Big Sandy Plant Unit 2

ORDER-OF-MAGNITUDE FGD COST ESTIMATE

Prepared for:
Kentucky Power Company (Owner)
and American Electric Power Service Corporation

Project No. 12721-000
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Report for WFGD, DFGD, IAQCS
and NID Technologies

Volume 4 – IAQCS Technology

55 East Monroe Street
Chicago, IL 60603-5780 USA

Issue Summary Page

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* - Due to the significant differences in layout between the phased and non-phased cost estimates the “bases” for comparison purposes were 1B for the non-phased cost estimates and 3B for the phased cost estimates. Therefore

cost estimates 2A, 2B, 3A (Phased) and 1A, 4A and 4B (Non-Phased) contain only accounts whose costs are different from the corresponding base estimates 3B and 1B respectively.

1.0 INTRODUCTION

The purpose of this document was to establish the Basis of the Order-of-Magnitude Integrated Air Quality Control System (IAQCS) FGD Cost Estimate to assist American Electric Power (AEP) with the selection of an FGD technology for Big Sandy Plant Unit 2. It was also intended to organize and present the deliverables for the IAQCS technology that were used to develop the Order-of-Magnitude FGD Cost Estimates. This document defines the project scope of work for the IAQCS technology and the organization of the capital cost estimate structure. The technical and commercial basis used to develop the Capital and O&M Cost Estimates and the assumptions used in preparing them are defined in Volume 1, Summary Report.

The Order-of-Magnitude FGD Cost Estimate Report is comprised of five (5) volumes as follows:

Volume	Description
1	Summary Report
2	WFGD Technology
3	DFGD Technology
4	IAQCS Technology
5	NID Technology

Order-of-Magnitude FGD Cost Estimates were prepared for the following four FGD Technologies:

- **Wet (WFGD):** Wet FGD Spray Tower and Integrated Wet ESP
- **Dry (DFGD):** Dry FGD Spray Dryer Absorber (SDA) and Fabric Filter (FF)
- **IAQCS:** Integrated Air Quality Control System (IAQCS) Dry SDA/FF and Wet FGD Spray Tower
- **NID:** Dry FGD NID and Fabric Filter

For the IAQCS technology, cost estimates were prepared considering fuel specifications with sulfur content of 1.7, 3.0, 4.5 and 7.5 lb SO_2/MMbtu. A base fuel was selected and a capital cost estimate was

prepared for each assuming an Engineer, Procure, Construct (EPC) contracting approach. Adjustments were then made to the base cost estimate to develop the remaining fuel estimates for that specific technology. The cost estimates also consider both the existing ESP in and removed from service. In order to reduce the size of the report the non-base cost estimates contain only those cost accounts that were different from the corresponding base estimate 1A or 1B.

The IAQCS system was evaluated assuming a phased implementation in order to make it more competitive at lower sulfur fuel cases. The DFGD portion would be installed initially and for estimate purposes the WFGD followed 5 years later for the 1.7 lb and 3.0 lb SO_2/MMbtu fuels. For the non-phased higher sulfur fuels both systems would be constructed to meet the earlier completion date. In the phased approach the future WFGD infrastructure was considered in the site layout and estimate development for the DFGD Phase. For example, costs for the limestone rail hopper foundation installation were included in the DFGD Phase in order to avoid impacting lime delivery during the WFGD installation in Phase II. The non-phased site layout was optimized to reduce ductwork costs by swapping the chimney and WFGD absorber locations. In addition to higher ductwork costs the phased approach also has significantly higher escalation costs due to the staggered schedule.

The cost estimates were based upon conceptual design deliverables prepared by S&L for each technology and the AEP Order of Magnitude/Relative Capital Installed Cost Estimate Specification (BS2-FGDSCE-052010, Rev. 2) which provided design basis and performance requirements. The conceptual deliverables, consisting of project general arrangements, process flow diagrams, mass balances, water balances and single lines, formed the basis for development of preliminary major equipment sizes and commodity estimates. Attention was focused on the significant elements that changed from one fuel to another, such as storage, handling and disposal of reagent and byproduct materials. The OEM equipment costs were taken from recent vendor quotes and adjusted for Big Sandy specifications, unit capacity, and escalated to 2010 dollars.

Table 1-1 illustrates the total of eight (8) cost estimates that were prepared for the IAQCS.

Table 1-1

EPC COST ESTIMATES

Technology	**1.7 lb SO_2/MMbtu**	**3.0 lb SO_2/MMbtu**	**4.5 lb SO_2/MMbtu**	**7.5 lb SO_2/MMbtu**
IAQCS (ESP)	IAQCS Est-2A	IAQCS Est-3A	IAQCS Base Est-1A	IAQCS Est-4A
IAQCS (N/ESP)	IAQCS Est-2B	IAQCS Est-3B	IAQCS Base Est-1B	IACCS Est-4B

ESP= ESP In Service **N/ESP = ESP Out of Service**

For details of the Technical and Commercial Basis of the entire study and the various technology cost comparisons, see Volume 1, Summary Report.

EXHIBIT 4-1
IAQCS Project Deliverable Index

VOLUME 4 - EXHIBIT 4-1
Project Deliverable Index
IAQCS Technology

Document No.	Description	Attachment No.
MSK-IAQCS-PFD-001_C	IAQCS FGD Process Flow Diagram – Sheet 1	4-1
MSK-IAQCS-PFD-002_C	IAQCS FGD Process Flow Diagram – Sheet 2	4-1
MSK-IAQCS-GA-001_D	IAQCS FGD Site Plan	4-2
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VOLUME 4 - EXHIBIT 4-1
Project Deliverable Index
IAQCS Technology

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ESK-IAQCS-NOTES-001_B	Basic Description of One Lines - IAQCS	4-5
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EXHIBIT 4-2
IAQCS Capital Cost Estimate Outline

EXHIBIT 4-2
IAQCS CAPITAL COST ESTIMATE OUTLINE
DIRECT COSTS

PROJECT DIRECT COSTS					
ACCT	**COST ESTIMATE CATEGORY**	**EQUIPMENT/MATERIAL COST RESPONSIBILITY**	**CONSTRUCTION/ERECTION COST RESPONSIBILITY**	**ESTIMATE BASIS**	**NOTES**
1.0	**ID FANS**	S&L	S&L	Previous OEM proposals and S&L Estimates	1
2.0	**FABRIC FILTERS**	S&L	S&L	Previous OEM proposals and S&L Estimates	
3.0	**NEW STACK**	AEP	AEP	Past AEP Projects	
4.0	**LIME HANDLING SYSTEM**	S&L	S&L	Previous OEM proposals and S&L Estimates	
5.0	**LIME SLAKER BUILDING**	S&L	S&L	Previous OEM proposals and S&L Estimates	
6.0	**BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS**	S&L	S&L	Previous OEM proposals and S&L Estimate	
7.0	**SPRAY DRYER ABSORBER ISLAND**	S&L	S&L	Previous OEM proposals and S&L Estimates	1, 2
8.0	**ACTIVATED CARBON INJECTTION SYSTEM**	AEP	AEP	Past AEP Projects	
9.0	**COMPRESSED AIR SYSTEM**	S&L	S&L	Past & Current S&L Projects	

EXHIBIT 4-2
IAQCS CAPITAL COST ESTIMATE OUTLINE
DIRECT COSTS

PROJECT DIRECT COSTS					
ACCT	**COST ESTIMATE CATEGORY**	**EQUIPMENT/MATERIAL COST RESPONSIBILITY**	**CONSTRUCTION/ERECTION COST RESPONSIBILITY**	**ESTIMATE BASIS**	**NOTES**
10.0	**SERVICE WATER SYSTEM**	S&L	S&L	Past & Current S&L Projects	
11.0	**POTABLE WATER SYSTEM**	S&L	S&L	Past & Current S&L Projects	
12.0	**FGD SUBSTATION**	S&L	S&L	Past & Current S&L Projects	
13.0	**FGD DCS SYSTEM**	S&L	S&L	Past S&L Projects Adjusted to Meet AEP Design Criteria	
14.0	**CEM SYSTEM**	AEP	AEP	Past AEP Projects	
15.0	**RAIL INFRASTRUCTURE**	S&L	S&L	Past & Current S&L Projects	
16.0	**SITE IMPROVEMENTS - CIVIL WORK**	S&L	S&L	Past & Current S&L Projects	
17.0	**LIMESTONE HANDLING SYSTEM**	S&L	S&L	Previous OEM proposals and S&L Estimates	
18.0	**REAGENT (LIMESTONE) PREPARATION ISLAND**	S&L	S&L	Previous OEM proposals and S&L Estimates	
19.0	**BYPRODUCT DEWATERING ISLAND**	S&L	S&L	Previous OEM proposals and S&L Estimates	

EXHIBIT 4-2
IAQCS CAPITAL COST ESTIMATE OUTLINE
DIRECT COSTS

PROJECT DIRECT COSTS					
ACCT	**COST ESTIMATE CATEGORY**	**EQUIPMENT/MATERIAL COST RESPONSIBILITY**	**CONSTRUCTION/ERECTION COST RESPONSIBILITY**	**ESTIMATE BASIS**	**NOTES**
20.0	**WET FGD ABSORBER ISLAND**	S&L	S&L	Previous OEM proposals and S&L Estimates	
21.0	**COMPRESSED AIR SYSTEMS (BY PRODUCT DEWATERING AREA)**	S&L	S&L	Past & Current S&L Projects	
22.0	**POTABLE WATER SYSTEM**	S&L	S&L	Past & Current S&L Projects	
23.0	**FGD SUBSTATION**	S&L	S&L	Past & Current S&L Projects	
24.0	**FGD DCS SYSTEM**	S&L	S&L	Past S&L Projects Adjusted to Meet AEP Design Criteria	
25.0	**SITE IMPROVEMENTS - CIVIL WORK**	S&L	S&L	Past & Current S&L Projects	
26.0	**BOP ITEMS**	S&L	S&L	Past & Current S&L Projects	
27.0	**CAPITAL REPLACEMENTS - REMOVAL AND RELOCATION OF EXISTING EQUIPMENT AND INFRASTRUCTURE**	S&L	S&L	Site Plans	
28.0	**ARSENIC, ASBESTOS , LEAD ABATEMENT**	AEP	AEP	Past AEP Projects	

Notes: 1) Noise Mitigation costs were considered for ID fan insulation and lagging and blower bldg construction.
2) Ductwork costs are based upon general arrangement layouts.

EXHIBIT 4-2
IAQCS CAPITAL COST ESTIMATE OUTLINE
DIRECT COSTS

PROJECT INDIRECT COSTS			
ACCT	**COST ESTIMATE CATEGORY**	**TOTAL COST RESPONSIBILITY**	**ESTIMATE SOURCE**
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES	S&L	Past FGD and AEP Projects
	CONSTRUCTION MANAGEMENT	S&L	Estimating Percentage
	S-U / COMMISSIONING	S&L	Estimating Percentage
	ESCALATION	S&L	Material, Equipment and Labor Indices
	CONTINGENCY	S&L	Range Estimating

EXHIBIT 4-3
IAQCS Contingency Analysis

AEP
BIG SANDY UNIT 2
FGD PROJECT - IAQCS - BASE (ESP)-1A - 4.5 LB/MM BTU - NON-PHASED

@RISK
Risk Analysis and Simulation Add-In for Microsoft EXCEL
Version 5.0
Palisade Corporation

ANALYSIS INPUT

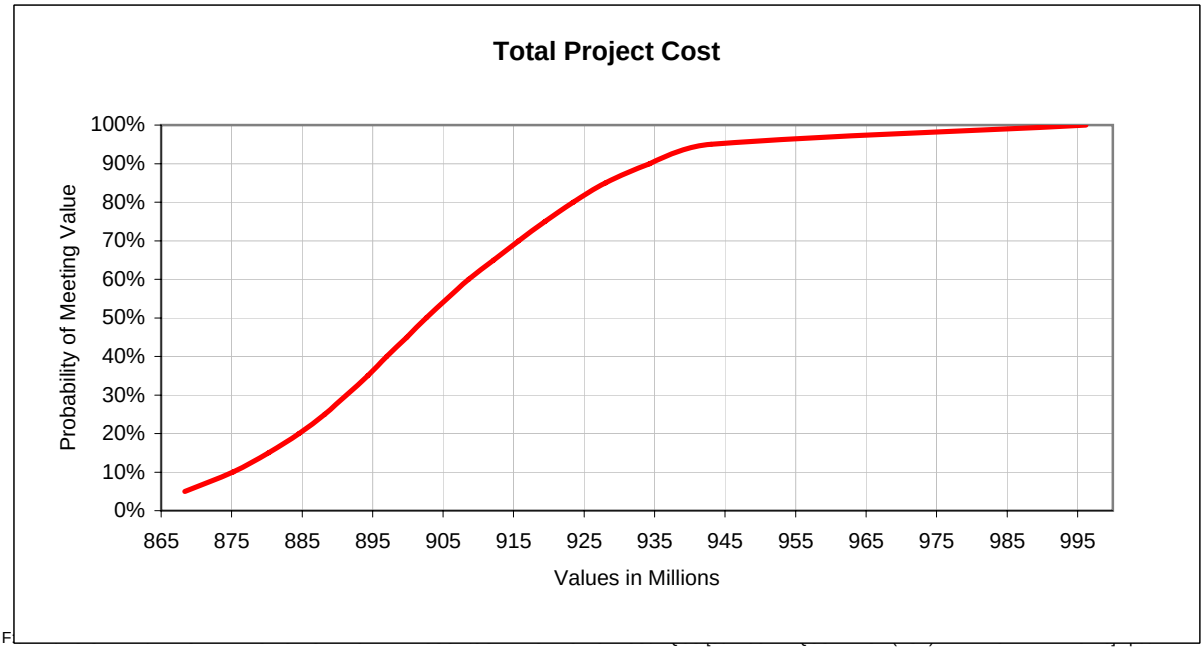
Values in Thousands

Accnt. No.	Cost Elements	Target Value $k	Minimum	Maximum	Minimum	Maximum
1.0	ID FANS	$51,769,600	95%	130%	$49,181,120	$67,300,480
2.0	FABRIC FILTERS	$42,279,100	95%	130%	$40,165,145	$54,962,830
3.0	NEW STACK	$31,480,000	95%	130%	$29,906,000	$40,924,000
4.0	LIME HANDLING SYSTEM	$9,166,700	95%	130%	$8,708,365	$11,916,710
5.0	LIME SLAKER BUILDING	$8,514,600	95%	130%	$8,088,870	$11,068,980
6.0	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS	$13,389,600	95%	130%	$12,720,120	$17,406,480
7.0	SPRAY DRYER ABSORBER ISLAND	$108,714,600	95%	130%	$103,278,870	$141,328,980
9.0	COMPRESSED AIR SYSTEM	$5,423,700	95%	135%	$5,152,515	$7,321,995
10.0	SERVICE WATER SYSTEM	$8,266,800	95%	135%	$7,853,460	$11,160,180
11.1	POTABLE WATER SYSTEM	$1,143,600	95%	135%	$1,086,420	$1,543,860
12.0	FGD SUBSTATION	$8,400,700	95%	135%	$7,980,665	$11,340,945
13.0	FGD DCS SYSTEM	$11,033,100	95%	135%	$10,481,445	$14,894,685
14.0	CEM SYSTEM	$2,110,000	95%	130%	$2,004,500	$2,743,000
15.0	TRUCK & RAIL INFRASTRUCTURE	$4,340,800	95%	140%	$4,123,760	$6,077,120
16.0	SITE IMPROVEMENTS - CIVIL WORK	$20,120,900	95%	140%	$19,114,855	$28,169,260
17.0	LIMESTONE HANDLING SYSTEM	$22,661,200	95%	130%	$21,528,140	$29,459,560
18.0	REAGENT (LIMESTONE) PREPARATION ISLAND	$40,693,200	95%	130%	$38,658,540	$52,901,160
19.0	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)	$60,616,600	95%	130%	$57,585,770	$78,801,580
20.0	WET FGD ABSORBER ISLAND	$127,317,900	95%	130%	$120,952,005	$165,513,270
21.0	COMPRESSED AIR SYSTEM (BYPRODUCT DEWATERING AREA)	$1,298,800	95%	135%	$1,233,860	$1,753,380
23.0	SCR SUBSTATION UPGRADE	$2,340,000	95%	130%	$2,223,000	$3,042,000
26.0	BOP ITEMS	$6,922,700	95%	160%	$6,576,565	$11,076,320
27.0	CAPITAL REPLACEMENTS - REMOVAL AND RELOCATION OF EXISTING EQUIPMENT AND INFRASTRUCTURE	$4,264,900	95%	200%	$4,051,655	$8,529,800
28.0	ARSENIC, ASBESTOS , LEAD ABATEMENT	$750,000	95%	150%	$712,500	$1,125,000
99.0	OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS	$145,552,500	95%	140%	$138,274,875	$203,773,500
	OVERALL PROJECT INDIRECT COSTS	$85,535,900	95%	130%	$81,259,105	$111,196,670
	SPARE PARTS	$2,957,500	95%	130%	$2,809,625	$3,844,750
	Total Base Case	**$827,065,000**				

ANALYSIS OUTPUT

Probability of meeting "Total Base Case" value: 827,065,000 0.0%

Total Budget Required ($k)	% Confidence Level	Confidence Level Risk	Contingency % of Base
996,177,169	100.0%	169,112,200	20.447%
943,031,188	95.0%	115,966,200	14.021%
934,278,622	90.0%	107,213,600	12.963%
928,010,946	85.0%	100,945,900	12.205%
923,483,623	80.0%	96,418,600	11.658%
919,463,217	75.0%	92,398,200	11.172%
915,699,834	70.0%	88,634,800	10.717%
912,160,980	65.0%	85,096,000	10.289%
908,628,748	60.0%	81,563,700	9.862%
905,591,547	55.0%	78,526,500	9.495%
902,628,671	50.0%	75,563,700	9.136%
899,883,655	45.0%	72,818,700	8.804%
897,000,645	40.0%	69,935,600	8.456%
894,323,452	35.0%	67,258,500	8.132%
891,318,789	30.0%	64,253,800	7.769%
888,176,153	25.0%	61,111,200	7.389%
884,580,757	20.0%	57,515,800	6.954%
880,243,531	15.0%	53,178,500	6.430%
875,208,465	10.0%	48,143,500	5.821%
868,342,108	5.0%	41,277,100	4.991%



AEP
BIG SANDY UNIT 2
FGD PROJECT - IAQCS - DRY FGD (ESP)-2A - 1.7 LB/MM BTU - PHASED

@RISK
Risk Analysis and Simulation Add-In for Microsoft EXCEL
Version 5.0
Palisade Corporation

ANALYSIS INPUT

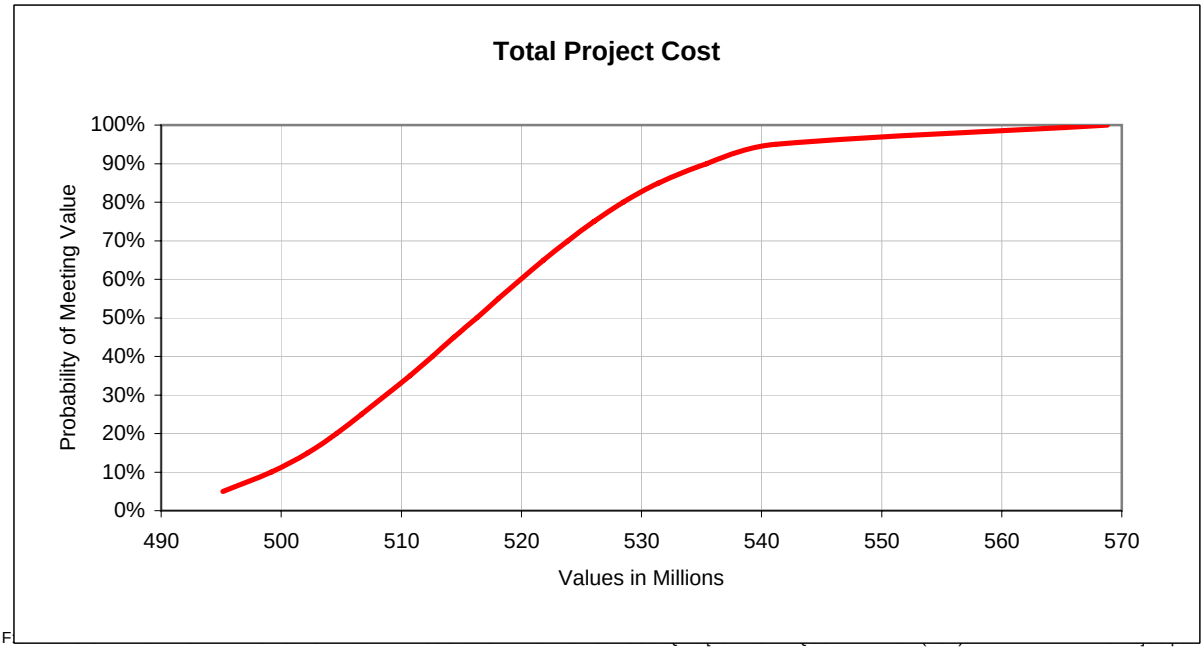
Values in Thousands

Accnt. No.	Cost Elements	Target Value $k	Minimum	Maximum	Minimum	Maximum
1.0	ID FANS	$56,191,100	95%	130%	$53,381,545	$73,048,430
2.0	FABRIC FILTERS	$42,507,200	95%	130%	$40,381,840	$55,259,360
3.0	NEW STACK	$31,480,000	95%	130%	$29,906,000	$40,924,000
4.0	LIME HANDLING SYSTEM	$11,970,100	95%	125%	$11,371,595	$14,962,625
5.0	LIME SLAKER BUILDING	$13,084,300	95%	130%	$12,430,085	$17,009,590
6.0	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS	$15,395,000	95%	130%	$14,625,250	$20,013,500
7.0	SPRAY DRYER ABSORBER ISLAND	$108,714,600	95%	130%	$103,278,870	$141,328,980
8.0	ACTIVATED CARBON INJECTION SYSTEM	$5,381,600	95%	130%	$5,112,520	$6,996,080
9.0	COMPRESSED AIR SYSTEM	$5,423,700	95%	135%	$5,152,515	$7,321,995
10.0	SERVICE WATER SYSTEM	$4,291,000	95%	135%	$4,076,450	$5,792,850
11.1	POTABLE WATER SYSTEM	$1,056,700	95%	135%	$1,003,865	$1,426,545
12.0	FGD SUBSTATION	$8,610,100	95%	135%	$8,179,595	$11,623,635
13.0	FGD DCS SYSTEM	$5,153,600	95%	135%	$4,895,920	$6,957,360
14.0	CEM SYSTEM	$2,110,000	95%	130%	$2,004,500	$2,743,000
15.0	TRUCK & RAIL INFRASTRUCTURE	$6,840,300	95%	140%	$6,498,285	$9,576,420
16.0	SITE IMPROVEMENTS - CIVIL WORK	$15,944,000	95%	140%	$15,146,800	$22,321,600
17.0	BOP ITEMS	$3,234,100	95%	160%	$3,072,395	$5,174,560
18.0	CAPITAL REPLACEMENTS - REMOVAL AND RELOCATION OF EXISTING EQUIPMENT AND INFRASTRUCTURE	$4,264,900	95%	200%	$4,051,655	$8,529,800
19.0	ARSENIC, ASBESTOS , LEAD ABATEMENT	$750,000	95%	150%	$712,500	$1,125,000
99.0	OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS	$79,733,700	95%	140%	$75,747,015	$111,627,180
	OVERALL PROJECT INDIRECT COSTS	$48,569,800	95%	130%	$46,141,310	$63,140,740
	SPARE PARTS	$1,762,700	95%	130%	$1,674,565	$2,291,510
	Total Base Case	**$472,468,500**				

ANALYSIS OUTPUT

Probability of meeting "Total Base Case" value: 472,468,500 0.0%

Total Budget Required ($k)	% Confidence Level	Confidence Level Risk	Contingency % of Base
568,811,907	100.0%	96,343,400	20.391%
541,192,698	95.0%	68,724,200	14.546%
535,406,465	90.0%	62,938,000	13.321%
531,430,258	85.0%	58,961,800	12.480%
528,492,282	80.0%	56,023,800	11.858%
526,045,607	75.0%	53,577,100	11.340%
523,873,366	70.0%	51,404,900	10.880%
521,833,142	65.0%	49,364,600	10.448%
519,957,309	60.0%	47,488,800	10.051%
518,076,600	55.0%	45,608,100	9.653%
516,314,012	50.0%	43,845,500	9.280%
514,373,402	45.0%	41,904,900	8.869%
512,589,968	40.0%	40,121,500	8.492%
510,731,289	35.0%	38,262,800	8.098%
508,723,788	30.0%	36,255,300	7.674%
506,672,570	25.0%	34,204,100	7.239%
504,603,043	20.0%	32,134,500	6.801%
502,238,656	15.0%	29,770,200	6.301%
499,202,286	10.0%	26,733,800	5.658%
495,152,391	5.0%	22,683,900	4.801%



AEP
BIG SANDY UNIT 2
FGD PROJECT - IAQCS - WET FGD (ESP)-2A - 1.7 LB/MM BTU - PHASED

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ANALYSIS INPUT

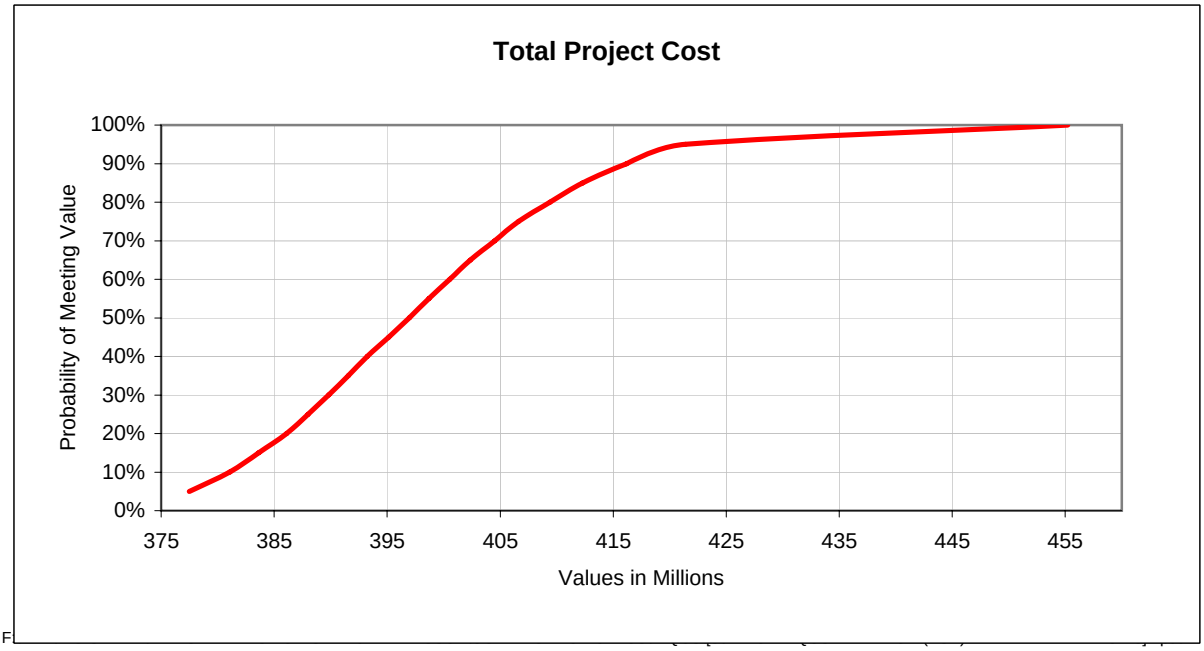
Values in Thousands

Accnt. No.	Cost Elements	Target Value $k	Minimum	Maximum	Minimum	Maximum
20.0	LIMESTONE HANDLING SYSTEM	$20,286,300	95%	130%	$19,271,985	$26,372,190
21.0	REAGENT (LIMESTONE) PREPARATION ISLAND	$34,619,700	95%	130%	$32,888,715	$45,005,610
22.0	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)	$55,944,700	95%	130%	$53,147,465	$72,728,110
23.0	WET FGD ABSORBER ISLAND	$126,209,000	95%	130%	$119,898,550	$164,071,700
24.0	COMPRESSED AIR SYSTEM (BYPRODUCT DEWATERING AREA)	$1,298,800	95%	135%	$1,233,860	$1,753,380
25.0	POTABLE WATER SYSTEM	$85,900	95%	130%	$81,605	$111,670
26.0	SCR SUBSTATION UPGRADE	$2,340,000	95%	130%	$2,223,000	$3,042,000
27.0	FGD DCS SYSTEM	$6,230,300	95%	135%	$5,918,785	$8,410,905
28.0	SITE IMPROVEMENTS - CIVIL WORK	$2,274,000	95%	140%	$2,160,300	$3,183,600
29.0	BOP ITEMS	$3,562,600	95%	160%	$3,384,470	$5,700,160
30.0	SERVICE WATER SYSTEM	$3,975,900	95%	135%	$3,777,105	$5,367,465
99.0	OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS	$67,692,600	95%	140%	$64,307,970	$94,769,640
	OVERALL PROJECT INDIRECT COSTS	$38,837,300	95%	130%	$36,895,435	$50,488,490
	SPARE PARTS	$1,192,900	95%	130%	$1,133,255	$1,550,770
	Total Base Case	**$364,550,000**				

ANALYSIS OUTPUT

Probability of meeting "Total Base Case" value: 364,550,000 0.0%

Total Budget Required ($k)	% Confidence Level	Confidence Level Risk	Contingency % of Base
455,206,478	100.0%	90,656,500	24.868%
421,404,100	95.0%	56,854,100	15.596%
416,170,756	90.0%	51,620,800	14.160%
412,303,006	85.0%	47,753,000	13.099%
409,392,358	80.0%	44,842,400	12.301%
406,631,059	75.0%	42,081,100	11.543%
404,490,783	70.0%	39,940,800	10.956%
402,337,758	65.0%	37,787,800	10.366%
400,534,966	60.0%	35,985,000	9.871%
398,690,296	55.0%	34,140,300	9.365%
396,966,976	50.0%	32,417,000	8.892%
395,124,898	45.0%	30,574,900	8.387%
393,233,509	40.0%	28,683,500	7.868%
391,570,707	35.0%	27,020,700	7.412%
389,823,908	30.0%	25,273,900	6.933%
387,990,568	25.0%	23,440,600	6.430%
386,112,680	20.0%	21,562,700	5.915%
383,647,163	15.0%	19,097,200	5.239%
381,095,351	10.0%	16,545,400	4.539%
377,493,055	5.0%	12,943,100	3.550%



AEP
BIG SANDY UNIT 2
FGD PROJECT - IAQCS - DRY FGD (ESP)-3A - 3.0 LB/MM BTU - PHASED

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ANALYSIS INPUT

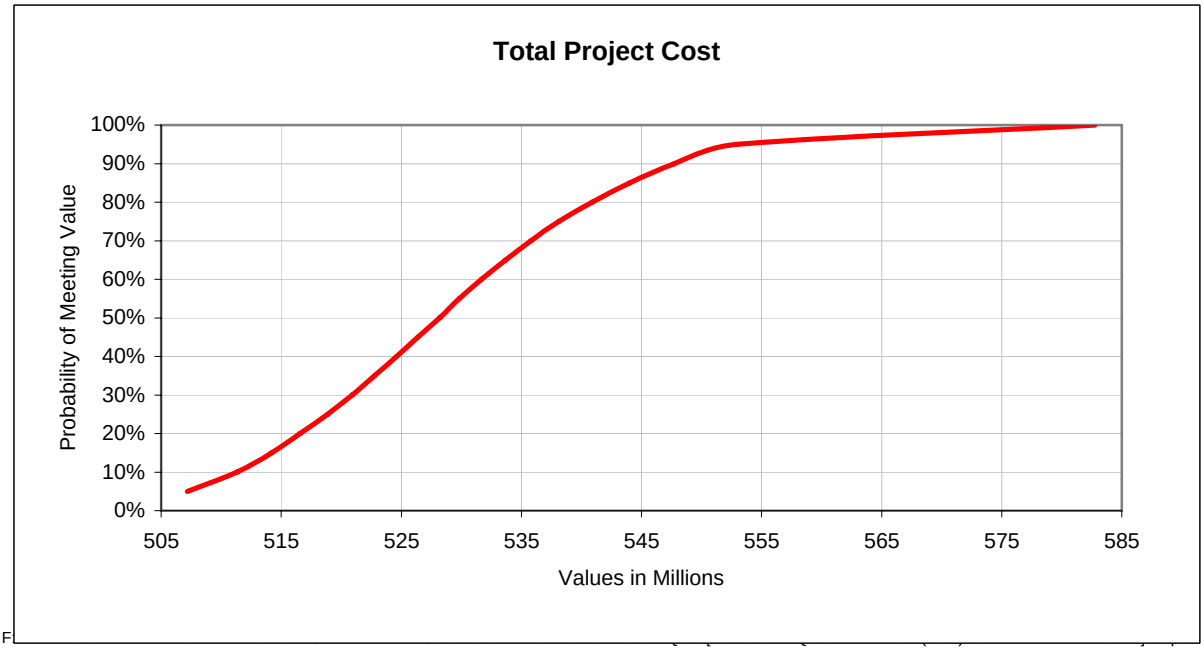
Values in Thousands

Accnt. No.	Cost Elements	Target Value $k	Minimum	Maximum	Minimum	Maximum
1.0	ID FANS	$56,191,100	95%	130%	$53,381,545	$73,048,430
2.0	FABRIC FILTERS	$42,323,100	95%	130%	$40,206,945	$55,020,030
3.0	NEW STACK	$31,480,000	95%	130%	$29,906,000	$40,924,000
4.0	LIME HANDLING SYSTEM	$17,169,900	95%	125%	$16,311,405	$21,462,375
5.0	LIME SLAKER BUILDING	$16,827,400	95%	130%	$15,986,030	$21,875,620
6.0	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS	$16,036,800	95%	130%	$15,234,960	$20,847,840
7.0	SPRAY DRYER ABSORBER ISLAND	$108,714,600	95%	130%	$103,278,870	$141,328,980
8.0	ACTIVATED CARBON INJECTION SYSTEM	$5,381,600	95%	130%	$5,112,520	$6,996,080
9.0	COMPRESSED AIR SYSTEM	$5,423,700	95%	135%	$5,152,515	$7,321,995
10.0	SERVICE WATER SYSTEM	$4,291,000	95%	135%	$4,076,450	$5,792,850
11.1	POTABLE WATER SYSTEM	$1,056,700	95%	135%	$1,003,865	$1,426,545
12.0	FGD SUBSTATION	$8,610,100	95%	135%	$8,179,595	$11,623,635
13.0	FGD DCS SYSTEM	$5,153,600	95%	135%	$4,895,920	$6,957,360
14.0	CEM SYSTEM	$2,110,000	95%	130%	$2,004,500	$2,743,000
15.0	TRUCK & RAIL INFRASTRUCTURE	$6,840,300	95%	140%	$6,498,285	$9,576,420
16.0	SITE IMPROVEMENTS - CIVIL WORK	$15,944,000	95%	140%	$15,146,800	$22,321,600
17.0	BOP ITEMS	$3,234,100	95%	160%	$3,072,395	$5,174,560
18.0	CAPITAL REPLACEMENTS - REMOVAL AND RELOCATION OF EXISTING EQUIPMENT AND INFRASTRUCTURE	$4,264,900	95%	200%	$4,051,655	$8,529,800
19.0	ARSENIC, ASBESTOS , LEAD ABATEMENT	$750,000	95%	150%	$712,500	$1,125,000
99.0	OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS	$80,912,200	95%	140%	$76,866,590	$113,277,080
	OVERALL PROJECT INDIRECT COSTS	$49,046,900	95%	130%	$46,594,555	$63,760,970
	SPARE PARTS	$1,874,300	95%	130%	$1,780,585	$2,436,590
	Total Base Case	**$483,636,300**				

ANALYSIS OUTPUT

Probability of meeting "Total Base Case" value: 483,636,300 0.0%

Total Budget Required ($k)	% Confidence Level	Confidence Level Risk	Contingency % of Base
582,758,400	100.0%	99,122,100	20.495%
553,011,579	95.0%	69,375,300	14.345%
547,707,838	90.0%	64,071,500	13.248%
544,013,667	85.0%	60,377,400	12.484%
540,886,223	80.0%	57,249,900	11.837%
538,127,157	75.0%	54,490,900	11.267%
535,790,365	70.0%	52,154,100	10.784%
533,664,974	65.0%	50,028,700	10.344%
531,687,106	60.0%	48,050,800	9.935%
529,836,304	55.0%	46,200,000	9.553%
528,209,660	50.0%	44,573,400	9.216%
526,373,937	45.0%	42,737,600	8.837%
524,621,934	40.0%	40,985,600	8.474%
522,784,898	35.0%	39,148,600	8.095%
520,926,083	30.0%	37,289,800	7.710%
518,863,373	25.0%	35,227,100	7.284%
516,559,166	20.0%	32,922,900	6.807%
514,227,760	15.0%	30,591,500	6.325%
511,341,207	10.0%	27,704,900	5.728%
507,176,313	5.0%	23,540,000	4.867%



AEP
BIG SANDY UNIT 2
FGD PROJECT - IAQCS - WET FGD (ESP)-3A - 3.0 LB/MM BTU - PHASED

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ANALYSIS INPUT

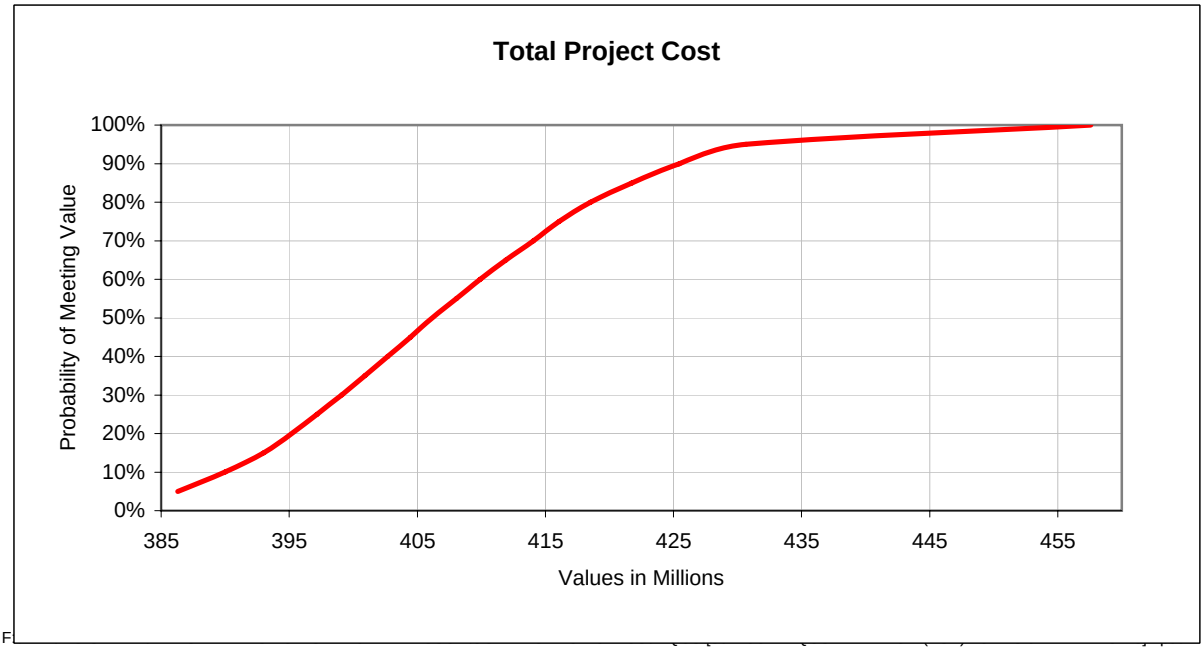
Values in Thousands

Accnt. No.	Cost Elements	Target Value $k	Minimum	Maximum	Minimum	Maximum
20.0	LIMESTONE HANDLING SYSTEM	$20,286,300	95%	130%	$19,271,985	$26,372,190
21.0	REAGENT (LIMESTONE) PREPARATION ISLAND	$37,870,400	95%	130%	$35,976,880	$49,231,520
22.0	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)	$58,456,400	95%	130%	$55,533,580	$75,993,320
23.0	WET FGD ABSORBER ISLAND	$127,120,900	95%	130%	$120,764,855	$165,257,170
24.0	COMPRESSED AIR SYSTEM (BYPRODUCT DEWATERING AREA)	$1,298,800	95%	135%	$1,233,860	$1,753,380
25.0	POTABLE WATER SYSTEM	$85,900	95%	130%	$81,605	$111,670
26.0	SCR SUBSTATION UPGRADE	$2,340,000	95%	130%	$2,223,000	$3,042,000
27.0	FGD DCS SYSTEM	$6,230,300	95%	135%	$5,918,785	$8,410,905
28.0	SITE IMPROVEMENTS - CIVIL WORK	$2,274,000	95%	140%	$2,160,300	$3,183,600
29.0	BOP ITEMS	$3,562,600	95%	160%	$3,384,470	$5,700,160
30.0	SERVICE WATER SYSTEM	$3,975,900	95%	135%	$3,777,105	$5,367,465
99.0	OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS	$68,883,700	95%	140%	$65,439,515	$96,437,180
	OVERALL PROJECT INDIRECT COSTS	$39,459,600	95%	130%	$37,486,620	$51,297,480
	SPARE PARTS	$1,256,000	95%	130%	$1,193,200	$1,632,800
	Total Base Case	**$373,100,800**				

ANALYSIS OUTPUT

Probability of meeting "Total Base Case" value: 373,100,800 0.0%

Total Budget Required ($k)	% Confidence Level	Confidence Level Risk	Contingency % of Base
457,569,706	100.0%	84,468,900	22.640%
430,676,039	95.0%	57,575,200	15.432%
425,457,770	90.0%	52,357,000	14.033%
421,748,218	85.0%	48,647,400	13.039%
418,518,998	80.0%	45,418,200	12.173%
416,076,700	75.0%	42,975,900	11.519%
414,064,397	70.0%	40,963,600	10.979%
411,919,139	65.0%	38,818,300	10.404%
409,906,228	60.0%	36,805,400	9.865%
408,054,471	55.0%	34,953,700	9.368%
406,178,948	50.0%	33,078,100	8.866%
404,462,855	45.0%	31,362,100	8.406%
402,683,488	40.0%	29,582,700	7.929%
400,903,487	35.0%	27,802,700	7.452%
399,118,009	30.0%	26,017,200	6.973%
397,178,390	25.0%	24,077,600	6.453%
395,189,883	20.0%	22,089,100	5.920%
393,029,959	15.0%	19,929,200	5.342%
390,008,027	10.0%	16,907,200	4.532%
386,310,689	5.0%	13,209,900	3.541%



AEP
BIG SANDY UNIT 2
FGD PROJECT - IAQCS - BASE (ESP)-4A - 7.5 LB/MM BTU - NON-PHASED

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ANALYSIS INPUT

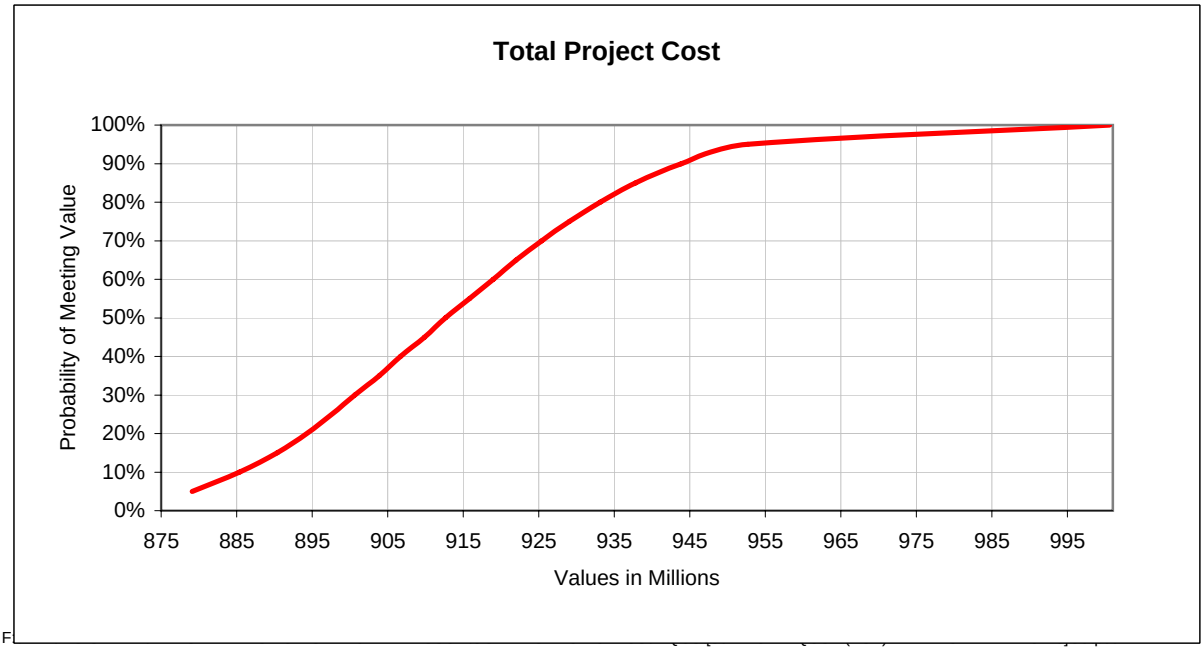
Values in Thousands

Accnt. No.	Cost Elements	Target Value $k	Minimum	Maximum	Minimum	Maximum
1.0	ID FANS	$51,769,600	95%	130%	$49,181,120	$67,300,480
2.0	FABRIC FILTERS	$42,094,900	95%	130%	$39,990,155	$54,723,370
3.0	NEW STACK	$31,480,000	95%	130%	$29,906,000	$40,924,000
4.0	LIME HANDLING SYSTEM	$9,569,800	95%	130%	$9,091,310	$12,440,740
5.0	LIME SLAKER BUILDING	$9,560,800	95%	130%	$9,082,760	$12,429,040
6.0	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS	$13,447,200	95%	130%	$12,774,840	$17,481,360
7.0	SPRAY DRYER ABSORBER ISLAND	$108,714,600	95%	130%	$103,278,870	$141,328,980
9.0	COMPRESSED AIR SYSTEM	$5,423,700	95%	135%	$5,152,515	$7,321,995
10.0	SERVICE WATER SYSTEM	$8,266,800	95%	135%	$7,853,460	$11,160,180
11.1	POTABLE WATER SYSTEM	$1,143,600	95%	135%	$1,086,420	$1,543,860
12.0	FGD SUBSTATION	$8,400,700	95%	135%	$7,980,665	$11,340,945
13.0	FGD DCS SYSTEM	$11,033,100	95%	135%	$10,481,445	$14,894,685
14.0	CEM SYSTEM	$2,110,000	95%	130%	$2,004,500	$2,743,000
15.0	TRUCK & RAIL INFRASTRUCTURE	$4,340,800	95%	140%	$4,123,760	$6,077,120
16.0	SITE IMPROVEMENTS - CIVIL WORK	$20,120,900	95%	140%	$19,114,855	$28,169,260
17.0	LIMESTONE HANDLING SYSTEM	$22,661,200	95%	130%	$21,528,140	$29,459,560
18.0	REAGENT (LIMESTONE) PREPARATION ISLAND	$43,573,300	95%	130%	$41,394,635	$56,645,290
19.0	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)	$62,999,400	95%	130%	$59,849,430	$81,899,220
20.0	WET FGD ABSORBER ISLAND	$128,103,300	95%	130%	$121,698,135	$166,534,290
21.0	COMPRESSED AIR SYSTEM (BYPRODUCT DEWATERING AREA)	$1,298,800	95%	135%	$1,233,860	$1,753,380
23.0	SCR SUBSTATION UPGRADE	$2,340,000	95%	130%	$2,223,000	$3,042,000
26.0	BOP ITEMS	$6,922,700	95%	160%	$6,576,565	$11,076,320
27.0	CAPITAL REPLACEMENTS - REMOVAL AND RELOCATION OF EXISTING EQUIPMENT AND INFRASTRUCTURE	$4,264,900	95%	200%	$4,051,655	$8,529,800
28.0	ARSENIC, ASBESTOS , LEAD ABATEMENT	$750,000	95%	150%	$712,500	$1,125,000
99.0	OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS	$146,847,800	95%	140%	$139,505,410	$205,586,920
	OVERALL PROJECT INDIRECT COSTS	$85,938,700	95%	130%	$81,641,765	$111,720,310
	SPARE PARTS	$3,027,200	95%	130%	$2,875,840	$3,935,360
	Total Base Case	**$836,203,800**				

ANALYSIS OUTPUT

Probability of meeting "Total Base Case" value: 836,203,800 0.0%

Total Budget Required ($k)	% Confidence Level	Confidence Level Risk	Contingency % of Base
1,000,585,970	100.0%	164,382,200	19.658%
952,700,898	95.0%	116,497,100	13.932%
943,845,382	90.0%	107,641,600	12.873%
937,787,180	85.0%	101,583,400	12.148%
933,130,838	80.0%	96,927,000	11.591%
929,070,920	75.0%	92,867,100	11.106%
925,392,175	70.0%	89,188,400	10.666%
922,004,034	65.0%	85,800,200	10.261%
918,978,001	60.0%	82,774,200	9.899%
915,852,420	55.0%	79,648,600	9.525%
912,684,084	50.0%	76,480,300	9.146%
909,856,411	45.0%	73,652,600	8.808%
906,704,891	40.0%	70,501,100	8.431%
903,886,774	35.0%	67,683,000	8.094%
900,662,276	30.0%	64,458,500	7.708%
897,582,618	25.0%	61,378,800	7.340%
894,259,813	20.0%	58,056,000	6.943%
890,397,078	15.0%	54,193,300	6.481%
885,416,940	10.0%	49,213,100	5.885%
879,091,758	5.0%	42,888,000	5.129%



AEP
BIG SANDY UNIT 2
FGD PROJECT - IAQCS - BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON-PHASED

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ANALYSIS INPUT

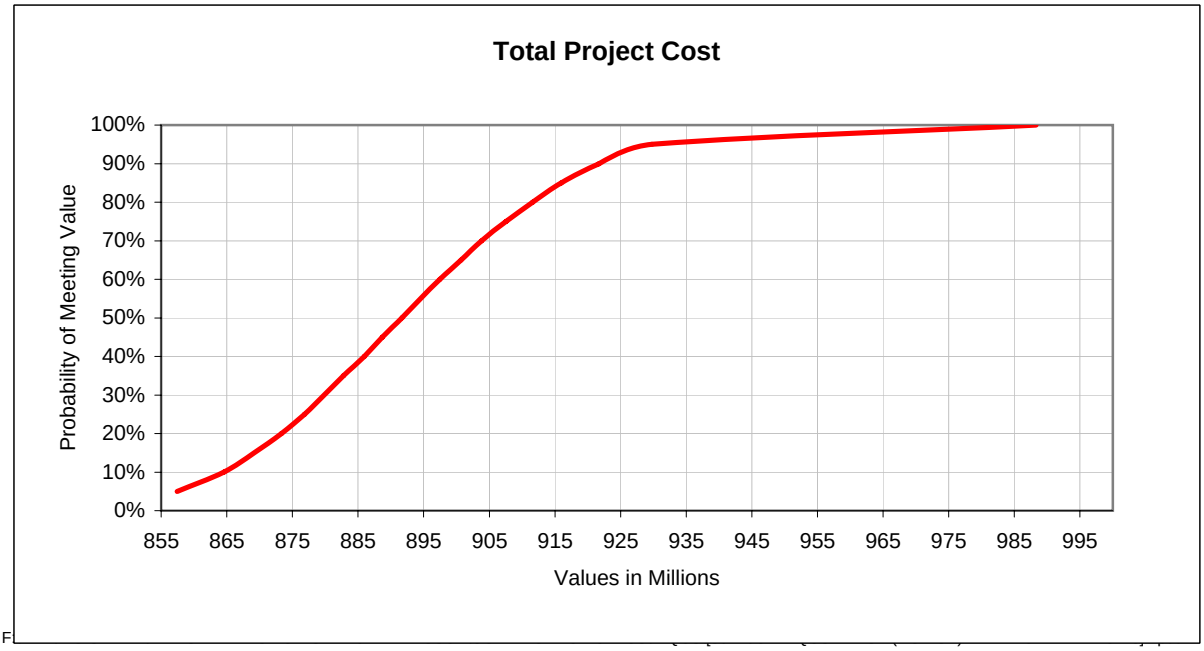
Values in Thousands

Accnt. No.	Cost Elements	Target Value $k	Minimum	Maximum	Minimum	Maximum
1.0	ID FANS	$53,014,600	95%	130%	$50,363,870	$68,918,980
2.0	FABRIC FILTERS	$42,992,100	95%	130%	$40,842,495	$55,889,730
3.0	NEW STACK	$31,480,000	95%	130%	$29,906,000	$40,924,000
4.0	LIME HANDLING SYSTEM	$9,166,700	95%	130%	$8,708,365	$11,916,710
5.0	LIME SLAKER BUILDING	$8,514,600	95%	130%	$8,088,870	$11,068,980
6.0	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS	$9,851,600	95%	130%	$9,359,020	$12,807,080
7.0	SPRAY DRYER ABSORBER ISLAND	$102,264,200	95%	130%	$97,150,990	$132,943,460
9.0	COMPRESSED AIR SYSTEM	$5,423,700	95%	135%	$5,152,515	$7,321,995
10.0	SERVICE WATER SYSTEM	$8,266,800	95%	135%	$7,853,460	$11,160,180
11.1	POTABLE WATER SYSTEM	$1,143,600	95%	135%	$1,086,420	$1,543,860
12.0	FGD SUBSTATION	$8,692,500	95%	135%	$8,257,875	$11,734,875
13.0	FGD DCS SYSTEM	$11,033,100	95%	135%	$10,481,445	$14,894,685
14.0	CEM SYSTEM	$2,110,000	95%	130%	$2,004,500	$2,743,000
15.0	TRUCK & RAIL INFRASTRUCTURE	$4,340,800	95%	140%	$4,123,760	$6,077,120
16.0	SITE IMPROVEMENTS - CIVIL WORK	$20,120,900	95%	140%	$19,114,855	$28,169,260
17.0	LIMESTONE HANDLING SYSTEM	$22,661,200	95%	130%	$21,528,140	$29,459,560
18.0	REAGENT (LIMESTONE) PREPARATION ISLAND	$40,693,200	95%	130%	$38,658,540	$52,901,160
19.0	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)	$60,616,600	95%	130%	$57,585,770	$78,801,580
20.0	WET FGD ABSORBER ISLAND	$127,317,900	95%	130%	$120,952,005	$165,513,270
21.0	COMPRESSED AIR SYSTEM (BYPRODUCT DEWATERING AREA)	$1,298,800	95%	135%	$1,233,860	$1,753,380
23.0	SCR SUBSTATION UPGRADE	$2,340,000	95%	130%	$2,223,000	$3,042,000
26.0	BOP ITEMS	$6,922,700	95%	160%	$6,576,565	$11,076,320
27.0	CAPITAL REPLACEMENTS - REMOVAL AND RELOCATION OF EXISTING EQUIPMENT AND INFRASTRUCTURE	$4,264,900	95%	200%	$4,051,655	$8,529,800
28.0	ARSENIC, ASBESTOS , LEAD ABATEMENT	$750,000	95%	150%	$712,500	$1,125,000
99.0	OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS	$143,067,200	95%	140%	$135,913,840	$200,294,080
	OVERALL PROJECT INDIRECT COSTS	$85,286,300	95%	130%	$81,021,985	$110,872,190
	SPARE PARTS	$2,957,700	95%	130%	$2,809,815	$3,845,010
	Total Base Case	**$816,591,700**				

ANALYSIS OUTPUT

Probability of meeting "Total Base Case" value: 816,591,700 0.0%

Total Budget Required ($k)	% Confidence Level	Confidence Level Risk	Contingency % of Base
988,299,655	100.0%	171,708,000	21.027%
929,792,275	95.0%	113,200,600	13.863%
921,705,744	90.0%	105,114,000	12.872%
915,943,694	85.0%	99,352,000	12.167%
911,621,709	80.0%	95,030,000	11.637%
907,536,476	75.0%	90,944,800	11.137%
903,803,935	70.0%	87,212,200	10.680%
900,698,387	65.0%	84,106,700	10.300%
897,471,189	60.0%	80,879,500	9.905%
894,556,818	55.0%	77,965,100	9.548%
891,692,497	50.0%	75,100,800	9.197%
888,701,193	45.0%	72,109,500	8.831%
885,949,244	40.0%	69,357,500	8.494%
882,807,375	35.0%	66,215,700	8.109%
879,872,853	30.0%	63,281,200	7.749%
876,846,033	25.0%	60,254,300	7.379%
873,355,330	20.0%	56,763,600	6.951%
869,183,077	15.0%	52,591,400	6.440%
864,621,128	10.0%	48,029,400	5.882%
857,413,557	5.0%	40,821,900	4.999%



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BIG SANDY UNIT 2
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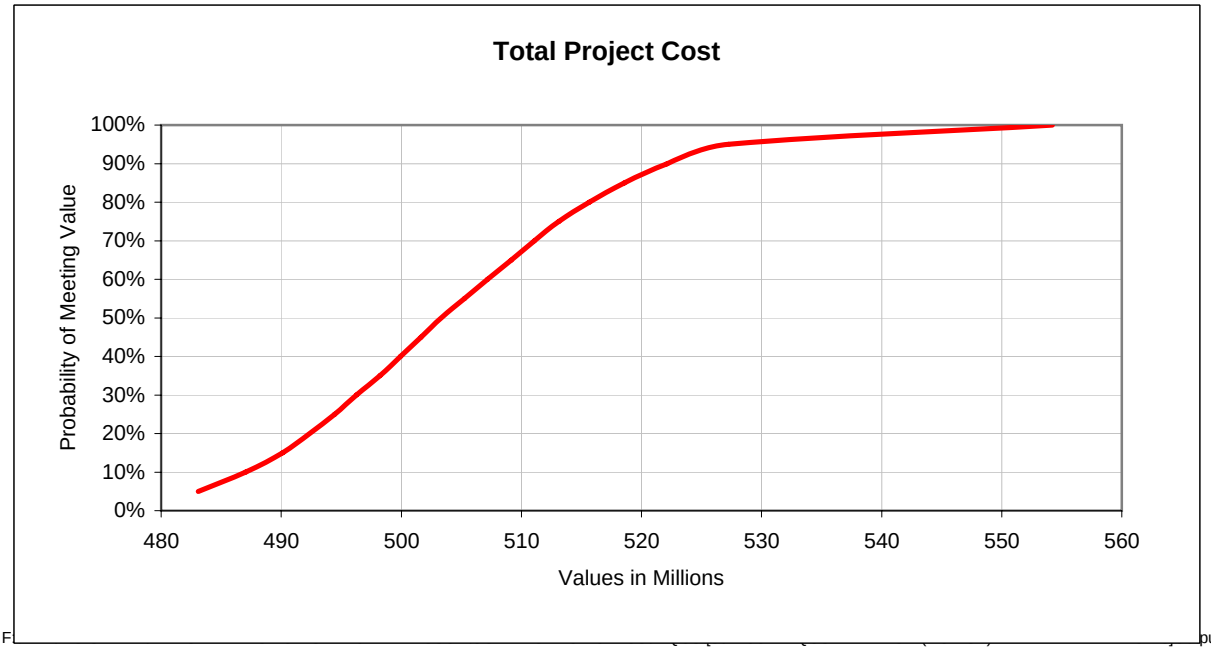
Values in Thousands

Accnt. No.	Cost Elements	Target Value $k	Minimum	Maximum	Minimum	Maximum
1.0	ID FANS	$57,436,100	95%	130%	$54,564,295	$74,666,930
2.0	FABRIC FILTERS	$43,292,800	95%	130%	$41,128,160	$56,280,640
3.0	NEW STACK	$31,480,000	95%	130%	$29,906,000	$40,924,000
4.0	LIME HANDLING SYSTEM	$11,565,100	95%	125%	$10,986,845	$14,456,375
5.0	LIME SLAKER BUILDING	$12,577,000	95%	130%	$11,948,150	$16,350,100
6.0	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS	$11,889,300	95%	130%	$11,294,835	$15,456,090
7.0	SPRAY DRYER ABSORBER ISLAND	$102,264,200	95%	130%	$97,150,990	$132,943,460
8.0	ACTIVATED CARBON INJECTION SYSTEM	$5,381,600	95%	130%	$5,112,520	$6,996,080
9.0	COMPRESSED AIR SYSTEM	$5,423,700	95%	135%	$5,152,515	$7,321,995
10.0	SERVICE WATER SYSTEM	$4,291,000	95%	135%	$4,076,450	$5,792,850
11.1	POTABLE WATER SYSTEM	$1,056,700	95%	135%	$1,003,865	$1,426,545
12.0	FGD SUBSTATION	$8,901,900	95%	135%	$8,456,805	$12,017,565
13.0	FGD DCS SYSTEM	$5,153,600	95%	135%	$4,895,920	$6,957,360
14.0	CEM SYSTEM	$2,110,000	95%	130%	$2,004,500	$2,743,000
15.0	TRUCK & RAIL INFRASTRUCTURE	$6,840,300	95%	140%	$6,498,285	$9,576,420
16.0	SITE IMPROVEMENTS - CIVIL WORK	$15,926,800	95%	140%	$15,130,460	$22,297,520
17.0	BOP ITEMS	$3,233,100	95%	160%	$3,071,445	$5,172,960
18.0	CAPITAL REPLACEMENTS - REMOVAL AND RELOCATION OF EXISTING EQUIPMENT AND INFRASTRUCTURE	$4,264,900	95%	200%	$4,051,655	$8,529,800
19.0	ARSENIC, ASBESTOS , LEAD ABATEMENT	$750,000	95%	150%	$712,500	$1,125,000
99.0	OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS	$77,197,800	95%	140%	$73,337,910	$108,076,920
	OVERALL PROJECT INDIRECT COSTS	$48,031,900	95%	130%	$45,630,305	$62,441,470
	SPARE PARTS	$1,750,400	95%	130%	$1,662,880	$2,275,520
	Total Base Case	**$460,818,200**				

ANALYSIS OUTPUT

Probability of meeting "Total Base Case" value: 460,818,200 0.0%

Total Budget Required ($k)	% Confidence Level	Confidence Level Risk	Contingency % of Base
554,216,437	100.0%	93,398,200	20.268%
527,276,963	95.0%	66,458,800	14.422%
522,127,264	90.0%	61,309,100	13.304%
518,554,911	85.0%	57,736,700	12.529%
515,668,538	80.0%	54,850,300	11.903%
513,120,889	75.0%	52,302,700	11.350%
511,076,041	70.0%	50,257,800	10.906%
509,158,671	65.0%	48,340,500	10.490%
507,186,476	60.0%	46,368,300	10.062%
505,265,487	55.0%	44,447,300	9.645%
503,354,199	50.0%	42,536,000	9.231%
501,645,015	45.0%	40,826,800	8.860%
499,942,668	40.0%	39,124,500	8.490%
498,228,817	35.0%	37,410,600	8.118%
496,293,248	30.0%	35,475,000	7.698%
494,444,945	25.0%	33,626,700	7.297%
492,355,723	20.0%	31,537,500	6.844%
490,119,897	15.0%	29,301,700	6.359%
487,050,085	10.0%	26,231,900	5.692%
483,087,859	5.0%	22,269,700	4.833%



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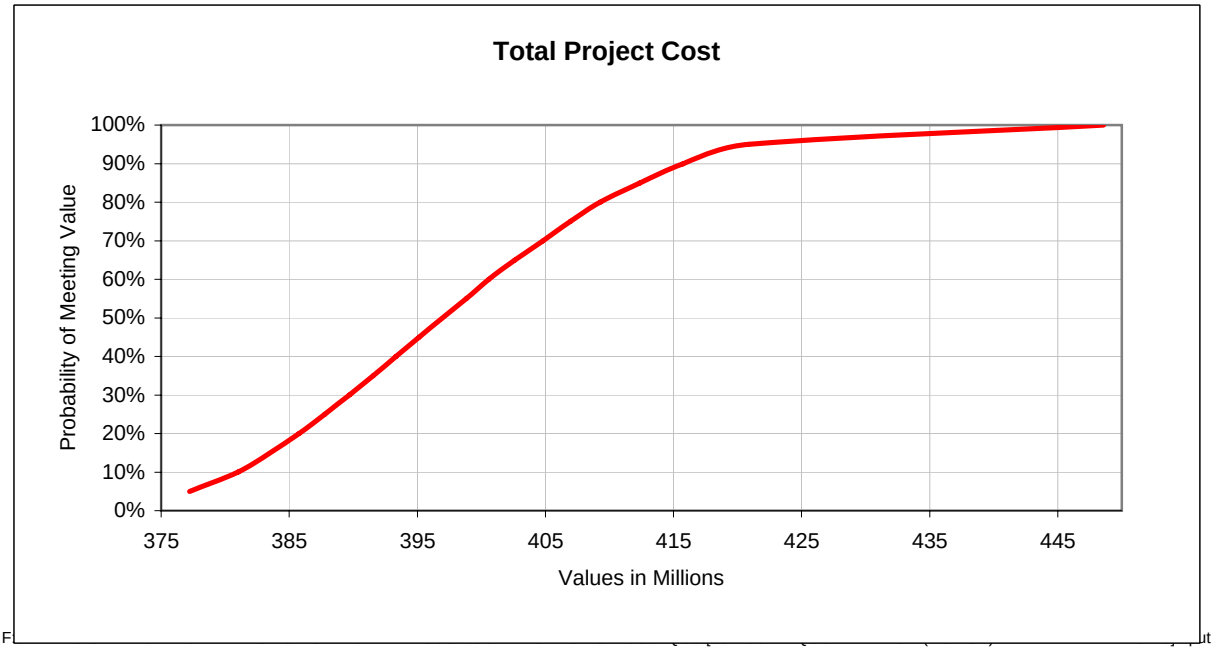
Values in Thousands

Accnt. No.	Cost Elements	Target Value $k	Minimum	Maximum	Minimum	Maximum
20.0	LIMESTONE HANDLING SYSTEM	$20,286,300	95%	130%	$19,271,985	$26,372,190
21.0	REAGENT (LIMESTONE) PREPARATION ISLAND	$34,619,700	95%	130%	$32,888,715	$45,005,610
22.0	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)	$55,944,700	95%	130%	$53,147,465	$72,728,110
23.0	WET FGD ABSORBER ISLAND	$126,209,000	95%	130%	$119,898,550	$164,071,700
24.0	COMPRESSED AIR SYSTEM (BYPRODUCT DEWATERING AREA)	$1,298,800	95%	135%	$1,233,860	$1,753,380
25.0	POTABLE WATER SYSTEM	$85,900	95%	130%	$81,605	$111,670
26.0	SCR SUBSTATION UPGRADE	$2,340,000	95%	130%	$2,223,000	$3,042,000
27.0	FGD DCS SYSTEM	$6,230,300	95%	135%	$5,918,785	$8,410,905
28.0	SITE IMPROVEMENTS - CIVIL WORK	$2,274,000	95%	140%	$2,160,300	$3,183,600
29.0	BOP ITEMS	$3,562,600	95%	160%	$3,384,470	$5,700,160
30.0	SERVICE WATER SYSTEM	$3,975,900	95%	135%	$3,777,105	$5,367,465
99.0	OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS	$67,657,500	95%	140%	$64,274,625	$94,720,500
	OVERALL PROJECT INDIRECT COSTS	$38,835,100	95%	130%	$36,893,345	$50,485,630
	SPARE PARTS	$1,192,900	95%	130%	$1,133,255	$1,550,770
	Total Base Case	**$364,512,700**				

ANALYSIS OUTPUT

Probability of meeting "Total Base Case" value: 364,512,700 0.0%

Total Budget Required ($k)	% Confidence Level	Confidence Level Risk	Contingency % of Base
448,575,820	100.0%	84,063,100	23.062%
420,923,913	95.0%	56,411,200	15.476%
415,745,642	90.0%	51,232,900	14.055%
412,380,380	85.0%	47,867,700	13.132%
409,281,680	80.0%	44,769,000	12.282%
406,957,442	75.0%	42,444,700	11.644%
404,816,450	70.0%	40,303,800	11.057%
402,603,199	65.0%	38,090,500	10.450%
400,571,668	60.0%	36,059,000	9.892%
398,844,045	55.0%	34,331,300	9.418%
396,993,380	50.0%	32,480,700	8.911%
395,142,057	45.0%	30,629,400	8.403%
393,325,670	40.0%	28,813,000	7.905%
391,559,311	35.0%	27,046,600	7.420%
389,710,335	30.0%	25,197,600	6.913%
387,769,081	25.0%	23,256,400	6.380%
385,771,036	20.0%	21,258,300	5.832%
383,526,444	15.0%	19,013,700	5.216%
381,032,790	10.0%	16,520,100	4.532%
377,231,792	5.0%	12,719,100	3.489%



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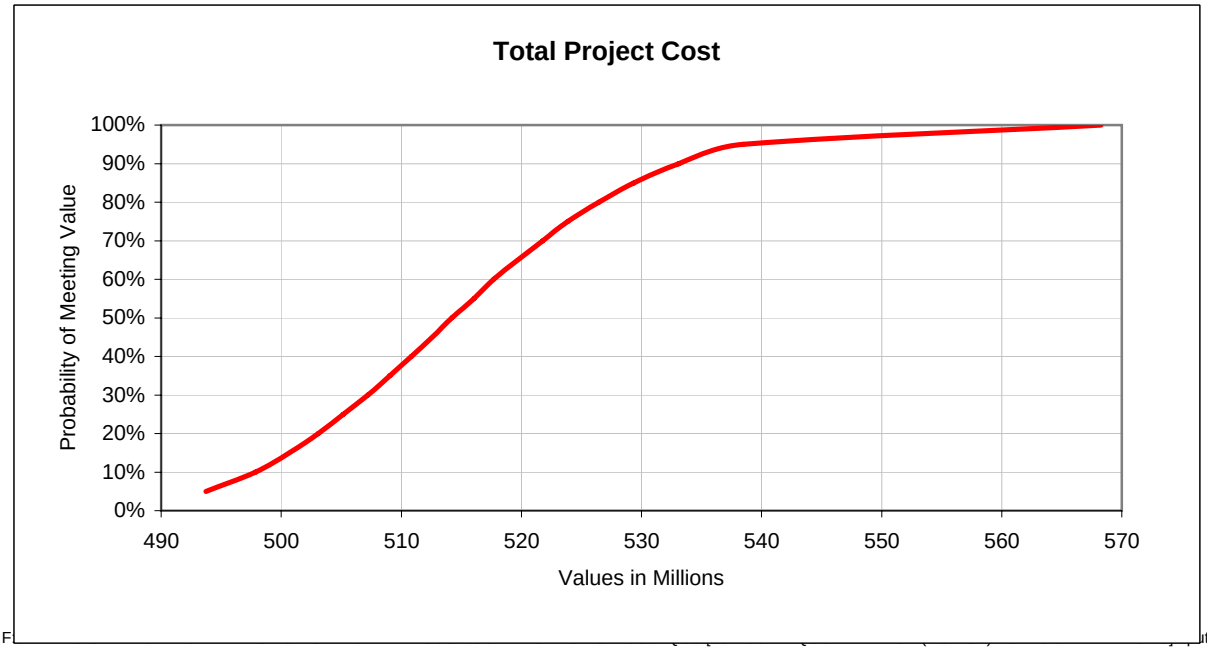
Values in Thousands

Accnt. No.	Cost Elements	Target Value $k	Minimum	Maximum	Minimum	Maximum
1.0	ID FANS	$57,436,100	95%	130%	$54,564,295	$74,666,930
2.0	FABRIC FILTERS	$42,992,100	95%	130%	$40,842,495	$55,889,730
3.0	NEW STACK	$31,480,000	95%	130%	$29,906,000	$40,924,000
4.0	LIME HANDLING SYSTEM	$15,896,900	95%	125%	$15,102,055	$19,871,125
5.0	LIME SLAKER BUILDING	$15,968,000	95%	130%	$15,169,600	$20,758,400
6.0	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS	$12,869,700	95%	130%	$12,226,215	$16,730,610
7.0	SPRAY DRYER ABSORBER ISLAND	$102,264,200	95%	130%	$97,150,990	$132,943,460
8.0	ACTIVATED CARBON INJECTION SYSTEM	$5,381,600	95%	130%	$5,112,520	$6,996,080
9.0	COMPRESSED AIR SYSTEM	$5,423,700	95%	135%	$5,152,515	$7,321,995
10.0	SERVICE WATER SYSTEM	$4,291,000	95%	135%	$4,076,450	$5,792,850
11.1	POTABLE WATER SYSTEM	$1,056,700	95%	135%	$1,003,865	$1,426,545
12.0	FGD SUBSTATION	$8,901,900	95%	135%	$8,456,805	$12,017,565
13.0	FGD DCS SYSTEM	$5,153,600	95%	135%	$4,895,920	$6,957,360
14.0	CEM SYSTEM	$2,110,000	95%	130%	$2,004,500	$2,743,000
15.0	TRUCK & RAIL INFRASTRUCTURE	$6,840,300	95%	140%	$6,498,285	$9,576,420
16.0	SITE IMPROVEMENTS - CIVIL WORK	$15,963,300	95%	140%	$15,165,135	$22,348,620
17.0	BOP ITEMS	$3,233,100	95%	160%	$3,071,445	$5,172,960
18.0	CAPITAL REPLACEMENTS - REMOVAL AND RELOCATION OF EXISTING EQUIPMENT AND INFRASTRUCTURE	$4,264,900	95%	200%	$4,051,655	$8,529,800
19.0	ARSENIC, ASBESTOS , LEAD ABATEMENT	$750,000	95%	150%	$712,500	$1,125,000
99.0	OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS	$78,239,100	95%	140%	$74,327,145	$109,534,740
	OVERALL PROJECT INDIRECT COSTS	$48,459,300	95%	130%	$46,036,335	$62,997,090
	SPARE PARTS	$1,851,300	95%	130%	$1,758,735	$2,406,690
	Total Base Case	**$470,826,800**				

ANALYSIS OUTPUT

Probability of meeting "Total Base Case" value: 470,826,800 0.0%

Total Budget Required ($k)	% Confidence Level	Confidence Level Risk	Contingency % of Base
568,259,704	100.0%	97,432,900	20.694%
538,517,262	95.0%	67,690,500	14.377%
533,078,581	90.0%	62,251,800	13.222%
529,367,776	85.0%	58,541,000	12.434%
526,449,208	80.0%	55,622,400	11.814%
523,860,228	75.0%	53,033,400	11.264%
521,778,208	70.0%	50,951,400	10.822%
519,697,583	65.0%	48,870,800	10.380%
517,690,322	60.0%	46,863,500	9.953%
516,063,538	55.0%	45,236,700	9.608%
514,222,948	50.0%	43,396,100	9.217%
512,567,830	45.0%	41,741,000	8.865%
510,833,933	40.0%	40,007,100	8.497%
509,064,916	35.0%	38,238,100	8.121%
507,254,323	30.0%	36,427,500	7.737%
505,175,331	25.0%	34,348,500	7.295%
503,072,437	20.0%	32,245,600	6.849%
500,694,491	15.0%	29,867,700	6.344%
497,880,745	10.0%	27,053,900	5.746%
493,739,536	5.0%	22,912,700	4.866%



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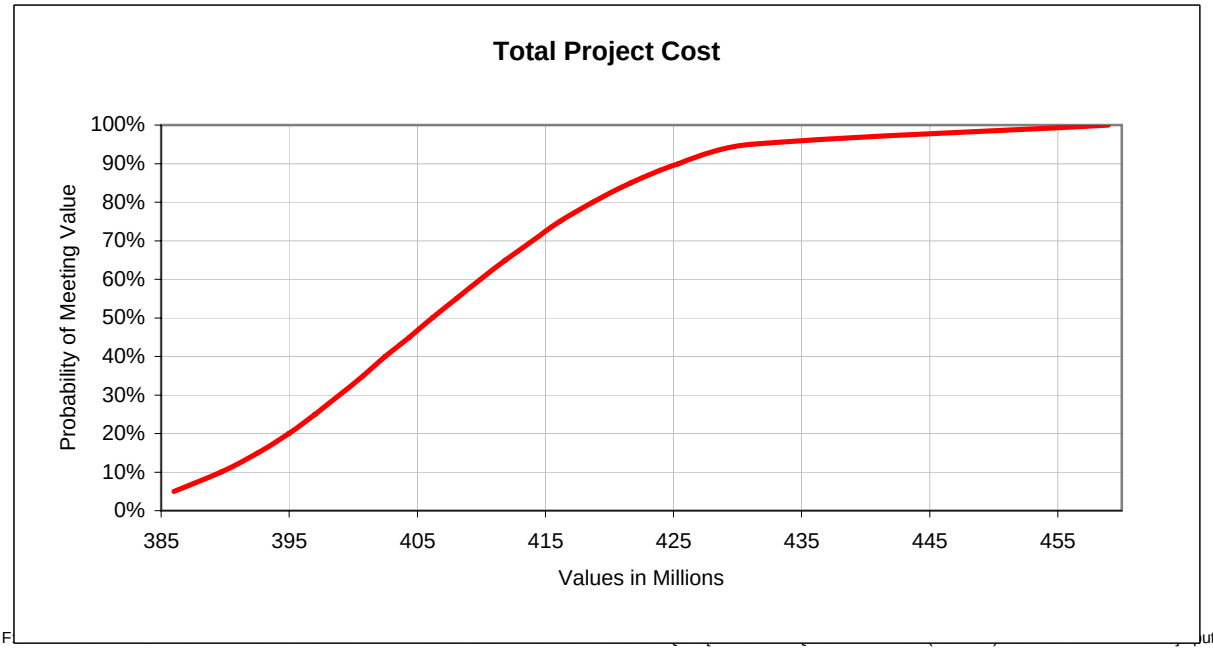
Values in Thousands

Accnt. No.	Cost Elements	Target Value $k	Minimum	Maximum	Minimum	Maximum
20.0	LIMESTONE HANDLING SYSTEM	$20,286,300	95%	130%	$19,271,985	$26,372,190
21.0	REAGENT (LIMESTONE) PREPARATION ISLAND	$37,983,300	95%	130%	$36,084,135	$49,378,290
22.0	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)	$58,456,400	95%	130%	$55,533,580	$75,993,320
23.0	WET FGD ABSORBER ISLAND	$127,120,900	95%	130%	$120,764,855	$165,257,170
24.0	COMPRESSED AIR SYSTEM (BYPRODUCT DEWATERING AREA)	$1,298,800	95%	135%	$1,233,860	$1,753,380
25.0	POTABLE WATER SYSTEM	$85,900	95%	130%	$81,605	$111,670
26.0	SCR SUBSTATION UPGRADE	$2,340,000	95%	130%	$2,223,000	$3,042,000
27.0	FGD DCS SYSTEM	$6,230,300	95%	135%	$5,918,785	$8,410,905
28.0	SITE IMPROVEMENTS - CIVIL WORK	$2,274,000	95%	140%	$2,160,300	$3,183,600
29.0	BOP ITEMS	$3,562,600	95%	160%	$3,384,470	$5,700,160
30.0	SERVICE WATER SYSTEM	$3,975,900	95%	135%	$3,777,105	$5,367,465
99.0	OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS	$68,918,400	95%	140%	$65,472,480	$96,485,760
	OVERALL PROJECT INDIRECT COSTS	$39,210,700	95%	130%	$37,250,165	$50,973,910
	SPARE PARTS	$1,256,000	95%	130%	$1,193,200	$1,632,800
	Total Base Case	**$372,999,500**				

ANALYSIS OUTPUT

Probability of meeting "Total Base Case" value: 372,999,500 0.0%

Total Budget Required ($k)	% Confidence Level	Confidence Level Risk	Contingency % of Base
458,940,213	100.0%	85,940,700	23.040%
431,093,461	95.0%	58,094,000	15.575%
425,368,227	90.0%	52,368,700	14.040%
421,655,342	85.0%	48,655,800	13.044%
418,698,662	80.0%	45,699,200	12.252%
416,140,389	75.0%	43,140,900	11.566%
413,977,160	70.0%	40,977,700	10.986%
411,875,849	65.0%	38,876,300	10.423%
409,943,686	60.0%	36,944,200	9.905%
408,070,782	55.0%	35,071,300	9.403%
406,178,876	50.0%	33,179,400	8.895%
404,377,309	45.0%	31,377,800	8.412%
402,494,403	40.0%	29,494,900	7.907%
400,793,274	35.0%	27,793,800	7.451%
398,950,131	30.0%	25,950,600	6.957%
397,007,698	25.0%	24,008,200	6.437%
394,980,263	20.0%	21,980,800	5.893%
392,570,752	15.0%	19,571,300	5.247%
389,703,326	10.0%	16,703,800	4.478%
385,991,641	5.0%	12,992,100	3.483%



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Values in Thousands

Accnt. No.	Cost Elements	Target Value $k	Minimum	Maximum	Minimum	Maximum
1.0	ID FANS	$53,014,600	95%	130%	$50,363,870	$68,918,980
2.0	FABRIC FILTERS	$42,764,900	95%	130%	$40,626,655	$55,594,370
3.0	NEW STACK	$31,480,000	95%	130%	$29,906,000	$40,924,000
4.0	LIME HANDLING SYSTEM	$9,569,800	95%	130%	$9,091,310	$12,440,740
5.0	LIME SLAKER BUILDING	$9,560,800	95%	130%	$9,082,760	$12,429,040
6.0	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS	$9,876,100	95%	130%	$9,382,295	$12,838,930
7.0	SPRAY DRYER ABSORBER ISLAND	$102,264,200	95%	130%	$97,150,990	$132,943,460
9.0	COMPRESSED AIR SYSTEM	$5,423,700	95%	135%	$5,152,515	$7,321,995
10.0	SERVICE WATER SYSTEM	$8,266,800	95%	135%	$7,853,460	$11,160,180
11.1	POTABLE WATER SYSTEM	$1,143,600	95%	135%	$1,086,420	$1,543,860
12.0	FGD SUBSTATION	$8,692,500	95%	135%	$8,257,875	$11,734,875
13.0	FGD DCS SYSTEM	$11,033,100	95%	135%	$10,481,445	$14,894,685
14.0	CEM SYSTEM	$2,110,000	95%	130%	$2,004,500	$2,743,000
15.0	TRUCK & RAIL INFRASTRUCTURE	$4,340,800	95%	140%	$4,123,760	$6,077,120
16.0	SITE IMPROVEMENTS - CIVIL WORK	$20,120,900	95%	140%	$19,114,855	$28,169,260
17.0	LIMESTONE HANDLING SYSTEM	$22,661,200	95%	130%	$21,528,140	$29,459,560
18.0	REAGENT (LIMESTONE) PREPARATION ISLAND	$43,573,300	95%	130%	$41,394,635	$56,645,290
19.0	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)	$62,999,400	95%	130%	$59,849,430	$81,899,220
20.0	WET FGD ABSORBER ISLAND	$128,103,300	95%	130%	$121,698,135	$166,534,290
21.0	COMPRESSED AIR SYSTEM (BYPRODUCT DEWATERING AREA)	$1,298,800	95%	135%	$1,233,860	$1,753,380
23.0	SCR SUBSTATION UPGRADE	$2,340,000	95%	130%	$2,223,000	$3,042,000
26.0	BOP ITEMS	$6,922,700	95%	160%	$6,576,565	$11,076,320
27.0	CAPITAL REPLACEMENTS - REMOVAL AND RELOCATION OF EXISTING EQUIPMENT AND INFRASTRUCTURE	$4,264,900	95%	200%	$4,051,655	$8,529,800
28.0	ARSENIC, ASBESTOS , LEAD ABATEMENT	$750,000	95%	150%	$712,500	$1,125,000
99.0	OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS	$144,348,000	95%	140%	$137,130,600	$202,087,200
	OVERALL PROJECT INDIRECT COSTS	$85,685,000	95%	130%	$81,400,750	$111,390,500
	SPARE PARTS	$3,026,900	95%	130%	$2,875,555	$3,934,970
	Total Base Case	**$825,635,300**				

ANALYSIS OUTPUT

Probability of meeting "Total Base Case" value: 825,635,300 0.0%

Total Budget Required ($k)	% Confidence Level	Confidence Level Risk	Contingency % of Base
996,679,879	100.0%	171,044,600	20.717%
940,894,404	95.0%	115,259,100	13.960%
932,096,613	90.0%	106,461,300	12.894%
926,120,409	85.0%	100,485,100	12.171%
921,130,070	80.0%	95,494,800	11.566%
917,299,370	75.0%	91,664,100	11.102%
913,737,797	70.0%	88,102,500	10.671%
910,535,533	65.0%	84,900,200	10.283%
907,501,993	60.0%	81,866,700	9.916%
904,512,796	55.0%	78,877,500	9.554%
901,622,611	50.0%	75,987,300	9.203%
898,732,330	45.0%	73,097,000	8.853%
895,661,866	40.0%	70,026,600	8.482%
892,656,400	35.0%	67,021,100	8.118%
889,466,675	30.0%	63,831,400	7.731%
885,960,613	25.0%	60,325,300	7.307%
882,640,906	20.0%	57,005,600	6.904%
878,993,336	15.0%	53,358,000	6.463%
873,945,516	10.0%	48,310,200	5.851%
867,469,919	5.0%	41,834,600	5.067%

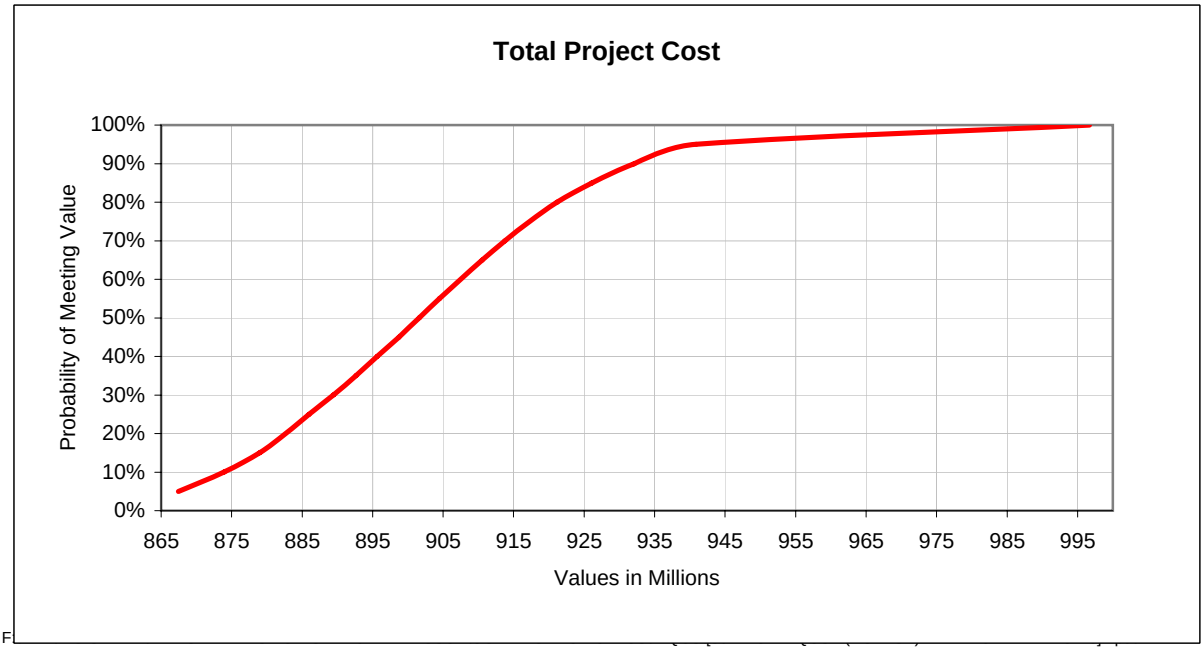


EXHIBIT 4-4
OEM Cost and Capital Cost Estimate Comparison Summaries
IAQCS FGD Options

EXHIBIT 4-4
Capital Cost Estimate Comparison Summary
IAQCS FGD Options

Attached are the capital cost estimate comparison summaries for the IAQCS FGD options. The cost differences between these options are related to the following issues:

- Phased Approach: The estimates are developed assuming the 1.7 lb coal and 3.0 lb coal will be constructed in a phased approach. This means that the DFGD will be constructed first, completed by 12/31/2015. The DFGD system will be required to complete treat the 1.7 lb and/or the 3.0 lb coal until a WFGD is constructed. The WFGD construction will follow with an in-service date of 12/31/2020.

- Non-Phased Approach: The 4.5 lb coal and 7.5 lb coal options will be constructed non-phased with an in-service date of 12/31/2015. The non-phased approach means that the DFGD and WFGD systems will work together for the entire lifecycle of the technology. Therefore, the DFGD system will not be designed to solely treat any of the fuels.

- The phasing of the work resulted in the following estimate changes:

    - For the phased construction, the foundation cost for the limestone rail unloading hopper is included in the DFGD phase I scope of work. The mechanical equipment will be installed in phase II. This will allow uninterrupted operation of the phase I lime handling facility during phase II construction.
    - The costs associated with equipment laydown areas, craft parking and the contractor office complex have been increased for the non-phased construction estimates due to the larger scope of construction activities.
    - In the non-phased options, the primary reagent used will be the less costly limestone, therefore the size of the lime silo and lime handling equipment is significantly smaller in the 4.5 lb and 7.5 lb options than in the 1.7 lb and 3.0 lb phased construction options.
    - For the non-phased construction, the activated carbon injection (ACI) system for mercury (Hg) removal was not included. With the inclusion of the wet scrubber in the initial non-phased installation, removal of mercury is expected to be at least equivalent to the WFGD operation alone. Therefore, ACI is not required in the non-phased approach.

EXHIBIT 4-4
Capital Cost Estimate Comparison Summary
IAQCS FGD Options

- Fuel Sulfur Content: The sulfur content of the coal impacts the cost of these options as follows:

    - The sulfur content of the coal impacts the DFGD equipment and processes as follows:

        - For the phased approach, the lime stoichiometric ratio increases with increasing sulfur. Therefore, the lime reagent rates increase quickly with increases in fuel sulfur. The higher lime reagent rates for the 3.0 lb/MMBtu fuel correlates to increases in lime handling equipment costs.

        - For the non-phased approach the increase in lime rate is less drastic. Overall, lime usage is much less in the non-phased approach when compared to the phased approach. Therefore, the cost impact of the lime system in the non-phased approach is minimal in the overall estimate pricing.

        - A higher byproduct rate results from an increase in fuel sulfur because the mass of sulfur removed and the mass of unreacted reagent increases. As more byproduct is produced, the costs for transport, storage and disposal are increased. Again, this effect is minor in the non-phased approached.

    - Regardless of a phased or non-phased approach, the sulfur content of the coal impacts the WFGD equipment and processes as follows:

        - The limestone usage increases with increasing fuel sulfur, which correlates to increased limestone reagent preparation equipment costs.

        - To adequately scrub the higher sulfur coals, the liquid recirculation rate in the absorber must be increased. The higher liquid recirculation rates result in larger or more recirculation pumps and spray headers. The increase in auxiliaries results in a slightly higher overall absorber island cost as the fuel sulfur increases.

        - A higher byproduct rate results from an increase in fuel sulfur because the mass of sulfur removed increases. As more byproduct

EXHIBIT 4-4
Capital Cost Estimate Comparison Summary
IAQCS FGD Options

is produced the costs for transport, dewatering and disposal are increased.

- Wastewater Treatment: The wastewater treatment facility is eliminated from the WFGD process as the chloride purge stream is sent to the DFGD recycle byproduct makeup tanks.

- Wet ESP: The wet ESP is eliminated from the WFGD process as the DFGD system will remove a significant amount of the SO_3 and HAPs present in the flue gas.
- Electrostatic Precipitator: The ESP in-service case versus without ESP in-service will result in the following:

ESP In	ESP Out
• Added cost for flyash transport, storage and blending system to stabilize the DFGD byproduct.	• Added cost for ESP and booster fan demolition. • Added cost for the economizer ash handling system. • Slightly larger fabric filter costs. • Improved lime utilization resulting in lower silo and silo foundation costs and lower slaking equipment costs (phased approach only). • Slightly higher electrical capital costs due to higher ID fan motor HP.

Exhibit 4-4. IAQCS OEM Cost Summary (Engineer and Furnish Materials Only)

	1.7 w/o ESP (Phased)	3.0 w/o ESP (Phased)	4.5 w/o ESP (Non-Phased)	7.5 w/o ESP (Non-Phased)	Comments
WFGD Reagent Prep	$ 11,425,000	$ 13,430,000	$ 15,167,000	$ 16,936,000	Vendor scope: - Limestone feeders from the day silos through the slurry storage tanks - Structural steel integral to the support of the vendor's equipment - Piping inside buildings to terminal points - Transfer pumps and all motors required by vendor scope of supply - Process instruments and control logic - Trolleys and Hoists By others: - Piping from terminal points out to the plant - Conduit, cables, etc… to vendor's motors - Site grading, roads, foundations, etc... - Limestone unloading, belt conveyors, stacking storage areas, etc... - All required DCS upgrades
WFGD Absorber Island	$ 40,589,000	$ 41,029,000	$ 41,363,000	$ 41,668,000	Vendor scope: - Absorber module (A2205) with internals and wet ESP integral to the absorber - Inlet duct only through the C22 wet/dry interface - Piping inside buildings to terminal point - Recycle pumps, oxidation compressors, mist eliminator wash pumps, etc... with motors - Structural steel integral to the support of the vendor's equipment - Process instruments and control logic - Trolleys and Hoists By others: - New ID fans - Duct from ID fans to wet/dry interface and duct from absorber module to stack breach - New wet stack - Piping from terminal points out to the plant - Conduit, cables, etc… to vendor's motors - Site grading, roads, foundations, etc... - All required DCS upgrades
Absorber Alloy	$ 14,940,000	$ 14,940,000	$ 14,940,000	$ 14,940,000	Additional cost for C276 absorber above the price of a A2205 absorber
De-watering	$ 5,688,000	$ 7,250,000	$ 8,701,000	$ 10,267,000	Vendor scope: - Primary & Secondary Dewatering from the hydroclone feed tanks to the hydroclones through the belt vacuum filters - Structural steel integral to the support of the vendor's equipment - Piping inside buildings to terminal point - All motors required by vendor scope of supply - Process instruments and control logic - Trolleys and Hoists By others: - Piping from terminal points out to the plant - Conduit, cables, etc… to vendor's motors - Site grading, roads, foundations, etc... - Gypsum conveyors, stacking storage areas, etc... - All required DCS upgrades

Exhibit 4-4. IAQCS OEM Cost Summary (Engineer and Furnish Materials Only)

	1.7 w/o ESP (Phased)	3.0 w/o ESP (Phased)	4.5 w/o ESP (Non-Phased)	7.5 w/o ESP (Non-Phased)	Comments
DFGD Reagent Prep	$ 5,560,000	$ 7,985,000	$ 2,663,000	$ 3,198,000	Vendor scope: - Rotary feeders, chain conveyors, and slakers through the lime slurry pumps and lime slurry storage tanks - Structural steel integral to the support of the vendor's equipment - Piping inside buildings to terminal point - All pumps and all motors required by vendor scope of supply - Process instruments and control logic - Trolleys and Hoists By others: - Piping from terminal points out to the plant - Conduit, cables, etc… to vendor's motors - Site grading, roads, foundations, etc... - Lime unloading, storage silo, etc... - All required DCS upgrades
DFGD Absorber Island	$ 39,438,000	$ 39,438,000	$ 39,438,000	$ 39,438,000	Vendor scope: - Absorber modules and atomizers with lube oil system - Duct work from the absorber inlets to the fabric filter outlet - Recycle storage silo, recycle slurry mix tanks, slurry storage tanks, and all ancillary systems with piping inside FGD buildings - Structural steel integral to the support of the vendor's equipment - Piping inside buildings to terminal point - All pumps and all motors required by vendor scope of supply - Process instruments and control logic - Trolleys and Hoists By others: - Conduit, cables, etc… to vendor's motors - Site grading, roads, foundations, etc... - All required DCS upgrades
Fabric Filter	$ 19,980,000	$ 19,761,000	$ 19,761,000	$ 19,585,000	Vendor scope: - A single fabric filter unit for all of the flue gas - All internal fabric filter elements such as bags, cages, ash hoppers, 2 broken bag detectors per compartment - Ash conveying system from the fabric filter to the recycle silo - Structural steel integral to the support of the vendor's equipment - Piping inside buildings to terminal point - All motors required by vendor scope of supply - Process instruments and control logic - Trolleys and Hoists By others: - Air compressors for the pulse-jet cleaning system - New ID fans - Duct from fabric filter to new ID fans - Piping from terminal points out to the plant - Conduit, cables, etc… to vendor's motors - Site grading, roads, foundations, etc... - Byproduct conveying, storage, etc... - All required DCS upgrades
Total	**$ 137,620,000**	**$ 143,833,000**	**$ 142,033,000**	**$ 146,032,000**	

Exhibit 4-4. IAQCS OEM Cost Summary (Engineer and Furnish Materials Only)

	1.7 w/ ESP (Phased)	3.0 w/ ESP (Phased)	4.5 w/ ESP (Non-Phased)	7.5 w/ ESP (Non-Phased)	Comments
WFGD Reagent Prep	$ 11,425,000	$ 13,430,000	$ 15,167,000	$ 16,936,000	Vendor scope: - Limestone feeders from the day silos through the slurry storage tanks - Structural steel integral to the support of the vendor's equipment - Piping inside buildings to terminal points - Transfer pumps and all motors required by vendor scope of supply - Process instruments and control logic - Trolleys and Hoists By others: - Piping from terminal points out to the plant - Conduit, cables, etc… to vendor's motors - Site grading, roads, foundations, etc... - Limestone unloading, belt conveyors, stacking storage areas, etc... - All required DCS upgrades
WFGD Absorber Island	$ 40,589,000	$ 41,029,000	$ 41,363,000	$ 41,668,000	Vendor scope: - Absorber module (A2205) with internals and wet ESP integral to the absorber - Inlet duct only through the C22 wet/dry interface - Piping inside buildings to terminal point - Recycle pumps, oxidation compressors, mist eliminator wash pumps, etc... with motors - Structural steel integral to the support of the vendor's equipment - Process instruments and control logic - Trolleys and Hoists By others: - New ID fans - Duct from ID fans to wet/dry interface and duct from absorber module to stack breach - New wet stack - Piping from terminal points out to the plant - Conduit, cables, etc… to vendor's motors - Site grading, roads, foundations, etc... - All required DCS upgrades
Absorber Alloy	$ 14,940,000	$ 14,940,000	$ 14,940,000	$ 14,940,000	Additional cost for C276 absorber above the price of a A2205 absorber
De-watering	$ 5,688,000	$ 7,250,000	$ 8,701,000	$ 10,267,000	Vendor scope: - Primary & Secondary Dewatering from the hydroclone feed tanks to the hydroclones through the belt vacuum filters - Structural steel integral to the support of the vendor's equipment - Piping inside buildings to terminal point - All motors required by vendor scope of supply - Process instruments and control logic - Trolleys and Hoists By others: - Piping from terminal points out to the plant - Conduit, cables, etc… to vendor's motors - Site grading, roads, foundations, etc... - Gypsum conveyors, stacking storage areas, etc... - All required DCS upgrades

Exhibit 4-4. IAQCS OEM Cost Summary (Engineer and Furnish Materials Only)

	1.7 w/ ESP (Phased)	3.0 w/ ESP (Phased)	4.5 w/ ESP (Non-Phased)	7.5 w/ ESP (Non-Phased)	Comments
DFGD Reagent Prep	$ 5,914,000	$ 8,616,000	$ 2,663,000	$ 3,198,000	Vendor scope: - Rotary feeders, chain conveyors, and slakers through the lime slurry pumps and lime slurry storage tanks - Structural steel integral to the support of the vendor's equipment - Piping inside buildings to terminal point - All pumps and all motors required by vendor scope of supply - Process instruments and control logic - Trolleys and Hoists By others: - Piping from terminal points out to the plant - Conduit, cables, etc… to vendor's motors - Site grading, roads, foundations, etc... - Lime unloading, storage silo, etc... - All required DCS upgrades
DFGD Absorber Island	$ 39,438,000	$ 39,438,000	$ 39,438,000	$ 39,438,000	Vendor scope: - Absorber modules and atomizers with lube oil system - Duct work from the absorber inlets to the fabric filter outlet - Recycle storage silo, recycle slurry mix tanks, slurry storage tanks, and all ancillary systems with piping inside FGD buildings - Structural steel integral to the support of the vendor's equipment - Piping inside buildings to terminal point - All pumps and all motors required by vendor scope of supply - Process instruments and control logic - Trolleys and Hoists By others: - Conduit, cables, etc… to vendor's motors - Site grading, roads, foundations, etc... - All required DCS upgrades
Fabric Filter	$ 19,409,000	$ 19,276,000	$ 19,232,000	$ 19,099,000	Vendor scope: - A single fabric filter unit for all of the flue gas - All internal fabric filter elements such as bags, cages, ash hoppers, 2 broken bag detectors per compartment - Ash conveying system from the fabric filter to the recycle silo - Structural steel integral to the support of the vendor's equipment - Piping inside buildings to terminal point - All motors required by vendor scope of supply - Process instruments and control logic - Trolleys and Hoists By others: - Air compressors for the pulse-jet cleaning system - New ID fans - Duct from fabric filter to new ID fans - Piping from terminal points out to the plant - Conduit, cables, etc… to vendor's motors - Site grading, roads, foundations, etc... - Byproduct conveying, storage, etc... - All required DCS upgrades
Total	**$ 137,403,000**	**$ 143,979,000**	**$ 141,504,000**	**$ 145,546,000**	

Costs for the reagent preparation, absorber islands, fabric filters, and dewatering equipment are based on a 2009 quotes from Alstom. The previous quotes were factored for the AEP Big Sandy Unit 2 capacity (865 MW) and adjusted for each sulfur.

The 1.7 and 3.0 lb SO_2/MMBtu pricing was based on a phased construction approach. The higher sulfur pricing considered that both the SDA and WFGD system would be operational at the same time.

Sargent & Lundy, LLC	30719C IAQCS Base Estimate 3B N/ESP 3.0 lb SO2/MMBTU	**EXHIBIT 4-4 CAPITAL COST ESTIMATE COMPARISON SUMMARY IAQCS PHASED OPTIONS**				30719C	30718C	30715C	30714C	Est 2B (N/ESP 1.7 lb SO2/MMBTU) Delta Base Est 3B	Est 3A (ESP 3.0 lb SO2/MMBTU) Delta Base Est 3B	Est 2A (ESP 1.7 lb SO2/MMBTU) Delta Base Est 3B	
						Base Est 3B - N/ESP 3.0 lb SO2/MMBTU Phased	Est 2B - N/ESP 1.7 lb SO2/MMBTU Phased	Est 3A - ESP 3.0 lb SO2/MMBTU Phased	Est 2A - ESP 1.7 lb SO2/MMBTU Phased				Remarks
Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost	Total Projected Cost	Total Projected Cost	Total Projected Cost				
1.0	ID FANS												The ID Fans without the ESP are larger (i.e. cost more) because they replace the existing Booster Fans.
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 12,195,000	$ 15,029,500	$ 30,211,600	$ 57,436,100	$ 57,436,100	$ 56,191,100	$ 56,191,100	$ -	$ (1,245,000)	$ (1,245,000)	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 609,800	$ 3,832,500	$ 10,891,300	$ 15,333,600	$ 15,333,600	$ 15,131,900	$ 15,131,900	$ -	$ (201,700)	$ (201,700)	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	ID FANS	$ 12,804,800	$ 18,862,000	$ 41,102,900	$ 72,769,700	$ 72,769,700	$ 71,323,000	$ 71,323,000	$ -	$ (1,446,700)	$ (1,446,700)	
2.0	FABRIC FILTERS												The Fabric Filter equipment costs are slightly larger at the lower coal sulfur levels because there is more actual flow rate i.e. there is more bag area in the same footprint.
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 22,419,400	$ 3,153,100	$ 17,524,600	$ 42,992,100	$ 43,292,800	$ 42,323,100	$ 42,507,200	$ 300,700	$ (669,000)	$ (484,900)	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 1,121,000	$ 804,000	$ 6,510,000	$ 8,435,100	$ 8,475,800	$ 8,342,300	$ 8,367,800	$ 40,700	$ (92,800)	$ (67,300)	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FABRIC FILTERS	$ 23,540,400	$ 3,957,100	$ 24,034,600	$ 51,427,200	$ 51,768,600	$ 50,665,400	$ 50,875,000	$ 341,400	$ (761,800)	$ (552,200)	
3.0	NEW STACK												
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS	$ -	$ -	$ -	$ -	$ 31,480,000	$ 31,480,000	$ 31,480,000	$ 31,480,000	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT	$ -	$ -	$ -	$ -	$ 4,722,000	$ 4,722,000	$ 4,722,000	$ 4,722,000	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	NEW STACK	$ -	$ -	$ -	$ 36,202,000	$ 36,202,000	$ 36,202,000	$ 36,202,000	$ -	$ -	$ -	
4.0	LIME HANDLING SYSTEM												The lime consumption rate is almost double for 3.0 vs.1.7 with ESP. There is also a difference in lime consumptions between ESP and No ESP. Without the ESP the approach to saturation temperature is reduced which improves the lime utilization thereby leading to slightly less lime consumption. The lime quipment (blowers etc.) is the same regardless. The main delta is the storage equipment (i.e. Storage Silo).
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 7,259,600	$ 2,831,000	$ 5,806,300	$ 15,896,900	$ 11,565,100	$ 17,169,900	$ 11,970,100	$ (4,331,800)	$ 1,273,000	$ (3,926,800)	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 363,000	$ 721,900	$ 2,120,800	$ 3,205,700	$ 2,705,400	$ 3,346,200	$ 2,734,900	$ (500,300)	$ 140,500	$ (470,800)	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME HANDLING SYSTEM	$ 7,622,600	$ 3,552,900	$ 7,927,100	$ 19,102,600	$ 14,270,500	$ 20,516,100	$ 14,705,000	$ (4,832,100)	$ 1,413,500	$ (4,397,600)	
5.0	LIME SLAKER BUILDING												
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 8,183,300	$ 1,200,300	$ 6,584,400	$ 15,968,000	$ 12,577,000	$ 16,827,400	$ 13,084,300	$ (3,391,000)	$ 859,400	$ (2,883,700)	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 409,200	$ 306,100	$ 2,456,800	$ 3,172,000	$ 2,690,900	$ 3,288,000	$ 2,765,100	$ (481,100)	$ 116,000	$ (406,900)	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME SLAKER BUILDING	$ 8,592,500	$ 1,506,400	$ 9,041,200	$ 19,140,000	$ 15,267,900	$ 20,115,400	$ 15,849,400	$ (3,872,100)	$ 975,400	$ (3,290,600)	
6.0	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS												With the ESP in service additional Fly Ash equipment is required including a silo for blending the fly ash with the byproduct. The silo sizes with the ESP in service are significantly smaller than without the ESP. This results from the fly ash being removed prior the waste being sent to the silo.
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 5,489,600	$ 2,330,200	$ 5,049,900	$ 12,869,700	$ 11,889,300	$ 16,036,800	$ 15,395,000	$ (980,400)	$ 3,167,100	$ 2,525,300	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 274,500	$ 594,200	$ 1,883,600	$ 2,752,300	$ 2,659,200	$ 3,443,600	$ 3,373,800	$ (93,100)	$ 691,300	$ 621,500	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS	$ 5,764,100	$ 2,924,400	$ 6,933,500	$ 15,622,000	$ 14,548,500	$ 19,480,400	$ 18,768,800	$ (1,073,500)	$ 3,858,400	$ 3,146,800	
7.0	SPRAY DRYER ABSORBER ISLAND												There are ductwork differences between the ESP and N/ESP cases that account for the cost difference in the absorber island. The absorber itself is sized on the actual flue gas flow rates which are roughly equivalent.
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 42,006,800	$ 12,606,500	$ 47,650,900	$ 102,264,200	$ 102,264,200	$ 108,714,600	$ 108,714,600	$ -	$ 6,450,400	$ 6,450,400	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 2,910,300	$ 3,214,700	$ 19,057,200	$ 25,182,200	$ 25,182,200	$ 27,220,600	$ 27,220,600	$ -	$ 2,038,400	$ 2,038,400	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SPRAY DRYER ABSORBER ISLAND	$ 44,917,100	$ 15,821,200	$ 66,708,100	$ 127,446,400	$ 127,446,400	$ 135,935,200	$ 135,935,200	$ -	$ 8,488,800	$ 8,488,800	
8.0	ACTIVATED CARBON INJECTION SYSTEM												
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 3,169,500	$ 326,600	$ 1,885,500	$ 5,381,600	$ 5,381,600	$ 5,381,600	$ 5,381,600	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 158,500	$ 83,300	$ 694,500	$ 936,300	$ 936,300	$ 936,300	$ 936,300	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	ACTIVATED CARBON INJECTION SYSTEM	$ 3,328,000	$ 409,900	$ 2,580,000	$ 6,317,900	$ 6,317,900	$ 6,317,900	$ 6,317,900	$ -	$ -	$ -	

Sargent & Lundy, LLC	30719C IAQCS Base Estimate 3B N/ESP 3.0 lb SO2/MMBTU	**EXHIBIT 4-4 CAPITAL COST ESTIMATE COMPARISON SUMMARY IAQCS PHASED OPTIONS**				30719C	30718C	30715C	30714C	Est 2B (N/ESP 1.7 lb SO2/MMBTU) Delta Base Est 3B	Est 3A (ESP 3.0 lb SO2/MMBTU) Delta Base Est 3B	Est 2A (ESP 1.7 lb SO2/MMBTU) Delta Base Est 3B	
						Base Est 3B - N/ESP 3.0 lb SO2/MMBTU Phased	Est 2B - N/ESP 1.7 lb SO2/MMBTU Phased	Est 3A - ESP 3.0 lb SO2/MMBTU Phased	Est 2A - ESP 1.7 lb SO2/MMBTU Phased				Remarks
Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost	Total Projected Cost	Total Projected Cost	Total Projected Cost				
9.0	COMPRESSED AIR SYSTEM												
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 1,390,600	$ 1,403,600	$ 2,629,500	$ 5,423,700	$ 5,423,700	$ 5,423,700	$ 5,423,700	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 69,500	$ 357,900	$ 963,100	$ 1,390,600	$ 1,390,600	$ 1,390,600	$ 1,390,600	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	COMPRESSED AIR SYSTEM	$ 1,460,100	$ 1,761,500	$ 3,592,600	$ 6,814,300	$ 6,814,300	$ 6,814,300	$ 6,814,300	$ -	$ -	$ -	
10.0	SERVICE WATER SYSTEM												
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 872,300	$ 1,170,700	$ 2,248,000	$ 4,291,000	$ 4,291,000	$ 4,291,000	$ 4,291,000	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 43,600	$ 298,500	$ 821,600	$ 1,163,700	$ 1,163,700	$ 1,163,700	$ 1,163,700	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SERVICE WATER SYSTEM	$ 915,900	$ 1,469,200	$ 3,069,600	$ 5,454,700	$ 5,454,700	$ 5,454,700	$ 5,454,700	$ -	$ -	$ -	
11.0	POTABLE WATER SYSTEM												
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 129,500	$ 235,600	$ 691,600	$ 1,056,700	$ 1,056,700	$ 1,056,700	$ 1,056,700	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 6,500	$ 60,100	$ 252,200	$ 318,700	$ 318,700	$ 318,700	$ 318,700	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	POTABLE WATER SYSTEM	$ 135,975	$ 295,678	$ 943,757	$ 1,375,410	$ 1,375,410	$ 1,375,410	$ 1,375,410	$ -	$ -	$ -	
12.0	FGD SUBSTATION												
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 3,671,900	$ 953,500	$ 4,276,500	$ 8,901,900	$ 8,901,900	$ 8,610,100	$ 8,610,100	$ -	$ (291,800)	$ (291,800)	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 183,600	$ 243,100	$ 1,543,254	$ 1,970,000	$ 1,970,000	$ 1,954,900	$ 1,954,900	$ -	$ (15,100)	$ (15,100)	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FGD SUBSTATION	$ 3,855,500	$ 1,196,600	$ 5,819,800	$ 10,871,900	$ 10,871,900	$ 10,565,000	$ 10,565,000	$ -	$ (306,900)	$ (306,900)	
13.0	FGD DCS SYSTEM												
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 2,700,000	$ 709,500	$ 1,744,100	$ 5,153,600	$ 5,153,600	$ 5,153,600	$ 5,153,600	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 135,000	$ 180,900	$ 650,900	$ 966,800	$ 966,800	$ 966,800	$ 966,800	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FGD DCS SYSTEM	$ 2,835,000	$ 890,400	$ 2,395,000	$ 6,120,400	$ 6,120,400	$ 6,120,400	$ 6,120,400	$ -	$ -	$ -	
14.0	CEM SYSTEM												
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 1,260,000	$ 540,000	$ 310,000	$ 2,110,000	$ 2,110,000	$ 2,110,000	$ 2,110,000	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT		$ -	$ -	$ -	$ 316,500	$ 316,500	$ 316,500	$ 316,500	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	CEM SYSTEM	$ -	$ -	$ -	$ 2,426,500	$ 2,426,500	$ 2,426,500	$ 2,426,500	$ -	$ -	$ -	
15.0	TRUCK & RAIL INFRASTRUCTURE												
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 432,300	$ 2,587,900	$ 3,820,100	$ 6,840,300	$ 6,840,300	$ 6,840,300	$ 6,840,300	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 21,600	$ 659,900	$ 1,433,500	$ 2,115,100	$ 2,115,100	$ 2,115,100	$ 2,115,100	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	TRUCK & RAIL INFRASTRUCTURE	$ 453,900	$ 3,247,800	$ 5,253,600	$ 8,955,400	$ 8,955,400	$ 8,955,400	$ 8,955,400	$ -	$ -	$ -	
16.0	SITE IMPROVEMENTS - CIVIL WORK												
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 4,942,500	$ 3,941,900	$ 7,078,900	$ 15,963,300	$ 15,926,800	$ 15,944,000	$ 15,944,000	$ (36,500)	$ (19,300)	$ (19,300)	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 247,100	$ 1,005,200	$ 2,587,500	$ 3,839,800	$ 3,832,400	$ 3,835,900	$ 3,835,900	$ (7,400)	$ (3,900)	$ (3,900)	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SITE IMPROVEMENTS - CIVIL WORK	$ 5,189,600	$ 4,947,100	$ 9,666,400	$ 19,803,100	$ 19,759,200	$ 19,779,900	$ 19,779,900	$ (43,900)	$ (23,200)	$ (23,200)	

Sargent & Lundy, LLC	30719C IAQCS Base Estimate 3B N/ESP 3.0 lb SO2/MMBTU	**EXHIBIT 4-4 CAPITAL COST ESTIMATE COMPARISON SUMMARY IAQCS PHASED OPTIONS**				30719C	30718C	30715C	30714C	Est 2B (N/ESP 1.7 lb SO2/MMBTU) Delta Base Est 3B	Est 3A (ESP 3.0 lb SO2/MMBTU) Delta Base Est 3B	Est 2A (ESP 1.7 lb SO2/MMBTU) Delta Base Est 3B	
						Base Est 3B - N/ESP 3.0 lb SO2/MMBTU Phased	Est 2B - N/ESP 1.7 lb SO2/MMBTU Phased	Est 3A - ESP 3.0 lb SO2/MMBTU Phased	Est 2A - ESP 1.7 lb SO2/MMBTU Phased				Remarks
Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost	Total Projected Cost	Total Projected Cost	Total Projected Cost				
17.0	BOP ITEMS												
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 210,000	$ 1,051,800	$ 1,971,300	$ 3,233,100	$ 3,233,100	$ 3,234,100	$ 3,234,100	$ -	$ 1,000	$ 1,000	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 10,500	$ 268,209	$ 750,442	$ 1,029,151	$ 1,029,151	$ 1,029,454	$ 1,029,454	$ -	$ 304	$ 304	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BOP ITEMS	$ 220,500	$ 1,320,000	$ 2,721,700	$ 4,262,300	$ 4,262,300	$ 4,263,600	$ 4,263,600	$ -	$ 1,300	$ 1,300	
18.0	CAPITAL REPLACEMENTS - REMOVAL AND RELOCATION OF EXISTING EQUIPMENT AND INFRASTRUCTURE												
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 500,000	$ 917,200	$ 2,847,700	$ 4,264,900	$ 4,264,900	$ 4,264,900	$ 4,264,900	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 25,000	$ 233,900	$ 1,018,300	$ 1,277,200	$ 1,277,200	$ 1,277,200	$ 1,277,200	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	CAPITAL REPLACEMENTS - REMOVAL AND RELOCATION OF EXISTING EQUIPMENT AND INFRASTRUCTURE	$ 525,000	$ 1,151,100	$ 3,866,000	$ 5,542,100	$ 5,542,100	$ 5,542,100	$ 5,542,100	$ -	$ -	$ -	
19.0	ARSENIC, ASBESTOS , LEAD ABATEMENT												
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ -	$ -	$ -	$ 750,000	$ 750,000	$ 750,000	$ 750,000	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT		$ -	$ -	$ -	$ 112,500	$ 112,500	$ 112,500	$ 112,500	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	ARSENIC, ASBESTOS , LEAD	$ -	$ -	$ -	$ 862,500	$ 862,500	$ 862,500	$ 862,500	$ -	$ -	$ -	
99.0	PHASE I - OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 116,832,300	$ 50,988,900	$ 142,330,900	$ 342,277,100	$ 333,838,100	$ 351,802,900	$ 342,402,300	$ (8,439,000)	$ 9,525,800	$ 125,200	
	PHASE I - OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 6,588,600	$ 12,945,500	$ 53,635,100	$ 78,239,100	$ 77,197,800	$ 80,912,200	$ 79,733,700	$ (1,041,300)	$ 2,673,100	$ 1,494,600	
	PHASE I - OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 123,420,900	$ 63,934,400	$ 195,966,000	$ 420,516,200	$ 411,035,900	$ 432,715,100	$ 422,136,000	$ (9,480,300)	$ 12,198,900	$ 1,619,800	
	INDIRECT COSTS - PHASE I							$ -					
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES					$ 28,000,000	$ 28,000,000	$ 28,000,000	$ 28,000,000	$ -	$ -	$ -	
	CONSTRUCTION MANAGEMENT					$ 12,615,500	$ 12,331,100	$ 12,981,500	$ 12,664,100	$ (284,400)	$ 366,000	$ 48,600	
	S-U / COMMISSIONING					$ 4,205,200	$ 4,110,400	$ 4,327,200	$ 4,221,400	$ (94,800)	$ 122,000	$ 16,200	
	CRAFT START-UP SUPPORT					$ 1,677,100	$ 1,657,300	$ 1,740,100	$ 1,717,900	$ (19,800)	$ 63,000	$ 40,800	
	INITIAL FILLS					$ 1,261,500	$ 1,233,100	$ 1,298,100	$ 1,266,400	$ (28,400)	$ 36,600	$ 4,900	
	OPERATOR & TRAINING MANUALS					$ 300,000	$ 300,000	$ 300,000	$ 300,000	$ -	$ -	$ -	
	SUBCONTRACTORS (NOISE & DUCTWORK CONSULTANT, GEOTECHNICAL INVESTIGATION)					$ 400,000	$ 400,000	$ 400,000	$ 400,000	$ -	$ -	$ -	
	SUBTOTAL - INDIRECT COSTS					$ 48,459,300	$ 48,031,900	$ 49,046,900	$ 48,569,800	$ (427,400)	$ 587,600	$ 110,500	
	TOTAL PHASE I DIRECT AND INDIRECT COSTS					$ 468,975,500	$ 459,067,800	$ 481,762,000	$ 470,705,800	$ (9,907,700)	$ 12,786,500	$ 1,730,300	
	SPARE PARTS - PHASE I					$ 1,851,300	$ 1,750,400	$ 1,874,300	$ 1,762,700	$ (100,900)	$ 23,000	$ (88,600)	
	SPARE PARTS - CAPITALIZED	0.90				$ 1,110,780	$ 1,050,240	$ 1,124,580	$ 1,057,620	$ (60,540)	$ 13,800	$ (53,160)	
	SPARE PARTS - FIRST YEAR OF OPERATION	0.60				$ 740,520	$ 700,160	$ 749,720	$ 705,080	$ (40,360)	$ 9,200	$ (35,440)	
	CONTINGENCY - PHASE I	14.4				$ 67,690,500	$ 66,458,800	$ 69,375,300	$ 68,724,200	$ (1,231,700)	$ 1,684,800	$ 1,033,700	
	ESCALATION - PHASE I					$ 59,601,900	$ 58,150,200	$ 107,858,500	$ 59,514,200	$ (1,451,700)	$ 48,256,600	$ (87,700)	
	EQUIPMENT					$ 19,653,700	$ 18,582,200	$ 34,072,800	$ 18,713,400	$ (1,071,500)	$ 14,419,100	$ (940,300)	
	MATERIAL					$ 7,157,800	$ 7,119,600	$ 14,583,300	$ 7,406,700	$ (38,200)	$ 7,425,500	$ 248,900	
	LABOR					$ 27,092,000	$ 26,800,200	$ 48,849,700	$ 27,682,500	$ (291,800)	$ 21,757,700	$ 590,500	
	INDIRECTS					$ 5,698,400	$ 5,648,200	$ 10,352,700	$ 5,711,600	$ (50,200)	$ 4,654,300	$ 13,200	
	PHASE I - TOTAL PROJECT COST					$ 598,119,200	$ 585,427,200	$ 660,870,100	$ 600,706,900	$ (12,692,000)	$ 62,750,900	$ 2,587,700	
	PHASE II - WET FGD												

Sargent & Lundy, LLC	30719C IAQCS Base Estimate 3B N/ESP 3.0 lb SO2/MMBTU	**EXHIBIT 4-4 CAPITAL COST ESTIMATE COMPARISON SUMMARY IAQCS PHASED OPTIONS**				30719C	30718C	30715C	30714C	Est 2B (N/ESP 1.7 lb SO2/MMBTU) Delta Base Est 3B	Est 3A (ESP 3.0 lb SO2/MMBTU) Delta Base Est 3B	Est 2A (ESP 1.7 lb SO2/MMBTU) Delta Base Est 3B	
						Base Est 3B - N/ESP 3.0 lb SO2/MMBTU Phased	Est 2B - N/ESP 1.7 lb SO2/MMBTU Phased	Est 3A - ESP 3.0 lb SO2/MMBTU Phased	Est 2A - ESP 1.7 lb SO2/MMBTU Phased				Remarks
Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost	Total Projected Cost	Total Projected Cost	Total Projected Cost				
20.0	LIMESTONE HANDLING SYSTEM												Limestone handling system costs are the same for all fuels because the equipment is assumed the same and operating durations will be adjusted as required.
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 6,279,000	$ 3,081,600	$ 10,925,700	$ 20,286,300	$ 20,286,300	$ 20,286,300	$ 20,286,300	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 314,000	$ 785,800	$ 4,187,700	$ 5,287,500	$ 5,287,500	$ 5,287,500	$ 5,287,500	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIMESTONE HANDLING SYSTEM	$ 6,593,000	$ 3,867,400	$ 15,113,400	$ 25,573,800	$ 25,573,800	$ 25,573,800	$ 25,573,800	$ -	$ -	$ -	
21.0	REAGENT (LIMESTONE) PREPARATION ISLAND												As fuel sulfur content increases more limestone is required, therefore the reagent prep island costs are increased.
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 14,075,400	$ 6,072,600	$ 17,835,300	$ 37,983,300	$ 34,619,700	$ 37,870,400	$ 34,619,700	$ (3,363,600)	$ (112,900)	$ (3,363,600)	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 703,800	$ 1,548,500	$ 6,836,300	$ 9,088,600	$ 8,487,100	$ 9,053,800	$ 8,487,100	$ (601,500)	$ (34,800)	$ (601,500)	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	REAGENT (LIMESTONE) PREPARATION ISLAND	$ 14,779,200	$ 7,621,100	$ 24,671,600	$ 47,071,900	$ 43,106,800	$ 47,038,200	$ 43,106,800	$ (3,965,100)	$ (33,700)	$ (3,965,100)	
22.0	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE												As fuel sulfur content increases more byproduct is produced, therefore the byproduct handling costs are increased.
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 11,277,800	$ 16,121,900	$ 31,056,700	$ 58,456,400	$ 55,944,700	$ 58,456,400	$ 55,944,700	$ (2,511,700)	$ -	$ (2,511,700)	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 563,900	$ 4,111,100	$ 11,904,400	$ 16,579,300	$ 16,145,600	$ 16,579,300	$ 16,145,600	$ (433,700)	$ -	$ (433,700)	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)	$ 11,841,700	$ 20,233,000	$ 42,961,100	$ 75,035,700	$ 72,090,300	$ 75,035,700	$ 72,090,300	$ (2,945,400)	$ -	$ (2,945,400)	
23.0	WET FGD ABSORBER ISLAND												As the fuel sulfur content increases the liquid-to-gas ratio increases thereby increasing the size of the recirculation system and slightly increasing the Absorber Island costs.
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 44,818,300	$ 23,355,000	$ 58,947,600	$ 127,120,900	$ 126,209,000	$ 127,120,900	$ 126,209,000	$ (911,900)	$ -	$ (911,900)	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 2,915,900	$ 5,955,500	$ 23,377,600	$ 32,249,000	$ 32,058,400	$ 32,249,000	$ 32,058,400	$ (190,600)	$ -	$ (190,600)	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 47,734,200	$ 29,310,500	$ 82,325,200	$ 159,369,900	$ 158,267,400	$ 159,369,900	$ 158,267,400	$ (1,102,500)	$ -	$ (1,102,500)	
24.0	COMPRESSED AIR SYSTEM (BYPRODUCT DEWATERING												
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 446,300	$ 166,200	$ 686,300	$ 1,298,800	$ 1,298,800	$ 1,298,800	$ 1,298,800	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT		$ 22,300	$ 42,400	$ 263,400	$ 328,100	$ 328,100	$ 328,100	$ 328,100	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	COMPRESSED AIR SYSTEM (BYPRODUCT DEWATERING AREA)	$ 468,600	$ 208,600	$ 949,700	$ 1,626,900	$ 1,626,900	$ 1,626,900	$ 1,626,900	$ -	$ -	$ -	
25.0	POTABLE WATER SYSTEM												
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 21,300	$ 16,700	$ 47,900	$ 85,900	$ 85,900	$ 85,900	$ 85,900	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT		$ 1,100	$ 4,300	$ 18,200	$ 23,500	$ 23,500	$ 23,500	$ 23,500	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	POTABLE WATER SYSTEM	$ 22,400	$ 21,000	$ 66,100	$ 109,400	$ 109,400	$ 109,400	$ 109,400	$ -	$ -	$ -	
26.0	SCR SUBSTATION UPGRADE												
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 1,376,000	$ 223,700	$ 740,300	$ 2,340,000	$ 2,340,000	$ 2,340,000	$ 2,340,000	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 68,800	$ 57,000	$ 283,381	$ 409,200	$ 409,200	$ 409,200	$ 409,200	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 1,444,800	$ 280,700	$ 1,023,700	$ 2,749,200	$ 2,749,200	$ 2,749,200	$ 2,749,200	$ -	$ -	$ -	
27.0	FGD DCS SYSTEM												
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 300,000	$ 3,827,800	$ 2,102,500	$ 6,230,300	$ 6,230,300	$ 6,230,300	$ 6,230,300	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 15,000	$ 976,100	$ 806,100	$ 1,797,100	$ 1,797,100	$ 1,797,100	$ 1,797,100	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 315,000	$ 4,803,900	$ 2,908,600	$ 8,027,400	$ 8,027,400	$ 8,027,400	$ 8,027,400	$ -	$ -	$ -	
28.0	SITE IMPROVEMENTS - CIVIL WORK												
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 3,000	$ 965,300	$ 1,305,700	$ 2,274,000	$ 2,274,000	$ 2,274,000	$ 2,274,000	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 200	$ 246,200	$ 500,900	$ 747,200	$ 747,200	$ 747,200	$ 747,200	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SITE IMPROVEMENTS - CIVIL WORK	$ 3,200	$ 1,211,500	$ 1,806,600	$ 3,021,200	$ 3,021,200	$ 3,021,200	$ 3,021,200	$ -	$ -	$ -	
29.0	BOP ITEMS												
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 180,000	$ 1,148,700	$ 2,233,900	$ 3,562,600	$ 3,562,600	$ 3,562,600	$ 3,562,600	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 9,000	$ 292,919	$ 855,996	$ 1,157,914	$ 1,157,914	$ 1,157,914	$ 1,157,914	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BOP ITEMS	$ 189,000	$ 1,441,600	$ 3,089,900	$ 4,720,500	$ 4,720,500	$ 4,720,500	$ 4,720,500	$ -	$ -	$ -	

Sargent & Lundy, LLC	30719C IAQCS Base Estimate 3B N/ESP 3.0 lb SO2/MMBTU	**EXHIBIT 4-4** **CAPITAL COST ESTIMATE COMPARISON SUMMARY** **IAQCS PHASED OPTIONS**				30719C	30718C	30715C	30714C	Est 2B (N/ESP 1.7 lb SO2/MMBTU) Delta Base Est 3B	Est 3A (ESP 3.0 lb SO2/MMBTU) Delta Base Est 3B	Est 2A (ESP 1.7 lb SO2/MMBTU) Delta Base Est 3B	
						Base Est 3B - N/ESP 3.0 lb SO2/MMBTU Phased	Est 2B - N/ESP 1.7 lb SO2/MMBTU Phased	Est 3A - ESP 3.0 lb SO2/MMBTU Phased	Est 2A - ESP 1.7 lb SO2/MMBTU Phased				Remarks
Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost	Total Projected Cost	Total Projected Cost	Total Projected Cost				
30.0	SERVICE WATER SYSTEM												
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 326,900	$ 1,277,900	$ 2,371,100	$ 3,975,900	$ 3,975,900	$ 3,975,900	$ 3,975,900	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 16,345	$ 325,865	$ 908,654	$ 1,250,863	$ 1,250,863	$ 1,250,863	$ 1,250,863	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SERVICE WATER SYSTEM	$ 343,200	$ 1,603,800	$ 3,279,800	$ 5,226,800	$ 5,226,800	$ 5,226,800	$ 5,226,800	$ -	$ -	$ -	
99.0	PHASE II - OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 79,104,000	$ 56,257,400	$ 128,253,000	$ 263,614,400	$ 256,827,200	$ 263,501,500	$ 256,827,200	$ (6,787,200)	$ (112,900)	$ (6,787,200)	
	PHASE II - OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 4,630,200	$ 14,345,600	$ 49,942,600	$ 68,918,400	$ 67,692,600	$ 68,883,700	$ 67,692,600	$ (1,225,800)	$ (34,700)	$ (1,225,800)	
	PHASE II - OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 83,734,200	$ 70,603,000	$ 178,195,600	$ 332,532,800	$ 324,519,800	$ 332,385,200	$ 324,519,800	$ (8,013,000)	$ (147,600)	$ (8,013,000)	
	INDIRECT COSTS - PHASE II												
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES					$ 23,000,000	$ 23,000,000	$ 23,000,000	$ 23,000,000	$ -	$ -	$ -	
	CONSTRUCTION MANAGEMENT					$ 9,976,000	$ 9,735,600	$ 9,971,600	$ 9,735,600	$ (240,400)	$ (4,400)	$ (240,400)	
	S-U / COMMISSIONING					$ 3,325,300	$ 3,245,200	$ 3,323,900	$ 3,245,200	$ (80,100)	$ (1,400)	$ (80,100)	
	CRAFT START-UP SUPPORT					$ 1,511,800	$ 1,482,900	$ 1,766,900	$ 1,482,900	$ (28,900)	$ 255,100	$ (28,900)	
	INITIAL FILLS					$ 997,600	$ 973,600	$ 997,200	$ 973,600	$ (24,000)	$ (400)	$ (24,000)	
	OPERATOR & TRAINING MANUALS					$ 300,000	$ 300,000	$ 300,000	$ 300,000	$ -	$ -	$ -	
	SUBCONTRACTORS (NOISE CONSULTANT)					$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ -	$ -	$ -	
	SUBTOTAL - INDIRECT COSTS					$ 39,210,700	$ 38,837,300	$ 39,459,600	$ 38,837,300	$ (373,400)	$ 248,900	$ (373,400)	
	TOTAL PHASE II DIRECT AND INDIRECT COSTS					$ 371,743,500	$ 363,357,100	$ 371,844,800	$ 363,357,100	$ (8,386,400)	$ 101,300	$ (8,386,400)	
	SPARE PARTS - PHASE II					$ 1,256,000	$ 1,192,900	$ 1,256,000	$ 1,192,900	$ (63,100)	$ -	$ (63,100)	
	SPARE PARTS - CAPITALIZED	0.90				$ 753,600	$ 715,740	$ 628,000	$ 715,740	$ (37,860)	$ (125,600)	$ (37,860)	
	SPARE PARTS - FIRST YEAR OF OPERATION	0.60				$ 502,400	$ 477,160	$ 628,000	$ 477,160	$ (25,240)	$ 125,600	$ (25,240)	
	CONTINGENCY - PHASE II.	15.6				$ 58,094,000	$ 56,411,200	$ 57,575,200	$ 56,854,100	$ (1,682,800)	$ (518,800)	$ (1,239,900)	
	ESCALATION - PHASE II					$ 107,828,700	$ 104,993,300	$ 107,858,500	$ 105,002,400	$ (2,835,400)	$ 29,800	$ (2,826,300)	
	EQUIPMENT					$ 34,072,800	$ 32,360,800	$ 34,072,800	$ 32,360,800	$ (1,712,000)	$ -	$ (1,712,000)	
	MATERIAL					$ 14,598,500	$ 14,511,000	$ 14,583,300	$ 14,514,400	$ (87,500)	$ (15,200)	$ (84,100)	
	LABOR					$ 48,870,000	$ 47,932,700	$ 48,849,700	$ 47,937,800	$ (937,300)	$ (20,300)	$ (932,200)	
	INDIRECTS					$ 10,287,400	$ 10,188,800	$ 10,352,700	$ 10,189,400	$ (98,600)	$ 65,300	$ (98,000)	
	PHASE II - TOTAL PROJECT COST					$ 538,922,200	$ 525,954,500	$ 538,534,500	$ 526,406,500	$ (12,967,700)	$ (387,700)	$ (12,515,700)	
	TOTAL PHASE I + PHASE II INDIRECT COSTS												
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES					$ 51,000,000	$ 51,000,000	$ 51,000,000	$ 51,000,000	$ -	$ -	$ -	
	CONSTRUCTION MANAGEMENT					$ 22,591,500	$ 22,066,700	$ 22,953,000	$ 22,399,700	$ (524,800)	$ 361,500	$ (191,800)	
	S-U / COMMISSIONING					$ 7,530,500	$ 7,355,600	$ 7,651,000	$ 7,466,600	$ (174,900)	$ 120,500	$ (63,900)	
	CRAFT START-UP SUPPORT					$ 3,188,900	$ 3,140,200	$ 3,507,000	$ 3,200,800	$ (48,700)	$ 318,100	$ 11,900	
	INITIAL FILLS					$ 2,259,100	$ 2,206,700	$ 2,295,300	$ 2,240,000	$ (52,400)	$ 36,200	$ (19,100)	
	OPERATOR & TRAINING MANUALS					$ 600,000	$ 600,000	$ 600,000	$ 600,000	$ -	$ -	$ -	
	SUBCONTRACTORS (PHASE I - NOISE & DUCTWORK CONSULTANT, GEOTECHNICAL INVESTIGATION, PHASE II - NOISE CONSULTANT ONLY)					$ 500,000	$ 500,000	$ 500,000	$ 500,000	$ -	$ -	$ -	
	NOISE ABATEMENT FOR 85 DBA REQUIREMENT	FOR ID FAN, SDA ENCLOSURE, TRANSFORMERS, BOP, DUCTWORK, ACOUSTIC BARRIERS FOR BOUNDARY LIMITS				$ 4,500,000	$ 4,500,000	$ 4,500,000	$ 4,500,000	$ -	$ -	$ -	
	SUBTOTAL - INDIRECT COSTS					$ 92,170,000	$ 91,369,200	$ 93,006,300	$ 91,907,100	$ (800,800)	$ 836,300	$ (262,900)	
	TOTAL PROJECT DIRECT AND INDIRECT COSTS					$ 845,219,000	$ 826,924,900	$ 858,106,600	$ 838,562,900	$ (18,294,100)	$ 12,887,600	$ (6,656,100)	

Sargent & Lundy, LLC	30719C IAQCS Base Estimate 3B N/ESP 3.0 lb SO2/MMBTU	**EXHIBIT 4-4** **CAPITAL COST ESTIMATE COMPARISON SUMMARY** **IAQCS PHASED OPTIONS**				30719C	30718C	30715C	30714C	Est 2B (N/ESP 1.7 lb SO2/MMBTU) Delta Base Est 3B	Est 3A (ESP 3.0 lb SO2/MMBTU) Delta Base Est 3B	Est 2A (ESP 1.7 lb SO2/MMBTU) Delta Base Est 3B	
						Base Est 3B - N/ESP 3.0 lb SO2/MMBTU Phased	Est 2B - N/ESP 1.7 lb SO2/MMBTU Phased	Est 3A - ESP 3.0 lb SO2/MMBTU Phased	Est 2A - ESP 1.7 lb SO2/MMBTU Phased				Remarks
Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost	Total Projected Cost	Total Projected Cost	Total Projected Cost				
	SPARE PARTS - PHASE I + PHASE II					$ 3,107,300	$ 2,943,300	$ 3,130,300	$ 2,955,700	$ (164,000)	$ 23,000	$ (151,600)	
	SPARE PARTS - CAPITALIZED	0.90				$ 1,864,380	$ 1,765,980	$ 1,752,580	$ 1,773,360	$ (98,400)	$ (111,800)	$ (91,020)	
	SPARE PARTS - FIRST YEAR OF OPERATION	0.60				$ 1,242,920	$ 1,177,320	$ 1,377,720	$ 1,182,240	$ (65,600)	$ 134,800	$ (60,680)	
	CONTINGENCY (PHASE I + PHASE II)					$ 125,784,500	$ 122,870,000	$ 126,950,500	$ 125,578,300	$ (2,914,500)	$ 1,166,000	$ (206,200)	
	ESCALATION (PHASE I + PHASE II)					$ 167,430,600	$ 163,143,500	$ 215,717,000	$ 164,516,600	$ (4,287,100)	$ 48,286,400	$ (2,914,000)	
	EQUIPMENT					$ 53,726,500	$ 50,943,000	$ 68,145,600	$ 51,074,200	$ (2,783,500)	$ 14,419,100	$ (2,652,300)	
	MATERIAL					$ 21,756,300	$ 21,630,600	$ 29,166,600	$ 21,921,100	$ (125,700)	$ 7,410,300	$ 164,800	
	LABOR					$ 75,962,000	$ 74,732,900	$ 97,699,400	$ 75,620,300	$ (1,229,100)	$ 21,737,400	$ (341,700)	
	INDIRECTS					$ 15,985,800	$ 15,837,000	$ 20,705,400	$ 15,901,000	$ (148,800)	$ 4,719,600	$ (84,800)	
	TOTAL PROJECT COST (PHASE I + PHASE II)					$ 1,141,541,400	$ 1,115,881,700	$ 1,203,904,400	$ 1,131,613,500	$ (25,659,700)	$ 62,363,000	$ (9,927,900)	

Sargent & Lundy, LLC	30720C IAQCS Base Estimate 1B N/ESP 4.5 lb SO2/MMBTU	**EXHIBIT 4-4** **CAPITAL COST ESTIMATE COMPARISON SUMMARY** **IAQCS NON-PHASED OPTIONS**				30720C	30721C	30716C	30717C	Est 4B (N/ESP 7.5 lb SO2/MMBTU) Delta Base Est 1B	Est 1A (ESP 4.5 lb SO2/MMBTU) Delta Base Est 1B	Est 4A (ESP 7.5 lb SO2/MMBTU) Delta Base Est 1B	
						Base Est 1B - N/ESP 4.5 lb SO2/MMBTU Non-Phased	Est 4B - N/ESP 7.5 lb SO2/MMBTU Non-Phased	Est 1A - ESP 4.5 lb SO2/MMBTU Non-Phased	Est 4A - ESP 7.5 lb SO2/MMBTU Non-Phased				Remarks
Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost	Total Projected Cost	Total Projected Cost	Total Projected Cost				
1.0	ID FANS												The ID Fans without the ESP are larger (i.e. cost more) because they replace the existing Booster Fans.
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 12,045,000	$ 13,451,100	$ 27,518,500	$ 53,014,600	$ 53,014,600	$ 51,769,600	$ 51,769,600	$ -	$ (1,245,000)	$ (1,245,000)	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 602,300	$ 3,430,000	$ 9,926,800	$ 13,959,100	$ 13,959,100	$ 13,757,400	$ 13,757,400	$ -	$ (201,700)	$ (201,700)	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	ID FANS	$ 12,647,300	$ 16,881,100	$ 37,445,300	$ 66,973,700	$ 66,973,700	$ 65,527,000	$ 65,527,000	$ -	$ (1,446,700)	$ (1,446,700)	
2.0	FABRIC FILTERS												The Fabric Filter equipment costs are slightly larger at the lower coal sulfur levels because there is more actual flow rate i.e. there is more bag area in the same footprint.
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 22,419,400	$ 3,153,100	$ 17,524,600	$ 42,992,100	$ 42,764,900	$ 42,279,100	$ 42,094,900	$ (227,200)	$ (713,000)	$ (897,200)	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 1,121,000	$ 804,000	$ 6,510,000	$ 8,435,100	$ 8,407,400	$ 8,340,100	$ 8,314,600	$ (27,700)	$ (95,000)	$ (120,500)	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FABRIC FILTERS	$ 23,540,400	$ 3,957,100	$ 24,034,600	$ 51,427,200	$ 51,172,300	$ 50,619,200	$ 50,409,500	$ (254,900)	$ (808,000)	$ (1,017,700)	
3.0	NEW STACK												
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ -	$ -	$ -	$ 31,480,000	$ 31,480,000	$ 31,480,000	$ 31,480,000	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT		$ -	$ -	$ -	$ 4,722,000	$ 4,722,000	$ 4,722,000	$ 4,722,000	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	NEW STACK	$ -	$ -	$ -	$ 36,202,000	$ 36,202,000	$ 36,202,000	$ 36,202,000	$ -	$ -	$ -	
4.0	LIME HANDLING SYSTEM												In the non-phased approach, the lime is only required to remove SO_3, HCl, and HF. The lime rate does not vary greatly with fuel sulfur in the non-phased approach. However the lime rate is greatly reduced when compared to the phased approach.
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 2,227,600	$ 2,269,200	$ 4,669,900	$ 9,166,700	$ 9,569,800	$ 9,166,700	$ 9,569,800	$ 403,100	$ -	$ 403,100	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 111,400	$ 578,600	$ 1,683,700	$ 2,373,700	$ 2,403,500	$ 2,373,700	$ 2,403,500	$ 29,800	$ -	$ 29,800	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME HANDLING SYSTEM	$ 2,339,000	$ 2,847,800	$ 6,353,600	$ 11,540,400	$ 11,973,300	$ 11,540,400	$ 11,973,300	$ 432,900	$ -	$ 432,900	
5.0	LIME SLAKER BUILDING												
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 2,861,300	$ 1,200,300	$ 4,453,000	$ 8,514,600	$ 9,560,800	$ 8,514,600	$ 9,560,800	$ 1,046,200	$ -	$ 1,046,200	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 143,100	$ 306,100	$ 1,663,000	$ 2,112,100	$ 2,328,500	$ 2,112,100	$ 2,328,500	$ 216,400	$ -	$ 216,400	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME SLAKER BUILDING	$ 3,004,400	$ 1,506,400	$ 6,116,000	$ 10,626,700	$ 11,889,300	$ 10,626,700	$ 11,889,300	$ 1,262,600	$ -	$ 1,262,600	
6.0	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS												With the ESP in service additional Fly Ash equipment is required including a silo for blending the fly ash with the byproduct. The silo sizes with the ESP in service are significantly smaller than without the ESP. This results from the fly ash being removed prior the waste being sent to the silo.
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 3,075,700	$ 2,202,200	$ 4,573,700	$ 9,851,600	$ 9,876,100	$ 13,389,600	$ 13,447,200	$ 24,500	$ 3,538,000	$ 3,595,600	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 153,800	$ 561,600	$ 1,702,500	$ 2,417,900	$ 2,419,100	$ 3,176,400	$ 3,190,000	$ 1,200	$ 758,500	$ 772,100	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS	$ 3,229,500	$ 2,763,800	$ 6,276,200	$ 12,269,500	$ 12,295,200	$ 16,566,000	$ 16,637,200	$ 25,700	$ 4,296,500	$ 4,367,700	
7.0	SPRAY DRYER ABSORBER ISLAND												There are ductwork differences between the ESP and N/ESP cases that account for the cost difference in the absorber island. The absorber itself is sized on the actual flue gas flow rates which are roughly equivalent. No adjustment was made to account for slightly smaller atomizers in the non-phased approach.
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 42,006,800	$ 12,606,500	$ 47,650,900	$ 102,264,200	$ 102,264,200	$ 108,714,600	$ 108,714,600	$ -	$ 6,450,400	$ 6,450,400	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 2,910,300	$ 3,214,700	$ 19,057,200	$ 25,182,200	$ 25,182,200	$ 27,220,600	$ 27,220,600	$ -	$ 2,038,400	$ 2,038,400	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SPRAY DRYER ABSORBER ISLAND	$ 44,917,100	$ 15,821,200	$ 66,708,100	$ 127,446,400	$ 127,446,400	$ 135,935,200	$ 135,935,200	$ -	$ 8,488,800	$ 8,488,800	

Sargent & Lundy, LLC	30720C IAQCS Base Estimate 1B N/ESP 4.5 lb SO2/MMBTU	**EXHIBIT 4-4** **CAPITAL COST ESTIMATE COMPARISON SUMMARY** **IAQCS NON-PHASED OPTIONS**				30720C	30721C	30716C	30717C	Est 4B (N/ESP 7.5 lb SO2/MMBTU) Delta Base Est 1B	Est 1A (ESP 4.5 lb SO2/MMBTU) Delta Base Est 1B	Est 4A (ESP 7.5 lb SO2/MMBTU) Delta Base Est 1B	
						Base Est 1B - N/ESP 4.5 lb SO2/MMBTU Non-Phased	Est 4B - N/ESP 7.5 lb SO2/MMBTU Non-Phased	Est 1A - ESP 4.5 lb SO2/MMBTU Non-Phased	Est 4A - ESP 7.5 lb SO2/MMBTU Non-Phased				Remarks
Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost	Total Projected Cost	Total Projected Cost	Total Projected Cost				
8.0	ACTIVATED CARBON INJECTION SYSTEM	NOT REQUIRED WITH NON-PHASED CONSTRUCTION											
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	ACTIVATED CARBON INJECTION SYSTEM	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
9.0	COMPRESSED AIR SYSTEM												
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 1,390,600	$ 1,403,600	$ 2,629,500	$ 5,423,700	$ 5,423,700	$ 5,423,700	$ 5,423,700	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 69,500	$ 357,900	$ 963,100	$ 1,390,600	$ 1,390,600	$ 1,390,600	$ 1,390,600	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	COMPRESSED AIR SYSTEM	$ 1,460,100	$ 1,761,500	$ 3,592,600	$ 6,814,300	$ 6,814,300	$ 6,814,300	$ 6,814,300	$ -	$ -	$ -	
10.0	SERVICE WATER SYSTEM												
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 1,199,200	$ 2,448,400	$ 4,619,200	$ 8,266,800	$ 8,266,800	$ 8,266,800	$ 8,266,800	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 60,000	$ 624,300	$ 1,683,200	$ 2,367,500	$ 2,367,500	$ 2,367,500	$ 2,367,500	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SERVICE WATER SYSTEM	$ 1,259,200	$ 3,072,700	$ 6,302,400	$ 10,634,300	$ 10,634,300	$ 10,634,300	$ 10,634,300	$ -	$ -	$ -	
11.0	POTABLE WATER SYSTEM												
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 129,500	$ 258,000	$ 756,100	$ 1,143,600	$ 1,143,600	$ 1,143,600	$ 1,143,600	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 6,500	$ 65,800	$ 275,700	$ 348,000	$ 348,000	$ 348,000	$ 348,000	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	POTABLE WATER SYSTEM	$ 136,000	$ 323,800	$ 1,031,800	$ 1,491,600	$ 1,491,600	$ 1,491,600	$ 1,491,600	$ -	$ -	$ -	
12.0	FGD SUBSTATION												
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 3,547,700	$ 953,500	$ 4,191,300	$ 8,692,500	$ 8,692,500	$ 8,400,700	$ 8,400,700	$ -	$ (291,800)	$ (291,800)	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 177,400	$ 243,100	$ 1,513,212	$ 1,933,700	$ 1,933,700	$ 1,918,700	$ 1,918,700	$ -	$ (15,000)	$ (15,000)	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FGD SUBSTATION	$ 3,725,100	$ 1,196,600	$ 5,704,500	$ 10,626,200	$ 10,626,200	$ 10,319,400	$ 10,319,400	$ -	$ (306,800)	$ (306,800)	
13.0	FGD DCS SYSTEM	DRY AND WET FGD COMBINED											
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 5,700,000	$ 1,537,300	$ 3,795,800	$ 11,033,100	$ 11,033,100	$ 11,033,100	$ 11,033,100	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 285,000	$ 392,000	$ 1,417,400	$ 2,094,400	$ 2,094,400	$ 2,094,400	$ 2,094,400	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FGD DCS SYSTEM	$ 5,985,000	$ 1,929,300	$ 5,213,200	$ 13,127,500	$ 13,127,500	$ 13,127,500	$ 13,127,500	$ -	$ -	$ -	
14.0	CEM SYSTEM												
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 1,260,000	$ 540,000	$ 310,000	$ 2,110,000	$ 2,110,000	$ 2,110,000	$ 2,110,000	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT		$ -	$ -	$ -	$ 316,500	$ 316,500	$ 316,500	$ 316,500	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	CEM SYSTEM	$ -	$ -	$ -	$ 2,426,500	$ 2,426,500	$ 2,426,500	$ 2,426,500	$ -	$ -	$ -	

Sargent & Lundy, LLC	30720C IAQCS Base Estimate 1B N/ESP 4.5 lb SO2/MMBTU	**EXHIBIT 4-4** **CAPITAL COST ESTIMATE COMPARISON SUMMARY** **IAQCS NON-PHASED OPTIONS**				30720C	30721C	30716C	30717C	Est 4B (N/ESP 7.5 lb SO2/MMBTU) Delta Base Est 1B	Est 1A (ESP 4.5 lb SO2/MMBTU) Delta Base Est 1B	Est 4A (ESP 7.5 lb SO2/MMBTU) Delta Base Est 1B	
						Base Est 1B - N/ESP 4.5 lb SO2/MMBTU Non-Phased	Est 4B - N/ESP 7.5 lb SO2/MMBTU Non-Phased	Est 1A - ESP 4.5 lb SO2/MMBTU Non-Phased	Est 4A - ESP 7.5 lb SO2/MMBTU Non-Phased				Remarks
Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost	Total Projected Cost	Total Projected Cost	Total Projected Cost				
15.0	TRUCK & RAIL INFRASTRUCTURE												
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 212,500	$ 2,044,200	$ 2,084,100	$ 4,340,800	$ 4,340,800	$ 4,340,800	$ 4,340,800	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 10,600	$ 521,300	$ 779,600	$ 1,311,500	$ 1,311,500	$ 1,311,500	$ 1,311,500	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	TRUCK & RAIL INFRASTRUCTURE	$ 223,100	$ 2,565,500	$ 2,863,700	$ 5,652,300	$ 5,652,300	$ 5,652,300	$ 5,652,300	$ -	$ -	$ -	
16.0	SITE IMPROVEMENTS - CIVIL WORK												
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 5,395,500	$ 5,525,100	$ 9,200,300	$ 20,120,900	$ 20,120,900	$ 20,120,900	$ 20,120,900	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 269,800	$ 1,408,900	$ 3,329,300	$ 5,008,000	$ 5,008,000	$ 5,008,000	$ 5,008,000	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SITE IMPROVEMENTS - CIVIL WORK	$ 5,665,300	$ 6,934,000	$ 12,529,600	$ 25,128,900	$ 25,128,900	$ 25,128,900	$ 25,128,900	$ -	$ -	$ -	
17.0	LIMESTONE HANDLING SYSTEM												
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 6,408,800	$ 3,625,300	$ 12,627,100	$ 22,661,200	$ 22,661,200	$ 22,661,200	$ 22,661,200	$ -	$ -	$ -	Limestone handling system costs are the same for all fuels because the equipment is assumed the same and operating durations will be adjusted as required.
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 320,400	$ 924,500	$ 4,839,900	$ 6,084,800	$ 6,084,800	$ 6,084,800	$ 6,084,800	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIMESTONE HANDLING SYSTEM	$ 6,729,200	$ 4,549,800	$ 17,467,000	$ 28,746,000	$ 28,746,000	$ 28,746,000	$ 28,746,000	$ -	$ -	$ -	
18.0	REAGENT (LIMESTONE) PREPARATION ISLAND												
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 15,812,400	$ 6,132,200	$ 18,748,600	$ 40,693,200	$ 43,573,300	$ 40,693,200	$ 43,573,300	$ 2,880,100	$ -	$ 2,880,100	As fuel sulfur content increases more limestone is required, therefore the reagent prep island costs are increased.
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 790,600	$ 1,563,700	$ 7,186,000	$ 9,540,300	$ 10,037,200	$ 9,540,300	$ 10,037,200	$ 496,900	$ -	$ 496,900	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	REAGENT (LIMESTONE) PREPARATION ISLAND	$ 16,603,000	$ 7,695,900	$ 25,934,600	$ 50,233,500	$ 53,610,500	$ 50,233,500	$ 53,610,500	$ 3,377,000	$ -	$ 3,377,000	
19.0	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)												As fuel sulfur content increases more byproduct is produced, therefore the reagent prep island costs are increased.
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 12,728,800	$ 16,133,500	$ 31,754,300	$ 60,616,600	$ 62,999,400	$ 60,616,600	$ 62,999,400	$ 2,382,800	$ -	$ 2,382,800	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 636,400	$ 4,114,000	$ 12,171,100	$ 16,921,600	$ 17,305,400	$ 16,921,600	$ 17,305,400	$ 383,800	$ -	$ 383,800	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 13,365,200	$ 20,247,500	$ 43,925,400	$ 77,538,200	$ 80,304,800	$ 77,538,200	$ 80,304,800	$ 2,766,600	$ -	$ 2,766,600	
20.0	WET FGD ABSORBER ISLAND												As the fuel sulfur content increases the liquid-to-gas ratio increases thereby increasing the size of the recirculation system and slightly increasing the Absorber Island costs.
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 45,302,300	$ 23,174,900	$ 58,840,700	$ 127,317,900	$ 128,103,300	$ 127,317,900	$ 128,103,300	$ 785,400	$ -	$ 785,400	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 2,940,100	$ 5,909,600	$ 23,335,900	$ 32,185,600	$ 32,365,900	$ 32,185,600	$ 32,365,900	$ 180,300	$ -	$ 180,300	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 48,242,400	$ 29,084,500	$ 82,176,600	$ 159,503,500	$ 160,469,200	$ 159,503,500	$ 160,469,200	$ 965,700	$ -	$ 965,700	
21.0	COMPRESSED AIR SYSTEM (BYPRODUCT DEWATERING												
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 446,300	$ 166,200	$ 686,300	$ 1,298,800	$ 1,298,800	$ 1,298,800	$ 1,298,800	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT		$ 22,300	$ 42,400	$ 263,400	$ 328,100	$ 328,100	$ 328,100	$ 328,100	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	COMPRESSED AIR SYSTEM (BYPRODUCT DEWATERING AREA)	$ 468,600	$ 208,600	$ 949,700	$ 1,626,900	$ 1,626,900	$ 1,626,900	$ 1,626,900	$ -	$ -	$ -	
22.0	POTABLE WATER SYSTEM	INCLUDED WITH ACCOUNT 11.0											
23.0	SCR SUBSTATION UPGRADE												
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 1,376,000	$ 223,700	$ 740,300	$ 2,340,000	$ 2,340,000	$ 2,340,000	$ 2,340,000	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 68,800	$ 57,000	$ 283,381	$ 409,200	$ 409,200	$ 409,200	$ 409,200	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 1,444,800	$ 280,700	$ 1,023,700	$ 2,749,200	$ 2,749,200	$ 2,749,200	$ 2,749,200	$ -	$ -	$ -	

Sargent & Lundy, LLC	30720C IAQCS Base Estimate 1B N/ESP 4.5 lb SO2/MMBTU	**EXHIBIT 4-4** **CAPITAL COST ESTIMATE COMPARISON SUMMARY** **IAQCS NON-PHASED OPTIONS**				30720C	30721C	30716C	30717C	Est 4B (N/ESP 7.5 lb SO2/MMBTU) Delta Base Est 1B	Est 1A (ESP 4.5 lb SO2/MMBTU) Delta Base Est 1B	Est 4A (ESP 7.5 lb SO2/MMBTU) Delta Base Est 1B	
						Base Est 1B - N/ESP 4.5 lb SO2/MMBTU Non-Phased	Est 4B - N/ESP 7.5 lb SO2/MMBTU Non-Phased	Est 1A - ESP 4.5 lb SO2/MMBTU Non-Phased	Est 4A - ESP 7.5 lb SO2/MMBTU Non-Phased				Remarks
Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost	Total Projected Cost	Total Projected Cost	Total Projected Cost				
24.0	FGD DCS SYSTEM	INCLUDED WITH ACCOUNT 13.0											
25.0	SITE IMPROVEMENTS - CIVIL WORK	INCLUDED WITH ACCOUNT 16.0											
26.0	BOP ITEMS												
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 390,000	$ 2,242,000	$ 4,290,700	$ 6,922,700	$ 6,922,700	$ 6,922,700	$ 6,922,700	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 19,500	$ 571,710	$ 1,644,510	$ 2,235,720	$ 2,235,720	$ 2,235,720	$ 2,235,720	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BOP ITEMS	$ 409,500	$ 2,813,700	$ 5,935,200	$ 9,158,400	$ 9,158,400	$ 9,158,400	$ 9,158,400	$ -	$ -	$ -	
27.0	CAPITAL REPLACEMENTS - REMOVAL AND RELOCATION OF EXISTING EQUIPMENT AND INFRASTRUCTURE												
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 500,000	$ 917,200	$ 2,847,700	$ 4,264,900	$ 4,264,900	$ 4,264,900	$ 4,264,900	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 25,000	$ 233,900	$ 1,018,300	$ 1,277,200	$ 1,277,200	$ 1,277,200	$ 1,277,200	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 525,000	$ 1,151,100	$ 3,866,000	$ 5,542,100	$ 5,542,100	$ 5,542,100	$ 5,542,100	$ -	$ -	$ -	
28.0	ARSENIC, ASBESTOS , LEAD ABATEMENT												
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ -	$ -	$ -	$ 750,000	$ 750,000	$ 750,000	$ 750,000	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT		$ -	$ -	$ -	$ 112,500	$ 112,500	$ 112,500	$ 112,500	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	ARSENIC, ASBESTOS , LEAD	$ -	$ -	$ -	$ 862,500	$ 862,500	$ 862,500	$ 862,500	$ -	$ -	$ -	
99.0	OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 186,435,400	$ 102,207,500	$ 264,512,600	$ 585,280,500	$ 592,575,400	$ 593,019,100	$ 600,390,100	$ 7,294,900	$ 7,738,600	$ 15,109,600	
	OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 10,743,800	$ 26,006,200	$ 101,247,200	$ 143,067,200	$ 144,348,000	$ 145,552,500	$ 146,847,800	$ 1,280,800	$ 2,485,300	$ 3,780,600	
	OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 197,179,200	$ 128,213,700	$ 365,759,800	$ 728,347,700	$ 736,923,400	$ 738,571,600	$ 747,237,900	$ 8,575,700	$ 10,223,900	$ 18,890,200	
	INDIRECT COSTS												
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES					$ 45,000,000	$ 45,000,000	$ 45,000,000	$ 45,000,000	$ -	$ -	$ -	
	CONSTRUCTION MANAGEMENT					$ 21,850,400	$ 22,107,700	$ 22,157,100	$ 22,417,100	$ 257,300	$ 306,700	$ 566,700	
	S-U / COMMISSIONING					$ 7,283,500	$ 7,369,200	$ 7,385,700	$ 7,472,400	$ 85,700	$ 102,200	$ 188,900	
	CRAFT START-UP SUPPORT					$ 3,117,400	$ 3,147,300	$ 3,177,400	$ 3,207,500	$ 29,900	$ 60,000	$ 90,100	
	INITIAL FILLS					$ 2,185,000	$ 2,210,800	$ 2,215,700	$ 2,241,700	$ 25,800	$ 30,700	$ 56,700	
	OPERATOR & TRAINING MANUALS					$ 600,000	$ 600,000	$ 600,000	$ 600,000	$ -	$ -	$ -	
	SUBCONTRACTORS (NOISE & DUCTWORK CONSULTANT,					$ 750,000	$ 750,000	$ 500,000	$ 500,000	$ -	$ (250,000)	$ (250,000)	
	NOISE ABATEMENT FOR 85 DBA REQUIREMENT	FOR ID FAN, SDA ENCLOSURE, TRANSFORMERS, BOP, DUCTWORK, ACOUSTIC BARRIERS FOR BOUNDARY LIMITS				$ 4,500,000	$ 4,500,000	$ 4,500,000	$ 4,500,000	$ -	$ -	$ -	
	SUBTOTAL - INDIRECT COSTS					$ 85,286,300	$ 85,685,000	$ 85,535,900	$ 85,938,700	$ 398,700	$ 249,600	$ 652,400	
	TOTAL DIRECT AND INDIRECT COSTS					$ 813,634,000	$ 822,608,400	$ 824,107,500	$ 833,176,600	$ 8,974,400	$ 10,473,500	$ 19,542,600	
	SPARE PARTS					$ 2,957,700	$ 3,026,900	$ 2,957,500	$ 3,027,200	$ 69,200	$ (200)	$ 69,500	
	SPARE PARTS - CAPITALIZED	0.90				$ 1,774,620	$ 1,816,140	$ 1,774,500	$ 1,816,320	$ 41,520	$ (120)	$ 41,700	
	SPARE PARTS - FIRST YEAR OF OPERATION	0.60				$ 1,183,080	$ 1,210,760	$ 1,183,000	$ 1,210,880	$ 27,680	$ (80)	$ 27,800	
	CONTINGENCY	13.9				$ 113,200,600	$ 115,259,100	$ 115,966,200	$ 116,497,100	$ 2,058,500	$ 2,765,600	$ 3,296,500	
	ESCALATION					$ 101,295,000	$ 102,512,500	$ 102,500,800	$ 103,730,600	$ 1,217,500	$ 1,205,800	$ 2,435,600	
	EQUIPMENT					$ 29,379,300	$ 30,066,600	$ 29,377,100	$ 30,070,300	$ 687,300	$ (2,200)	$ 691,000	
	MATERIAL					$ 13,609,300	$ 13,651,900	$ 13,919,200	$ 13,963,200	$ 42,600	$ 309,900	$ 353,900	
	LABOR					$ 48,448,900	$ 48,890,400	$ 49,318,100	$ 49,764,200	$ 441,500	$ 869,200	$ 1,315,300	
	INDIRECTS					$ 9,857,500	$ 9,903,600	$ 9,886,400	$ 9,932,900	$ 46,100	$ 28,900	$ 75,400	
	TOTAL PROJECT COST					$ 1,031,087,300	$ 1,043,406,900	$ 1,045,532,000	$ 1,056,431,500	$ 12,319,600	$ 14,444,700	$ 25,344,200	

EXHIBIT 4-5
IAQCS O&M Cost Estimate Summary

Exhibit 4-5. IAQCS O&M Cost Estimate Summary - Without ESP (2010 dollars)

Fuel	IAQCS (Phased – DFGD Only)		IAQCS (Non-Phased – DFGD and WFGD)			
	1.7 w/o ESP	**3.0 w/o ESP**	**1.7 w/o ESP**	**3.0 w/o ESP**	**4.5 w/o ESP**	**7.5 w/o ESP**
Fixed O&M ($/year)						
Operating Labor	832,000	832,000	2,184,000	2,184,000	2,184,000	2,184,000
Maintenance Material	2,076,000	2,136,000	4,039,000	4,117,000	4,191,000	4,272,000
Maintenance Labor	1,384,000	1,424,000	2,693,000	2,744,000	2,795,000	2,849,000
Total Fixed O&M ($/year)	**4,292,000**	**4,392,000**	**8,916,000**	**9,045,000**	**9,170,000**	**9,305,000**
Variable O&M ($/year)						
Limestone Reagent Cost	NA	NA	2,376,000	4,558,000	6,442,000	9,685,000
Lime Reagent Cost	8,601,000	19,605,000	661,000	1,225,000	1,713,000	2,574,000
Activated Carbon	2,344,000	2,319,000	NA	NA	NA	NA
WFGD Byproduct Disposal Cost	NA	NA	1,215,000	2,425,000	3,472,000	5,227,000
DFGD Byproduct Disposal Cost	4,148,000	5,612,000	2,732,000	2,553,000	2,426,000	2,670,000
Total Makeup Water Cost	509,000	521,000	746,000	752,000	763,000	780,000
Wastewater Treatment Chemicals	NA	NA	NA	NA	NA	NA
Bags and Cages Replacement	651,000	651,000	651,000	651,000	651,000	651,000
Total Variable O&M excluding Auxiliary Power ($/year)	**16,253,000**	**28,708,000**	**8,381,000**	**12,164,000**	**15,467,000**	**21,587,000**
Auxiliary Power at Full Load (MW)						
Overall Draft [in WC]	23 [49]	23 [49]	29 [66]	29 [66]	29 [66]	29 [66]
FGD Draft Only [in WC]	8 [16]	8 [16]	14 [28]	14 [29]	15 [30]	16 [31]
FGD Equipment Load	4	5	11	15	17	24
Existing Booster Fans	-10	-10	-10	-10	-10	-10
Existing ESP	-4	-4	-4	-4	-4	-4
WESP	NA	NA	NA	NA	NA	NA
Total Auxiliary Power at Full Load (MW)	**13**	**14**	**26**	**30**	**32**	**39**

Note: NA = Not Applicable for the technology

Exhibit 4-5. IAQCS O&M Cost Estimate Summary - With ESP (2010 dollars)

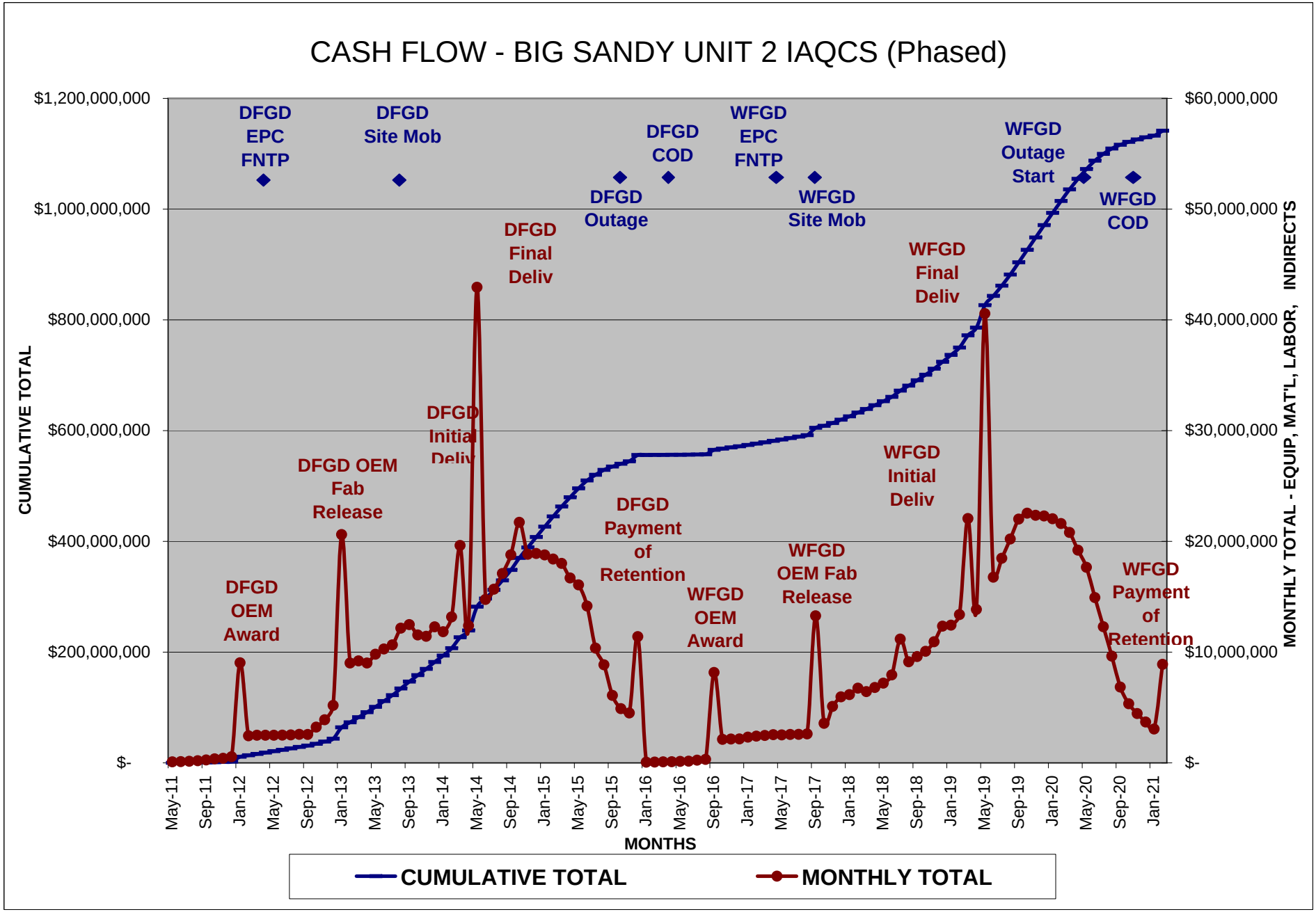
Fuel	IAQCS (Phased – DFGD Only)		IAQCS (Non-Phased – DFGD and WFGD)			
	1.7 w/ ESP	**3.0 w/ ESP**	**1.7 w/ ESP**	**3.0 w/ ESP**	**4.5 w/ ESP**	**7.5 w/ ESP**
Fixed O&M ($/year)						
Operating Labor	832,000	832,000	2,184,000	2,184,000	2,184,000	2,184,000
Maintenance Material	2,076,000	2,136,000	4,039,000	4,117,000	4,191,000	4,272,000
Maintenance Labor	1,384,000	1,424,000	2,693,000	2,744,000	2,795,000	2,849,000
Total Fixed O&M ($/year)	**4,292,000**	**4,392,000**	**8,916,000**	**9,045,000**	**9,170,000**	**9,305,000**
Variable O&M ($/year)						
Limestone Reagent Cost	NA	NA	2,376,000	4,558,000	6,442,000	9,685,000
Lime Reagent Cost	9,924,000	23,281,000	661,000	1,225,000	1,713,000	2,574,000
Activated Carbon	2,267,000	2,243,000	NA	NA	NA	NA
WFGD Byproduct Disposal Cost	NA	NA	1,216,000	2,426,000	3,472,000	5,228,000
DFGD Byproduct Disposal Cost	1,793,000	3,817,000	182,000	245,000	300,000	420,000
Total Makeup Water Cost	464,000	482,000	701,000	709,000	721,000	737,000
Wastewater Treatment Chemicals	NA	NA	NA	NA	NA	NA
Bags and Cages Replacement	651,000	651,000	651,000	651,000	651,000	651,000
Total Variable O&M excluding Auxiliary Power ($/year)	**15,099,000**	**30,474,000**	**5,787,000**	**9,814,000**	**13,299,000**	**19,295,000**
Auxiliary Power at Full Load (MW)						
Overall Draft [in WC]	17 [39]	17 [39]	24 [54]	24 [54]	24 [54]	24 [54]
FGD Draft Only [in WC]	8 [16]	8 [16]	14 [28]	14 [29]	15 [30]	16 [31]
FGD Equipment Load	4	5	11	15	17	24
Existing Booster Fans	0	0	0	0	0	0
Existing ESP	0	0	0	0	0	0
WESP	NA	NA	NA	NA	NA	NA
Total Auxiliary Power at Full Load (MW)	**21**	**22**	**35**	**39**	**41**	**48**

Note: NA = Not Applicable for the technology

EXHIBIT 4-6
IAQCS Project Cash Flows – Phased and Non-Phased

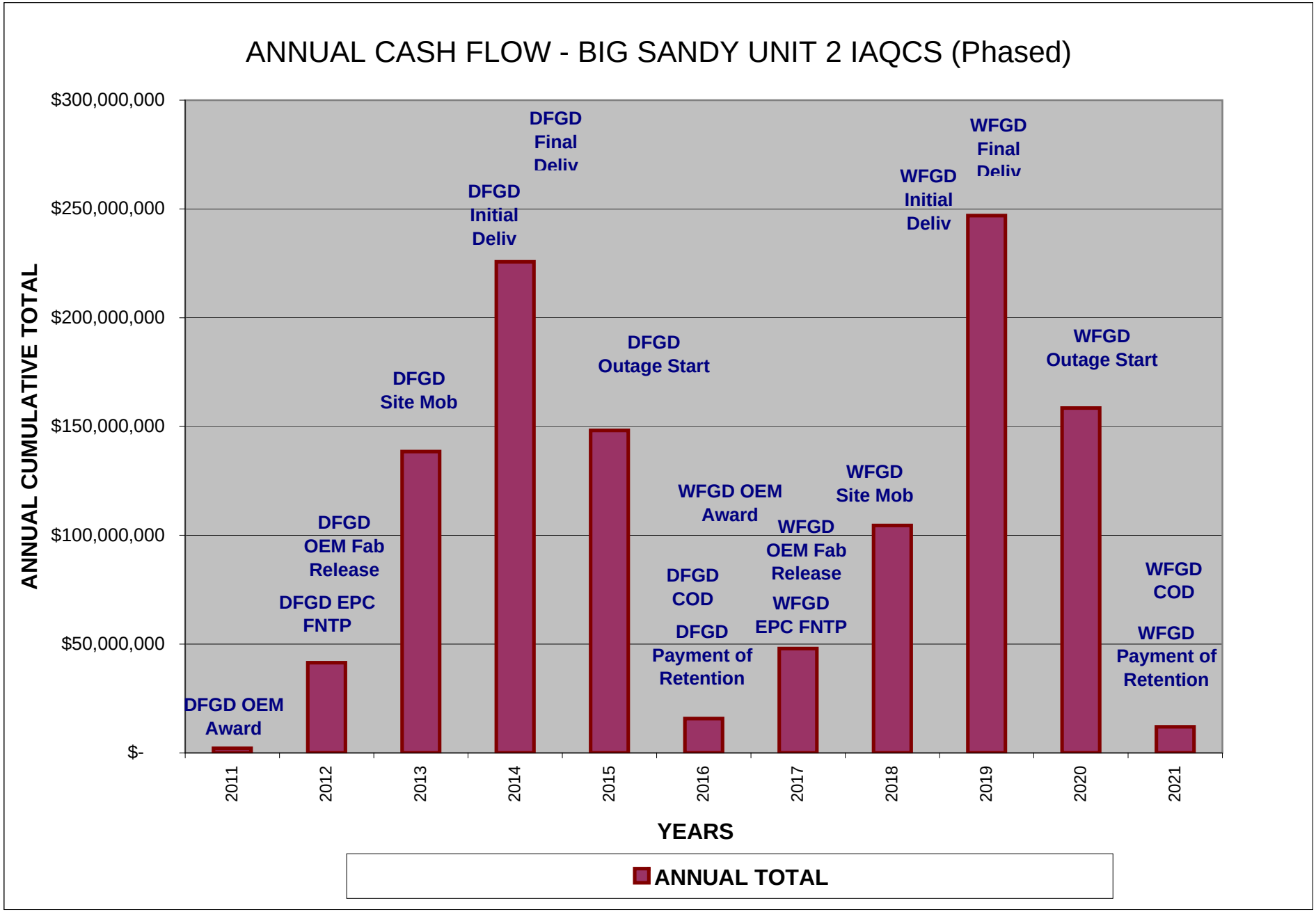
Kentucky Power Company & American Electric Power Service Corporation
Big Sandy Unit 2
IAQCS Phased (3.0 Lb/MMBtu)
Cash Flows - Cumulative Total and Monthly Totals

Sargent & Lundy
Date: 9/29/10
Rev: 0



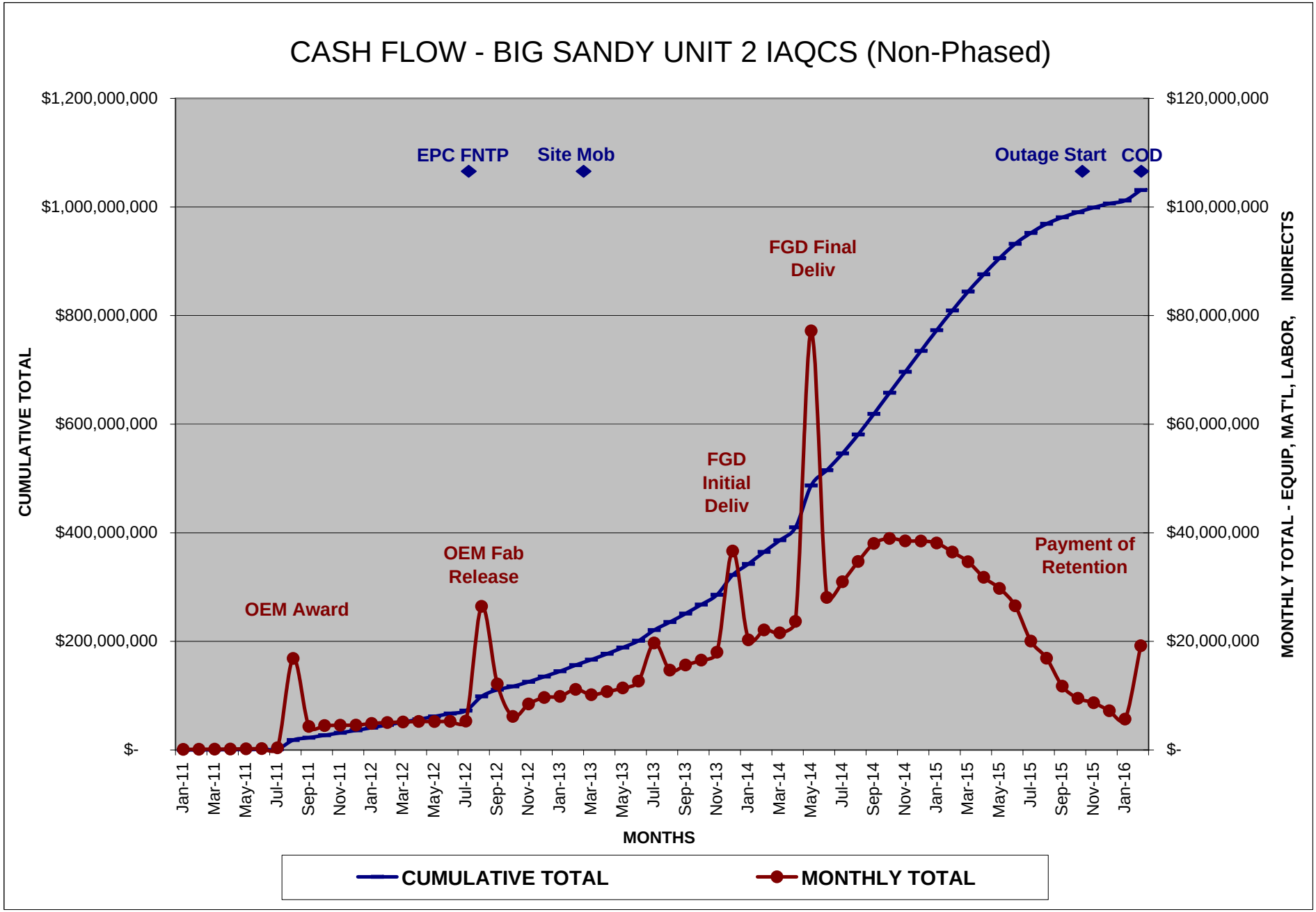
Kentucky Power Company & American Electric Power Service Corporation
Big Sandy Unit 2
IAQCS Phased (3.0 Lb/MMBtu)
Cash Flows - Cumulative Total and Monthly Totals

Sargent & Lundy
Date: 9/29/10
Rev: 0



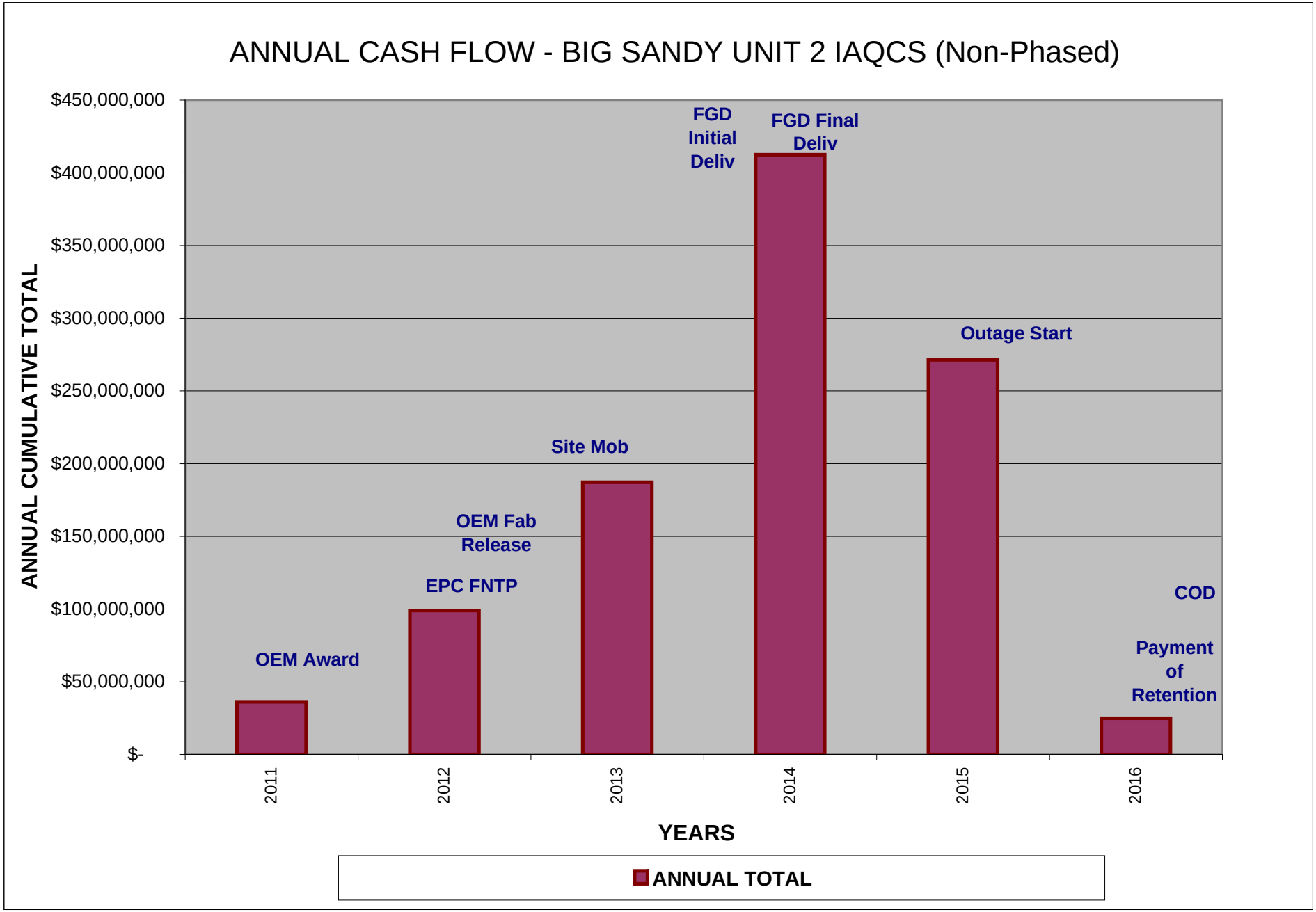
Kentucky Power Company & American Electric Power Service Corporation
Big Sandy Unit 2
IAQCS Non-Phased (4.5 Lb/MMBtu)
Cash Flows - Cumulative Total and Monthly Totals

Sargent & Lundy
Date: 9/29/10
Rev: 0



Kentucky Power Company & American Electric Power Service Corporation
Big Sandy Unit 2
IAQCS Non-Phased (4.5 Lb/MMBtu)
Cash Flows - Cumulative Total and Monthly Totals

Sargent & Lundy
Date: 9/29/10
Rev: 0



ATTACHMENT 4-1
IAQCS Process Flow Diagrams

DWG. NO. MSK-IAQCS-PFD-001_B

FROM LIMESTONE SILOS (MSK-IAQCS-PFD-002)

LIMESTONE FEEDERS (2 X 100%)

BALL MILLS (2 X 100%)

SERVICE WATER E/K3

BALL MILL HYDROCLONES (REAGENT SLURRY CLASSIFIERS) (1 X 125% PER BALL MILL)

LIMESTONE SLURRY TANKS (780,000 GAL. EACH) (2 X 100%) (CROSSTIED)

REAGENT FEED PUMPS (2 PER SLURRY TANK - 4 X 100%)

A/H5 TO ABSORBER

(2 REDUNDANT AND INDEPENDENT SLURRY LOOPS)

BALL MILL PRODUCT TANK (2 X 100%)

BALL MILL PRODUCT TANK PUMPS (2 PER PRODUCT TANK - 4 X 100%)

TO LIMESTONE SLURRY TANKS (MSK-IAQCS-PFD-002) K/B6

REAGENT AREA SUMP PUMPS (2 X 100%)

REAGENT PREPARATION

OPTION TO DELETE FOR ESP OUT

FLUE GAS FROM UNIT 2 BOILER

TO FLY ASH POND

ESP (2 X 50%) EXISTING

BOOSTER FANS (2 X 50%) EXISTING

FROM SDA FEED PUMPS L/G7

(2 REDUNDANT AND INDEPENDENT SLURRY LOOPS)

FLUE GAS TREATMENT

SDA (3 X 33%)

IAQCS AIR DRYERS (2 X 100%)

IAQCS AIR COMPRESSORS (2 X 100%)

INDUCED DRAFT FANS (2 X 50%)

FABRIC FILTER (1 X 100%) (SEE NOTE 1)

TRANSPORT AIR HEATERS (2 X 100%)

BYPRODUCT TRANSPORT BLOWERS (2 X 100%)

DUMPSTER

FLY ASH TRANSPORT BLOWERS (2 X 100%)

BIN VENT FILTER (1 X 100%)

FLY ASH SILO (1 X 100% - 72 HOURS)

BYPRODUCT WASTE SILO (1 X 100% - 72 HOURS)

C/H7 C/H7 P/H7 P/H7

TO WASTE PIN MIXERS (MSK-IAQCS-PFD-002)

FLUIDIZED AIR HEATERS (2 X 100%)

FLUIDIZING AIR BLOWERS (2 X 100%)

BIN VENT FILTER (1 X 100%)

RECYCLE BYPRODUCT SILO (1 X 100%) (16 HOURS)

SILENCER (TYP)

ROTARY VALVES (2 X 100%)

FLUIDIZED AIR HEATERS (2 X 100%)

FLUIDIZING AIR BLOWERS (2 X 100%)

TO PROCESS WATER STORAGE BASIN M/J8

BYPRODUCT WASTE SILO AREA SUMP PUMPS (2 X 100%)

RECYCLE BYPRODUCT PREMIX TANKS (2 X 100%)

FROM PROCESS WATER STORAGE BASIN T/G8

RECYCLE BYPRODUCT MAKEUP TANKS (2 X 100%)

TO WASTE PIN MIXERS (MSK-IAQCS-PFD-002) R/J7

TO RECYCLE BYPRODUCT MAKE-UP TANKS C/D8

GRIT SCREENS (2 X 100%)

FROM LIME SLURRY FEED PUMPS (MSK-IAQCS-PFD-002) S/A7

L/D4 TO SPRAY DRYER ABSORBERS

SDA FEED TANKS (2 X 100%)

SDA FEED PUMPS (2 X 100%)

FROM RECLAIM WATER C/H7

GRIT BIN

TO LIME SLAKERS (MSK-IAQCS-PFD-002) Q/E8

D/K4 FROM SERVICE WATER PUMPS

TO RECYCLE BYPRODUCT PREMIX TANKS T/E7

TO WASTE PIN MIXERS (MSK-IAQCS-PFD-002) Y/J7

PROCESS WATER STORAGE BASIN SUMP PUMPS (2 X 100%)

PROCESS WATER STORAGE BASIN

M/D6 FROM BYPRODUCT WASTE SILO AREA SUMP PUMPS

REAGENT PREPARATION

TO BLEED TANKS W/L4

TO ABSORBER RECYCLE TANK J/H6

ABSORBER AREA SUMP PUMPS (2 X 100%)

ABSORBER MODULE (1 X 100%)

EMERGENCY QUENCH B/K3

REAGENT FEED A/G2

RECYCLE PUMPS (6 X 20%)

AIR

OXIDATION AIR BLOWERS (2 X 100%)

SERVICE WATER F/K3

FROM ABSORBER AREA SUMP PUMPS J/H3

ABSORBER BLEED PUMPS (2 X 100%)

MAINTENANCE STORAGE TANK TRANSFER PUMPS (2 X 100%)

MAINTENANCE STORAGE TANK (1 X 100%)

FLUE GAS TREATMENT

NEW WET STACK SHELL AND LINER (1 X 100%)

TO OX. AIR F/H5

TO BALL MILLS E/D2

D/E7 TO RECYCLE BYPRODUCT PREMIX TANKS & LIME SLAKERS

SERVICE WATER USERS

SERVICE WATER PUMPS (2 X 100%)

B/H4 DIESEL EMERGENCY QUENCH PUMP (1 X 100%)

SERVICE WATER TRANSFER PUMPS (2 X 100%)

LANDFILL SERVICE WATER TANKS (2 X 100%) (CROSSTIED)

LANDFILL SERVICE WATER TRANSFER PUMPS (2 X 100%)

SERVICE WATER USERS

U/J7 TO WASTE PIN MIXERS (MSK-IAQCS-PFD-002)

MIST ELIMINATOR WASH PUMPS (2 X 100%)

SERVICE WATER TANKS (2 X 100%) (20,000 GAL. EACH) (CROSSTIED)

DUPLEX SELF CLEANING STRAINER (2 X 100%)

RIVER WATER BOOSTER PUMPS (2 X 100%)

TIE-IN TO PLANT RIVER WATER SYSTEM

W/H3

GYPSUM SLURRY TRANSFER PUMPS (2 X 100%)

BLEED TANKS (2 X 100%) (CROSSTIED)

AUXILIARY PUMP HOUSE BUILDING SUMP PUMPS (2 X 100%)

H/N6 FROM DEWATERING AREA SUMP PUMPS

X/K8 FROM GYPSUM STORAGE RUNOFF POND SUMP PUMPS (MSK-IAQCS-PFD-002)

HYDRO-CLONE FEED TANKS (2 X 75%) (CROSSTIED)

HYDRO-CLONE FEED PUMPS (2 X 100%)

HYDROCLONES (2 X 100%)

G/K7 TO LANDFILL RECLAIM WATER TANKS

VACUUM BELT FILTERS (2 X 100%)

VACUUM RECEIVERS (2 X 100%)

G/M6 FROM HYDROCLONES

FILTRATE PUMPS (2 X 100%)

VACUUM PUMPS (2 X 100%)

TO HYDROCLONE FEED TANKS H/K6

DEWATERING AREA SUMP PUMPS (2 X 100%)

O/H5 TO BYPRODUCT HANDLING SYSTEM (MSK-IAQCS-PFD-002)

LANDFILL RECLAIM WATER TANKS (2 X 100%) (CROSSTIED)

RECLAIM WATER TRANSFER PUMPS (2 X 100%)

RECLAIM WATER PUMPS (2 X 100%)

RECLAIM WATER TANKS (2 X 100%) (230,000 GAL. EACH) (CROSSTIED)

BYPRODUCT DEWATERING

NOTES

1. FABRIC FILTER WILL INCLUDE 2 BROKEN BAG DETECTORS PER COMPARTMENT.
2. EACH SLAKER AND PRE-MIX TANK WILL INCLUDE VAPOR CANISTERS AND DUST VAPOR SCRUBBERS (1 X 100%).

AMERICAN ELECTRIC POWER
BIG SANDY PLANT FGD PROJECT
ORDER-OF-MAGNITUDE COST ESTIMATE
INTEGRATED AIR QUALITY CONTROL SYSTEM (IAQCS) TECHNOLOGY

REV	DATE RELEASED	PURPOSE	
C	09/10/2010	ISSUED FOR USE	PREPARED
B	08/09/2010	ISSUED FOR USE	REVIEWED
A	07/06/2010	ISSUED FOR REVIEW	APPROVED

DRAWING RELEASE RECORD

DATE	NO.	DESCRIPTION	APPD.

REVISIONS

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PROFESSIONAL ENGINEER'S STAMP

KENTUCKY POWER CO.
BIG SANDY PLANT
UNIT 2
BIG SANDY KENTUCKY

BIG SANDY FGD PROJECT
PROCESS FLOW DIAGRAM
INTEGRATED AIR QUALITY CONTROL SYSTEM (IAQCS)

DWG. NO. MSK-IAQCS-PFD-001_C

SCALE: NONE
DR:
CH:
APPROVED BY:
DATE:

AEP SERVICE CORP.
1 RIVERSIDE PLAZA
COLUMBUS, OH 43215

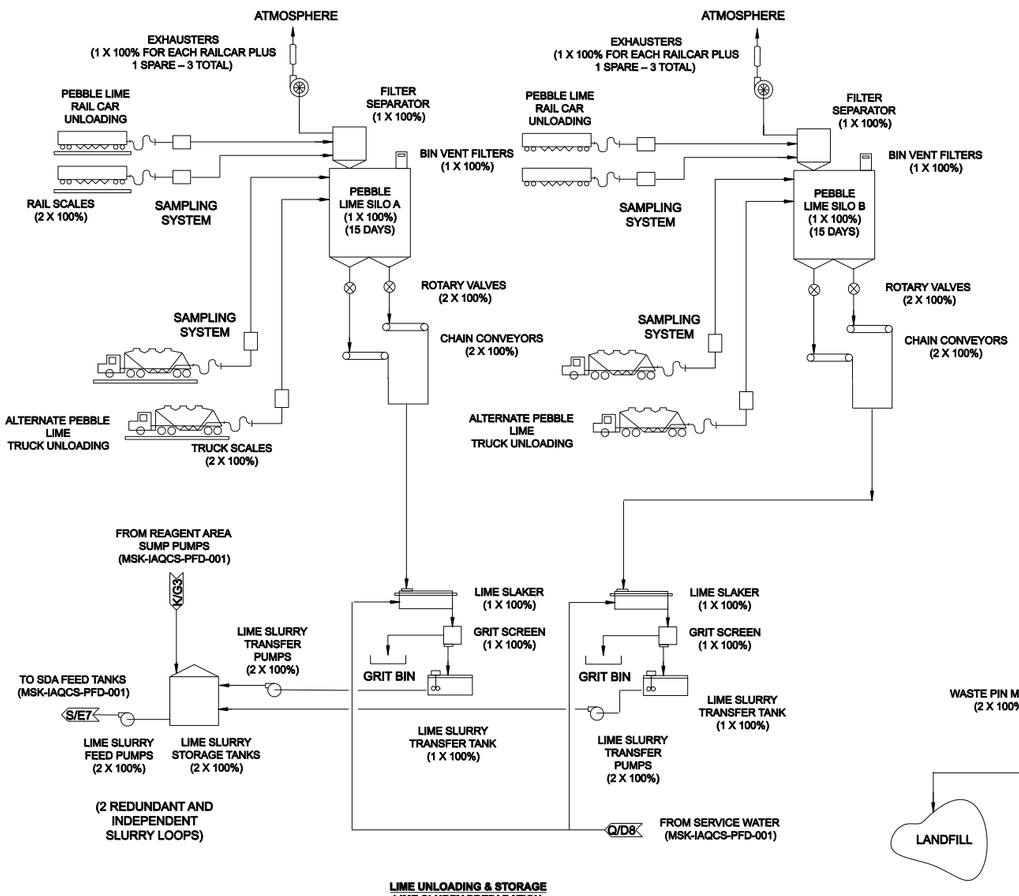
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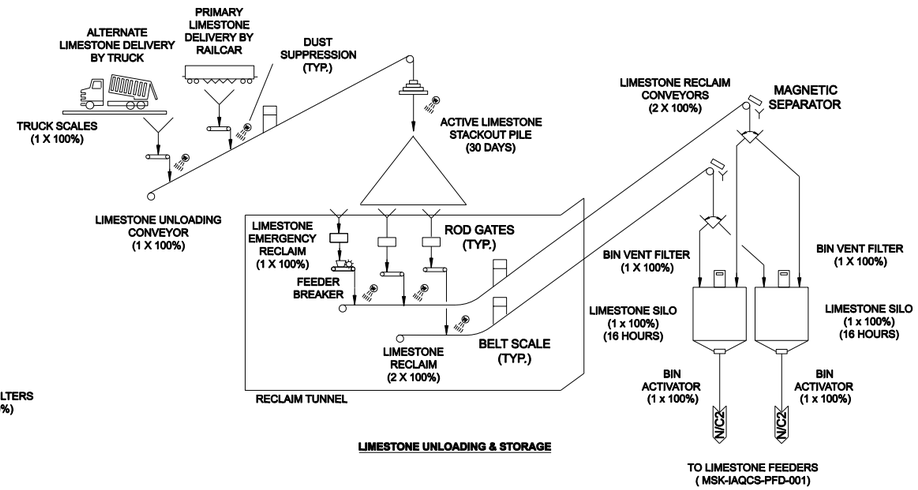
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SYSTEM DATE: DD-MMM-YYYY
SYSTEM TIME: HOUR:MINUTE

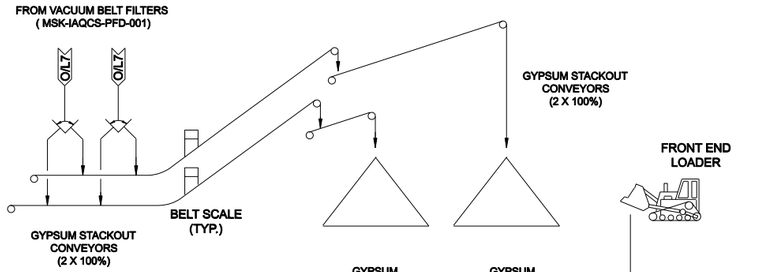
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DWG. NO. MSK-IAQCS-PFD-002_B

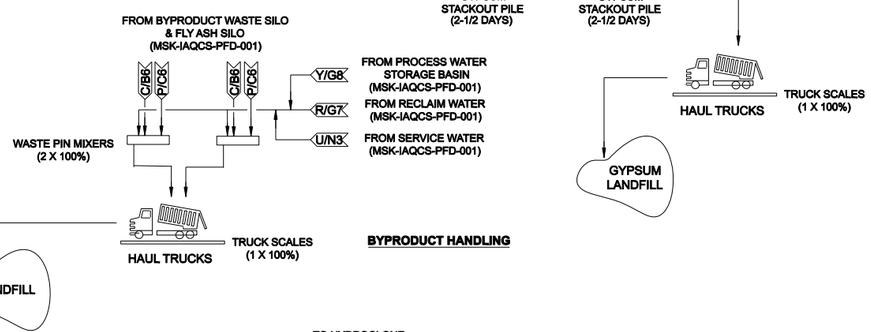




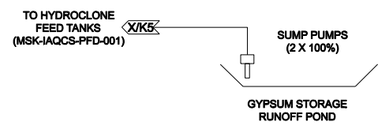
LIMESTONE UNLOADING & STORAGE



LIME UNLOADING & STORAGE
LIME SLURRY PREPARATION



BYPRODUCT HANDLING



AMERICAN ELECTRIC POWER
BIG SANDY PLANT FGD PROJECT
ORDER-OF-MAGNITUDE COST ESTIMATE
INTEGRATED AIR QUALITY CONTROL SYSTEM (IAQCS)
TECHNOLOGY

NOTES

REV	DATE RELEASED	PURPOSE	
C	09/10/2010	ISSUED FOR USE	PREPARED
B	08/09/2010	ISSUED FOR USE	REVIEWED
A	07/06/2010	ISSUED FOR REVIEW	APPROVED

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DATE	NO.	DESCRIPTION	APPD.

REVISIONS

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PROFESSIONAL ENGINEER'S STAMP

CONTRACTOR/INSTALLER SHALL TAKE ALL APPROPRIATE SAFETY PRECAUTIONS FOR THE WORK TO BE PERFORMED AND CREATED ON THE WORK SITE, INCLUDING CONTRACTOR'S/ INSTALLER'S PERSONNEL (OR THAT OF ITS SUBCONTRACTORS) PERFORMING THE WORK.

KENTUCKY POWER CO.
BIG SANDY PLANT
UNIT 2
BIG SANDY KENTUCKY

FILE NAME: MSK-IAQCS-PFD-002.DGN

BIG SANDY FGD PROJECT
PROCESS FLOW DIAGRAM
INTEGRATED AIR QUALITY CONTROL SYSTEM
(IAQCS)

DWG. NO. MSK-IAQCS-PFD-002_C

SCALE: NONE
DR:
CH:
APPROVED BY:
DATE:

AEP AMERICAN ELECTRIC POWER
AEP SERVICE CORP.
1 RIVERSIDE PLAZA
COLUMBUS, OH 43215

SYSTEM DATE: DD-MMM-YYYY
SYSTEM TIME: HOUR:MINUTE

IGS0694

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ATTACHMENT 4-2
IAQCS Site Plan and General Arrangement Drawings

DWG. NO. MSK-IAQCS-GA-001_D

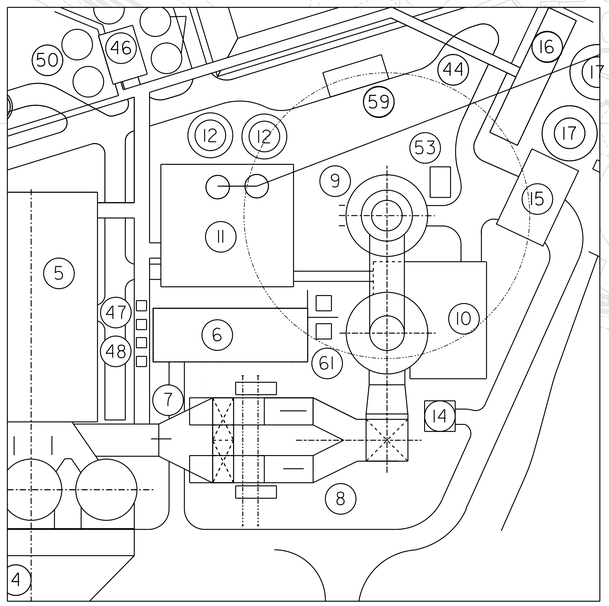
FACILITIES LEGEND (SEE NOTE 5)

1	EXISTING UNIT 1 & 2 CHIMNEY	17	PEBBLE LIME SILOS (54' DIAM) •	31	HYDROGEN STORAGE (RELOCATED) WITH EXCLUSION ZONE •	44	PIPE RACK •	56	PHASE II DUCTWORK EXTENSION TO WFGD
2	BOOSTER FAN OUTLET	18	LIME UNLOADING BLOWER/ELECTRICAL BUILDING •	32	138 kV FGD SUBSTATION •	45	MAINTENANCE STORAGE TANK	57	LIMESTONE RAIL UNLOADING TRACK HOPPER •
3	PRECIPITATOR OUTLET DUCT	19	LIME RAILCAR UNLOADING PAD •	33	TRANSFORMER PDC •	46	AUXILIARY PUMPHOUSE BUILDING W/EE ROOM (35'x50')	58	RAIL SCALE •
4	SPRAY DRYER ABSORBER (SDA) VESSEL •	20	LIMESTONE UNLOADING PDC	34	138 kV POWER LINES •	47	HVAC UNITS •	59	TRUCK SCALE •
5	FABRIC FILTER (130'x225') •	21	LIMESTONE TRANSFER CONVEYOR	35	NEW TRANSMISSION TOWER •	48	480 V TRANSFORMERS •	60	LIMESTONE RECLAIM PDC
6	I.D FAN PDC/CONTROL ROOM (52'-6"x150') •	22	LIMESTONE TRANSFER TOWER	36	138 kV TRANSMISSION LINE EXCLUSION ZONE (35 FT.) •	49	RECLAIM WATER TANKS	61	4.16 kV TRANSFORMERS •
7	I.D. FAN W/ AUX. EQUIPMENT •	23	LIMESTONE STACKOUT PILE (180' DIAM)	37	RECYCLE ASH BLOWER BUILDING	50	BLEED TANKS	62	13.8 kV LINE ON PIPE RACK & FO CABLE •
8	I.D. FAN OUTLET DUCT •	24	LIMESTONE RECLAIM CONVEYOR		W/RECYCLE SILO (65'x100') •	51	FLYASH BLOWER BUILDING W/EE ROOM (20'x110') •	63	OH 13.8 kV LINE & FO CABLE •
9	CHIMNEY W/280 FT. DIA. CONSTRUCTION EXCLUSION ZONE •	25	PROCESS WATER STORAGE BASIN •	38	LIME SLURRY STORAGE TANKS •	52	138/13.8 kV FGD/SCR TRANSFORMERS • (REPLACE EXISTING SCR TRANSFORMERS)		
10	ABSORBER & ABSORBER BUILDING W/EE ROOM	26	AIR COMPRESSOR BUILDING •	39	ASH BLOWER BUILDING W/EE ROOM (30'x90') •				
11	REAGENT PREP BUILDING (120'x130')	27	SERVICE WATER TANKS •	40	BYPRODUCT WASTE SILO •	53	CEMS BUILDING •		
12	LIMESTONE SLURRY STORAGE TANKS (44' DIAM)	28	ALTERNATE DUCT ARRANGEMENT W/O ESP	41	FLY ASH SILO •	54	PROCESS WATER STORAGE BASIN SUMP •		
13	NOT USED	29	EXISTING WAREHOUSE BUILDING (RELOCATED) •	42	STORMWATER RUNOFF POND •	55	HAUL ROAD TERMINAL POINT		
14	OXIDATION BLOWER BUILDING (30'x30')	30	NEW HAZARDOUS WASTE STORAGE BUILDING •	43	STORMWATER POND SUMP STRUCTURE •				
15	LIME TRUCK UNLOADING •								
16	LIME SLAKER BUILDING •								

SEE NOTE 6.

SEE NOTE 4.

PIPE RACK CONT. TO DEWATERING ISLAND SHOWN ON DWG. MSK-IAQCS-GA-002



PARTIAL PLAN

(NON-PHASED CONSTRUCTION SEQUENCE LAYOUT. SEE NOTE 4)

THIS SYMBOL DENOTES THE BASE COORDINATE OF THE PLANT GRID SYSTEM.

GRAPHIC SCALE: 1"= 100'-0"

PLANT NORTH

NOTES

1. DRY FGD EQUIPMENT SHOWN ON GA HAS BEEN SIZED FOR WORST CASE COAL: 3.0 LBS SO2/MMBTU.
2. WET FGD EQUIPMENT SHOWN ON GA HAS BEEN SIZED FOR WORST CASE COAL: 7.5 LBS SO2/MMBTU.
3. FOR OPTION W/O ESP, DUCT SEGMENT 28 IS ADDED AND ITEMS 2, 4 AND 5 ARE REMOVED.
4. THE IAQC LAYOUT ON THE GA IS BASED UPON A PHASED CONSTRUCTION SEQUENCE. NOTE THAT A SECOND BREECHING BLOCKOUT IS REQUIRED IN THE CHIMNEY SHELL FOR THE NON-PHASED CONSTRUCTION SEQUENCE (4.5 LB AND 7.5 LB COALS) THE WFGD ABSORBER AND CHIMNEY POSITIONS WOULD BE SWAPPED TO REDUCE DUCTWORK LENGTHS. SEE PARTIAL PLAN.
5. LEGEND FACILITIES WITH AN ASTERIK (•) WILL BE COMPLETED IN PHASE I OF THE PHASED CONSTRUCTION SEQUENCE.
6. THE PROCESS WATER STORAGE BASIN IS ONLY REQUIRED FOR THE PHASED OPTIONS (1.7 LB AND 3.0 LB COALS).

DATE	NO.	DESCRIPTION	APPD.

REVISIONS

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KENTUCKY POWER CO.

BIG SANDY PLANT UNIT 2

BIG SANDY KENTUCKY

BIG SANDY FGD PROJECT

IAQCS SITE PLAN

DWG. NO. MSK-IAQCS-GA-001_D

SCALE: 1"=100'-0"

DR: CH: APPROVED BY: DATE:

FILE NAME: MSK-IAQCS-GA-001.DGN

REV	DATE RELEASED	PURPOSE	
D	09/29/2010	ISSUED FOR USE	
C	09/10/2010	ISSUED FOR USE	
B	08/09/2010	ISSUED FOR USE	
A	07/14/2010	ISSUED FOR REVIEW	

DRAWING RELEASE RECORD

PREPARED
REVIEWED
APPROVED

PROFESSIONAL ENGINEER'S STAMP

Sargent & Lundy

CONTRACTOR/INSTALLER SHALL TAKE ALL APPROPRIATE PRECAUTIONS TO ENSURE THE SAFETY OF ALL PEOPLE LOCATED ON THE WORK SITE, INCLUDING CONTRACTOR'S/INSTALLER'S PERSONNEL (OR THAT OF ITS SUBCONTRACTORS) PERFORMING THE WORK.

AEP AMERICAN ELECTRIC POWER

AEP SERVICE CORP.
1 RIVERSIDE PLAZA
COLUMBUS, OH 43215

SYSTEM DATE: DD-MMM-YYYY
SYSTEM TIME: HOUR:MINUTE

IGS0694

DWG. NO. MSK-IAQCS-GA-002_C

FACILITIES LEGEND

1	BYPRODUCT DEWATERING BUILDING (WITH EE ROOM)	9	GYPSUM PILE CONTAINMENT WALL AND WIND SCREEN	17	HAUL ROAD INTERFACE TO GYPSUM LANDFILL
2	LANDFILL RECLAIM WATER TANKS	10	HYDROCLONE FEED TANKS	18	CONTAINMENT RUNOFF POND
3	LANDFILL SERVICE WATER TANKS	11	GYPSUM AREA RUNOFF POND	19	CONTAINMENT POND SUMP STRUCTURE
4	GYPSUM STACK-OUT CONVEYOR	12	GYPSUM POND SUMP STRUCTURE		
5	GYPSUM STACK-OUT PILES	13	4.16 kV TRANSFORMERS		
6	PIPE RACK (INCL. TRAY FOR ELECTRICAL AND I&C)	14	13.8 kV LINE & FO CABLE ON PIPE RACK		
7	HVAC UNITS	15	OVERHEAD 13.8 kV LINE & FO CABLE		
8	480 V TRANSFORMERS	16	SECURITY GATE AND FENCE		



FOR CONTINUATION
SEE DWG:
MSK-IAQCS-GA-001

GRAPHIC SCALE: 1"= 100'-0"

PLANT NORTH

NOTES

1. EQUIPMENT SHOWN ON GA HAS BEEN SIZED FOR WORST CASE COAL: 7.5 LBS SO2/MMBTU.

DATE	NO.	DESCRIPTION	APPD.

REVISIONS

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KENTUCKY POWER CO.

BIG SANDY PLANT
UNIT 2

BIG SANDY KENTUCKY

BIG SANDY FGD PROJECT

IAQCS SITE PLAN

DWG. NO. MSK-IAQCS-GA-002_C

SCALE: 1"=100'-0"

DR:

CH:

APPROVED BY:

DATE:

FILE NAME: MSK-IAQCS-GA-002.DGN

REV	DATE RELEASED	PURPOSE	
C	09/10/2010	ISSUED FOR USE	PREPARED
B	08/09/2010	ISSUED FOR USE	REVIEWED
A	07/14/2010	ISSUED FOR REVIEW	APPROVED

DRAWING RELEASE RECORD

PROFESSIONAL ENGINEER'S STAMP

Sargent & Lundy

CONTRACTOR/INSTALLER SHALL TAKE ALL APPROPRIATE PRECAUTIONS TO ENSURE THE SAFETY OF ALL PEOPLE LOCATED ON THE WORK SITE, INCLUDING CONTRACTOR'S PERSONNEL, OR THAT OF ITS SUBCONTRACTOR(S) PERFORMING THE WORK

AEP SERVICE CORP.
1 RIVERSIDE PLAZA
COLUMBUS, OH 43215

IGS0694

SYSTEM DATE: DD-MMM-YYYY
SYSTEM TIME: HOUR:MINUTE

DWG. NO. MSK-IAQCS-GA-003_C

FACILITIES LEGEND (SEE NOTE 5)

1	EXISTING UNIT 1 & 2 CHIMNEY	17	PEBBLE LIME SILOS (54'-DIAM) •	33	TRANSFORMER PDC (35'x65') •	42	STORMWATER RUNOFF POND •	52	138/13.8 kV FGD/SCR TRANSFORMERS • (REPLACE EXISTING SCR TRANSFORMERS)
2	BOOSTER FAN OUTLET	18	LIME UNLOADING BLOWER/ELECTRICAL BUILDING •	34	138 kV POWER LINES •	43	STORMWATER POND SUMP STRUCTURE •	53	CEMS BUILDING •
3	PRECIPITATOR OUTLET DUCT	19	LIME RAILCAR UNLOADING PAD •	35	NEW TRANSMISSION TOWER •	44	PIPE RACK •	54	PROCESS WATER STORAGE BASIN SUMP •
4	SPRAY DRYER ABSORBER (SDA) VESSEL •	20	LIMESTONE UNLOADING PDC	36	138 kV TRANSMISSION LINE EXCLUSION ZONE (35 FT.)	45	MAINTENANCE STORAGE TANK	55	HAUL ROAD TERMINAL POINT
5	FABRIC FILTER (130'x225') •	21	LIMSTONE TRANSFER CONVEYOR	37	RECYCLE ASH BLOWER BUILDING	46	AUXILIARY PUMPHOUSE BUILDING W/EE ROOM (35'x50')		
6	I.D FAN PDC/CONTROL ROOM (52'-6'x150') •	22	LIMESTONE TRANSFER TOWER		W/RECYCLE SILO (65'x100') •	47	HVAC UNITS •		
7	I.D. FAN W/ AUX. EQUIPMENT •	23	LIMESTONE STACKOUT PILE (180' DIAM)	38	LIME SLURRY STORAGE TANKS •	48	480 V TRANSFORMERS •		
8	I.D. FAN OUTLET DUCT •	24	LIMESTONE RECLAIM CONVEYOR	39	ASH BLOWER BUILDING W/EE ROOM (30'x90') •	49	RECLAIM WATER TANKS		
9	CHIMNEY W/280 FT. DIA. CONSTRUCTION EXCLUSION ZONE •	25	PROCESS WATER STORAGE BASIN	40	BYPRODUCT WASTE SILO •	50	BLEED TANKS		
10	ABSORBER & ABSORBER BUILDING W/EE ROOM	26	AIR COMPRESSOR BUILDING (60'x100') •	41	FLY ASH SILO •	51	FLYASH BLOWER BUILDING W/EE ROOM (120'x110') •		

56	PHHASE II DUCTWORK EXTENSION TO WFGD
57	LIMESTONE RAIL UNLOADING TRACK HOPPER
58	RAIL SCALE
59	TRUCK SCALE
60	LIMESTONE RECLAIM PDC (15'x40')
61	4.16 kV TRANSFORMERS
62	13.8 kV LINE ON PIPE RACK & FO CABLE
63	OH 13.8 kV LINE & FO CABLE

NOTES

1. DRY FGD EQUIPMENT SHOWN ON GA HAS BEEN SIZED FOR WORST CASE COALS 3.0 LBS SO2/MMBTU.
2. WET FGD EQUIPMENT SHOWN ON GA HAS BEEN SIZED FOR WORST CASE COALS 7.5 LBS SO2/MMBTU.
3. FOR OPTION W/O ESP, DUCT SEGMENT 28 IS ADDED AND ITEMS 2, X AND S ARE REMOVED.
4. THE IAQC LAYOUT ON THE GA IS BASED UPON A PHASED CONSTRUCTION SEQUENCE. NOTE THAT A SECOND BREECHING BLOCKOUT IS REQUIRED IN THE CHIMNEY SHELL FOR THE NON-PHASED CONSTRUCTION SEQUENCE (4.5 LB AND 7.5 LB COALS). THE WFGD ABSORBER AND CHIMNEY POSITIONS WOULD BE SWAPPED TO REDUCE DUCTWORK LENGTHS. SEE PARTIAL PLAN (DRAWING MSK-IAQCS-GA-004).
5. LEGEND FACILITIES WITH AN ASTERIK (*) WILL BE COMPLETED IN PHASE I OF THE PHASED CONSTRUCTION SEQUENCE.
6. THE PROCESS WATER STORAGE BASIN IS ONLY REQUIRED FOR THE PHASED OPTIONS (1.7 LB AND 3.0 LB COALS).

DATE	NO.	DESCRIPTION	APPD.
		REVISIONS	

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KENTUCKY POWER CO.

BIG SANDY PLANT

BIG SANDY KENTUCKY

BIG SANDY FGD PROJECT

IAQCS SITE PLAN

DWG. NO. MSK-IAQCS-GA-003_C

SCALE: 1"=50'-0"

DR: CH:

APPROVED BY

DATE:

FILE NAME: MSK-IAQCS-GA-003.DGN

REV	DATE RELEASED	PURPOSE	
C	09/29/2010	ISSUED FOR USE	PREPARED
B	09/10/2010	ISSUED FOR USE	REVIEWED
A	08/09/2010	ISSUED FOR REVIEW	APPROVED

DRAWING RELEASE RECORD

PROFESSIONAL ENGINEER'S STAMP

Bergere & Lundy...

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AEP AMERICAN ELECTRIC POWER

AEP SERVICE CORP.
1 RIVERSIDE PLAZA
COLUMBUS, OH 43215

SYSTEM DATE: DD-MMM-YYYY
SYSTEM TIME: HOURMINUTE

IGS0694

GRAPHIC SCALE: 1"= 50'-0"

THIS SYMBOL DENOTES THE BASE COORDINATE OF THE PLANT GRID SYSTEM.

PLANT NORTH

DWG. NO. MSK-IAQCS-GA-004_B

FACILITIES LEGEND

1	BYPRODUCT DEWATERING BUILDING (WITH EE ROOM)	9	GYPSUM PILE CONTAINMENT WALL AND WIND SCREEN	17	HAUL ROAD INTERFACE TO GYPSUM LANDFILL
2	LANDFILL RECLAIM WATER TANKS (30' DIAM)	10	HYDROCLONE FEED TANKS (30' DIAM)		
3	LANDFILL SERVICE WATER TANKS (30' DIAM)	11	GYPSUM AREA RUNOFF POND		
4	GYPSUM STACK-OUT CONVEYOR	12	GYPSUM POND SUMP STRUCTURE		
5	GYPSUM STACK-OUT PILES (120' DIAM)	13	4.16 kV TRANSFORMERS		
6	PIPE RACK (INCL. TRAY FOR ELECTRICAL AND I&C)	14	13.8 kV LINE & FO CABLE ON PIPE RACK		
7	HVAC UNITS	15	OVERHEAD 13.8 kV LINE & FO CABLE		
8	480 V TRANSFORMERS	16	SECURITY GATE & FENCE		



PLANT NORTH

GRAPHIC SCALE: 1"= 50'-0"
0' 25' 50' 100' 150'

NOTES

1. EQUIPMENT SHOWN ON GA HAS BEEN SIZED FOR WORST CASE COAL: 7.5 LBS SO2/MMBTU.

REV	DATE RELEASED	PURPOSE	
B	09/10/2010	ISSUED FOR USE	PREPARED
A	08/09/2010	ISSUED FOR REVIEW	REVIEWED
			APPROVED

DRAWING RELEASE RECORD

CONTRACTOR/INSTALLER SHALL TAKE ALL APPROPRIATE PRECAUTIONS TO ENSURE THE SAFETY OF ALL PEOPLE (EMPLOYEES, THE PUBLIC, AND CONTRACTOR'S/ INSTALLER'S PERSONNEL) FOR THAT OF ITS SUBCONTRACTOR'S PERFORMING THE WORK.

PROFESSIONAL ENGINEER'S STAMP

Sargent & Lundy

DATE	NO.	DESCRIPTION	APPD.
		REVISIONS	

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KENTUCKY POWER CO.

BIG SANDY PLANT

BIG SANDY KENTUCKY

BIG SANDY FGD PROJECT

IAQCS SITE PLAN

DWG. NO. MSK-IAQCS-GA-004_B

FILE NAME: MSK-IAQCS-GA-004.DGN

SCALE: 1"=50'-0"

DR:

CH:

APPROVED BY

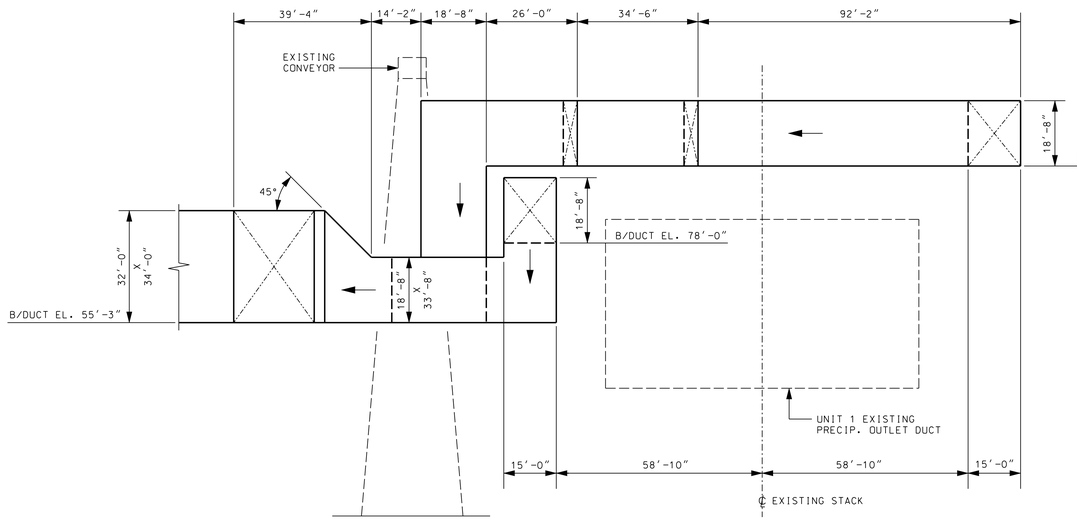
DATE:

AEP SERVICE CORP.
1 RIVERSIDE PLAZA
COLUMBUS, OH 43215

SYSTEM DATE: DD-MMM-YYYY
SYSTEM TIME: HOUR:MINUTE

IGS0694

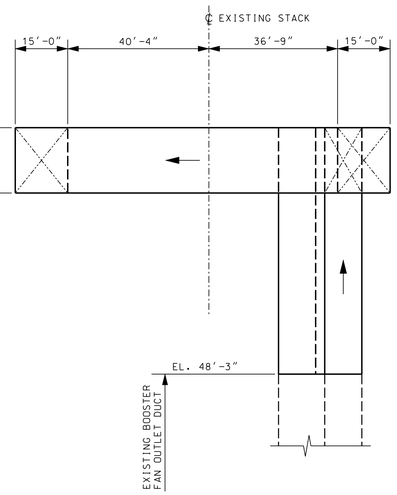
DWG. NO. MSK-IAQCS-GA-005_B



SECTION A-A (LOOKING EAST)

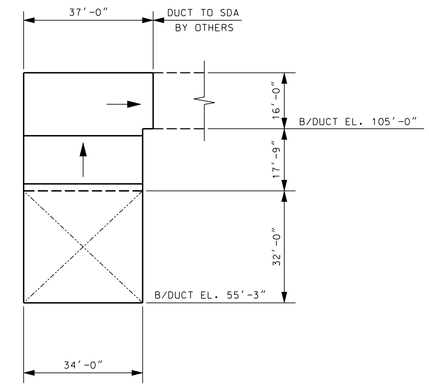
(ESP IN)

MSK-IAQCS-GA-003



SECTION B-B (LOOKING NORTH)

MSK-IAQCS-GA-003

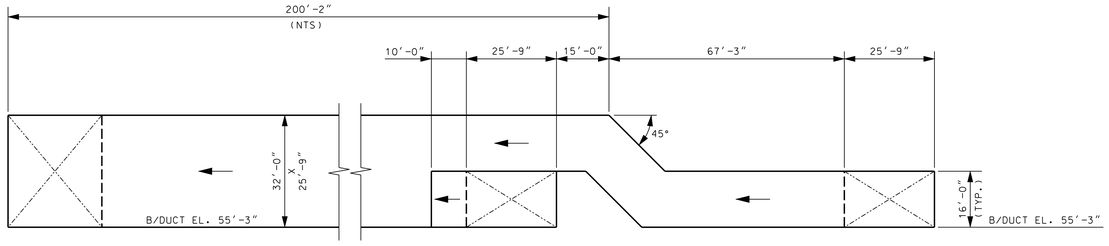


SECTION E-E (LOOKING WEST)

MSK-IAQCS-GA-003

NOTES

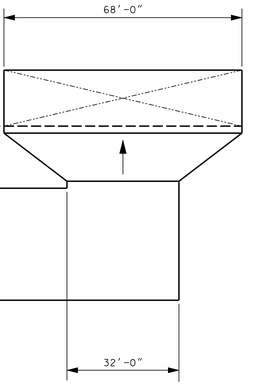
1. ALL DIMENSIONS AND ELEVATIONS SHOWN ARE PRELIMINARY AND FOR USE IN THE BIG SANDY FGD ORDER-OF-MAGNITUDE ESTIMATE ONLY.



SECTION C-C (LOOKING EAST)

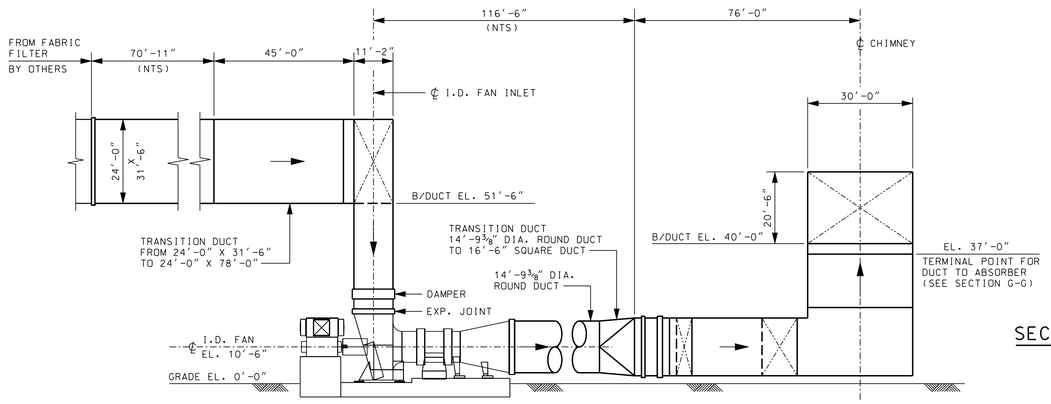
(ESP OUT)

MSK-IAQCS-GA-003



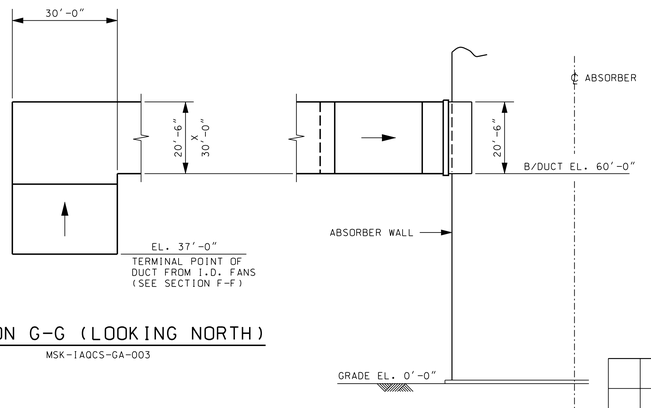
SECTION D-D (LOOKING NORTH)

MSK-IAQCS-GA-003



SECTION F-F (LOOKING NORTH)

MSK-IAQCS-GA-003



SECTION G-G (LOOKING NORTH)

MSK-IAQCS-GA-003

SECTION H-H (LOOKING WEST)

MSK-IAQCS-GA-003

DATE	NO.	DESCRIPTION	APPD.
		REVISIONS	

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KENTUCKY POWER CO.

BIG SANDY PLANT
UNIT 2

BIG SANDY KENTUCKY

BIG SANDY FGD PROJECT
IAQCS GA DUCT LAYOUT
SECTIONS

DWG. NO. MSK-IAQCS-GA-005_B

SCALE: 3/64" = 1'-0"

DRN

CHK

APPROVED BY

DATE:

FILE NAME: MSK-IAQCS-GA-005.DGN

PROFESSIONAL ENGINEER'S STAMP

Bechtel Lundy

REV	DATE RELEASED	PURPOSE	
B	09/10/2010	ISSUED FOR USE	PREPARED
A	08/09/2010	ISSUED FOR REVIEW	REVIEWED
			APPROVED

DRAWING RELEASE RECORD

CONTRACTOR/INSTALLER SHALL TAKE ALL APPROPRIATE PRECAUTIONS TO ENSURE THE SAFETY OF ALL PEOPLE LOCATED ON THE WORK SITE, INCLUDING CONTRACTOR'S/INSTALLER'S PERSONNEL OR THAT OF ITS SUBCONTRACTORS PERFORMING THE WORK.

AEP AMERICAN ELECTRIC POWER

AEP SERVICE CORP.
1 RIVERSIDE PLAZA
COLUMBUS, OH 43215

SYSTEM DATE: DD-MMM-YYYY
SYSTEM TIME: HOURMINUTE

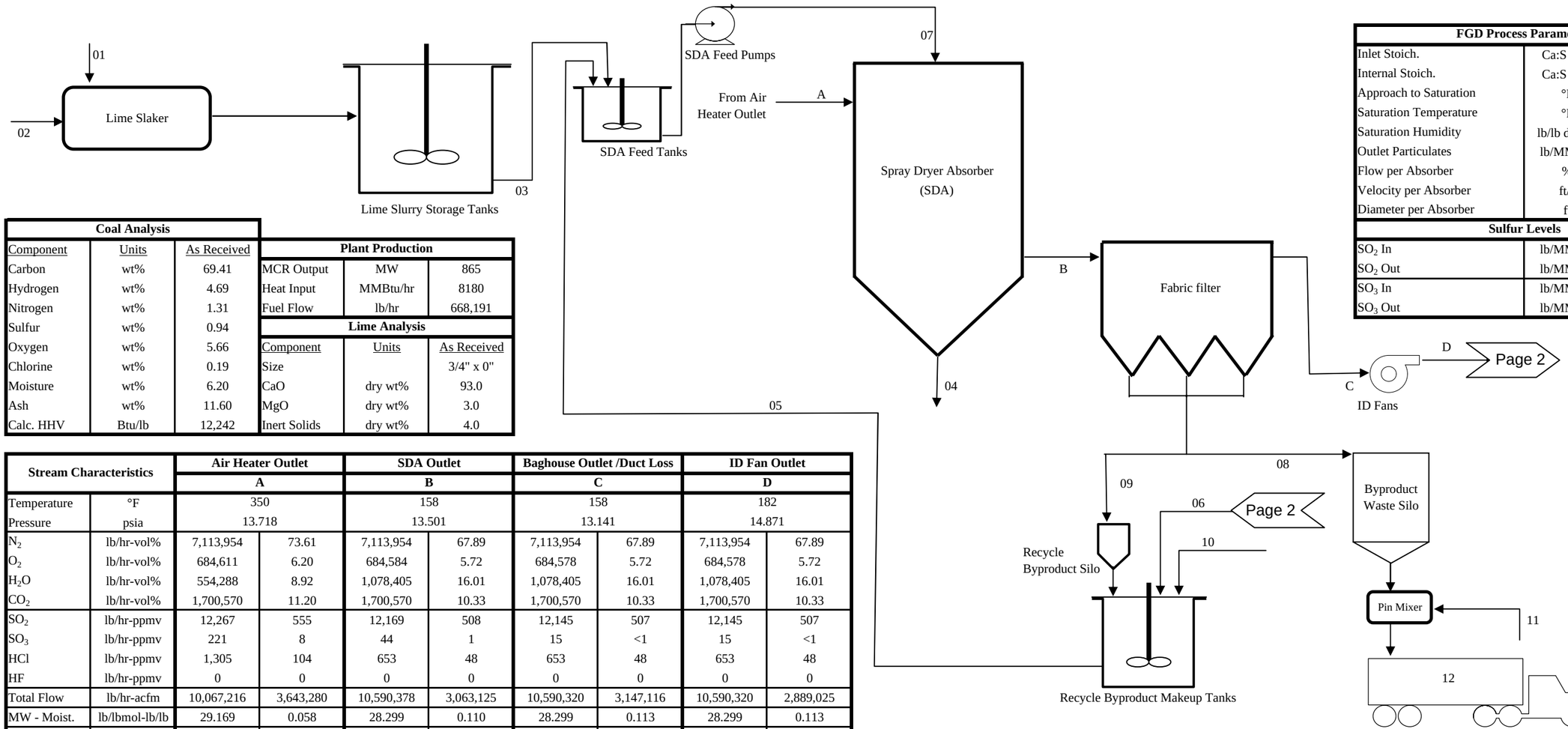
IGS0694

ATTACHMENT 4-3
IAQCS Mass Balances

Client: AEP
Station: Big Sandy - Unit 2

Mass Balance Integrated FGD (IAQCS) Technology -
1.7 lb SO_2/MMBtu Coal (w/o ESP)

Project No.12721-000
9/29/2010
Revision B



FGD Process Parameters		
Inlet Stoich.	Ca:S Inlet	0.1
Internal Stoich.	Ca:S Inlet	0.31
Approach to Saturation	°F	30
Saturation Temperature	°F	128
Saturation Humidity	lb/lb dry air	0.118
Outlet Particulates	lb/MMBtu	0.014
Flow per Absorber	%	33.3
Velocity per Absorber	ft/s	6.4
Diameter per Absorber	ft	64
Sulfur Levels		
SO_2 In	lb/MMBtu	1.500
SO_2 Out	lb/MMBtu	1.485
SO_3 In	lb/MMBtu	0.027
SO_3 Out	lb/MMBtu	0.002

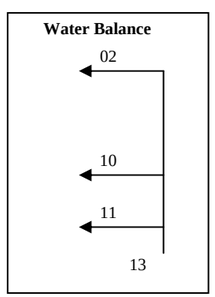
Coal Analysis		
Component	Units	As Received
Carbon	wt%	69.41
Hydrogen	wt%	4.69
Nitrogen	wt%	1.31
Sulfur	wt%	0.94
Oxygen	wt%	5.66
Chlorine	wt%	0.19
Moisture	wt%	6.20
Ash	wt%	11.60
Calc. HHV	Btu/lb	12,242

Plant Production		
MCR Output	MW	865
Heat Input	MMBtu/hr	8180
Fuel Flow	lb/hr	668,191

Lime Analysis		
Component	Units	As Received
Size		3/4" x 0"
CaO	dry wt%	93.0
MgO	dry wt%	3.0
Inert Solids	dry wt%	4.0

Stream Characteristics		Air Heater Outlet		SDA Outlet		Baghouse Outlet /Duct Loss		ID Fan Outlet	
		A		B		C		D	
Temperature	°F	350		158		158		182	
Pressure	psia	13.718		13.501		13.141		14.871	
N_2	lb/hr-vol%	7,113,954	73.61	7,113,954	67.89	7,113,954	67.89	7,113,954	67.89
O_2	lb/hr-vol%	684,611	6.20	684,584	5.72	684,578	5.72	684,578	5.72
H_2O	lb/hr-vol%	554,288	8.92	1,078,405	16.01	1,078,405	16.01	1,078,405	16.01
CO_2	lb/hr-vol%	1,700,570	11.20	1,700,570	10.33	1,700,570	10.33	1,700,570	10.33
SO_2	lb/hr-ppmv	12,267	555	12,169	508	12,145	507	12,145	507
SO_3	lb/hr-ppmv	221	8	44	1	15	<1	15	<1
HCl	lb/hr-ppmv	1,305	104	653	48	653	48	653	48
HF	lb/hr-ppmv	0	0	0	0	0	0	0	0
Total Flow	lb/hr-acfm	10,067,216	3,643,280	10,590,378	3,063,125	10,590,320	3,147,116	10,590,320	2,889,025
MW - Moist.	lb/lbmol-lb/lb	29.169	0.058	28.299	0.110	28.299	0.113	28.299	0.113
Ash	lb/hr-gr/acf	62,008	1.986	427,584	16.286	115	0.004	115	0.005

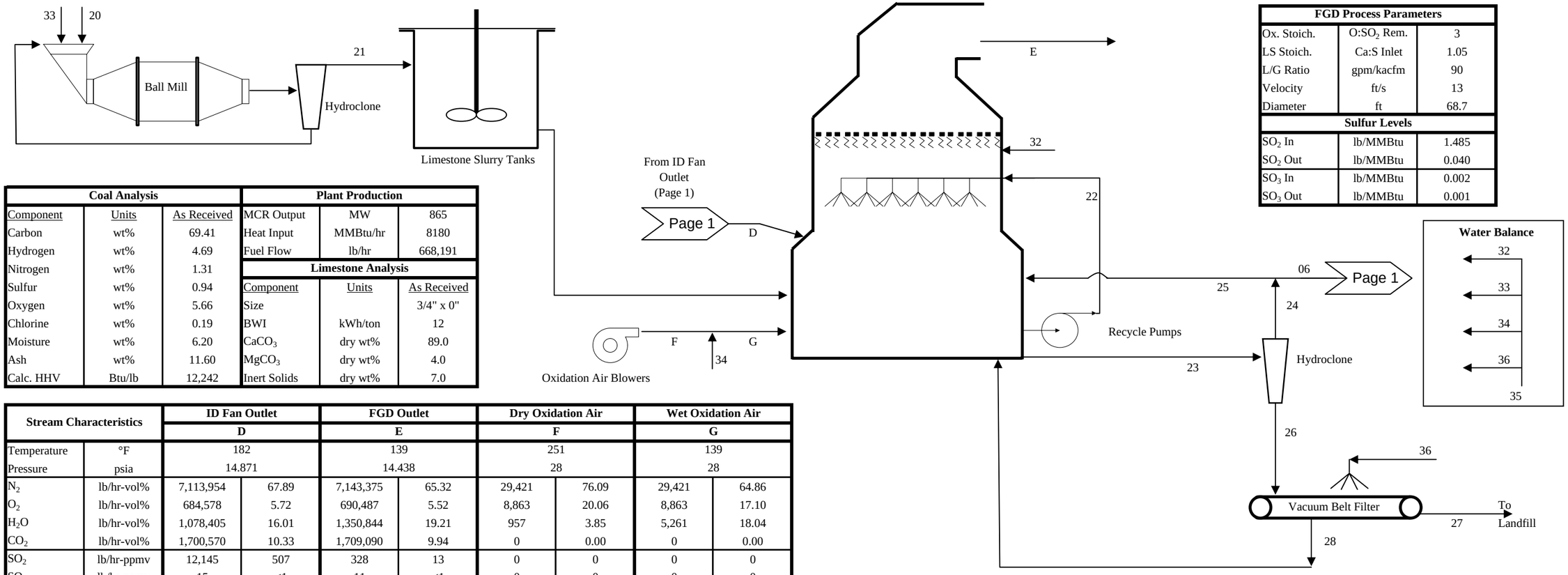
Stream Characteristics		Fresh Lime	Slaker H2O	Lime Slurry	Abs. Solids	Recycle	Purge	SDA Inlet	Waste Solids	Recycle Solids	Recycle H2O	Dust Control	Landfill	SDA Water
		01	02	03	04	05	06	07	08	09	10	11	12	13
Inert Solids	lb/hr	51	0	51		366,192	552	366,243	61,944	365,640	0	0	61,944	0
CaO	lb/hr	1,189	0	0		0	0	0	0	0	0	0	0	0
$Ca(OH)_2$	lb/hr	0	0	1,571		3,410	0	4,981	578	3,410	0	0	578	0
MgO	lb/hr	38	0	38		226	0	265	38	226	0	0	38	0
$CaSO_3*0.5H_2O$	lb/hr	0	0	0		2,049	0	2,049	347	2,049	0	0	347	0
$CaSO_4*2H_2O$	lb/hr	0	0	0		1,821	0	1,821	309	1,821	0	0	309	0
$CaCl_2 + CaF_2$	lb/hr	0	0	0		5,858	0	5,858	992	5,858	0	0	992	0
Total Solids	lb/hr	1,278	0	1,661		379,557	552	381,218	64,208	379,004	0	0	64,208	0
Water	lb/hr	0	4,257	3,875		569,335	52,906	573,210	7,134	42,112	474,318	20,383	27,518	498,959
Total Flow	lb/hr	1,278	4,257	5,536	TBD	948,892	53,458	954,428	71,342	421,116	474,318	20,383	91,726	498,959
Total Flow	gpm	---	9	9		1,467	107	1,477	---	---	948	41	---	997
Solids	wt%	100	0	30		40	1	40	90	90	0	0	70	0



Client: AEP
Station: Big Sandy - Unit 2

Mass Balance Integrated FGD (IAQCS) Technology -
1.7 lb SO_2/MMBtu Coal (w/o ESP)

Project No.12721-000
9/29/2010
Revision B



FGD Process Parameters		
Ox. Stoich.	$O:SO_2$ Rem.	3
LS Stoich.	Ca:S Inlet	1.05
L/G Ratio	gpm/kacfm	90
Velocity	ft/s	13
Diameter	ft	68.7
Sulfur Levels		
SO_2 In	lb/MMBtu	1.485
SO_2 Out	lb/MMBtu	0.040
SO_3 In	lb/MMBtu	0.002
SO_3 Out	lb/MMBtu	0.001

Coal Analysis			Plant Production		
Component	Units	As Received	MCR Output	MW	865
Carbon	wt%	69.41	Heat Input	MMBtu/hr	8180
Hydrogen	wt%	4.69	Fuel Flow	lb/hr	668,191
Nitrogen	wt%	1.31	**Limestone Analysis**		
Sulfur	wt%	0.94	Component	Units	As Received
Oxygen	wt%	5.66	Size		3/4" x 0"
Chlorine	wt%	0.19	BWI	kWh/ton	12
Moisture	wt%	6.20	$CaCO_3$	dry wt%	89.0
Ash	wt%	11.60	$MgCO_3$	dry wt%	4.0
Calc. HHV	Btu/lb	12,242	Inert Solids	dry wt%	7.0

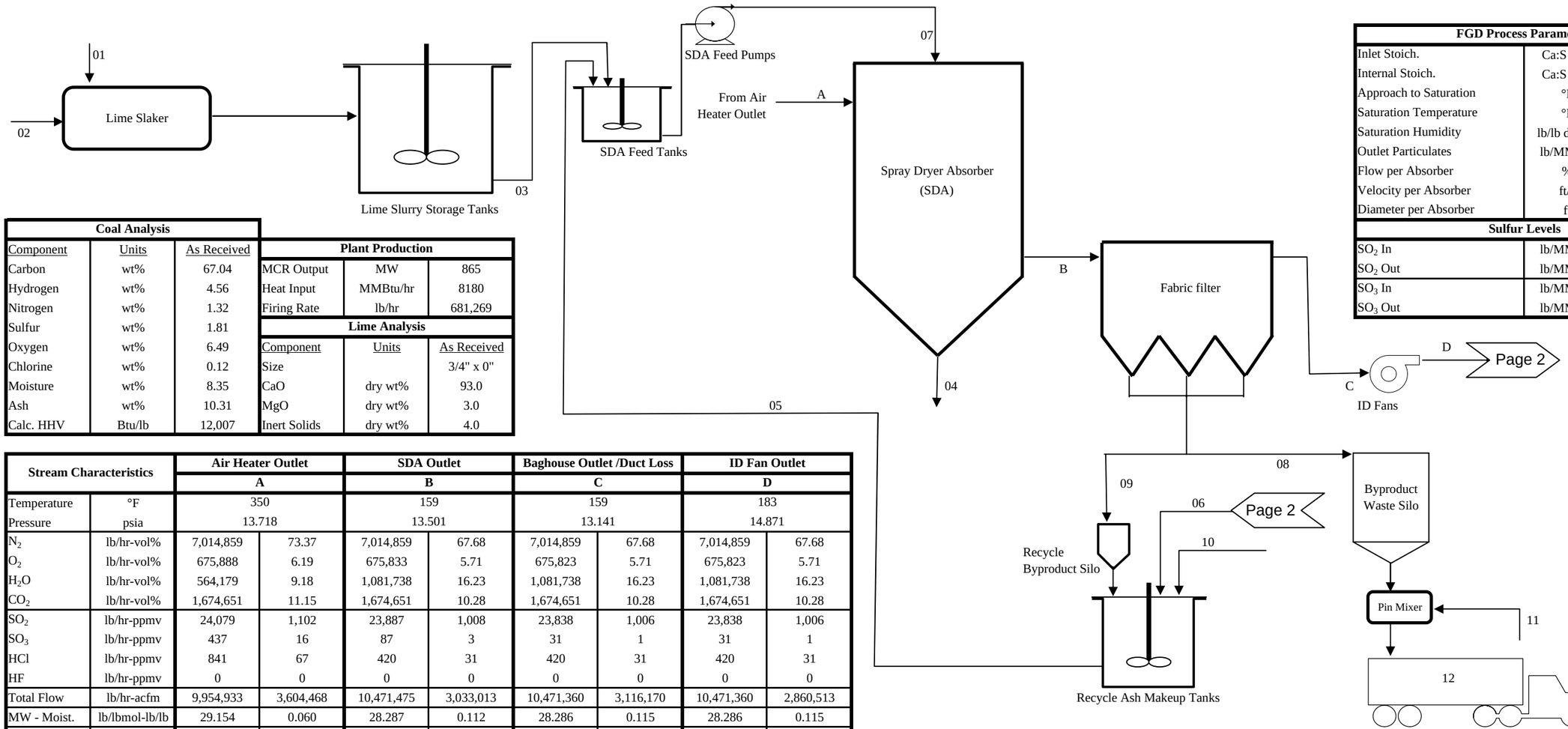
Stream Characteristics		ID Fan Outlet		FGD Outlet		Dry Oxidation Air		Wet Oxidation Air	
		D		E		F		G	
Temperature	°F	182		139		251		139	
Pressure	psia	14.871		14.438		28		28	
N_2	lb/hr-vol%	7,113,954	67.89	7,143,375	65.32	29,421	76.09	29,421	64.86
O_2	lb/hr-vol%	684,578	5.72	690,487	5.52	8,863	20.06	8,863	17.10
H_2O	lb/hr-vol%	1,078,405	16.01	1,350,844	19.21	957	3.85	5,261	18.04
CO_2	lb/hr-vol%	1,700,570	10.33	1,709,090	9.94	0	0.00	0	0.00
SO_2	lb/hr-ppmv	12,145	507	328	13	0	0	0	0
SO_3	lb/hr-ppmv	15	<1	11	<1	0	0	0	0
HCl	lb/hr-ppmv	653	48	0	0	0	0	0	0
HF	lb/hr-ppmv	0	0	0	0	0	0	0	0
Total Flow	lb/hr-acfm	10,590,320	2,889,025	10,894,134	2,894,798	39,241	6,308	43,544	6,234
MW - Moist.	lb/lbmol-lb/lb	28.299	0.113	27.891	0.137	28.417	0.025	26.880	0.137
Ash	lb/hr-gr/acf	115	0.005	87	0.003	0	0.000	0	0.000

Stream Characteristics		Limestone	Fresh Slurry	Recycle	Bleed	HC - Over	Purge	HC - Reclaim	HC - Under	BF Product	Filtrate H2O	ME H2O	Mill H2O	Ox. Air H2O	WFGD Water	Belt Wash	Total Service Water	Total Landfill
		20	21	22	23	24	06	25	26	27	28	32	33	34	35	36	40	41
Inert Solids	lb/hr	1,596	1,596	998,137	1,699	111	36	75	1,589	1,589	0	0	0	0	0		0	63,533
CaCO3	lb/hr	20,287	20,287	567,418	966	63	20	43	903	903	0	0	0	0	0		0	--
$MgCO_3$	lb/hr	912	912	560,230	954	62	20	42	892	892	0	0	0	0	0		0	--
$CaSO_4*2H_2O$	lb/hr	0	0	19,244,190	32,766	1,474	476	998	31,292	31,292	0	0	0	0	0		0	--
Total Solids	lb/hr	22,795	22,795	21,369,975	36,386	1,710	552	1,158	34,675	34,675	0	0	0	0	0		0	98,883
Water	lb/hr	0	53,188	121,096,523	206,185	163,804	52,906	110,898	42,381	6,119	36,262	279,665	53,188	4,303	337,156	TBD	836,115	33,637
Total Flow	lb/hr	22,795	75,982	142,466,498	242,571	165,515	53,458	112,056	77,056	40,794	36,262	279,665	53,188	4,303	337,156		836,115	132,520
Total Flow	gpm	---	123	260,532	444	331	107	224	115	42	72	559	106	9	674		1,671	--
Solids	wt%	100.0	30.0	15.0	15.0	0.0	1.0	0.0	45.0	85.0	0.0	0.0	0.0	0.0	0.0		0.0	74.6
Chlorides	lb/hr	0	1	1,307,386	2,226	1,768	577	1,197	458	66	391	7	1	0	8		21	--
Chlorides	ppmw (d-gyp)	0	25	10,796	10,796	10,796	10,796	10,796	10,796	10,796	10,796	25	25	25	25		25	--

Client: AEP
Station: Big Sandy - Unit 2

Mass Balance Integrated FGD (IAQCS) Technology -
3.0 lb SO_2/MMBtu Coal (w/o ESP)

Project No.12721-000
8/5/2010
Revision B



FGD Process Parameters		
Inlet Stoich.	Ca:S Inlet	0.1
Internal Stoich.	Ca:S Inlet	0.45
Approach to Saturation	°F	30
Saturation Temperature	°F	129
Saturation Humidity	lb/lb dry air	0.120
Outlet Particulates	lb/MMBtu	0.014
Flow per Absorber	%	33.3
Velocity per Absorber	ft/s	6.3
Diameter per Absorber	ft	63
Sulfur Levels		
SO_2 In	lb/MMBtu	2.944
SO_2 Out	lb/MMBtu	2.914
SO_3 In	lb/MMBtu	0.053
SO_3 Out	lb/MMBtu	0.004

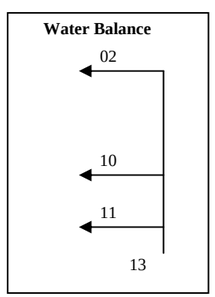
Coal Analysis		
Component	Units	As Received
Carbon	wt%	67.04
Hydrogen	wt%	4.56
Nitrogen	wt%	1.32
Sulfur	wt%	1.81
Oxygen	wt%	6.49
Chlorine	wt%	0.12
Moisture	wt%	8.35
Ash	wt%	10.31
Calc. HHV	Btu/lb	12,007

Plant Production		
MCR Output	MW	865
Heat Input	MMBtu/hr	8180
Firing Rate	lb/hr	681,269

Lime Analysis		
Component	Units	As Received
Size		3/4" x 0"
CaO	dry wt%	93.0
MgO	dry wt%	3.0
Inert Solids	dry wt%	4.0

Stream Characteristics		Air Heater Outlet		SDA Outlet		Baghouse Outlet /Duct Loss		ID Fan Outlet	
		A		B		C		D	
Temperature	°F	350		159		159		183	
Pressure	psia	13.718		13.501		13.141		14.871	
N_2	lb/hr-vol%	7,014,859	73.37	7,014,859	67.68	7,014,859	67.68	7,014,859	67.68
O_2	lb/hr-vol%	675,888	6.19	675,833	5.71	675,823	5.71	675,823	5.71
H_2O	lb/hr-vol%	564,179	9.18	1,081,738	16.23	1,081,738	16.23	1,081,738	16.23
CO_2	lb/hr-vol%	1,674,651	11.15	1,674,651	10.28	1,674,651	10.28	1,674,651	10.28
SO_2	lb/hr-ppmv	24,079	1,102	23,887	1,008	23,838	1,006	23,838	1,006
SO_3	lb/hr-ppmv	437	16	87	3	31	1	31	1
HCl	lb/hr-ppmv	841	67	420	31	420	31	420	31
HF	lb/hr-ppmv	0	0	0	0	0	0	0	0
Total Flow	lb/hr-acfm	9,954,933	3,604,468	10,471,475	3,033,013	10,471,360	3,116,170	10,471,360	2,860,513
MW - Moist.	lb/lbmol-lb/lb	29.154	0.060	28.287	0.112	28.286	0.115	28.286	0.115
Ash	lb/hr-gr/acf	56,191	1.819	404,340	15.553	117	0.004	117	0.005

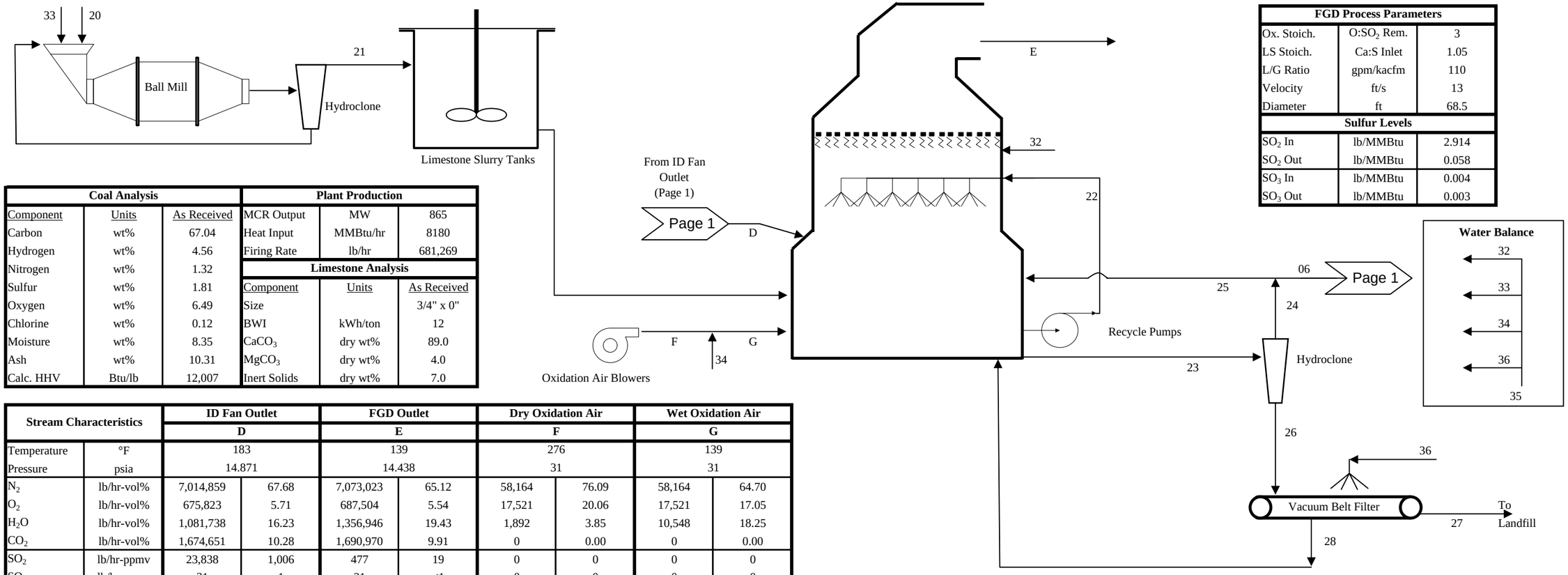
Stream Characteristics		Fresh Lime	Slaker H2O	Lime Slurry	Abs. Solids	Recycle	Purge	SDA Inlet	Waste Solids	Recycle Solids	Recycle H2O	Dust Control	Landfill	SDA Water
		01	02	03	04	05	06	07	08	09	10	11	12	13
Inert Solids	lb/hr	95	0	95		348,436	265	348,531	56,169	348,171	0	0	56,169	0
CaO	lb/hr	2,202	0	0		0	0	0	0	0	0	0	0	0
$Ca(OH)_2$	lb/hr	0	0	2,910		11,340	0	14,249	1,829	11,340	0	0	1,829	0
MgO	lb/hr	71	0	71		440	0	511	71	440	0	0	71	0
$CaSO_3$*0.5H_2O	lb/hr	0	0	0		4,243	0	4,243	684	4,243	0	0	684	0
$CaSO_4$*2H_2O	lb/hr	0	0	0		3,771	0	3,771	608	3,771	0	0	608	0
$CaCl_2$ + CaF_2	lb/hr	0	0	0		3,961	0	3,961	639	3,961	0	0	639	0
Total Solids	lb/hr	2,368	0	3,076		372,192	265	375,267	60,001	371,927	0	0	60,001	0
Water	lb/hr	0	7,884	7,176		558,287	25,397	565,464	6,667	41,325	491,566	19,048	25,715	518,498
Total Flow	lb/hr	2,368	7,884	10,252	TBD	930,479	25,661	940,731	66,668	413,252	491,566	19,048	85,716	518,498
Total Flow	gpm	---	16	17		1,439	51	1,456	---	---	982	38	---	1,036
Solids	wt%	100	0	30		40	1	40	90	90	0	0	70	0



Client: AEP
Station: Big Sandy - Unit 2

Mass Balance Integrated FGD (IAQCS) Technology -
3.0 lb SO_2/MMBtu Coal (w/o ESP)

Project No.12721-000
8/5/2010
Revision B



FGD Process Parameters		
Ox. Stoich.	$O:SO_2$ Rem.	3
LS Stoich.	Ca:S Inlet	1.05
L/G Ratio	gpm/kacfm	110
Velocity	ft/s	13
Diameter	ft	68.5
Sulfur Levels		
SO_2 In	lb/MMBtu	2.914
SO_2 Out	lb/MMBtu	0.058
SO_3 In	lb/MMBtu	0.004
SO_3 Out	lb/MMBtu	0.003

Coal Analysis		
Component	Units	As Received
Carbon	wt%	67.04
Hydrogen	wt%	4.56
Nitrogen	wt%	1.32
Sulfur	wt%	1.81
Oxygen	wt%	6.49
Chlorine	wt%	0.12
Moisture	wt%	8.35
Ash	wt%	10.31
Calc. HHV	Btu/lb	12,007

Plant Production		
MCR Output	MW	865
Heat Input	MMBtu/hr	8180
Firing Rate	lb/hr	681,269
Limestone Analysis		
Component	Units	As Received
Size		3/4" x 0"
BWI	kWh/ton	12
$CaCO_3$	dry wt%	89.0
$MgCO_3$	dry wt%	4.0
Inert Solids	dry wt%	7.0

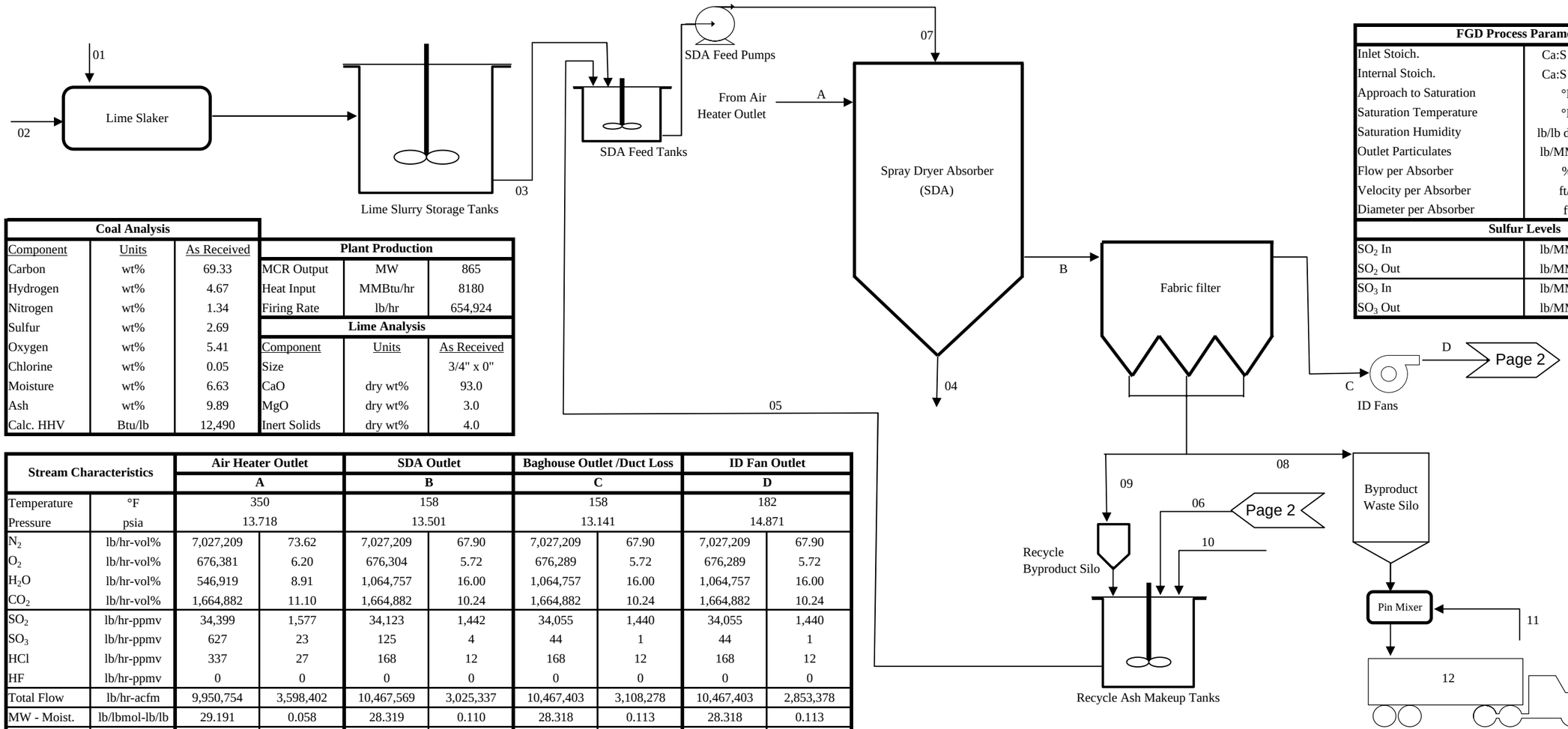
Stream Characteristics		ID Fan Outlet		FGD Outlet		Dry Oxidation Air		Wet Oxidation Air	
		D		E		F		G	
Temperature	°F	183		139		276		139	
Pressure	psia	14.871		14.438		31		31	
N_2	lb/hr-vol%	7,014,859	67.68	7,073,023	65.12	58,164	76.09	58,164	64.70
O_2	lb/hr-vol%	675,823	5.71	687,504	5.54	17,521	20.06	17,521	17.05
H_2O	lb/hr-vol%	1,081,738	16.23	1,356,946	19.43	1,892	3.85	10,548	18.25
CO_2	lb/hr-vol%	1,674,651	10.28	1,690,970	9.91	0	0.00	0	0.00
SO_2	lb/hr-ppmv	23,838	1,006	477	19	0	0	0	0
SO_3	lb/hr-ppmv	31	1	21	<1	0	0	0	0
HCl	lb/hr-ppmv	420	31	0	0	0	0	0	0
HF	lb/hr-ppmv	0	0	0	0	0	0	0	0
Total Flow	lb/hr-acfm	10,471,360	2,860,513	10,808,941	2,878,091	77,578	11,722	86,234	11,229
MW - Moist.	lb/lbmol-lb/lb	28.286	0.115	27.864	0.139	28.417	0.025	26.857	0.139
Ash	lb/hr-gr/acf	117	0.005	88	0.004	0	0.000	0	0.000

Stream Characteristics		Limestone	Fresh Slurry	Recycle	Bleed	HC - Over	Purge	HC - Reclaim	HC - Under	BF Product	Filtrate H2O	ME H2O	Mill H2O	Ox. Air H2O	WFGD Water	Belt Wash	Total Service Water	Total Landfill
		20	21	22	23	24	06	25	26	27	28	32	33	34	35	36	40	41
Inert Solids	lb/hr	3,061	3,061	1,175,735	3,288	214	17	198	3,073	3,073	0	0	0	0	0		0	59,242
CaCO3	lb/hr	38,915	38,915	694,656	1,942	127	10	117	1,816	1,816	0	0	0	0	0		0	--
$MgCO_3$	lb/hr	1,749	1,749	665,475	1,861	121	9	112	1,740	1,740	0	0	0	0	0		0	--
$CaSO_4*2H_2O$	lb/hr	0	0	23,432,248	65,524	2,949	229	2,719	62,575	62,575	0	0	0	0	0		0	--
Total Solids	lb/hr	43,725	43,725	25,968,114	72,615	3,411	265	3,146	69,204	69,204	0	0	0	0	0		0	129,205
Water	lb/hr	0	102,025	147,152,646	411,483	326,900	25,397	301,504	84,583	12,212	72,370	213,388	102,025	8,656	324,069	TBD	842,567	37,927
Total Flow	lb/hr	43,725	145,751	173,120,760	484,098	330,311	25,661	304,650	153,786	81,416	72,370	213,388	102,025	8,656	324,069		842,567	167,132
Total Flow	gpm	---	236	316,590	885	660	51	609	229	85	145	426	204	17	648		1,684	--
Solids	wt%	100.0	30.0	15.0	15.0	0.0	1.0	0.0	45.0	85.0	0.0	0.0	0.0	0.0	0.0		0.0	77.3
Chlorides	lb/hr	0	3	1,619,651	4,529	3,598	282	3,319	931	134	797	5	3	0	8		21	--
Chlorides	ppmw (d-gyp)	0	25	11,007	11,007	11,007	11,007	11,007	11,007	11,007	11,007	25	25	25	25		25	--

Client: AEP
Station: Big Sandy - Unit 2

Mass Balance Integrated FGD (IAQCS) Technology -
4.5 lb SO_2/MMBtu Coal (Base w/o ESP)

Project No.12721-000
8/5/2010
Revision B



FGD Process Parameters		
Inlet Stoich.	Ca:S Inlet	0.1
Internal Stoich.	Ca:S Inlet	0.51
Approach to Saturation	°F	30
Saturation Temperature	°F	128
Saturation Humidity	lb/lb dry air	0.118
Outlet Particulates	lb/MMBtu	0.014
Flow per Absorber	%	33.3
Velocity per Absorber	ft/s	6.3
Diameter per Absorber	ft	63
Sulfur Levels		
SO_2 In	lb/MMBtu	4.205
SO_2 Out	lb/MMBtu	4.163
SO_3 In	lb/MMBtu	0.077
SO_3 Out	lb/MMBtu	0.005

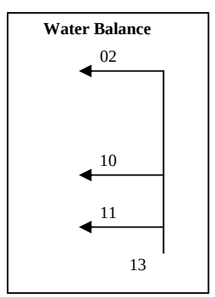
Coal Analysis		
Component	Units	As Received
Carbon	wt%	69.33
Hydrogen	wt%	4.67
Nitrogen	wt%	1.34
Sulfur	wt%	2.69
Oxygen	wt%	5.41
Chlorine	wt%	0.05
Moisture	wt%	6.63
Ash	wt%	9.89
Calc. HHV	Btu/lb	12,490

Plant Production		
MCR Output	MW	865
Heat Input	MMBtu/hr	8180
Firing Rate	lb/hr	654,924

Lime Analysis		
Component	Units	As Received
Size		3/4" x 0"
CaO	dry wt%	93.0
MgO	dry wt%	3.0
Inert Solids	dry wt%	4.0

Stream Characteristics		Air Heater Outlet A		SDA Outlet B		Baghouse Outlet /Duct Loss C		ID Fan Outlet D	
Temperature	°F	350		158		158		182	
Pressure	psia	13.718		13.501		13.141		14.871	
N_2	lb/hr-vol%	7,027,209	73.62	7,027,209	67.90	7,027,209	67.90	7,027,209	67.90
O_2	lb/hr-vol%	676,381	6.20	676,304	5.72	676,289	5.72	676,289	5.72
H_2O	lb/hr-vol%	546,919	8.91	1,064,757	16.00	1,064,757	16.00	1,064,757	16.00
CO_2	lb/hr-vol%	1,664,882	11.10	1,664,882	10.24	1,664,882	10.24	1,664,882	10.24
SO_2	lb/hr-ppmv	34,399	1,577	34,123	1,442	34,055	1,440	34,055	1,440
SO_3	lb/hr-ppmv	627	23	125	4	44	1	44	1
HCl	lb/hr-ppmv	337	27	168	12	168	12	168	12
HF	lb/hr-ppmv	0	0	0	0	0	0	0	0
Total Flow	lb/hr-acfm	9,950,754	3,598,402	10,467,569	3,025,337	10,467,403	3,108,278	10,467,403	2,853,378
MW - Moist.	lb/lbmol-lb/lb	29.191	0.058	28.319	0.110	28.318	0.113	28.318	0.113
Ash	lb/hr-gr/acf	51,818	1.680	388,366	14.977	113	0.004	113	0.005

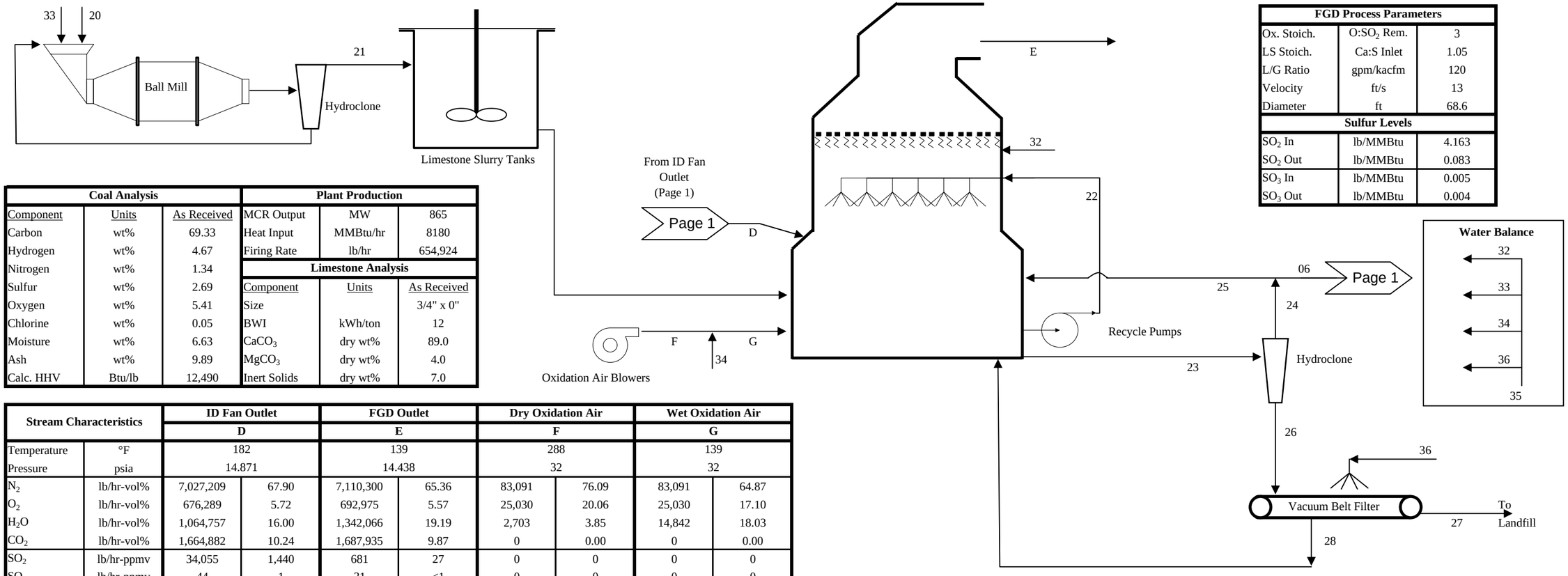
Stream Characteristics		Fresh Lime 01	Slaker H2O 02	Lime Slurry 03	Abs. Solids 04	Recycle 05	Purge 06	SDA Inlet 07	Waste Solids 08	Recycle Solids 09	Recycle H2O 10	Dust Control 11	Landfill 12	SDA Water 13
Inert Solids	lb/hr	132	0	132		336,603	75	336,736	51,837	336,528	0	0	51,837	0
CaO	lb/hr	3,080	0	0		0	0	0	0	0	0	0	0	0
$Ca(OH)_2$	lb/hr	0	0	4,069		19,226	0	23,296	2,962	19,226	0	0	2,962	0
MgO	lb/hr	99	0	99		645	0	744	99	645	0	0	99	0
$CaSO_3*0.5H_2O$	lb/hr	0	0	0		6,365	0	6,365	980	6,365	0	0	980	0
$CaSO_4*2H_2O$	lb/hr	0	0	0		5,657	0	5,657	871	5,657	0	0	871	0
$CaCl_2 + CaF_2$	lb/hr	0	0	0		1,662	0	1,662	256	1,662	0	0	256	0
Total Solids	lb/hr	3,311	0	4,301		370,158	75	374,459	57,006	370,083	0	0	57,006	0
Water	lb/hr	0	11,026	10,036		555,237	7,191	565,274	6,334	41,120	506,926	18,097	24,431	536,050
Total Flow	lb/hr	3,311	11,026	14,338	TBD	925,395	7,266	939,733	63,340	411,204	506,926	18,097	81,437	536,050
Total Flow	gpm	---	22	23		1,431	15	1,455	---	---	1,013	36	---	1,071
Solids	wt%	100	0	30		40	1	40	90	90	0	0	70	0



Client: AEP
Station: Big Sandy - Unit 2

Mass Balance Integrated FGD (IAQCS) Technology -
4.5 lb SO_2/MMBtu Coal (Base w/o ESP)

Project No.12721-000
8/5/2010
Revision B



FGD Process Parameters		
Ox. Stoich.	$O:SO_2$ Rem.	3
LS Stoich.	Ca:S Inlet	1.05
L/G Ratio	gpm/kacfm	120
Velocity	ft/s	13
Diameter	ft	68.6
Sulfur Levels		
SO_2 In	lb/MMBtu	4.163
SO_2 Out	lb/MMBtu	0.083
SO_3 In	lb/MMBtu	0.005
SO_3 Out	lb/MMBtu	0.004

Coal Analysis		
Component	Units	As Received
Carbon	wt%	69.33
Hydrogen	wt%	4.67
Nitrogen	wt%	1.34
Sulfur	wt%	2.69
Oxygen	wt%	5.41
Chlorine	wt%	0.05
Moisture	wt%	6.63
Ash	wt%	9.89
Calc. HHV	Btu/lb	12,490

Plant Production		
MCR Output	MW	865
Heat Input	MMBtu/hr	8180
Firing Rate	lb/hr	654,924
Limestone Analysis		
Component	Units	As Received
Size		3/4" x 0"
BWI	kWh/ton	12
$CaCO_3$	dry wt%	89.0
$MgCO_3$	dry wt%	4.0
Inert Solids	dry wt%	7.0

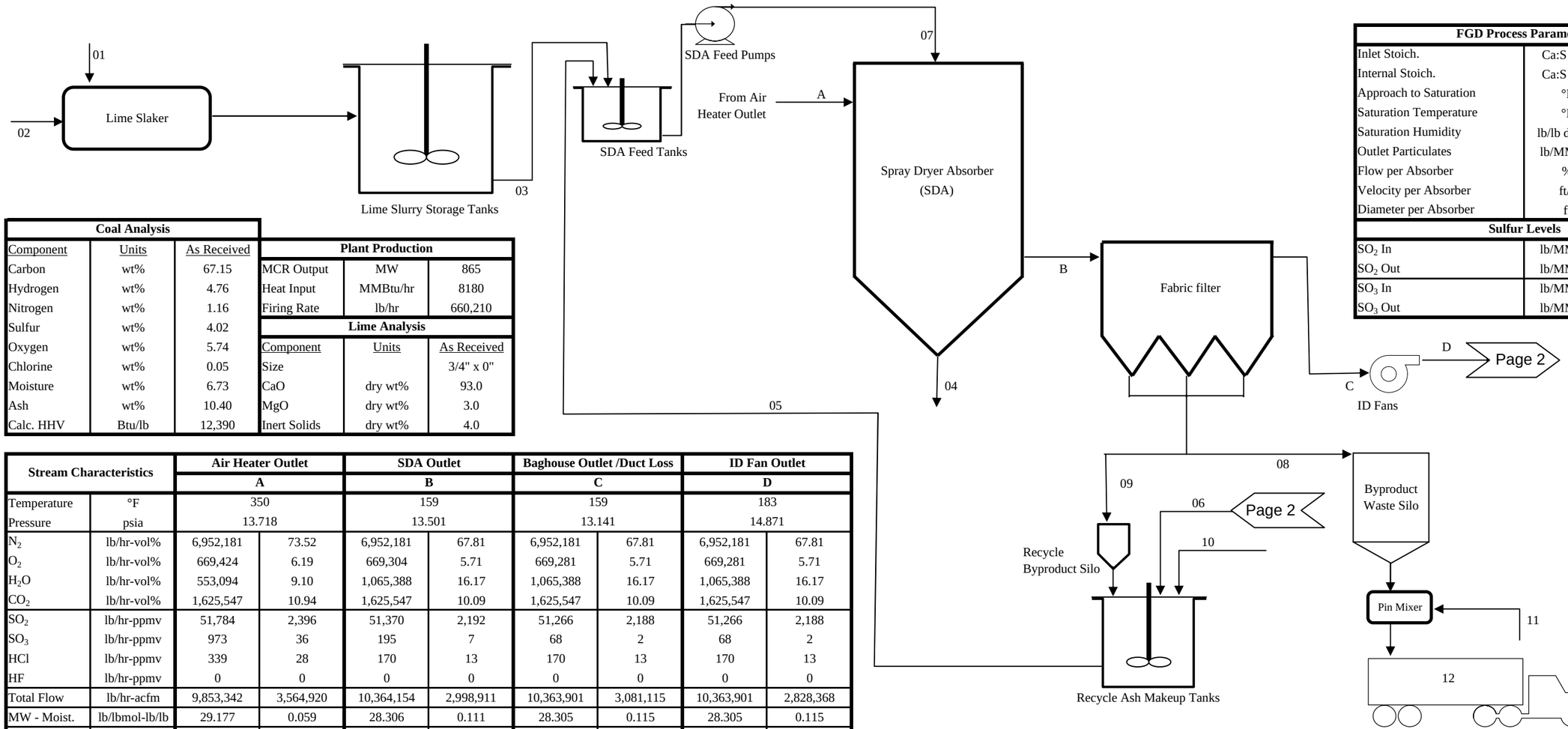
Stream Characteristics		ID Fan Outlet D		FGD Outlet E		Dry Oxidation Air F		Wet Oxidation Air G	
Temperature	°F	182		139		288		139	
Pressure	psia	14.871		14.438		32		32	
N_2	lb/hr-vol%	7,027,209	67.90	7,110,300	65.36	83,091	76.09	83,091	64.87
O_2	lb/hr-vol%	676,289	5.72	692,975	5.57	25,030	20.06	25,030	17.10
H_2O	lb/hr-vol%	1,064,757	16.00	1,342,066	19.19	2,703	3.85	14,842	18.03
CO_2	lb/hr-vol%	1,664,882	10.24	1,687,935	9.87	0	0.00	0	0.00
SO_2	lb/hr-ppmv	34,055	1,440	681	27	0	0	0	0
SO_3	lb/hr-ppmv	44	1	31	<1	0	0	0	0
HCl	lb/hr-ppmv	168	12	0	0	0	0	0	0
HF	lb/hr-ppmv	0	0	0	0	0	0	0	0
Total Flow	lb/hr-acfm	10,467,403	2,853,378	10,833,988	2,879,259	110,825	16,267	122,963	15,275
MW - Moist.	lb/lbmol-lb/lb	28.318	0.113	27.885	0.137	28.417	0.025	26.881	0.137
Ash	lb/hr-gr/acf	113	0.005	84	0.003	0	0.000	0	0.000

Stream Characteristics		Limestone 20	Fresh Slurry 21	Recycle 22	Bleed 23	HC - Over 24	Purge 06	HC - Reclaim 25	HC - Under 26	BF Product 27	Filtrate H2O 28	ME H2O 32	Mill H2O 33	Ox. Air H2O 34	WFGD Water 35	Belt Wash 36	Total Service Water 40	Total Landfill 41
Inert Solids	lb/hr	4,326	4,326	1,268,354	4,653	303	5	299	4,349	4,349	0	0	0	0	0		0	56,186
CaCO3	lb/hr	55,001	55,001	759,750	2,787	182	3	179	2,605	2,605	0	0	0	0	0		0	--
$MgCO_3$	lb/hr	2,472	2,472	720,087	2,641	172	3	170	2,469	2,469	0	0	0	0	0		0	--
$CaSO_4*2H_2O$	lb/hr	0	0	25,592,156	93,879	4,225	65	4,160	89,655	89,655	0	0	0	0	0		0	--
Total Solids	lb/hr	61,799	61,799	28,340,347	103,960	4,882	75	4,807	99,079	99,079	0	0	0	0	0		0	156,085
Water	lb/hr	0	144,198	160,595,301	589,109	468,013	7,191	460,822	121,096	17,485	103,612	161,723	144,198	12,139	318,060	TBD	854,110	41,916
Total Flow	lb/hr	61,799	205,997	188,935,648	693,070	472,895	7,266	465,629	220,175	116,563	103,612	161,723	144,198	12,139	318,060		854,110	198,001
Total Flow	gpm	---	334	345,511	1,267	945	15	930	328	121	207	323	288	24	636		1,707	--
Solids	wt%	100.0	30.0	15.0	15.0	0.0	1.0	0.0	45.0	85.0	0.0	0.0	0.0	0.0	0.0		0.0	78.8
Chlorides	lb/hr	0	4	1,113,987	4,086	3,246	50	3,197	840	121	719	4	4	0	8		21	--
Chlorides	ppmw (d-gyp)	0	25	6,937	6,937	6,937	6,937	6,937	6,937	6,937	6,937	25	25	25	25		25	--

Client: AEP
Station: Big Sandy - Unit 2

Mass Balance Integrated FGD (IAQCS) Technology -
7.5 lb SO_2/MMBtu Coal (w/o ESP)

Project No.12721-000
8/5/2010
Revision B



FGD Process Parameters		
Inlet Stoich.	Ca:S Inlet	0.1
Internal Stoich.	Ca:S Inlet	0.47
Approach to Saturation	°F	30
Saturation Temperature	°F	129
Saturation Humidity	lb/lb dry air	0.119
Outlet Particulates	lb/MMBtu	0.014
Flow per Absorber	%	33.3
Velocity per Absorber	ft/s	6.3
Diameter per Absorber	ft	63
Sulfur Levels		
SO_2 In	lb/MMBtu	6.331
SO_2 Out	lb/MMBtu	6.267
SO_3 In	lb/MMBtu	0.119
SO_3 Out	lb/MMBtu	0.008

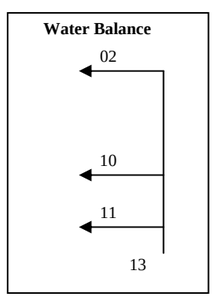
Coal Analysis		
Component	Units	As Received
Carbon	wt%	67.15
Hydrogen	wt%	4.76
Nitrogen	wt%	1.16
Sulfur	wt%	4.02
Oxygen	wt%	5.74
Chlorine	wt%	0.05
Moisture	wt%	6.73
Ash	wt%	10.40
Calc. HHV	Btu/lb	12,390

Plant Production		
MCR Output	MW	865
Heat Input	MMBtu/hr	8180
Firing Rate	lb/hr	660,210

Lime Analysis		
Component	Units	As Received
Size		3/4" x 0"
CaO	dry wt%	93.0
MgO	dry wt%	3.0
Inert Solids	dry wt%	4.0

Stream Characteristics		Air Heater Outlet A		SDA Outlet B		Baghouse Outlet /Duct Loss C		ID Fan Outlet D	
Temperature	°F	350		159		159		183	
Pressure	psia	13.718		13.501		13.141		14.871	
N_2	lb/hr-vol%	6,952,181	73.52	6,952,181	67.81	6,952,181	67.81	6,952,181	67.81
O_2	lb/hr-vol%	669,424	6.19	669,304	5.71	669,281	5.71	669,281	5.71
H_2O	lb/hr-vol%	553,094	9.10	1,065,388	16.17	1,065,388	16.17	1,065,388	16.17
CO_2	lb/hr-vol%	1,625,547	10.94	1,625,547	10.09	1,625,547	10.09	1,625,547	10.09
SO_2	lb/hr-ppmv	51,784	2,396	51,370	2,192	51,266	2,188	51,266	2,188
SO_3	lb/hr-ppmv	973	36	195	7	68	2	68	2
HCl	lb/hr-ppmv	339	28	170	13	170	13	170	13
HF	lb/hr-ppmv	0	0	0	0	0	0	0	0
Total Flow	lb/hr-acfm	9,853,342	3,564,920	10,364,154	2,998,911	10,363,901	3,081,115	10,363,901	2,828,368
MW - Moist.	lb/lbmol-lb/lb	29.177	0.059	28.306	0.111	28.305	0.115	28.305	0.115
Ash	lb/hr-gr/acf	54,929	1.798	373,164	14.517	112	0.004	112	0.005

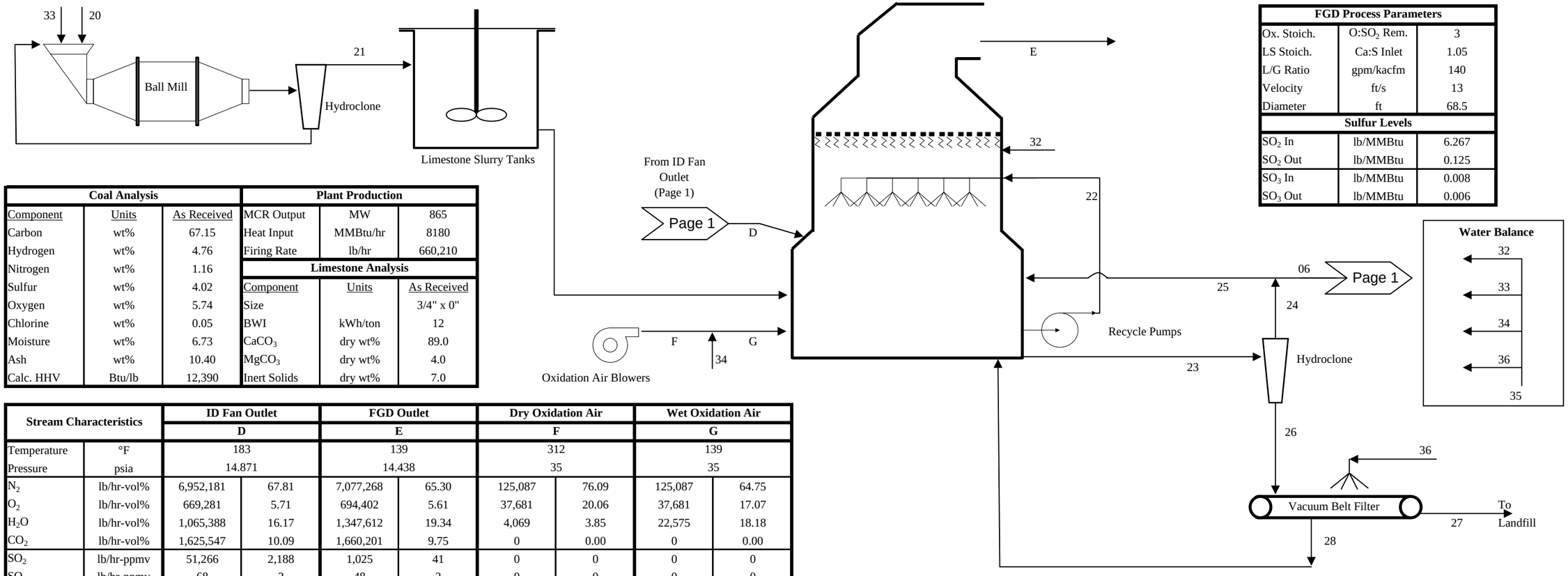
Stream Characteristics		Fresh Lime 01	Slaker H2O 02	Lime Slurry 03	Abs. Solids 04	Recycle 05	Purge 06	SDA Inlet 07	Waste Solids 08	Recycle Solids 09	Recycle H2O 10	Dust Control 11	Landfill 12	SDA Water 13
Inert Solids	lb/hr	199	0	199		318,207	60	318,406	55,016	318,147	0	0	55,016	0
CaO	lb/hr	4,625	0	0		0	0	0	0	0	0	0	0	0
$Ca(OH)_2$	lb/hr	0	0	6,112		26,048	0	32,160	4,504	26,048	0	0	4,504	0
MgO	lb/hr	149	0	149		863	0	1,012	149	863	0	0	149	0
$CaSO_3$*0.5H_2O	lb/hr	0	0	0		8,682	0	8,682	1,501	8,682	0	0	1,501	0
$CaSO_4$*2H_2O	lb/hr	0	0	0		7,718	0	7,718	1,335	7,718	0	0	1,335	0
$CaCl_2$ + CaF_2	lb/hr	0	0	0		1,492	0	1,492	258	1,492	0	0	258	0
Total Solids	lb/hr	4,973	0	6,460		363,010	60	369,470	62,764	362,950	0	0	62,764	0
Water	lb/hr	0	16,560	15,073		544,515	5,732	559,588	6,974	40,328	498,455	19,925	26,899	534,940
Total Flow	lb/hr	4,973	16,560	21,533	TBD	907,525	5,792	929,058	69,738	403,278	498,455	19,925	89,663	534,940
Total Flow	gpm	---	33	35		1,403	12	1,439	---	---	996	40	---	1,069
Solids	wt%	100	0	30		40	1	40	90	90	0	0	70	0



Client: AEP
Station: Big Sandy - Unit 2

Mass Balance Integrated FGD (IAQCS) Technology -
7.5 lb SO_2/MMBtu Coal (w/o ESP)

Project No.12721-000
8/5/2010
Revision B



FGD Process Parameters		
Ox. Stoich.	$O:SO_2$ Rem.	3
LS Stoich.	Ca:S Inlet	1.05
L/G Ratio	gpm/kacfm	140
Velocity	ft/s	13
Diameter	ft	68.5
Sulfur Levels		
SO_2 In	lb/MMBtu	6.267
SO_2 Out	lb/MMBtu	0.125
SO_3 In	lb/MMBtu	0.008
SO_3 Out	lb/MMBtu	0.006

Coal Analysis		
Component	Units	As Received
Carbon	wt%	67.15
Hydrogen	wt%	4.76
Nitrogen	wt%	1.16
Sulfur	wt%	4.02
Oxygen	wt%	5.74
Chlorine	wt%	0.05
Moisture	wt%	6.73
Ash	wt%	10.40
Calc. HHV	Btu/lb	12,390

Plant Production		
MCR Output	MW	865
Heat Input	MMBtu/hr	8180
Firing Rate	lb/hr	660,210
Limestone Analysis		
Component	Units	As Received
Size		3/4" x 0"
BWI	kWh/ton	12
$CaCO_3$	dry wt%	89.0
$MgCO_3$	dry wt%	4.0
Inert Solids	dry wt%	7.0

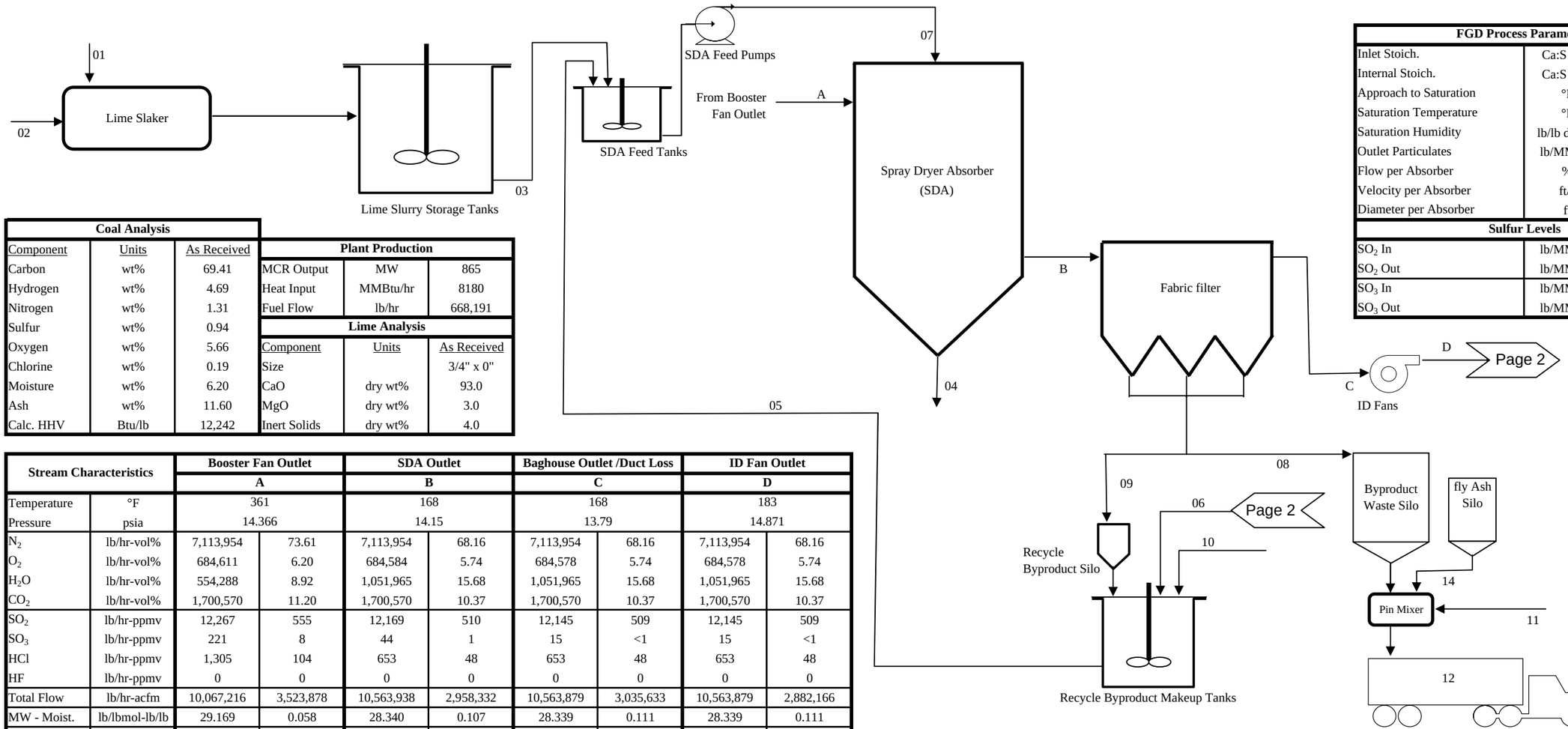
Stream Characteristics		ID Fan Outlet D		FGD Outlet E		Dry Oxidation Air F		Wet Oxidation Air G	
Temperature	°F	183		139		312		139	
Pressure	psia	14.871		14.438		35		35	
N_2	lb/hr-vol%	6,952,181	67.81	7,077,268	65.30	125,087	76.09	125,087	64.75
O_2	lb/hr-vol%	669,281	5.71	694,402	5.61	37,681	20.06	37,681	17.07
H_2O	lb/hr-vol%	1,065,388	16.17	1,347,612	19.34	4,069	3.85	22,575	18.18
CO_2	lb/hr-vol%	1,625,547	10.09	1,660,201	9.75	0	0.00	0	0.00
SO_2	lb/hr-ppmv	51,266	2,188	1,025	41	0	0	0	0
SO_3	lb/hr-ppmv	68	2	48	2	0	0	0	0
HCl	lb/hr-ppmv	170	13	0	0	0	0	0	0
HF	lb/hr-ppmv	0	0	0	0	0	0	0	0
Total Flow	lb/hr-acfm	10,363,901	2,828,368	10,780,556	2,870,775	166,837	23,083	185,343	21,035
MW - Moist.	lb/lbmol-lb/lb	28.305	0.115	27.851	0.139	28.417	0.025	26.865	0.139
Ash	lb/hr-gr/acf	112	0.005	84	0.003	0	0.000	0	0.000

Stream Characteristics		Limestone 20	Fresh Slurry 21	Recycle 22	Bleed 23	HC - Over 24	Purge 06	HC - Reclaim 25	HC - Under 26	BF Product 27	Filtrate H2O 28	ME H2O 32	Mill H2O 33	Ox. Air H2O 34	WFGD Water 35	Belt Wash 36	Total Service Water 40	Total Landfill 41
Inert Solids	lb/hr	6,503	6,503	1,470,618	6,983	455	4	451	6,528	6,528	0	0	0	0	0		0	61,544
CaCO3	lb/hr	82,686	82,686	884,066	4,198	274	2	271	3,924	3,924	0	0	0	0	0		0	--
$MgCO_3$	lb/hr	3,716	3,716	836,752	3,973	259	2	257	3,714	3,714	0	0	0	0	0		0	--
$CaSO_4*2H_2O$	lb/hr	0	0	29,774,875	141,376	6,362	52	6,310	135,015	135,015	0	0	0	0	0		0	--
Total Solids	lb/hr	92,905	92,905	32,966,312	156,530	7,350	60	7,290	149,180	149,180	0	0	0	0	0		0	211,944
Water	lb/hr	0	216,779	186,809,101	887,003	704,672	5,732	698,939	182,332	26,326	156,006	103,198	216,779	18,506	338,483	TBD	873,423	53,225
Total Flow	lb/hr	92,905	309,684	219,775,412	1,043,533	712,021	5,792	706,229	331,512	175,506	156,006	103,198	216,779	18,506	338,483		873,423	265,169
Total Flow	gpm	---	502	401,908	1,908	1,423	12	1,411	494	182	312	206	433	37	676		1,745	--
Solids	wt%	100.0	30.0	15.0	15.0	0.0	1.0	0.0	45.0	85.0	0.0	0.0	0.0	0.0	0.0		0.0	79.9
Chlorides	lb/hr	0	5	1,009,216	4,792	3,807	31	3,776	985	142	843	3	5	0	8		22	--
Chlorides	ppmw (d-gyp)	0	25	5,402	5,402	5,402	5,402	5,402	5,402	5,402	5,402	25	25	25	25		25	--

Client: AEP
Station: Big Sandy - Unit 2

Mass Balance Integrated FGD (IAQCS) Technology -
1.7 lb SO_2/MMBtu Coal (w/ESP)

Project No.12721-000
9/29/2010
Revision B



FGD Process Parameters		
Inlet Stoich.	Ca:S Inlet	0.1
Internal Stoich.	Ca:S Inlet	3.16
Approach to Saturation	°F	40
Saturation Temperature	°F	128
Saturation Humidity	lb/lb dry air	0.118
Outlet Particulates	lb/MMBtu	0.014
Flow per Absorber	%	33.3
Velocity per Absorber	ft/s	6.3
Diameter per Absorber	ft	63
Sulfur Levels		
SO_2 In	lb/MMBtu	1.500
SO_2 Out	lb/MMBtu	1.485
SO_3 In	lb/MMBtu	0.027
SO_3 Out	lb/MMBtu	0.002

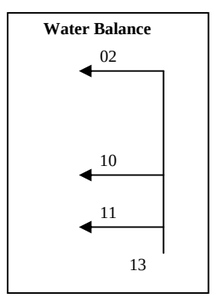
Coal Analysis		
Component	Units	As Received
Carbon	wt%	69.41
Hydrogen	wt%	4.69
Nitrogen	wt%	1.31
Sulfur	wt%	0.94
Oxygen	wt%	5.66
Chlorine	wt%	0.19
Moisture	wt%	6.20
Ash	wt%	11.60
Calc. HHV	Btu/lb	12,242

Plant Production		
MCR Output	MW	865
Heat Input	MMBtu/hr	8180
Fuel Flow	lb/hr	668,191

Lime Analysis		
Component	Units	As Received
Size		3/4" x 0"
CaO	dry wt%	93.0
MgO	dry wt%	3.0
Inert Solids	dry wt%	4.0

Stream Characteristics		Booster Fan Outlet		SDA Outlet		Baghouse Outlet /Duct Loss		ID Fan Outlet	
		A		B		C		D	
Temperature	°F	361		168		168		183	
Pressure	psia	14.366		14.15		13.79		14.871	
N_2	lb/hr-vol%	7,113,954	73.61	7,113,954	68.16	7,113,954	68.16	7,113,954	68.16
O_2	lb/hr-vol%	684,611	6.20	684,584	5.74	684,578	5.74	684,578	5.74
H_2O	lb/hr-vol%	554,288	8.92	1,051,965	15.68	1,051,965	15.68	1,051,965	15.68
CO_2	lb/hr-vol%	1,700,570	11.20	1,700,570	10.37	1,700,570	10.37	1,700,570	10.37
SO_2	lb/hr-ppmv	12,267	555	12,169	510	12,145	509	12,145	509
SO_3	lb/hr-ppmv	221	8	44	1	15	<1	15	<1
HCl	lb/hr-ppmv	1,305	104	653	48	653	48	653	48
HF	lb/hr-ppmv	0	0	0	0	0	0	0	0
Total Flow	lb/hr-acfm	10,067,216	3,523,878	10,563,938	2,958,332	10,563,879	3,035,633	10,563,879	2,882,166
MW - Moist.	lb/lbmol-lb/lb	29.169	0.058	28.340	0.107	28.339	0.111	28.339	0.111
Ash	lb/hr-gr/acf	1,930	0.064	162,435	6.406	114	0.004	114	0.005

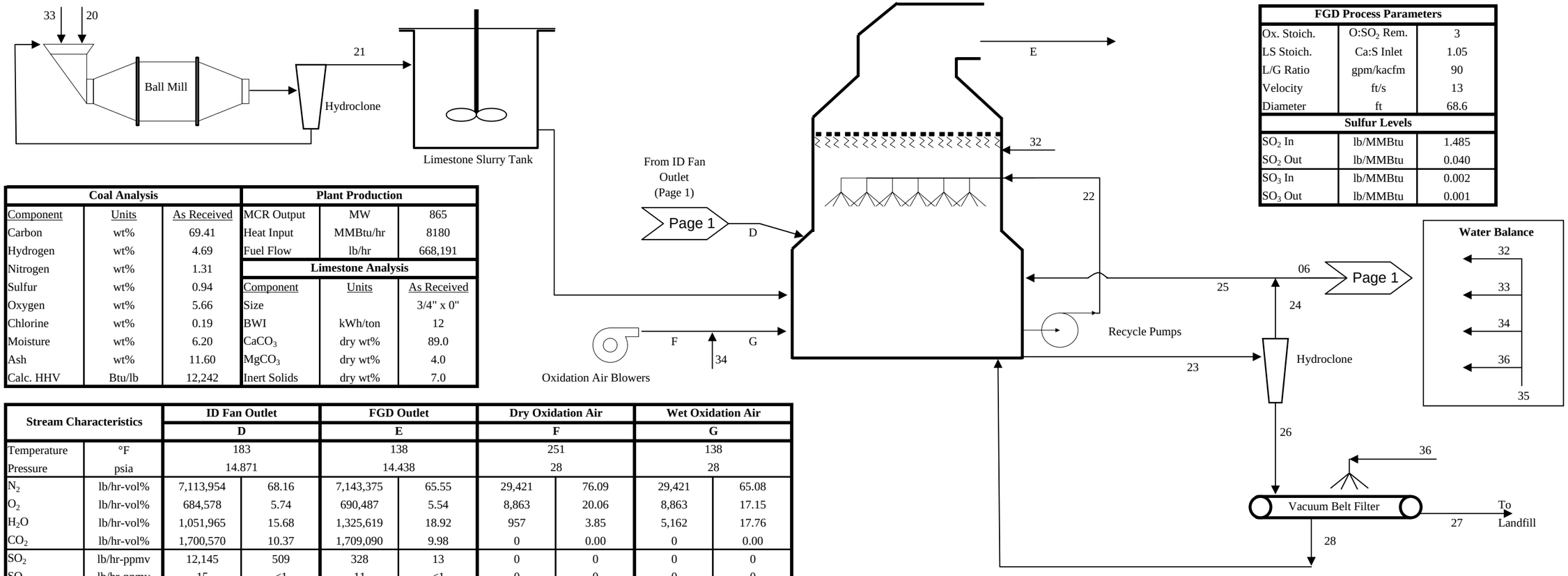
Stream Characteristics		Fresh Lime	Slaker H2O	Lime Slurry	Abs. Solids	Recycle	Purge	SDA Inlet	Waste Solids	Recycle Solids	Recycle H2O	Pin Mixer H2O	Landfill	SDA Water	Stabilization
		01	02	03	04	05	06	07	08	09	10	11	12	13	14
Inert Solids	lb/hr	51	0	51		161,091	524	161,142	1,868	160,567	0	0	2,075	0	207
CaO	lb/hr	1,189	0	0		0	0	0	0	0	0	0	0	0	0
$Ca(OH)_2$	lb/hr	0	0	1,571		49,661	0	51,232	578	49,661	0	0	578	0	0
MgO	lb/hr	38	0	38		3,297	0	3,335	38	3,297	0	0	38	0	0
$CaSO_3$*0.5H_2O	lb/hr	0	0	0		29,838	0	29,838	347	29,838	0	0	347	0	0
$CaSO_4$*2H_2O	lb/hr	0	0	0		26,522	0	26,522	309	26,522	0	0	309	0	0
CaCl2 + CaF2	lb/hr	0	0	0		85,307	0	85,307	992	85,307	0	0	992	0	0
Total Solids	lb/hr	1,278	0	1,661		355,716	524	357,376	4,132	355,192	0	0	4,339	0	207
Water	lb/hr	0	4,257	3,875		533,574	50,187	537,448	459	39,466	443,921	1,312	1,771	449,490	0
Total Flow	lb/hr	1,278	4,257	5,536	TBD	889,289	50,711	894,825	4,591	394,657	443,921	1,312	6,110	449,490	207
Total Flow	gpm	---	9	9		1,375	101	1,384	---	---	887	3	---	898	---
Solids	wt%	100	0	30		40	1	40	90	90	0	0	71	0	100



Client: AEP
Station: Big Sandy - Unit 2

Mass Balance Integrated FGD (IAQCS) Technology -
1.7 lb SO_2/MMBtu Coal (w/ESP)

Project No.12721-000
9/29/2010
Revision B



FGD Process Parameters		
Ox. Stoich.	$O:SO_2$ Rem.	3
LS Stoich.	Ca:S Inlet	1.05
L/G Ratio	gpm/kacfm	90
Velocity	ft/s	13
Diameter	ft	68.6
Sulfur Levels		
SO_2 In	lb/MMBtu	1.485
SO_2 Out	lb/MMBtu	0.040
SO_3 In	lb/MMBtu	0.002
SO_3 Out	lb/MMBtu	0.001

Coal Analysis		
Component	Units	As Received
Carbon	wt%	69.41
Hydrogen	wt%	4.69
Nitrogen	wt%	1.31
Sulfur	wt%	0.94
Oxygen	wt%	5.66
Chlorine	wt%	0.19
Moisture	wt%	6.20
Ash	wt%	11.60
Calc. HHV	Btu/lb	12,242

Plant Production		
MCR Output	MW	865
Heat Input	MMBtu/hr	8180
Fuel Flow	lb/hr	668,191
Limestone Analysis		
Component	Units	As Received
Size		3/4" x 0"
BWI	kWh/ton	12
$CaCO_3$	dry wt%	89.0
$MgCO_3$	dry wt%	4.0
Inert Solids	dry wt%	7.0

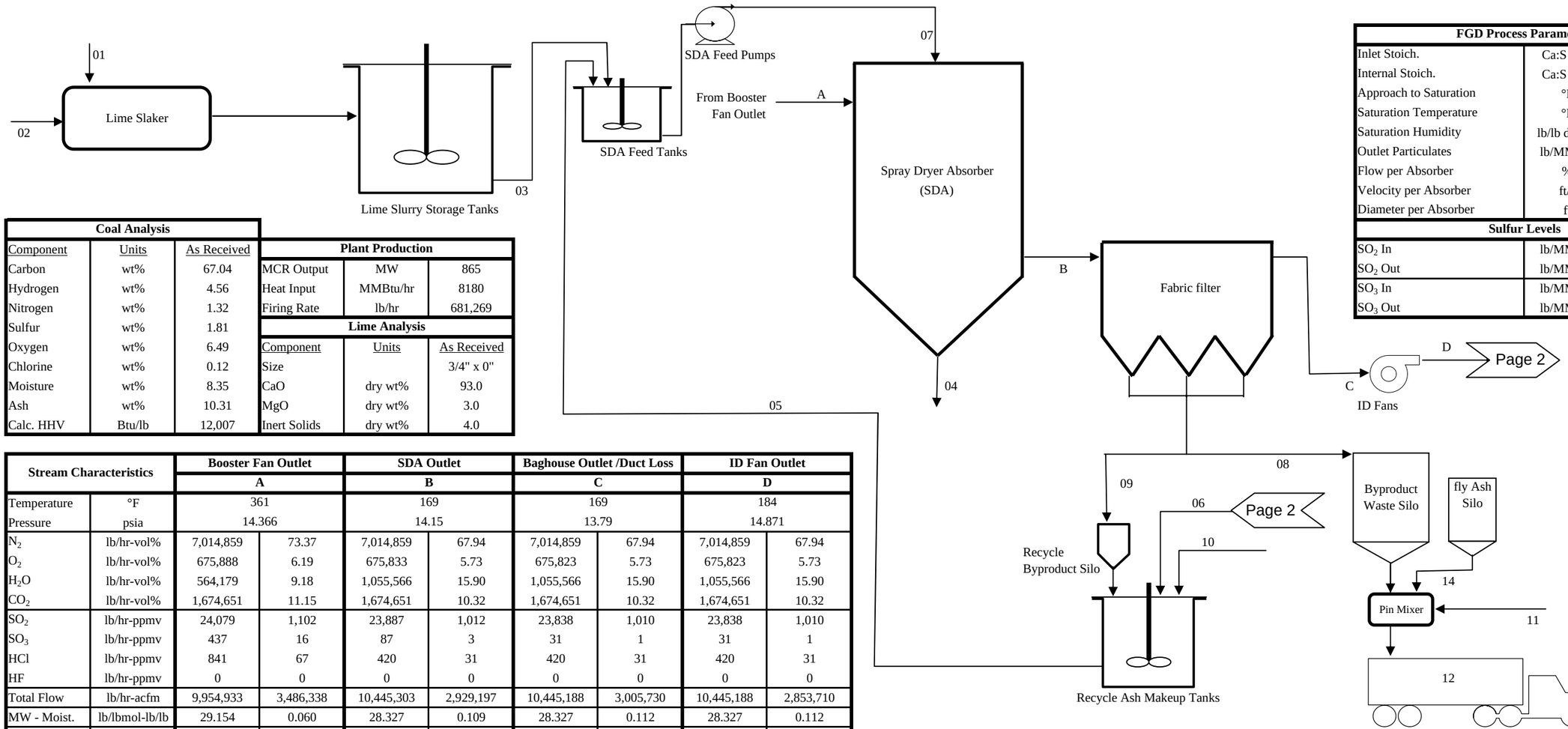
Stream Characteristics		ID Fan Outlet		FGD Outlet		Dry Oxidation Air		Wet Oxidation Air	
		D		E		F		G	
Temperature	°F	183		138		251		138	
Pressure	psia	14.871		14.438		28		28	
N_2	lb/hr-vol%	7,113,954	68.16	7,143,375	65.55	29,421	76.09	29,421	65.08
O_2	lb/hr-vol%	684,578	5.74	690,487	5.54	8,863	20.06	8,863	17.15
H_2O	lb/hr-vol%	1,051,965	15.68	1,325,619	18.92	957	3.85	5,162	17.76
CO_2	lb/hr-vol%	1,700,570	10.37	1,709,090	9.98	0	0.00	0	0.00
SO_2	lb/hr-ppmv	12,145	509	328	13	0	0	0	0
SO_3	lb/hr-ppmv	15	<1	11	<1	0	0	0	0
HCl	lb/hr-ppmv	653	48	0	0	0	0	0	0
HF	lb/hr-ppmv	0	0	0	0	0	0	0	0
Total Flow	lb/hr-acfm	10,563,879	2,882,166	10,868,909	2,880,305	39,241	6,308	43,446	6,204
MW - Moist.	lb/lbmol-lb/lb	28.339	0.111	27.927	0.135	28.417	0.025	26.910	0.135
Ash	lb/hr-gr/acf	114	0.005	85	0.003	0	0.000	0	0.000

Stream Characteristics		Limestone	Fresh Slurry	Recycle	Bleed	HC - Over	Purge	HC - Reclaim	HC - Under	BF Product	Filtrate H2O	ME H2O	Mill H2O	Ox. Air H2O	WFGD Water	Belt Wash	Total Service Water	Total Landfill
		20	21	22	23	24	06	25	26	27	28	32	33	34	35	36	40	41
Inert Solids	lb/hr	1,596	1,596	993,214	1,701	111	34	77	1,590	1,590	0	0	0	0	0		0	3,665
CaCO3	lb/hr	20,287	20,287	564,771	967	63	19	44	904	904	0	0	0	0	0		0	--
$MgCO_3$	lb/hr	912	912	557,616	955	62	19	43	893	893	0	0	0	0	0		0	--
$CaSO_4*2H_2O$	lb/hr	0	0	19,147,381	32,792	1,476	452	1,024	31,316	31,316	0	0	0	0	0		0	--
Total Solids	lb/hr	22,795	22,795	21,262,983	36,415	1,712	524	1,188	34,703	34,703	0	0	0	0	0		0	39,042
Water	lb/hr	0	53,188	120,490,235	206,351	163,936	50,187	113,750	42,415	6,124	36,291	278,265	53,188	4,205	335,657	TBD	785,147	7,895
Total Flow	lb/hr	22,795	75,982	141,753,217	242,766	165,648	50,711	114,937	77,118	40,827	36,291	278,265	53,188	4,205	335,657		785,147	46,937
Total Flow	gpm	---	123	259,227	444	331	101	230	115	42	73	556	106	8	671		1,569	--
Solids	wt%	100.0	30.0	15.0	15.0	0.0	1.0	0.0	45.0	85.0	0.0	0.0	0.0	0.0	0.0		0.0	83.2
Chlorides	lb/hr	0	1	1,363,528	2,335	1,855	574	1,287	480	69	411	7	1	0	8		20	--
Chlorides	ppmw (d-gyp)	0	25	11,317	11,317	11,317	11,317	11,317	11,317	11,317	11,317	25	25	25	25		25	--

Client: AEP
Station: Big Sandy - Unit 2

Mass Balance Integrated FGD (IAQCS) Technology -
3.0 lb SO_2/MMBtu Coal (w/ESP)

Project No.12721-000
8/5/2010
Revision B



FGD Process Parameters		
Inlet Stoich.	Ca:S Inlet	0.1
Internal Stoich.	Ca:S Inlet	3.69
Approach to Saturation	°F	40
Saturation Temperature	°F	129
Saturation Humidity	lb/lb dry air	0.120
Outlet Particulates	lb/MMBtu	0.013
Flow per Absorber	%	33.3
Velocity per Absorber	ft/s	6.3
Diameter per Absorber	ft	63
Sulfur Levels		
SO_2 In	lb/MMBtu	2.944
SO_2 Out	lb/MMBtu	2.914
SO_3 In	lb/MMBtu	0.053
SO_3 Out	lb/MMBtu	0.004

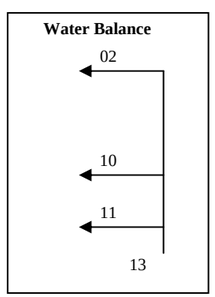
Coal Analysis		
Component	Units	As Received
Carbon	wt%	67.04
Hydrogen	wt%	4.56
Nitrogen	wt%	1.32
Sulfur	wt%	1.81
Oxygen	wt%	6.49
Chlorine	wt%	0.12
Moisture	wt%	8.35
Ash	wt%	10.31
Calc. HHV	Btu/lb	12,007

Plant Production		
MCR Output	MW	865
Heat Input	MMBtu/hr	8180
Firing Rate	lb/hr	681,269

Lime Analysis		
Component	Units	As Received
Size		3/4" x 0"
CaO	dry wt%	93.0
MgO	dry wt%	3.0
Inert Solids	dry wt%	4.0

Stream Characteristics		Booster Fan Outlet		SDA Outlet		Baghouse Outlet /Duct Loss		ID Fan Outlet	
		A		B		C		D	
Temperature	°F	361		169		169		184	
Pressure	psia	14.366		14.15		13.79		14.871	
N_2	lb/hr-vol%	7,014,859	73.37	7,014,859	67.94	7,014,859	67.94	7,014,859	67.94
O_2	lb/hr-vol%	675,888	6.19	675,833	5.73	675,823	5.73	675,823	5.73
H_2O	lb/hr-vol%	564,179	9.18	1,055,566	15.90	1,055,566	15.90	1,055,566	15.90
CO_2	lb/hr-vol%	1,674,651	11.15	1,674,651	10.32	1,674,651	10.32	1,674,651	10.32
SO_2	lb/hr-ppmv	24,079	1,102	23,887	1,012	23,838	1,010	23,838	1,010
SO_3	lb/hr-ppmv	437	16	87	3	31	1	31	1
HCl	lb/hr-ppmv	841	67	420	31	420	31	420	31
HF	lb/hr-ppmv	0	0	0	0	0	0	0	0
Total Flow	lb/hr-acfm	9,954,933	3,486,338	10,445,303	2,929,197	10,445,188	3,005,730	10,445,188	2,853,710
MW - Moist.	lb/lbmol-lb/lb	29.154	0.060	28.327	0.109	28.327	0.112	28.327	0.112
Ash	lb/hr-gr/acf	1,749	0.059	110,364	4.396	110	0.004	110	0.005

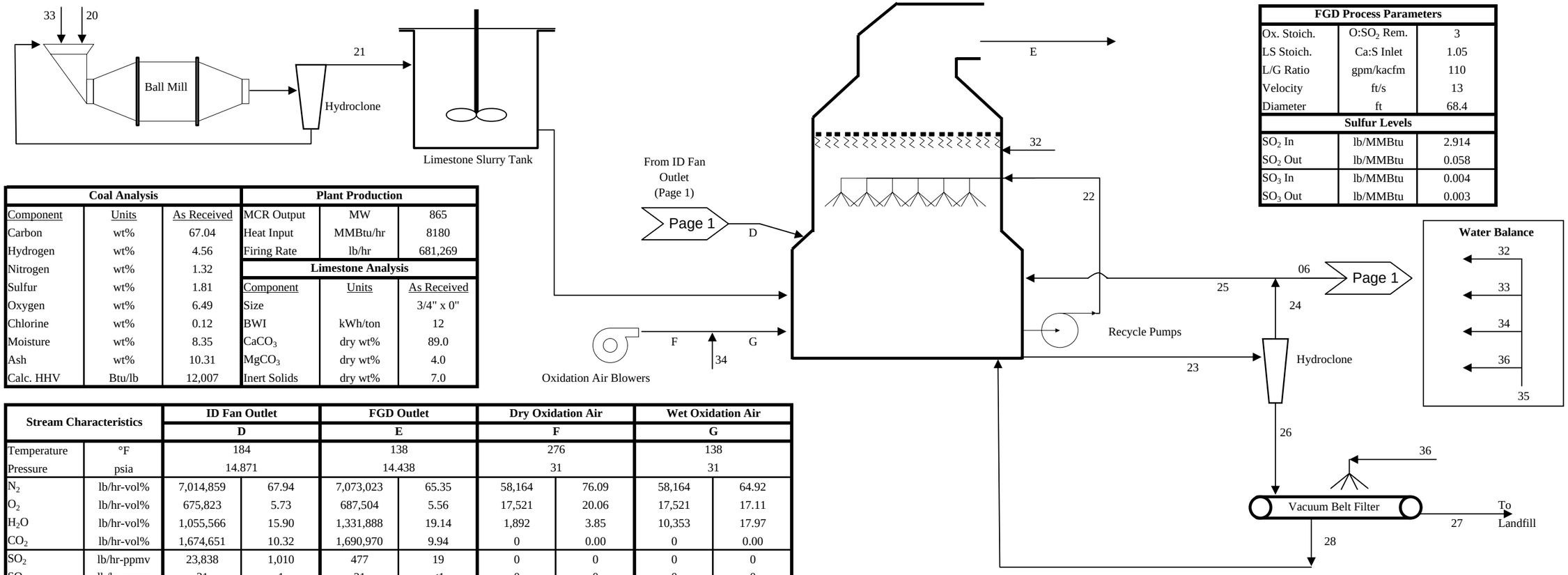
Stream Characteristics		Fresh Lime	Slaker H2O	Lime Slurry	Abs. Solids	Recycle	Purge	SDA Inlet	Waste Solids	Recycle Solids	Recycle H2O	Pin Mixer H2O	Landfill	SDA Water	Stabilization
		01	02	03	04	05	06	07	08	09	10	11	12	13	14
Inert Solids	lb/hr	95	0	95		108,871	240	108,966	1,734	108,631	0	0	2,012	0	278
CaO	lb/hr	2,202	0	0		0	0	0	0	0	0	0	0	0	0
$Ca(OH)_2$	lb/hr	0	0	2,910		114,623	0	117,532	1,829	114,623	0	0	1,829	0	0
MgO	lb/hr	71	0	71		4,451	0	4,522	71	4,451	0	0	71	0	0
$CaSO_3$*0.5H_2O	lb/hr	0	0	0		42,887	0	42,887	684	42,887	0	0	684	0	0
$CaSO_4$*2H_2O	lb/hr	0	0	0		38,122	0	38,122	608	38,122	0	0	608	0	0
CaCl2 + CaF2	lb/hr	0	0	0		40,041	0	40,041	639	40,041	0	0	639	0	0
Total Solids	lb/hr	2,368	0	3,076		348,995	240	352,070	5,566	348,755	0	0	5,844	0	278
Water	lb/hr	0	7,884	7,176		523,492	23,014	530,669	618	38,751	461,728	1,767	2,385	471,379	0
Total Flow	lb/hr	2,368	7,884	10,252	TBD	872,487	23,254	882,739	6,185	387,505	461,728	1,767	8,230	471,379	278
Total Flow	gpm	---	16	17		1,349	46	1,366	---	---	923	4	---	942	---
Solids	wt%	100	0	30		40	1	40	90	90	0	0	71	0	100



Client: AEP
Station: Big Sandy - Unit 2

Mass Balance Integrated FGD (IAQCS) Technology -
3.0 lb SO_2/MMBtu Coal (w/ESP)

Project No.12721-000
8/5/2010
Revision B



FGD Process Parameters		
Ox. Stoich.	$O:SO_2$ Rem.	3
LS Stoich.	Ca:S Inlet	1.05
L/G Ratio	gpm/kacfm	110
Velocity	ft/s	13
Diameter	ft	68.4
Sulfur Levels		
SO_2 In	lb/MMBtu	2.914
SO_2 Out	lb/MMBtu	0.058
SO_3 In	lb/MMBtu	0.004
SO_3 Out	lb/MMBtu	0.003

Coal Analysis		
Component	Units	As Received
Carbon	wt%	67.04
Hydrogen	wt%	4.56
Nitrogen	wt%	1.32
Sulfur	wt%	1.81
Oxygen	wt%	6.49
Chlorine	wt%	0.12
Moisture	wt%	8.35
Ash	wt%	10.31
Calc. HHV	Btu/lb	12,007

Plant Production		
MCR Output	MW	865
Heat Input	MMBtu/hr	8180
Firing Rate	lb/hr	681,269
Limestone Analysis		
Component	Units	As Received
Size		3/4" x 0"
BWI	kWh/ton	12
$CaCO_3$	dry wt%	89.0
$MgCO_3$	dry wt%	4.0
Inert Solids	dry wt%	7.0

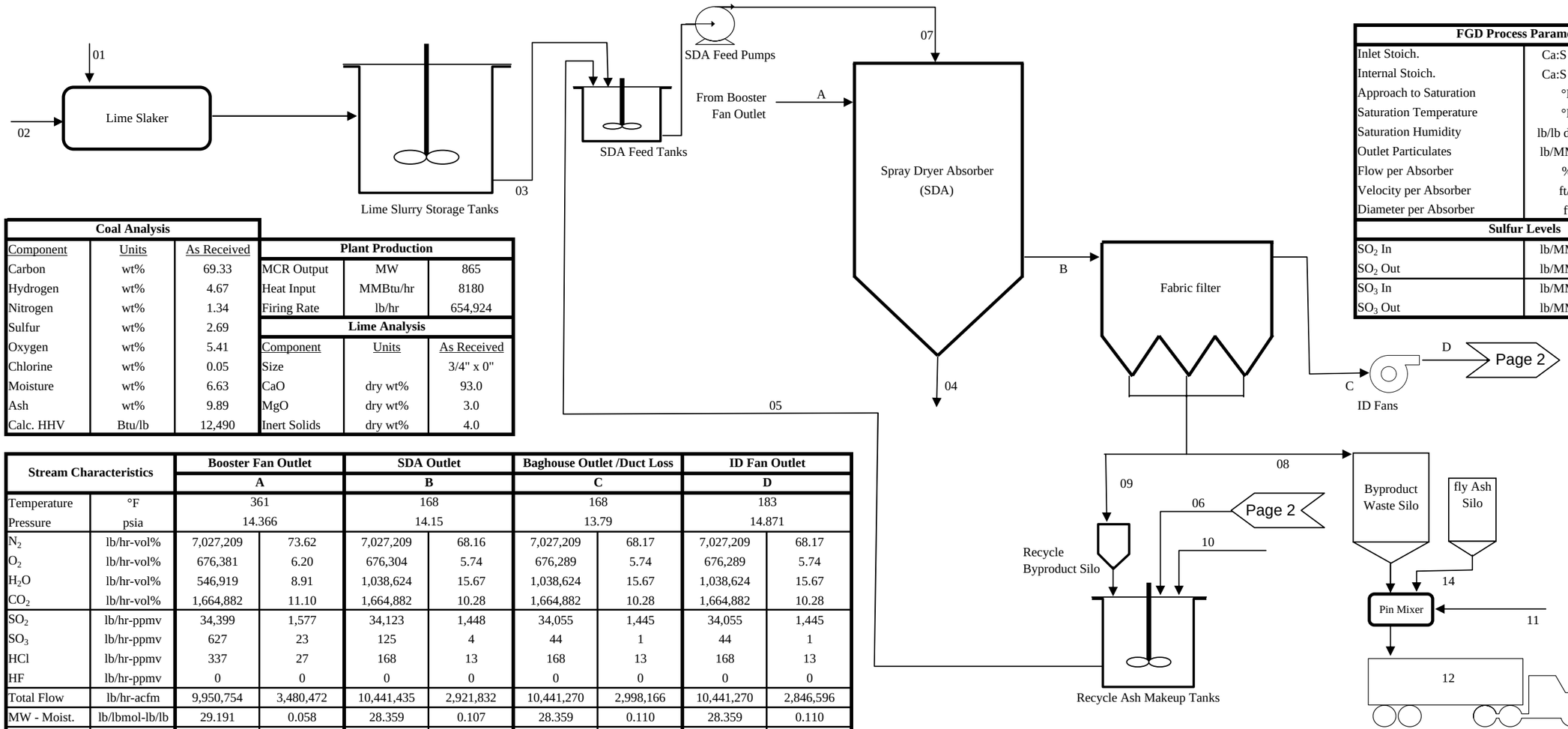
Stream Characteristics		ID Fan Outlet		FGD Outlet		Dry Oxidation Air		Wet Oxidation Air	
		D		E		F		G	
Temperature	°F	184		138		276		138	
Pressure	psia	14.871		14.438		31		31	
N_2	lb/hr-vol%	7,014,859	67.94	7,073,023	65.35	58,164	76.09	58,164	64.92
O_2	lb/hr-vol%	675,823	5.73	687,504	5.56	17,521	20.06	17,521	17.11
H_2O	lb/hr-vol%	1,055,566	15.90	1,331,888	19.14	1,892	3.85	10,353	17.97
CO_2	lb/hr-vol%	1,674,651	10.32	1,690,970	9.94	0	0.00	0	0.00
SO_2	lb/hr-ppmv	23,838	1,010	477	19	0	0	0	0
SO_3	lb/hr-ppmv	31	1	21	<1	0	0	0	0
HCl	lb/hr-ppmv	420	31	0	0	0	0	0	0
HF	lb/hr-ppmv	0	0	0	0	0	0	0	0
Total Flow	lb/hr-acfm	10,445,188	2,853,710	10,783,883	2,863,672	77,578	11,722	86,039	11,175
MW - Moist.	lb/lbmol-lb/lb	28.327	0.112	27.900	0.137	28.417	0.025	26.887	0.137
Ash	lb/hr-gr/acf	110	0.005	83	0.003	0	0.000	0	0.000

Stream Characteristics		Limestone	Fresh Slurry	Recycle	Bleed	HC - Over	Purge	HC - Reclaim	HC - Under	BF Product	Filtrate H2O	ME H2O	Mill H2O	Ox. Air H2O	WFGD Water	Belt Wash	Total Service Water	Total Landfill
		20	21	22	23	24	06	25	26	27	28	32	33	34	35	36	40	41
Inert Solids	lb/hr	3,061	3,061	1,169,394	3,288	214	15	199	3,073	3,073	0	0	0	0	0		0	5,085
CaCO3	lb/hr	38,915	38,915	691,295	1,943	127	9	118	1,817	1,817	0	0	0	0	0		0	--
$MgCO_3$	lb/hr	1,749	1,749	662,256	1,862	121	9	113	1,740	1,740	0	0	0	0	0		0	--
$CaSO_4*2H_2O$	lb/hr	0	0	23,315,067	65,546	2,950	208	2,742	62,597	62,597	0	0	0	0	0		0	--
Total Solids	lb/hr	43,725	43,725	25,838,012	72,639	3,412	240	3,172	69,227	69,227	0	0	0	0	0		0	75,071
Water	lb/hr	0	102,025	146,415,403	411,620	327,010	23,014	303,995	84,611	12,217	72,394	212,319	102,025	8,461	322,805	TBD	794,184	14,602
Total Flow	lb/hr	43,725	145,751	172,253,416	484,259	330,421	23,254	307,167	153,838	81,444	72,394	212,319	102,025	8,461	322,805		794,184	89,673
Total Flow	gpm	---	236	315,004	886	660	46	614	229	85	145	424	204	17	645		1,587	--
Solids	wt%	100.0	30.0	15.0	15.0	0.0	1.0	0.0	45.0	85.0	0.0	0.0	0.0	0.0	0.0		0.0	83.7
Chlorides	lb/hr	0	3	1,720,583	4,837	3,843	273	3,572	994	144	851	5	3	0	8		20	--
Chlorides	ppmw (d-gyp)	0	25	11,751	11,751	11,751	11,751	11,751	11,751	11,751	11,751	25	25	25	25		25	--

Client: AEP
Station: Big Sandy - Unit 2

Mass Balance Integrated FGD (IAQCS) Technology -
4.5 lb SO_2/MMBtu Coal (Base w/ESP)

Project No.12721-000
8/5/2010
Revision B



FGD Process Parameters		
Inlet Stoich.	Ca:S Inlet	0.1
Internal Stoich.	Ca:S Inlet	3.42
Approach to Saturation	°F	40
Saturation Temperature	°F	128
Saturation Humidity	lb/lb dry air	0.118
Outlet Particulates	lb/MMBtu	0.014
Flow per Absorber	%	33.3
Velocity per Absorber	ft/s	6.3
Diameter per Absorber	ft	63
Sulfur Levels		
SO_2 In	lb/MMBtu	4.205
SO_2 Out	lb/MMBtu	4.163
SO_3 In	lb/MMBtu	0.077
SO_3 Out	lb/MMBtu	0.005

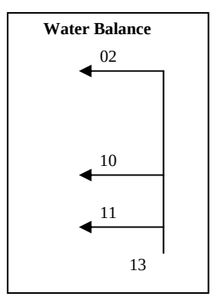
Coal Analysis		
Component	Units	As Received
Carbon	wt%	69.33
Hydrogen	wt%	4.67
Nitrogen	wt%	1.34
Sulfur	wt%	2.69
Oxygen	wt%	5.41
Chlorine	wt%	0.05
Moisture	wt%	6.63
Ash	wt%	9.89
Calc. HHV	Btu/lb	12,490

Plant Production		
MCR Output	MW	865
Heat Input	MMBtu/hr	8180
Firing Rate	lb/hr	654,924

Lime Analysis		
Component	Units	As Received
Size		3/4" x 0"
CaO	dry wt%	93.0
MgO	dry wt%	3.0
Inert Solids	dry wt%	4.0

Stream Characteristics		Booster Fan Outlet A		SDA Outlet B		Baghouse Outlet /Duct Loss C		ID Fan Outlet D	
Temperature	°F	361		168		168		183	
Pressure	psia	14.366		14.15		13.79		14.871	
N_2	lb/hr-vol%	7,027,209	73.62	7,027,209	68.16	7,027,209	68.17	7,027,209	68.17
O_2	lb/hr-vol%	676,381	6.20	676,304	5.74	676,289	5.74	676,289	5.74
H_2O	lb/hr-vol%	546,919	8.91	1,038,624	15.67	1,038,624	15.67	1,038,624	15.67
CO_2	lb/hr-vol%	1,664,882	11.10	1,664,882	10.28	1,664,882	10.28	1,664,882	10.28
SO_2	lb/hr-ppmv	34,399	1,577	34,123	1,448	34,055	1,445	34,055	1,445
SO_3	lb/hr-ppmv	627	23	125	4	44	1	44	1
HCl	lb/hr-ppmv	337	27	168	13	168	13	168	13
HF	lb/hr-ppmv	0	0	0	0	0	0	0	0
Total Flow	lb/hr-acfm	9,950,754	3,480,472	10,441,435	2,921,832	10,441,270	2,998,166	10,441,270	2,846,596
MW - Moist.	lb/lbmol-lb/lb	29.191	0.058	28.359	0.107	28.359	0.110	28.359	0.110
Ash	lb/hr-gr/acf	1,613	0.054	85,092	3.398	111	0.004	111	0.005

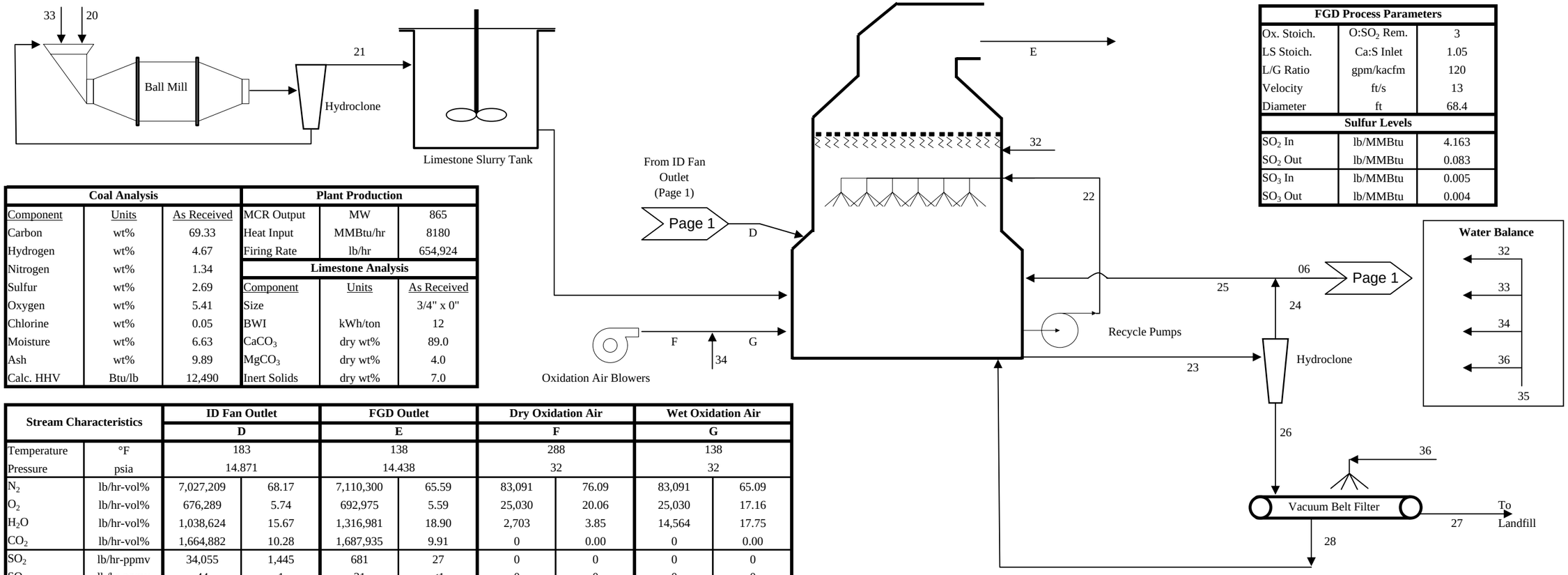
Stream Characteristics		Fresh Lime 01	Slaker H2O 02	Lime Slurry 03	Abs. Solids 04	Recycle 05	Purge 06	SDA Inlet 07	Waste Solids 08	Recycle Solids 09	Recycle H2O 10	Pin Mixer H2O 11	Landfill 12	SDA Water 13	Stabilization 14
Inert Solids	lb/hr	132	0	132		83,509	53	83,642	1,635	83,456	0	0	1,975	0	340
CaO	lb/hr	3,080	0	0		0	0	0	0	0	0	0	0	0	0
$Ca(OH)_2$	lb/hr	0	0	4,069		151,162	0	155,232	2,962	151,162	0	0	2,962	0	0
MgO	lb/hr	99	0	99		5,071	0	5,170	99	5,071	0	0	99	0	0
$CaSO_3*0.5H_2O$	lb/hr	0	0	0		50,040	0	50,040	980	50,040	0	0	980	0	0
$CaSO_4*2H_2O$	lb/hr	0	0	0		44,480	0	44,480	871	44,480	0	0	871	0	0
CaCl2 + CaF2	lb/hr	0	0	0		13,065	0	13,065	256	13,065	0	0	256	0	0
Total Solids	lb/hr	3,311	0	4,301		347,328	53	351,629	6,804	347,275	0	0	7,144	0	340
Water	lb/hr	0	11,026	10,036		520,992	5,052	531,028	756	38,586	477,354	2,160	2,916	490,540	0
Total Flow	lb/hr	3,311	11,026	14,338	TBD	868,320	5,105	882,657	7,560	385,861	477,354	2,160	10,060	490,540	340
Total Flow	gpm	---	22	23		1,343	10	1,367	---	---	954	4	---	980	---
Solids	wt%	100	0	30		40	1	40	90	90	0	0	71	0	100



Client: AEP
Station: Big Sandy - Unit 2

Mass Balance Integrated FGD (IAQCS) Technology -
4.5 lb SO_2/MMBtu Coal (Base w/ESP)

Project No.12721-000
8/5/2010
Revision B



FGD Process Parameters		
Ox. Stoich.	$O:SO_2$ Rem.	3
LS Stoich.	Ca:S Inlet	1.05
L/G Ratio	gpm/kacfm	120
Velocity	ft/s	13
Diameter	ft	68.4
Sulfur Levels		
SO_2 In	lb/MMBtu	4.163
SO_2 Out	lb/MMBtu	0.083
SO_3 In	lb/MMBtu	0.005
SO_3 Out	lb/MMBtu	0.004

Coal Analysis		
Component	Units	As Received
Carbon	wt%	69.33
Hydrogen	wt%	4.67
Nitrogen	wt%	1.34
Sulfur	wt%	2.69
Oxygen	wt%	5.41
Chlorine	wt%	0.05
Moisture	wt%	6.63
Ash	wt%	9.89
Calc. HHV	Btu/lb	12,490

Plant Production		
MCR Output	MW	865
Heat Input	MMBtu/hr	8180
Firing Rate	lb/hr	654,924
Limestone Analysis		
Component	Units	As Received
Size		3/4" x 0"
BWI	kWh/ton	12
$CaCO_3$	dry wt%	89.0
$MgCO_3$	dry wt%	4.0
Inert Solids	dry wt%	7.0

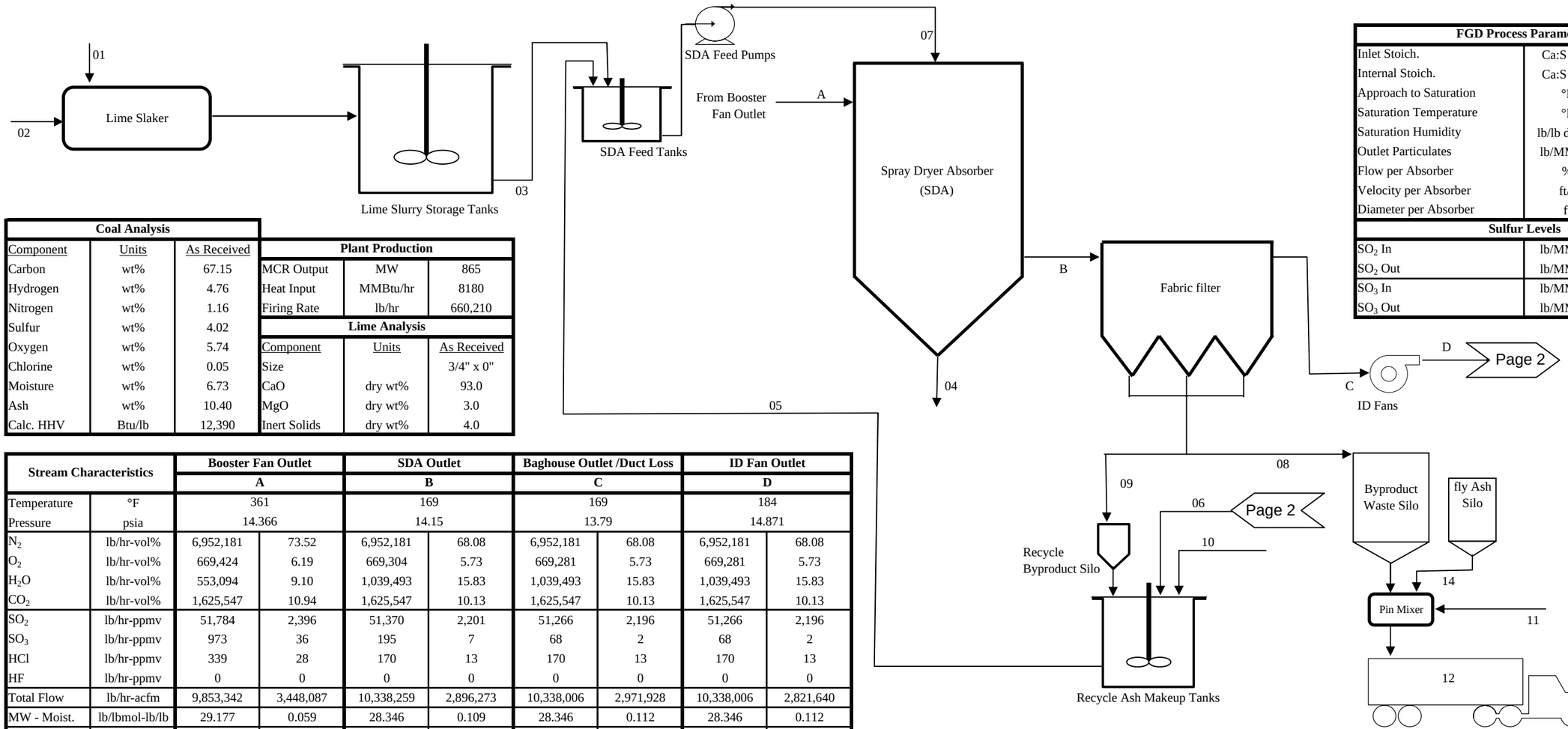
Stream Characteristics		ID Fan Outlet D		FGD Outlet E		Dry Oxidation Air F		Wet Oxidation Air G	
Temperature	°F	183		138		288		138	
Pressure	psia	14.871		14.438		32		32	
N_2	lb/hr-vol%	7,027,209	68.17	7,110,300	65.59	83,091	76.09	83,091	65.09
O_2	lb/hr-vol%	676,289	5.74	692,975	5.59	25,030	20.06	25,030	17.16
H_2O	lb/hr-vol%	1,038,624	15.67	1,316,981	18.90	2,703	3.85	14,564	17.75
CO_2	lb/hr-vol%	1,664,882	10.28	1,687,935	9.91	0	0.00	0	0.00
SO_2	lb/hr-ppmv	34,055	1,445	681	27	0	0	0	0
SO_3	lb/hr-ppmv	44	1	31	<1	0	0	0	0
HCl	lb/hr-ppmv	168	13	0	0	0	0	0	0
HF	lb/hr-ppmv	0	0	0	0	0	0	0	0
Total Flow	lb/hr-acfm	10,441,270	2,846,596	10,808,903	2,864,847	110,825	16,267	122,686	15,202
MW - Moist.	lb/lbmol-lb/lb	28.359	0.110	27.920	0.135	28.417	0.025	26.911	0.135
Ash	lb/hr-gr/acf	111	0.005	83	0.003	0	0.000	0	0.000

Stream Characteristics		Limestone 20	Fresh Slurry 21	Recycle 22	Bleed 23	HC - Over 24	Purge 06	HC - Reclaim 25	HC - Under 26	BF Product 27	Filtrate H2O 28	ME H2O 32	Mill H2O 33	Ox. Air H2O 34	WFGD Water 35	Belt Wash 36	Total Service Water 40	Total Landfill 41
Inert Solids	lb/hr	4,326	4,326	1,261,984	4,654	303	3	300	4,350	4,350	0	0	0	0	0		0	6,325
CaCO3	lb/hr	55,001	55,001	756,022	2,788	182	2	180	2,606	2,606	0	0	0	0	0		0	--
$MgCO_3$	lb/hr	2,472	2,472	716,553	2,642	172	2	170	2,470	2,470	0	0	0	0	0		0	--
$CaSO_4*2H_2O$	lb/hr	0	0	25,463,927	93,900	4,225	46	4,180	89,674	89,674	0	0	0	0	0		0	--
Total Solids	lb/hr	61,799	61,799	28,198,486	103,983	4,883	53	4,830	99,101	99,101	0	0	0	0	0		0	106,245
Water	lb/hr	0	144,198	159,791,422	589,239	468,116	5,052	463,064	121,123	17,488	103,635	160,913	144,198	11,861	316,973	TBD	807,513	20,404
Total Flow	lb/hr	61,799	205,997	187,989,908	693,222	472,999	5,105	467,894	220,224	116,589	103,635	160,913	144,198	11,861	316,973		807,513	126,649
Total Flow	gpm	---	334	343,782	1,268	945	10	935	328	121	207	322	288	24	633		1,614	--
Solids	wt%	100.0	30.0	15.0	15.0	0.0	1.0	0.0	45.0	85.0	0.0	0.0	0.0	0.0	0.0		0.0	83.9
Chlorides	lb/hr	0	4	1,214,040	4,477	3,557	39	3,518	920	133	787	4	4	0	8		20	--
Chlorides	ppmw (d-gyp)	0	25	7,598	7,598	7,598	7,598	7,598	7,598	7,598	7,598	25	25	25	25		25	--

Client: AEP
Station: Big Sandy - Unit 2

Mass Balance Integrated FGD (IAQCS) Technology -
7.5 lb SO_2/MMBtu Coal (w/ESP)

Project No.12721-000
8/5/2010
Revision B



FGD Process Parameters		
Inlet Stoich.	Ca:S Inlet	0.1
Internal Stoich.	Ca:S Inlet	2.43
Approach to Saturation	°F	40
Saturation Temperature	°F	129
Saturation Humidity	lb/lb dry air	0.119
Outlet Particulates	lb/MMBtu	0.014
Flow per Absorber	%	33.3
Velocity per Absorber	ft/s	6.2
Diameter per Absorber	ft	62
Sulfur Levels		
SO_2 In	lb/MMBtu	6.331
SO_2 Out	lb/MMBtu	6.267
SO_3 In	lb/MMBtu	0.119
SO_3 Out	lb/MMBtu	0.008

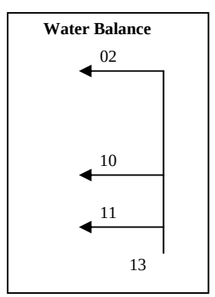
Coal Analysis		
Component	Units	As Received
Carbon	wt%	67.15
Hydrogen	wt%	4.76
Nitrogen	wt%	1.16
Sulfur	wt%	4.02
Oxygen	wt%	5.74
Chlorine	wt%	0.05
Moisture	wt%	6.73
Ash	wt%	10.40
Calc. HHV	Btu/lb	12,390

Plant Production		
MCR Output	MW	865
Heat Input	MMBtu/hr	8180
Firing Rate	lb/hr	660,210

Lime Analysis		
Component	Units	As Received
Size		3/4" x 0"
CaO	dry wt%	93.0
MgO	dry wt%	3.0
Inert Solids	dry wt%	4.0

Stream Characteristics		Booster Fan Outlet		SDA Outlet		Baghouse Outlet /Duct Loss		ID Fan Outlet	
		A		B		C		D	
Temperature	°F	361		169		169		184	
Pressure	psia	14.366		14.15		13.79		14.871	
N_2	lb/hr-vol%	6,952,181	73.52	6,952,181	68.08	6,952,181	68.08	6,952,181	68.08
O_2	lb/hr-vol%	669,424	6.19	669,304	5.73	669,281	5.73	669,281	5.73
H_2O	lb/hr-vol%	553,094	9.10	1,039,493	15.83	1,039,493	15.83	1,039,493	15.83
CO_2	lb/hr-vol%	1,625,547	10.94	1,625,547	10.13	1,625,547	10.13	1,625,547	10.13
SO_2	lb/hr-ppmv	51,784	2,396	51,370	2,201	51,266	2,196	51,266	2,196
SO_3	lb/hr-ppmv	973	36	195	7	68	2	68	2
HCl	lb/hr-ppmv	339	28	170	13	170	13	170	13
HF	lb/hr-ppmv	0	0	0	0	0	0	0	0
Total Flow	lb/hr-acfm	9,853,342	3,448,087	10,338,259	2,896,273	10,338,006	2,971,928	10,338,006	2,821,640
MW - Moist.	lb/lbmol-lb/lb	29.177	0.059	28.346	0.109	28.346	0.112	28.346	0.112
Ash	lb/hr-gr/acf	1,710	0.058	65,827	2.652	112	0.004	112	0.005

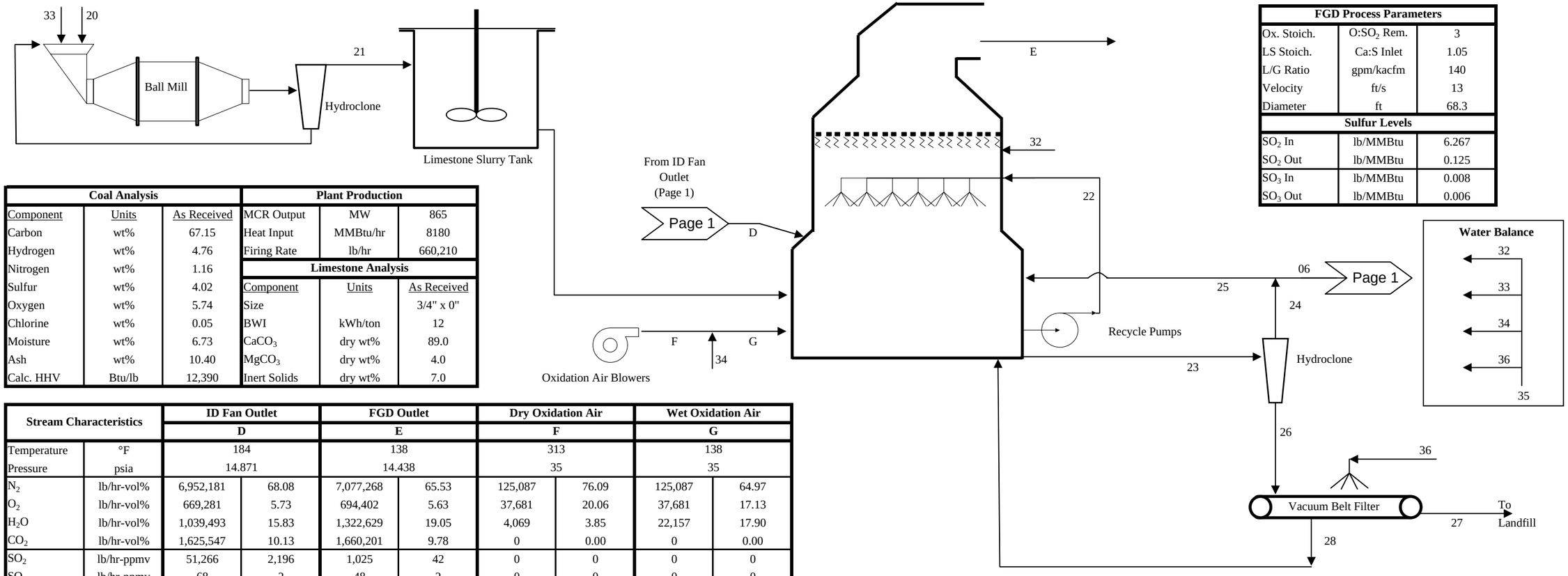
Stream Characteristics		Fresh Lime	Slaker H2O	Lime Slurry	Abs. Solids	Recycle	Purge	SDA Inlet	Waste Solids	Recycle Solids	Recycle H2O	Pin Mixer H2O	Landfill	SDA Water	Stabilization
		01	02	03	04	05	06	07	08	09	10	11	12	13	14
Inert Solids	lb/hr	199	0	199		64,070	40	64,269	1,797	64,030	0	0	2,274	0	477
CaO	lb/hr	4,625	0	0		0	0	0	0	0	0	0	0	0	0
$Ca(OH)_2$	lb/hr	0	0	6,112		160,487	0	166,599	4,504	160,487	0	0	4,504	0	0
MgO	lb/hr	149	0	149		5,316	0	5,465	149	5,316	0	0	149	0	0
$CaSO_3$*0.5H_2O	lb/hr	0	0	0		53,493	0	53,493	1,501	53,493	0	0	1,501	0	0
$CaSO_4$*2H_2O	lb/hr	0	0	0		47,550	0	47,550	1,335	47,550	0	0	1,335	0	0
CaCl2 + CaF2	lb/hr	0	0	0		9,194	0	9,194	258	9,194	0	0	258	0	0
Total Solids	lb/hr	4,973	0	6,460		340,110	40	346,570	9,545	340,069	0	0	10,022	0	477
Water	lb/hr	0	16,560	15,073		510,164	3,882	525,238	1,061	37,785	468,497	3,030	4,091	488,087	0
Total Flow	lb/hr	4,973	16,560	21,533	TBD	850,274	3,922	871,808	10,605	377,855	468,497	3,030	14,113	488,087	477
Total Flow	gpm	---	33	35		1,315	8	1,351	---	---	936	6	---	975	---
Solids	wt%	100	0	30		40	1	40	90	90	0	0	71	0	100



Client: AEP
Station: Big Sandy - Unit 2

Mass Balance Integrated FGD (IAQCS) Technology -
7.5 lb SO_2/MMBtu Coal (w/ESP)

Project No.12721-000
8/5/2010
Revision B



FGD Process Parameters		
Ox. Stoich.	$O:SO_2$ Rem.	3
LS Stoich.	Ca:S Inlet	1.05
L/G Ratio	gpm/kacfm	140
Velocity	ft/s	13
Diameter	ft	68.3
Sulfur Levels		
SO_2 In	lb/MMBtu	6.267
SO_2 Out	lb/MMBtu	0.125
SO_3 In	lb/MMBtu	0.008
SO_3 Out	lb/MMBtu	0.006

Coal Analysis		
Component	Units	As Received
Carbon	wt%	67.15
Hydrogen	wt%	4.76
Nitrogen	wt%	1.16
Sulfur	wt%	4.02
Oxygen	wt%	5.74
Chlorine	wt%	0.05
Moisture	wt%	6.73
Ash	wt%	10.40
Calc. HHV	Btu/lb	12,390

Plant Production		
MCR Output	MW	865
Heat Input	MMBtu/hr	8180
Firing Rate	lb/hr	660,210
Limestone Analysis		
Component	Units	As Received
Size		3/4" x 0"
BWI	kWh/ton	12
$CaCO_3$	dry wt%	89.0
$MgCO_3$	dry wt%	4.0
Inert Solids	dry wt%	7.0

Stream Characteristics		ID Fan Outlet D		FGD Outlet E		Dry Oxidation Air F		Wet Oxidation Air G	
Temperature	°F	184		138		313		138	
Pressure	psia	14.871		14.438		35		35	
N_2	lb/hr-vol%	6,952,181	68.08	7,077,268	65.53	125,087	76.09	125,087	64.97
O_2	lb/hr-vol%	669,281	5.73	694,402	5.63	37,681	20.06	37,681	17.13
H_2O	lb/hr-vol%	1,039,493	15.83	1,322,629	19.05	4,069	3.85	22,157	17.90
CO_2	lb/hr-vol%	1,625,547	10.13	1,660,201	9.78	0	0.00	0	0.00
SO_2	lb/hr-ppmv	51,266	2,196	1,025	42	0	0	0	0
SO_3	lb/hr-ppmv	68	2	48	2	0	0	0	0
HCl	lb/hr-ppmv	170	13	0	0	0	0	0	0
HF	lb/hr-ppmv	0	0	0	0	0	0	0	0
Total Flow	lb/hr-acfm	10,338,006	2,821,640	10,755,573	2,856,403	166,837	23,039	184,924	20,873
MW - Moist.	lb/lbmol-lb/lb	28.346	0.112	27.887	0.136	28.417	0.025	26.895	0.136
Ash	lb/hr-gr/acf	112	0.005	84	0.003	0	0.000	0	0.000

Stream Characteristics		Limestone 20	Fresh Slurry 21	Recycle 22	Bleed 23	HC - Over 24	Purge 06	HC - Reclaim 25	HC - Under 26	BF Product 27	Filtrate H2O 28	ME H2O 32	Mill H2O 33	Ox. Air H2O 34	WFGD Water 35	Belt Wash 36	Total Service Water 40	Total Landfill 41
Inert Solids	lb/hr	6,503	6,503	1,463,332	6,984	455	3	453	6,529	6,529	0	0	0	0	0		0	8,803
CaCO3	lb/hr	82,686	82,686	879,688	4,198	274	2	272	3,925	3,925	0	0	0	0	0		0	--
$MgCO_3$	lb/hr	3,716	3,716	832,608	3,974	259	1	258	3,715	3,715	0	0	0	0	0		0	--
$CaSO_4*2H_2O$	lb/hr	0	0	29,625,646	141,394	6,363	35	6,328	135,031	135,031	0	0	0	0	0		0	--
Total Solids	lb/hr	92,905	92,905	32,801,273	156,550	7,351	40	7,310	149,200	149,200	0	0	0	0	0		0	159,222
Water	lb/hr	0	216,779	185,873,882	887,118	704,763	3,882	700,881	182,355	26,329	156,026	102,681	216,779	18,088	337,548	TBD	825,635	30,420
Total Flow	lb/hr	92,905	309,684	218,675,155	1,043,668	712,113	3,922	708,191	331,555	175,529	156,026	102,681	216,779	18,088	337,548		825,635	189,642
Total Flow	gpm	---	502	399,896	1,909	1,423	8	1,415	494	182	312	205	433	36	674		1,650	--
Solids	wt%	100.0	30.0	15.0	15.0	0.0	1.0	0.0	45.0	85.0	0.0	0.0	0.0	0.0	0.0		0.0	84.0
Chlorides	lb/hr	0	5	1,065,971	5,088	4,042	22	4,019	1,046	151	895	3	5	0	8		21	--
Chlorides	ppmw (d-gyp)	0	25	5,735	5,735	5,735	5,735	5,735	5,735	5,735	5,735	25	25	25	25		25	--

ATTACHMENT 4-4
IAQCS Water Balances

IAQCS Water Balance Assumptions

1. Service Water within the IAQCS Island (to Ball Mill, Mist Eliminator, Oxidation Air, Belt Filter, Lime Slaker, Recycle Ash Premix Tank. Waste silo and pin mixer) are from Mass Balances dated 9/10/2010.

2. Water for wash-down and flushes are based on assumed instantaneous flow rates and usages of 1230 GPM seven times a week for 15 minutes and will be drained/pumped to the process water storage basin for the 1.7 and 3.0 lb SO_2/mmBtu cases (with provisions to dump into the hydroclones when the WFGD is phased in). This water will be pumped directly to the WFGD system for the 4.5 and 7.5 lb SO_2/mmBtu cases.

3. Water from the process water storage basin will be used in the IAQCS recycle system. A filtering system will be in place in the basin to limit particle size to 1/32".

4. Leachate would be pumped from the landfill to the leachate pond, the balance of the water in the landfill is assumed to be lost to evaporation. Leachate disposal will be by treatment system or off-site disposal.

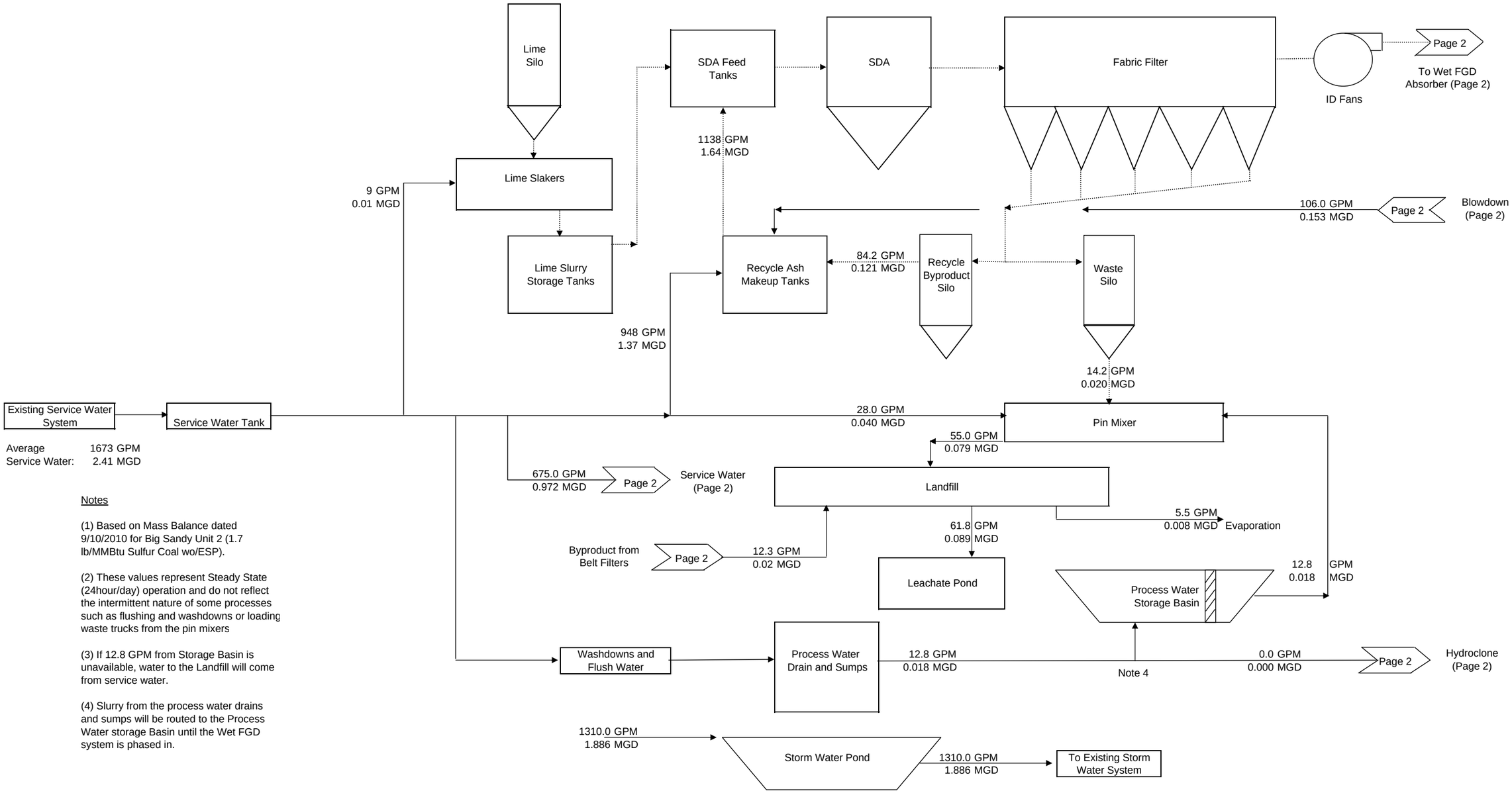
5. 10% of the water sprayed for dust suppression (without ESP) or pin mixing (with ESP) is lost to evaporation

6. Storm Water Pond flow is a 24 hour average of the 50 year rain.

<u>Steady State vs. Instantaneous Service Water Requirements</u>

The average service water required is a steady state (or average) amount over the course of a year. Actual operation will occur in more of a batch mode, and as such, higher demands of service water will be needed over the course of a day (i.e. the lime slaker and ball mill require a maximum of flow of service water on an instantaneous basis but only the average basis is depicted on the water balance.

Big Sandy IAQCS Water Balance
1.7 lb/mmbtu Sulfur Coal wo/ESP



Notes

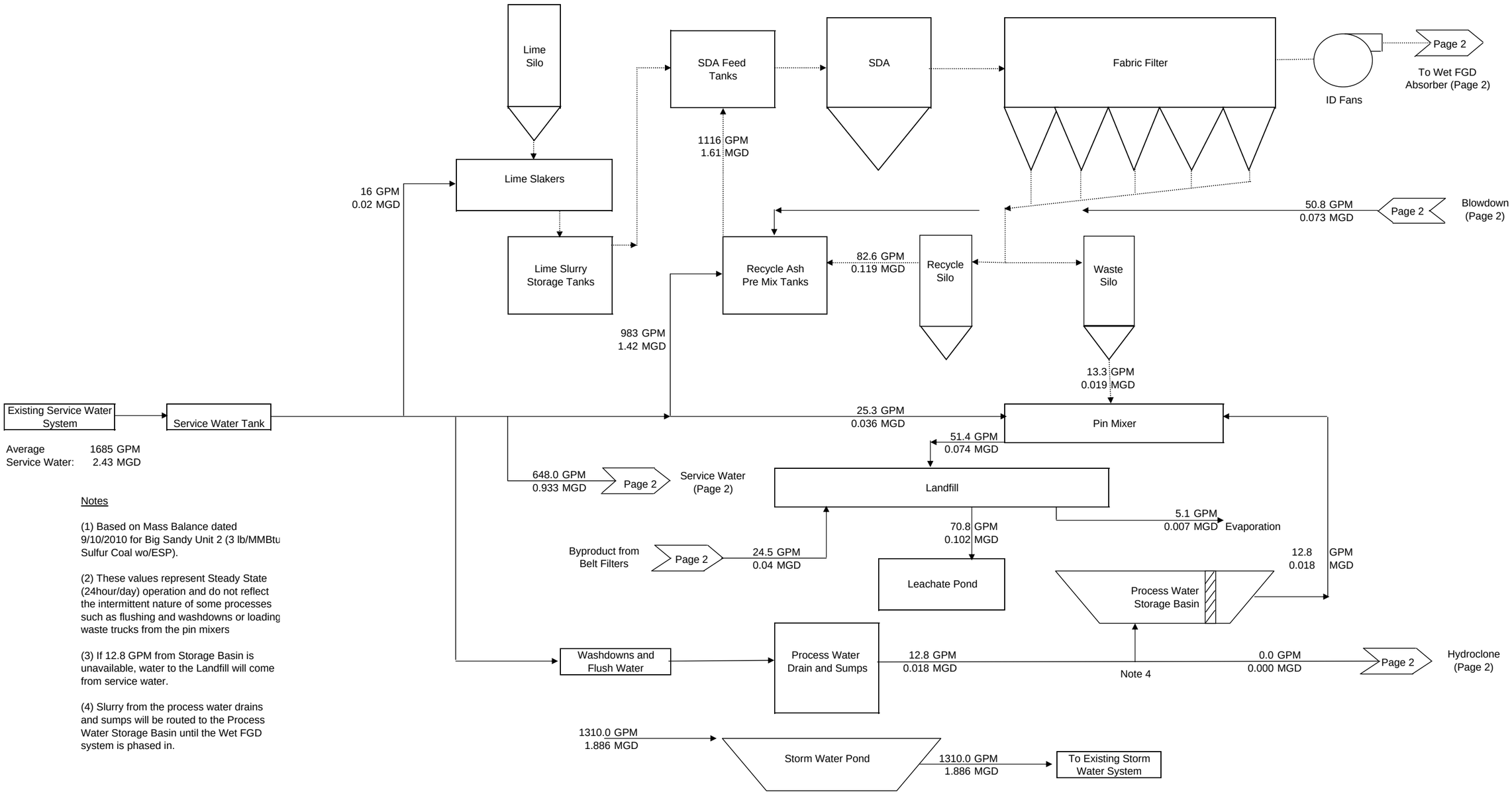
(1) Based on Mass Balance dated 9/10/2010 for Big Sandy Unit 2 (1.7 lb/MMBtu Sulfur Coal wo/ESP).

(2) These values represent Steady State (24hour/day) operation and do not reflect the intermittent nature of some processes such as flushing and washdowns or loading waste trucks from the pin mixers

(3) If 12.8 GPM from Storage Basin is unavailable, water to the Landfill will come from service water.

(4) Slurry from the process water drains and sumps will be routed to the Process Water storage Basin until the Wet FGD system is phased in.

Big Sandy IAQCS Water Balance
3 lb/mmbtu Sulfur Coal wo/ESP



Notes

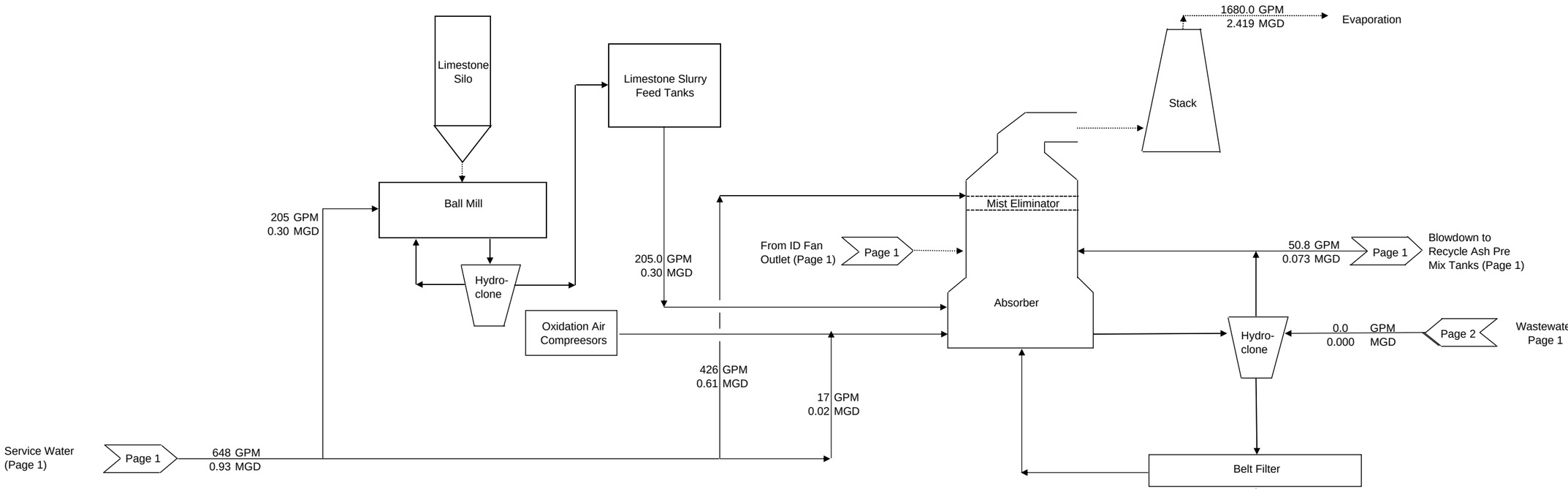
(1) Based on Mass Balance dated 9/10/2010 for Big Sandy Unit 2 (3 lb/MMBtu Sulfur Coal wo/ESP).

(2) These values represent Steady State (24hour/day) operation and do not reflect the intermittent nature of some processes such as flushing and washdowns or loading waste trucks from the pin mixers

(3) If 12.8 GPM from Storage Basin is unavailable, water to the Landfill will come from service water.

(4) Slurry from the process water drains and sumps will be routed to the Process Water Storage Basin until the Wet FGD system is phased in.

Big Sandy IAQCS Water Balance
3 lb/mmbtu Sulfur Coal wo/ESP

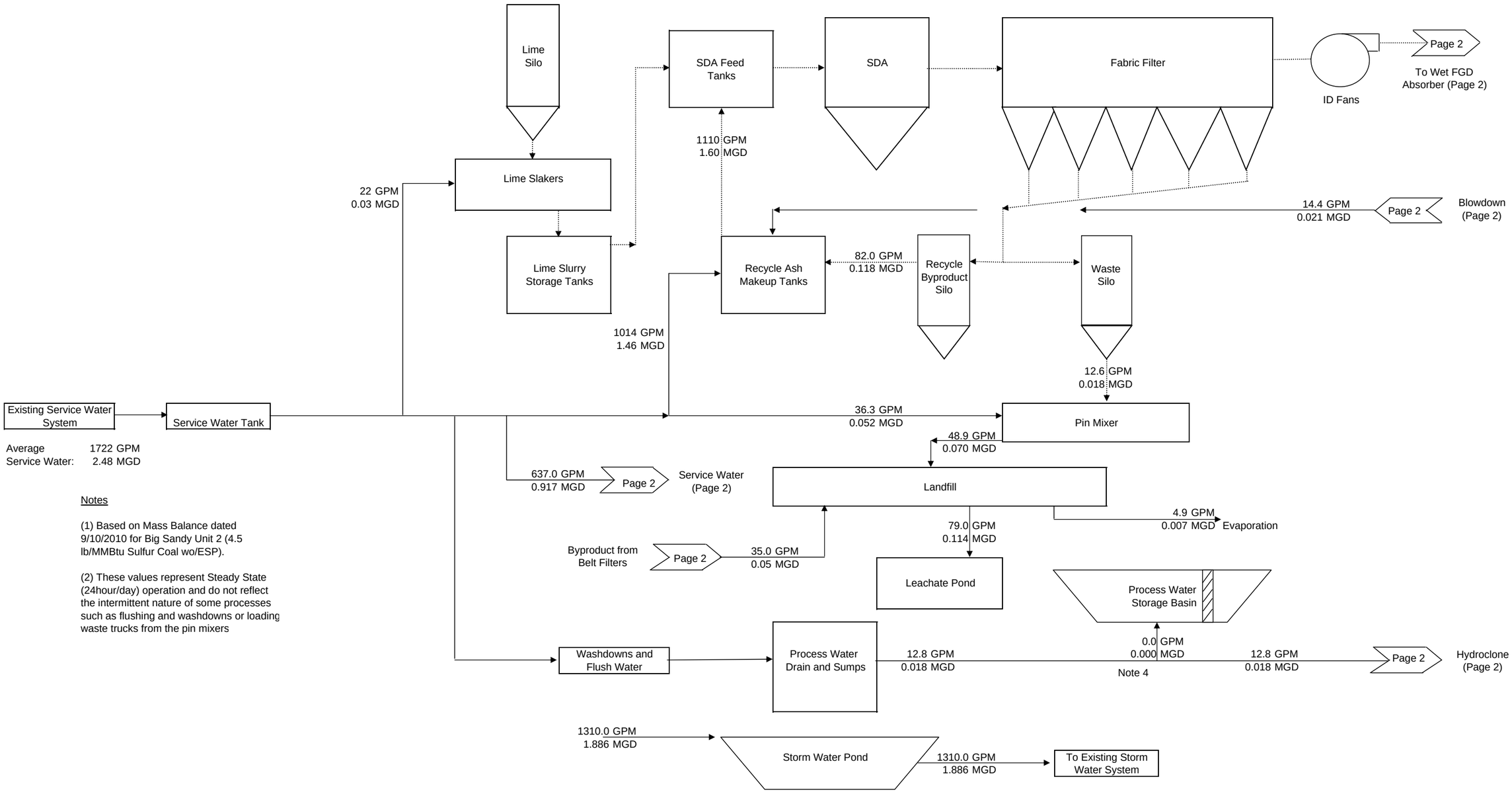


Notes

(1) Based on Mass Balance dated 9/10/2010 for Big Sandy Unit 2 (3 lb/MMBtu Sulfur Coal wo/ESP).

(2) These values represent Steady State (24hour/day) operation and do not reflect the intermittent nature of some processes such as flushing and washdowns or loading waste trucks from the pin mixers

Big Sandy IAQCS Water Balance
4.5 lb/mmbtu Sulfur Coal wo/ESP



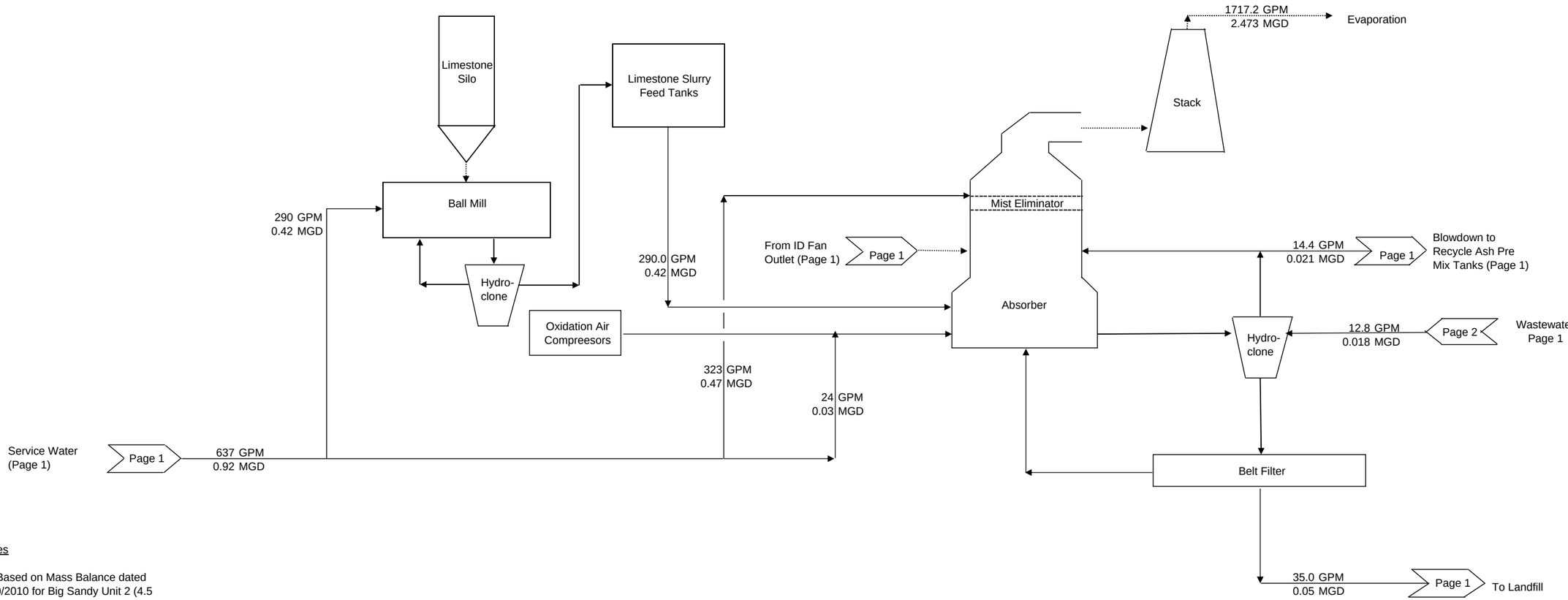
Average Service Water: 1722 GPM 2.48 MGD

Notes

(1) Based on Mass Balance dated 9/10/2010 for Big Sandy Unit 2 (4.5 lb/MMBtu Sulfur Coal wo/ESP).

(2) These values represent Steady State (24hour/day) operation and do not reflect the intermittent nature of some processes such as flushing and washdowns or loading waste trucks from the pin mixers

Big Sandy IAQCS Water Balance
4.5 lb/mmbtu Sulfur Coal wo/ESP

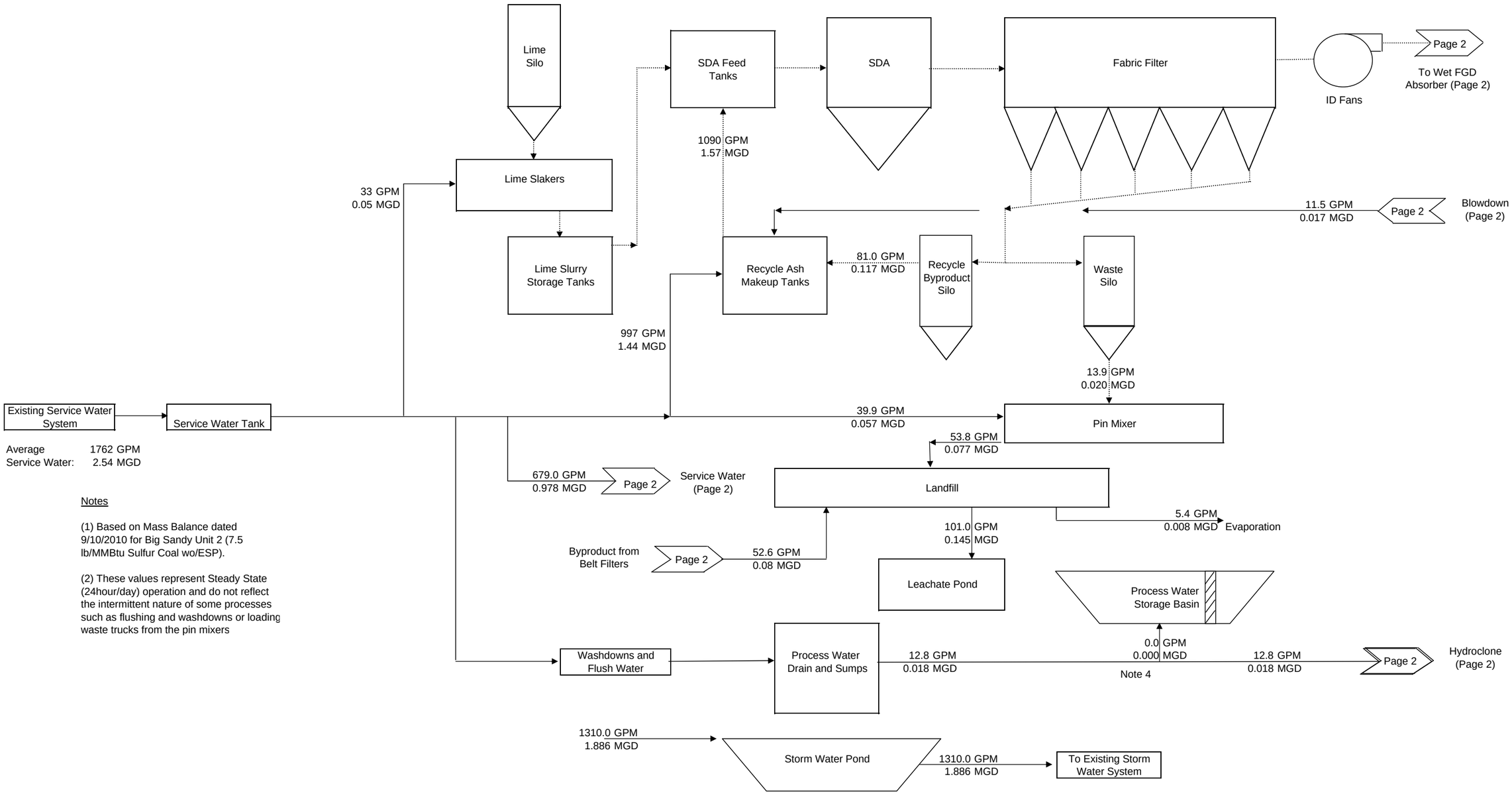


Notes

(1) Based on Mass Balance dated 9/10/2010 for Big Sandy Unit 2 (4.5 lb/MMBtu Sulfur Coal wo/ESP).

(2) These values represent Steady State (24hour/day) operation and do not reflect the intermittent nature of some processes such as flushing and washdowns or loading waste trucks from the pin mixers

Big Sandy IAQCS Water Balance
7.5 lb/mmbtu Sulfur Coal wo/ESP

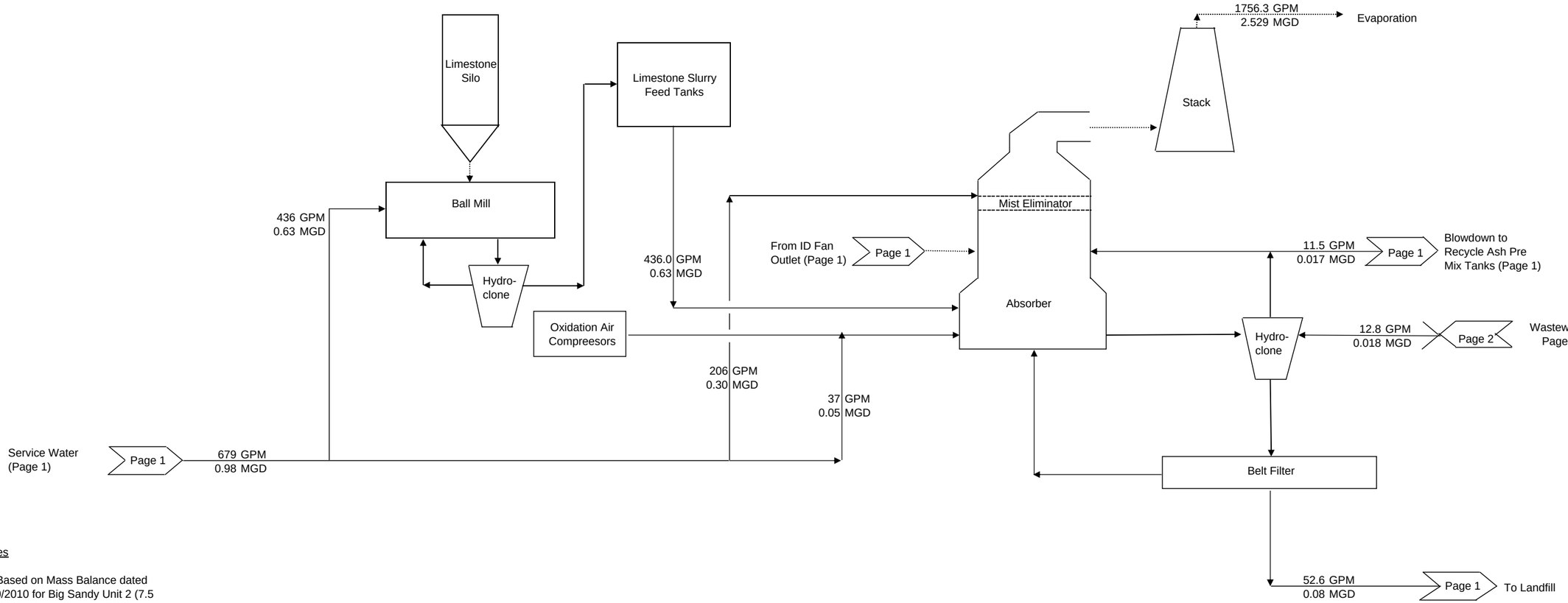


Notes

(1) Based on Mass Balance dated 9/10/2010 for Big Sandy Unit 2 (7.5 lb/MMBtu Sulfur Coal wo/ESP).

(2) These values represent Steady State (24hour/day) operation and do not reflect the intermittent nature of some processes such as flushing and washdowns or loading waste trucks from the pin mixers

Big Sandy IAQCS Water Balance
7.5 lb/mmbtu Sulfur Coal wo/ESP

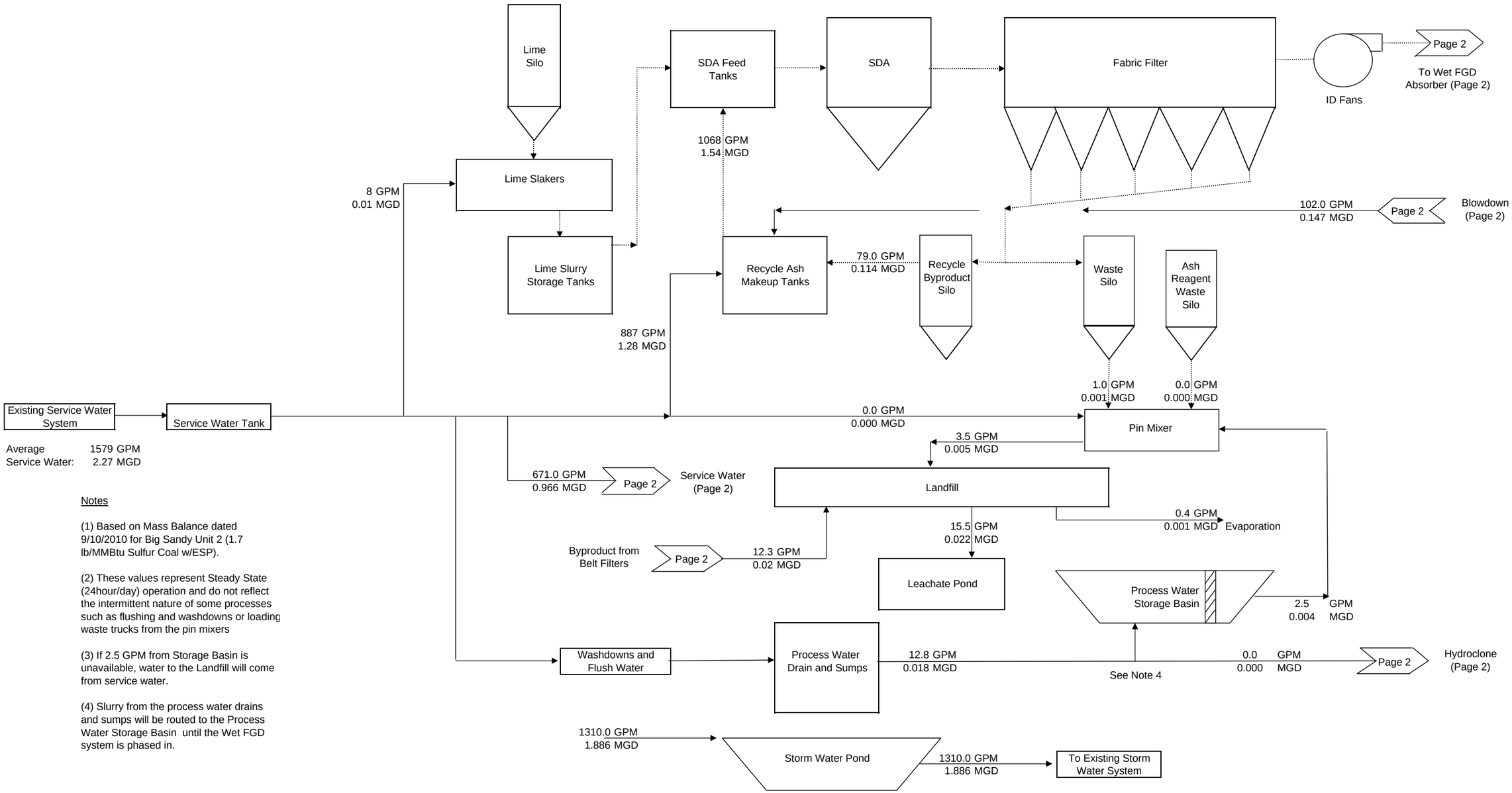


Notes

(1) Based on Mass Balance dated 9/10/2010 for Big Sandy Unit 2 (7.5 lb/MMBtu Sulfur Coal wo/ESP).

(2) These values represent Steady State (24hour/day) operation and do not reflect the intermittent nature of some processes such as flushing and washdowns or loading waste trucks from the pin mixers

Big Sandy IAQCS Water Balance
1.7 lb/mmbtu Sulfur Coal w/ESP



Average Service Water: 1579 GPM 2.27 MGD

Notes

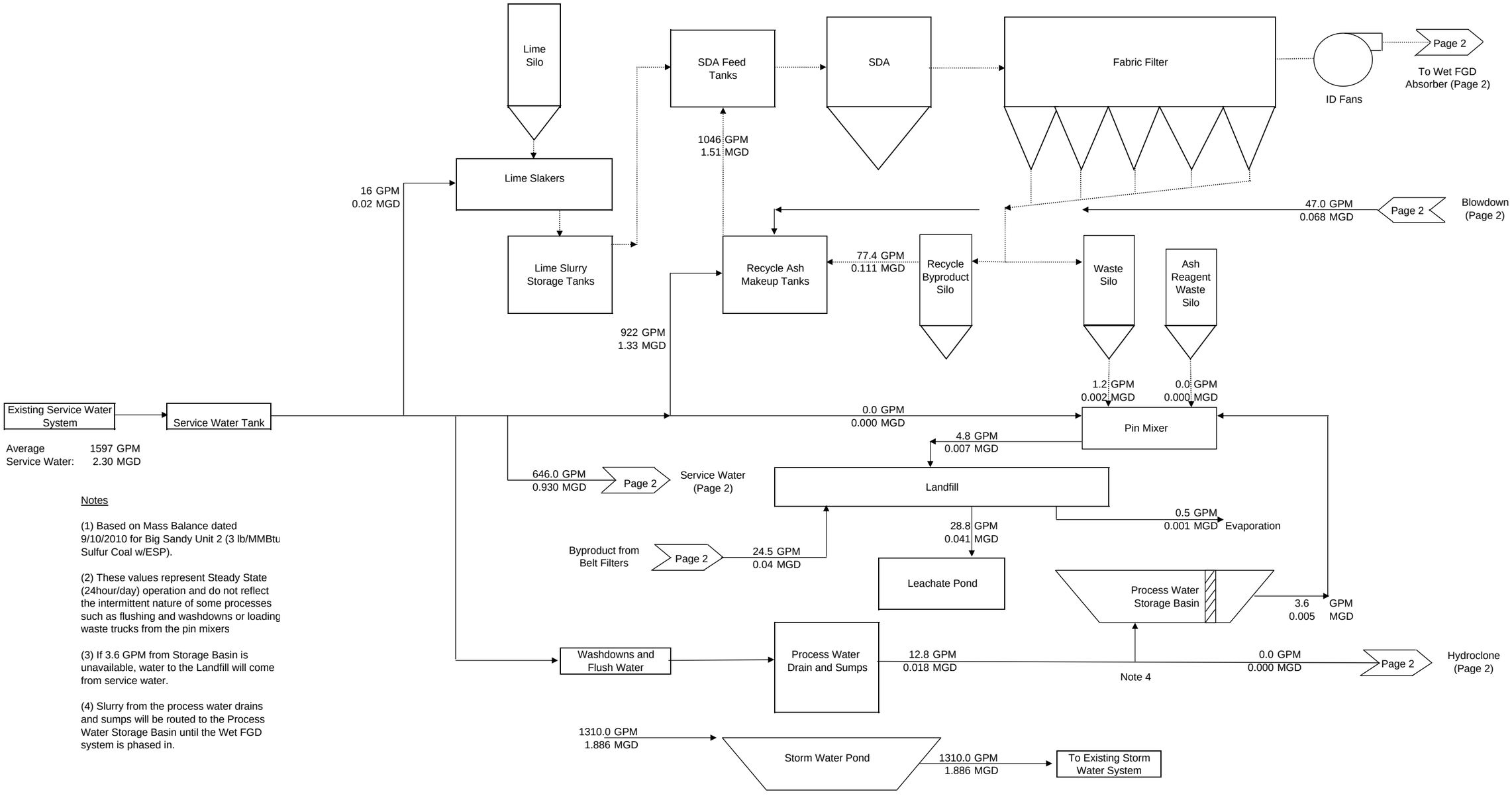
(1) Based on Mass Balance dated 9/10/2010 for Big Sandy Unit 2 (1.7 lb/MMBtu Sulfur Coal w/ESP).

(2) These values represent Steady State (24hour/day) operation and do not reflect the intermittent nature of some processes such as flushing and washdowns or loading waste trucks from the pin mixers

(3) If 2.5 GPM from Storage Basin is unavailable, water to the Landfill will come from service water.

(4) Slurry from the process water drains and sumps will be routed to the Process Water Storage Basin until the Wet FGD system is phased in.

Big Sandy IAQCS Water Balance
3 lb/mmbtu Sulfur Coal w/ESP



Average Service Water: 1597 GPM 2.30 MGD

Notes

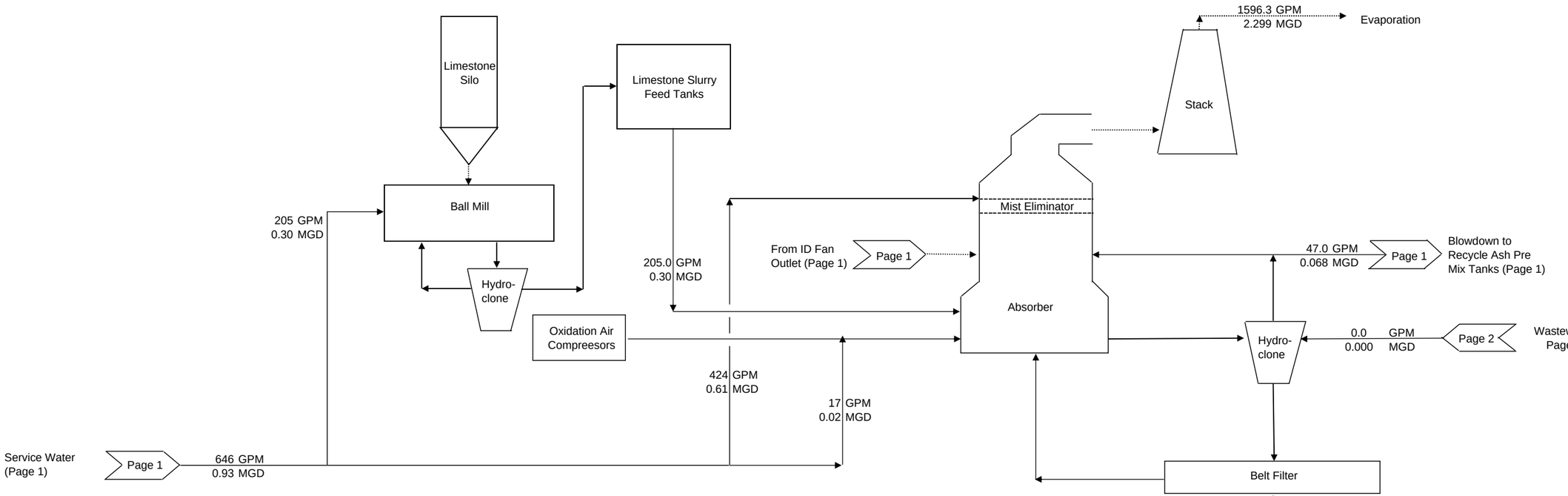
(1) Based on Mass Balance dated 9/10/2010 for Big Sandy Unit 2 (3 lb/MMBtu Sulfur Coal w/ESP).

(2) These values represent Steady State (24hour/day) operation and do not reflect the intermittent nature of some processes such as flushing and washdowns or loading waste trucks from the pin mixers

(3) If 3.6 GPM from Storage Basin is unavailable, water to the Landfill will come from service water.

(4) Slurry from the process water drains and sumps will be routed to the Process Water Storage Basin until the Wet FGD system is phased in.

Big Sandy IAQCS Water Balance
3 lb/mmbtu Sulfur Coal w/ESP

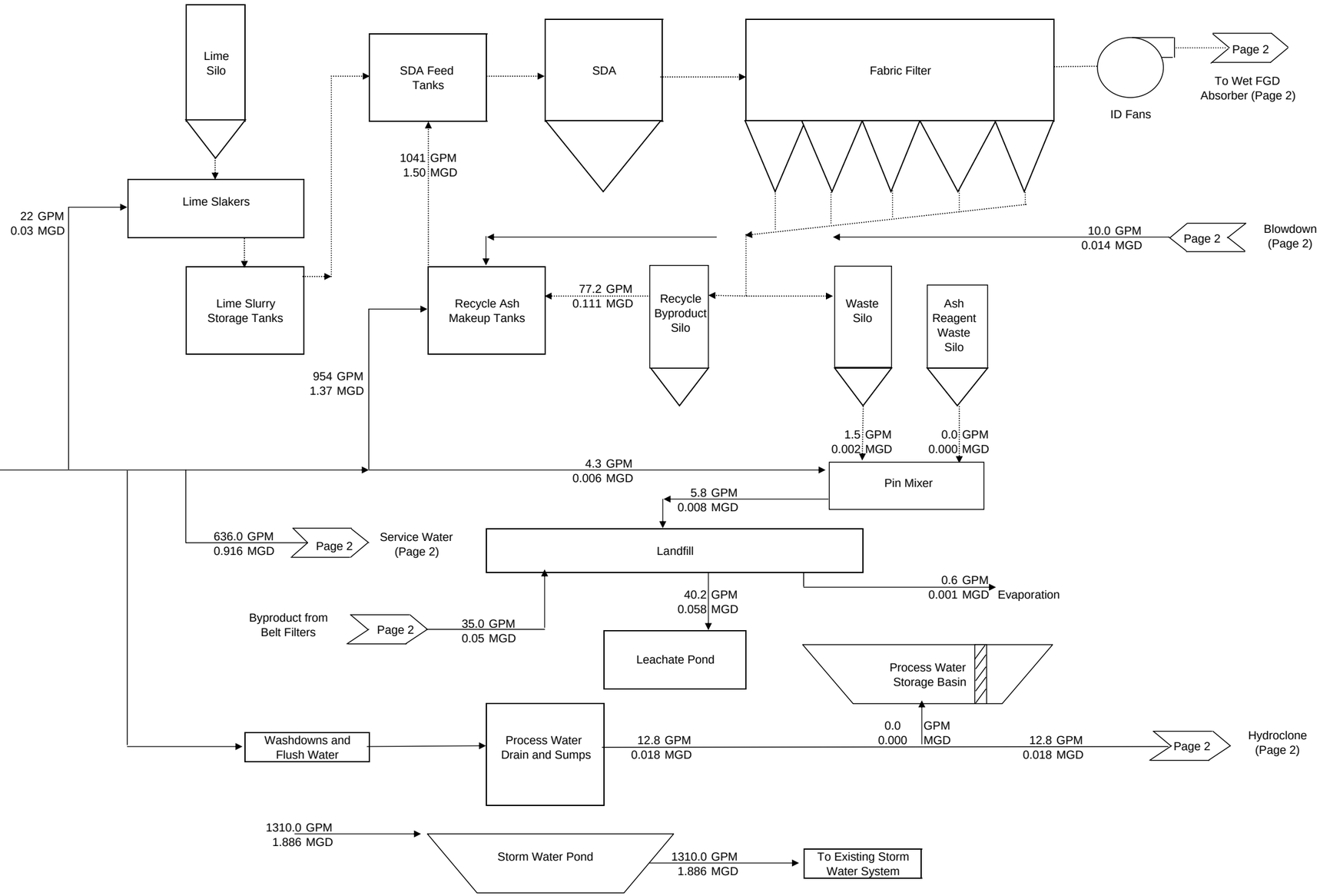


Notes

(1) Based on Mass Balance dated 9/10/2010 for Big Sandy Unit 2 (3 lb/MMBtu Sulfur Coal w/ESP).

(2) These values represent Steady State (24hour/day) operation and do not reflect the intermittent nature of some processes such as flushing and washdowns or loading waste trucks from the pin mixers

Big Sandy IAQCS Water Balance
4.5 lb/mmbtu Sulfur Coal w/ESP



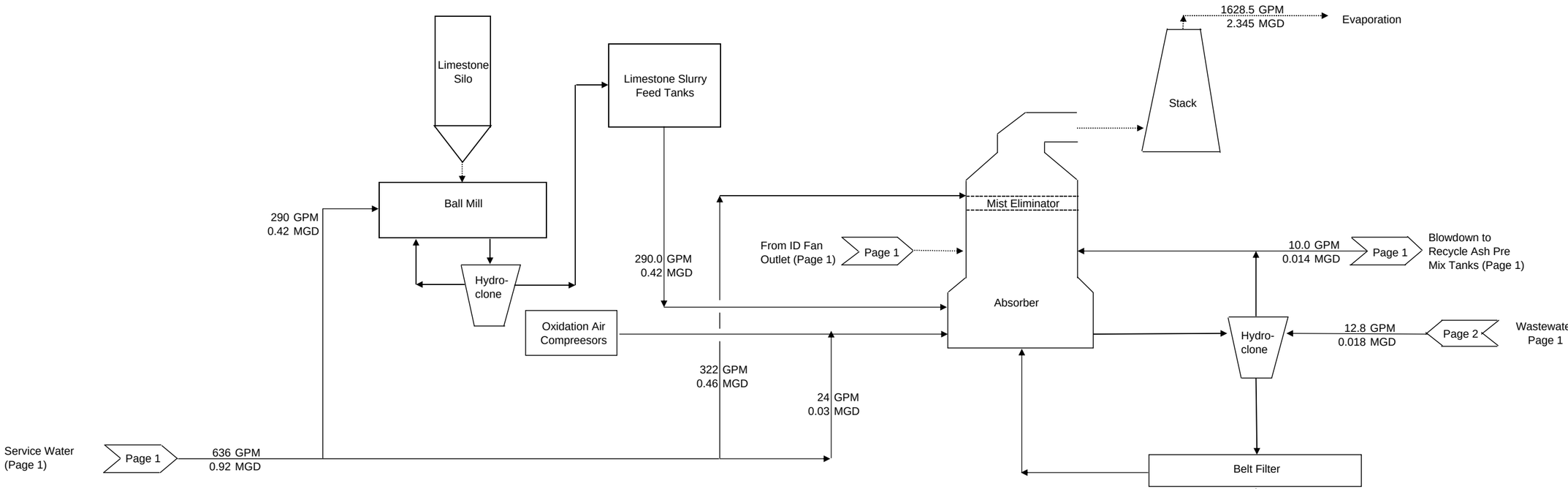
Average Service Water: 1629 GPM, 2.35 MGD

Notes

(1) Based on Mass Balance dated 9/10/2010 for Big Sandy Unit 2 (4.5 lb/MMBtu Sulfur Coal w/ESP).

(2) These values represent Steady State (24hour/day) operation and do not reflect the intermittent nature of some processes such as flushing and washdowns or loading waste trucks from the pin mixers

Big Sandy IAQCS Water Balance
4.5 lb/mmbtu Sulfur Coal w/ESP

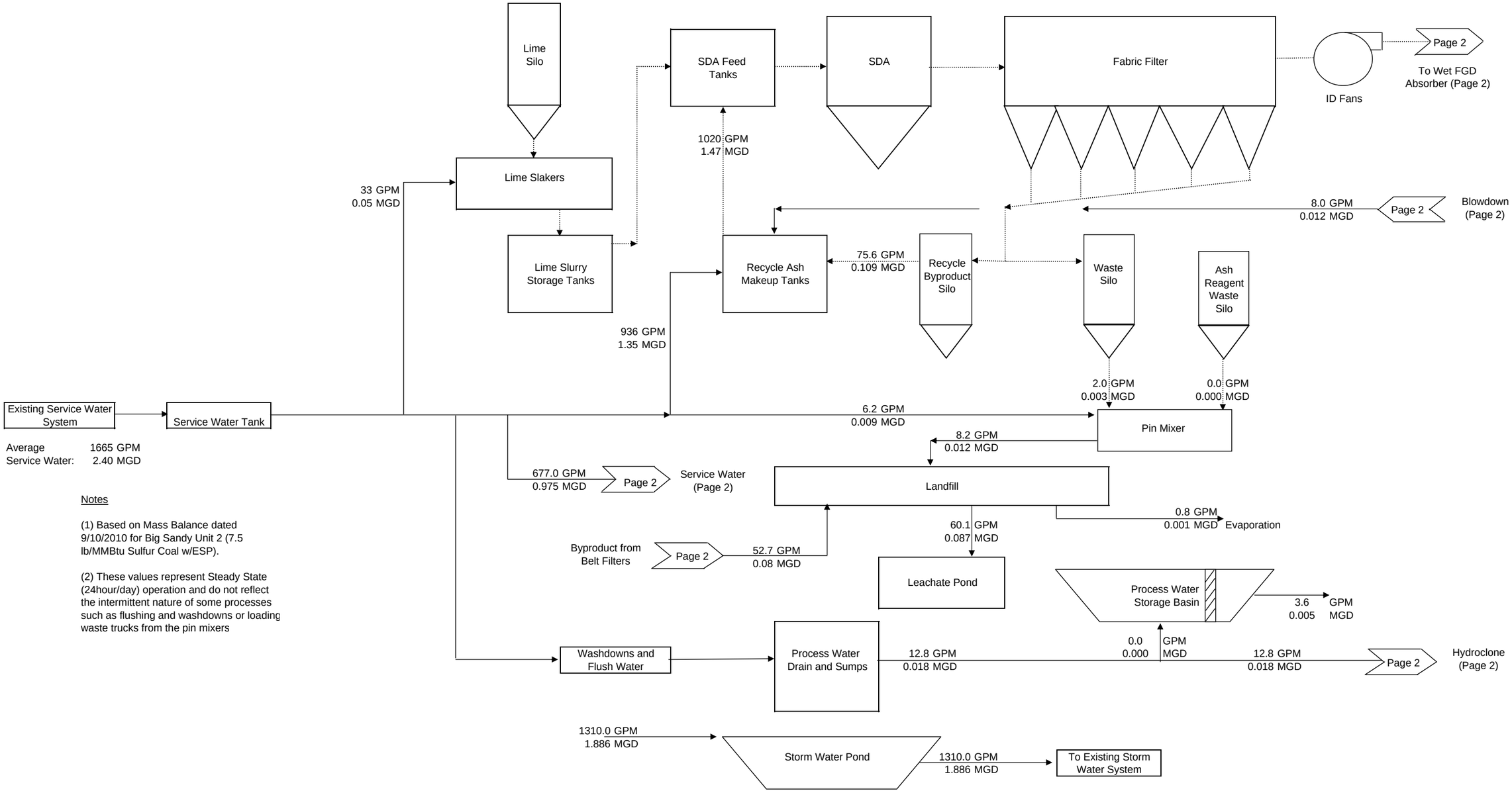


Notes

(1) Based on Mass Balance dated 9/10/2010 for Big Sandy Unit 2 (4.5 lb/MMBtu Sulfur Coal w/ESP).

(2) These values represent Steady State (24hour/day) operation and do not reflect the intermittent nature of some processes such as flushing and washdowns or loading waste trucks from the pin mixers

Big Sandy IAQCS Water Balance
7.5 lb/mmbtu Sulfur Coal w/ESP

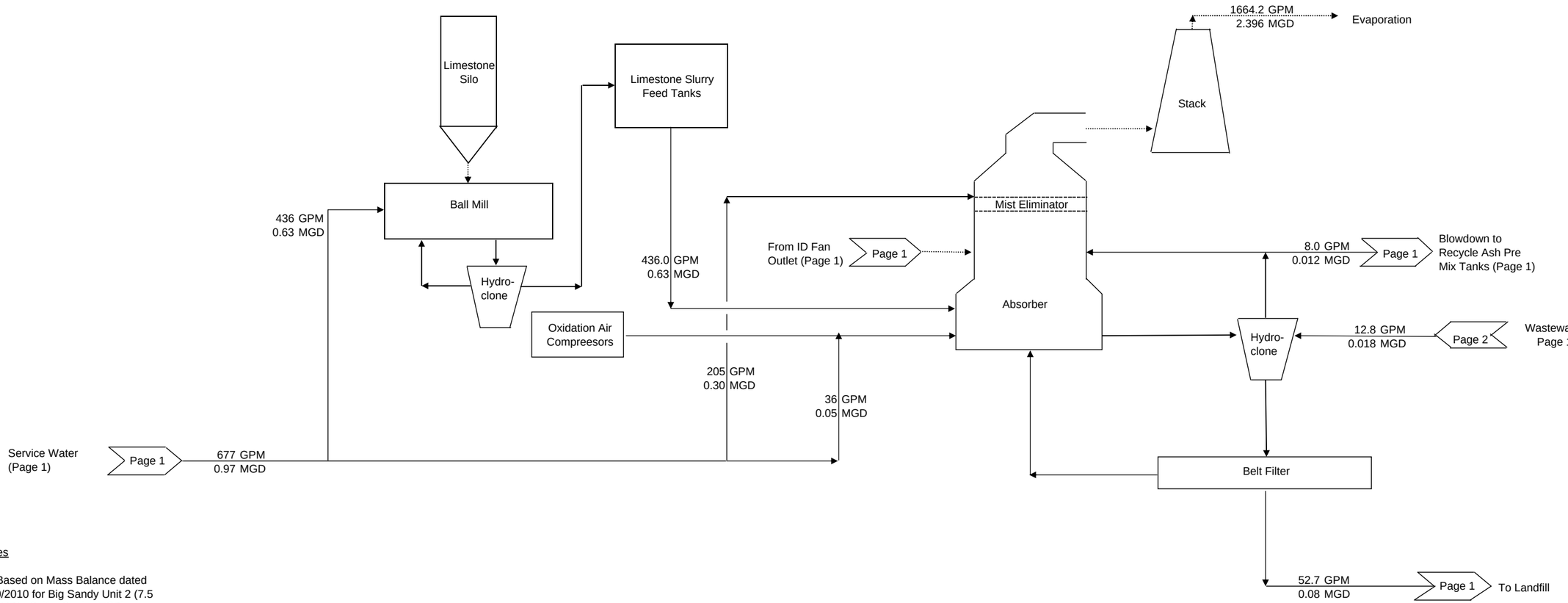


Notes

(1) Based on Mass Balance dated 9/10/2010 for Big Sandy Unit 2 (7.5 lb/MMBtu Sulfur Coal w/ESP).

(2) These values represent Steady State (24hour/day) operation and do not reflect the intermittent nature of some processes such as flushing and washdowns or loading waste trucks from the pin mixers

Big Sandy IAQCS Water Balance
7.5 lb/mmbtu Sulfur Coal w/ESP



Notes

(1) Based on Mass Balance dated 9/10/2010 for Big Sandy Unit 2 (7.5 lb/MMBtu Sulfur Coal w/ESP).

(2) These values represent Steady State (24hour/day) operation and do not reflect the intermittent nature of some processes such as flushing and washdowns or loading waste trucks from the pin mixers

ATTACHMENT 4-5
IAQCS Electrical One-Lines

Big Sandy Plant Unit 2
Big Sandy EPC Cost Estimate Project

ESK-IAQCS-NOTES-001_B

August 9, 2010

BASIC DESCRIPTION OF ONE LINES - IAQCS

A. IAQCS FGD SYSTEM (ESP OUT)

1. The preliminary ID fan size on which the one line has been developed is 25,000 HP.
2. The 138 kV voltage used in the study is 1.009 PU based on information received from the system planning group.
3. The 138 kV line to the existing SCR transformers will be tapped to feed new 138 kV – 13.8 kV FGD transformers.
4. The existing SCR transformers will be replaced with larger transformers.
5. The existing SCR switchgear which is fed from existing 138 kV – 13.8 kV transformers will be replaced to accommodate the larger load of the IAQCS system.

B. IAQCS FGD SYSTEM (ESP IN)

1. The preliminary ID fan size on which the one line has been developed is 14,000 HP.
2. The existing ID Booster Fans will be retained. Due to loading considerations, the existing ID booster fans will be fed from the new ID fan switchgear.
3. The 138 kV voltage used in the study is 1.009 PU based on information received from the system planning group.
4. The 138 kV line to the existing SCR transformers will be tapped to feed new 138 kV – 13.8 kV FGD transformers.
5. The existing SCR transformers will be replaced with larger transformers.
6. The existing SCR switchgear which is fed from existing 138 kV – 13.8 kV transformers will be replaced to accommodate the larger load of the IAQCS system.

DWG. NO.

138 KV BUS NO. 2
DWG E-1200

138 KV BUS NO. 1
DWG E-1200

138KV CONNECTION 1

138KV CONNECTION 2

138KV SCR SUBSTATION

TR 2SCR-2F
135.6-13.8 KV
35/46.5/58.5 MVA
ONAN/ONAF/ONAF
Z=5.5%

TR 2SCR-2FR
135.6-13.8 KV
35/46.5/58.5 MVA
ONAN/ONAF/ONAF
Z=5.5%

2500A
50KA
NC

2500A
NO

13.8 KV BUS 2F

13.8 KV BUS 2FR

2500A

1200A

F

G

TR 2SCR-2J
13.8-4.16 KV
5.6/7.0 MVA
Z = 4.0%

TR 3SCR-2JR
13.8-4.16 KV
5.6/7.0 MVA
Z = 4.0

4.16KV BUS 2J

SPARE

SEAL AIR FAN

SEAL AIR FAN

SPARE

TR 2SCR-2L
4.16-600V
1.5/2.0 MVA

TR 2SCR-2M
4.16-600V
1.5/2.0 MVA

600V
BUS 2SCRL

600V
BUS 2SCRM

SCR SWITCHGEAR BUILDING
(EXISTING)

13.8KV BUS 13F

13.8KV BUS 13G

2500A
40KA
NC

2000A

SPARE

DWG. ESK-1AOCS-001A

G1

TRF-31F
13.8-0.48KV
2/2.67 MVA
Z = 5.0% @2MVA
AN/AF

TRF-21F
13.8-4.16KV
10/14 MVA
Z = 6% @ 10 MVA
ONAN/ONAF

TRF-21G
13.8-4.16KV
10/14 MVA
Z = 6% @ 10 MVA
ONAN/ONAF

TRF-31G
13.8-0.48KV
2/2.67 MVA
Z = 5.0% @2MVA
AN/AF

2000A
31.5KA
NC

2000A
31.5KA
NO

4.16 KV SWG-21F

4.16 KV SWG-21G

TYPICAL MOTOR
FEEDER

SPARE

SPARE

TYPICAL MOTOR
FEEDER

ID FAN PDC/CONTROL ROOM

4000A
65KA
NC

4000A
65KA
NO

480V BUS SWG-31F

480V BUS SWG-31G

TRF-33F
13.8-0.48KV
2/2.67 MVA
Z = 5.0% @2MVA
AN/AF

TRF-32F
13.8-0.48KV
2/2.67 MVA
Z = 5.0% @2MVA
AN/AF

SDA/FABRIC
FILTER MCC A

ID FAN
MCC A

SPARE

SPARE

ID FAN
MCC B

SDA/FABRIC
FILTER MCC B

TRF-32G
13.8-0.48KV
2/2.67 MVA
Z = 5.0% @2MVA
AN/AF

TRF-33G
13.8-0.48KV
2/2.67 MVA
Z = 5.0% @2MVA
AN/AF

ID FAN PDC/CONTROL ROOM

480V BUS SWG-32F

480V BUS SWG-32G

RECYCLE ASH
MCC A

ACI MCC A

ACI AREA

FLY ASH MCC A

FLY ASH
BLOWER BUILDING

ASH BLOWER
MCC A

LOAD OUT
AREA PDC

TRANSFORMER PDC

ASH BLOWER
MCC B

LOAD OUT
AREA PDC

FLY ASH MCC B

FLY ASH
BLOWER BUILDING

ACI MCC B

ACI AREA

RECYCLE ASH
MCC B

480V BUS SWG-33F

480V BUS SWG-33G

SPARE

LIMESTONE UNLOADING
MCC A

LIMESTONE
UNLOADING
PDC

LIME UNLOADING
MCC A

LIMESTONE RECLAIM
MCC A

LIMESTONE
RECLAIM
PDC

LIME UNLOADING BLOWER/ELECTRICAL BLDG

LIMESTONE RECLAIM
MCC B

LIMESTONE
RECLAIM
PDC

LIME UNLOADING
MCC B

LIMESTONE UNLOADING
MCC B

LIMESTONE
UNLOADING
PDC

SPARE

138KV FGD SUBSTATION

84KV MCOV

84KV MCOV

TRF-11A
138-13.8KV
55/73 MVA
Z= 5.0% @ 55MVA
ONAN/ONAF

TRF-11B
138-13.8KV
55/73 MVA
Z= 5.0% @ 55MVA
ONAN/ONAF

2000A
63KA
NC

2000A
63KA
NO

2000A
63KA
NO

2000A
63KA
NC

13.8KV BUS 11A

13.8KV BUS 11B

1200A

SPARE

SPARE

2500
HP

ID FAN A

2500
HP

ID FAN B

TRANSFORMER PDC

NOTES:
1. ------- INDICATES EXISTING EQUIPMENT.
2. _____ INDICATES NEW EQUIPMENT.

DATE	NO.	DESCRIPTION	APPD.
		REVISIONS	

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PRELIMINARY

KENTUCKY POWER CO.
BIG SANDY PLANT
UNIT 2
BIG SANDY KENTUCKY

AUXILIARY
ONE LINE DIAGRAM
1AOCS (ESP OUT)
UNIT 2

DWG. NO. ESK-1AOCS-001_B

SCALE:	ELECTRICAL & CONTROLS ENGINEERING DIV.
DR:	
CH:	
SUPV:	
ENGR:	
DATE:	

REV	DATE RELEASED	PURPOSE	
B	08/09/2010	ISSUED FOR USE	K. DAVE K. NOMANBHOY
A	07/26/2010	FOR REVIEW	M. SRONCE K. NOMANBHOY
			PREPARED REVIEWED APPROVED

FILE NAME: ESK-1AOCS-001

PROFESSIONAL ENGINEER'S STAMP

CONTRACTOR/INSTALLER SHALL TAKE ALL APPROPRIATE PRECAUTIONS TO ENSURE THE SAFETY OF ALL PERSONNEL INCLUDING EMPLOYEES AND THAT OF ITS SUBCONTRACTORS(S) PERFORMING THE WORK

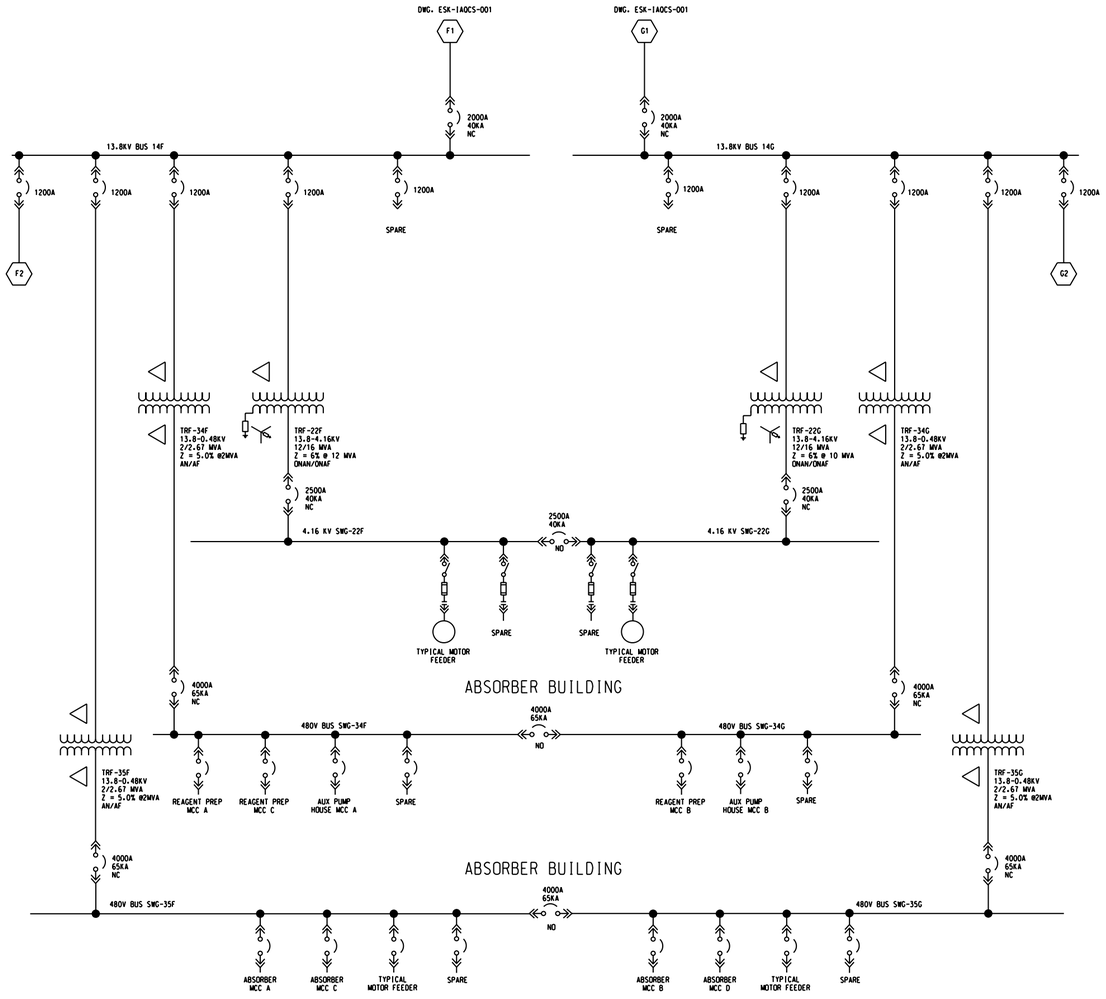
AEP AMERICAN ELECTRIC POWER

AEP SERVICE CORP.
1 RIVERSIDE PLAZA
COLUMBUS, OH 43215

SYSTEM DATE: DD-MMM-YYYY

IGS0694

DWG. NO.:



NOTES:
1. - - - - - - INDICATES EXISTING EQUIPMENT.
2. ——— INDICATES NEW EQUIPMENT.

REV	DATE RELEASED	PURPOSE	
B	08/09/2010	ISSUED FOR USE	K. DAVE K. NOWANSHOT
A	07/26/2010	FOR REVIEW	M. SRONCE K. NOWANSHOT
			PREPARED REVIEWED APPROVED

CONTRACTOR/INSTALLER SHALL TAKE ALL APPROPRIATE PRECAUTIONS TO ENSURE THE SAFETY OF ALL PERSONS INSTALLER'S PERSONNEL AND THAT OF ITS SUBCONTRACTOR(S) PERFORMING THE WORK

PROFESSIONAL ENGINEER'S STAMP

DATE	NO.	DESCRIPTION	APPD.
REVISIONS			

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PRELIMINARY

KENTUCKY POWER CO.
BIG SANDY PLANT
UNIT 2
BIG SANDY KENTUCKY

AUXILIARY
ONE LINE DIAGRAM
1AOCS (ESP OUT)
UNIT 2

DWG. NO. ESK-1AOCS-002_B

FILE NAME: ESK-1AOCS-002

SCALE: -
DR: -
CH: -
SUPV: -
ENGR: -
DATE: -

APPROVED BY

ELECTRICAL & CONTROLS ENGINEERING DIV.

AEP SERVICE CORP
1 RIVERSIDE PLAZA
COLUMBUS, OH 43215

SYSTEM DATE- DD-MMM-YYYY
SYSTEM TIME- HOUR:MINUTE

IGS0694

DWG. NO.

138 KV BUS NO. 2
DWG E-1200

138 KV BUS NO. 1
DWG E-1200

138KV CONNECTION 1

138KV CONNECTION 2

138KV SCR SUBSTATION

TR 2SCR-2F
135.6-13.8 KV
35/46.5/58.5 MVA
ONAN/ONAF/ONAF
Z=5.5%

TR 2SCR-2FR
135.6-13.8 KV
35/46.5/58.5 MVA
ONAN/ONAF/ONAF
Z=5.5%

13.8 KV BUS 2F

13.8 KV BUS 2FR

2500A
50KA
NC

2500A
NO

TR 2SCR-2J
13.8-4.16 KV
5.6/7.0 MVA
Z = 4.0%

TR 2SCR-2JR
13.8-4.16 KV
5.6/7.0 MVA
Z = 4.0

4.16KV BUS 2J

SPARE

SEAL AIR FAN

SEAL AIR FAN

SPARE

TR 2SCR-2L
4.16-600V
1.5/2.0 MVA

TR 2SCR-2M
4.16-600V
1.5/2.0 MVA

600V
BUS 2SCRL

600V
BUS 2SCRM

SCR SWITCHGEAR BUILDING
(EXISTING)

13.8KV BUS 13F

13.8KV BUS 13G

2500A
40KA
NC

SPARE

DWG. ESK-1AOCS-002A

TRF-31F
13.8-0.48KV
2/2.67 MVA
Z = 5.0% @2MVA
AN/AF

TRF-21F
13.8-4.16KV
10/14 MVA
Z = 6% @ 10 MVA
ONAN/ONAF

TRF-21G
13.8-4.16KV
10/14 MVA
Z = 6% @ 10 MVA
ONAN/ONAF

TRF-31G
13.8-0.48KV
2/2.67 MVA
Z = 5.0% @2MVA
AN/AF

2000A
31.5KA
NC

2000A
31.5KA
NO

4.16 KV SWG-21F

4.16 KV SWG-21G

TYPICAL MOTOR
FEEDER

SPARE

SPARE

TYPICAL MOTOR
FEEDER

ID FAN PDC/CONTROL ROOM

4000A
65KA
NC

4000A
65KA
NO

480V BUS SWG-31F

480V BUS SWG-31G

TRF-33F
13.8-0.48KV
2/2.67 MVA
Z = 5.0% @2MVA
AN/AF

TRF-32F
13.8-0.48KV
2/2.67 MVA
Z = 5.0% @2MVA
AN/AF

SDA/FABRIC
FILTER MCC A

ID FAN
MCC A

SPARE

SPARE

ID FAN
MCC B

SDA/FABRIC
FILTER MCC B

TRF-32G
13.8-0.48KV
2/2.67 MVA
Z = 5.0% @2MVA
AN/AF

TRF-33G
13.8-0.48KV
2/2.67 MVA
Z = 5.0% @2MVA
AN/AF

ID FAN PDC/CONTROL ROOM

480V BUS SWG-32F

480V BUS SWG-32G

ASH BLOWER
MCC A

LOAD OUT
AREA PDC

RECYCLE ASH
MCC A

ACI MCC A

ACI AREA

FLY ASH MCC A

FLY ASH
BLOWER BUILDING

TRANSFORMER PDC

FLY ASH MCC B

FLY ASH
BLOWER BUILDING

ACI MCC B

ACI AREA

RECYCLE ASH
MCC B

ASH BLOWER
MCC B

LOAD OUT
AREA PDC

480V BUS SWG-33F

480V BUS SWG-33G

SPARE

LIMESTONE UNLOADING
MCC A

LIME UNLOADING
MCC A

LIMESTONE RECLAIM
MCC A

LIMESTONE
UNLOADING
PDC

LIMESTONE
RECLAIM
PDC

LIME UNLOADING BLOWER/ELECTRICAL BLDG

LIMESTONE
RECLAIM
PDC

LIME UNLOADING
MCC B

LIMESTONE UNLOADING
MCC B

SPARE

LIMESTONE
UNLOADING
PDC

138KV FGD SUBSTATION

84KV MCOV

TRF-11A
138-13.8KV
50/66.7 MVA
Z= 5.0% @ 50MVA
ONAN/ONAF

84KV MCOV

TRF-11B
138-13.8KV
50/66.7 MVA
Z= 5.0% @ 50MVA
ONAN/ONAF

13.8KV BUS 11A

13.8KV BUS 11B

2000A
50KA
NC

2000A
50KA
NO

2000A
50KA
NO

2000A
50KA
NC

SPARE

SPARE

1000
EXISTING
BOOSTER
FAN A

1970
ID FAN A

1970
ID FAN B

1000
EXISTING
BOOSTER
FAN B

TRANSFORMER PDC

NOTES:
1. - - - - - - INDICATES EXISTING EQUIPMENT.
2. _____ INDICATES NEW EQUIPMENT.

DATE	NO.	DESCRIPTION	APPD.
		REVISIONS	

"THIS DRAWING IS THE PROPERTY OF THE AMERICAN ELECTRIC POWER SERVICE CORP. AND LOANED UPON CONDITION THAT IT IS NOT TO BE REPRODUCED OR COPIED, IN WHOLE OR IN PART, OR USED FOR FURNISHING INFORMATION TO ANY PERSON WITHOUT THE WRITTEN CONSENT OF THE AEP SERVICE CORP. FOR ANY PURPOSE DETRIMENTAL TO THEIR INTEREST, AND IS TO BE RETURNED UPON REQUEST"

PRELIMINARY

REV	DATE RELEASED	PURPOSE	
B	08/09/2010	ISSUED FOR USE	K. DAVE
			K. NOMANBHOY
A	07/26/2010	FOR REVIEW	M. SRONCE
			K. NOMANBHOY

PROFESSIONAL ENGINEER'S STAMP

CONTRACTOR/INSTALLER SHALL TAKE ALL APPROPRIATE PRECAUTIONS TO ENSURE THE SAFETY OF ALL PEOPLE (INSTALLER'S PERSONNEL OR THAT OF ITS SUBCONTRACTORS) PERFORMING THE WORK

FILE NAME: ESK-1AOCS-003

KENTUCKY POWER CO.
BIG SANDY PLANT
UNIT 2
BIG SANDY KENTUCKY

AUXILIARY
ONE LINE DIAGRAM
1AOCS (ESP IN)
UNIT 2

DWG. NO. ESK-1AOCS-003_B

SCALE: -	ELECTRICAL & CONTROLS ENGINEERING DIV.
DR: -	APPROVED BY
CH: -	
SUPV: -	
ENGR: -	
DATE: -	

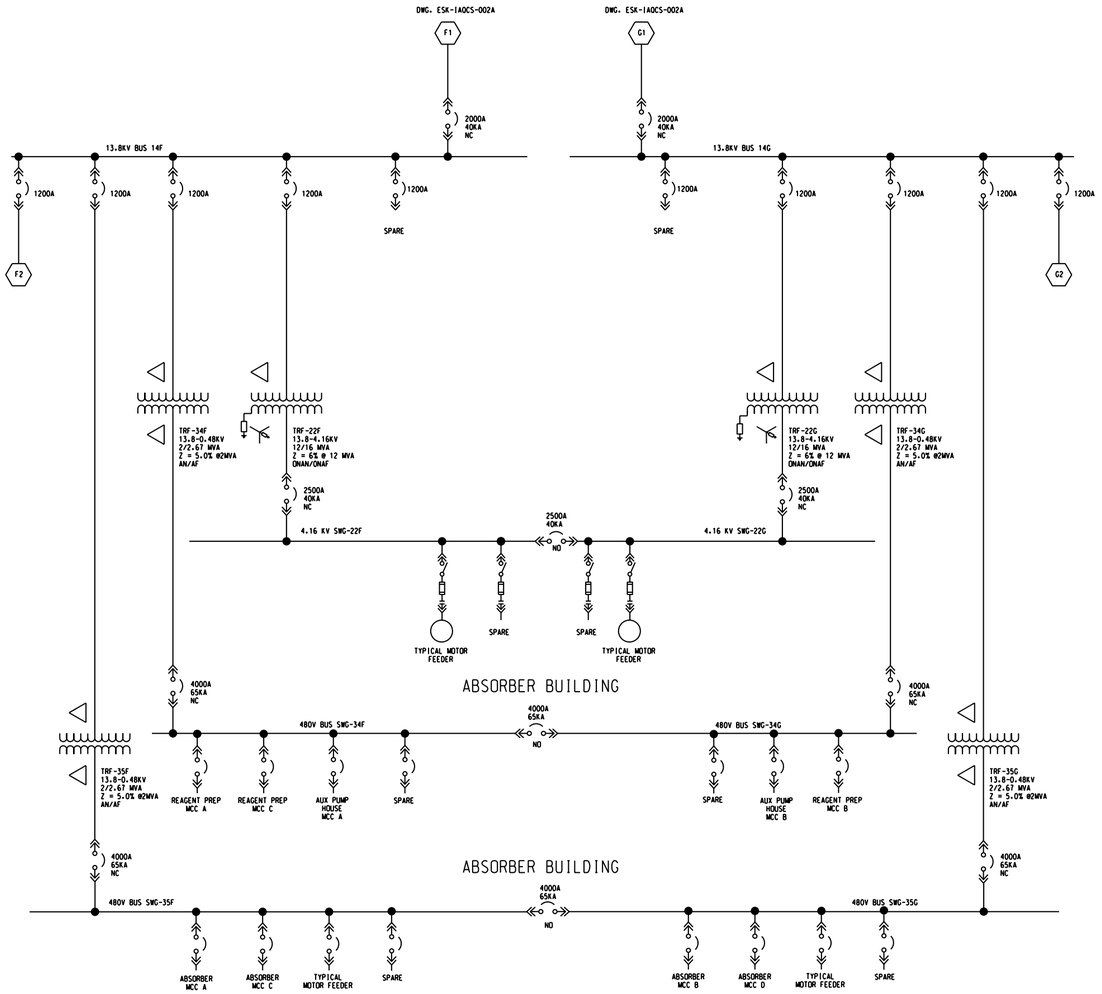
AMERICAN ELECTRIC POWER

AEP SERVICE CORP.
1 RIVERSIDE PLAZA
COLUMBUS, OH 43215

SYSTEM DATE- DD-MMM-YYYY
SYSTEM TIME- HOUR:MINUTE

IGS0694

DWG. NO.:



NOTES:
1. - - - - - - INDICATES EXISTING EQUIPMENT.
2. ——— INDICATES NEW EQUIPMENT.

DATE	NO.	DESCRIPTION	APPD.
		REVISIONS	

"THIS DRAWING IS THE PROPERTY OF THE AMERICAN ELECTRIC POWER SERVICE CORP. LOANED UPON CONDITION THAT IT IS NOT TO BE REPRODUCED OR COPIED, IN WHOLE OR IN PART, OR USED FOR FURNISHING INFORMATION TO ANY PERSON WITHOUT THE WRITTEN CONSENT OF THE AEP SERVICE CORP. FOR ANY PURPOSE DETRIMENTAL TO THEIR INTEREST, AND IS TO BE RETURNED UPON REQUEST"

PRELIMINARY

REV	DATE RELEASED	PURPOSE	
B	08/09/2010	ISSUED FOR USE	K. DAVE K. NOMANBHOY
A	07/26/2010	FOR REVIEW	M. SRONCE K. NOMANBHOY
			PREPARED REVIEWED APPROVED

CONTRACTOR/INSTALLER SHALL TAKE ALL APPROPRIATE PRECAUTIONS NECESSARY TO ENSURE THE SAFETY OF ALL PEOPLE INSTALLING EQUIPMENT AND THAT OF ITS SUBCONTRACTOR(S) PERFORMING THE WORK.

FILE NAME: ESK-1AOCS-004

PROFESSIONAL ENGINEER'S STAMP

Sergey A. Lundy

KENTUCKY POWER CO.
BIG SANDY PLANT
UNIT 2
BIG SANDY KENTUCKY

AUXILIARY
ONE LINE DIAGRAM
IAOCS (ESP IN)
UNIT 2

DWG. NO: ESK-1AOCS-004_B

SCALE: -	ELECTRICAL & CONTROLS ENGINEERING DIV.
DR: -	
CH: -	
SUPV: -	
ENGR: -	
DATE: -	

APPROVED BY

AEP AMERICAN ELECTRIC POWER

AEP SERVICE CORP.
1 RIVERSIDE PLAZA
COLUMBUS, OH 43215

SYSTEM DATE- DD-MMM-YYYY
SYSTEM TIME- HOUR:MINUTE

IGS0694

ATTACHMENT 4-6
IAQCS Detailed Capital Cost Estimate No. 30716 Base Est-1A ESP in Service (4.5 lb SO_2/MMbtu)

* - Due to the significant differences in layout between the phased and non-phased cost estimates the "bases" for comparison purposes were 1B for the non-phased cost estimates and 3B for the phased cost estimates. Therefore cost estimates 2A, 2B, 3A (Phased) and 1A, 4A and 4B (Non-Phased) contain only accounts whose costs are different from the corresponding base estimates 3B and 1B respectively.

				AEP										Estimate No.:	30716C
				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS BASE (ESP)-1A - 4.5 LB/MM BTU - NON PHASED										Date:	9/29/2010
				ORDER OF MAGNITUDE COST ESTIMATE										Preparer:	MNO
		Cost Type:												Reviewer:	JMK
		Est=Estimated												Approver:	PEF
		Allow.=Allowance								Wage Rates Based on:		BIG SANDY			
		Q=Vendor Quote								Labor Productivity =		1.15			

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	PHASE I - DRY FGD														
1.0	ID FANS														
1.1	ID FANS - OEM EQUIPMENT	1,800,000 ACFM WITH 19,700 HP MOTORS ($750,000 EACH). INCLUDES HYDRAULIC OIL UNITS, SEAL AIR FAN SKIDS, VIBRATION MONITORING EQUIPMENT, FAN STALL EQUIPMENT, FIELD SERVICE REP FOR 140 DAYS	EST	2	EA	3,460,000.000		6,920,000	0	8190.00	18,837	MECH	88.89	1,674,400	8,594,400
1.2	PIPING & SUPPORTS - MECHANICAL							21,800	28,700					120,500	171,000
	LARGE BORE PIPING	6" CS, SCH 40 WELDED	EST	200	LF		41.7	0	8,300	1.61	370	SPNG	94.41	35,000	43,300
	SMALL BORE PIPING	2" CS, SCH 80 WELDED	EST	50	LF		22.20	0	1,100	1.26	72	SPNG	94.41	6,800	7,900
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	250	LF		48.80	0	12,200	1.44	414	SPNG	94.41	39,100	51,300
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	100	LF		33.70	0	3,400	1.32	152	SPNG	94.41	14,300	17,700
	VALVE	2" GLOBE, 150# SS, WELDED	EST	15	EA	1,450		21,800	0	5.64	97	SPNG	94.41	9,200	31,000
	PIPE SUPPORTS		EST	105	EA		35.00	0	3,700	1.50	181	MECH	88.89	16,100	19,800
1.3	DAMPERS							781,000	0					352,600	1,133,600
	INLET DAMPERS	2X50% DOUBLE LOUVER TYPE WITH SEAL AIR FANS TOTAL FOR TWO FANS	EST	580	SF	450		261,000	0	2.50	1,668	MECH	88.89	148,200	409,200
	OUTLET DAMPERS	2X50% GUILLOTINE DAMPERS, WITH SEAL AIR FANS TOTAL FOR TWO FANS	EST	800	SF	650		520,000	0	2.50	2,300	MECH	88.89	204,400	724,400
1.4	EXPANSION JOINTS		EST	570	LF		230.00	0	131,100	2.00	1,311	MECH	88.89	116,500	247,600
1.5	DUCTWORK	FABRIC FILTER OUTLET TO ID FANS AND FROM ID FANS TO STACK - INCLUDES INTERNAL BRACING AND TURNING VANES	EST	880	TN		3,250.00	0	2,860,000	50.00	50,600	FLDU	107.96	5,462,800	8,322,800
1.6	DUCT SUPPORT STEEL	THREE COAT SHOP PAINT	EST	440	TN		2,900.00	0	1,276,000	24.00	12,144	STST	105.71	1,283,700	2,559,700
1.7	ID FAN INSULATION & LAGGING	TOTAL FOR TWO FANS. PRICING REFLECTS STANDARD ACOUSTICAL INSULATION	EST	4,200	SF		40.00	0	168,000	0.55	2,657	DINS	81.75	217,200	385,200
1.8	DUCTWORK INSULATION & LAGGING	INCLUDES INSULATION FOR SPRAY DRYER OUTLET DUCT TO FABRIC FILTERS SUPPLIED WITH THE OEM EQUIPMENT	EST	90,896	SF		12.00	0	1,090,800	0.25	26,133	DINS	81.75	2,136,300	3,227,100
1.9	DUCT SUPPORT STEEL - FOUNDATIONS							0	352,200					684,000	1,036,200
	EXCAVATION / BACKFILL		EST	2,265	CY			0	0	0.36	938	EXFD	90.00	84,400	84,400
	REINFORCING		EST	131	TN		1,150.00	0	150,800	20.00	3,016	REIN	78.27	236,000	386,800
	FORMWORK		EST	7,390	SF		2.50	0	18,500	0.14	1,190	FORM	99.43	118,300	136,800
	CONCRETE		EST	1,430	CY		105.00	0	150,200	1.50	2,467	CONP	79.64	196,500	346,700
	MUD MAT		EST	226	CY		105.00	0	23,800	1.50	391	CONP	79.64	31,100	54,900
	EMBEDDED STEEL		EST	3,576	LB		2.50	0	8,900	0.06	247	CARP	71.88	17,700	26,600
1.10	ID FAN FOUNDATIONS INCLUDING ID FAN AUX EQUIPMENT							0	106,000					198,700	304,700
	EXCAVATION / BACKFILL		EST	600	CY			0	0	0.36	248	EXFD	90.00	22,400	22,400
	REINFORCING		EST	40	TN		1,150.00	0	46,000	20.00	920	REIN	78.27	72,000	118,000
	FORMWORK		EST	1,500	SF		2.50	0	3,800	0.14	242	FORM	99.43	24,000	27,800
	CONCRETE		EST	400	CY		105.00	0	42,000	1.50	690	CONP	79.64	55,000	97,000
	MUD MAT		EST	40	CY		105.00	0	4,200	1.50	69	CONP	79.64	5,500	9,700
	EMBEDDED STEEL		EST	4,000	LB		2.50	0	10,000	0.06	276	CARP	71.88	19,800	29,800
1.11	ID FAN IAQCS CONTROL ROOM - FOUNDATIONS							0	270,100					508,600	778,700
	EXCAVATION / BACKFILL		EST	800	CY			0	0	0.36	331	EXFD	90.00	29,800	29,800
	REINFORCING		EST	100	TN		1,150.00	0	115,000	20.00	2,300	REIN	78.27	180,000	295,000

				AEP										Estimate No.:	30716C
				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS BASE (ESP)-1A - 4.5 LB/MM BTU - NON PHASED										Date:	9/29/2010
				ORDER OF MAGNITUDE COST ESTIMATE										Preparer:	MNO
		Cost Type:												Reviewer:	JMK
		Est=Estimated												Approver:	PEF
		Allow.=Allowance								Wage Rates Based on:		BIG SANDY			
		Q=Vendor Quote								Labor Productivity =		1.15			

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	FORMWORK		EST	7,000	SF		2.50	0	17,500	0.14	1,127	FORM	99.43	112,100	129,600
	CONCRETE		EST	1,100	CY		105.00	0	115,500	1.50	1,898	CONP	79.64	151,100	266,600
	MUD MAT		EST	115	CY		105.00	0	12,100	1.50	198	CONP	79.64	15,800	27,900
	EMBEDDED STEEL		EST	4,000	LB		2.50	0	10,000	0.06	276	CARP	71.88	19,800	29,800
1.12	ID FAN IAQCS CONTROL ROOM	SUBCONTRACT PRICE INCLUDES LABOR. COMPLETE WITH HVAC, FINISHES AND SANITARY FACILITIES	EST	7,875	SF		500.00	0	3,937,500	0.00	0	STST	105.71	0	3,937,500
1.13	TRANSFORMERS							770,000	0					145,600	915,600
	SST TRANSFORMERS: 21F & 21G	13.8KV-4160V, 3 PHASE, 2 WINDING	EST	2	EA	300000		600,000	0	500.00	1,150	EHEA	79.16	91,000	691,000
	SUS TRANSFORMERS: 31F, 31G	13.8KV-480V, 3 PHASE, CAST COIL	EST	2	EA	85000		170,000	0	300.00	690	EHEA	79.16	54,600	224,600
1.14	SWITCHGEAR							1,132,000	0		0			589,900	1,721,900
	480V LOW VOLTAGE (31F/G)	PRICE PER SECTION	EST	5	EA	38000		190,000	0	230.00	1,323	EHEA	79.16	104,700	294,700
	4.16 KV MEDIUM VOLTAGE (21A/B)	PRICE PER SECTION	EST	10	EA	39200		392,000	0	280.00	3,220	EHEA	79.16	254,900	646,900
	13KV MEDIUM VOLTAGE (13F/G)	PRICE PER SECTION	EST	11	EA	50000		550,000	0	230.00	2,910	EHEA	79.16	230,300	780,300
1.15	CABLE BUS & TERMINATIONS							1,129,100	35,800		0			1,930,000	3,094,900
	15KV CABLE BUS TO 13F/G)	CABLE BUS	EST	2,100	FT	466		978,600	0	6.75	16,301	WIRE	98.84	1,611,200	2,589,800
	5KV CABLE BUS	CABLE BUS	EST	150	FT	385		57,800	0	4.70	811	WIRE	98.84	80,100	137,900
	480V CABLE BUS	CABLE BUS	EST	150	FT	618		92,700	0	10.30	1,777	WIRE	98.84	175,600	268,300
	CABLE BUS TERMINATION	15KV TERMINATIONS	EST	4	EA		1,800.00	0	7,200	33.00	152	WIRE	98.84	15,000	22,200
	CABLE BUS TERMINATION	5KV TERMINATIONS	EST	4	EA		4,440.00	0	17,800	51.60	237	WIRE	98.84	23,500	41,300
	CABLE BUS TERMINATION	480V TERMINATIONS	EST	4	EA		2,700.00	0	10,800	54.00	248	WIRE	98.84	24,600	35,400
1.16	MCC							180,000	0					10,900	190,900
	480V MCC	PER LINE UP	EST	4	EA	30,000		120,000	0	16.00	74	WIRE	98.84	7,300	127,300
	DC MCC	PER LINE UP	EST	2	EA	30,000		60,000	0	16.00	37	WIRE	98.84	3,600	63,600
1.17	MIMIC PANELS		EST	1	EA	17500		17,500	0	40.00	46	WIRE	98.84	4,500	22,000
1.18	RACEWAY, CABLE TRAY, & CONDUIT							0	1,664,200					8,196,600	9,860,800
	12" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	5,000	LF		18.25	0	91,300	1.10	6,325	WIRE	98.84	625,200	716,500
	18" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	3,000	LF		21.50	0	64,500	1.45	5,003	WIRE	98.84	494,400	558,900
	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	9,320	LF		27.10	0	252,600	1.75	18,757	WIRE	98.84	1,853,900	2,106,500
	36" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	2,400	LF		30.30	0	72,700	1.95	5,382	WIRE	98.84	532,000	604,700
	5" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	4,000	LF		61.00	0	244,000	1.13	5,184	WIRE	98.84	512,400	756,400
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	8,600	LF		31.00	0	266,600	0.81	7,981	WIRE	98.84	788,900	1,055,500
	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	8,000	LF		21.50	0	172,000	0.65	5,934	WIRE	98.84	586,500	758,500
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	12,000	LF		9.25	0	111,000	0.35	4,858	WIRE	98.84	480,100	591,100
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	15,000	LF		7.15	0	107,300	0.28	4,899	WIRE	98.84	484,200	591,500
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	28,000	LF		4.44	0	124,300	0.24	7,696	WIRE	98.84	760,700	885,000
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	48,900	LF		3.23	0	157,900	0.19	10,910	WIRE	98.84	1,078,300	1,236,200
1.19	HIGH VOLTAGE POWER CABLE & TERMINATION							0	288,500					666,700	955,200
	1/C # 750KCMIL-15KV - 14400' ID FAN		EST	14,400	LF		12.89	0	185,600	0.23	3,809	WIRE	98.84	376,500	562,100
	1/C # 500KCMIL-15KV		EST	11,100	LF		9.27	0	102,900	0.23	2,936	WIRE	98.84	290,200	393,100
1.20	MEDIUM VOLTAGE POWER CABLE & TERMINATION							0	100,200					427,400	527,600
	1/C # 350KCMIL-5KV		EST	16,350	LF		6.13	0	100,200	0.23	4,325	WIRE	98.84	427,400	527,600
1.21	LOW VOLTAGE POWER CABLE & TERMINATIONS		EST	1,800	LF		26.12	0	229,800	0.69	1,428	WIRE	98.84	732,100	961,900

				AEP										Estimate No.:	30716C
				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS BASE (ESP)-1A - 4.5 LB/MM BTU - NON PHASED										Date:	9/29/2010
				ORDER OF MAGNITUDE COST ESTIMATE										Preparer:	MNO
		Cost Type:												Reviewer:	JMK
		Est=Estimated												Approver:	PEF
		Allow.=Allowance								Wage Rates Based on:		BIG SANDY			
		Q=Vendor Quote								Labor Productivity =		1.15			

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	3/C # 500KCMIL-600V		EST	1,800	LF		26.12	0	148,900	0.69	1,428	WIRE	98.84	141,200	290,100
	#4/0 - #12 AWG-600V		EST	65,800	LF		7.22	0	80,900	0.08	5,978	WIRE	98.84	590,900	671,800
1.22	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	EST	112,800	LF		3.20	0	361,000	0.08	10,248	WIRE	98.84	1,012,900	1,373,900
1.23	EMERGENCY POWER SYSTEM							285,500	0					38,900	324,400
	DC PANEL BOADRD		EST	1	EA	20150		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	UPS PANEL BOARDS		EST	2	EA	20150		31,000	0	40.00	92	WIRE	98.84	9,100	40,100
	UPS		EST	1	EA	78000		60,000	0	32.00	37	WIRE	98.84	3,600	63,600
	SWITCHBOARD		EST	1	EA	52000		40,000	0	40.00	46	WIRE	98.84	4,500	44,500
	BYPASS TRANSFORMERS		EST	1	EA	32500		25,000	0	40.00	46	WIRE	98.84	4,500	29,500
	BATTERY CHARGER		EST	2	EA	41600		64,000	0	16.00	37	WIRE	98.84	3,600	67,600
	BATTERIES		EST	1	LT	65000		50,000	0	80.00	92	WIRE	98.84	9,100	59,100
1.24	GROUNDING							14,100	0					42,700	56,800
	GROUND ROD	3/4" - 20' LONG EACH	EST	16	EA	150		2,400	0	4.00	74	WIRE	98.84	7,300	9,700
	500 MCM	BARE COPPER WIRE	EST	1,400	FT	7.65		10,700	0	0.12	193	WIRE	98.84	19,100	29,800
	CADWELD		EST	64	EA	15		1,000	0	2.00	147	WIRE	98.84	14,500	15,500
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	16.00	18	WIRE	98.84	1,800	1,800
1.25	LIGHTING/ TRANSFORMERS & PANELS							26,000	30,000					29,500	85,500
	LIGHT FIXTURES		EST	40	EA		750	0	30,000	4.00	184	WIRE	98.84	18,200	48,200
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	1	EA	10000		10,000	0	40.00	46	WIRE	98.84	4,500	14,500
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	1	EA	7500		7,500	0	32.00	37	WIRE	98.84	3,600	11,100
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	1	EA	5000		5,000	0	16.00	18	WIRE	98.84	1,800	6,800
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	1	EA	3500		3,500	0	12.00	14	WIRE	98.84	1,400	4,900
1.26	DUCT BANK							0	136,000					192,700	328,700
	DUCT BANK WITH 12-5" & 4-3" CONDUITS		EST	100	LF		361.21	0	38,000	6.24	717	ECND	75.97	54,500	92,500
	DUCT BANK WITH 6-5" & 2-3" CONDUITS		EST	180	LF		230.91	0	71,400	5.45	1,128	ECND	75.97	85,700	157,100
	DUCT BANK WITH 6-5" & 6-3" CONDUITS		EST	100	LF		265.88	0	26,600	6.01	691	ECND	75.97	52,500	79,100
1.27	FOUNDATION FOR TRANSFORMERS							0	61,900		0			162,600	224,500
	EXCAVATION / BACKFILL		EST	1,000	CY			0	0	0.36	414	EXFD	90.00	37,300	37,300
	REINFORCING		EST	20	TN		1,150.00	0	23,000	20.00	460	REIN	78.27	36,000	59,000
	FORMWORK		EST	2,500	SF		2.50	0	6,300	0.14	403	FORM	99.43	40,000	46,300
	CONCRETE		EST	190	CY		105.00	0	20,000	1.50	328	CONP	79.64	26,100	46,100
	MUD MAT		EST	25	CY		105.00	0	2,600	1.50	43	CONP	79.64	3,400	6,000
	EMBEDDED STEEL		EST	4,000	LB		2.50	0	10,000	0.06	276	CARP	71.88	19,800	29,800
1.28	FIREWALL FOR TRANSFORMERS							0	3,200					8,300	11,500
	REINFORCING		EST	1.2	TN		1,150.00	0	1,400	20.00	28	REIN	78.27	2,200	3,600
	FORMWORK		EST	80	SF		2.50	0	200	0.14	13	FORM	99.43	1,300	1,500
	CONCRETE		EST	15	CY		105.00	0	1,600	3.50	60	CONP	79.64	4,800	6,400
1.29	EARLY COMMISSIONING COSTS TEMPORARY HIGH VOLTAGE POWER CABLE & TERMINATION FROM EAST SIDE OF SCR BUILDING TO TRANSFORMER PDC		EST	300	LF		466	0	139,800	6.75	2,329	WIRE	98.84	230,200	370,000
1.30	COMMUNICATIONS		EST	1	LT		17,000.00	0	17,000	114.00	131	WIRE	98.84	13,000	30,000
1.31	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							11,277,000	13,295,800		284,033			27,196,800	51,769,600
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										4,227,788
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						24,698		83.48	2,062,000	2,062,000

				AEP										Estimate No.:	30716C
				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS BASE (ESP)-1A - 4.5 LB/MM BTU - NON PHASED										Date:	9/29/2010
				ORDER OF MAGNITUDE COST ESTIMATE										Preparer:	MNO
		Cost Type:												Reviewer:	JMK
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Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						30,873			2,165,788	2,165,788
	PER DIEM	NONE		0.00	HR						339,604			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				66,479					135,984	202,463
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				664,790						664,790
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			563,850							563,850
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				664,790					1,359,840	2,024,630
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				1,994,370					4,079,520	6,073,890
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							563,900	3,390,400					9,803,100	13,757,400
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	ID FANS						11,840,900	16,686,200					36,999,900	65,527,000
2.0	FABRIC FILTERS														
2.1	MECHANICAL EQUIPMENT	A SINGLE FABRIC FILTER (225' X 130') UNIT INCLUDING ALL INTERNAL FABRIC FILTER ELEMENTS SUCH AS BAGS, CAGES, ASH HOPPERS, 2 BROKEN BAG DETECTORS PER COMPARTMENT	EST	1	LT	19,232,000		19,232,000	0	121500.00	139,725	MECH	88.89	12,420,200	31,652,200
2.2	INSULATION FOR FABRIC FILTER	SUBCONTRACT COST INCLUDES LABOR	EST	81,000	SF	30		2,430,000	0	0.00	0	DINS	81.75	0	2,430,000
2.3	PENTHOUSE FOR FABRIC FILTER	SUPPORT STEEL AND PRLINS INCLUDED WITH OEM EQUIPMENT		29,500	SF			70,200	787,000					1,007,600	1,864,800
	SIDING FOR PENTHOUSE		EST	14,200	SF		12.00	0	170,400	0.11	1,796	SDNG	93.41	167,800	338,200
	CONCRETE FLOOR FOR PENTHOUSE		EST	250	CY		230.00	0	57,500	7.50	2,156	SDNG	93.41	201,400	258,900
	ROOFING FOR PENTHOUSE		EST	29,500	SF		18.00	0	531,000	0.22	7,464	ROOF	69.12	515,900	1,046,900
	H&V		EST	1	LT	70200	28080	70,200	28,100	1310.67	1,507	HVAC	81.24	122,500	220,800
2.4	BOTTOM ENCLOSURE FOR BAGHOUSE							60,000	1,204,000					1,359,800	2,623,800
	SUPPORT STEEL, GIRTS AND SIDING		EST	29,500	SF		40.00	0	1,180,000	0.35	11,874	STST	105.71	1,255,200	2,435,200
	H&V		EST	1	LT	60000	24000	60,000	24,000	1120.00	1,288	HVAC	81.24	104,600	188,600
2.5	PIPING & SUPPORTS - MECHANICAL							30,900	101,400					209,500	341,800
	LARGE BORE PIPING	6" SS, SCH 40 WELDED	EST	100	LF		111.00	0	11,100	2.02	232	SPNG	94.41	21,900	33,000
	LARGE BORE PIPING	12" CS, SCH 40 WELDED	EST	400	LF		188.70	0	75,500	2.80	1,288	SPNG	94.41	121,600	197,100
	SMALL BORE PIPING	2" CS, SCH 80 WELDED	EST	50	LF		22.20	0	1,100	1.26	72	SPNG	94.41	6,800	7,900
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	50	LF		48.80	0	2,400	1.44	83	SPNG	94.41	7,800	10,200
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	100	LF		33.70	0	3,400	1.32	152	SPNG	94.41	14,300	17,700
	VALVE	12" GATE, 150 #, CS, WELDED	EST	2	EA	8,200		16,400	0	19.20	44	SPNG	94.41	4,200	20,600
	VALVE	2" GLOBE, 150# SS, WELDED	EST	10	EA	1,450		14,500	0	5.64	65	SPNG	94.41	6,100	20,600
	PIPE SUPPORTS		EST	105	EA		75.00	0	7,900	2.50	302	MECH	88.89	26,800	34,700
2.6	FABRIC FILTER - FOUNDATIONS							0	550,700					1,081,100	1,631,800
	EXCAVATION / BACKFILL		EST	4,945	CY			0	0	0.36	2,047	EXFD	90.00	184,300	184,300
	REINFORCING		EST	192	TN		1,150.00	0	220,800	20.00	4,416	REIN	78.27	345,600	566,400
	FORMWORK		EST	7,800	SF		2.50	0	19,500	0.14	1,256	FORM	99.43	124,900	144,400
	CONCRETE		EST	2,400	CY		105.00	0	252,000	1.50	4,140	CONP	79.64	329,700	581,700
	MUD MAT		EST	270	CY		105.00	0	28,400	1.50	466	CONP	79.64	37,100	65,500
	EMBEDDED STEEL		EST	12,000	LB		2.50	0	30,000	0.06	828	CARP	71.88	59,500	89,500
2.7	FABRIC FILTER - SUPPORT STEEL AND ACCESS GALLERY							0	360,000					1,186,700	1,546,700
	SUPPORT STEEL	MATERIAL INCLUDED WITH OEM EQUIPMENT	EST	300	TN			0	0	24.00	8,280	STST	105.71	875,300	875,300
	ACCESS GALLERY		EST	8,000	SF		45.00	0	360,000	0.40	3,680	GALL	84.61	311,400	671,400
2.8	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE INCLUDED IN SECTION 1.0 - ID FANS													
2.9	LIGHTING/ TRANSFORMERS & PANELS							30,000	75,000					58,200	163,200

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Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	LIGHT FIXTURES		EST	100	EA		750	0	75,000	4.00	460	WIRE	98.84	45,500	120,500
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	10000		20,000	0	40.00	92	WIRE	98.84	9,100	29,100
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	2	EA	5000		10,000	0	16.00	37	WIRE	98.84	3,600	13,600
2.10	GROUNDING							7,300	0					17,500	24,800
	GROUND ROD	3/4" - 20' LONG	EST	4	EA	150		600	0	4.00	18	WIRE	98.84	1,800	2,400
	500 MCM	BARE COPPER WIRE	EST	850	FT	7.65		6,500	0	0.12	117	WIRE	98.84	11,600	18,100
	CADWELD		EST	16	EA	15		200	0	2.00	37	WIRE	98.84	3,600	3,800
	GROUNDING TEST	TEST, CALIBRATION & DOCUMENTATION	EST	1	EA			0	0	4.00	5	WIRE	98.84	500	500
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							21,890,400	3,153,100		193,927			17,340,600	42,279,100
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										2,886,720
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						16,863		83.48	1,408,000	1,408,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						21,079			1,478,720	1,478,720
	PER DIEM	NONE		0.00	HR						231,869			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				15,766					86,703	102,469
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				157,655						157,655
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			1,094,520							1,094,520
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				157,655					867,030	1,024,685
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				472,965					2,601,090	3,074,055
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							1,094,500	804,000					6,441,500	8,340,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FABRIC FILTERS						22,984,900	3,957,100					23,782,100	50,619,200
3.0	NEW STACK														
4.0	LIME HANDLING SYSTEM														
4.1	LIME STORAGE SILO							1,020,000	0					0	1,020,000
	SILO	CONCRETE SILO 40' DIA X 58' H - 1188 TONS -SUBCONTRACT COST INCLUDES LABOR	EST	1	EA	730,000.00		730,000	0	0.00	0	CONP	79.64	0	730,000
	ELEVATOR	MAINTENANCE ELEVATOR - SUBCONTRACT COST INCLUDES LABOR	EST	1	EA	290,000.00		290,000	0	0.00	0	MECH	88.89	0	290,000
4.2	LIME UNLOADING SYSTEM	INCLUDES PNEUMATIC HANDLING SYSTEM, THREE VACUUM EXHAUSTER, TWO FILTER SEPARATORS	EST	1	LT	350,000		350,000	0	2750.00	3,163	MECH	88.89	281,100	631,100
4.3	PIPING - MECHANICAL							29,000	15,600					77,900	122,500
	SMALL BORE PIPING	2" CS, SCH 80 WELDED	EST	100	LF		22.20	0	2,200	1.26	145	SPNG	94.41	13,700	15,900
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	100	LF		48.80	0	4,900	1.44	166	SPNG	94.41	15,600	20,500
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	200	LF		33.70	0	6,700	1.32	304	SPNG	94.41	28,700	35,400
	VALVE	2" GLOBE, 150# SS, WELDED	EST	20	EA	1,450		29,000	0	5.64	130	SPNG	94.41	12,200	41,200
	PIPE SUPPORTS		EST	50	EA		35.00	0	1,800	1.50	86	MECH	88.89	7,700	9,500
4.4	LIME STORAGE SILO ACCESS STAIR TOWER	THREE COAT SHOP PAINT	EST	30	TN		2,900.00	0	87,000	24.00	828	STST	105.71	87,500	174,500

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Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
4.5	PIPE RACK FOR LIME HANDLING, WASTE HANDLING AND MISC MECHANICAL PIPING	THREE COAT SHOP PAINT	EST	270	TN		2,900.00	0	783,000	24.00	7,452	STST	105.71	787,800	1,570,800
4.6	RAIL CAR UNLOADING AREA - FOUNDATIONS	20 X 60 - NO SIDING						0	22,600					49,100	71,700
	EXCAVATION / BACKFILL		EST	300	CY			0	0	0.36	124	EXFD	90.00	11,200	11,200
	REINFORCING		EST	9	TN		1,150.00	0	9,800	20.00	196	REIN	78.27	15,300	25,100
	FORMWORK		EST	400	SF		2.50	0	1,000	0.14	64	FORM	99.43	6,400	7,400
	CONCRETE		EST	100	CY		105.00	0	10,500	1.50	173	CONP	79.64	13,700	24,200
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	500	LB		2.50	0	1,300	0.06	35	CARP	71.88	2,500	3,800
4.7	LIME UNLOADING BLOWER / ELECTRICAL BUILDING - FOUNDATIONS							0	80,600					139,600	220,200
	EXCAVATION / BACKFILL		EST	340	CY			0	0	0.36	141	EXFD	90.00	12,700	12,700
	REINFORCING		EST	30	TN		1,150.00	0	34,500	20.00	690	REIN	78.27	54,000	88,500
	FORMWORK		EST	780	SF		2.50	0	2,000	0.14	126	FORM	99.43	12,500	14,500
	CONCRETE		EST	330	CY		105.00	0	34,700	1.50	569	CONP	79.64	45,300	80,000
	MUD MAT		EST	50	CY		105.00	0	5,300	1.50	86	CONP	79.64	6,900	12,200
	EMBEDDED STEEL		EST	1,650	LB		2.50	0	4,100	0.06	114	CARP	71.88	8,200	12,300
4.8	LIME UNLOADING BLOWER / ELECTRICAL BUILDING	100' L X 30' W X 30' H						75,000	335,000					24,400	434,400
	PREENGINEERED BUILDING INCLUDING H&V AND LIGHTING	SUBCONTRACT PRICE, INCLUDES LABOR	EST	3,000	SF		105	0	315,000	0.00	0	STST	105.71	0	315,000
	ADDITONAL HVAC UNIT FOR ELECTRICAL ROOM & CONTROLS	40T PACKAGED UNIT FOR ELECTRICAL EQUIPMENT ROOM. INCLUDES ALLOWANCE FOR CONCRETE PAD AND ELECTRICAL WORK	EST	1	LT	75000	20000	75,000	20,000	350.00	300	HVAC	81.24	24,400	119,400
4.9	CONCRETE PIT FOR THE ELEVATOR		EST	10	CY		230.00	0	2,300	7.50	86	CONP	79.64	6,900	9,200
4.10	LIME STORAGE SILO - FOUNDATIONS							0	75,100					150,000	225,100
	EXCAVATION / BACKFILL		EST	790	CY			0	0	0.36	327	EXFD	90.00	29,400	29,400
	REINFORCING		EST	30.0	TN		1,150.00	0	34,500	20.00	690	REIN	78.27	54,000	88,500
	FORMWORK		EST	800	SF		2.50	0	2,000	0.14	129	FORM	99.43	12,800	14,800
	CONCRETE		EST	300	CY		105.00	0	31,500	1.50	518	CONP	79.64	41,200	72,700
	MUD MAT		EST	20	CY		105.00	0	2,100	1.50	35	CONP	79.64	2,700	4,800
	EMBEDDED STEEL		EST	2,000	LB		2.50	0	5,000	0.06	138	CARP	71.88	9,900	14,900
4.11	LIME STORAGE SILO ACCESS STAIR TOWER - FOUNDATIONS							0	10,700					22,300	33,000
	EXCAVATION / BACKFILL		EST	95	CY			0	0	0.36	39	EXFD	90.00	3,500	3,500
	REINFORCING		EST	3.6	TN		1,150.00	0	4,100	20.00	83	REIN	78.27	6,500	10,600
	FORMWORK		EST	260	SF		2.50	0	700	0.14	42	FORM	99.43	4,200	4,900
	CONCRETE		EST	45	CY		105.00	0	4,700	1.50	78	CONP	79.64	6,200	10,900
	MUD MAT		EST	6	CY		105.00	0	600	1.50	10	CONP	79.64	800	1,400
	EMBEDDED STEEL		EST	225	LB		2.50	0	600	0.06	16	CARP	71.88	1,100	1,700
4.12	PIPE RACK - FOUNDATIONS							0	94,200					237,800	332,000
	EXCAVATION / BACKFILL		EST	1,360	CY			0	0	0.36	563	EXFD	90.00	50,700	50,700
	REINFORCING		EST	32.2	TN		1,150.00	0	37,000	20.00	740	REIN	78.27	57,900	94,900
	FORMWORK		EST	4,000	SF		2.50	0	10,000	0.14	644	FORM	99.43	64,000	74,000
	CONCRETE		EST	402	CY		105.00	0	42,200	1.50	693	CONP	79.64	55,200	97,400
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	2,010	LB		2.50	0	5,000	0.06	139	CARP	71.88	10,000	15,000
4.13	TRANSFORMERS: 33F, 33G,	13.8KV-480V,3PHASE, CAST COIL	EST	2	EA	85000		170,000	0	300.00	690	EHEA	79.16	54,600	224,600
4.14	480V LOW VOLTAGE (33F/G) SWITCHGEAR	PER LINE UP	EST	5	EA	39200		196,000	0	230.00	1,323	EHEA	79.16	104,700	300,700
4.15	CABLE BUS DUCT							134,700	10,800					200,200	345,700

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	480V CABLE BUS	BUST DUCT ONLY	EST	150	FT	898		134,700	0	10.30	1,777	WIRE	98.84	175,600	310,300
	CABLE BUS TERMINATION	480V TERMINATIONS	EST	4	EA		2,700.00	0	10,800	54.00	248	WIRE	98.84	24,600	35,400
4.16	MCC							61,800	0					3,600	65,400
	480V MCC	PER LINE UP	EST	2	EA	30900		61,800	0	16.00	37	WIRE	98.84	3,600	65,400
4.17	MIMIC PANELS		EST	1	EA	17500		17,500	0	12.00	14	WIRE	98.84	1,400	18,900
4.18	EMERGENCY POWER SYSTEM							108,300	0					24,400	132,700
	DC PANEL BOARD		EST	1	EA	15450		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	UPS PANEL BOARDS		EST	1	EA	15450		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	SATELLITE UPS		EST	1	EA	41200		41,200	0	16.00	18	WIRE	98.84	1,800	43,000
	VRLA BATTERIES		EST	1	LT	36050		36,100	0	120.00	138	WIRE	98.84	13,600	49,700
4.19	GROUNDING							13,300	0					41,300	54,600
	GROUND ROD	3/4" - 20' LONG	EST	16	EA	150		2,400	0	4.00	74	WIRE	98.84	7,300	9,700
	500 MCM	BARE COPPER WIRE	EST	1,300	FT	7.65		9,900	0	0.12	179	WIRE	98.84	17,700	27,600
	CADWELD		EST	64	EA	15		1,000	0	2.00	147	WIRE	98.84	14,500	15,500
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	16.00	18	WIRE	98.84	1,800	1,800
4.20	LIGHTING/ TRANSFORMERS & PANELS							52,000	135,000					104,500	291,500
	LIGHT FIXTURES		EST	180	EA		750	0	135,000	4.00	828	WIRE	98.84	81,800	216,800
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	10000		20,000	0	40.00	92	WIRE	98.84	9,100	29,100
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	7500		15,000	0	32.00	74	WIRE	98.84	7,300	22,300
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	2	EA	5000		10,000	0	16.00	37	WIRE	98.84	3,600	13,600
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	2	EA	3500		7,000	0	12.00	28	WIRE	98.84	2,700	9,700
4.21	RACEWAY, CABLE TRAY, & CONDUIT							0	310,900					1,537,100	1,848,000
	12" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,050	LF		18.25	0	19,200	1.10	1,328	WIRE	98.84	131,300	150,500
	18" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	600	LF		21.50	0	12,900	1.45	1,001	WIRE	98.84	98,900	111,800
	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,700	LF		27.10	0	46,100	1.75	3,421	WIRE	98.84	338,200	384,300
	36" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	500	LF		30.30	0	15,200	1.95	1,121	WIRE	98.84	110,800	126,000
	5" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	750	LF		61.00	0	45,800	1.13	972	WIRE	98.84	96,100	141,900
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,450	LF		31.00	0	45,000	0.81	1,346	WIRE	98.84	133,000	178,000
	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,550	LF		21.50	0	33,300	0.65	1,150	WIRE	98.84	113,600	146,900
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	2,400	LF		9.25	0	22,200	0.35	972	WIRE	98.84	96,000	118,200
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	3,050	LF		7.15	0	21,800	0.28	996	WIRE	98.84	98,500	120,300
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	5,150	LF		4.44	0	22,900	0.24	1,415	WIRE	98.84	139,900	162,800
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	8,200	LF		3.23	0	26,500	0.19	1,829	WIRE	98.84	180,800	207,300
4.22	HIGH VOLTAGE POWER CABLE & TERMINATION	1/C # 500KCMIL-15KV	EST	5,400	LF		9.27	0	50,100	0.23	1,428	WIRE	98.84	141,200	191,300
4.23	MEDIUM VOLTAGE POWER CABLE & TERMINATION	1/C # 350KCMIL-5KV	EST	10,800	LF		6.13	0	66,200	0.23	2,857	WIRE	98.84	282,300	348,500
4.24	LOW VOLTAGE POWER CABLE & TERMINATION							0	93,000					143,200	236,200
	3/C # 500KCMIL- 600V		EST	600	LF		26.12	0	15,700	0.69	476	WIRE	98.84	47,100	62,800
	#4/0 - #12 AWG-600V		EST	10,700	LF		7.22	0	77,300	0.08	972	WIRE	98.84	96,100	173,400
4.25	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	EST	8,200	LF		3.20	0	26,200	0.08	745	WIRE	98.84	73,600	99,800

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4.26	DUCT BANK	6-5" & 6-3" CONDUITS	EST	100	LF		265.88	0	26,600	6.01	691	ECND	75.97	52,500	79,100
4.27	FOUNDATIONS FOR TRANSFORMERS							0	5,300					11,900	17,200
	EXCAVATION / BACKFILL		EST	75	CY			0	0	0.36	31	EXFD	90.00	2,800	2,800
	REINFORCING		EST	2	TN		1,150.00	0	2,300	20.00	46	REIN	78.27	3,600	5,900
	FORMWORK		EST	100	SF		2.50	0	300	0.14	16	FORM	99.43	1,600	1,900
	CONCRETE		EST	20	CY		105.00	0	2,100	1.50	35	CONP	79.64	2,700	4,800
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	250	LB		2.50	0	600	0.06	17	CARP	71.88	1,200	1,800
4.28	COMMUNICATIONS		EST	1	LT		17,000.00	0	17,000	114.00	131	WIRE	98.84	13,000	30,000
4.29	LIGHTNING PROTECTION		EST	1	LT		14,000.00	0	14,000	79.00	91	WIRE	98.84	9,000	23,000
4.30	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							2,227,600	2,269,200		48,830			4,669,900	9,166,700
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										726,333
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						4,246		83.48	354,000	354,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						5,308			372,333	372,333
	PER DIEM	NONE		0.00	HR						58,383			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				11,346					23,350	34,696
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				113,460						113,460
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			111,380							111,380
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				113,460					233,495	346,955
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				340,380					700,485	1,040,865
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							111,400	578,600					1,683,700	2,373,700
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME HANDLING SYSTEM						2,339,000	2,847,800					6,353,600	11,540,400
5.0	LIME SLAKER BUILDING														0
5.1	MECHANICAL EQUIPMENT	INCLUDES:CHAIN CONVEYOR, SLAKERS THROUGH THE LIME SLURRY PUMPS, PIPING, AND LIME SLURRY STORAGE TANKS.	EST	1	LT	2,663,000		2,663,000	0	27500.00	31,625	MECH	88.89	2,811,100	5,474,100
5.2	REAGENT AREA SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
5.3	AGITATOR FOR SUMP PUMPS	5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
5.4	PIPING - MECHANICAL		EST	1	LT			117,800	111,400					381,100	610,300
	LARGE BORE PIPING	6" CS, SCH 40 WELDED	EST	200	LF		41.7	0	8,300	1.61	370	SPNG	94.41	35,000	43,300
	LARGE BORE PIPING	8" HDPE (UNDERGROUND)	EST	1,200	LF		14.1	0	16,900	0.83	1,145	SPNG	94.41	108,100	125,000
	LARGE BORE PIPING	10" CS, SCH 40 WELDED	EST	400	LF		110.3	0	44,100	2.40	1,104	SPNG	94.41	104,200	148,300
	LARGE BORE PIPING	14" CS, SCH 40 WELDED	EST	100	LF		205.9	0	20,600	2.87	330	SPNG	94.41	31,200	51,800
	SMALL BORE PIPING	2" CS, SCH 80 WELDED	EST	50	LF		22.20	0	1,100	1.26	72	SPNG	94.41	6,800	7,900
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	50	LF		48.80	0	2,400	1.44	83	SPNG	94.41	7,800	10,200

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	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	100	LF		33.70	0	3,400	1.32	152	SPNG	94.41	14,300	17,700
	VALVE	2" GLOBE, 150# SS, WELDED	EST	15	EA	1,450		21,800	0	5.64	97	SPNG	94.41	9,200	31,000
	VALVE	6" AIR OPERATED, 150 #, CS, FLANGED	EST	2	EA	14,000		28,000	0	17.30	40	SPNG	94.41	3,800	31,800
	VALVE	8" AIR OPERATED, 150 #, CS, FLANGED	EST	4	EA	17,000		68,000	0	19.30	89	SPNG	94.41	8,400	76,400
	EXCAVATION / BACKFILL	FOR UNDERGROUND PIPING	EST	1,000	CY			0	0	0.20	230	EXFD	90.00	20,700	20,700
	BEDDING	FOR UNDERGROUND PIPING	EST	133	CY		35.0	0	4,700	0.25	38	EXFD	90.00	3,500	8,200
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	110	EA		90.00	0	9,900	2.50	316	MECH	88.89	28,100	38,000
5.5	LIME SLURRY TANKS - FOUNDATIONS							0	166,400					299,400	465,800
	EXCAVATION / BACKFILL		EST	969	CY			0	0	0.36	401	EXFD	90.00	36,100	36,100
	REINFORCING		EST	90	TN		1,150.00	0	103,500	20.00	2,070	REIN	78.27	162,000	265,500
	FORMWORK		EST	1,166	SF		2.50	0	2,900	0.14	188	FORM	99.43	18,700	21,600
	CONCRETE		EST	475	CY		105.00	0	49,900	1.50	819	CONP	79.64	65,300	115,200
	MUD MAT		EST	40	CY		105.00	0	4,200	1.50	69	CONP	79.64	5,500	9,700
	EMBEDDED STEEL		EST	2,375	LB		2.50	0	5,900	0.06	164	CARP	71.88	11,800	17,700
5.6	LIME SLAKER BUILDING - FOUNDATIONS							0	119,200					204,000	323,200
	EXCAVATION / BACKFILL		EST	450	CY			0	0	0.36	186	EXFD	90.00	16,800	16,800
	REINFORCING		EST	50	TN		1,150.00	0	57,500	20.00	1,150	REIN	78.27	90,000	147,500
	FORMWORK		EST	1,000	SF		2.50	0	2,500	0.14	161	FORM	99.43	16,000	18,500
	CONCRETE		EST	450	CY		105.00	0	47,300	1.50	776	CONP	79.64	61,800	109,100
	MUD MAT		EST	60	CY		105.00	0	6,300	1.50	104	CONP	79.64	8,200	14,500
	EMBEDDED STEEL		EST	2,250	LB		2.50	0	5,600	0.06	155	CARP	71.88	11,200	16,800
5.7	LIME SLAKER BUILDING	135' L X 30' W X 50' H						40,500	803,300					740,500	1,584,300
	STRUCTURAL STEEL		EST	110	TN		2650	0	291,500	16.00	2,024	STST	105.71	214,000	505,500
	INSULATED METAL SIDING		EST	16,500	SF		12	0	198,000	0.11	2,087	SDNG	93.41	195,000	393,000
	ROLLING OVERHEAD DOOR		EST	320	SF		27	0	8,600	0.25	92	CARP	71.88	6,600	15,200
	METAL ROOF DECKING		EST	4,050	SF		2.7	0	10,900	0.06	279	STST	105.71	29,500	40,400
	RIGID ROOF INSULATION		EST	4,050	SF		2.4	0	9,700	0.02	70	ROOF	69.12	4,800	14,500
	ROOFING (4-PLY TAR & GRAVEL)		EST	4,050	SF		1.55	0	6,300	0.04	186	ROOF	69.12	12,900	19,200
	LIGHTWEIGHT CONCRETE FILL 1"		EST	50	CY		100	0	5,000	1.30	75	ROOF	69.12	5,200	10,200
	ROOF FLASHING		EST	350	LF		14.45	0	5,100	0.12	48	ROOF	69.12	3,300	8,400
	ROOF DRAINS		EST	1	LT		25000	0	25,000	240.00	276	PLMB	79.42	21,900	46,900
	FLOOR DRAINS		EST	1	LT		30000	0	30,000	280.00	322	PLMB	79.42	25,600	55,600
	FLOOR SLABS	INCLUDES METAL DECKING AND FORMWORK	EST	50	CY		210	0	10,500	7.50	431	CONP	79.64	34,300	44,800
	FLOOR FINISHES		EST	3,102	SF		2.5	0	7,800	0.05	178	CONP	79.64	14,200	22,000
	LOUVERS/WINDOWS/DOORS		EST	1,601	SF		40	0	64,000	0.35	644	CARP	71.88	46,300	110,300
	ROOF VENTILATORS		EST	4	EA		15000	0	60,000	24.00	110	HVAC	81.24	9,000	69,000
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	1,215	SF		45	0	54,700	0.40	559	GALL	84.61	47,300	102,000
	H&V		EST	1	LT	40500	16200	40,500	16,200	756.00	869	HVAC	81.24	70,600	127,300
5.8	ELECTRICAL	INCLUDED WITH LIME HANDLING SYSTEM, ACCOUNT 4.0													
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							2,861,300	1,200,300		50,378			4,453,000	8,514,600
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										750,138
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						4,381		83.48	366,000	366,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						5,476			384,138	384,138
	PER DIEM	NONE		0.00	HR						60,234			0	0

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	CONSUMABLES - % of ACCT NO. 90			0.5	%				6,002					22,265	28,267
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				60,015						60,015
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			143,065							143,065
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				60,015					222,650	282,665
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				180,045					667,950	847,995
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							143,100	306,100					1,663,000	2,112,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME SLAKER BUILDING						3,004,400	1,506,400					6,116,000	10,626,700
6.0	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS														0
6.1	BYPRODUCT WASTE HANDLING - MECHANICAL EQUIPMENT	INCLUDES PNEUMATIC HANDLING SYSTEM, THREE PRESSURE BLOWERS, ONE BIN VENT FILTER, ASH UNLOADING SYSTEM	EST	1	LT	1,637,600		1,637,600	0	10800.00	12,420	MECH	88.89	1,104,000	2,741,600
6.2	FLY ASH HANDLING - MECHANICAL EQUIPMENT	INCLUDES PNEUMATIC HANDLING SYSTEM, TWO PRESSURE EXHAUSTERS, TRANSFER STATION, ONE BIN VENT FILTER, ASH UNLOADING SYSTEM	EST	1	LT	2,285,000		2,285,000	0	14000.00	16,100	MECH	88.89	1,431,100	3,716,100
6.3	BYPRODUCT WASTE SILO AREA SUMP PUMPS	FOR BUILDINGS - DUPLEX. INCLUDES CHECK & ISOLATION VALVES.		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
6.4	AGITATOR FOR SUMP PUMPS	5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
6.5	PIPING - MECHANICAL		EST	1	LT			142,800	240,900					759,100	1,142,800
	LARGE BORE PIPING	4" CS, SCHEDULE 40, WELDED	EST	300	LF		23.0	0	6,900	1.48	511	SPNG	94.41	48,200	55,100
	LARGE BORE PIPING	4" SS, SCHEDULE 40, WELDED	EST	300	LF		68.3	0	20,500	1.82	628	SPNG	94.41	59,300	79,800
	LARGE BORE PIPING	6" CS, SCH 40 WELDED	EST	400	LF		41.7	0	16,700	1.61	741	SPNG	94.41	69,900	86,600
	LARGE BORE PIPING	8" HDPE (UNDERGROUND)	EST	800	LF		14.1	0	11,300	0.83	764	SPNG	94.41	72,100	83,400
	LARGE BORE PIPING	10" CS, SCH 40 WELDED	EST	300	LF		110.3	0	33,100	2.40	828	SPNG	94.41	78,200	111,300
	LARGE BORE PIPING	20" HDPE (UNDERGROUND)	EST	1,600	LF		72.8	0	116,500	1.45	2,668	SPNG	94.41	251,900	368,400
	SMALL BORE PIPING	2" CS, SCH 80 WELDED	EST	100	LF		22.20	0	2,200	1.26	145	SPNG	94.41	13,700	15,900
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	100	LF		48.80	0	4,900	1.44	166	SPNG	94.41	15,600	20,500
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	200	LF		33.70	0	6,700	1.32	304	SPNG	94.41	28,700	35,400
	VALVE	2" GLOBE, 150# SS, WELDED	EST	15	EA	1,450		21,800	0	5.64	97	SPNG	94.41	9,200	31,000
	VALVE	4" GATE, 150 #, CS, WELDED	EST	10	EA	2,500		25,000	0	7.70	89	SPNG	94.41	8,400	33,400
	VALVE	6" AIR OPERATED, 150 #, CS, FLANGED	EST	2	EA	14,000		28,000	0	17.30	40	SPNG	94.41	3,800	31,800
	VALVE	8" AIR OPERATED, 150 #, CS, FLANGED	EST	4	EA	17,000		68,000	0	19.30	89	SPNG	94.41	8,400	76,400
	EXCAVATION / BACKFILL	FOR UNDERGROUND PIPING	EST	2,000	CY			0	0	0.20	460	EXFD	90.00	41,400	41,400
	BEDDING	FOR UNDERGROUND PIPING	EST	267	CY		35.0	0	9,300	0.25	77	EXFD	90.00	6,900	16,200
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	170	EA		75.00	0	12,800	2.50	489	MECH	88.89	43,400	56,200
6.6	BYPRODUCT WASTE SILO							87,500	40,600					117,700	245,800
	SILO BIN	STEEL SILO 20' DIA X 19' H - 88 TONS	EST	1	EA	87,500		87,500	0	750.00	863	TANK	89.16	76,900	164,400
	SUPPORT STEEL FOR SILO	THREE-COAT SHOP PAINT	EST	14	TN		2,900.00	0	40,600	24.00	386	STST	105.71	40,800	81,400
6.7	SDA RECYCLE SILO	INCLUDED WITH OEM EQUIPMENT													

AEP

BIG SANDY UNIT 2

FGD PROJECT - IAQCS BASE (ESP)-1A - 4.5 LB/MM BTU - NON PHASED

ORDER OF MAGNITUDE COST ESTIMATE

Estimate No.: 30716C
Project No.: 12721-000
Date: 9/29/2010
Preparer: MNO
Reviewer: JMK
Approver: PEF

Cost Type:
Est=Estimated
Allow.=Allowance
Q=Vendor Quote

Wage Rates Based on: BIG SANDY
Labor Productivity = 1.15

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
6.8	FLY ASH SILO	46T STEEL -STORAGE SILO, 15' DIA X 19' H						45,000	23,200					64,300	132,500
	SILO BIN	PIN MIXERS INCLUDED WITH FLY ASH HANDLING MECHANICAL EQUIPMENT	EST	1	EA	45,000		45,000	0	400.00	460	TANK	89.16	41,000	86,000
	SUPPORT STEEL FOR SILO	THREE-COAT SHOP PAINT	EST	8	TN		2,900.00	0	23,200	24.00	221	STST	105.71	23,300	46,500
6.9	BYPRODUCT WASTE SILO - FOUNDATIONS							0	23,200					54,100	77,300
	EXCAVATION / BACKFILL		EST	380	CY			0	0	0.36	157	EXFD	90.00	14,200	14,200
	REINFORCING		EST	10.0	TN		1,150.00	0	11,500	20.00	230	REIN	78.27	18,000	29,500
	FORMWORK		EST	400	SF		2.50	0	1,000	0.14	64	FORM	99.43	6,400	7,400
	CONCRETE		EST	75	CY		105.00	0	7,900	1.50	129	CONP	79.64	10,300	18,200
	MUD MAT		EST	5	CY		105.00	0	500	1.50	9	CONP	79.64	700	1,200
	EMBEDDED STEEL		EST	900	LB		2.50	0	2,300	0.06	62	CARP	71.88	4,500	6,800
6.10	FLY ASH SILO - FOUNDATIONS							0	10,800					24,500	35,300
	EXCAVATION / BACKFILL		EST	160	CY			0	0	0.36	66	EXFD	90.00	6,000	6,000
	REINFORCING		EST	5.0	TN		1,150.00	0	5,800	20.00	115	REIN	78.27	9,000	14,800
	FORMWORK		EST	200	SF		2.50	0	500	0.14	32	FORM	99.43	3,200	3,700
	CONCRETE		EST	30	CY		105.00	0	3,200	1.50	52	CONP	79.64	4,100	7,300
	MUD MAT		EST	5	CY		105.00	0	500	1.50	9	CONP	79.64	700	1,200
	EMBEDDED STEEL		EST	300	LB		2.50	0	800	0.06	21	CARP	71.88	1,500	2,300
6.11	FLY ASH BLOWER AND ELECTRICAL BUILDING - FOUNDATIONS							0	49,600					105,700	155,300
	EXCAVATION / BACKFILL		EST	578	CY			0	0	0.36	239	EXFD	90.00	21,500	21,500
	REINFORCING		EST	17	TN		1,150.00	0	19,600	20.00	391	REIN	78.27	30,600	50,200
	FORMWORK		EST	890	SF		2.50	0	2,200	0.14	143	FORM	99.43	14,200	16,400
	CONCRETE		EST	222	CY		105.00	0	23,300	1.50	383	CONP	79.64	30,500	53,800
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	1,800	LB		2.50	0	4,500	0.06	124	CARP	71.88	8,900	13,400
6.12	FLY ASH BLOWER AND ELECTRICAL BUILDING	90' L X 30' W X 25' H						28,000	244,500					24,400	296,900
	PREENGINEERED BUILDING INCLUDING H&V AND LIGHTING	SUBCONTRACT PRICE, INCLUDES LABOR	EST	2,700	SF		85	0	229,500	0.00	0	STST	105.71	0	229,500
	ADDITONAL HVAC UNIT FOR ELECTRICAL ROOM & CONTROLS	10T PACKAGED UNIT. INCLUDES ALLOANCE FOR CONCRETE PAD AND ELECTRICAL WORK	EST	1	LT	28000	15000	28,000	15,000	0.00	300	HVAC	81.24	24,400	67,400
6.13	RECYCLE ASH BUILDING - FOUNDATIONS							0	234,300					393,800	628,100
	EXCAVATION / BACKFILL		EST	950	CY			0	0	0.36	393	EXFD	90.00	35,400	35,400
	REINFORCING		EST	90	TN		1,150.00	0	103,500	20.00	2,070	REIN	78.27	162,000	265,500
	FORMWORK		EST	1,320	SF		2.50	0	3,300	0.14	213	FORM	99.43	21,100	24,400
	CONCRETE		EST	1,000	CY		105.00	0	105,000	1.50	1,725	CONP	79.64	137,400	242,400
	MUD MAT		EST	95	CY		105.00	0	10,000	1.50	164	CONP	79.64	13,100	23,100
	EMBEDDED STEEL		EST	5,000	LB		2.50	0	12,500	0.06	345	CARP	71.88	24,800	37,300
6.14	RECYCLE ASH BUILDING	100' L X 65' W X 50' H						58,500	1,306,700					1,194,500	2,559,700
	STRUCTURAL STEEL		EST	180	TN		2650	0	477,000	16.00	3,312	STST	105.71	350,100	827,100
	INSULATED METAL SIDING		EST	16,500	SF		12	0	198,000	0.11	2,087	SDNG	93.41	195,000	393,000
	ROLLING OVERHEAD DOOR		EST	640	SF		27	0	17,300	0.25	184	CARP	71.88	13,200	30,500
	METAL ROOF DECKING		EST	6,500	SF		2.7	0	17,600	0.06	449	STST	105.71	47,400	65,000
	RIGID ROOF INSULATION		EST	6,500	SF		2.4	0	15,600	0.02	112	ROOF	69.12	7,800	23,400
	ROOFING (4-PLY TAR & GRAVEL)		EST	6,500	SF		1.55	0	10,100	0.04	299	ROOF	69.12	20,700	30,800
	LIGHTWEIGHT CONCRETE FILL 1"		EST	60	CY		100	0	6,000	1.30	90	ROOF	69.12	6,200	12,200
	ROOF FLASHING		EST	350	LF		14.45	0	5,100	0.12	48	ROOF	69.12	3,300	8,400
	ROOF DRAINS		EST	1	LT		25000	0	25,000	240.00	276	PLMB	79.42	21,900	46,900
	FLOOR DRAINS		EST	1	LT		30000	0	30,000	280.00	322	PLMB	79.42	25,600	55,600
	FLOOR SLABS	INCLUDES METAL DECKING AND FORMWORK	EST	60	CY		210	0	12,600	7.50	518	CONP	79.64	41,200	53,800
	FLOOR FINISHES		EST	5,000	SF		2.5	0	12,500	0.05	288	CONP	79.64	22,900	35,400
	LOUVERS/WINDOWS/DOORS		EST	2,600	SF		40	0	104,000	0.35	1,047	CARP	71.88	75,200	179,200

				AEP										Estimate No.:	30716C
				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS BASE (ESP)-1A - 4.5 LB/MM BTU - NON PHASED										Date:	9/29/2010
				ORDER OF MAGNITUDE COST ESTIMATE										Preparer:	MNO
		Cost Type:												Reviewer:	JMK
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	ROOF VENTILATORS		EST	4	EA		15000	0	60,000	24.00	110	HVAC	81.24	9,000	69,000
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	6,500	SF		45	0	292,500	0.40	2,990	GALL	84.61	253,000	545,500
	H&V		EST	1	LT	58500	23400	58,500	23,400	1092.00	1,256	HVAC	81.24	102,000	183,900
6.15	MCC	480V MCC PER LINE UP	EST	4	EA	30000		120,000	0	16.00	74	WIRE	98.84	7,300	127,300
6.16	EMERGENCY POWER SYSTEM							185,500	0					40,000	225,500
	UPS PANEL BOARDS		EST	2	EA	15500		31,000	0	40.00	92	WIRE	98.84	9,100	40,100
	SATELLITE UPS		EST	2	EA	41200		82,400	0	16.00	37	WIRE	98.84	3,600	86,000
	VRLA BATTERIES		EST	2	LT	36050		72,100	0	120.00	276	WIRE	98.84	27,300	99,400
6.17	LIGHTING/ TRANSFORMERS & PANELS							18,500	75,000					53,200	146,700
	LIGHT FIXTURES		EST	100	EA		750	0	75,000	4.00	460	WIRE	98.84	45,500	120,500
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	1	EA	10000		10,000	0	40.00	46	WIRE	98.84	4,500	14,500
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	1	EA	5000		5,000	0	16.00	18	WIRE	98.84	1,800	6,800
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	1	EA	3500		3,500	0	12.00	14	WIRE	98.84	1,400	4,900
6.18	RACEWAY, CABLE TRAY, & CONDUIT							0	40,700					236,200	276,900
	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	350	LF		27.10	0	9,500	1.75	704	WIRE	98.84	69600	79,100
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	350	LF		31.00	0	10,900	0.81	325	WIRE	98.84	32100	43,000
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,300	LF		4.44	0	5,800	0.24	357	WIRE	98.84	35300	41,100
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	4,500	LF		3.23	0	14,500	0.19	1,004	WIRE	98.84	99200	113,700
6.19	GROUNDING							0	4,500					10,900	15,400
	GROUND ROD	3/4" - 20' LONG EACH	EST	4	EA		150	0	600	4.00	18	WIRE	98.84	1,800	2,400
	500 MCM	BARE COPPER WIRE	EST	500	FT		7.65	0	3,800	0.12	69	WIRE	98.84	6,800	10,600
	CADWELD		EST	8	EA		15	0	100	2.00	18	WIRE	98.84	1,800	1,900
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	4.00	5	WIRE	98.84	500	500
6.20	LOW VOLTAGE POWER CABLE & TERMINATION	#4/0 - #12 AWG-600V	EST	10,200	LF		7.22	0	73,600	0.08	927	WIRE	98.84	91600	165,200
6.21	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	EST	12,000	LF		3.20	0	38,400	0.08	1,090	WIRE	98.84	107800	146,200
6.22	DUCT BANK							0	109,700					205,400	315,100
	DUCT BANK WITH 8-5" & 8-3" CONDUITS		EST	125	LF		398.82	0	49,900	7.51	1,080	ECND	75.97	82,000	131,900
	DUCT BANK WITH 6-5" & 6-3" CONDUITS		EST	125	LF		265.88	0	33,200	6.01	864	ECND	75.97	65,600	98,800
	DUCT BANK WITH 2-5" & 2-3" CONDUITS		EST	200	LF		132.94	0	26,600	3.31	760	ECND	75.97	57,800	84,400
6.23	COMMUNICATIONS		EST	1	LT		70,000.00	0	70,000	440.00	506	WIRE	98.84	50,000	120,000
6.24	LIGHTNING PROTECTION		EST	1	LT		19,000.00	0	19,000	123.00	141	WIRE	98.84	14,000	33,000
6.25	SECURITY SYSTEM		EST	1	LT		16,000.00	0	16,000	123.00	141	WIRE	98.84	14,000	30,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							4,648,400	2,620,700		68,583			6,120,500	13,389,600
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										1,020,953
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						5,964		83.48	498,000	498,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						7,455			522,953	522,953
	PER DIEM	NONE		0.00	HR						82,001			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				13,104					30,603	43,706
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				131,035						131,035

				AEP										Estimate No.:	30716C
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Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			232,420							232,420
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				131,035					306,025	437,060
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				393,105					918,075	1,311,180
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							232,400	668,300					2,275,700	3,176,400
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS						4,880,800	3,289,000					8,396,200	16,566,000
7.0	SPRAY DRYER ABSORBER ISLAND														0
7.1	MECHANICAL EQUIPMENT	INCLUDES: ABSORBER MODULES AND ATOMIZERS WITH LUBE OIL, DUCT WORK FROM THE ABSORBERS TO THE FABRIC FILTER, AND COMPLETE RECYCLE SYSTEM WITH PIPING INSIDE FGD BUILDINGS.	EST	1	LT	39438000		39,438,000	0	236600	272,090	MECH	88.89	24,186,100	63,624,100
7.2	ELEVATOR	MAINTENANCE ELEVATOR - SUBCONTRACT COST INCLUDES LABOR	EST	1	EA	325,000.00		325,000	0	0.00	0	MECH	88.89	0	325,000
7.3	ABSORBER AREA SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES.		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
7.4	AGITATOR FOR SUMP PUMPS	5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
7.5	PIPING - MECHANICAL							142,800	36,900					227,900	407,600
	LARGE BORE PIPING	4" CS, SCHEDULE 40, WELDED	EST	300	LF		23.0	0	6,900	1.48	511	SPNG	94.41	48,200	55,100
	LARGE BORE PIPING	6" CS, SCH 40 WELDED	EST	100	LF		41.7	0	4,200	1.61	185	SPNG	94.41	17,500	21,700
	LARGE BORE PIPING	8" HDPE (UNDERGROUND)	EST	800	LF		14.1	0	11,300	0.83	764	SPNG	94.41	72,100	83,400
	SMALL BORE PIPING	2" CS, SCH 80 WELDED	EST	50	LF		22.20	0	1,100	1.26	72	SPNG	94.41	6,800	7,900
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	50	LF		48.80	0	2,400	1.44	83	SPNG	94.41	7,800	10,200
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	100	LF		33.70	0	3,400	1.32	152	SPNG	94.41	14,300	17,700
	VALVE	2" GLOBE, 150# SS, WELDED	EST	15	EA	1,450		21,800	0	5.64	97	SPNG	94.41	9,200	31,000
	VALVE	4" GATE, 150 #, CS, WELDED	EST	10	EA	2,500		25,000	0	7.70	89	SPNG	94.41	8,400	33,400
	VALVE	6" AIR OPERATED, 150 #, CS, FLANGED	EST	2	EA	14,000		28,000	0	17.30	40	SPNG	94.41	3,800	31,800
	VALVE	8" AIR OPERATED, 150 #, CS, FLANGED	EST	4	EA	17,000		68,000	0	19.30	89	SPNG	94.41	8,400	76,400
	EXCAVATION / BACKFILL	FOR UNDERGROUND PIPING	EST	667	CY			0	0	0.20	153	EXFD	90.00	13,800	13,800
	BEDDING	FOR UNDERGROUND PIPING	EST	89	CY		35.0	0	3,100	0.25	26	EXFD	90.00	2,300	5,400
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	60	EA		75.00	0	4,500	2.50	173	MECH	88.89	15,300	19,800
7.6	SDA SUPERSTRUCTURE							75,000	764,900					1,227,300	2,067,200
	PENTHOUSE FOR SDA'S	TOTAL SUPPORT STEEL AND PURLINS	EST	138	TN		2650.0	0	364,400	30.00	4,744	STST	105.71	501,500	865,900
	ROOFING FOR SDA PENTHOUSE	STANDING SEAM TYPE	EST	10,000	SF		18.00	0	180,000	0.22	2,530	ROOF	69.12	174,900	354,900
	SIDING		EST	13,000	SF		12.00	0	156,000	0.11	1,645	SDNG	93.41	153,600	309,600
	CONCRETE FLOOR FOR PENTHOUSE	INCLUDES DECKING AND FORMWORK	EST	150	CY		230.00	0	34,500	7.50	1,294	CONP	79.64	103,000	137,500
	H&V		EST	3	LT	25000	10000	75,000	30,000	1050.00	3,623	HVAC	81.24	294,300	399,300
7.7	SDA BOTTOM ENCLOSURE - SUPPORT STEEL, GIRTS AND SIDING	TOTAL FOR THREE ABSORBERS	EST	9,053	SF		40.00	0	362,100	0.35	3,644	STST	105.71	385,200	747,300
7.8	SDA SHELL / ROOF INSULATION	61,000 SF. SUBCONTRACT COST INCLUDES LABOR	EST	61,000	SF	30		1,830,000	0		0	DINS	81.75	0	1,830,000
7.9	SDA - SUPPORT STEEL & ACCESS GALLERY							0	711,000					1,884,100	2,595,100

AEP
BIG SANDY UNIT 2
FGD PROJECT - IAQCS BASE (ESP)-1A - 4.5 LB/MM BTU - NON PHASED
ORDER OF MAGNITUDE COST ESTIMATE

Estimate No.: 30716C
Project No.: 12721-000
Date: 9/29/2010
Preparer: MNO
Reviewer: JMK
Approver: PEF

Cost Type:
Est=Estimated
Allow.=Allowance
Q=Vendor Quote

Wage Rates Based on: BIG SANDY
Labor Productivity = 1.15

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	SUPPORT STEEL	MATERIAL INCLUDED WITH OEM EQUIPMENT	EST	435	TN			0	0	24.00	12,006	STST	105.71	1,269,200	1,269,200
	ACCESS GALLERY		EST	15,800	SF		45.00	0	711,000	0.40	7,268	GALL	84.61	614,900	1,325,900
7.10	EXPANSION JOINTS		EST	850	LF		230.00	0	195,500	2.00	1,955	MECH	88.89	173,800	369,300
7.11	DUCTWORK							0	6,175,000					13,113,700	19,288,700
	SPRAY DRYER INLET	INCLUDES INTERNAL BRACING AND TURNING VANES	EST	1,900	TN		3,250.00	0	6,175,000	50.00	109,250	FLDU	107.96	11,794,600	17,969,600
	SPRAY DRYER OUTLET TO FABRIC FILTER INLET	INSTALLATION ONLY - MATERIAL INCLUDED WITH OEM EQUIPMENT	EST	213	TN			0	0	50.00	12,219	FLDU	107.96	1,319,100	1,319,100
7.12	DUCT SUPPORT STEEL	THREE COAT SHOP PAINT	EST	950	TN		2,900.00	0	2,755,000	24.00	26,220	STST	105.71	2,771,700	5,526,700
7.13	DUCTWORK INSULATION & LAGGING		EST	170,000	SF		12.00	0	2,040,000	0.25	48,875	DINS	81.75	3,995,500	6,035,500
7.14	CONCRETE PIT FOR ELEVATOR		EST	12	CY		230.00	0	2,800	7.50	104	CONP	79.64	8,200	11,000
7.15	SPRAY DRYER ABSORBER - FOUNDATIONS	TOTAL FOR THREE TOWERS						0	1,678,600					3,323,400	5,002,000
	EXCAVATION / BACKFILL		EST	16,000	CY			0	0	0.36	6,624	EXFD	90.00	596,200	596,200
	REINFORCING		EST	600	TN		1,150.00	0	690,000	20.00	13,800	REIN	78.27	1,080,100	1,770,100
	FORMWORK		EST	23,000	SF		2.50	0	57,500	0.14	3,703	FORM	99.43	368,200	425,700
	CONCRETE		EST	7,500	CY		105.00	0	787,500	1.50	12,938	CONP	79.64	1,030,300	1,817,800
	MUD MAT		EST	510	CY		105.00	0	53,600	1.50	880	CONP	79.64	70,100	123,700
	EMBEDDED STEEL		EST	36,000	LB		2.50	0	90,000	0.06	2,484	CARP	71.88	178,500	268,500
7.16	FOUNDATIONS FOR SUPPORT STEEL							0	69,000					143,000	212,000
	EXCAVATION / BACKFILL		EST	784	CY			0	0	0.36	324	EXFD	90.00	29,200	29,200
	REINFORCING		EST	23	TN		1,150.00	0	26,100	20.00	522	REIN	78.27	40,900	67,000
	FORMWORK		EST	1,125	SF		2.50	0	2,800	0.14	181	FORM	99.43	18,000	20,800
	CONCRETE		EST	303	CY		105.00	0	31,800	1.50	522	CONP	79.64	41,600	73,400
	MUD MAT		EST	43	CY		105.00	0	4,500	1.50	73	CONP	79.64	5,800	10,300
	EMBEDDED STEEL		EST	1,513	LB		2.50	0	3,800	0.06	104	CARP	71.88	7,500	11,300
7.17	GROUNDING							0	16,000		0			46,100	62,100
	GROUND ROD	3/4" - 20' LONG	EST	16	EA		150	0	2,400	4.00	74	WIRE	98.84	7,300	9,700
	500 MCM	BARE COPPER WIRE	EST	1,650	FT		7.65	0	12,600	0.12	228	WIRE	98.84	22,500	35,100
	CADWELD		EST	64	EA		15	0	1,000	2.00	147	WIRE	98.84	14,500	15,500
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	16.00	18	WIRE	98.84	1,800	1,800
7.18	LIGHTING/ TRANSFORMERS & PANELS							156,000	150,000		0			159,100	465,100
	LIGHT FIXTURES		EST	200	EA		750	0	150,000	4.00	920	WIRE	98.84	90,900	240,900
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	6	EA	10000		60,000	0	40.00	276	WIRE	98.84	27,300	87,300
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	6	EA	7500		45,000	0	32.00	221	WIRE	98.84	21,800	66,800
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	6	EA	5000		30,000	0	16.00	110	WIRE	98.84	10,900	40,900
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	6	EA	3500		21,000	0	12.00	83	WIRE	98.84	8,200	29,200
7.19	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE INCLUDED IN SECTION 1.0 - ID FANS													
7.20	COMMUNICATIONS		EST	1	LT		17,000.00	0	17,000	114.00	131	WIRE	98.84	13,000	30,000
7.21	LIGHTNING PROTECTION		EST	1	LT		25,500.00	0	25,500	163.00	187	WIRE	98.84	18,500	44,000
7.22	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							42,006,800	15,007,300		554,709			51,700,500	108,714,600
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE	2 CRANES		9	MN	90,000.00		810,000	0	1440.00	14,904	MECH	88.89	1,523,520	2,333,520
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0

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	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										8,361,283
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						48,236		83.48	4,027,000	4,027,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						61,785			4,334,283	4,334,283
	PER DIEM	NONE		0.00	HR						679,633			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				75,037					258,503	333,539
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				750,365						750,365
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			2,100,340							2,100,340
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				750,365					2,585,025	3,335,390
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				2,251,095					7,755,075	10,006,170
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							2,910,300	3,826,900					20,483,400	27,220,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SPRAY DRYER ABSORBER ISLAND						44,917,100	18,834,200					72,183,900	135,935,200
8.0	ACTIVATED CARBON INJECTION SYSTEM	NOT REQUIRED WITH NON-PHASED CONSTRUCTION													0
9.0	COMPRESSED AIR SYSTEM														
10.0	SERVICE WATER SYSTEM														
11.0	POTABLE WATER SYSTEM														
12.0	FGD SUBSTATION														
12.1	TRANSFORMERS							1,560,000	0					273,100	1,833,100
	FGD SUBSTATION-AUX TRANSFORMERS: 11A & 11B	138KV-13.8KV- 2 WINDING XFMR	EST	2	EA	695000		1,390,000	0	1200.00	2,760	EHEA	79.16	218,500	1,608,500
	TRANSFORMERS: 32F, 32G	13.8KV-480V,3PHASE, 2 WINDING CAST COIL	EST	2	EA	85000		170,000	0	300.00	690	EHEA	79.16	54,600	224,600
12.2	TRANSFORMER PDC	15W X 45' X 10'H. SUBCONTRACT PRICE INCLUDES LABOR	EST	675.0	SF	300.0		202500.0	0.0	0.0	0.0	STST	105.71	0.0	202500.0
12.3	TRANSFORMER PDC - FOUNDATION							0	73,200					146,900	220,100
	EXCAVATION / BACKFILL		EST	700	CY			0	0	0.36	290	EXFD	90.00	26,100	26,100
	REINFORCING		EST	26	TN		1,150.00	0	30,200	20.00	604	REIN	78.27	47,300	77,500
	FORMWORK		EST	1,100	SF		2.50	0	2,800	0.14	177	FORM	99.43	17,600	20,400
	CONCRETE		EST	300	CY		105.00	0	31,500	1.50	518	CONP	79.64	41,200	72,700
	MUD MAT		EST	35	CY		105.00	0	3,700	1.50	60	CONP	79.64	4,800	8,500
	EMBEDDED STEEL		EST	2,000	LB		2.50	0	5,000	0.06	138	CARP	71.88	9,900	14,900
12.4	138KV MAIN FEEDER & TERMINATIONS							264,000	0					254,000	518,000
	138KV STRUCTURE AND SWITCH	STRUCTURE STEEL	EST	1	LT	103500		103,500	0	450.00	518	STST	105.71	54,700	158,200
	138KV MAIN FEEDER	1/C 750KCMIL- 138KV	EST	2,100	LF	51.75		108,700	0	0.69	1,671	WIRE	98.84	165,200	273,900
	138KV ACCESSORIES		EST	1	LT	51750		51,800	0	300.00	345	WIRE	98.84	34,100	85,900
12.5	SWITCHGEAR							690,000	0					43,700	733,700
	13.8 KV MEDIUM VOLTAGE (11A/B)	PRICE PER SECTION	EST	10	EA	50000		500,000	0	40.00	460	EHEA	79.16	36,400	536,400
	480V LOW VOLTAGE (32F/G)	PRICE PER SECTION	EST	5	EA	38000		190,000	0	16.00	92	EHEA	79.16	7,300	197,300
12.6	MCC	480V MCC, PER LINE UP	EST	2	EA	30000		60,000	0	16.00	37	WIRE	98.84	3,600	63,600
12.7	CABLE BUS							181,100	18,000					290,200	489,300
	15KV CABLE BUS DUCT	BUS DUCT ONLY	EST	200	FT	442		88,400	0	3.30	759	WIRE	98.84	75,000	163,400
	480V CABLE BUS DUCT	BUS DUCT ONLY	EST	150	FT	618		92,700	0	10.30	1,777	WIRE	98.84	175,600	268,300
	CABLE BUS TERMINATION	500MCM - 15KV TERMINATIONS	EST	4	EA		1,800.00	0	7,200	33.00	152	WIRE	98.84	15,000	22,200

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	CABLE BUS TERMINATION	750MCM- 480V TERMINATIONS	EST	4	EA		2,700.00	0	10,800	54.00	248	WIRE	98.84	24,600	35,400
12.8	PANELS - RELAY							100,000	0					9,100	109,100
	RELAY PANELS & INTERLOCK	ALLOWANCE	EST	1	LT	100000		100,000	0	80.00	92	WIRE	98.84	9,100	109,100
12.9	MIMIC PANELS		EST	1	EA	17500		17,500	0	40.00	46	WIRE	98.84	4,500	22,000
12.10	EMERGENCY POWER SYSTEM							108,300	0					24,400	132,700
	DC PANEL BOADRD		EST	1	EA	15500		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	UPS PANEL BOARDS		EST	1	EA	15500		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	SATELLITE UPS		EST	1	EA	41200		41,200	0	16.00	18	WIRE	98.84	1,800	43,000
	VRLA BATTERIES	8HR-400A, 480V	EST	1	LT	36050		36,100	0	120.00	138	WIRE	98.84	13,600	49,700
12.11	GROUNDING							23,300	0					59,100	82,400
	GROUND ROD	3/4" - 20' LONG EACH	EST	16	EA	150		2,400	0	4.00	74	WIRE	98.84	7,300	9,700
	500 MCM	BARE COPPER WIRE	EST	2,600	FT	7.65		19,900	0	0.12	359	WIRE	98.84	35,500	55,400
	CADWELD		EST	64	EA	15		1,000	0	2.00	147	WIRE	98.84	14,500	15,500
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	16.00	18	WIRE	98.84	1,800	1,800
12.12	LIGHTING/ TRANSFORMERS & PANELS							26,000	30,000					29,500	85,500
	LIGHT FIXTURES		EST	40	EA		750	0	30,000	4.00	184	WIRE	98.84	18,200	48,200
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	1	EA	10000		10,000	0	40.00	46	WIRE	98.84	4,500	14,500
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	1	EA	7500		7,500	0	32.00	37	WIRE	98.84	3,600	11,100
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	1	EA	5000		5,000	0	16.00	18	WIRE	98.84	1,800	6,800
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	1	EA	3500		3,500	0	12.00	14	WIRE	98.84	1,400	4,900
12.13	OUTDOOR LIGHTING	NEW AUX YARD LIGHTING - ALLOWANCE	EST	1	LT	25000		25,000	0	500.00	575	WIRE	98.84	56,800	81,800
12.14	RACEWAY, CABLE TRAY, & CONDUIT							0	390,600					1,918,600	2,309,200
	12" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,250	LF		18.25	0	22,800	1.10	1,581	WIRE	98.84	156,300	179,100
	18" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	750	LF		21.50	0	16,100	1.45	1,251	WIRE	98.84	123,600	139,700
	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	2,200	LF		27.10	0	59,600	1.75	4,428	WIRE	98.84	437,600	497,200
	36" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	600	LF		30.30	0	18,200	1.95	1,346	WIRE	98.84	133,000	151,200
	5" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,000	LF		61.00	0	61,000	1.13	1,296	WIRE	98.84	128,100	189,100
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,800	LF		31.00	0	55,800	0.81	1,670	WIRE	98.84	165,100	220,900
	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	2,000	LF		21.50	0	43,000	0.65	1,484	WIRE	98.84	146,600	189,600
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	3,000	LF		9.25	0	27,800	0.35	1,214	WIRE	98.84	120,000	147,800
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	3,700	LF		7.15	0	26,500	0.28	1,208	WIRE	98.84	119,400	145,900
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	6,200	LF		4.44	0	27,500	0.24	1,704	WIRE	98.84	168,400	195,900
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	10,000	LF		3.23	0	32,300	0.19	2,231	WIRE	98.84	220,500	252,800
12.15	DUCT BANK							0	26,200	0.05	0			54,300	80,500
	UNDERGROUND SURVEY FOR NEW DUCT BANK RUN	MAIN FEEDER BETWEEN EXISTING SCR SUBSTATION TO FGD AUX XFMR	EST	200	LF			0	0	0.80	184	ECND	75.97	14,000	14,000
	4' X 4' DUCT BANK (138KV SCR TO FGD AUX XFMR SUBSTATION)	6 - 6" PVC	EST	40	LF		375	0	15,000	6.25	288	ECND	75.97	21,800	36,800
	DUCT BANK WITH 6-5" & 4-3" CONDUITS	2.38' H X 4' W	EST	50	LF		223.02	0	11,200	4.24	244	ECND	75.97	18,500	29,700
12.16	HIGH VOLTAGE POWER CABLE & TERMINATION	1/C # 500KCMIL-15KV	EST	3,000	LF		9.27	0	27,800	0.23	794	WIRE	98.84	78400	106,200
12.17	LOW VOLTAGE POWER CABLE & TERMINATION							0	263,700		0			649,600	913,300
	3/C # 500KCMIL- 600V		EST	7,000	LF		26.12	0	182,800	0.69	5,555	WIRE	98.84	549000	731,800
	#4/0 - #12 AWG-600V		EST	11,200	LF		7.22	0	80,900	0.08	1,018	WIRE	98.84	100,600	181,500
12.18	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	EST	6,800	LF		3.20	0	21,800	0.08	618	WIRE	98.84	61,100	82,900
12.19	FOUNDATION FOR AUX TRANSFORMER							0	70,200					205,400	275,600
	EXCAVATION / BACKFILL		EST	1,000	CY			0	0	0.36	414	EXFD	90.00	37,300	37,300
	REINFORCING		EST	20.0	TN		1,150.00	0	23,000	20.00	460	REIN	78.27	36,000	59,000
	FORMWORK		EST	5,000	SF		2.50	0	12,500	0.14	805	FORM	99.43	80,000	92,500
	CONCRETE		EST	190	CY		105.00	0	20,000	1.50	328	CONP	79.64	26,100	46,100
	MUD MAT		EST	45	CY		105.00	0	4,700	1.50	78	CONP	79.64	6,200	10,900

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	EMBEDDED STEEL		EST	4,000	LB		2.50	0	10,000	0.06	276	CARP	71.88	19,800	29,800
12.20	FIREWALL FOR TRANSFORMERS							0	3,000					5,200	8,200
	REINFORCING		EST	1.0	TN		1,150.00	0	1,200	20.00	23	REIN	78.27	1,800	3,000
	FORMWORK		EST	80	SF		2.50	0	200	0.14	13	FORM	99.43	1,300	1,500
	CONCRETE		EST	15	CY		105.00	0	1,600	1.50	26	CONP	79.64	2,100	3,700
12.21	COMMUNICATIONS		EST	1	LT		17,000.00	0	17,000	114.00	131	WIRE	98.84	13,000	30,000
12.22	LIGHTNING PROTECTION		EST	1	LT		4,000.00	0	4,000	18.00	21	WIRE	98.84	2,000	6,000
12.23	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							3,257,700	953,500		43,910			4,189,500	8,400,700
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										653,820
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						3,818		83.48	319,000	319,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						4,773			334,820	334,820
	PER DIEM	NONE		0.00	HR						52,501			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				4,768					20,948	25,715
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				47,675						47,675
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			162,885							162,885
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				47,675					209,475	257,150
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				143,025					628,425	771,450
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							162,900	243,100					1,512,667	1,918,700
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FGD SUBSTATION						3,420,600	1,196,600					5,702,200	10,319,400
13.0	FGD DCS SYSTEM	DRY AND WET FGD COMBINED													0
14.0	CEM SYSTEM														0
15.0	TRUCK & RAIL INFRASTRUCTURE														0
16.0	SITE IMPROVEMENTS - CIVIL WORK (DFGD + WFGD AREAS)														
17.0	LIMESTONE HANDLING SYSTEM														
18.0	REAGENT (LIMESTONE) PREPARATION ISLAND														0
18.1	MECHANICAL EQUIPMENT	INCLUDES LIMESTONE FEEDERS, FROM THE DAY SILOS THROUGH THE SLURRY STORAGE TANKS AND TRANSFER PUMPS WITH INTEGRAL PIPING	EST	1	LT	15,167,000		15,167,000	0	120000.00	138,000	MECH	88.89	12,266,800	27,433,800
18.2	SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300

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				FGD PROJECT - IAQCS BASE (ESP)-1A - 4.5 LB/MM BTU - NON PHASED										Date:	9/29/2010
				ORDER OF MAGNITUDE COST ESTIMATE										Preparer:	MNO
		Cost Type:												Reviewer:	JMK
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Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
18.3	AGITATOR FOR SUMP PUMPS	5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
18.4	PIPING - MECHANICAL		EST	1	LT			278,900	205,000					587,300	1,071,200
	LARGE BORE PIPING	4.0" CS, SCH 40 WELDED	EST	500	LF		23.00	0	11,500	1.48	851	SPNG	94.41	80,300	91,800
	LARGE BORE PIPING	6" FRP	EST	2,000	LF		33.90	0	67,800	0.67	1,541	SPNG	94.41	145,500	213,300
	LARGE BORE PIPING	8" FRP	EST	1,000	LF		51.30	0	51,300	0.95	1,093	SPNG	94.41	103,100	154,400
	LARGE BORE PIPING	10" FRP	EST	300	LF		68.00	0	20,400	1.18	407	SPNG	94.41	38,400	58,800
	LARGE BORE PIPING	12" FRP	EST	250	LF		80.90	0	20,200	1.41	405	SPNG	94.41	38,300	58,500
	VALVE	6" BFLY, 150 #, CS, FLANGED	EST	6	EA	850		5,100	0	8.70	60	SPNG	94.41	5,700	10,800
	VALVE	8" BFLY, 150 #, CS, FLANGED	EST	12	EA	1,400		16,800	0	9.10	126	SPNG	94.41	11,900	28,700
	VALVE	10" BFLY, 150 #, CS, FLANGED	EST	10	EA	2,300		23,000	0	13.80	159	SPNG	94.41	15,000	38,000
	VALVE	12" BFLY, 150 #, CS, FLANGED	EST	3	EA	3,000		9,000	0	14.60	50	SPNG	94.41	4,800	13,800
	VALVE	6" AIR OPERATED, 150 #, CS, FLANGED	EST	10	EA	14,000		140,000	0	17.30	199	SPNG	94.41	18,800	158,800
	VALVE	8" AIR OPERATED, 150 #, CS, FLANGED	EST	5	EA	17,000		85,000	0	19.30	111	SPNG	94.41	10,500	95,500
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	450	EA		75.00	0	33,800	2.50	1,294	MECH	88.89	115,000	148,800
18.5	LIMESTONE SLURRY TANKS - FOUNDATIONS							0	166,400					299,400	465,800
	EXCAVATION / BACKFILL		EST	969	CY			0	0	0.36	401	EXFD	90.00	36,100	36,100
	REINFORCING		EST	90	TN		1,150.00	0	103,500	20.00	2,070	REIN	78.27	162,000	265,500
	FORMWORK		EST	1,166	SF		2.50	0	2,900	0.14	188	FORM	99.43	18,700	21,600
	CONCRETE		EST	475	CY		105.00	0	49,900	1.50	819	CONP	79.64	65,300	115,200
	MUD MAT		EST	40	CY		105.00	0	4,200	1.50	69	CONP	79.64	5,500	9,700
	EMBEDDED STEEL		EST	2,375	LB		2.50	0	5,900	0.06	164	CARP	71.88	11,800	17,700
18.6	REAGENT PREPARATION BUILDING - FOUNDATIONS							0	682,000					1,132,200	1,814,200
	EXCAVATION / BACKFILL		EST	2,767	CY			0	0	0.36	1,146	EXFD	90.00	103,100	103,100
	REINFORCING		EST	273	TN		1,150.00	0	314,000	20.00	6,279	REIN	78.27	491,500	805,500
	FORMWORK		EST	2,500	SF		2.50	0	6,300	0.14	403	FORM	99.43	40,000	46,300
	CONCRETE		EST	2,889	CY		105.00	0	303,300	1.50	4,984	CONP	79.64	396,900	700,200
	MUD MAT		EST	212	CY		105.00	0	22,300	1.50	366	CONP	79.64	29,100	51,400
	EMBEDDED STEEL		EST	14,445	LB		2.50	0	36,100	0.06	997	CARP	71.88	71,600	107,700
18.7	REAGENT PREPARATION BUILDING	120' L X 130' W X 130' H						269,400	4,865,000					4,251,600	9,386,000
	STRUCTURAL STEEL		EST	1,217	TN		2650	0	3,225,100	16.00	22,393	STST	105.71	2,367,100	5,592,200
	INSULATED METAL SIDING		EST	65,000	SF		12	0	780,000	0.11	8,223	SDNG	93.41	768,100	1,548,100
	ROLLING OVERHEAD DOOR		EST	640	SF		27	0	17,300	0.25	184	CARP	71.88	13,200	30,500
	METAL ROOF DECKING		EST	15,600	SF		2.7	0	42,100	0.06	1,076	STST	105.71	113,800	155,900
	RIGID ROOF INSULATION		EST	15,600	SF		2.4	0	37,400	0.02	269	ROOF	69.12	18,600	56,000
	ROOFING (4-PLY TAR & GRAVEL)		EST	15,600	SF		1.55	0	24,200	0.04	718	ROOF	69.12	49,600	73,800
	LIGHTWEIGHT CONCRETE FILL 1"		EST	48	CY		100	0	4,800	1.30	72	ROOF	69.12	5,000	9,800
	ROOF FLASHING		EST	500	LF		14.45	0	7,200	0.12	69	ROOF	69.12	4,800	12,000
	ROOF DRAINS		EST	1	LT		45000	0	15,000	500.00	575	PLMB	79.42	45,700	60,700
	FLOOR DRAINS		EST	1	LT		37500	0	20,000	375.00	431	PLMB	79.42	34,200	54,200
	FLOOR SLABS	INCLUDES METAL DECKING AND FORMWORK	EST	48	CY		210	0	10,100	7.50	415	CONP	79.64	33,100	43,200
	FLOOR FINISHES		EST	9,360	SF		2.5	0	23,400	0.05	538	CONP	79.64	42,900	66,300
	LOUVERS/WINDOWS/DOORS		EST	6,500	SF		40	0	260,000	0.35	2,616	CARP	71.88	188,100	448,100
	ROOF VENTILATORS		EST	6	EA		15000	0	90,000	24.00	166	HVAC	81.24	13,500	103,500
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	4,680	SF		45	0	210,600	0.40	2,153	GALL	84.61	182,100	392,700
	H&V		EST	1	LT	194400	77760	194,400	77,800	3629.33	4,174	HVAC	81.24	339,100	611,300
	HVAC	40T PACKAGED UNIT FOR ELECTRICAL EQUIPMENT ROOM. INCLUDES ALLOWANCE FOR CONCRETE PAD AND ELECTRICAL WORK	EST	1	LT	75000	20000	75,000	20,000	350.00	403	HVAC	81.24	32,700	127,700
18.8	PIPE SUPPORT PAD - REAGENT PREP BUILDING							0	13,800					27,500	41,300
	EXCAVATION / BACKFILL		EST	110	CY			0	0	0.36	46	EXFD	90.00	4,100	4,100
	REINFORCING		EST	5.0	TN		1,150.00	0	5,800	20.00	115	REIN	78.27	9,000	14,800

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Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	FORMWORK		EST	280	SF		2.50	0	700	0.14	45	FORM	99.43	4,500	5,200
	CONCRETE		EST	40	CY		105.00	0	4,200	1.50	69	CONP	79.64	5,500	9,700
	MUD MAT		EST	25	CY		105.00	0	2,600	1.50	43	CONP	79.64	3,400	6,000
	EMBEDDED STEEL		EST	200	LB		2.50	0	500	0.06	14	CARP	71.88	1,000	1,500
18.9	LIGHTING/ TRANSFORMERS & PANELS							52,000	135,000					104,500	291,500
	LIGHT FIXTURES		EST	180	EA		750	0	135,000	4.00	828	WIRE	98.84	81,800	216,800
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	10000		20,000	0	40.00	92	WIRE	98.84	9,100	29,100
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	7500		15,000	0	32.00	74	WIRE	98.84	7,300	22,300
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	2	EA	5000		10,000	0	16.00	37	WIRE	98.84	3,600	13,600
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	2	EA	3500		7,000	0	12.00	28	WIRE	98.84	2,700	9,700
18.10	GROUNDING							5,100	0					13,400	18,500
	GROUND ROD	3/4" - 20' LONG	EST	2	EA	150		300	0	4.00	9	WIRE	98.84	900	1,200
	500 MCM	BARE COPPER WIRE	EST	600	FT	7.65		4,600	0	0.12	83	WIRE	98.84	8,200	12,800
	CADWELD		EST	16	EA	15		200	0	2.00	37	WIRE	98.84	3,600	3,800
	GROUNDING TEST	TEST, CALIBRATION & DOCUMENTATION	EST	2	EA			0	0	3.00	7	WIRE	98.84	700	700
18.11	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE ARE INCLUDED IN SECTION 20.0 - ABSORBER ISLAND													
18.12	COMMUNICATIONS		EST	1	LT		34,000.00	0	34,000	229.00	263	WIRE	98.84	26,000	60,000
18.13	LIGHTNING PROTECTION		EST	1	LT		23,000.00	0	23,000	141.00	162	WIRE	98.84	16,000	39,000
18.14	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							15,812,400	6,132,200		208,865			18,748,600	40,693,200
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										3,342,514
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						18,162		89.76	1,630,000	1,630,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						22,703			1,712,514	1,712,514
	PER DIEM	NONE		0.00	HR						249,730			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				30,661					93,743	124,404
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				306,610						306,610
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			790,620							790,620
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				306,610					937,430	1,244,040
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				919,830					2,812,290	3,732,120
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							790,600	1,563,700					7,186,000	9,540,300
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	REAGENT (LIMESTONE) PREPARATION ISLAND						16,603,000	7,695,900					25,934,600	50,233,500
19.0	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)														0

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19.1	MECHANICAL EQUIPMENT	PRIMARY & SECONDARY DEWATERING INCLUDING HYDROCLONE FEED TANKS, HYDROCLONES, PUMPS, INTEGRAL PIPING AND BELT VACUUM FILTERS	EST	1	LT	8,701,000		8,701,000	0	65000.00	74,750	MECH	88.89	6,644,500	15,345,500
19.2	PUMPS & AGITATORS							250,000	0					137,000	387,000
	GYPSUM SLURRY TRANSFER PUMPS	1500 GPM, 150 HP	EST	2	EA	40000		80,000	0	220.00	506	MECH	88.89	45,000	125,000
	RECLAIM WATER PUMPS	350 GPM, 25 HP	EST	2	EA	15000		30,000	0	120.00	276	MECH	88.89	24,500	54,500
	RECLAIM WATER TRANSFER PUMPS	500 GPM, 100 HP	EST	2	EA	30000		60,000	0	165.00	380	MECH	88.89	33,700	93,700
	SUMP PUMPS	AUXILIARY PUMPHOUSE BUILDING SUMP PUMPS - DUPLEX. INCLUDES CHECK & ISOLATION VALVES		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
	AGITATOR FOR SUMP PUMPS	AUXILIARY PUMPHOUSE BUILDING SUMP AGITATORS - 5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
	SUMP PUMPS	BYPRODUCT DEWATERING BUILDING SUMP PUMPS - DUPLEX. INCLUDES CHECK & ISOLATION VALVES		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
	AGITATOR FOR SUMP PUMPS	BYPRODUCT DEWATERING BUILDING SUMP AGITATORS - 5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
19.3	PIPING - MECHANICAL		EST	1	LT			282,700	3,555,700					7,786,000	11,624,400
	LARGE BORE PIPING	4" FRP	EST	2,050	LF		28.40	0	58,200	0.38	896	SPNG	94.41	84,600	142,800
	LARGE BORE PIPING	6" FRP	EST	3,300	LF		33.90	0	111,900	0.67	2,543	SPNG	94.41	240,100	352,000
	LARGE BORE PIPING	8" FRP	EST	6,250	LF		51.30	0	320,600	0.95	6,828	SPNG	94.41	644,600	965,200
	LARGE BORE PIPING	10" FRP	EST	6,400	LF		68.00	0	435,200	1.18	8,685	SPNG	94.41	819,900	1,255,100
	LARGE BORE PIPING	12" FRP	EST	1,000	LF		80.90	0	80,900	1.41	1,622	SPNG	94.41	153,100	234,000
	LARGE BORE PIPING	14" FRP	EST	16,500	LF		133.90	0	2,209,400	2.67	50,663	SPNG	94.41	4,783,100	6,992,500
	LARGE BORE PIPING	16" FRP	EST	100	LF		152.20	0	15,200	2.88	331	SPNG	94.41	31,300	46,500
	LARGE BORE PIPING	20" FRP	EST	125	LF		165.00	0	20,600	3.31	476	SPNG	94.41	44,900	65,500
	VALVE	4" BFLY, 150 #, CS, FLANGED	EST	6	EA	625		3,800	0	7.20	50	SPNG	94.41	4,700	8,500
	VALVE	6" BFLY, 150 #, CS, FLANGED	EST	6	EA	850		5,100	0	8.70	60	SPNG	94.41	5,700	10,800
	VALVE	8" BFLY, 150 #, CS, FLANGED	EST	12	EA	1,400		16,800	0	9.10	126	SPNG	94.41	11,900	28,700
	VALVE	10" BFLY, 150 #, CS, FLANGED	EST	10	EA	2,300		23,000	0	13.80	159	SPNG	94.41	15,000	38,000
	VALVE	12" BFLY, 150 #, CS, FLANGED	EST	3	EA	3,000		9,000	0	14.60	50	SPNG	94.41	4,800	13,800
	VALVE	6" AIR OPERATED, 150 #, CS, FLANGED	EST	10	EA	14,000		140,000	0	17.30	199	SPNG	94.41	18,800	158,800
	VALVE	8" AIR OPERATED, 150 #, CS, FLANGED	EST	5	EA	17,000		85,000	0	19.30	111	SPNG	94.41	10,500	95,500
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	3,573	EA		85.00	0	303,700	2.50	10,271	MECH	88.89	913,000	1,216,700
19.4	MATERIAL HANDLING EQUIPMENT							724,000	7,500					614,100	1,345,600
	CONVEYOR GH-1A	36" W x 75' L		75	LF	1,000		75,000	0	7.50	647	MECH	88.89	57,500	132,500
	CONVEYOR GH-1B	36" W x 75' L		75	LF	1,000		75,000	0	30.00	2,588	MECH	88.89	230,000	305,000
	BELT SCALES	CONVEYORS GH-1A AND GH-1B		2	EA	30,000		60,000	0	180.00	414	MECH	88.89	36,800	96,800
	STACKOUT CONVEYOR GH-2A	36" W X 120' L		120	LF	1,100		132,000	0	7.50	1,035	MECH	88.89	92,000	224,000
	STACKOUT CONVEYOR GH-2B	36" W X 120' L		120	LF	1,100		132,000	0	7.50	1,035	MECH	88.89	92,000	224,000
	TELESCOPIC CHUTES	CONVEYORS GH-2A AND GH-2B		2	EA	125,000		250,000	0	375.00	863	MECH	88.89	76,700	326,700
	FRONT END LOADER	NOT INCLUDED						0	0	30.00	0	MECH	88.89	0	0
	DUMP TRUCK	NOT INCLUDED						0	0	700.00	0	MECH	88.89	0	0
	WATER SPRAY AT DISCHARGE OF GH-2A & GH-2B	ALLOWANCE FOR 200 LF SMALL BORE PIPING AND SPRAYS AND VALVVING		300	LF		25.0	0	7,500	0.95	328	MECH	88.89	29,100	36,600
19.5	FIRE PROTECTION SYSTEM FOR BELT CONVEYORS	DELUGE SYSTEM, DRY PIPE, SENSORS, ACTIVATION VALVE AND FM APPROVED PANEL - SUBCONTRACT PRICE FOR ALL CONVEYORS INCLUDES LABOR		1	LT	170,000		170,000	0	0.00	0	MECH	88.89	0	170,000
19.6	CONVEYOR STRUCTURE SUPPORT STEEL	THREE-COAT SHOP PAINT	EST	34	TN		2,900.00	0	99,000	24.00	942	STST	105.71	99,600	198,600

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Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
19.7	PIPE RACK SUPPORT STEEL	THREE-COAT SHOP PAINT	EST	68	TN		2,900.00	0	197,200	24.00	1,877	STST	105.71	198,400	395,600
19.8	TANKS							0	3,825,300					846,700	4,672,000
	LANDFILL SERVICE WATER TANKS	70,000 GAL, CS, 20' DIA X 30' - SUBCONTRACT PRICE INCLUDES LABOR WITH EXTERIOR PRIMED AND FIELD PAINTED	EST	2	EA		157500.0	0	315,000	0.00	0	TANK	89.16	0	315,000
	BLEED TANKS	120,000 GAL, CS, 27' DIA X 27' - SUBCONTRACT PRICE INCLUDES LABOR WITH EXTERIOR PRIMED AND FIELD PAINTED	EST	2	EA		216000.0	0	432,000	0.00	0	TANK	89.16	0	432,000
	RECLAIM WATER TANKS	230,000 GAL, CS, 29' DIA X 33' - SUBCONTRACT PRICE INCLUDES LABOR WITH EXTERIOR PRIMED AND FIELD PAINTED	EST	2	EA		330000.0	0	660,000	0.00	0	TANK	89.16	0	660,000
	RECLAIM WATER TANKS - INTERIOR LINING	FLAKECOAT VINYL ESTER TOTAL FOR TWO TANKS	EST	8,656	SF		15.0	0	129,800	0.35	3,484	PNTR	66.72	232,500	362,300
	LANDFILL RECLAIM WATER TANKS	230,000 GAL, CS, 29' DIA X 33' - SUBCONTRACT PRICE INCLUDES LABOR WITH EXTERIOR PRIMED AND FIELD PAINTED	EST	2	EA		330000.0	0	660,000	0.00	0	TANK	89.16	0	660,000
	LANDFILL RECLAIM WATER TANKS - INTERIOR LINING	FLAKECOAT VINYL ESTER TOTAL FOR TWO TANKS	EST	8,656	SF		15.0	0	129,800	0.35	3,484	PNTR	66.72	232,500	362,300
	MAINTENANCE STORAGE TANK	1,250,000 GAL, CS, 58' DIA X 62' - SUBCONTRACT PRICE INCLUDES LABOR WITH EXTERIOR PRIMED AND FIELD PAINTED	EST	1	EA		1250000.0	0	1,250,000	0.00	0	TANK	89.16	0	1,250,000
	MAINTENANCE STORAGE TANK - INTERIOR LINING	FLAKECOAT VINYL ESTER	EST	16,581	SF		15.0	0	248,700	0.30	5,720	PNTR	66.72	381,700	630,400
19.9	RECLAIM WATER TANKS & PUMPS - FOUNDATIONS							0	26,000					54,000	80,000
	EXCAVATION / BACKFILL		EST	295	CY			0	0	0.36	122	EXFD	90.00	11,000	11,000
	REINFORCING		EST	10.0	TN		1,150.00	0	11,500	20.00	230	REIN	78.27	18,000	29,500
	FORMWORK		EST	384	SF		2.50	0	1,000	0.14	62	FORM	99.43	6,100	7,100
	CONCRETE		EST	103	CY		105.00	0	10,800	1.50	178	CONP	79.64	14,200	25,000
	MUD MAT		EST	9	CY		105.00	0	900	1.50	16	CONP	79.64	1,200	2,100
	EMBEDDED STEEL		EST	705	LB		2.50	0	1,800	0.06	49	CARP	71.88	3,500	5,300
19.10	MAINTENANCE STORAGE TANK & PUMPS - FOUNDATIONS							0	100,000					177,300	277,300
	EXCAVATION / BACKFILL		EST	614	CY			0	0	0.36	254	EXFD	90.00	22,900	22,900
	REINFORCING		EST	42.0	TN		1,150.00	0	48,300	20.00	966	REIN	78.27	75,600	123,900
	FORMWORK		EST	795	SF		2.50	0	2,000	0.14	128	FORM	99.43	12,700	14,700
	CONCRETE		EST	420	CY		105.00	0	44,100	1.50	725	CONP	79.64	57,700	101,800
	MUD MAT		EST	36	CY		105.00	0	3,800	1.50	62	CONP	79.64	4,900	8,700
	EMBEDDED STEEL		EST	705	LB		2.50	0	1,800	0.06	49	CARP	71.88	3,500	5,300
19.11	LANDFILL SERVICE WATER TANKS & PUMP - FOUNDATIONS							0	80,900					155,100	236,000
	EXCAVATION / BACKFILL		EST	614	CY			0	0	0.36	254	EXFD	90.00	22,900	22,900
	REINFORCING		EST	42.0	TN		1,150.00	0	48,300	20.00	966	REIN	78.27	75,600	123,900
	FORMWORK		EST	795	SF		2.50	0	2,000	0.14	128	FORM	99.43	12,700	14,700
	CONCRETE		EST	221	CY		105.00	0	23,200	1.50	381	CONP	79.64	30,400	53,600
	MUD MAT		EST	18	CY		105.00	0	1,900	1.50	31	CONP	79.64	2,500	4,400
	EMBEDDED STEEL		EST	2,210	LB		2.50	0	5,500	0.06	152	CARP	71.88	11,000	16,500
19.12	LANDFILL RECLAIM WATER TANKS & PUMPS - FOUNDATIONS							0	26,000					54,000	80,000
	EXCAVATION / BACKFILL		EST	295	CY			0	0	0.36	122	EXFD	90.00	11,000	11,000
	REINFORCING		EST	10.0	TN		1,150.00	0	11,500	20.00	230	REIN	78.27	18,000	29,500
	FORMWORK		EST	384	SF		2.50	0	1,000	0.14	62	FORM	99.43	6,100	7,100
	CONCRETE		EST	103	CY		105.00	0	10,800	1.50	178	CONP	79.64	14,200	25,000
	MUD MAT		EST	9	CY		105.00	0	900	1.50	16	CONP	79.64	1,200	2,100
	EMBEDDED STEEL		EST	705	LB		2.50	0	1,800	0.06	49	CARP	71.88	3,500	5,300

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19.13	HYDROCLONE FEED TANKS & BLEED TANKS - FOUNDATIONS	TOTAL FOR HYDROCLONE AND BLEED TANKS						0	340,200					618,900	959,100
	EXCAVATION / BACKFILL		EST	1,915	CY			0	0	0.36	793	EXFD	90.00	71,400	71,400
	REINFORCING		EST	212.0	TN		1,150.00	0	243,800	20.00	4,876	REIN	78.27	381,600	625,400
	FORMWORK		EST	2,400	SF		2.50	0	6,000	0.14	386	FORM	99.43	38,400	44,400
	CONCRETE		EST	671	CY		105.00	0	70,500	1.50	1,157	CONP	79.64	92,200	162,700
	MUD MAT		EST	58	CY		105.00	0	6,100	1.50	100	CONP	79.64	8,000	14,100
	EMBEDDED STEEL		EST	5,500	LB		2.50	0	13,800	0.06	380	CARP	71.88	27,300	41,100
19.14	BYPRODUCT STACKOUT CONVEYOR & TRANSFER TOWER - FOUNDATIONS							0	16,100					34,700	50,800
	EXCAVATION / BACKFILL		EST	140	CY			0	0	0.36	58	EXFD	90.00	5,200	5,200
	REINFORCING		EST	6	TN		1,150.00	0	6,900	20.00	138	REIN	78.27	10,800	17,700
	FORMWORK		EST	480	SF		2.50	0	1,200	0.14	77	FORM	99.43	7,700	8,900
	CONCRETE		EST	59	CY		105.00	0	6,200	1.50	102	CONP	79.64	8,100	14,300
	MUD MAT		EST	10	CY		105.00	0	1,100	1.50	17	CONP	79.64	1,400	2,500
	EMBEDDED STEEL		EST	295	LB		2.50	0	700	0.06	20	CARP	71.88	1,500	2,200
19.15	BYPRODUCT STACKOUT PILE - FOUNDATIONS	INCLUDES CONTAINMENT AREA SLAB						0	891,700					1,427,400	2,319,100
	EXCAVATION / BACKFILL		EST	2,900	CY			0	0	0.36	1,201	EXFD	90.00	108,100	108,100
	REINFORCING		EST	360	TN		1,150.00	0	414,000	20.00	8,280	REIN	78.27	648,100	1,062,100
	FORMWORK		EST	2,365	SF		2.50	0	5,900	0.14	381	FORM	99.43	37,900	43,800
	CONCRETE		EST	3,813	CY		105.00	0	400,400	1.50	6,577	CONP	79.64	523,800	924,200
	MUD MAT		EST	453	CY		105.00	0	47,600	1.50	781	CONP	79.64	62,200	109,800
	EMBEDDED STEEL		EST	9,533	LB		2.50	0	23,800	0.06	658	CARP	71.88	47,300	71,100
19.16	PIPE RACK	SUPPORTS AT 15' C/C						0	60,800					149,400	210,200
	EXCAVATION / BACKFILL		EST	1,120	CY			0	0	0.36	464	EXFD	90.00	41,700	41,700
	REINFORCING		EST	24	TN		1,150.00	0	27,600	20.00	552	REIN	78.27	43,200	70,800
	FORMWORK		EST	1,500	SF		2.50	0	3,800	0.14	242	FORM	99.43	24,000	27,800
	CONCRETE		EST	250	CY		105.00	0	26,300	1.50	431	CONP	79.64	34,300	60,600
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	1,250	LB		2.50	0	3,100	0.06	86	CARP	71.88	6,200	9,300
19.17	BYPRODUCT CONTAINMENT WALLS							0	137,300					235,000	372,300
	EXCAVATION / BACKFILL		EST	489	CY			0	0	0.36	202	EXFD	90.00	18,200	18,200
	REINFORCING		EST	46	TN		1,150.00	0	52,900	20.00	1,058	REIN	78.27	82,800	135,700
	FORMWORK		EST	1,520	SF		2.50	0	3,800	0.14	245	FORM	99.43	24,300	28,100
	CONCRETE		EST	489	CY		105.00	0	51,300	1.50	844	CONP	79.64	67,200	118,500
	MUD MAT		EST	221	CY		105.00	0	23,200	1.50	381	CONP	79.64	30,400	53,600
	EMBEDDED STEEL		EST	2,445	LB		2.50	0	6,100	0.06	169	CARP	71.88	12,100	18,200
19.18	INSTALL WIND SCREEN		EST	700	LF		750.00	0	525,000	3.00	2,415	CONP	79.64	192,300	717,300
19.19	BYPRODUCT DEWATERING BUILDING - FOUNDATIONS							0	291,400					482,800	774,200
	EXCAVATION / BACKFILL		EST	1,220	CY			0	0	0.36	505	EXFD	90.00	45,500	45,500
	REINFORCING		EST	121	TN		1,150.00	0	139,200	20.00	2,783	REIN	78.27	217,800	357,000
	FORMWORK		EST	1,520	SF		2.50	0	3,800	0.14	245	FORM	99.43	24,300	28,100
	CONCRETE		EST	1,278	CY		105.00	0	134,200	1.50	2,205	CONP	79.64	175,600	309,800
	MUD MAT		EST	121	CY		105.00	0	12,700	1.50	209	CONP	79.64	16,600	29,300
	EMBEDDED STEEL		EST	605	LB		2.50	0	1,500	0.06	42	CARP	71.88	3,000	4,500
19.20	BYPRODUCT DEWATERING BUILDING	120' L X 75' W X 65' H						145,200	1,595,300					1,495,900	3,236,400
	STRUCTURAL STEEL		EST	322	TN		2650	0	852,600	16.00	5,920	STST	105.71	625,800	1,478,400
	INSULATED METAL SIDING		EST	25,350	SF		12	0	304,200	0.11	3,207	SDNG	93.41	299,500	603,700
	ROLLING OVERHEAD DOOR		EST	640	SF		27	0	17,300	0.25	184	CARP	71.88	13,200	30,500
	METAL ROOF DECKING		EST	9,000	SF		2.7	0	24,300	0.06	621	STST	105.71	65,600	89,900
	RIGID ROOF INSULATION		EST	9,000	SF		2.4	0	21,600	0.02	155	ROOF	69.12	10,700	32,300
	ROOFING (4-PLY TAR & GRAVEL)		EST	9,000	SF		1.55	0	14,000	0.04	414	ROOF	69.12	28,600	42,600
	LIGHTWEIGHT CONCRETE FILL 1"		EST	28	CY		100	0	2,800	1.30	42	ROOF	69.12	2,900	5,700
	ROOF FLASHING		EST	390	LF		14.45	0	5,600	0.12	54	ROOF	69.12	3,700	9,300
	ROOF DRAINS		EST	1	LT		40000	0	15,000	450.00	518	PLMB	79.42	41,100	56,100

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	FLOOR DRAINS		EST	1	LT		32500	0	20,000	350.00	403	PLMB	79.42	32,000	52,000
	FLOOR SLABS		EST	50	CY		210	0	10,500	7.50	431	CONP	79.64	34,300	44,800
	FLOOR FINISHES	MAIN LEVEL	EST	6,750	SF		2.5	0	16,900	0.05	388	CONP	79.64	30,900	47,800
	LOUVERS/WINDOWS/DOORS		EST	2,535	SF		40	0	101,400	0.35	1,020	CARP	71.88	73,300	174,700
	ROOF VENTILATORS		EST	4	EA		15000	0	60,000	24.00	110	HVAC	81.24	9,000	69,000
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	1,800	SF		45	0	81,000	0.40	828	GALL	84.61	70,100	151,100
	H&V		EST	1	LT	70200	28080	70,200	28,100	1310.67	1,507	HVAC	81.24	122,500	220,800
	HVAC	40T PACKAGED UNIT FOR ELECTRICAL EQUIPMENT ROOM. INCLUDES ALLOWANCE FOR CONCRETE PAD AND ELECTRICAL WORK	EST	1	LT	75000	20000	75,000	20,000	350.00	403	HVAC	81.24	32,700	127,700
19.21	PIPE SUPPORT PAD							0	18,300					36,000	54,300
	EXCAVATION / BACKFILL		EST	92	CY			0	0	0.36	38	EXFD	90.00	3,400	3,400
	REINFORCING		EST	6.0	TN		1,150.00	0	6,900	20.00	138	REIN	78.27	10,800	17,700
	FORMWORK		EST	492	SF		2.50	0	1,200	0.14	79	FORM	99.43	7,900	9,100
	CONCRETE		EST	68	CY		105.00	0	7,100	1.50	117	CONP	79.64	9,300	16,400
	MUD MAT		EST	21	CY		105.00	0	2,200	1.50	36	CONP	79.64	2,900	5,100
	EMBEDDED STEEL		EST	340	LB		2.50	0	900	0.06	23	CARP	71.88	1,700	2,600
19.22	AUXILIARY PUMPHOUSE BUILDING WITH ELECTRICAL ROOM - FOUNDATIONS							0	32,300					60,800	93,100
	EXCAVATION / BACKFILL		EST	210	CY			0	0	0.36	87	EXFD	90.00	7,800	7,800
	REINFORCING		EST	11	TN		1,150.00	0	12,900	20.00	258	REIN	78.27	20,200	33,100
	FORMWORK		EST	500	SF		2.50	0	1,300	0.14	81	FORM	99.43	8,000	9,300
	CONCRETE		EST	140	CY		105.00	0	14,700	1.50	242	CONP	79.64	19,200	33,900
	MUD MAT		EST	15	CY		105.00	0	1,600	1.50	26	CONP	79.64	2,100	3,700
	EMBEDDED STEEL		EST	700	LB		2.50	0	1,800	0.06	48	CARP	71.88	3,500	5,300
19.23	AUXILIARY PUMPHOUSE BUILDING	50'L X 35' W X 20'H						101,300	252,500					269,800	623,600
	STRUCTURAL STEEL		EST	20	TN		2650	0	53,000	16.00	368	STST	105.71	38,900	91,900
	INSULATED METAL SIDING		EST	3,400	SF		12	0	40,800	0.11	430	SDNG	93.41	40,200	81,000
	ROLLING OVERHEAD DOOR		EST	320	SF		27	0	8,600	0.25	92	CARP	71.88	6,600	15,200
	METAL ROOF DECKING		EST	1,750	SF		2.7	0	4,700	0.06	121	STST	105.71	12,800	17,500
	RIGID ROOF INSULATION		EST	1,750	SF		2.4	0	4,200	0.02	30	ROOF	69.12	2,100	6,300
	ROOFING (4-PLY TAR & GRAVEL)		EST	1,750	SF		1.55	0	2,700	0.04	81	ROOF	69.12	5,600	8,300
	LIGHTWEIGHT CONCRETE FILL 1"		EST	5	CY		100	0	500	1.30	8	ROOF	69.12	600	1,100
	ROOF FLASHING		EST	170	LF		14.45	0	2,500	0.12	23	ROOF	69.12	1,600	4,100
	ROOF DRAINS		EST	1	LT		20000	0	15,000	250.00	288	PLMB	79.42	22,800	37,800
	FLOOR DRAINS		EST	1	LT		18000	0	20,000	220.00	253	PLMB	79.42	20,100	40,100
	FLOOR SLABS		EST	16	CY		210	0	3,400	7.50	138	CONP	79.64	11,000	14,400
	FLOOR FINISHES	MAIN LEVEL	EST	1,313	SF		2.5	0	3,300	0.05	75	CONP	79.64	6,000	9,300
	LOUVERS/WINDOWS/DOORS		EST	340	SF		40	0	13,600	0.35	137	CARP	71.88	9,800	23,400
	ROOF VENTILATORS		EST	2	EA		15000	0	30,000	24.00	55	HVAC	81.24	4,500	34,500
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	438	SF		45	0	19,700	0.40	201	GALL	84.61	17,000	36,700
	H&V		EST	1	LT	26250	10500	26,300	10,500	490.67	564	HVAC	81.24	45,800	82,600
	ADDITONAL HVAC UNIT FOR ELECTRICAL ROOM & CONTROLS	40T PACKAGED UNIT FOR ELECTRICAL EQUIPMENT ROOM. INCLUDES ALLOWANCE FOR CONCRETE PAD AND ELECTRICAL WORK	EST	1	LT	75000	20000	75,000	20,000	350.00	300	HVAC	81.24	24,400	119,400
19.24	SITE GRADING - GYPSUM HANDLING AREA							0	0					587,800	587,800
	CUT		EST	18,000	CY			0	0	0.08	1,656	ETWK	177.49	293,900	293,900
	FILL		EST	18,000	CY			0	0	0.08	1,656	ETWK	177.49	293,900	293,900
19.25	ROADS & SURFACING - GYPSUM HANDLING AREA							0	188,000					427,900	615,900
	CONCRETE PAD BUILDING ENTRANCES	10" REINFORCED CONCRETE	EST	100	SY		80	0	8,000	1.50	173	CONP	79.64	13,700	21,700
	AGGREGATE AREA SURFACING	INCLUDES: 6" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST	20,000	SY		9	0	180,000	0.17	3,910	BCSE	105.94	414,200	594,200

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Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
19.26	GYPSUM HANDLING & STORAGE							0	1,179,900					1,854,100	3,034,000
	GYPSUM AREA SURFACING	12" REINFORCED CONCRETE	EST	11,500	SY		96	0	1,104,000	1.60	21,160	CONP	79.64	1,685,200	2,789,200
	GYPSUM RUNOFF DRAINAGE DITCH	6" REINFORCED CONCRETE	EST	1,300	SY		48	0	62,400	1.20	1,794	CONP	79.64	142,900	205,300
	DRAINAGE CULVERTS	24" DIA CHDPE	EST	150	LF		84.7	0	12,700	1.41	243	YDPP	90.14	21,900	34,600
	EXCAVATION / BACKFILL	FOR UNDERGROUND PIPING	EST	167	CY			0	0	0.20	38	EXFD	90.00	3,500	3,500
	BEDDING	FOR UNDERGROUND PIPING	EST	22	CY		35.0	0	800	0.25	6	EXFD	90.00	600	1,400
19.27	GYPSUM RUNOFF POND							68,000	110,400					315,700	494,100
	SAND EXCAVATION		EST	4,000	CY			0	0	0.03	120	ETWK	177.49	21,200	21,200
	ROCK EXCAVATION	ASSUME ROCK IS RIPPABLE	EST	500	CY			0	0	0.05	28	ETWK	177.49	4,900	4,900
	POND SURFACING	6" REINFORCED CONCRETE	EST	2,300	SY		48	0	110,400	1.20	3,174	CONP	79.64	252,800	363,200
	PUMPS	500 GPM, 100 PSIG	EST	2	EA	34000		68,000	0	180.00	414	MECH	88.89	36,800	104,800
19.28	GYPSUM RUNOFF POND PUMP STRUCTURE - CONCRETE							0	47,000					105,400	152,400
	EXCAVATION / BACKFILL		EST	0	CY			0	0	0.36	0	EXFD	90.00	0	0
	REINFORCING		EST	7	TN		1,150.00	0	8,100	20.00	161	REIN	78.27	12,600	20,700
	FORMWORK		EST	3,968	SF		2.50	0	9,900	0.14	639	FORM	99.43	63,500	73,400
	CONCRETE		EST	76	CY		105.00	0	8,000	1.50	131	CONP	79.64	10,400	18,400
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	380	LB		2.50	0	1,000	0.06	26	CARP	71.88	1,900	2,900
	BYPRODUCT POND PUMP STRUCTURE - GALLERY		EST	5	TN		4,000.00	0	20,000	35.00	201	GALL	84.61	17,000	37,000
19.29	OILY WATER SEWER - GYPSUM HANDLING AREA							1,500	9,000					14,200	24,700
	PIPING	6" CISP	EST	200	LF		21.5	0	4,300	0.33	76	YDPP	90.14	6,800	11,100
	POST INDICATOR VALVE		EST	2	EA	750		1,500	0	6.00	14	YDPP	90.14	1,200	2,700
	MANHOLES		EST	3	EA		1575.0	0	4,700	20.00	69	YDPP	90.14	6,200	10,900
19.30	OIL SEPARATOR - GYPSUM HANDLING AREA	500 GPM W/ INTEGRAL LIFT STATION	EST	1	EA	50000		50,000	0	560.00	644	YDPP	90.14	58,100	108,100
19.31	EROSION & SEDIMENT CONTROL - GYPSUM HANDLING AREA							0	18,000					28,300	46,300
	SILT FENCE		EST	8,000	LF		1.0	0	8,000	0.02	184	LAND	61.45	11,300	19,300
	ROCK CHECK DAMS		EST	20	EA		500.0	0	10,000	12.00	276	LAND	61.45	17,000	27,000
19.32	SITE GRADING - ACCESS ROAD WIDENING & CONTAINMENT DITCH	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA						0	0					60,400	60,400
	CUT		EST	2,700	CY			0	0	0.08	248	ETWK	177.49	44,100	44,100
	FILL		EST	1,000	CY			0	0	0.08	92	ETWK	177.49	16,300	16,300
19.33	ROADS & SURFACING - GYPSUM DEWATERING AREA	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA						0	66,300					190,800	257,100
	WIDENING OF EXISTING ROAD	INCLUDES: 6" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST	3,700	SY		9	0	33,300	0.17	723	BCSE	105.94	76,600	109,900
	GUARDRAIL	INCLUDES POSTS	EST	2,200	SY		15	0	33,000	0.50	1,265	PBIT	90.25	114,200	147,200
19.34	PIPELINE CONTAINMENT & DRAINAGE	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA						0	271,600					429,200	700,800
	CONTAINMENT / DICTH SURFACING	4" SHOTCRETE W/ WELDED WIRE FABRIC	EST	5,800	SY		46	0	265,800	0.78	5,188	CONP	79.64	413,200	679,000
	CONCRETE ENERGY DISSIPATION STRUCTURE		EST	25	CY		230	0	5,800	7.00	201	CONP	79.64	16,000	21,800
19.35	CONTAINMENT RUNOFF POND	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA						68,000	114,300					344,300	526,600
	SAND EXCAVATION		EST	4,000	CY			0	0	0.03	120	ETWK	177.49	21,200	21,200
	ROCK EXCAVATION	ASSUME ROCK IS RIPPABLE	EST	500	CY			0	0	0.05	28	ETWK	177.49	4,900	4,900
	POND SURFACING	6" REINFORCED CONCRETE	EST	2,300	SY		48	0	110,400	1.20	3,174	CONP	79.64	252,800	363,200
	PUMPS	500 GPM, 100 PSIG	EST	2	EA	34000		68,000	0	180.00	414	MECH	88.89	36,800	104,800
	LARGE BORE PIPING	6" HDPE, SDR 9	EST	400	LF		9.8	0	3,900	0.69	317	YDPP	90.14	28,600	32,500
19.36	CONTAINMENT POND PUMP STRUCTURE - CONCRETE	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA						0	47,000					105,400	152,400
	EXCAVATION / BACKFILL		EST	0	CY			0	0	0.36	0	EXFD	90.00	0	0

				AEP											Estimate No.:	30716C
				BIG SANDY UNIT 2											Project No.:	12721-000
				FGD PROJECT - IAQCS BASE (ESP)-1A - 4.5 LB/MM BTU - NON PHASED											Date:	9/29/2010
				ORDER OF MAGNITUDE COST ESTIMATE											Preparer:	MNO
		Cost Type:													Reviewer:	JMK
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	REINFORCING		EST	7	TN		1,150.00	0	8,100	20.00	161	REIN	78.27	12,600	20,700
	FORMWORK		EST	3,968	SF		2.50	0	9,900	0.14	639	FORM	99.43	63,500	73,400
	CONCRETE		EST	76	CY		105.00	0	8,000	1.50	131	CONP	79.64	10,400	18,400
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	380	LB		2.50	0	1,000	0.06	26	CARP	71.88	1,900	2,900
	BYPRODUCT POND PUMP STRUCTURE - GALLERY		EST	5	TN		4,000.00	0	20,000	35.00	201	GALL	84.61	17,000	37,000
19.37	SITE GRADING - PIPELINE CONTAINMENT & DRAINAGE	SOUTH OF HWY 23						0	0					30,200	30,200
	CUT		EST	1,600	CY			0	0	0.08	147	ETWK	177.49	26,100	26,100
	FILL		EST	250	CY			0	0	0.08	23	ETWK	177.49	4,100	4,100
19.38	PIPELINE CONTAINMENT & DRAINAGE	SOUTH OF HWY 23						0	169,600					263,600	433,200
	CONTAINMENT / DICTH SURFACING	4" SHOTCRETE W/ WELDED WIRE FABRIC	EST	3,700	SY		46	0	169,600	0.78	3,309	CONP	79.64	263,600	433,200
19.39	PIPE BORING PIT	SOUTH OF HWY 23						0	5,300					50,900	56,200
	SAND EXCAVATION		EST	950	CY			0	0	0.08	87	ETWK	177.49	15,500	15,500
	ROCK EXCAVATION	ASSUMED ROCK IS RIPPABLE	EST	400	CY			0	0	0.08	37	ETWK	177.49	6,500	6,500
	BACKFILL		EST	1,350	CY			0	0	0.10	155	ETWK	177.49	27,600	27,600
	4" TOPSOIL		EST	100	SY		45	0	4,500	0.07	7	LAND	61.45	500	5,000
	GRASS SEEDING, FERTILIZER AND MULCH		EST	0.2	AC		4000	0	800	60.00	14	LAND	61.45	800	1,600
19.40	PIPE RECEIVING PIT	NORTH OF HWY 23						0	4,900					43,500	48,400
	SAND EXCAVATION		EST	800	CY			0	0	0.08	74	ETWK	177.49	13,100	13,100
	ROCK EXCAVATION	ASSUMED ROCK IS RIPPABLE	EST	350	CY			0	0	0.08	32	ETWK	177.49	5,700	5,700
	BACKFILL		EST	1,150	CY			0	0	0.10	132	ETWK	177.49	23,500	23,500
	4" TOPSOIL		EST	90	SY		45	0	4,100	0.07	7	LAND	61.45	400	4,500
	GRASS SEEDING, FERTILIZER AND MULCH		EST	0.2	AC		4000	0	800	60.00	14	LAND	61.45	800	1,600
19.41	DIRECTIONAL BORING FOR BURIED PIPE	BENEATH HWY 23						28,000	652,500					277,000	957,500
	MOBILIZATION / DEMOBILIZATION	BORING EQUIPMENT, MUD TRAILER, OPERATORS AND LABORERS	EST	1	LT		12000	0	12,000	80.00	92	EXFD	90.00	8,300	20,300
	EQUIPMENT RENTAL	BORING EQUIPMENT, MUD TRAILER. BASED ON 2 WEEKS RENTAL	EST	1	LT	28000		28,000	0	400.00	460	EXFD	90.00	41,400	69,400
	DIRECTIONAL BORING	7-24" DIA 320FT LONG EACH	EST	2,240	LF			0	0	0.32	824	EXFD	90.00	74,200	74,200
	LARGE BORE PIPING	FOR UNDERGROUND SLEEVE, 24" CS PIPE. 40 FT SPOOL PIECES	EST	2,240	LF		285	0	638,400	0.65	1,674	YDPP	90.14	150,900	789,300
	RUBBER END SEALS	NEOPRENE	EST	14	EA		150	0	2,100	1.50	24	YDPP	90.14	2,200	4,300
19.42	TRANSFORMERS							470,000	0					136,500	606,500
	SST TRANSFORMERS: 23F & 23G	13.8KV-4160V, 2 WINDING XFMR	EST	2	EA	150000		300,000	0	450.00	1,035	EHEA	79.16	81,900	381,900
	SUS TRANSFORMERS: 36F/G	13.8KV-480V,3PHASE, CAST COIL	EST	2	EA	85000		170,000	0	300.00	690	EHEA	79.16	54,600	224,600
19.43	SWITCHGEAR							825,600	0					500,700	1,326,300
	13.8 KV MEDIUM VOLTAGE SWITCHGEAR (13F/G))	PRICE PER SECTION	EST	6	EA	50000		300,000	0	325.00	2,243	EHEA	79.16	177,500	477,500
	4.16KV MEDIUM VOLTAGE SWITCHGEAR& MCCS (21A/B)	PRICE PER SECTION	EST	8	EA	41200		329,600	0	300.00	2,760	EHEA	79.16	218,500	548,100
	480V LOW VOLTAGE SWITCHGEAR (31F/G ; 32F/G)	PRICE PER SECTION	EST	5	EA	39200		196,000	0	230.00	1,323	EHEA	79.16	104,700	300,700
19.44	CABLE BUS & TERMINATIONS							355,500	39,400					730,700	1,125,600
	5KV CABLE BUS		EST	300	FT	567		170,100	0	9.00	3,105	WIRE	98.84	306,900	477,000
	480V CABLE BUS		EST	300	FT	618		185,400	0	10.30	3,554	WIRE	98.84	351,200	536,600
	CABLE BUS TERMINATION	5KV TERMINATIONS	EST	4	EA		4,440.00	0	17,800	51.60	237	WIRE	98.84	23,500	41,300
	CABLE BUS TERMINATION	480V TERMINATIONS	EST	8	EA		2,700.00	0	21,600	54.00	497	WIRE	98.84	49,100	70,700
19.45	MCC							123,600	0					6,300	129,900
	480V MCC	PER MCC LINEUP	EST	4	EA	30900		123,600	0	16.00	64	WIRE	98.84	6,300	129,900

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19.46	MIMIC PANELS		EST	1	EA	17500		17,500	0	16.00	16	WIRE	98.84	1,600	19,100
19.47	EMERGENCY POWER SYSTEM							285,500	0					38,900	324,400
	DC PANEL BOADRD		EST	1	EA	15500		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	UPS PANEL BOARDS		EST	2	EA	15500		31,000	0	40.00	92	WIRE	98.84	9,100	40,100
	UPS		EST	1	EA	60000		60,000	0	32.00	37	WIRE	98.84	3,600	63,600
	SWITCHBOARD		EST	1	EA	40000		40,000	0	40.00	46	WIRE	98.84	4,500	44,500
	BYPASS TRANSFORMERS		EST	1	EA	25000		25,000	0	40.00	46	WIRE	98.84	4,500	29,500
	BATTERY CHARGER		EST	2	EA	32000		64,000	0	16.00	37	WIRE	98.84	3,600	67,600
	BATTERIES		EST	1	LT	50000		50,000	0	80.00	92	WIRE	98.84	9,100	59,100
19.48	GROUNDING							9,400	0					25,400	34,800
	GROUND ROD	3/4" - 20' LONG	EST	8	EA	150		1,200	0	4.00	37	WIRE	98.84	3,600	4,800
	500 MCM	BARE COPPER WIRE	EST	1,000	FT	7.65		7,700	0	0.12	138	WIRE	98.84	13,600	21,300
	CADWELD		EST	32	EA	15		500	0	2.00	74	WIRE	98.84	7,300	7,800
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	8.00	9	WIRE	98.84	900	900
19.49	LIGHTING/ TRANSFORMERS & PANELS							52,000	135,000					104,500	291,500
	LIGHT FIXTURES		EST	180	EA		750	0	135,000	4.00	828	WIRE	98.84	81,800	216,800
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	10000		20,000	0	40.00	92	WIRE	98.84	9,100	29,100
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	7500		15,000	0	32.00	74	WIRE	98.84	7,300	22,300
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	2	EA	5000		10,000	0	16.00	37	WIRE	98.84	3,600	13,600
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	2	EA	3500		7,000	0	12.00	28	WIRE	98.84	2,700	9,700
19.50	RACEWAY, CABLE TRAY, & CONDUIT							0	354,700					1,514,100	1,868,800
	12" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,000	LF		18.25	0	18,300	1.10	1,100	WIRE	98.84	108700	127,000
	18" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,000	LF		21.50	0	21,500	1.45	1,450	WIRE	98.84	143300	164,800
	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,000	LF		27.10	0	27,100	1.75	1,750	WIRE	98.84	173000	200,100
	36" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,000	LF		30.30	0	30,300	1.95	1,950	WIRE	98.84	192700	223,000
	5" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	900	LF		61.00	0	54,900	1.13	1,014	WIRE	98.84	100300	155,200
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,800	LF		31.00	0	55,800	0.81	1,453	WIRE	98.84	143600	199,400
	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,900	LF		21.50	0	40,900	0.65	1,226	WIRE	98.84	121100	162,000
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	2,800	LF		9.25	0	25,900	0.35	986	WIRE	98.84	97400	123,300
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	3,500	LF		7.15	0	25,000	0.28	994	WIRE	98.84	98200	123,200
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	6,000	LF		4.44	0	26,600	0.24	1,434	WIRE	98.84	141700	168,300
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	8,800	LF		3.23	0	28,400	0.19	1,963	WIRE	98.84	194100	222,500
19.51	13.8 KV OH LINE OPGW	INCLUDES POLES, CONDUCTORS, INSULATORS & GROUNDING	EST	5,250	LF		45.75	0	240,200	0.49	2,958	WIRE	98.84	292400	532,600
19.52	HIGH VOLTAGE POWER CABLE & TERMINATION							0	88,400					256,600	345,000
	1/C # 500KCMIL-15KV	1/C # 500KCMIL-15KV	EST	1,800	LF		9.27	0	16,700	0.23	476	WIRE	98.84	47100	63,800
	1/C # 4/0-15KV	1/C # 4/0-15KV	EST	15,750	LF		4.55	0	71,700	0.12	2,119	WIRE	98.84	209500	281,200
19.53	MEDIUM VOLTAGE POWER CABLE & TERMINATION	1/C # 350KCMIL-5KV	EST	3,000	LF		6.13	0	18,400	0.23	794	WIRE	98.84	78400	96,800
19.54	LOW VOLTAGE POWER CABLE & TERMINATION							0	62,700					547,400	610,100
	3/C # 500KCMIL- 600V		EST	2,400	LF		26.12	0	62,700	0.69	1,904	WIRE	98.84	188200	250,900
	#4/0 - #12 AWG-600V		EST	40,000	LF		7.22			0.08	3,634	WIRE	98.84	359200	359,200

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19.55	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	EST	35,000	LF		3.20	0	112,000	0.08	3,180	WIRE	98.84	314300	426,300
19.56	FOUNDATIONS FOR TRANSFORMERS							0	70,200					205,400	275,600
	EXCAVATION / BACKFILL		EST	1,000	CY			0	0	0.36	414	EXFD	90.00	37,300	37,300
	REINFORCING		EST	20	TN		1,150.00	0	23,000	20.00	460	REIN	78.27	36,000	59,000
	FORMWORK		EST	5,000	SF		2.50	0	12,500	0.14	805	FORM	99.43	80,000	92,500
	CONCRETE		EST	190	CY		105.00	0	20,000	1.50	328	CONP	79.64	26,100	46,100
	MUD MAT		EST	45	CY		105.00	0	4,700	1.50	78	CONP	79.64	6,200	10,900
	EMBEDDED STEEL		EST	4,000	LB		2.50	0	10,000	0.06	276	CARP	71.88	19,800	29,800
19.57	FIREWALL FOR TRANSFORMERS							0	3,200					8,300	11,500
	REINFORCING		EST	1.2	TN		1,150.00	0	1,400	20.00	28	REIN	78.27	2,200	3,600
	FORMWORK		EST	80	SF		2.50	0	200	0.14	13	FORM	99.43	1,300	1,500
	CONCRETE		EST	15	CY		105.00	0	1,600	3.50	60	CONP	79.64	4,800	6,400
19.58	COMMUNICATIONS		EST	1	LT		34,000.00	0	34,000	229.00	263	WIRE	98.84	26,000	60,000
19.59	LIGHTNING PROTECTION		EST	1	LT		13,000.00	0	13,000	91.00	105	WIRE	98.84	10,300	23,300
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							12,728,800	16,133,500		354,068			31,754,300	60,616,600
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										5,661,466
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						30,789		89.68	2,761,000	2,761,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						38,486			2,900,466	2,900,466
	PER DIEM	NONE		0.00	HR						423,342			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				80,668					158,772	239,439
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				806,675						806,675
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			636,440							636,440
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				806,675					1,587,715	2,394,390
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				2,420,025					4,763,145	7,183,170
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							636,400	4,114,000					12,171,100	16,921,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)						13,365,200	20,247,500					43,925,400	77,538,200
20.0	WET FGD ABSORBER ISLAND														0
20.1	MECHANICAL EQUIPMENT	INCLUDES ABSORBER MODULE (A2205) WITH INTERNALS, INLET DUCT ONLY THROUGH WET/DRY INTERFACE, PIPING INSIDE ABSORBER BUILDING TO TERMINAL POINTS, RECYCLE PUMPS, OXIDATION BLOWERS, MIST ELIMINATOR AND WASH PUMPS AND OTHER MISC. EQUIPMENT AND MATERIAL	EST	1	LT	41363000		41,363,000	0	400000.00	460,000	MECH	88.89	40,889,400	82,252,400
20.2	ADDITIONAL COST FOR C276 ABSORBER SHELL MATERIAL ABOVE THE PRICE OF A2205 ABSORBER SHELL	INCLUDES MATERIAL AND WELDING ROD COST DIFFERENTIAL - 49,800 TOTAL SF	EST	49,800	SF		308.00	0	15,338,400	0.00	0	MECH	88.89	0	15,338,400
20.3	SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300

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Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
20.4	AGITATOR FOR SUMP PUMPS	5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
20.5	EMERGENCY DIESEL DRIVEN QUENCH PUMP	WITH FUEL DAY TANK. FOUNDATIONS INCLUDED WITH ABSORBER BUILDING FOUNDATIONS		1	EA	150,000		150,000	0	300.00	345	MECH	88.89	30,700	180,700
20.6	PIPING - MECHANICAL	ALL PIPING INCLUDED IN OEM EQUIPMENT COST. NO BOP PIPING						0	0					0	0
20.7	ABSORBER VESSEL - FOUNDATIONS							0	366,900					672,900	1,039,800
	EXCAVATION / BACKFILL		EST	2,921	CY			0	0	0.36	1,209	EXFD	90.00	108,800	108,800
	REINFORCING		EST	148	TN		1,150.00	0	170,200	20.00	3,404	REIN	78.27	266,400	436,600
	FORMWORK		EST	2,121	SF		2.50	0	5,300	0.14	341	FORM	99.43	34,000	39,300
	CONCRETE		EST	1,571	CY		105.00	0	165,000	1.50	2,710	CONP	79.64	215,800	380,800
	MUD MAT		EST	65	CY		105.00	0	6,800	1.50	112	CONP	79.64	8,900	15,700
	EMBEDDED STEEL		EST	7,855	LB		2.50	0	19,600	0.06	542	CARP	71.88	39,000	58,600
20.8	ABSORBER BUILDING - FOUNDATIONS							0	579,500					961,200	1,540,700
	EXCAVATION / BACKFILL		EST	2,440	CY			0	0	0.36	1,010	EXFD	90.00	90,900	90,900
	REINFORCING		EST	240	TN		1,150.00	0	276,000	20.00	5,520	REIN	78.27	432,100	708,100
	FORMWORK		EST	2,400	SF		2.50	0	6,000	0.14	386	FORM	99.43	38,400	44,400
	CONCRETE		EST	2,500	CY		105.00	0	262,500	1.50	4,313	CONP	79.64	343,400	605,900
	MUD MAT		EST	185	CY		105.00	0	19,400	1.50	319	CONP	79.64	25,400	44,800
	EMBEDDED STEEL		EST	6,250	LB		2.50	0	15,600	0.06	431	CARP	71.88	31,000	46,600
20.9	ABSORBER BUILDING	150' L X 90' W X 60' H						164,500	2,622,800					2,402,700	5,190,000
	STRUCTURAL STEEL		EST	560	TN		2650	0	1,484,000	16.00	10,304	STST	105.71	1,089,200	2,573,200
	INSULATED METAL SIDING		EST	28,800	SF		12	0	345,600	0.11	3,643	SDNG	93.41	340,300	685,900
	ROLLING OVERHEAD DOOR		EST	960	SF		27	0	25,900	0.25	276	CARP	71.88	19,800	45,700
	METAL ROOF DECKING		EST	13,500	SF		2.7	0	36,500	0.06	932	STST	105.71	98,500	135,000
	RIGID ROOF INSULATION		EST	13,500	SF		2.4	0	32,400	0.02	233	ROOF	69.12	16,100	48,500
	ROOFING (4-PLY TAR & GRAVEL)		EST	13,500	SF		1.55	0	20,900	0.04	621	ROOF	69.12	42,900	63,800
	LIGHTWEIGHT CONCRETE FILL 1"		EST	39	CY		100	0	3,900	1.30	58	ROOF	69.12	4,000	7,900
	ROOF FLASHING		EST	480	LF		14.45	0	6,900	0.12	66	ROOF	69.12	4,600	11,500
	ROOF DRAINS		EST	1	LT		45000	0	15,000	500.00	575	PLMB	79.42	45,700	60,700
	FLOOR DRAINS		EST	1	LT		37500	0	20,000	375.00	431	PLMB	79.42	34,200	54,200
	FLOOR SLABS	INCLUDES METAL DECKING AND FORMWORK	EST	58	CY		210	0	12,300	7.50	503	CONP	79.64	40,100	52,400
	FLOOR FINISHES		EST	8,370	SF		2.5	0	20,900	0.05	481	CONP	79.64	38,300	59,200
	LOUVERS/WINDOWS/DOORS		EST	5,760	SF		40	0	230,400	0.35	2,318	CARP	71.88	166,600	397,000
	ROOF VENTILATORS		EST	6	EA		20000	0	120,000	32.00	221	HVAC	81.24	17,900	137,900
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	4,050	SF		45	0	182,300	0.40	1,863	GALL	84.61	157,600	339,900
	H&V		EST	1	LT	164500	65800	164,500	65,800	3070.67	3,531	HVAC	81.24	286,900	517,200
20.10	PIPE SUPPORT PAD - ABSORBER BUILDING							0	7,700					16,100	23,800
	EXCAVATION / BACKFILL		EST	95	CY			0	0	0.36	39	EXFD	90.00	3,500	3,500
	REINFORCING		EST	5.0	TN		1,150.00	0	5,800	20.00	115	REIN	78.27	9,000	14,800
	FORMWORK		EST	80	SF		2.50	0	200	0.14	13	FORM	99.43	1,300	1,500
	CONCRETE		EST	10	CY		105.00	0	1,100	1.50	17	CONP	79.64	1,400	2,500
	MUD MAT		EST	5	CY		105.00	0	500	1.50	9	CONP	79.64	700	1,200
	EMBEDDED STEEL		EST	50	LB		2.50	0	100	0.06	3	CARP	71.88	200	300
20.11	OXIDATION AIR BLOWER BUILDING - FOUNDATIONS							0	37,000					67,300	104,300
	EXCAVATION / BACKFILL		EST	188	CY			0	0	0.36	78	EXFD	90.00	7,000	7,000
	REINFORCING		EST	16.0	TN		1,150.00	0	18,400	20.00	368	REIN	78.27	28,800	47,200
	FORMWORK		EST	480	SF		2.50	0	1,200	0.14	77	FORM	99.43	7,700	8,900
	CONCRETE		EST	133	CY		105.00	0	14,000	1.50	229	CONP	79.64	18,300	32,300
	MUD MAT		EST	16	CY		105.00	0	1,700	1.50	28	CONP	79.64	2,200	3,900

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	EMBEDDED STEEL		EST	665	LB		2.50	0	1,700	0.06	46	CARP	71.88	3,300	5,000
20.12	OXIDATION AIR BLOWER BUILDING	30' L X 30' W X 25' H						33,800	191,000					201,400	426,200
	STRUCTURAL STEEL		EST	14	TN		2650	0	35,800	16.00	248	STST	105.71	26,300	62,100
	INSULATED METAL SIDING		EST	3,000	SF		12	0	36,000	0.11	380	SDNG	93.41	35,400	71,400
	ROLLING OVERHEAD DOOR		EST	320	SF		27	0	8,600	0.25	92	CARP	71.88	6,600	15,200
	METAL ROOF DECKING		EST	900	SF		2.7	0	2,400	0.06	62	STST	105.71	6,600	9,000
	RIGID ROOF INSULATION		EST	900	SF		2.4	0	2,200	0.02	16	ROOF	69.12	1,100	3,300
	ROOFING (4-PLY TAR & GRAVEL)		EST	900	SF		1.55	0	1,400	0.04	41	ROOF	69.12	2,900	4,300
	LIGHTWEIGHT CONCRETE FILL 1"		EST	3	CY		100	0	300	1.30	4	ROOF	69.12	300	600
	ROOF FLASHING		EST	120	LF		14.45	0	1,700	0.12	17	ROOF	69.12	1,100	2,800
	ROOF DRAINS		EST	1	LT		7000	0	15,000	50.00	58	PLMB	79.42	4,600	19,600
	FLOOR DRAINS		EST	1	LT		7500	0	20,000	60.00	69	PLMB	79.42	5,500	25,500
	FLOOR SLABS	NONE	EST	0	CY		210	0	0	7.50	0	CONP	79.64	0	0
	FLOOR FINISHES	MAIN LEVEL	EST	810	SF		2.5	0	2,000	0.05	47	CONP	79.64	3,700	5,700
	BLOCK WALLS	SOUND ATTENUATING INTERIOR BLOCK WALLS	EST	3,000	SF		8	0	24,000	0.18	621	MSRY	73.39	45,600	69,600
	LOUVERS/WINDOWS/DOORS & VENTILATORS	SOUND ATTENUATING	EST	300	SF	75	40	22,500	12,000	1.25	431	CARP	71.88	31,000	65,500
	ROOF VENTILATORS		EST	1	EA		15000	0	15,000	24.00	28	HVAC	81.24	2,200	17,200
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	225	SF		45	0	10,100	0.40	104	GALL	84.61	8,800	18,900
	H&V		EST	1	LT	11250	4500	11,300	4,500	210.67	242	HVAC	81.24	19,700	35,500
20.13	PIPE SUPPORT PAD - OXIDATION BUILDING							0	7,700					13,700	21,400
	EXCAVATION / BACKFILL		EST	30	CY			0	0	0.36	12	EXFD	90.00	1,100	1,100
	REINFORCING		EST	5.0	TN		1,150.00	0	5,800	20.00	115	REIN	78.27	9,000	14,800
	FORMWORK		EST	80	SF		2.50	0	200	0.14	13	FORM	99.43	1,300	1,500
	CONCRETE		EST	10	CY		105.00	0	1,100	1.50	17	CONP	79.64	1,400	2,500
	MUD MAT		EST	5	CY		105.00	0	500	1.50	9	CONP	79.64	700	1,200
	EMBEDDED STEEL		EST	50	LB		2.50	0	100	0.06	3	CARP	71.88	200	300
20.14	DUCTWORK	INCLUDES INTERNAL BRACING AND TURNING VANES	EST	115	TN		3,250.00	0	373,800	50.00	6,613	FLDU	107.96	713,900	1,087,700
20.15	DUCT SUPPORT STEEL	THREE-COAT SHOP PAINT	EST	58	TN		2,900.00	0	168,200	24.00	1,601	STST	105.71	169,200	337,400
20.16	DUCTWORK INSULATION & LAGGING		EST	11,000	SF		12.00	0	132,000	0.25	3,163	DINS	81.75	258,500	390,500
20.17	FOUNDATIONS FOR DUCT SUPPORT STEEL							0	17,700					35,300	53,000
	EXCAVATION / BACKFILL		EST	144	CY			0	0	0.36	60	EXFD	90.00	5,400	5,400
	REINFORCING		EST	6	TN		1,150.00	0	7,400	20.00	147	REIN	78.27	11,500	18,900
	FORMWORK		EST	360	SF		2.50	0	900	0.14	58	FORM	99.43	5,800	6,700
	CONCRETE		EST	72	CY		105.00	0	7,600	1.50	124	CONP	79.64	9,900	17,500
	MUD MAT		EST	11	CY		105.00	0	1,200	1.50	19	CONP	79.64	1,500	2,700
	EMBEDDED STEEL		EST	240	LB		2.50	0	600	0.06	17	CARP	71.88	1,200	1,800
20.18	TRANSFORMERS							981,000	0					209,300	1,190,300
	SST TRANSFORMERS: 22F & 22G	13.8KV-4160V, 2 WINDING XFMR	EST	2	EA	320500		641,000	0	550.00	1,265	EHEA	79.16	100,100	741,100
	SUS TRANSFORMERS: 34F/G; 35F/G	13.8KV-480V,3PHASE, CAST COIL	EST	4	EA	85000		340,000	0	300.00	1,380	EHEA	79.16	109,200	449,200
20.19	SWITCHGEAR							1,162,800	0					673,700	1,836,500
	13.8 KV MEDIUM VOLTAGE SWITCHGEAR	PRICE PER SECTION	EST	8	EA	50000		400,000	0	300.00	2,760	EHEA	79.16	218,500	618,500
	4.16KV MEDIUM VOLTAGE SWITCHGEAR& MCCS	PRICE PER SECTION	EST	9	EA	41200		370,800	0	300.00	3,105	EHEA	79.16	245,800	616,600
	480V LOW VOLTAGE SWITCHGEAR	PRICE PER SECTION	EST	10	EA	39200		392,000	0	230.00	2,645	EHEA	79.16	209,400	601,400
20.20	CABLE BUS & TERMINATIONS							867,100	46,600					1,634,100	2,547,800
	15KV CABLE BUS	CABLE BUS	EST	700	FT	466		326,200	0	6.75	5,434	WIRE	98.84	537,100	863,300
	5KV CABLE BUS	CABLE BUS	EST	300	FT	567		170,100	0	9.00	3,105	WIRE	98.84	306,900	477,000

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	480V CABLE BUS	CABLE BUS	EST	600	FT	618		370,800	0	10.30	7,107	WIRE	98.84	702,500	1,073,300
	CABLE BUS TERMINATION	500MCM- 15KV TERMINATIONS	EST	4	EA		1,800.00	0	7,200	33.00	152	WIRE	98.84	15,000	22,200
	CABLE BUS TERMINATION	1000MCM- 5KV TERMINATIONS	EST	4	EA		4,440.00	0	17,800	51.60	237	WIRE	98.84	23,500	41,300
	CABLE BUS TERMINATION	750MCM- 480V TERMINATIONS	EST	8	EA		2,700.00	0	21,600	54.00	497	WIRE	98.84	49,100	70,700
20.21	MCC							216,300	0					11,100	227,400
	480V MCC	PER MCC LINE UP	EST	7	EA	30900		216,300	0	16.00	112	WIRE	98.84	11,100	227,400
20.22	MIMIC PANELS		EST	2	EA	17500		35,000	0	40.00	80	WIRE	98.84	7,900	42,900
20.23	GROUNDING							16,000	0					46,100	62,100
	GROUND ROD	3/4" - 20' LONG	EST	16	EA	150		2,400	0	4.00	74	WIRE	98.84	7,300	9,700
	500 MCM	BARE COPPER WIRE	EST	1,650	FT	7.65		12,600	0	0.12	228	WIRE	98.84	22,500	35,100
	CADWELD		EST	64	EA	15		1,000	0	2.00	147	WIRE	98.84	14,500	15,500
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	16.00	18	WIRE	98.84	1,800	1,800
20.24	LIGHTING/ TRANSFORMERS & PANELS							164,500	165,000					171,300	500,800
	LIGHT FIXTURES		EST	220	EA		750	0	165,000	4.00	1,012	WIRE	98.84	100,000	265,000
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	6	EA	10000		60,000	0	40.00	276	WIRE	98.84	27,300	87,300
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	6	EA	7500		45,000	0	32.00	221	WIRE	98.84	21,800	66,800
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	7	EA	5000		35,000	0	16.00	129	WIRE	98.84	12,700	47,700
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	7	EA	3500		24,500	0	12.00	97	WIRE	98.84	9,500	34,000
20.25	EMERGENCY POWER SYSTEM							108,300	0					24,400	132,700
	DC PANEL BOADRD		EST	1	EA	15450		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	UPS PANEL BOARDS		EST	1	EA	15450		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	SATELLITE UPS		EST	1	EA	41200		41,200	0	16.00	18	WIRE	98.84	1,800	43,000
	VRLA BATTERIES		EST	1	LT	36050		36,100	0	120.00	138	WIRE	98.84	13,600	49,700
20.26	RACEWAY, CABLE TRAY, & CONDUIT							0	1,515,700					5,849,000	7,364,700
	12" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	2,450	LF		18.25	0	44,700	1.10	2,695	WIRE	98.84	266400	311,100
	18" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,650	LF		21.50	0	35,500	1.45	2,393	WIRE	98.84	236500	272,000
	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	2,950	LF		27.10	0	79,900	1.75	5,163	WIRE	98.84	510300	590,200
	36" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,650	LF		30.30	0	50,000	1.95	3,218	WIRE	98.84	318000	368,000
	5" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	4,500	LF		61.00	0	274,500	1.13	5,072	WIRE	98.84	501300	775,800
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	8,000	LF		31.00	0	248,000	0.81	6,456	WIRE	98.84	638100	886,100
	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	8,000	LF		21.50	0	172,000	0.65	5,160	WIRE	98.84	510000	682,000
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	13,000	LF		9.25	0	120,300	0.35	4,576	WIRE	98.84	452300	572,600
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	16,000	LF		7.15	0	114,400	0.28	4,544	WIRE	98.84	449100	563,500
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	29,000	LF		4.44	0	128,800	0.24	6,931	WIRE	98.84	685100	813,900

AEP
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Wage Rates Based on: BIG SANDY
Labor Productivity = 1.15

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	53,000	LF		3.23	0	171,200	0.19	11,824	WIRE	98.84	1168700	1,339,900
	DUCT BANK WITH 12-5" & 6-3" CONDUITS	3.08' H X 5.2' W	EST	200	LF		381.96	0	76,400	6.48	1,490	ECND	75.97	113200	189,600
20.27	HIGH VOLTAGE POWER CABLE & TERMINATION							0	58,400					164,700	223,100
	1/C # 500KCMIL-15KV		EST	6,300	LF		9.27	0	58,400	0.23	1,666	WIRE	98.84	164700	223,100
20.28	MEDIUM VOLTAGE POWER CABLE & TERMINATION							0	114,600		0			431,700	546,300
	1/C # 500KCMIL-5KV		EST	6,000	LF		8.08	0	48,500	0.17	1,194	WIRE	98.84	118000	166,500
	1/C # 350KCMIL-5KV		EST	6,600	LF		6.13	0	40,500	0.23	1,746	WIRE	98.84	172500	213,000
	1/C # 250KCMIL-5KV		EST	5,400	LF		4.74	0	25,600	0.23	1,428	WIRE	98.84	141200	166,800
20.29	LOW VOLTAGE POWER CABLE & TERMINATION							0	795,900					1,500,700	2,296,600
	3/C # 500KCMIL- 600V		EST	11,120	LF		26.12	0	290,500	0.69	8,824	WIRE	98.84	872100	1,162,600
	#4/0 - #12 AWG-600V		EST	70,000	LF		7.22	0	505,400	0.08	6,360	WIRE	98.84	628600	1,134,000
20.30	CONTROL & INSTRUMENT CABLE							0	512,000					1,436,700	1,948,700
	#14, #16 & PR # 20 FD & SHLD WIRE		EST	160,000	LF		3.20	0	512,000	0.08	14,536	WIRE	98.84	1436700	1,948,700
20.31	FOUNDATION FOR TRANSFORMERS							0	59,000					173,700	232,700
	FOR 21A & 21B	WITH OIL PIT	EST	178	CY		250	0	44,500	8.00	1,638	CONP	79.64	130,400	174,900
	FOR 31F, 31G, 32F, 32G, 33F & 33G		EST	63.0	CY		230	0	14,500	7.50	543	CONP	79.64	43,300	57,800
20.32	TRANSFORMER FIRE WALLS							0	3,500					9,600	13,100
	FOR 21A & 21B		EST	15	CY		230	0	3,500	7.00	121	CONP	79.64	9,600	13,100
20.33	COMMUNICATIONS		EST	1	LT		34,000.00	0	34,000	229.00	263	WIRE	98.84	26,000	60,000
20.34	LIGHTNING PROTECTION		EST	1	LT		19,500.00	0	19,500	128.00	147	WIRE	98.84	14,500	34,000
20.35	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							45,302,300	23,174,900		650,727			58,840,700	127,317,900
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE			9	MN	75000		675,000		720.00	7,452	MECH	88.89	662400	1,337,400
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										10,611,110
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						57,233		90.42	5,175,000	5,175,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						71,541			5,436,110	5,436,110
	PER DIEM	NONE		0.00	HR						786,953			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				115,875					294,204	410,078
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				1,158,745						1,158,745
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			2,265,115							2,265,115
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				1,158,745					2,942,035	4,100,780
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				3,476,235					8,826,105	12,302,340
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							2,940,100	5,909,600					23,335,900	32,185,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	WET FGD ABSORBER ISLAND						48,242,400	29,084,500					82,176,600	159,503,500

				AEP											Estimate No.:	30716C
				BIG SANDY UNIT 2											Project No.:	12721-000
				FGD PROJECT - IAQCS BASE (ESP)-1A - 4.5 LB/MM BTU - NON PHASED											Date:	9/29/2010
				ORDER OF MAGNITUDE COST ESTIMATE											Preparer:	MNO
		Cost Type:													Reviewer:	JMK
		Est=Estimated													Approver:	PEF
		Allow.=Allowance								Wage Rates Based on:		BIG SANDY				
		Q=Vendor Quote								Labor Productivity =		1.15				

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
21.0	COMPRESSED AIR SYSTEM (BYPRODUCT DEWATERING AREA)														0
22.0	POTABLE WATER SYSTEM	INCLUDED WITH ACCOUNT 11.0													
23.0	SCR SUBSTATION UPGRADE														
24.0	FGD DCS SYSTEM	INCLUDED WITH ACCOUNT 13.0													0
25.0	SITE IMPROVEMENTS - CIVIL WORK	INCLUDED WITH ACCOUNT 16.0													
26.0	BOP ITEMS														
27.0	CAPITAL REPLACEMENTS - REMOVAL AND RELOCATION OF EXISTING EQUIPMENT AND INFRASTRUCTURE														0
28.0	ARSENIC, ASBESTOS , LEAD ABATEMENT														0
99.00	OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS							186,421,100	104,871,500		2,941,852			269,601,500	593,019,100
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE							1,485,000	0	2,160	22,356	MECH	88.89	2,185,920	3,670,920
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										45,663,197
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						256,461		91.64	22,220,000	22,220,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						322,067			23,443,197	23,443,197
	PER DIEM	NONE		0.00	HR									0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				521,658					1,346,458	1,868,115
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				5,216,575						5,216,575
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			9,258,055							9,258,055
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				5,216,575					13,464,575	18,681,150
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				15,730,725					40,393,725	61,194,450
	OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							10,743,100	26,685,500					103,053,900	145,552,500
	OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST							197,164,200	131,557,000					372,655,400	738,571,600
	TOTAL DIRECT AND CONSTRUCTION INDIRECT COSTS							197,164,200	131,557,000					372,655,400	738,571,600
								0	0					0	0
	INDIRECT COSTS														
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES			1.0	LT										45,000,000
	CONSTRUCTION MANAGEMENT			3.0	%										22,157,100
	S-U / COMMISSIONING			1.0											7,385,700
	CRAFT START-UP SUPPORT	1% OF TOTAL LABOR MANHOURS (INCLUDES OVERTIME INEFFICIENCY & COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - BASED ON ASSUMED 5X10 WORKWEEK)		1.0	%						31,983		91.64	3,177,400	3,177,400
	INITIAL FILLS			0.3	%										2,215,700
	OPERATOR & TRAINING MANUALS			1.0	LT										600,000

				AEP											Estimate No.:	30716C
				BIG SANDY UNIT 2											Project No.:	12721-000
				FGD PROJECT - IAQCS BASE (ESP)-1A - 4.5 LB/MM BTU - NON PHASED											Date:	9/29/2010
				ORDER OF MAGNITUDE COST ESTIMATE											Preparer:	MNO
		Cost Type:													Reviewer:	JMK
		Est=Estimated													Approver:	PEF
		Allow.=Allowance								Wage Rates Based on:		BIG SANDY				
		Q=Vendor Quote								Labor Productivity =		1.15				

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	SUBCONTRACTORS (NOISE & DUCTWORK CONSULTANT, GEOTECHNICAL INVESTIGATION)			1.0	LT										500,000
	NOISE ABATEMENT FOR 85 DBA REQUIREMENT	FOR ID FAN, SDA ENCLOSURE, TRANSFORMERS, BOP, DUCTWORK, ACOUSTIC BARRIERS FOR BOUNDARY LIMITS		1.0	LT										4,500,000
	SUBTOTAL - INDIRECT COSTS														85,535,900
	TOTAL DIRECT AND INDIRECT COSTS														824,107,500
	SPARE PARTS			1.5	%			2,957,500							2,957,500
	SPARE PARTS - CAPITALIZED			0.90	%			1,774,500							1,774,500
	SPARE PARTS - FIRST YEAR OF OPERATION			0.60	%			1,183,000							1,183,000
	CONTINGENCY			14.0	%										115,966,200
	ESCALATION														102,500,800
	EQUIPMENT	4.0%/yr		4.0	%			29,377,100							29,377,100
	MATERIAL	2.0%/yr		2.0	%				13,919,200						13,919,200
	LABOR	2.5%/yr		2.5	%									49,318,100	49,318,100
	INDIRECTS	2.5%/yr		2.5	%									9,886,400	9,886,400
	TOTAL PROJECT COST														1,045,532,000
	REFERENCE COSTS:														
A	REMOVAL OF FUEL OIL TANK							1,200,000	80,000					469,400	1,749,400
	REMOVE FUEL OIL TANK & SOIL REMEDIATION	LABOR COST IS FOR REMOVAL OF TANK ONLY. ALLOWANCE FOR SOIL REMEDIATION AND DISPOSAL IN AN EPA APPROVED LANDFILL. SUBCONTRACT COST INCLUDES LABOR. USED LOWER END OF THE RANGE $118-355/CY. COST COULD BE LOWER ($59-118/CY) IF SOLD TO A BITUMINOUS CONCRETE BATCH PLANT	EST	8,000	CY	150		1,200,000	0		0	MECH	88.89	0	1,200,000
	REMOVE DIKE & RECOMPACT FILL IN TANK AREA		EST	3,500	CY			0	0	0.60	2,415	ETWK	177.49	428,600	428,600
	FILL FROM OFF SITE COURSE		EST	5,000	CY		16	0	80,000	0.04	230	ETWK	177.49	40,800	120,800

ATTACHMENT 4-7
IAQCS Detailed Capital Cost Estimate No. 30720 Base Est-1B ESP not in Service (4.5 lb SO_2/MMbtu)

				AEP											Estimate No.:	30720C
				BIG SANDY UNIT 2											Project No.:	12721-000
				FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED											Date:	9/29/2010
				ORDER OF MAGNITUDE COST ESTIMATE											Preparer:	MNO
		Cost Type:													Reviewer:	JMK
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Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	PHASE I - DRY FGD														
1.0	ID FANS														
1.1	ID FANS - OEM EQUIPMENT	1,865,000 ACFM WITH 24,500 HP MOTORS ($875,000 EACH). INCLUDES HYDRAULIC OIL UNITS, SEAL AIR FAN SKIDS, VIBRATION MONITORING EQUIPMENT, FAN STALL EQUIPMENT, FIELD SERVICE REP FOR 140 DAYS	EST	2	EA	3,844,000.000		7,688,000	0	8500.00	19,550	MECH	88.89	1,737,800	9,425,800
1.2	PIPING & SUPPORTS - MECHANICAL							21,800	28,700					120,500	171,000
	LARGE BORE PIPING	6" CS, SCH 40 WELDED	EST	200	LF		41.7	0	8,300	1.61	370	SPNG	94.41	35,000	43,300
	SMALL BORE PIPING	2" CS, SCH 80 WELDED	EST	50	LF		22.20	0	1,100	1.26	72	SPNG	94.41	6,800	7,900
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	250	LF		48.80	0	12,200	1.44	414	SPNG	94.41	39,100	51,300
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	100	LF		33.70	0	3,400	1.32	152	SPNG	94.41	14,300	17,700
	VALVE	2" GLOBE, 150# SS, WELDED	EST	15	EA	1,450		21,800	0	5.64	97	SPNG	94.41	9,200	31,000
	PIPE SUPPORTS		EST	105	EA		35.00	0	3,700	1.50	181	MECH	88.89	16,100	19,800
1.3	DAMPERS							781,000	0					352,600	1,133,600
	INLET DAMPERS	2X50% DOUBLE LOUVER TYPE WITH SEAL AIR FANS TOTAL FOR TWO FANS	EST	580	SF	450		261,000	0	2.50	1,668	MECH	88.89	148,200	409,200
	OUTLET DAMPERS	2X50% GUILLOTINE DAMPERS, WITH SEAL AIR FANS TOTAL FOR TWO FANS	EST	800	SF	650		520,000	0	2.50	2,300	MECH	88.89	204,400	724,400
1.4	EXPANSION JOINTS		EST	570	LF		230.00	0	131,100	2.00	1,311	MECH	88.89	116,500	247,600
1.5	DUCTWORK	FABRIC FILTER OUTLET TO ID FANS AND FROM ID FANS TO STACK - INCLUDES INTERNAL BRACING AND TURNING VANES	EST	880	TN		3,250.00	0	2,860,000	50.00	50,600	FLDU	107.96	5,462,800	8,322,800
1.6	DUCT SUPPORT STEEL	THREE COAT SHOP PAINT	EST	440	TN		2,900.00	0	1,276,000	24.00	12,144	STST	105.71	1,283,700	2,559,700
1.7	ID FAN INSULATION & LAGGING	TOTAL FOR TWO FANS. PRICING REFLECTS STANDARD ACOUSTICAL INSULATION	EST	5,000	SF		40.00	0	200,000	0.55	3,163	DINS	81.75	258,500	458,500
1.8	DUCTWORK INSULATION & LAGGING	INCLUDES INSULATION FOR SPRAY DRYER OUTLET DUCT TO FABRIC FILTERS SUPPLIED WITH THE OEM EQUIPMENT	EST	90,896	SF		12.00	0	1,090,800	0.25	26,133	DINS	81.75	2,136,300	3,227,100
1.9	DUCT SUPPORT STEEL - FOUNDATIONS							0	352,200					684,000	1,036,200
	EXCAVATION / BACKFILL		EST	2,265	CY			0	0	0.36	938	EXFD	90.00	84,400	84,400
	REINFORCING		EST	131	TN		1,150.00	0	150,800	20.00	3,016	REIN	78.27	236,000	386,800
	FORMWORK		EST	7,390	SF		2.50	0	18,500	0.14	1,190	FORM	99.43	118,300	136,800
	CONCRETE		EST	1,430	CY		105.00	0	150,200	1.50	2,467	CONP	79.64	196,500	346,700
	MUD MAT		EST	226	CY		105.00	0	23,800	1.50	391	CONP	79.64	31,100	54,900
	EMBEDDED STEEL		EST	3,576	LB		2.50	0	8,900	0.06	247	CARP	71.88	17,700	26,600
1.10	ID FAN FOUNDATIONS INCLUDING ID FAN AUX EQUIPMENT							0	229,300					415,700	645,000
	EXCAVATION / BACKFILL		EST	1,300	CY			0	0	0.36	538	EXFD	90.00	48,400	48,400
	REINFORCING		EST	100	TN		1,150.00	0	115,000	20.00	2,300	REIN	78.27	180,000	295,000
	FORMWORK		EST	2,400	SF		2.50	0	6,000	0.14	386	FORM	99.43	38,400	44,400
	CONCRETE		EST	850	CY		105.00	0	89,300	1.50	1,466	CONP	79.64	116,800	206,100
	MUD MAT		EST	80	CY		105.00	0	8,400	1.50	138	CONP	79.64	11,000	19,400
	EMBEDDED STEEL		EST	4,250	LB		2.50	0	10,600	0.06	293	CARP	71.88	21,100	31,700
1.11	ID FAN IAQCS CONTROL ROOM - FOUNDATIONS							0	270,100					508,600	778,700
	EXCAVATION / BACKFILL		EST	800	CY			0	0	0.36	331	EXFD	90.00	29,800	29,800
	REINFORCING		EST	100	TN		1,150.00	0	115,000	20.00	2,300	REIN	78.27	180,000	295,000

				AEP										Estimate No.:	30720C
				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED										Date:	9/29/2010
				ORDER OF MAGNITUDE COST ESTIMATE										Preparer:	MNO
		Cost Type:												Reviewer:	JMK
		Est=Estimated												Approver:	PEF
		Allow.=Allowance								Wage Rates Based on:		BIG SANDY			
		Q=Vendor Quote								Labor Productivity =		1.15			

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	FORMWORK		EST	7,000	SF		2.50	0	17,500	0.14	1,127	FORM	99.43	112,100	129,600
	CONCRETE		EST	1,100	CY		105.00	0	115,500	1.50	1,898	CONP	79.64	151,100	266,600
	MUD MAT		EST	115	CY		105.00	0	12,100	1.50	198	CONP	79.64	15,800	27,900
	EMBEDDED STEEL		EST	4,000	LB		2.50	0	10,000	0.06	276	CARP	71.88	19,800	29,800
1.12	ID FAN IAQCS CONTROL ROOM	SUBCONTRACT PRICE INCLUDES LABOR. COMPLETE WITH HVAC, FINISHES AND SANITARY FACILITIES	EST	7,875	SF		500.00	0	3,937,500	0.00	0	STST	105.71	0	3,937,500
1.13	TRANSFORMERS							770,000	0					145,600	915,600
	SST TRANSFORMERS: 21F & 21G	13.8KV-4160V, 3 PHASE, 2 WINDING	EST	2	EA	300000		600,000	0	500.00	1,150	EHEA	79.16	91,000	691,000
	SUS TRANSFORMERS: 31F, 31G	13.8KV-480V, 3 PHASE, CAST COIL	EST	2	EA	85000		170,000	0	300.00	690	EHEA	79.16	54,600	224,600
1.14	SWITCHGEAR							1,132,000	0		0			589,900	1,721,900
	480V LOW VOLTAGE (31F/G)	PRICE PER SECTION	EST	5	EA	38000		190,000	0	230.00	1,323	EHEA	79.16	104,700	294,700
	4.16 KV MEDIUM VOLTAGE (21F/G)	PRICE PER SECTION	EST	10	EA	39200		392,000	0	280.00	3,220	EHEA	79.16	254,900	646,900
	13.8KV MEDIUM VOLTAGE (13F/G)	PRICE PER SECTION	EST	11	EA	50000		550,000	0	230.00	2,910	EHEA	79.16	230,300	780,300
1.15	CABLE BUS & TERMINATIONS							1,129,100	35,800		0			1,930,000	3,094,900
	15KV CABLE BUS TO 13F/G)	CABLE BUS	EST	2,100	FT	466		978,600	0	6.75	16,301	WIRE	98.84	1,611,200	2,589,800
	5KV CABLE BUS	CABLE BUS	EST	150	FT	385		57,800	0	4.70	811	WIRE	98.84	80,100	137,900
	480V CABLE BUS	CABLE BUS	EST	150	FT	618		92,700	0	10.30	1,777	WIRE	98.84	175,600	268,300
	CABLE BUS TERMINATION	15KV TERMINATIONS	EST	4	EA		1,800.00	0	7,200	33.00	152	WIRE	98.84	15,000	22,200
	CABLE BUS TERMINATION	5KV TERMINATIONS	EST	4	EA		4,440.00	0	17,800	51.60	237	WIRE	98.84	23,500	41,300
	CABLE BUS TERMINATION	480V TERMINATIONS	EST	4	EA		2,700.00	0	10,800	54.00	248	WIRE	98.84	24,600	35,400
1.16	MCC							180,000	0					10,900	190,900
	480V MCC	PER LINE UP	EST	4	EA	30,000		120,000	0	16.00	74	WIRE	98.84	7,300	127,300
	DC MCC	PER LINE UP	EST	2	EA	30,000		60,000	0	16.00	37	WIRE	98.84	3,600	63,600
1.17	MIMIC PANELS		EST	1	EA	17500		17,500	0	40.00	46	WIRE	98.84	4,500	22,000
1.18	RACEWAY, CABLE TRAY, & CONDUIT							0	1,664,200					8,196,600	9,860,800
	12" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	5,000	LF		18.25	0	91,300	1.10	6,325	WIRE	98.84	625,200	716,500
	18" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	3,000	LF		21.50	0	64,500	1.45	5,003	WIRE	98.84	494,400	558,900
	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	9,320	LF		27.10	0	252,600	1.75	18,757	WIRE	98.84	1,853,900	2,106,500
	36" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	2,400	LF		30.30	0	72,700	1.95	5,382	WIRE	98.84	532,000	604,700
	5" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	4,000	LF		61.00	0	244,000	1.13	5,184	WIRE	98.84	512,400	756,400
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	8,600	LF		31.00	0	266,600	0.81	7,981	WIRE	98.84	788,900	1,055,500
	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	8,000	LF		21.50	0	172,000	0.65	5,934	WIRE	98.84	586,500	758,500
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	12,000	LF		9.25	0	111,000	0.35	4,858	WIRE	98.84	480,100	591,100
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	15,000	LF		7.15	0	107,300	0.28	4,899	WIRE	98.84	484,200	591,500
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	28,000	LF		4.44	0	124,300	0.24	7,696	WIRE	98.84	760,700	885,000
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	48,900	LF		3.23	0	157,900	0.19	10,910	WIRE	98.84	1,078,300	1,236,200
1.19	HIGH VOLTAGE POWER CABLE & TERMINATION							0	288,500					666,700	955,200
	1/C # 750KCMIL-15KV - 14400' ID FAN		EST	14,400	LF		12.89	0	185,600	0.23	3,809	WIRE	98.84	376,500	562,100
	1/C # 500KCMIL-15KV		EST	11,100	LF		9.27	0	102,900	0.23	2,936	WIRE	98.84	290,200	393,100
1.20	MEDIUM VOLTAGE POWER CABLE & TERMINATION							0	100,200					427,400	527,600
	1/C # 350KCMIL-5KV		EST	16,350	LF		6.13	0	100,200	0.23	4,325	WIRE	98.84	427,400	527,600
1.21	LOW VOLTAGE POWER CABLE & TERMINATIONS		EST	1,800	LF		26.12	0	229,800	0.69	1,428	WIRE	98.84	732,100	961,900

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				ORDER OF MAGNITUDE COST ESTIMATE										Preparer:	MNO
		Cost Type:												Reviewer:	JMK
		Est=Estimated												Approver:	PEF
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Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	3/C # 500KCMIL-600V		EST	1,800	LF		26.12	0	148,900	0.69	1,428	WIRE	98.84	141,200	290,100
	#4/0 - #12 AWG-600V		EST	65,800	LF		7.22	0	80,900	0.08	5,978	WIRE	98.84	590,900	671,800
1.22	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	EST	112,800	LF		3.20	0	361,000	0.08	10,248	WIRE	98.84	1,012,900	1,373,900
1.23	EMERGENCY POWER SYSTEM							285,500	0					38,900	324,400
	DC PANEL BOADRD		EST	1	EA	20150		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	UPS PANEL BOARDS		EST	2	EA	20150		31,000	0	40.00	92	WIRE	98.84	9,100	40,100
	UPS		EST	1	EA	78000		60,000	0	32.00	37	WIRE	98.84	3,600	63,600
	SWITCHBOARD		EST	1	EA	52000		40,000	0	40.00	46	WIRE	98.84	4,500	44,500
	BYPASS TRANSFORMERS		EST	1	EA	32500		25,000	0	40.00	46	WIRE	98.84	4,500	29,500
	BATTERY CHARGER		EST	2	EA	41600		64,000	0	16.00	37	WIRE	98.84	3,600	67,600
	BATTERIES		EST	1	LT	65000		50,000	0	80.00	92	WIRE	98.84	9,100	59,100
1.24	GROUNDING							14,100	0					42,700	56,800
	GROUND ROD	3/4" - 20' LONG EACH	EST	16	EA	150		2,400	0	4.00	74	WIRE	98.84	7,300	9,700
	500 MCM	BARE COPPER WIRE	EST	1,400	FT	7.65		10,700	0	0.12	193	WIRE	98.84	19,100	29,800
	CADWELD		EST	64	EA	15		1,000	0	2.00	147	WIRE	98.84	14,500	15,500
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	16.00	18	WIRE	98.84	1,800	1,800
1.25	LIGHTING/ TRANSFORMERS & PANELS							26,000	30,000					29,500	85,500
	LIGHT FIXTURES		EST	40	EA		750	0	30,000	4.00	184	WIRE	98.84	18,200	48,200
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	1	EA	10000		10,000	0	40.00	46	WIRE	98.84	4,500	14,500
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	1	EA	7500		7,500	0	32.00	37	WIRE	98.84	3,600	11,100
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	1	EA	5000		5,000	0	16.00	18	WIRE	98.84	1,800	6,800
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	1	EA	3500		3,500	0	12.00	14	WIRE	98.84	1,400	4,900
1.26	DUCT BANK							0	136,000					192,700	328,700
	DUCT BANK WITH 12-5" & 4-3" CONDUITS		EST	100	LF		361.21	0	38,000	6.24	717	ECND	75.97	54,500	92,500
	DUCT BANK WITH 6-5" & 2-3" CONDUITS		EST	180	LF		230.91	0	71,400	5.45	1,128	ECND	75.97	85,700	157,100
	DUCT BANK WITH 6-5" & 6-3" CONDUITS		EST	100	LF		265.88	0	26,600	6.01	691	ECND	75.97	52,500	79,100
1.27	FOUNDATION FOR TRANSFORMERS							0	61,900		0			162,600	224,500
	EXCAVATION / BACKFILL		EST	1,000	CY			0	0	0.36	414	EXFD	90.00	37,300	37,300
	REINFORCING		EST	20	TN		1,150.00	0	23,000	20.00	460	REIN	78.27	36,000	59,000
	FORMWORK		EST	2,500	SF		2.50	0	6,300	0.14	403	FORM	99.43	40,000	46,300
	CONCRETE		EST	190	CY		105.00	0	20,000	1.50	328	CONP	79.64	26,100	46,100
	MUD MAT		EST	25	CY		105.00	0	2,600	1.50	43	CONP	79.64	3,400	6,000
	EMBEDDED STEEL		EST	4,000	LB		2.50	0	10,000	0.06	276	CARP	71.88	19,800	29,800
1.28	FIREWALL FOR TRANSFORMERS							0	3,200					8,300	11,500
	REINFORCING		EST	1.2	TN		1,150.00	0	1,400	20.00	28	REIN	78.27	2,200	3,600
	FORMWORK		EST	80	SF		2.50	0	200	0.14	13	FORM	99.43	1,300	1,500
	CONCRETE		EST	15	CY		105.00	0	1,600	3.50	60	CONP	79.64	4,800	6,400
1.29	EARLY COMMISSIONING COSTS TEMPORARY HIGH VOLTAGE POWER CABLE & TERMINATION FROM EAST SIDE OF SCR BUILDING TO TRANSFORMER PDC		EST	300	LF		466	0	139,800	6.75	2,329	WIRE	98.84	230,200	370,000
1.30	COMMUNICATIONS		EST	1	LT		17,000.00	0	17,000	114.00	131	WIRE	98.84	13,000	30,000
1.31	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							12,045,000	13,451,100		287,929			27,518,500	53,014,600
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										4,285,497
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						25,037		83.48	2,090,000	2,090,000

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	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						31,297			2,195,497	2,195,497
	PER DIEM	NONE		0.00	HR						344,263			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				67,256					137,593	204,848
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				672,555						672,555
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			602,250							602,250
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				672,555					1,375,925	2,048,480
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				2,017,665					4,127,775	6,145,440
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							602,300	3,430,000					9,926,800	13,959,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	ID FANS						12,647,300	16,881,100					37,445,300	66,973,700
2.0	FABRIC FILTERS														
2.1	MECHANICAL EQUIPMENT	A SINGLE FABRIC FILTER (225' X 130') UNIT INCLUDING ALL INTERNAL FABRIC FILTER ELEMENTS SUCH AS BAGS, CAGES, ASH HOPPERS, 2 BROKEN BAG DETECTORS PER COMPARTMENT	EST	1	LT	19,761,000		19,761,000	0	123300.00	141,795	MECH	88.89	12,604,200	32,365,200
2.2	INSULATION FOR FABRIC FILTER	SUBCONTRACT COST INCLUDES LABOR	EST	81,000	SF	30		2,430,000	0	0.00	0	DINS	81.75	0	2,430,000
2.3	PENTHOUSE FOR FABRIC FILTER	SUPPORT STEEL AND PRLINS INCLUDED WITH OEM EQUIPMENT		29,500	SF			70,200	787,000					1,007,600	1,864,800
	SIDING FOR PENTHOUSE		EST	14,200	SF		12.00	0	170,400	0.11	1,796	SDNG	93.41	167,800	338,200
	CONCRETE FLOOR FOR PENTHOUSE		EST	250	CY		230.00	0	57,500	7.50	2,156	SDNG	93.41	201,400	258,900
	ROOFING FOR PENTHOUSE		EST	29,500	SF		18.00	0	531,000	0.22	7,464	ROOF	69.12	515,900	1,046,900
	H&V		EST	1	LT	70200	28080	70,200	28,100	1310.67	1,507	HVAC	81.24	122,500	220,800
2.4	BOTTOM ENCLOSURE FOR BAGHOUSE							60,000	1,204,000					1,359,800	2,623,800
	SUPPORT STEEL, GIRTS AND SIDING		EST	29,500	SF		40.00	0	1,180,000	0.35	11,874	STST	105.71	1,255,200	2,435,200
	H&V		EST	1	LT	60000	24000	60,000	24,000	1120.00	1,288	HVAC	81.24	104,600	188,600
2.5	PIPING & SUPPORTS - MECHANICAL							30,900	101,400					209,500	341,800
	LARGE BORE PIPING	6" SS, SCH 40 WELDED	EST	100	LF		111.00	0	11,100	2.02	232	SPNG	94.41	21,900	33,000
	LARGE BORE PIPING	12" CS, SCH 40 WELDED	EST	400	LF		188.70	0	75,500	2.80	1,288	SPNG	94.41	121,600	197,100
	SMALL BORE PIPING	2" CS, SCH 80 WELDED	EST	50	LF		22.20	0	1,100	1.26	72	SPNG	94.41	6,800	7,900
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	50	LF		48.80	0	2,400	1.44	83	SPNG	94.41	7,800	10,200
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	100	LF		33.70	0	3,400	1.32	152	SPNG	94.41	14,300	17,700
	VALVE	12" GATE, 150 #, CS, WELDED	EST	2	EA	8,200		16,400	0	19.20	44	SPNG	94.41	4,200	20,600
	VALVE	2" GLOBE, 150# SS, WELDED	EST	10	EA	1,450		14,500	0	5.64	65	SPNG	94.41	6,100	20,600
	PIPE SUPPORTS		EST	105	EA		75.00	0	7,900	2.50	302	MECH	88.89	26,800	34,700
2.6	FABRIC FILTER - FOUNDATIONS							0	550,700					1,081,100	1,631,800
	EXCAVATION / BACKFILL		EST	4,945	CY			0	0	0.36	2,047	EXFD	90.00	184,300	184,300
	REINFORCING		EST	192	TN		1,150.00	0	220,800	20.00	4,416	REIN	78.27	345,600	566,400
	FORMWORK		EST	7,800	SF		2.50	0	19,500	0.14	1,256	FORM	99.43	124,900	144,400
	CONCRETE		EST	2,400	CY		105.00	0	252,000	1.50	4,140	CONP	79.64	329,700	581,700
	MUD MAT		EST	270	CY		105.00	0	28,400	1.50	466	CONP	79.64	37,100	65,500
	EMBEDDED STEEL		EST	12,000	LB		2.50	0	30,000	0.06	828	CARP	71.88	59,500	89,500
2.7	FABRIC FILTER - SUPPORT STEEL AND ACCESS GALLERY							0	360,000					1,186,700	1,546,700
	SUPPORT STEEL	MATERIAL INCLUDED WITH OEM EQUIPMENT	EST	300	TN			0	0	24.00	8,280	STST	105.71	875,300	875,300
	ACCESS GALLERY		EST	8,000	SF		45.00	0	360,000	0.40	3,680	GALL	84.61	311,400	671,400
2.8	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE INCLUDED IN SECTION 1.0 - ID FANS													
2.9	LIGHTING/ TRANSFORMERS & PANELS							30,000	75,000					58,200	163,200

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	LIGHT FIXTURES		EST	100	EA		750	0	75,000	4.00	460	WIRE	98.84	45,500	120,500
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	10000		20,000	0	40.00	92	WIRE	98.84	9,100	29,100
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	2	EA	5000		10,000	0	16.00	37	WIRE	98.84	3,600	13,600
2.10	GROUNDING							7,300	0					17,500	24,800
	GROUND ROD	3/4" - 20' LONG	EST	4	EA	150		600	0	4.00	18	WIRE	98.84	1,800	2,400
	500 MCM	BARE COPPER WIRE	EST	850	FT	7.65		6,500	0	0.12	117	WIRE	98.84	11,600	18,100
	CADWELD		EST	16	EA	15		200	0	2.00	37	WIRE	98.84	3,600	3,800
	GROUNDING TEST	TEST, CALIBRATION & DOCUMENTATION	EST	1	EA			0	0	4.00	5	WIRE	98.84	500	500
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							22,419,400	3,153,100		195,997			17,524,600	42,992,100
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										2,917,504
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						17,043		83.48	1,423,000	1,423,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						21,304			1,494,504	1,494,504
	PER DIEM	NONE		0.00	HR						234,344			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				15,766					87,623	103,389
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				157,655						157,655
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			1,120,970							1,120,970
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				157,655					876,230	1,033,885
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				472,965					2,628,690	3,101,655
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							1,121,000	804,000					6,510,000	8,435,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FABRIC FILTERS						23,540,400	3,957,100					24,034,600	51,427,200
3.0	NEW STACK														
3.1	CONCRETE STACK (WET)	PROVIDED BY AEP													31,480,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS														31,480,000
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT			15	%				0						4,722,000
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														4,722,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	NEW STACK													36,202,000
4.0	LIME HANDLING SYSTEM														
4.1	LIME STORAGE SILO							1,020,000	0					0	1,020,000
	SILO	CONCRETE SILO 40' DIA X 58' H - 1188 TONS -SUBCONTRACT COST INCLUDES LABOR	EST	1	EA	730,000.00		730,000	0	0.00	0	CONP	79.64	0	730,000
	ELEVATOR	MAINTENANCE ELEVATOR - SUBCONTRACT COST INCLUDES LABOR	EST	1	EA	290,000.00		290,000	0	0.00	0	MECH	88.89	0	290,000
4.2	LIME UNLOADING SYSTEM	INCLUDES PNEUMATIC HANDLING SYSTEM, THREE VACUUM EXHAUSTER, TWO FILTER SEPARATORS	EST	1	LT	350,000		350,000	0	2750.00	3,163	MECH	88.89	281,100	631,100

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4.3	PIPING - MECHANICAL							29,000	15,600					77,900	122,500
	SMALL BORE PIPING	2" CS, SCH 80 WELDED	EST	100	LF		22.20	0	2,200	1.26	145	SPNG	94.41	13,700	15,900
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	100	LF		48.80	0	4,900	1.44	166	SPNG	94.41	15,600	20,500
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	200	LF		33.70	0	6,700	1.32	304	SPNG	94.41	28,700	35,400
	VALVE	2" GLOBE, 150# SS, WELDED	EST	20	EA	1,450		29,000	0	5.64	130	SPNG	94.41	12,200	41,200
	PIPE SUPPORTS		EST	50	EA		35.00	0	1,800	1.50	86	MECH	88.89	7,700	9,500
4.4	LIME STORAGE SILO ACCESS STAIR TOWER	THREE COAT SHOP PAINT	EST	30	TN		2,900.00	0	87,000	24.00	828	STST	105.71	87,500	174,500
4.5	PIPE RACK FOR LIME HANDLING, WASTE HANDLING AND MISC MECHANICAL PIPING	THREE COAT SHOP PAINT	EST	270	TN		2,900.00	0	783,000	24.00	7,452	STST	105.71	787,800	1,570,800
4.6	RAIL CAR UNLOADING AREA - FOUNDATIONS	20 X 60 - NO SIDING						0	22,600					49,100	71,700
	EXCAVATION / BACKFILL		EST	300	CY			0	0	0.36	124	EXFD	90.00	11,200	11,200
	REINFORCING		EST	9	TN		1,150.00	0	9,800	20.00	196	REIN	78.27	15,300	25,100
	FORMWORK		EST	400	SF		2.50	0	1,000	0.14	64	FORM	99.43	6,400	7,400
	CONCRETE		EST	100	CY		105.00	0	10,500	1.50	173	CONP	79.64	13,700	24,200
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	500	LB		2.50	0	1,300	0.06	35	CARP	71.88	2,500	3,800
4.7	LIME UNLOADING BLOWER / ELECTRICAL BUILDING - FOUNDATIONS							0	80,600					139,600	220,200
	EXCAVATION / BACKFILL		EST	340	CY			0	0	0.36	141	EXFD	90.00	12,700	12,700
	REINFORCING		EST	30	TN		1,150.00	0	34,500	20.00	690	REIN	78.27	54,000	88,500
	FORMWORK		EST	780	SF		2.50	0	2,000	0.14	126	FORM	99.43	12,500	14,500
	CONCRETE		EST	330	CY		105.00	0	34,700	1.50	569	CONP	79.64	45,300	80,000
	MUD MAT		EST	50	CY		105.00	0	5,300	1.50	86	CONP	79.64	6,900	12,200
	EMBEDDED STEEL		EST	1,650	LB		2.50	0	4,100	0.06	114	CARP	71.88	8,200	12,300
4.8	LIME UNLOADING BLOWER / ELECTRICAL BUILDING	100' L X 30' W X 30' H						75,000	335,000					24,400	434,400
	PREENGINEERED BUILDING INCLUDING H&V AND LIGHTING	SUBCONTRACT PRICE, INCLUDES LABOR	EST	3,000	SF		105	0	315,000	0.00	0	STST	105.71	0	315,000
	ADDITONAL HVAC UNIT FOR ELECTRICAL ROOM & CONTROLS	40T PACKAGED UNIT FOR ELECTRICAL EQUIPMENT ROOM. INCLUDES ALLOWANCE FOR CONCRETE PAD AND ELECTRICAL WORK	EST	1	LT	75000	20000	75,000	20,000	350.00	300	HVAC	81.24	24,400	119,400
4.9	CONCRETE PIT FOR THE ELEVATOR		EST	10	CY		230.00	0	2,300	7.50	86	CONP	79.64	6,900	9,200
4.10	LIME STORAGE SILO - FOUNDATIONS							0	75,100					150,000	225,100
	EXCAVATION / BACKFILL		EST	790	CY			0	0	0.36	327	EXFD	90.00	29,400	29,400
	REINFORCING		EST	30.0	TN		1,150.00	0	34,500	20.00	690	REIN	78.27	54,000	88,500
	FORMWORK		EST	800	SF		2.50	0	2,000	0.14	129	FORM	99.43	12,800	14,800
	CONCRETE		EST	300	CY		105.00	0	31,500	1.50	518	CONP	79.64	41,200	72,700
	MUD MAT		EST	20	CY		105.00	0	2,100	1.50	35	CONP	79.64	2,700	4,800
	EMBEDDED STEEL		EST	2,000	LB		2.50	0	5,000	0.06	138	CARP	71.88	9,900	14,900
4.11	LIME STORAGE SILO ACCESS STAIR TOWER - FOUNDATIONS							0	10,700					22,300	33,000
	EXCAVATION / BACKFILL		EST	95	CY			0	0	0.36	39	EXFD	90.00	3,500	3,500
	REINFORCING		EST	3.6	TN		1,150.00	0	4,100	20.00	83	REIN	78.27	6,500	10,600
	FORMWORK		EST	260	SF		2.50	0	700	0.14	42	FORM	99.43	4,200	4,900
	CONCRETE		EST	45	CY		105.00	0	4,700	1.50	78	CONP	79.64	6,200	10,900
	MUD MAT		EST	6	CY		105.00	0	600	1.50	10	CONP	79.64	800	1,400
	EMBEDDED STEEL		EST	225	LB		2.50	0	600	0.06	16	CARP	71.88	1,100	1,700
4.12	PIPE RACK - FOUNDATIONS							0	94,200					237,800	332,000
	EXCAVATION / BACKFILL		EST	1,360	CY			0	0	0.36	563	EXFD	90.00	50,700	50,700
	REINFORCING		EST	32.2	TN		1,150.00	0	37,000	20.00	740	REIN	78.27	57,900	94,900
	FORMWORK		EST	4,000	SF		2.50	0	10,000	0.14	644	FORM	99.43	64,000	74,000

AEP | Estimate No.: 30720C
BIG SANDY UNIT 2 | Project No.: 12721-000
FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED | Date: 9/29/2010
ORDER OF MAGNITUDE COST ESTIMATE | Preparer: MNO
Cost Type: | Reviewer: JMK
Est=Estimated | Approver: PEF
Allow.=Allowance
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Wage Rates Based on: BIG SANDY
Labor Productivity = 1.15

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	CONCRETE		EST	402	CY		105.00	0	42,200	1.50	693	CONP	79.64	55,200	97,400
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	2,010	LB		2.50	0	5,000	0.06	139	CARP	71.88	10,000	15,000
4.13	TRANSFORMERS: 33F, 33G,	13.8KV-480V,3PHASE, CAST COIL	EST	2	EA	85000		170,000	0	300.00	690	EHEA	79.16	54,600	224,600
4.14	480V LOW VOLTAGE (33F/G) SWITCHGEAR	PER LINE UP	EST	5	EA	39200		196,000	0	230.00	1,323	EHEA	79.16	104,700	300,700
4.15	CABLE BUS DUCT							134,700	10,800					200,200	345,700
	480V CABLE BUS	BUST DUCT ONLY	EST	150	FT	898		134,700	0	10.30	1,777	WIRE	98.84	175,600	310,300
	CABLE BUS TERMINATION	480V TERMINATIONS	EST	4	EA		2,700.00	0	10,800	54.00	248	WIRE	98.84	24,600	35,400
4.16	MCC							61,800	0					3,600	65,400
	480V MCC	PER LINE UP	EST	2	EA	30900		61,800	0	16.00	37	WIRE	98.84	3,600	65,400
4.17	MIMIC PANELS		EST	1	EA	17500		17,500	0	12.00	14	WIRE	98.84	1,400	18,900
4.18	EMERGENCY POWER SYSTEM							108,300	0					24,400	132,700
	DC PANEL BOARD		EST	1	EA	15450		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	UPS PANEL BOARDS		EST	1	EA	15450		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	SATELLITE UPS		EST	1	EA	41200		41,200	0	16.00	18	WIRE	98.84	1,800	43,000
	VRLA BATTERIES		EST	1	LT	36050		36,100	0	120.00	138	WIRE	98.84	13,600	49,700
4.19	GROUNDING							13,300	0					41,300	54,600
	GROUND ROD	3/4" - 20' LONG	EST	16	EA	150		2,400	0	4.00	74	WIRE	98.84	7,300	9,700
	500 MCM	BARE COPPER WIRE	EST	1,300	FT	7.65		9,900	0	0.12	179	WIRE	98.84	17,700	27,600
	CADWELD		EST	64	EA	15		1,000	0	2.00	147	WIRE	98.84	14,500	15,500
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	16.00	18	WIRE	98.84	1,800	1,800
4.20	LIGHTING/ TRANSFORMERS & PANELS							52,000	135,000					104,500	291,500
	LIGHT FIXTURES		EST	180	EA		750	0	135,000	4.00	828	WIRE	98.84	81,800	216,800
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	10000		20,000	0	40.00	92	WIRE	98.84	9,100	29,100
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	7500		15,000	0	32.00	74	WIRE	98.84	7,300	22,300
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	2	EA	5000		10,000	0	16.00	37	WIRE	98.84	3,600	13,600
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	2	EA	3500		7,000	0	12.00	28	WIRE	98.84	2,700	9,700
4.21	RACEWAY, CABLE TRAY, & CONDUIT							0	310,900					1,537,100	1,848,000
	12" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,050	LF		18.25	0	19,200	1.10	1,328	WIRE	98.84	131,300	150,500
	18" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	600	LF		21.50	0	12,900	1.45	1,001	WIRE	98.84	98,900	111,800
	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,700	LF		27.10	0	46,100	1.75	3,421	WIRE	98.84	338,200	384,300
	36" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	500	LF		30.30	0	15,200	1.95	1,121	WIRE	98.84	110,800	126,000
	5" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	750	LF		61.00	0	45,800	1.13	972	WIRE	98.84	96,100	141,900
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,450	LF		31.00	0	45,000	0.81	1,346	WIRE	98.84	133,000	178,000
	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,550	LF		21.50	0	33,300	0.65	1,150	WIRE	98.84	113,600	146,900
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	2,400	LF		9.25	0	22,200	0.35	972	WIRE	98.84	96,000	118,200
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	3,050	LF		7.15	0	21,800	0.28	996	WIRE	98.84	98,500	120,300
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	5,150	LF		4.44	0	22,900	0.24	1,415	WIRE	98.84	139,900	162,800
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	8,200	LF		3.23	0	26,500	0.19	1,829	WIRE	98.84	180,800	207,300

				AEP											Estimate No.:	30720C
				BIG SANDY UNIT 2											Project No.:	12721-000
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4.22	HIGH VOLTAGE POWER CABLE & TERMINATION	1/C # 500KCMIL-15KV	EST	5,400	LF		9.27	0	50,100	0.23	1,428	WIRE	98.84	141,200	191,300
4.23	MEDIUM VOLTAGE POWER CABLE & TERMINATION	1/C # 350KCMIL-5KV	EST	10,800	LF		6.13	0	66,200	0.23	2,857	WIRE	98.84	282,300	348,500
4.24	LOW VOLTAGE POWER CABLE & TERMINATION							0	93,000					143,200	236,200
	3/C # 500KCMIL- 600V		EST	600	LF		26.12	0	15,700	0.69	476	WIRE	98.84	47,100	62,800
	#4/0 - #12 AWG-600V		EST	10,700	LF		7.22	0	77,300	0.08	972	WIRE	98.84	96,100	173,400
4.25	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	EST	8,200	LF		3.20	0	26,200	0.08	745	WIRE	98.84	73,600	99,800
4.26	DUCT BANK	6-5" & 6-3" CONDUITS	EST	100	LF		265.88	0	26,600	6.01	691	ECND	75.97	52,500	79,100
4.27	FOUNDATIONS FOR TRANSFORMERS							0	5,300					11,900	17,200
	EXCAVATION / BACKFILL		EST	75	CY			0	0	0.36	31	EXFD	90.00	2,800	2,800
	REINFORCING		EST	2	TN		1,150.00	0	2,300	20.00	46	REIN	78.27	3,600	5,900
	FORMWORK		EST	100	SF		2.50	0	300	0.14	16	FORM	99.43	1,600	1,900
	CONCRETE		EST	20	CY		105.00	0	2,100	1.50	35	CONP	79.64	2,700	4,800
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	250	LB		2.50	0	600	0.06	17	CARP	71.88	1,200	1,800
4.28	COMMUNICATIONS		EST	1	LT		17,000.00	0	17,000	114.00	131	WIRE	98.84	13,000	30,000
4.29	LIGHTNING PROTECTION		EST	1	LT		14,000.00	0	14,000	79.00	91	WIRE	98.84	9,000	23,000
4.30	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							2,227,600	2,269,200		48,830			4,669,900	9,166,700
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										726,333
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						4,246		83.48	354,000	354,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						5,308			372,333	372,333
	PER DIEM	NONE		0.00	HR						58,383			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				11,346					23,350	34,696
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				113,460						113,460
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			111,380							111,380
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				113,460					233,495	346,955
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				340,380					700,485	1,040,865
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							111,400	578,600					1,683,700	2,373,700
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME HANDLING SYSTEM						2,339,000	2,847,800					6,353,600	11,540,400
5.0	LIME SLAKER BUILDING														0
5.1	MECHANICAL EQUIPMENT	INCLUDES:CHAIN CONVEYOR, SLAKERS THROUGH THE LIME SLURRY PUMPS, PIPING, AND LIME SLURRY STORAGE TANKS.	EST	1	LT	2,663,000		2,663,000	0	27500.00	31,625	MECH	88.89	2,811,100	5,474,100
5.2	REAGENT AREA SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300

				AEP										Estimate No.:	30720C
				BIG SANDY UNIT 2										Project No.:	12721-000
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5.3	AGITATOR FOR SUMP PUMPS	5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
5.4	PIPING - MECHANICAL		EST	1	LT			117,800	111,400					381,100	610,300
	LARGE BORE PIPING	6" CS, SCH 40 WELDED	EST	200	LF		41.7	0	8,300	1.61	370	SPNG	94.41	35,000	43,300
	LARGE BORE PIPING	8" HDPE (UNDERGROUND)	EST	1,200	LF		14.1	0	16,900	0.83	1,145	SPNG	94.41	108,100	125,000
	LARGE BORE PIPING	10" CS, SCH 40 WELDED	EST	400	LF		110.3	0	44,100	2.40	1,104	SPNG	94.41	104,200	148,300
	LARGE BORE PIPING	14" CS, SCH 40 WELDED	EST	100	LF		205.9	0	20,600	2.87	330	SPNG	94.41	31,200	51,800
	SMALL BORE PIPING	2" CS, SCH 80 WELDED	EST	50	LF		22.20	0	1,100	1.26	72	SPNG	94.41	6,800	7,900
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	50	LF		48.80	0	2,400	1.44	83	SPNG	94.41	7,800	10,200
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	100	LF		33.70	0	3,400	1.32	152	SPNG	94.41	14,300	17,700
	VALVE	2" GLOBE, 150# SS, WELDED	EST	15	EA	1,450		21,800	0	5.64	97	SPNG	94.41	9,200	31,000
	VALVE	6" AIR OPERATED, 150 #, CS, FLANGED	EST	2	EA	14,000		28,000	0	17.30	40	SPNG	94.41	3,800	31,800
	VALVE	8" AIR OPERATED, 150 #, CS, FLANGED	EST	4	EA	17,000		68,000	0	19.30	89	SPNG	94.41	8,400	76,400
	EXCAVATION / BACKFILL	FOR UNDERGROUND PIPING	EST	1,000	CY			0	0	0.20	230	EXFD	90.00	20,700	20,700
	BEDDING	FOR UNDERGROUND PIPING	EST	133	CY		35.0	0	4,700	0.25	38	EXFD	90.00	3,500	8,200
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	110	EA		90.00	0	9,900	2.50	316	MECH	88.89	28,100	38,000
5.5	LIME SLURRY TANKS - FOUNDATIONS							0	166,400					299,400	465,800
	EXCAVATION / BACKFILL		EST	969	CY			0	0	0.36	401	EXFD	90.00	36,100	36,100
	REINFORCING		EST	90	TN		1,150.00	0	103,500	20.00	2,070	REIN	78.27	162,000	265,500
	FORMWORK		EST	1,166	SF		2.50	0	2,900	0.14	188	FORM	99.43	18,700	21,600
	CONCRETE		EST	475	CY		105.00	0	49,900	1.50	819	CONP	79.64	65,300	115,200
	MUD MAT		EST	40	CY		105.00	0	4,200	1.50	69	CONP	79.64	5,500	9,700
	EMBEDDED STEEL		EST	2,375	LB		2.50	0	5,900	0.06	164	CARP	71.88	11,800	17,700
5.6	LIME SLAKER BUILDING - FOUNDATIONS							0	119,200					204,000	323,200
	EXCAVATION / BACKFILL		EST	450	CY			0	0	0.36	186	EXFD	90.00	16,800	16,800
	REINFORCING		EST	50	TN		1,150.00	0	57,500	20.00	1,150	REIN	78.27	90,000	147,500
	FORMWORK		EST	1,000	SF		2.50	0	2,500	0.14	161	FORM	99.43	16,000	18,500
	CONCRETE		EST	450	CY		105.00	0	47,300	1.50	776	CONP	79.64	61,800	109,100
	MUD MAT		EST	60	CY		105.00	0	6,300	1.50	104	CONP	79.64	8,200	14,500
	EMBEDDED STEEL		EST	2,250	LB		2.50	0	5,600	0.06	155	CARP	71.88	11,200	16,800
5.7	LIME SLAKER BUILDING	135' L X 30' W X 50' H						40,500	803,300					740,500	1,584,300
	STRUCTURAL STEEL		EST	110	TN		2650	0	291,500	16.00	2,024	STST	105.71	214,000	505,500
	INSULATED METAL SIDING		EST	16,500	SF		12	0	198,000	0.11	2,087	SDNG	93.41	195,000	393,000
	ROLLING OVERHEAD DOOR		EST	320	SF		27	0	8,600	0.25	92	CARP	71.88	6,600	15,200
	METAL ROOF DECKING		EST	4,050	SF		2.7	0	10,900	0.06	279	STST	105.71	29,500	40,400
	RIGID ROOF INSULATION		EST	4,050	SF		2.4	0	9,700	0.02	70	ROOF	69.12	4,800	14,500
	ROOFING (4-PLY TAR & GRAVEL)		EST	4,050	SF		1.55	0	6,300	0.04	186	ROOF	69.12	12,900	19,200
	LIGHTWEIGHT CONCRETE FILL 1"		EST	50	CY		100	0	5,000	1.30	75	ROOF	69.12	5,200	10,200
	ROOF FLASHING		EST	350	LF		14.45	0	5,100	0.12	48	ROOF	69.12	3,300	8,400
	ROOF DRAINS		EST	1	LT		25000	0	25,000	240.00	276	PLMB	79.42	21,900	46,900
	FLOOR DRAINS		EST	1	LT		30000	0	30,000	280.00	322	PLMB	79.42	25,600	55,600
	FLOOR SLABS	INCLUDES METAL DECKING AND FORMWORK	EST	50	CY		210	0	10,500	7.50	431	CONP	79.64	34,300	44,800
	FLOOR FINISHES		EST	3,102	SF		2.5	0	7,800	0.05	178	CONP	79.64	14,200	22,000
	LOUVERS/WINDOWS/DOORS		EST	1,601	SF		40	0	64,000	0.35	644	CARP	71.88	46,300	110,300
	ROOF VENTILATORS		EST	4	EA		15000	0	60,000	24.00	110	HVAC	81.24	9,000	69,000
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	1,215	SF		45	0	54,700	0.40	559	GALL	84.61	47,300	102,000
	H&V		EST	1	LT	40500	16200	40,500	16,200	756.00	869	HVAC	81.24	70,600	127,300
5.8	ELECTRICAL	INCLUDED WITH LIME HANDLING SYSTEM, ACCOUNT 4.0													
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							2,861,300	1,200,300		50,378			4,453,000	8,514,600
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														

				AEP										Estimate No.:	30720C
				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED										Date:	9/29/2010
				ORDER OF MAGNITUDE COST ESTIMATE										Preparer:	MNO
		Cost Type:												Reviewer:	JMK
		Est=Estimated												Approver:	PEF
		Allow.=Allowance								Wage Rates Based on:		BIG SANDY			
		Q=Vendor Quote								Labor Productivity =		1.15			

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										750,138
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						4,381		83.48	366,000	366,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						5,476			384,138	384,138
	PER DIEM	NONE		0.00	HR						60,234			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				6,002					22,265	28,267
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				60,015						60,015
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			143,065							143,065
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				60,015					222,650	282,665
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				180,045					667,950	847,995
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							143,100	306,100					1,663,000	2,112,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME SLAKER BUILDING						3,004,400	1,506,400					6,116,000	10,626,700
6.0	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS														0
6.1	BYPRODUCT WASTE HANDLING - MECHANICAL EQUIPMENT	INCLUDES PNEUMATIC HANDLING SYSTEM, THREE PRESSURE BLOWERS, ONE BIN VENT FILTER, ASH UNLOADING SYSTEM	EST	1	LT	1,637,600		1,637,600	0	10800.00	12,420	MECH	88.89	1,104,000	2,741,600
6.2	ECONOMIZER ASH HANDLING - MECHANICAL EQUIPMENT	INCLUDES JET PUMPS AND PIPING / SUPPORTS TO THE BOTTOM ASH POND	EST	1	LT	400,000		400,000	0	2900.00	3,335	MECH	88.89	296,400	696,400
6.3	BYPRODUCT WASTE SILO AREA SUMP PUMPS	FOR BUILDINGS - DUPLEX. INCLUDES CHECK & ISOLATION VALVES.		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
6.4	AGITATOR FOR SUMP PUMPS	5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
6.5	PIPING - MECHANICAL		EST	1	LT			142,800	240,900					759,100	1,142,800
	LARGE BORE PIPING	4" CS, SCHEDULE 40, WELDED	EST	300	LF		23.0	0	6,900	1.48	511	SPNG	94.41	48,200	55,100
	LARGE BORE PIPING	4" SS, SCHEDULE 40, WELDED	EST	300	LF		68.3	0	20,500	1.82	628	SPNG	94.41	59,300	79,800
	LARGE BORE PIPING	6" CS, SCH 40 WELDED	EST	400	LF		41.7	0	16,700	1.61	741	SPNG	94.41	69,900	86,600
	LARGE BORE PIPING	8" HDPE (UNDERGROUND)	EST	800	LF		14.1	0	11,300	0.83	764	SPNG	94.41	72,100	83,400
	LARGE BORE PIPING	10" CS, SCH 40 WELDED	EST	300	LF		110.3	0	33,100	2.40	828	SPNG	94.41	78,200	111,300
	LARGE BORE PIPING	20" HDPE (UNDERGROUND)	EST	1,600	LF		72.8	0	116,500	1.45	2,668	SPNG	94.41	251,900	368,400
	SMALL BORE PIPING	2" CS, SCH 80 WELDED	EST	100	LF		22.20	0	2,200	1.26	145	SPNG	94.41	13,700	15,900
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	100	LF		48.80	0	4,900	1.44	166	SPNG	94.41	15,600	20,500
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	200	LF		33.70	0	6,700	1.32	304	SPNG	94.41	28,700	35,400
	VALVE	2" GLOBE, 150# SS, WELDED	EST	15	EA	1,450		21,800	0	5.64	97	SPNG	94.41	9,200	31,000
	VALVE	4" GATE, 150 #, CS, WELDED	EST	10	EA	2,500		25,000	0	7.70	89	SPNG	94.41	8,400	33,400
	VALVE	6" AIR OPERATED, 150 #, CS, FLANGED	EST	2	EA	14,000		28,000	0	17.30	40	SPNG	94.41	3,800	31,800
	VALVE	8" AIR OPERATED, 150 #, CS, FLANGED	EST	4	EA	17,000		68,000	0	19.30	89	SPNG	94.41	8,400	76,400
	EXCAVATION / BACKFILL	FOR UNDERGROUND PIPING	EST	2,000	CY			0	0	0.20	460	EXFD	90.00	41,400	41,400
	BEDDING	FOR UNDERGROUND PIPING	EST	267	CY		35.0	0	9,300	0.25	77	EXFD	90.00	6,900	16,200
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	170	EA		75.00	0	12,800	2.50	489	MECH	88.89	43,400	56,200

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Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
6.6	BYPRODUCT WASTE SILO	CONCRETE SILO 35' DIA X 46' H - 782 TONS SUBCONTRACT COST INCLUDES LABOR	EST	1	EA	625,500.00		625,500	0					0	625,500
6.7	SDA RECYCLE SILO	INCLUDED WITH OEM EQUIPMENT													
6.8	FLY ASH SILO	NOT REQUIRED - ECONOMIZER FLY ASH SLUICD TO BOTTOM ASH POND						0	0	2.50	0	TANK	89.16	0	0
6.9	BYPRODUCT WASTE SILO - FOUNDATIONS							0	60,200					122,300	182,500
	EXCAVATION / BACKFILL		EST	670	CY			0	0	0.36	277	EXFD	90.00	25,000	25,000
	REINFORCING		EST	25.0	TN		1,150.00	0	28,800	20.00	575	REIN	78.27	45,000	73,800
	FORMWORK		EST	700	SF		2.50	0	1,800	0.14	113	FORM	99.43	11,200	13,000
	CONCRETE		EST	230	CY		105.00	0	24,200	1.50	397	CONP	79.64	31,600	55,800
	MUD MAT		EST	15	CY		105.00	0	1,600	1.50	26	CONP	79.64	2,100	3,700
	EMBEDDED STEEL		EST	1,500	LB		2.50	0	3,800	0.06	104	CARP	71.88	7,400	11,200
6.10	FLY ASH SILO - FOUNDATIONS	NOT REQUIRED						0	0					0	0
	EXCAVATION / BACKFILL		EST	0	CY			0	0	0.36	0	EXFD	90.00	0	0
	REINFORCING		EST	0.0	TN		1,150.00	0	0	20.00	0	REIN	78.27	0	0
	FORMWORK		EST	0	SF		2.50	0	0	0.14	0	FORM	99.43	0	0
	CONCRETE		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	0	LB		2.50	0	0	0.06	0	CARP	71.88	0	0
6.11	FLY ASH BLOWER AND ELECTRICAL BUILDING - FOUNDATIONS	NOT REQUIRED						0	0					0	0
	EXCAVATION / BACKFILL		EST	0	CY			0	0	0.36	0	EXFD	90.00	0	0
	REINFORCING		EST	0	TN		1,150.00	0	0	20.00	0	REIN	78.27	0	0
	FORMWORK		EST	0	SF		2.50	0	0	0.14	0	FORM	99.43	0	0
	CONCRETE		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	0	LB		2.50	0	0	0.06	0	CARP	71.88	0	0
6.12	FLY ASH BLOWER AND ELECTRICAL BUILDING	NOT REQUIRED						0	0					0	0
	PREENGINEERED BUILDING INCLUDING H&V AND LIGHTING		EST	0	SF		95	0	0	0.00	0	STST	105.71	0	0
	ADDITONAL HVAC UNIT FOR ELECTRICAL ROOM & CONTROLS		EST	0	LT	75000	20000	0	0	350.00	0	HVAC	81.24	0	0
6.13	RECYCLE ASH BUILDING - FOUNDATIONS							0	234,300					393,800	628,100
	EXCAVATION / BACKFILL		EST	950	CY			0	0	0.36	393	EXFD	90.00	35,400	35,400
	REINFORCING		EST	90	TN		1,150.00	0	103,500	20.00	2,070	REIN	78.27	162,000	265,500
	FORMWORK		EST	1,320	SF		2.50	0	3,300	0.14	213	FORM	99.43	21,100	24,400
	CONCRETE		EST	1,000	CY		105.00	0	105,000	1.50	1,725	CONP	79.64	137,400	242,400
	MUD MAT		EST	95	CY		105.00	0	10,000	1.50	164	CONP	79.64	13,100	23,100
	EMBEDDED STEEL		EST	5,000	LB		2.50	0	12,500	0.06	345	CARP	71.88	24,800	37,300
6.14	RECYCLE ASH BUILDING	100' L X 65' W X 50' H						58,500	1,306,700					1,194,500	2,559,700
	STRUCTURAL STEEL		EST	180	TN		2650	0	477,000	16.00	3,312	STST	105.71	350,100	827,100
	INSULATED METAL SIDING		EST	16,500	SF		12	0	198,000	0.11	2,087	SDNG	93.41	195,000	393,000
	ROLLING OVERHEAD DOOR		EST	640	SF		27	0	17,300	0.25	184	CARP	71.88	13,200	30,500
	METAL ROOF DECKING		EST	6,500	SF		2.7	0	17,600	0.06	449	STST	105.71	47,400	65,000
	RIGID ROOF INSULATION		EST	6,500	SF		2.4	0	15,600	0.02	112	ROOF	69.12	7,800	23,400
	ROOFING (4-PLY TAR & GRAVEL)		EST	6,500	SF		1.55	0	10,100	0.04	299	ROOF	69.12	20,700	30,800
	LIGHTWEIGHT CONCRETE FILL 1"		EST	60	CY		100	0	6,000	1.30	90	ROOF	69.12	6,200	12,200
	ROOF FLASHING		EST	350	LF		14.45	0	5,100	0.12	48	ROOF	69.12	3,300	8,400
	ROOF DRAINS		EST	1	LT		25000	0	25,000	240.00	276	PLMB	79.42	21,900	46,900
	FLOOR DRAINS		EST	1	LT		30000	0	30,000	280.00	322	PLMB	79.42	25,600	55,600
	FLOOR SLABS	INCLUDES METAL DECKING AND FORMWORK	EST	60	CY		210	0	12,600	7.50	518	CONP	79.64	41,200	53,800
	FLOOR FINISHES		EST	5,000	SF		2.5	0	12,500	0.05	288	CONP	79.64	22,900	35,400
	LOUVERS/WINDOWS/DOORS		EST	2,600	SF		40	0	104,000	0.35	1,047	CARP	71.88	75,200	179,200

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	ROOF VENTILATORS		EST	4	EA		15000	0	60,000	24.00	110	HVAC	81.24	9,000	69,000
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	6,500	SF		45	0	292,500	0.40	2,990	GALL	84.61	253,000	545,500
	H&V		EST	1	LT	58500	23400	58,500	23,400	1092.00	1,256	HVAC	81.24	102,000	183,900
6.15	MCC	480V MCC PER LINE UP	EST	2	EA	30000		60,000	0	16.00	37	WIRE	98.84	3,600	63,600
6.16	EMERGENCY POWER SYSTEM							92,800	0					19,900	112,700
	UPS PANEL BOARDS		EST	1	EA	15500		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	SATELLITE UPS		EST	1	EA	41200		41,200	0	16.00	18	WIRE	98.84	1,800	43,000
	VRLA BATTERIES		EST	1	LT	36050		36,100	0	120.00	138	WIRE	98.84	13,600	49,700
6.17	LIGHTING/ TRANSFORMERS & PANELS							18,500	60,000					44,100	122,600
	LIGHT FIXTURES		EST	80	EA		750	0	60,000	4.00	368	WIRE	98.84	36,400	96,400
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	1	EA	10000		10,000	0	40.00	46	WIRE	98.84	4,500	14,500
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	1	EA	5000		5,000	0	16.00	18	WIRE	98.84	1,800	6,800
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	1	EA	3500		3,500	0	12.00	14	WIRE	98.84	1,400	4,900
6.18	RACEWAY, CABLE TRAY, & CONDUIT							0	32,500					189,100	221,600
	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	280	LF		27.10	0	7,600	1.75	564	WIRE	98.84	55700	63,300
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	280	LF		31.00	0	8,700	0.81	260	WIRE	98.84	25700	34,400
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,040	LF		4.44	0	4,600	0.24	286	WIRE	98.84	28300	32,900
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	3,600	LF		3.23	0	11,600	0.19	803	WIRE	98.84	79400	91,000
6.19	GROUNDING							0	4,500					10,900	15,400
	GROUND ROD	3/4" - 20' LONG EACH	EST	4	EA		150	0	600	4.00	18	WIRE	98.84	1,800	2,400
	500 MCM	BARE COPPER WIRE	EST	500	FT		7.65	0	3,800	0.12	69	WIRE	98.84	6,800	10,600
	CADWELD		EST	8	EA		15	0	100	2.00	18	WIRE	98.84	1,800	1,900
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	4.00	5	WIRE	98.84	500	500
6.20	LOW VOLTAGE POWER CABLE & TERMINATION	#4/0 - #12 AWG-600V	EST	8,960	LF		7.22	0	64,700	0.08	814	WIRE	98.84	80500	145,200
6.21	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	EST	9,600	LF		3.20	0	30,700	0.08	872	WIRE	98.84	86200	116,900
6.22	DUCT BANK							0	109,700					205,400	315,100
	DUCT BANK WITH 8-5" & 8-3" CONDUITS		EST	125	LF		398.82	0	49,900	7.51	1,080	ECND	75.97	82,000	131,900
	DUCT BANK WITH 6-5" & 6-3" CONDUITS		EST	125	LF		265.88	0	33,200	6.01	864	ECND	75.97	65,600	98,800
	DUCT BANK WITH 2-5" & 2-3" CONDUITS		EST	200	LF		132.94	0	26,600	3.31	760	ECND	75.97	57,800	84,400
6.23	COMMUNICATIONS		EST	1	LT		34,000.00	0	34,000	229.00	263	WIRE	98.84	26,000	60,000
6.24	LIGHTNING PROTECTION		EST	1	LT		16,000.00	0	16,000	123.00	141	WIRE	98.84	14,000	30,000
6.25	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							3,075,700	2,202,200		51,399			4,573,700	9,851,600
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										764,928
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						4,470		83.48	373,000	373,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						5,587			391,928	391,928
	PER DIEM	NONE		0.00	HR						61,456			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				11,011					22,869	33,880
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				110,110						110,110
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			153,785							153,785

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	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				110,110					228,685	338,795
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				330,330					686,055	1,016,385
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							153,800	561,600					1,702,500	2,417,900
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS						3,229,500	2,763,800					6,276,200	12,269,500
7.0	SPRAY DRYER ABSORBER ISLAND														0
7.1	MECHANICAL EQUIPMENT	INCLUDES: ABSORBER MODULES AND ATOMIZERS WITH LUBE OIL, DUCT WORK FROM THE ABSORBERS TO THE FABRIC FILTER, AND COMPLETE RECYCLE SYSTEM WITH PIPING INSIDE FGD BUILDINGS.	EST	1	LT	39438000		39,438,000	0	236600	272,090	MECH	88.89	24,186,100	63,624,100
7.2	ELEVATOR	MAINTENANCE ELEVATOR - SUBCONTRACT COST INCLUDES LABOR	EST	1	EA	325,000.00		325,000	0	0.00	0	MECH	88.89	0	325,000
7.3	ABSORBER AREA SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES.		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
7.4	AGITATOR FOR SUMP PUMPS	5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
7.5	PIPING - MECHANICAL							142,800	36,900					227,900	407,600
	LARGE BORE PIPING	4" CS, SCHEDULE 40, WELDED	EST	300	LF		23.0	0	6,900	1.48	511	SPNG	94.41	48,200	55,100
	LARGE BORE PIPING	6" CS, SCH 40 WELDED	EST	100	LF		41.7	0	4,200	1.61	185	SPNG	94.41	17,500	21,700
	LARGE BORE PIPING	8" HDPE (UNDERGROUND)	EST	800	LF		14.1	0	11,300	0.83	764	SPNG	94.41	72,100	83,400
	SMALL BORE PIPING	2" CS, SCH 80 WELDED	EST	50	LF		22.20	0	1,100	1.26	72	SPNG	94.41	6,800	7,900
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	50	LF		48.80	0	2,400	1.44	83	SPNG	94.41	7,800	10,200
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	100	LF		33.70	0	3,400	1.32	152	SPNG	94.41	14,300	17,700
	VALVE	2" GLOBE, 150# SS, WELDED	EST	15	EA	1,450		21,800	0	5.64	97	SPNG	94.41	9,200	31,000
	VALVE	4" GATE, 150 #, CS, WELDED	EST	10	EA	2,500		25,000	0	7.70	89	SPNG	94.41	8,400	33,400
	VALVE	6" AIR OPERATED, 150 #, CS, FLANGED	EST	2	EA	14,000		28,000	0	17.30	40	SPNG	94.41	3,800	31,800
	VALVE	8" AIR OPERATED, 150 #, CS, FLANGED	EST	4	EA	17,000		68,000	0	19.30	89	SPNG	94.41	8,400	76,400
	EXCAVATION / BACKFILL	FOR UNDERGROUND PIPING	EST	667	CY			0	0	0.20	153	EXFD	90.00	13,800	13,800
	BEDDING	FOR UNDERGROUND PIPING	EST	89	CY		35.0	0	3,100	0.25	26	EXFD	90.00	2,300	5,400
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	60	EA		75.00	0	4,500	2.50	173	MECH	88.89	15,300	19,800
7.6	SDA SUPERSTRUCTURE							75,000	764,900					1,227,300	2,067,200
	PENTHOUSE FOR SDA'S	TOTAL SUPPORT STEEL AND PURLINS	EST	138	TN		2650.0	0	364,400	30.00	4,744	STST	105.71	501,500	865,900
	ROOFING FOR SDA PENTHOUSE	STANDING SEAM TYPE	EST	10,000	SF		18.00	0	180,000	0.22	2,530	ROOF	69.12	174,900	354,900
	SIDING		EST	13,000	SF		12.00	0	156,000	0.11	1,645	SDNG	93.41	153,600	309,600
	CONCRETE FLOOR FOR PENTHOUSE	INCLUDES DECKING AND FORMWORK	EST	150	CY		230.00	0	34,500	7.50	1,294	CONP	79.64	103,000	137,500
	H&V		EST	3	LT	25000	10000	75,000	30,000	1050.00	3,623	HVAC	81.24	294,300	399,300
7.7	SDA BOTTOM ENCLOSURE - SUPPORT STEEL, GIRTS AND SIDING	TOTAL FOR THREE ABSORBERS	EST	9,053	SF		40.00	0	362,100	0.35	3,644	STST	105.71	385,200	747,300
7.8	SDA SHELL / ROOF INSULATION	61,000 SF. SUBCONTRACT COST INCLUDES LABOR	EST	61,000	SF	30		1,830,000	0		0	DINS	81.75	0	1,830,000
7.9	SDA - SUPPORT STEEL & ACCESS GALLERY							0	711,000					1,884,100	2,595,100

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				ORDER OF MAGNITUDE COST ESTIMATE										Preparer:	MNO
		Cost Type:												Reviewer:	JMK
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Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	SUPPORT STEEL	MATERIAL INCLUDED WITH OEM EQUIPMENT	EST	435	TN			0	0	24.00	12,006	STST	105.71	1,269,200	1,269,200
	ACCESS GALLERY		EST	15,800	SF		45.00	0	711,000	0.40	7,268	GALL	84.61	614,900	1,325,900
7.10	EXPANSION JOINTS		EST	850	LF		230.00	0	195,500	2.00	1,955	MECH	88.89	173,800	369,300
7.11	DUCTWORK							0	4,797,000					10,481,700	15,278,700
	SPRAY DRYER INLET	INCLUDES INTERNAL BRACING AND TURNING VANES	EST	1,476	TN		3,250.00	0	4,797,000	50.00	84,870	FLDU	107.96	9,162,600	13,959,600
	SPRAY DRYER OUTLET TO FABRIC FILTER INLET	INSTALLATION ONLY - MATERIAL INCLUDED WITH OEM EQUIPMENT	EST	213	TN			0	0	50.00	12,219	FLDU	107.96	1,319,100	1,319,100
7.12	DUCT SUPPORT STEEL	THREE COAT SHOP PAINT	EST	738	TN		2,900.00	0	2,140,200	24.00	20,369	STST	105.71	2,153,200	4,293,400
7.13	DUCTWORK INSULATION & LAGGING		EST	136,000	SF		12.00	0	1,632,000	0.25	39,100	DINS	81.75	3,196,400	4,828,400
7.14	CONCRETE PIT FOR ELEVATOR		EST	12	CY		230.00	0	2,800	7.50	104	CONP	79.64	8,200	11,000
7.15	SPRAY DRYER ABSORBER - FOUNDATIONS	TOTAL FOR THREE TOWERS						0	1,678,600					3,323,400	5,002,000
	EXCAVATION / BACKFILL		EST	16,000	CY			0	0	0.36	6,624	EXFD	90.00	596,200	596,200
	REINFORCING		EST	600	TN		1,150.00	0	690,000	20.00	13,800	REIN	78.27	1,080,100	1,770,100
	FORMWORK		EST	23,000	SF		2.50	0	57,500	0.14	3,703	FORM	99.43	368,200	425,700
	CONCRETE		EST	7,500	CY		105.00	0	787,500	1.50	12,938	CONP	79.64	1,030,300	1,817,800
	MUD MAT		EST	510	CY		105.00	0	53,600	1.50	880	CONP	79.64	70,100	123,700
	EMBEDDED STEEL		EST	36,000	LB		2.50	0	90,000	0.06	2,484	CARP	71.88	178,500	268,500
7.16	FOUNDATIONS FOR SUPPORT STEEL							0	69,000					143,000	212,000
	EXCAVATION / BACKFILL		EST	784	CY			0	0	0.36	324	EXFD	90.00	29,200	29,200
	REINFORCING		EST	23	TN		1,150.00	0	26,100	20.00	522	REIN	78.27	40,900	67,000
	FORMWORK		EST	1,125	SF		2.50	0	2,800	0.14	181	FORM	99.43	18,000	20,800
	CONCRETE		EST	303	CY		105.00	0	31,800	1.50	522	CONP	79.64	41,600	73,400
	MUD MAT		EST	43	CY		105.00	0	4,500	1.50	73	CONP	79.64	5,800	10,300
	EMBEDDED STEEL		EST	1,513	LB		2.50	0	3,800	0.06	104	CARP	71.88	7,500	11,300
7.17	GROUNDING							0	16,000		0			46,100	62,100
	GROUND ROD	3/4" - 20' LONG	EST	16	EA		150	0	2,400	4.00	74	WIRE	98.84	7,300	9,700
	500 MCM	BARE COPPER WIRE	EST	1,650	FT		7.65	0	12,600	0.12	228	WIRE	98.84	22,500	35,100
	CADWELD		EST	64	EA		15	0	1,000	2.00	147	WIRE	98.84	14,500	15,500
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	16.00	18	WIRE	98.84	1,800	1,800
7.18	LIGHTING/ TRANSFORMERS & PANELS							156,000	150,000		0			159,100	465,100
	LIGHT FIXTURES		EST	200	EA		750	0	150,000	4.00	920	WIRE	98.84	90,900	240,900
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	6	EA	10000		60,000	0	40.00	276	WIRE	98.84	27,300	87,300
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	6	EA	7500		45,000	0	32.00	221	WIRE	98.84	21,800	66,800
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	6	EA	5000		30,000	0	16.00	110	WIRE	98.84	10,900	40,900
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	6	EA	3500		21,000	0	12.00	83	WIRE	98.84	8,200	29,200
7.19	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE INCLUDED IN SECTION 1.0 - ID FANS													
7.20	COMMUNICATIONS		EST	1	LT		17,000.00	0	17,000	114.00	131	WIRE	98.84	13,000	30,000
7.21	LIGHTNING PROTECTION		EST	1	LT		25,500.00	0	25,500	163.00	187	WIRE	98.84	18,500	44,000
7.22	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							42,006,800	12,606,500		514,702			47,650,900	102,264,200
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE	2 CRANES		9	MN	90,000.00		810,000	0	1440.00	14,904	MECH	88.89	1,523,520	2,333,520
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0

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	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										7,765,230
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						44,757		83.48	3,736,000	3,736,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						57,436			4,029,230	4,029,230
	PER DIEM	NONE		0.00	HR						631,800			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				63,033					238,255	301,287
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				630,325						630,325
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			2,100,340							2,100,340
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				630,325					2,382,545	3,012,870
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				1,890,975					7,147,635	9,038,610
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							2,910,300	3,214,700					19,057,200	25,182,200
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SPRAY DRYER ABSORBER ISLAND						44,917,100	15,821,200					66,708,100	127,446,400
8.0	ACTIVATED CARBON INJECTION SYSTEM	NOT REQUIRED WITH NON-PHASED CONSTRUCTION													0
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS														
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE														
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%										
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%										
	PER DIEM	NONE		0.00	HR										
	CONSUMABLES - % of ACCT NO. 90			0.5	%										
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%										
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%										
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%										
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%										
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	ACTIVATED CARBON INJECTION SYSTEM													
9.0	COMPRESSED AIR SYSTEM														0
9.1	AIR COMPRESSOR & AUXILIARIES							832,000	0					184,600	1,016,600
	AIR COMPRESSOR	4000 CFM, OIL FREE	EST	2	EA	343000		686,000	0	750.00	1,725	MECH	88.89	153,300	839,300
	DRYERS	DESSICANT TYPE, HEATED AIR	EST	2	EA	59000		118,000	0	115.00	265	MECH	88.89	23,500	141,500
	RECEIVERS	3000 GAL WITH SAFETY RELIEF VALVE AND PRESSURE GAUGE	EST	2	EA	14000		28,000	0	38.00	87	MECH	88.89	7,800	35,800
9.2	PIPING - MECHANICAL							543,100	722,600					2,151,100	3,416,800
	LARGE BORE PIPING	4" CS, SCHEDULE 40, WELDED	EST	2,500	LF		23.0	0	57,500	1.48	4,255	SPNG	94.41	401,700	459,200
	LARGE BORE PIPING	6" CS, SCH 40 WELDED	EST	100	LF		41.7	0	4,200	1.61	185	SPNG	94.41	17,500	21,700
	LARGE BORE PIPING	4" SS, SCHEDULE 40, WELDED	EST	500	LF		68.3	0	34,200	1.82	1,047	SPNG	94.41	98,800	133,000
	LARGE BORE PIPING	6" SS, SCHEDULE 40, WELDED	EST	200	LF		111.0	0	22,200	2.02	465	SPNG	94.41	43,900	66,100
	LARGE BORE PIPING	8" SS, SCHEDULE 40, WELDED	EST	700	LF		179.9	0	125,900	2.49	2,004	SPNG	94.41	189,200	315,100
	SMALL BORE PIPING	2" CS, SCH 80 WELDED, UNDERGROUND WRAPPED	EST	2,500	LF		22.20	0	55,500	1.26	3,623	SPNG	94.41	342,000	397,500

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	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" CS, SCH 80 WELDED	EST	200	LF		19.30	0	3,900	1.16	267	SPNG	94.41	25,200	29,100
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	700	LF		48.80	0	34,200	1.44	1,159	SPNG	94.41	109,400	143,600
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	3,500	LF		33.70	0	118,000	1.32	5,313	SPNG	94.41	501,600	619,600
	VALVE	2" GLOBE, 150# SS, WELDED	EST	100	EA	1,450		145,000	0	5.64	649	SPNG	94.41	61,200	206,200
	VALVE	4" GATE, 150 #, CS, WELDED	EST	10	EA	2,500		25,000	0	7.70	89	SPNG	94.41	8,400	33,400
	VALVE	4" GATE, 150 #, SS, WELDED	EST	10	EA	3,400		34,000	0	9.24	106	SPNG	94.41	10,000	44,000
	VALVE	6" GATE, 150 #, SS, WELDED	EST	2	EA	4,700		9,400	0	12.96	30	SPNG	94.41	2,800	12,200
	VALVE	8" GATE, 150 #, SS, WELDED	EST	14	EA	6,240		87,400	0	15.96	257	SPNG	94.41	24,300	111,700
	VALVE	<2" GLOBE, 150# CS, WELDED	EST	10	EA	450		4,500	0	3.40	39	SPNG	94.41	3,700	8,200
	VALVE	<2" GLOBE, 150# SS, WELDED	EST	300	EA	750	750.00	225,000	225,000	4.08	1,408	SPNG	94.41	132,900	582,900
	VALVE	2" GLOBE, 150# CS, WELDED	EST	15	EA	850		12,800	0	4.20	72	SPNG	94.41	6,800	19,600
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	840	EA		50.00	0	42,000	2.00	1,932	MECH	88.89	171,700	213,700
9.3	AIR COMPRESSOR BUILDING - FOUNDATIONS							0	96,100					194,700	290,800
	EXCAVATION / BACKFILL		EST	950	CY			0	0	0.36	393	EXFD	90.00	35,400	35,400
	REINFORCING		EST	35	TN		1,150.00	0	40,300	20.00	805	REIN	78.27	63,000	103,300
	FORMWORK		EST	1,600	SF		2.50	0	4,000	0.14	258	FORM	99.43	25,600	29,600
	CONCRETE		EST	450	CY		105.00	0	47,300	1.50	776	CONP	79.64	61,800	109,100
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	1,800	LB		2.50	0	4,500	0.06	124	CARP	71.88	8,900	13,400
9.4	AIR COMPRESSOR BUILDING	100' L X 600' W X 20' H						0	510,000					0	510,000
	PREENGINEERED BUILDING INCLUDING H&V AND LIGHTING	SUBCONTRACT PRICE, INCLUDES LABOR	EST	6,000	SF		85	0	510,000	0.00	0	STST	105.71	0	510,000
9.5	LIGHTING/ TRANSFORMERS & PANELS							11,000	10,500					11,400	32,900
	LIGHT FIXTURES		EST	14	EA		750	0	10,500	4.00	64	WIRE	98.84	6,400	16,900
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	1	EA	7500		7,500	0	32.00	37	WIRE	98.84	3,600	11,100
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	1	EA	3500		3,500	0	12.00	14	WIRE	98.84	1,400	4,900
9.6	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE ARE INCLUDED IN SECTION 1.0 - ID FANS													
9.7	GROUNDING							4,500	0					10,900	15,400
	GROUND ROD	3/4" - 20' LONG EACH	EST	4	EA	150		600	0	4.00	18	WIRE	98.84	1,800	2,400
	500 MCM	BARE COPPER WIRE	EST	500	FT	7.65		3,800	0	0.12	69	WIRE	98.84	6,800	10,600
	CADWELD		EST	8	EA	15		100	0	2.00	18	WIRE	98.84	1,800	1,900
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	4.00	5	WIRE	98.84	500	500
9.8	DUCT BANK	3-5" & 3-3" CONDUITS	EST	150	LF		132.94	0	19,900	3.31	570	ECND	75.97	43,300	63,200
9.9	COMMUNICATIONS		EST	1	LT		34,000.00	0	34,000	229.00	263	WIRE	98.84	26,000	60,000
9.10	LIGHTNING PROTECTION		EST	1	LT		10,500.00	0	10,500	66.00	76	WIRE	98.84	7,500	18,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							1,390,600	1,403,600		28,467			2,629,500	5,423,700
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										424,062
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						2,475		83.48	207,000	207,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						3,094			217,062	217,062

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				FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED										Date:	9/29/2010
				ORDER OF MAGNITUDE COST ESTIMATE										Preparer:	MNO
		Cost Type:												Reviewer:	JMK
		Est=Estimated												Approver:	PEF
		Allow.=Allowance								Wage Rates Based on:		BIG SANDY			
		Q=Vendor Quote								Labor Productivity =		1.15			

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	PER DIEM	NONE		0.00	HR						34,036			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				7,018					13,148	20,166
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				70,180						70,180
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			69,530							69,530
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				70,180					131,475	201,655
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				210,540					394,425	604,965
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							69,500	357,900					963,100	1,390,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	COMPRESSED AIR SYSTEM						1,460,100	1,761,500					3,592,600	6,814,300
10.0	SERVICE WATER SYSTEM														
10.1	PUMPS	INCLUDES SELF-CLEANING STRAIINERS						260,000	0					110,500	370,500
	SERVICE WATER PUMPS	4000 GPM, 200 HP	EST	2	EA	60000		120,000	0	240.00	552	MECH	88.89	49,100	169,100
	RIVER WATER BOOSTER PUMPS	4000 GPM, 100 HP	EST	2	EA	48000		96,000	0	220.00	506	MECH	88.89	45,000	141,000
	SELF-CLEANING STRAIINERS	DUPLEX, 4000 GPM	EST	2	EA	22000		44,000	0	80.00	184	MECH	88.89	16,400	60,400
10.2	PIPING - MECHANICAL		EST	1	LT			504,300	1,813,000					3,377,200	5,694,500
	LARGE BORE PIPING	4" SS, SCHEDULE 40, WELDED	EST	2,600	LF		68.3	0	177,600	1.82	5,442	SPNG	94.41	513,800	691,400
	LARGE BORE PIPING	6" SS, SCHEDULE 40, WELDED	EST	2,800	LF		111.0	0	310,800	2.02	6,504	SPNG	94.41	614,100	924,900
	LARGE BORE PIPING	8" SS, SCHEDULE 40, WELDED	EST	1,800	LF		179.9	0	323,800	2.49	5,154	SPNG	94.41	486,600	810,400
	LARGE BORE PIPING	12" SS, SCHEDULE 40, WELDED	EST	2,000	LF		353.8	0	707,600	4.12	9,476	SPNG	94.41	894,600	1,602,200
	LARGE BORE PIPING	14" HDPE (UNDERGROUND)	EST	1,500	LF		65.5	0	98,300	1.02	1,760	SPNG	94.41	166,100	264,400
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	1,500	LF		48.80	0	73,200	1.44	2,484	SPNG	94.41	234,500	307,700
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	100	LF		33.70	0	3,400	1.32	152	SPNG	94.41	14,300	17,700
	VALVE	4" GATE, 150 #, SS, WELDED	EST	50	EA	3,400		170,000	0	9.24	531	SPNG	94.41	50,200	220,200
	VALVE	6" GATE, 150 #, SS, WELDED	EST	35	EA	4,700		164,500	0	12.96	522	SPNG	94.41	49,200	213,700
	VALVE	8" GATE, 150 #, SS, WELDED	EST	20	EA	6,240		124,800	0	15.96	367	SPNG	94.41	34,700	159,500
	VALVE	14" BFLY 150# SS, FLANGED	EST	6	EA	7,500		45,000	0	19.76	136	SPNG	94.41	12,900	57,900
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	900	EA		125.00	0	112,500	3.00	3,105	MECH	88.89	276,000	388,500
	EXCAVATION / BACKFILL	FOR UNDERGROUND PIPING	EST	1,250	CY			0	0	0.20	288	EXFD	90.00	25,900	25,900
	BEDDING	FOR UNDERGROUND PIPING	EST	167	CY		35.0	0	5,800	0.25	48	EXFD	90.00	4,300	10,100
10.3	PIPING - FIRE PROTECTION SYSTEM		EST	1	LT			434,900	415,600	89.55	10,821	0	1207.47	1,014,300	1,864,800
	LARGE BORE PIPING	4" CS, SCHEDULE 40, WELDED	EST	400	LF		24.4	0	9,800	0.73	336	SPNG	94.41	31,700	41,500
	LARGE BORE PIPING	8" CS, SCHEDULE 40, WELDED	EST	600	LF		64.2	0	38,500	0.98	676	SPNG	94.41	63,800	102,300
	LARGE BORE PIPING	12" CS, SCHEDULE 40, WELDED	EST	300	LF		174.6	0	52,400	1.43	493	SPNG	94.41	46,600	99,000
	LARGE BORE PIPING	20" HDPE (UNDERGROUND)	EST	4,000	LF		72.8	0	291,200	1.45	6,670	SPNG	94.41	629,700	920,900
	VALVE	4" GATE, 150 #, CS, WELDED	EST	15	EA	2,500		37,500	0	7.70	133	SPNG	94.41	12,500	50,000
	VALVE	8" GATE, 150 #, CS, WELDED	EST	12	EA	4,800		57,600	0	13.30	184	SPNG	94.41	17,300	74,900
	VALVE	10" GATE, 150 #, CS, WELDED	EST	8	EA	6,500		52,000	0	16.10	148	SPNG	94.41	14,000	66,000
	VALVE	10" GATE WITH PIV, 150 #, CS, WELDED	EST	30	EA	7,000		210,000	0	17.71	611	SPNG	94.41	57,700	267,700
	VALVE	12" GATE, 150 #, CS, WELDED	EST	4	EA	8,200		32,800	0	19.20	88	SPNG	94.41	8,300	41,100
	FIRE HYDRANTS		EST	30	EA	1,500		45,000	0	8.00	276	MECH	88.89	24,500	69,500
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	108	EA		75.00	0	8,100	2.50	311	MECH	88.89	27,700	35,800
	EXCAVATION / BACKFILL	FOR UNDERGROUND PIPING	EST	3,333	CY			0	0	0.20	767	EXFD	90.00	69,000	69,000
	BEDDING	FOR UNDERGROUND PIPING	EST	444	CY		35.0	0	15,600	0.25	128	EXFD	90.00	11,500	27,100
10.4	TANKS							0	150,000					0	150,000
	SERVICE WATER TANKS	25,000 GAL, CS, 16' DIA X 20' - SUBCONTRACT PRICE INCLUDES LABOR WITH EXTERIOR PRIMED AND FIELD PAINTED	EST	2	EA		75000.0	0	150,000	0.00	0	TANK	89.16	0	150,000
10.5	SERVICE WATER TANK & PUMP - FOUNDATIONS							0	69,800					117,200	187,000
	EXCAVATION / BACKFILL		EST	0	CY			0	0	0.36	0	EXFD	90.00	0	0
	REINFORCING		EST	35.0	TN		1,150.00	0	40,300	20.00	805	REIN	78.27	63,000	103,300
	FORMWORK		EST	1,100	SF		2.50	0	2,800	0.14	177	FORM	99.43	17,600	20,400
	CONCRETE		EST	100	CY		105.00	0	10,500	1.50	173	CONP	79.64	13,700	24,200
	MUD MAT		EST	130	CY		105.00	0	13,700	1.50	224	CONP	79.64	17,900	31,600
	EMBEDDED STEEL		EST	1,000	LB		2.50	0	2,500	0.06	69	CARP	71.88	5,000	7,500

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Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
10.6	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE ARE INCLUDED IN SECTION 1.0 - ID FANS													
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							1,199,200	2,448,400		49,479			4,619,200	8,266,800
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										736,288
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						4,303		83.48	359,000	359,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						5,378			377,288	377,288
	PER DIEM	NONE		0.00	HR						59,160			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				12,242					23,096	35,338
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				122,420						122,420
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			59,960							59,960
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				122,420					230,960	353,380
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				367,260					692,880	1,060,140
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							60,000	624,300					1,683,200	2,367,500
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SERVICE WATER SYSTEM						1,259,200	3,072,700					6,302,400	10,634,300
11.0	POTABLE WATER SYSTEM														
11.1	PUMPS							30,000	0					18,400	48,400
	POTABLE WATER BOOSTER PUMPS	50 GPM, 5 HP	EST	2	EA	15000		30,000	0	90.00	207	MECH	88.89	18,400	48,400
11.2	PIPING - MECHANICAL		EST	1	LT			99,500	258,000					737,700	1,095,200
	LARGE BORE PIPING	4" SS, SCHEDULE 40, WELDED	EST	1,000	LF		68.3	0	68,300	1.82	2,093	SPNG	94.41	197,600	265,900
	LARGE BORE PIPING	6" SS, SCHEDULE 40, WELDED	EST	800	LF		111.0	0	88,800	2.02	1,858	SPNG	94.41	175,500	264,300
	LARGE BORE PIPING	8" HDPE (UNDERGROUND)	EST	2,000	LF		14.1	0	28,200	0.83	1,909	SPNG	94.41	180,200	208,400
	SMALL BORE PIPING	2" D.I. SCH 80 (UNDERGROUND)	EST	500	LF		15.00	0	7,500	0.30	173	SPNG	94.41	16,300	23,800
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	200	LF		33.70	0	6,700	1.32	304	SPNG	94.41	28,700	35,400
	SMALL BORE PIPING	2" COPPER	EST	300	LF		28.50	0	8,600	0.43	148	SPNG	94.41	14,000	22,600
	VALVE	2" GLOBE, 150# CS, WELDED	EST	10	EA	850		8,500	0	4.20	48	SPNG	94.41	4,600	13,100
	VALVE	<2" GLOBE, 150# SS, WELDED	EST	8	EA	750	750.00	6,000	6,000	4.08	38	SPNG	94.41	3,500	15,500
	VALVE	4" GATE, 150 #, SS, WELDED	EST	20	EA	4,250		85,000	0	9.24	213	SPNG	94.41	20,100	105,100
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	150	EA		60.00	0	9,000	2.50	431	MECH	88.89	38,300	47,300
	EXCAVATION / BACKFILL	FOR UNDERGROUND PIPING	EST	1,667	CY			0	0	0.20	383	EXFD	90.00	34,500	34,500
	BEDDING	FOR UNDERGROUND PIPING	EST	222	CY		35.0	0	7,800	0.25	64	EXFD	90.00	5,800	13,600
11.3	TANKS							0	17,000					0	17,000
	POTABLE WATER TANK	1,000 GAL, SS, 5' DIA X 8' - SUBCONTRACT PRICE INCLUDES LABOR	EST	2	EA		8500.0	0	17,000	0.00	0	TANK	89.16	0	17,000
11.4	POTABLE WATER TANK & PUMP - FOUNDATIONS							0	10,100					18,600	28,700
	EXCAVATION / BACKFILL		EST	40	CY			0	0	0.36	17	EXFD	90.00	1,500	1,500
	REINFORCING		EST	6.0	TN		1,150.00	0	6,900	20.00	138	REIN	78.27	10,800	17,700
	FORMWORK		EST	150	SF		2.50	0	400	0.14	24	FORM	99.43	2,400	2,800
	CONCRETE		EST	24	CY		105.00	0	2,500	1.50	41	CONP	79.64	3,300	5,800
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	120	LB		2.50	0	300	0.06	8	CARP	71.88	600	900

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Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
11.5	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE ARE INCLUDED IN SECTION 1.0 - ID FANS													
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							129,500	258,000		8,097			756,100	1,143,600
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										120,741
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						704		83.48	59,000	59,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						880			61,741	61,741
	PER DIEM	NONE		0.00	HR						9,681			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				1,290					3,781	5,071
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				12,900						12,900
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			6,475							6,475
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				12,900					37,805	50,705
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				38,700					113,415	152,115
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							6,500	65,800					275,700	348,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	POTABLE WATER SYSTEM						136,000	323,800					1,031,800	1,491,600
12.0	FGD SUBSTATION														
12.1	TRANSFORMERS							1,670,000	0					282,200	1,952,200
	FGD SUBSTATION-AUX TRANSFORMERS: 11A & 11B	138KV-13.8KV- 2 WINDING XFMR	EST	2	EA	750000		1,500,000	0	1250.00	2,875	EHEA	79.16	227,600	1,727,600
	TRANSFORMERS: 32F, 32G	13.8KV-480V,3PHASE, 2 WINDING CAST COIL	EST	2	EA	85000		170,000	0	300.00	690	EHEA	79.16	54,600	224,600
12.2	TRANSFORMER PDC	15W X 45' X 10'H. SUBCONTRACT PRICE INCLUDES LABOR	EST	675.0	SF	300.0		202500.0	0.0	0.0	0.0	STST	105.71	0.0	202500.0
12.3	TRANSFORMER PDC - FOUNDATION							0	73,200					146,900	220,100
	EXCAVATION / BACKFILL		EST	700	CY			0	0	0.36	290	EXFD	90.00	26,100	26,100
	REINFORCING		EST	26	TN		1,150.00	0	30,200	20.00	604	REIN	78.27	47,300	77,500
	FORMWORK		EST	1,100	SF		2.50	0	2,800	0.14	177	FORM	99.43	17,600	20,400
	CONCRETE		EST	300	CY		105.00	0	31,500	1.50	518	CONP	79.64	41,200	72,700
	MUD MAT		EST	35	CY		105.00	0	3,700	1.50	60	CONP	79.64	4,800	8,500
	EMBEDDED STEEL		EST	2,000	LB		2.50	0	5,000	0.06	138	CARP	71.88	9,900	14,900
12.4	138KV MAIN FEEDER & TERMINATIONS							264,000	0					254,000	518,000
	138KV STRUCTURE AND SWITCH	STRUCTURE STEEL	EST	1	LT	103500		103,500	0	450.00	518	STST	105.71	54,700	158,200
	138KV MAIN FEEDER	1/C 750KCMIL- 138KV	EST	2,100	LF	51.75		108,700	0	0.69	1,671	WIRE	98.84	165,200	273,900
	138KV ACCESSORIES		EST	1	LT	51750		51,800	0	300.00	345	WIRE	98.84	34,100	85,900
12.5	SWITCHGEAR							870,000	0					36,400	906,400
	13.8 KV MEDIUM VOLTAGE (11A/B)	PRICE PER SECTION	EST	8	EA	85000		680,000	0	40.00	368	EHEA	79.16	29,100	709,100
	480V LOW VOLTAGE (32F/G)	PRICE PER SECTION	EST	5	EA	38000		190,000	0	16.00	92	EHEA	79.16	7,300	197,300
12.6	MCC	480V MCC, PER LINE UP	EST	2	EA	30000		60,000	0	16.00	37	WIRE	98.84	3,600	63,600
12.7	CABLE BUS							181,100	18,000					290,200	489,300
	15KV CABLE BUS DUCT	BUS DUCT ONLY	EST	200	FT	442		88,400	0	3.30	759	WIRE	98.84	75,000	163,400
	480V CABLE BUS DUCT	BUS DUCT ONLY	EST	150	FT	618		92,700	0	10.30	1,777	WIRE	98.84	175,600	268,300

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	CABLE BUS TERMINATION	500MCM - 15KV TERMINATIONS	EST	4	EA		1,800.00	0	7,200	33.00	152	WIRE	98.84	15,000	22,200
	CABLE BUS TERMINATION	750MCM- 480V TERMINATIONS	EST	4	EA		2,700.00	0	10,800	54.00	248	WIRE	98.84	24,600	35,400
12.8	PANELS - RELAY							100,000	0					9,100	109,100
	RELAY PANELS & INTERLOCK	ALLOWANCE	EST	1	LT	100000		100,000	0	80.00	92	WIRE	98.84	9,100	109,100
12.9	MIMIC PANELS		EST	1	EA	17500		17,500	0	40.00	46	WIRE	98.84	4,500	22,000
12.10	EMERGENCY POWER SYSTEM							108,300	0					24,400	132,700
	DC PANEL BOADRD		EST	1	EA	15500		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	UPS PANEL BOARDS		EST	1	EA	15500		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	SATELLITE UPS		EST	1	EA	41200		41,200	0	16.00	18	WIRE	98.84	1,800	43,000
	VRLA BATTERIES	8HR-400A, 480V	EST	1	LT	36050		36,100	0	120.00	138	WIRE	98.84	13,600	49,700
12.11	GROUNDING							23,300	0					59,100	82,400
	GROUND ROD	3/4" - 20' LONG EACH	EST	16	EA	150		2,400	0	4.00	74	WIRE	98.84	7,300	9,700
	500 MCM	BARE COPPER WIRE	EST	2,600	FT	7.65		19,900	0	0.12	359	WIRE	98.84	35,500	55,400
	CADWELD		EST	64	EA	15		1,000	0	2.00	147	WIRE	98.84	14,500	15,500
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	16.00	18	WIRE	98.84	1,800	1,800
12.12	LIGHTING/ TRANSFORMERS & PANELS							26,000	30,000					29,500	85,500
	LIGHT FIXTURES		EST	40	EA		750	0	30,000	4.00	184	WIRE	98.84	18,200	48,200
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	1	EA	10000		10,000	0	40.00	46	WIRE	98.84	4,500	14,500
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	1	EA	7500		7,500	0	32.00	37	WIRE	98.84	3,600	11,100
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	1	EA	5000		5,000	0	16.00	18	WIRE	98.84	1,800	6,800
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	1	EA	3500		3,500	0	12.00	14	WIRE	98.84	1,400	4,900
12.13	OUTDOOR LIGHTING	NEW AUX YARD LIGHTING - ALLOWANCE	EST	1	LT	25000		25,000	0	500.00	575	WIRE	98.84	56,800	81,800
12.14	RACEWAY, CABLE TRAY, & CONDUIT							0	390,600					1,918,600	2,309,200
	12" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,250	LF		18.25	0	22,800	1.10	1,581	WIRE	98.84	156,300	179,100
	18" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	750	LF		21.50	0	16,100	1.45	1,251	WIRE	98.84	123,600	139,700
	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	2,200	LF		27.10	0	59,600	1.75	4,428	WIRE	98.84	437,600	497,200
	36" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	600	LF		30.30	0	18,200	1.95	1,346	WIRE	98.84	133,000	151,200
	5" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,000	LF		61.00	0	61,000	1.13	1,296	WIRE	98.84	128,100	189,100
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,800	LF		31.00	0	55,800	0.81	1,670	WIRE	98.84	165,100	220,900
	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	2,000	LF		21.50	0	43,000	0.65	1,484	WIRE	98.84	146,600	189,600
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	3,000	LF		9.25	0	27,800	0.35	1,214	WIRE	98.84	120,000	147,800
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	3,700	LF		7.15	0	26,500	0.28	1,208	WIRE	98.84	119,400	145,900
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	6,200	LF		4.44	0	27,500	0.24	1,704	WIRE	98.84	168,400	195,900
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	10,000	LF		3.23	0	32,300	0.19	2,231	WIRE	98.84	220,500	252,800
12.15	DUCT BANK							0	26,200	0.05	0			54,300	80,500
	UNDERGROUND SURVEY FOR NEW DUCT BANK RUN	MAIN FEEDER BETWEEN EXISTING SCR SUBSTATION TO FGD AUX XFMR	EST	200	LF			0	0	0.80	184	ECND	75.97	14,000	14,000
	4' X 4' DUCT BANK (138KV SCR TO FGD AUX XFMR SUBSTATION)	6 - 6" PVC	EST	40	LF		375	0	15,000	6.25	288	ECND	75.97	21,800	36,800
	DUCT BANK WITH 6-5" & 4-3" CONDUITS	2.38' H X 4' W	EST	50	LF		223.02	0	11,200	4.24	244	ECND	75.97	18,500	29,700
12.16	HIGH VOLTAGE POWER CABLE & TERMINATION	1/C # 500KCMIL-15KV	EST	3,000	LF		9.27	0	27,800	0.23	794	WIRE	98.84	78400	106,200
12.17	LOW VOLTAGE POWER CABLE & TERMINATION							0	263,700		0			649,600	913,300
	3/C # 500KCMIL- 600V		EST	7,000	LF		26.12	0	182,800	0.69	5,555	WIRE	98.84	549000	731,800
	#4/0 - #12 AWG-600V		EST	11,200	LF		7.22	0	80,900	0.08	1,018	WIRE	98.84	100,600	181,500
12.18	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	EST	6,800	LF		3.20	0	21,800	0.08	618	WIRE	98.84	61,100	82,900
12.19	FOUNDATION FOR AUX TRANSFORMER							0	70,200					205,400	275,600
	EXCAVATION / BACKFILL		EST	1,000	CY			0	0	0.36	414	EXFD	90.00	37,300	37,300
	REINFORCING		EST	20.0	TN		1,150.00	0	23,000	20.00	460	REIN	78.27	36,000	59,000
	FORMWORK		EST	5,000	SF		2.50	0	12,500	0.14	805	FORM	99.43	80,000	92,500
	CONCRETE		EST	190	CY		105.00	0	20,000	1.50	328	CONP	79.64	26,100	46,100

				AEP										Estimate No.:	30720C
				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED										Date:	9/29/2010
				ORDER OF MAGNITUDE COST ESTIMATE										Preparer:	MNO
		Cost Type:												Reviewer:	JMK
		Est=Estimated												Approver:	PEF
		Allow.=Allowance								Wage Rates Based on:		BIG SANDY			
		Q=Vendor Quote								Labor Productivity =		1.15			

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	MUD MAT		EST	45	CY		105.00	0	4,700	1.50	78	CONP	79.64	6,200	10,900
	EMBEDDED STEEL		EST	4,000	LB		2.50	0	10,000	0.06	276	CARP	71.88	19,800	29,800
12.20	FIREWALL FOR TRANSFORMERS							0	3,000					5,200	8,200
	REINFORCING		EST	1.0	TN		1,150.00	0	1,200	20.00	23	REIN	78.27	1,800	3,000
	FORMWORK		EST	80	SF		2.50	0	200	0.14	13	FORM	99.43	1,300	1,500
	CONCRETE		EST	15	CY		105.00	0	1,600	1.50	26	CONP	79.64	2,100	3,700
12.21	COMMUNICATIONS		EST	1	LT		17,000.00	0	17,000	114.00	131	WIRE	98.84	13,000	30,000
12.22	LIGHTNING PROTECTION		EST	1	LT		4,000.00	0	4,000	18.00	21	WIRE	98.84	2,000	6,000
12.23	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							3,547,700	953,500		43,933			4,191,300	8,692,500
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										653,995
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						3,820		83.48	319,000	319,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						4,775			334,995	334,995
	PER DIEM	NONE		0.00	HR						52,529			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				4,768					20,957	25,724
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				47,675						47,675
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			177,385							177,385
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				47,675					209,565	257,240
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				143,025					628,695	771,720
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							177,400	243,100					1,513,212	1,933,700
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FGD SUBSTATION						3,725,100	1,196,600					5,704,500	10,626,200
13.0	FGD DCS SYSTEM	DRY AND WET FGD COMBINED													0
13.1	DCS	7000 I/O POINTS	EST	7,000	EA	750		5,250,000	0	2.50	20,125	INEL	88.43	1,779,700	7,029,700
13.2	DCS - VENDOR FIELD SUPPORT	300 MANDAYS @ $1500/DAY - SHOWN AS SUBCONTRACT COST	EST	300	DAYS	1500		450,000	0		0	INEL	88.43	0	450,000
13.3	LOCALLY MOUNTED INSTRUMENTS							0	1,537,300					2,016,100	3,553,400
	LOCALLY MOUNTED INSTRUMENTS		EST	650	EA		2200	0	1,430,000	20.00	14,950	INEL	88.43	1,322,000	2,752,000
	INSTRUMENT RACKS	INCLUDED WITH INSTRUMENTS													
	INSTRUMENT TUBING	ALLOWANCE	EST	19,500	LF		5.5	0	107,300	0.35	7,849	INEL	88.43	694,100	801,400
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							5,700,000	1,537,300		42,924			3,795,800	11,033,100
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										639,299
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						3,733		83.48	312,000	312,000

				AEP										Estimate No.:	30720C
				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED										Date:	9/29/2010
				ORDER OF MAGNITUDE COST ESTIMATE										Preparer:	MNO
		Cost Type:												Reviewer:	JMK
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Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						4,666			327,299	327,299
	PER DIEM	NONE		0.00	HR						51,322			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				7,687					18,979	26,666
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				76,865						76,865
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			285,000							285,000
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				76,865					189,790	266,655
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				230,595					569,370	799,965
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							285,000	392,000					1,417,400	2,094,400
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FGD DCS SYSTEM						5,985,000	1,929,300					5,213,200	13,127,500
14.0	CEM SYSTEM														0
14.1	CEM	PROVIDED BY AEP		1	LT	1260000	540000	1,260,000	540,000					310,000	2,110,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							1,260,000	540,000					310,000	2,110,000
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				81,000						316,500
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														316,500
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	CEM SYSTEM													2,426,500
15.0	TRUCK & RAIL INFRASTRUCTURE														0
15.1	EXISTING RAILROAD IMPROVEMENTS	FOR FULL RAILCAR STORAGE TRACK IMPROVEMENTS - 3250 LF						0	660,200					689,200	1,349,400
	REMOVE AND REPLACE 8" OF THE BALLAST	INCLUDES DISPOSAL OF REMOVED BALLAST	EST	3,250	LF		12.25	0	39,800	0.16	598	RRTK	88.26	52,800	92,600
	REPLACE 75% OF THE EXISTING WOODEN RAILROAD TIES	INCLUDES TIE PLATES, SPIKES AND BOLTS	EST	1,950	LF		80	0	156,000	0.85	1,906	RRTK	88.26	168,200	324,200
	REMOVE THE EXISTING RAIL AND REPLACE WITH 132-LB RAIL		EST	3,250	LF		87.5	0	284,400	1.05	3,924	RRTK	88.26	346,400	630,800
	REPLACE EXISTING #8 TURNOUTS		EST	4	EA		45000	0	180,000	300.00	1,380	RRTK	88.26	121,800	301,800
15.2	EXISTING RAILROAD IMPROVEMENTS	FOR LOOP TRACK UPGRADE - 5000 LF						0	1,008,800					1,055,600	2,064,400
	REMOVE AND REPLACE 8" OF THE BALLAST	INCLUDES DISPOSAL OF REMOVED BALLAST	EST	5,000	LF		12.25	0	61,300	0.16	920	RRTK	88.26	81,200	142,500
	REPLACE 75% OF THE EXISTING WOODEN RAILROAD TIES	INCLUDES TIE PLATES, SPIKES AND BOLTS	EST	3,000	LF		80	0	240,000	0.85	2,933	RRTK	88.26	258,800	498,800
	REMOVE THE EXISTING RAIL AND REPLACE WITH 132-LB RAIL		EST	5,000	LF		87.5	0	437,500	1.05	6,038	RRTK	88.26	532,900	970,400
	REPLACE EXISTING #8 TURNOUTS		EST	6	EA		45000	0	270,000	300.00	2,070	RRTK	88.26	182,700	452,700
15.3	NEW RAILROAD TRACK	1400 LF. INCLUDES, 132LB RAIL, 7" TIMBERS, TIE PLATES, SPIKES, BOLTS, 12: SUBBALLAST, 12" BALLAST, 12 OZ/SY GEOTEXTILE MEMBRANE, 12" SUBGRADE PREP	EST	1,400	LF		180	0	252,000	1.50	2,415	RRTK	88.26	213,100	465,100
15.4	FIELD FABRICATED TURNOUTS	#8 TURNOUT	EST	2	EA		45000	0	90,000	270.00	621	RRTK	88.26	54,800	144,800
15.5	RAIL SCALE	SUBCONTRACT COST, INCLUDES FOUNDATIONS	EST	2	EA	106250		212,500	0	0.00	0	MECH	88.89	0	212,500
15.6	NEW CONCRETE ENCASEMENT	OVER AND AROUND DUCT BANK CONNECTING THE PLANT TO SWITCHYARD. THIS IS UNDER THE NEW TRACKWORK EXTENSION						0	33,200					71,400	104,600
	EXCAVATION / BACKFILL		EST	170	CY			0	0	0.36	70	EXFD	90.00	6,300	6,300
	REINFORCING		EST	13	TN		1,150.00	0	14,400	20.00	288	REIN	78.27	22,500	36,900
	FORMWORK		EST	1,350	SF		2.50	0	3,400	0.14	217	FORM	99.43	21,600	25,000
	CONCRETE		EST	113	CY		105.00	0	11,900	1.50	195	CONP	79.64	15,500	27,400
	MUD MAT		EST	20	CY		105.00	0	2,100	1.50	35	CONP	79.64	2,700	4,800

				AEP											Estimate No.:	30720C
				BIG SANDY UNIT 2											Project No.:	12721-000
				FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED											Date:	9/29/2010
				ORDER OF MAGNITUDE COST ESTIMATE											Preparer:	MNO
		Cost Type:													Reviewer:	JMK
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Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	EMBEDDED STEEL		EST	567	LB		2.50	0	1,400	0.06	39	CARP	71.88	2,800	4,200
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							212,500	2,044,200		23,648			2,084,100	4,340,800
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										352,321
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						2,056		83.48	172,000	172,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						2,570			180,321	180,321
	PER DIEM	NONE		0.00	HR						28,275			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				10,221					10,421	20,642
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				102,210						102,210
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			10,625							10,625
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				102,210					104,205	206,415
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				306,630					312,615	619,245
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							10,600	521,300					779,600	1,311,500
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	TRUCK & RAIL INFRASTRUCTURE						223,100	2,565,500					2,863,700	5,652,300
16.0	SITE IMPROVEMENTS - CIVIL WORK														
16.1	SITE GRADING							0	0					676,000	676,000
	CUT		EST	20,700	CY			0	0	0.08	1,904	ETWK	177.49	338,000	338,000
	FILL		EST	20,700	CY			0	0	0.08	1,904	ETWK	177.49	338,000	338,000
16.2	ROADS & SURFACING							0	1,811,000					2,387,200	4,198,200
	20' WIDE ACCESS ROAD	INCLUDES: 1.5" ASPHALT SURFACE COURSE 1.5" ASPHALT BINDER COURSE 12" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST	5,900	SY		47	0	277,300	0.40	2,714	PBIT	90.25	244,900	522,200
	24' WIDE ACCESS ROAD	INCLUDES: 1.5" ASPHALT SURFACE COURSE 1.5" ASPHALT BINDER COURSE 12" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST	14,200	SY		47	0	667,400	0.40	6,532	PBIT	90.25	589,500	1,256,900
	24' WIDE ACCESS ROAD AGGREGATE SHOULDERS	INCLUDES: 12" BASE COURSE 10 OZ/SY GEOTEXTILE	EST	1,800	SY		17.5	0	31,500	0.10	207	BCSE	105.94	21,900	53,400
	LIME UNLOADING AREA	INCLUDES: 1.5" ASPHALT SURFACE COURSE 1.5" ASPHALT BINDER COURSE 12" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST	1,300	SY		47	0	61,100	0.40	598	PBIT	90.25	54,000	115,100
	ASH LOADING AREA - SURFACING	12" REINFORCED CONCRETE	EST	750	SY		96	0	72,000	1.60	1,380	CONP	79.64	109,900	181,900
	ASH LOADING AREA	6" CONCRETE CURB	EST	330	LF		6.5	0	2,100	0.96	364	COND	70.04	25,500	27,600
	CONCRETE PAD BUILDING ENTRANCES	10" REINFORCED CONCRETE	EST	590	SY		80	0	47,200	1.50	1,018	CONP	79.64	81,100	128,300

				AEP										Estimate No.:	30720C
				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED										Date:	9/29/2010
				ORDER OF MAGNITUDE COST ESTIMATE										Preparer:	MNO
		Cost Type:												Reviewer:	JMK
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	AGGREGATE AREA SURFACING	INCLUDES: 6" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST	34,700	SY		9	0	312,300	0.17	6,784	BCSE	105.94	718,700	1,031,000
	LIMESTONE HANDLING & STORAGE							0	340,100					541,700	881,800
	CUT	CUT AND SPREAD IN COAL PILE AREA	EST	5,000	CY			0	0	0.40	2,300	ETWK	177.49	408,200	408,200
	FILL	FROM AN OFF SOURCE FILL	EST	13,100	CY		16	0	209,600	0.04	603	ETWK	177.49	107,000	316,600
	AREA SURFACING	INCLUDES: 18" CRUSHED AGGREGATE 10 OZ/SY GEOTEXTILE	EST	14,500	SY		9	0	130,500	0.02	250	BCSE	105.94	26,500	157,000
16.3	RAILROAD CROSSING	50' WIDE CROSSING THREE TRACKS - CUSTOM BUILT	EST	1	EA		120000	0	120,000	1500.00	1,725	RRTK	88.26	152,200	272,200
16.4	NEW CONCRETE ENCASEMENT	16' X 4' X 40' - FOR EXISTING ASH PIPE HAUL ROAD CROSSING						0	144,300					286,600	430,900
	EXCAVATION / BACKFILL		EST	1,100	CY			0	0	0.36	455	EXFD	90.00	41,000	41,000
	REINFORCING		EST	100.0	TN		1,150.00	0	115,000	20.00	2,300	REIN	78.27	180,000	295,000
	FORMWORK		EST	2,000	SF		2.50	0	5,000	0.14	322	FORM	99.43	32,000	37,000
	CONCRETE		EST	200	CY		105.00	0	21,000	1.50	345	CONP	79.64	27,500	48,500
	MUD MAT		EST	8	CY		105.00	0	800	1.50	14	CONP	79.64	1,100	1,900
	EMBEDDED STEEL		EST	1,000	LB		2.50	0	2,500	0.06	69	CARP	71.88	5,000	7,500
16.5	TRUCK WASH AREA - CONCRETE PAD							0	47,300					83,100	130,400
	EXCAVATION / BACKFILL		EST	190	CY			0	0	0.36	79	EXFD	90.00	7,100	7,100
	REINFORCING		EST	20	TN		1,150.00	0	23,000	20.00	460	REIN	78.27	36,000	59,000
	FORMWORK		EST	510	SF		2.50	0	1,300	0.14	82	FORM	99.43	8,200	9,500
	CONCRETE		EST	170	CY		105.00	0	17,900	1.50	293	CONP	79.64	23,400	41,300
	MUD MAT		EST	25	CY		105.00	0	2,600	1.50	43	CONP	79.64	3,400	6,000
	EMBEDDED STEEL		EST	1,000	LB		2.50	0	2,500	0.06	69	CARP	71.88	5,000	7,500
16.6	TRUCK SCALE & CONCRETE APPROACH							170,000	27,300					92,000	289,300
	TRUCK SCALE	SUBCONTRACT COST, INCLUDES FOUNDATIONS AND LABOR	EST	2	EA	85000		170,000	0	0.00	0	MECH	88.89	0	170,000
	CONCRETE APPROACH FOR TRUCK SCALE	20' x 40' - TOTAL FOR TWO SCALES	EST	119	CY		230.0	0	27,300	7.50	1,022	EXFD	90.00	92,000	119,300
16.7	PROCESS WATER STORAGE BASIN							60,000	110,400					312,600	483,000
	SAND EXCAVATION		EST	4,000	CY			0	0	0.03	120	ETWK	177.49	21,200	21,200
	ROCK EXCAVATION	ASSUME ROCK IS RIPPABLE	EST	500	CY			0	0	0.05	28	ETWK	177.49	4,900	4,900
	BASIN SURFACING	6" REINFORCED CONCRETE	EST	2,300	SY		48	0	110,400	1.20	3,174	CONP	79.64	252,800	363,200
	PUMPS	500 GPM, 75 PSIG	EST	2	EA	30000		60,000	0	165.00	380	MECH	88.89	33,700	93,700
16.8	PROCESS WATER STORAGE BASIN PUMP STRUCTURE - CONCRETE							0	47,000					105,400	152,400
	EXCAVATION / BACKFILL		EST	0	CY			0	0	0.36	0	EXFD	90.00	0	0
	REINFORCING		EST	7	TN		1,150.00	0	8,100	20.00	161	REIN	78.27	12,600	20,700
	FORMWORK		EST	3,968	SF		2.50	0	9,900	0.14	639	FORM	99.43	63,500	73,400
	CONCRETE		EST	76	CY		105.00	0	8,000	1.50	131	CONP	79.64	10,400	18,400
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	380	LB		2.50	0	1,000	0.06	26	CARP	71.88	1,900	2,900
	PROCESS WATER STORAGE BASIN PUMP STRUCTURE - GALLERY		EST	5	TN		4,000.00	0	20,000	35.00	201	GALL	84.61	17,000	37,000
16.9	STORMWATER DRAINAGE TRENCH	2' W X 3' DEEP CAST-IN-PLACE CONCRETE TRENCH W/REINFORCING & HS-20 RATED GRATE COVERS	EST	4,400	LF		135	0	594,000	1.50	7,590	CONP	79.64	604,500	1,198,500
16.10	STORMWATER RUNOFF POND							0	15,000					122,600	137,600
	SAND EXCAVATION		EST	11,000	CY			0	0	0.03	329	ETWK	177.49	58,400	58,400

AEP

BIG SANDY UNIT 2

FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED

ORDER OF MAGNITUDE COST ESTIMATE

Estimate No.: 30720C
Project No.: 12721-000
Date: 9/29/2010
Preparer: MNO
Reviewer: JMK
Approver: PEF

Cost Type:
Est=Estimated
Allow.=Allowance
Q=Vendor Quote

Wage Rates Based on: BIG SANDY
Labor Productivity = 1.15

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	ROCK EXCAVATION	ASSUME ROCK IS RIPPABLE	EST	3,700	CY			0	0	0.05	204	ETWK	177.49	36,300	36,300
	4" TOPSOIL		EST	650	CY		14	0	9,100	0.03	22	LAND	61.45	1,400	10,500
	GRASS SEEDING, FERTILIZER AND MULCH		EST	1.2	AC		4930	0	5,900	240.00	331	MSTR	80.04	26,500	32,400
16.11	STORM WATER POND PUMP STRUCTURE - CONCRETE							90,000	42,300					182,200	314,500
	EXCAVATION / BACKFILL		EST	0	CY			0	0	0.36	0	EXFD	90.00	0	0
	REINFORCING		EST	3	TN		1,150.00	0	3,500	20.00	69	REIN	78.27	5,400	8,900
	FORMWORK		EST	2,025	SF		2.50	0	5,100	0.14	326	FORM	99.43	32,400	37,500
	CONCRETE		EST	33	CY		105.00	0	3,500	1.50	57	CONP	79.64	4,500	8,000
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	165	LB		2.50	0	400	0.06	11	CARP	71.88	800	1,200
	STORM WATER POND PUMP STRUCTURE - GALLERY		EST	5	TN		4,000.00	0	20,000	35.00	201	GALL	84.61	17,000	37,000
	PUMPS	500 GPM, 75 PSIG	EST	3	EA	30000		90,000	0	165.00	569	MECH	88.89	50,600	140,600
	PIPING	6" HDPE, SDR 9	EST	1,000	LF		9.8	0	9,800	0.69	794	YDPP	90.14	71,500	81,300
16.12	OILY WATER SEWER							7,500	128,100					261,600	397,200
	PIPING	6" CISP	EST	1,850	LF		21.5	0	39,800	0.33	702	YDPP	90.14	63,300	103,100
	PIPING	8" CISP	EST	1,450	LF		33.5	0	48,600	0.54	900	YDPP	90.14	81,200	129,800
	PIPING	6" HDPE, SDR 9	EST	1,000	LF		9.8	0	9,800	0.69	794	YDPP	90.14	71,500	81,300
	POST INDICATOR VALVE		EST	10	EA	750		7,500	0	6.00	69	YDPP	90.14	6,200	13,700
	MANHOLES		EST	19	EA		1575.0	0	29,900	20.00	437	YDPP	90.14	39,400	69,300
16.13	OIL SEPARATOR	500 GPM W/ INTEGRAL LIFT STATION	EST	2	EA	50000		100,000	0	560.00	1,288	YDPP	90.14	116,100	216,100
16.14	SANITARY SEWER							0	37,100					118,900	156,000
	PIPING	6" CISP	EST	900	LF		21.5	0	19,400	0.33	342	YDPP	90.14	30,800	50,200
	MANHOLES		EST	8	EA		1575.0	0	12,600	20.00	184	YDPP	90.14	16,600	29,200
	PIPING	4" HDPE (UNDERGROUND)	EST	1,500	LF		3.4	0	5,100	0.46	794	YDPP	90.14	71,500	76,600
16.15	SANITARY LIFT STATION	PACKAGED TYPE COMPLETE WITH PUMPS 100,000 GPD	EST	1	EA	150,000		150,000	0	475.00	546	YDPP	90.14	49,200	199,200
16.16	CONSTRUCTION LAYDOWN AREA	ALLOWANCE FOR 15 ACRES, DOES NOT INCLUDE LAND ACQUISITION, IF REQUIRED	EST	15	AC		70,000.0	0	1,050,000	800.00	13,800	EXFD	90.00	1,242,000	2,292,000
16.17	CRAFT PARKING	DOES NOT INCLUDE LAND ACQUISITION, IF REQUIRED. ALLOWANCE FOR 30,000 SY INCLUDES: 6" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST	30,000	SY		9	0	270,000	0.17	5,865	BCSE	105.94	621,300	891,300
16.18	CONTRACTOR OFFICES (AREA)	DOES NOT INCLUDE LAND ACQUISITION, IF REQUIRED. ALLOWANCE FOR 7,500 SY AREA (TRAILERS BY CONTRACTORS) INCLUDES: 6" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST	7,500	SY		9	0	67,500	0.17	1,466	BCSE	105.94	155,300	222,800
16.19	NEW PERMANENT STORAGE WAREHOUSE	INCLUDES LIGHTING AND H&V. SUBCONTRACT PRICE INCLUDES ELECTRICAL AND H&V		30,000	SF	85		2,550,000	0		0	STST	105.71	0	2,550,000
16.20	FOUNDATIONS FOR THE NEW PERMANENT STORAGE WAREHOUSE WAREHOUSE							0	803,800					1,301,600	2,105,400
	EXCAVATION / BACKFILL		EST	2,600	CY			0	0	0.36	1,076	EXFD	90.00	96,900	96,900
	REINFORCING		EST	320	TN		1,150.00	0	368,000	20.00	7,360	REIN	78.27	576,100	944,100
	FORMWORK		EST	2,400	SF		2.50	0	6,000	0.14	386	FORM	99.43	38,400	44,400
	CONCRETE		EST	3,300	CY		105.00	0	346,500	1.50	5,693	CONP	79.64	453,400	799,900
	MUD MAT		EST	400	CY		105.00	0	42,000	1.50	690	CONP	79.64	55,000	97,000

				AEP										Estimate No.:	30720C
				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED										Date:	9/29/2010
				ORDER OF MAGNITUDE COST ESTIMATE										Preparer:	MNO
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	EMBEDDED STEEL		EST	16,500	LB		2.50	0	41,300	0.06	1,139	CARP	71.88	81,800	123,100
16.21	NEW TEMPORARY STORAGE	WEATHER TIGHT CANVAS ENCLOSURE. INCLUDES LIGHTING AND H&V. SUBCONTRACT PRICE INCLUDES ELECTRICAL AND H&V		20,000	SF	45		900,000	0		0	STST	105.71	0	900,000
16.22	FOUNDATIONS FOR TEMPORARY STORAGE							0	197,400					309,200	506,600
	EXCAVATION / BACKFILL		EST	440	CY			0	0	0.36	182	EXFD	90.00	16,400	16,400
	REINFORCING		EST	70	TN		1,150.00	0	80,500	20.00	1,610	REIN	78.27	126,000	206,500
	FORMWORK		EST	600	SF		2.50	0	1,500	0.14	97	FORM	99.43	9,600	11,100
	CONCRETE		EST	740	CY		105.00	0	77,700	1.50	1,277	CONP	79.64	101,700	179,400
	MUD MAT		EST	270	CY		105.00	0	28,400	1.50	466	CONP	79.64	37,100	65,500
	EMBEDDED STEEL		EST	3,700	LB		2.50	0	9,300	0.06	255	CARP	71.88	18,400	27,700
16.23	LABOR BUS SERVICE FROM PARKING LOT TO CONSTRUCTION AREA AND ACCESS CONTROL	ALLOWANCE FOR 36 MONTHS BASED ON 2 BUSES OPERATING CONTINUOUSLY FOR 5X10 WORKWEEK. SUBCONTRACT COST INCLUDES EQUIPMENT, MATERIAL AND LABOR	ALLOW	36	MN	38000		1,368,000	0					0	1,368,000
16.24	EROSION & SEDIMENT CONTROL							0	12,600					20,700	33,300
	SILT FENCE		EST	2,600	LF		1.0	0	2,600	0.02	60	LAND	61.45	3,700	6,300
	ROCK CHECK DAMS		EST	20	EA		500.0	0	10,000	12.00	276	LAND	61.45	17,000	27,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							5,395,500	5,525,100		96,953			9,200,300	20,120,900
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										1,443,278
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						8,431		83.48	704,000	704,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						10,538			739,278	739,278
	PER DIEM	NONE		0.00	HR						115,922			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				27,626					46,002	73,627
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				276,255						276,255
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			269,775							269,775
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				276,255					460,015	736,270
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				828,765					1,380,045	2,208,810
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							269,800	1,408,900					3,329,300	5,008,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SITE IMPROVEMENTS - CIVIL WORK						5,665,300	6,934,000					12,529,600	25,128,900
17.0	LIMESTONE HANDLING SYSTEM														
17.1	MATERIAL HANDLING EQUIPMENT							4,690,100	845,000					3,540,600	9,075,700
	LIMESTONE TRACK HOPPER			154	TN		3,250	0	500,000	30.00	5,308	MECH	88.89	471,800	971,800
	BELT FEEDER TRACK HOPPER BF-1	36" W x 15' L		1	EA	180,000		180,000	0	700.00	805	MECH	88.89	71,600	251,600
	LIMESTONE TRUCK HOPPER			31	TN		3,250	0	100,000	30.00	1,062	MECH	88.89	94,400	194,400
	BELT FEEDER TRUCK DUMP BF-2	36" W x 15' L		1	EA	180,000		180,000	0	700.00	805	MECH	88.89	71,600	251,600
	CONVEYOR LH-1	30" W x 250' L		250	LF	1,100		275,000	0	7.50	2,156	MECH	88.89	191,700	466,700
	MAGNETIC SEPARATORS AND CHUTEWORK	HEAD OF LH-1		1	EA	65,000		65,000	0	350.00	403	MECH	88.89	35,800	100,800
	CONVEYOR LH-2	30" W x 287' L		287	LF	1,100		315,700	0	7.50	2,475	MECH	88.89	220,000	535,700
	EMERGENCY RECLAIM HOPPER	ONE LOCATION		20	TN		3,250	0	65,000	30.00	690	MECH	88.89	61,300	126,300
	CRUSHER FOR EMERGENCY RECLAIM HOPPER			1	EA	50,000		50,000	0	400.00	460	MECH	88.89	40,900	90,900

				AEP											Estimate No.:	30720C
				BIG SANDY UNIT 2											Project No.:	12721-000
				FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED											Date:	9/29/2010
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	BELT FEEDER EMERGENCY RECLAIM BF-3	36" W x 15' L		1	EA	180,000		180,000	0	700.00	805	MECH	88.89	71,600	251,600
	RECLAIM HOPPERS	TOTAL FOR TWO LOCATIONS		55	TN		3,250	0	180,000	30.00	1,911	MECH	88.89	169,800	349,800
	BELT FEEDERS BF-4 and BF-5	36" W x 15' L		2	EA	180,000		360,000	0	700.00	1,610	MECH	88.89	143,100	503,100
	ROD GATES RECLAIM HOPPERS	FOR THREE RECLAIM HOPPERS		3	EA	15,000		45,000	0	60.00	207	MECH	88.89	18,400	63,400
	CONVEYOR LH-3A	30" W x 537' L		537	LF	1,100		590,700	0	7.50	4,632	MECH	88.89	411,700	1,002,400
	CONVEYOR LH-3B	30" W x 537' L		537	LF	1,100		590,700	0	7.50	4,632	MECH	88.89	411,700	1,002,400
	MAGNETIC SEPARATORS AND CHUTEWORK	LH-3A AND LH-3B		2	EA	65,000		130,000	0	350.00	805	MECH	88.89	71,600	201,600
	CONVEYOR LH-4	30"W x 30' L		30	LF	1,100		33,000	0	10.00	345	MECH	88.89	30,700	63,700
	BELT SCALES	CONVEYORS LH-1, LH-3A AND LH-3B		3	EA	30,000		90,000	0	180.00	621	MECH	88.89	55,200	145,200
	BIN VENT FILTER AND DISCHARGE DUCTING	ONE PER SILO		2	EA	75,000		150,000	0	450.00	1,035	MECH	88.89	92,000	242,000
	SILO LEVEL MONITORING RADAR	ONE PER SILO		2	EA	5,000		10,000	0	40.00	92	MECH	88.89	8,200	18,200
	SILO HIGH-HIGH LEVEL SWITCH	ONE PER SILO - INCLUDED WITH LEVEL MONITORING RADAR						0	0		0	MECH	88.89	0	0
	BIN ACTIVATORS	ONE PER SILO 12' DIA		2	EA	65,000		130,000	0	300.00	690	MECH	88.89	61,300	191,300
	CUT OFF GATE	ONE PER SILO 3' OUTLET		2	EA	45,000		90,000	0	220.00	506	MECH	88.89	45,000	135,000
	TUNNEL HEATING & VENTILATION	TRACK HOPPER AND RECLAIM TUNNEL		2	EA	125,000		250,000	0	800.00	1,840	HVAC	81.24	149,500	399,500
	HOIST BEAMS	RP, TRACK HOPPER AND RECLAIM PIT		3	EA	10,000		30,000	0	60.00	207	MECH	88.89	18,400	48,400
	SUMP PUMPS	2-EACH TRACK HOPPER PIT AND RECLAIM PIT. INCLUDES CHECK & ISOLATION VALVES		4	EA	35,000		140,000	0	140.00	644	MECH	88.89	57,200	197,200
	AGITATOR FOR SUMP PUMPS	10 HP		2	EA	20,000		40,000	0	60.00	138	MECH	88.89	12,300	52,300
	TELESCOPIC CHUTE	STACKOUT CONVEYOR LH-2		1	EA	75,000		75,000	0	240.00	276	MECH	88.89	24,500	99,500
	DUST SUPPRESSION SYSTEMS	TRACK HOPPER, STACKOUT CONVEYOR , RECLAIM TUNNEL		3	LT	230,000		690,000	0	1400.00	4,830	MECH	88.89	429,300	1,119,300
17.2	FIRE PROTECTION SYSTEM FOR BELT CONVEYORS	DELUGE SYSTEM, DRY PIPE, SENSORS, ACTIVATION VALVE AND FM APPROVED PANEL - SUBCONTRACT PRICE FOR ALL CONVEYORS INCLUDES LABOR		1	LT	660,000		660,000	0	0.00	0	MECH	88.89	0	660,000
17.3	PIPING - MECHANICAL							4,800	1,700		0			13,200	19,700
	LARGE BORE PIPING	2.5" CS, SCHEDULE 40, WELDED		125	LF		10.8	0	1,400	0.64	91	SPNG	94.41	8,600	10,000
	VALVE	2.5" GLOBE, 150 #, CS, WELDED	EST	5	EA	955		4,800	0	4.70	27	SPNG	94.41	2,600	7,400
	PIPE SUPPORTS			13	EA		25	0	300	1.50	22	MECH	88.89	2,000	2,300
17.4	CONVEYOR STRUCTURE SUPPORT STEEL	THREE-COAT SHOP PAINT	EST	100	TN		2,900.00	0	290,000	24.00	2,760	STST	105.71	291,800	581,800
17.5	RAILCAR LIMESTONE UNLOADING HOPPER, CONVEYOR TUNNEL AND ESCAPE TUNNEL - FOUNDATIONS							0	542,000		0			1,613,400	2,155,400
	EXCAVATION / BACKFILL		EST	13,000	CY			0	0	0.36	5,382	EXFD	90.00	484,400	484,400
	REINFORCING		EST	200.0	TN		1,150.00	0	230,000	20.00	4,600	REIN	78.27	360,000	590,000
	FORMWORK		EST	27,000	SF		2.50	0	67,500	0.14	4,347	FORM	99.43	432,200	499,700
	CONCRETE		EST	2,000	CY		105.00	0	210,000	1.50	3,450	CONP	79.64	274,800	484,800
	MUD MAT		EST	90	CY		105.00	0	9,500	1.50	155	CONP	79.64	12,400	21,900
	EMBEDDED STEEL		EST	10,000	LB		2.50	0	25,000	0.06	690	CARP	71.88	49,600	74,600
17.6	CONVEYOR SUPPORT STEEL - FOUNDATIONS							0	16,000		0			48,700	64,700
	EXCAVATION / BACKFILL		EST	148	CY			0	0	0.36	61	EXFD	90.00	5,500	5,500
	REINFORCING		EST	4.4	TN		1,150.00	0	5,100	20.00	102	REIN	78.27	8,000	13,100
	FORMWORK		EST	1,600	SF		2.50	0	4,000	0.14	258	FORM	99.43	25,600	29,600
	CONCRETE		EST	59	CY		105.00	0	6,200	1.50	102	CONP	79.64	8,100	14,300
	EMBEDDED STEEL		EST	296	LB		2.50	0	700	0.06	20	CARP	71.88	1,500	2,200
17.7	LIMESTONE TRANSFER TOWER - FOUNDATIONS							0	15,400		0			30,500	45,900
	EXCAVATION / BACKFILL		EST	106	CY			0	0	0.36	44	EXFD	90.00	3,900	3,900
	REINFORCING		EST	6	TN		1,150.00	0	6,900	20.00	138	REIN	78.27	10,800	17,700

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Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	FORMWORK		EST	320	SF		2.50	0	800	0.14	52	FORM	99.43	5,100	5,900
	CONCRETE		EST	59	CY		105.00	0	6,200	1.50	102	CONP	79.64	8,100	14,300
	MUD MAT		EST	8	CY		105.00	0	800	1.50	14	CONP	79.64	1,100	1,900
	EMBEDDED STEEL		EST	295	LB		2.50	0	700	0.06	20	CARP	71.88	1,500	2,200
17.8	LIMESTONE TRANSFER CONVEYOR - FOUNDATIONS							0	62,000		0			125,800	187,800
	EXCAVATION / BACKFILL		EST	421	CY			0	0	0.36	174	EXFD	90.00	15,700	15,700
	REINFORCING		EST	31	TN		1,150.00	0	35,700	20.00	713	REIN	78.27	55,800	91,500
	FORMWORK		EST	1,440	SF		2.50	0	3,600	0.14	232	FORM	99.43	23,100	26,700
	CONCRETE		EST	178	CY		105.00	0	18,700	1.50	307	CONP	79.64	24,500	43,200
	MUD MAT		EST	17	CY		105.00	0	1,800	1.50	29	CONP	79.64	2,300	4,100
	EMBEDDED STEEL		EST	890	LB		2.50	0	2,200	0.06	61	CARP	71.88	4,400	6,600
17.9	LIMESTONE RECLAIM HOPPER, CONVEYOR TUNNEL AND ESCAPE TUNNEL - FOUNDATIONS							0	542,000		0			1,613,400	2,155,400
	EXCAVATION / BACKFILL		EST	13,000	CY			0	0	0.36	5,382	EXFD	90.00	484,400	484,400
	REINFORCING		EST	200.0	TN		1,150.00	0	230,000	20.00	4,600	REIN	78.27	360,000	590,000
	FORMWORK		EST	27,000	SF		2.50	0	67,500	0.14	4,347	FORM	99.43	432,200	499,700
	CONCRETE		EST	2,000	CY		105.00	0	210,000	1.50	3,450	CONP	79.64	274,800	484,800
	MUD MAT		EST	90	CY		105.00	0	9,500	1.50	155	CONP	79.64	12,400	21,900
	EMBEDDED STEEL		EST	10,000	LB		2.50	0	25,000	0.06	690	CARP	71.88	49,600	74,600
17.10	LIMESTONE UNLOADING PDC - FOUNDATIONS							0	24,100		0			44,800	68,900
	EXCAVATION / BACKFILL		EST	129	CY			0	0	0.36	53	EXFD	90.00	4,800	4,800
	REINFORCING		EST	9	TN		1,150.00	0	10,400	20.00	207	REIN	78.27	16,200	26,600
	FORMWORK		EST	420	SF		2.50	0	1,100	0.14	68	FORM	99.43	6,700	7,800
	CONCRETE		EST	92	CY		105.00	0	9,700	1.50	159	CONP	79.64	12,600	22,300
	MUD MAT		EST	16	CY		105.00	0	1,700	1.50	28	CONP	79.64	2,200	3,900
	EMBEDDED STEEL		EST	460	LB		2.50	0	1,200	0.06	32	CARP	71.88	2,300	3,500
17.11	LIMESTONE UNLOADING PDC - CONCRETE PIERS	10 PIERS	EST	30	CY		230.00	0	6,900	7.50	259	CONP	79.64	20,600	27,500
											0				
17.12	LIMESTONE RECLAIM PDC - FOUNDATIONS							0	16,800		0			32,300	49,100
	EXCAVATION / BACKFILL		EST	99	CY			0	0	0.36	41	EXFD	90.00	3,700	3,700
	REINFORCING		EST	6	TN		1,150.00	0	6,900	20.00	138	REIN	78.27	10,800	17,700
	FORMWORK		EST	330	SF		2.50	0	800	0.14	53	FORM	99.43	5,300	6,100
	CONCRETE		EST	67	CY		105.00	0	7,000	1.50	116	CONP	79.64	9,200	16,200
	MUD MAT		EST	12	CY		105.00	0	1,300	1.50	21	CONP	79.64	1,600	2,900
	EMBEDDED STEEL		EST	335	LB		2.50	0	800	0.06	23	CARP	71.88	1,700	2,500
17.13	LIMESTONE RECLAIM PDC - CONCRETE PIERS	10 PIERS	EST	30	CY		230.00	0	6,900	7.50	259	CONP	79.64	20,600	27,500
17.14	LIMESTONE UNLOADING PDC	18W X 50' X 10'H	EST	900	SF	500		450,000	0	0.30	311	STST	105.71	32,800	482,800
											0				
17.15	LIMESTONE RECLAIM PDC	15W X 30' X 10'H	EST	450	SF	500		225,000	0	0.30	155	STST	105.71	16,400	241,400
17.16	MCC	LIMESTONE UNLOADING & RECLAIM AREAS						123,600	0		0			7,200	130,800
	480V MOTOR CONTROL CENTERS (LIMESTONE UNLOADING)	PRICE PER LINE UP	EST	2	EA	30900		61,800	0	16.00	37	WIRE	98.84	3,600	65,400
	480V MOTOR CONTROL CENTERS (LIMESTONE RECLAIM)	PRICE PER LINE UP	EST	2	EA	30900		61,800	0	16.00	37	WIRE	98.84	3,600	65,400
17.17	EMERGENCY POWER SYSTEM	LIMESTONE UNLOADING & RECLAIM AREAS						216,300	0		0			49,100	265,400
	DC PANEL BOADRD		EST	2	EA	15450		30,900	0	40.00	92	WIRE	98.84	9,100	40,000
	UPS PANEL BOARDS		EST	2	EA	15450		30,900	0	40.00	92	WIRE	98.84	9,100	40,000

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	SATELLITE UPS		EST	2	EA	41200		82,400	0	16.00	37	WIRE	98.84	3,600	86,000
	VRLA BATTERIES		EST	2	LT	36050		72,100	0	120.00	276	WIRE	98.84	27,300	99,400
17.18	LIGHTING/ TRANSFORMERS & PANELS							26,000	67,500		0			52,200	145,700
	LIGHT FIXTURES		EST	90	EA		750	0	67,500	4.00	414	WIRE	98.84	40,900	108,400
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	1	EA	10000		10,000	0	40.00	46	WIRE	98.84	4,500	14,500
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	1	EA	7500		7,500	0	32.00	37	WIRE	98.84	3,600	11,100
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	1	EA	5000		5,000	0	16.00	18	WIRE	98.84	1,800	6,800
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	1	EA	3500		3,500	0	12.00	14	WIRE	98.84	1,400	4,900
17.19	GROUNDING	LIMESTONE UNLOADING & RECLAIM AREAS						13,000	0		0			42,400	55,400
	GROUND ROD	3/4" - 20' LONG	EST	16	EA	150		2,400	0	4.00	74	WIRE	98.84	7,300	9,700
	500 MCM	BARE COPPER WIRE	EST	1,250	FT	7.65		9,600	0	0.12	173	WIRE	98.84	17,000	26,600
	CADWELD		EST	64	EA	15		1,000	0	2.00	147	WIRE	98.84	14,500	15,500
	GROUNDING TEST	TEST & DOCUMENTATION	EST	2	LT			0	0	16.00	37	WIRE	98.84	3,600	3,600
17.20	RACEWAY, CABLE TRAY, & CONDUIT							0	801,100		0			3,597,400	4,398,500
	12" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,500	LF		18.25	0	27,400	1.10	1,898	WIRE	98.84	187500	214,900
	18" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	900	LF		21.50	0	19,400	1.45	1,501	WIRE	98.84	148300	167,700
	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	2,600	LF		27.10	0	70,500	1.75	5,233	WIRE	98.84	517200	587,700
	36" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	750	LF		30.30	0	22,700	1.95	1,682	WIRE	98.84	166200	188,900
	5" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	2,400	LF		61.00	0	146,400	1.13	3,111	WIRE	98.84	307400	453,800
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	4,400	LF		31.00	0	136,400	0.81	4,083	WIRE	98.84	403600	540,000
	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	4,800	LF		21.50	0	103,200	0.65	3,560	WIRE	98.84	351900	455,100
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	7,200	LF		9.25	0	66,600	0.35	2,915	WIRE	98.84	288100	354,700
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	9,000	LF		7.15	0	64,400	0.28	2,939	WIRE	98.84	290500	354,900
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	15,000	LF		4.44	0	66,600	0.24	4,123	WIRE	98.84	407500	474,100
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	24,000	LF		3.23	0	77,500	0.19	5,354	WIRE	98.84	529200	606,700
17.21	HIGH VOLTAGE POWER CABLE & TERMINATION	1/C # 500KCMIL-15KV	EST	3,600	LF		9.27	0	33,400	0.23	952	WIRE	98.84	94100	127,500
											0				
17.22	LOW VOLTAGE POWER CABLE & TERMINATION							0	130,600		0			715,400	846,000
	3/C # 500KCMIL- 600V		EST	5,000	LF		26.12	0	130,600	0.69	3,968	WIRE	98.84	392100	522,700
	#4/0 - #12 AWG-600V		EST	36,000	LF		7.22			0.08	3,271	WIRE	98.84	323300	323,300
17.23	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	EST	44,000	LF		3.20	0	140,800	0.08	3,997	WIRE	98.84	395100	535,900
17.24	DUCT BANK	DUCT BANK WITH 6-5" & 6-3" CONDUIT	EST	350	LF		265.88	0	26,600	6.01	2,419	ECND	75.97	183800	210,400
17.25	COMMUNICATIONS		EST	1	LT		34,000.00	0	34,000	229.00	263	WIRE	98.84	26,000	60,000
17.26	LIGHTNING PROTECTION		EST	1	LT		6,500.00	0	6,500	48.00	55	WIRE	98.84	5,500	12,000
17.27	SECURITY SYSTEM		EST	1	LT		16,000.00	0	16,000	123.00	141	WIRE	98.84	14,000	30,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							6,408,800	3,625,300		137,483			12,627,100	22,661,200
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														

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	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										2,251,370
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						11,955		91.84	1,098,000	1,098,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						14,944			1,153,370	1,153,370
	PER DIEM	NONE		0.00	HR						164,382			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				18,127					63,136	81,262
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				181,265						181,265
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			320,440							320,440
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				181,265					631,355	812,620
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				543,795					1,894,065	2,437,860
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							320,400	924,500					4,839,900	6,084,800
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIMESTONE HANDLING SYSTEM						6,729,200	4,549,800					17,467,000	28,746,000
18.0	REAGENT (LIMESTONE) PREPARATION ISLAND														0
18.1	MECHANICAL EQUIPMENT	INCLUDES LIMESTONE FEEDERS, FROM THE DAY SILOS THROUGH THE SLURRY STORAGE TANKS AND TRANSFER PUMPS WITH INTEGRAL PIPING	EST	1	LT	15,167,000		15,167,000	0	120000.00	138,000	MECH	88.89	12,266,800	27,433,800
18.2	SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
18.3	AGITATOR FOR SUMP PUMPS	5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
18.4	PIPING - MECHANICAL		EST	1	LT			278,900	205,000					587,300	1,071,200
	LARGE BORE PIPING	4.0" CS, SCH 40 WELDED	EST	500	LF		23.00	0	11,500	1.48	851	SPNG	94.41	80,300	91,800
	LARGE BORE PIPING	6" FRP	EST	2,000	LF		33.90	0	67,800	0.67	1,541	SPNG	94.41	145,500	213,300
	LARGE BORE PIPING	8" FRP	EST	1,000	LF		51.30	0	51,300	0.95	1,093	SPNG	94.41	103,100	154,400
	LARGE BORE PIPING	10" FRP	EST	300	LF		68.00	0	20,400	1.18	407	SPNG	94.41	38,400	58,800
	LARGE BORE PIPING	12" FRP	EST	250	LF		80.90	0	20,200	1.41	405	SPNG	94.41	38,300	58,500
	VALVE	6" BFLY, 150 #, CS, FLANGED	EST	6	EA	850		5,100	0	8.70	60	SPNG	94.41	5,700	10,800
	VALVE	8" BFLY, 150 #, CS, FLANGED	EST	12	EA	1,400		16,800	0	9.10	126	SPNG	94.41	11,900	28,700
	VALVE	10" BFLY, 150 #, CS, FLANGED	EST	10	EA	2,300		23,000	0	13.80	159	SPNG	94.41	15,000	38,000
	VALVE	12" BFLY, 150 #, CS, FLANGED	EST	3	EA	3,000		9,000	0	14.60	50	SPNG	94.41	4,800	13,800
	VALVE	6" AIR OPERATED, 150 #, CS, FLANGED	EST	10	EA	14,000		140,000	0	17.30	199	SPNG	94.41	18,800	158,800
	VALVE	8" AIR OPERATED, 150 #, CS, FLANGED	EST	5	EA	17,000		85,000	0	19.30	111	SPNG	94.41	10,500	95,500
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	450	EA		75.00	0	33,800	2.50	1,294	MECH	88.89	115,000	148,800
18.5	LIMESTONE SLURRY TANKS - FOUNDATIONS							0	166,400					299,400	465,800
	EXCAVATION / BACKFILL		EST	969	CY			0	0	0.36	401	EXFD	90.00	36,100	36,100
	REINFORCING		EST	90	TN		1,150.00	0	103,500	20.00	2,070	REIN	78.27	162,000	265,500
	FORMWORK		EST	1,166	SF		2.50	0	2,900	0.14	188	FORM	99.43	18,700	21,600
	CONCRETE		EST	475	CY		105.00	0	49,900	1.50	819	CONP	79.64	65,300	115,200
	MUD MAT		EST	40	CY		105.00	0	4,200	1.50	69	CONP	79.64	5,500	9,700
	EMBEDDED STEEL		EST	2,375	LB		2.50	0	5,900	0.06	164	CARP	71.88	11,800	17,700
18.6	REAGENT PREPARATION BUILDING - FOUNDATIONS							0	682,000					1,132,200	1,814,200
	EXCAVATION / BACKFILL		EST	2,767	CY			0	0	0.36	1,146	EXFD	90.00	103,100	103,100
	REINFORCING		EST	273	TN		1,150.00	0	314,000	20.00	6,279	REIN	78.27	491,500	805,500
	FORMWORK		EST	2,500	SF		2.50	0	6,300	0.14	403	FORM	99.43	40,000	46,300
	CONCRETE		EST	2,889	CY		105.00	0	303,300	1.50	4,984	CONP	79.64	396,900	700,200

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	MUD MAT		EST	212	CY		105.00	0	22,300	1.50	366	CONP	79.64	29,100	51,400
	EMBEDDED STEEL		EST	14,445	LB		2.50	0	36,100	0.06	997	CARP	71.88	71,600	107,700
18.7	REAGENT PREPARATION BUILDING	120' L X 130' W X 130' H						269,400	4,865,000					4,251,600	9,386,000
	STRUCTURAL STEEL		EST	1,217	TN		2650	0	3,225,100	16.00	22,393	STST	105.71	2,367,100	5,592,200
	INSULATED METAL SIDING		EST	65,000	SF		12	0	780,000	0.11	8,223	SDNG	93.41	768,100	1,548,100
	ROLLING OVERHEAD DOOR		EST	640	SF		27	0	17,300	0.25	184	CARP	71.88	13,200	30,500
	METAL ROOF DECKING		EST	15,600	SF		2.7	0	42,100	0.06	1,076	STST	105.71	113,800	155,900
	RIGID ROOF INSULATION		EST	15,600	SF		2.4	0	37,400	0.02	269	ROOF	69.12	18,600	56,000
	ROOFING (4-PLY TAR & GRAVEL)		EST	15,600	SF		1.55	0	24,200	0.04	718	ROOF	69.12	49,600	73,800
	LIGHTWEIGHT CONCRETE FILL 1"		EST	48	CY		100	0	4,800	1.30	72	ROOF	69.12	5,000	9,800
	ROOF FLASHING		EST	500	LF		14.45	0	7,200	0.12	69	ROOF	69.12	4,800	12,000
	ROOF DRAINS		EST	1	LT		45000	0	15,000	500.00	575	PLMB	79.42	45,700	60,700
	FLOOR DRAINS		EST	1	LT		37500	0	20,000	375.00	431	PLMB	79.42	34,200	54,200
	FLOOR SLABS	INCLUDES METAL DECKING AND FORMWORK	EST	48	CY		210	0	10,100	7.50	415	CONP	79.64	33,100	43,200
	FLOOR FINISHES		EST	9,360	SF		2.5	0	23,400	0.05	538	CONP	79.64	42,900	66,300
	LOUVERS/WINDOWS/DOORS		EST	6,500	SF		40	0	260,000	0.35	2,616	CARP	71.88	188,100	448,100
	ROOF VENTILATORS		EST	6	EA		15000	0	90,000	24.00	166	HVAC	81.24	13,500	103,500
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	4,680	SF		45	0	210,600	0.40	2,153	GALL	84.61	182,100	392,700
	H&V		EST	1	LT	194400	77760	194,400	77,800	3629.33	4,174	HVAC	81.24	339,100	611,300
	HVAC	40T PACKAGED UNIT FOR ELECTRICAL EQUIPMENT ROOM. INCLUDES ALLOWANCE FOR CONCRETE PAD AND ELECTRICAL WORK	EST	1	LT	75000	20000	75,000	20,000	350.00	403	HVAC	81.24	32,700	127,700
18.8	PIPE SUPPORT PAD - REAGENT PREP BUILDING							0	13,800					27,500	41,300
	EXCAVATION / BACKFILL		EST	110	CY			0	0	0.36	46	EXFD	90.00	4,100	4,100
	REINFORCING		EST	5.0	TN		1,150.00	0	5,800	20.00	115	REIN	78.27	9,000	14,800
	FORMWORK		EST	280	SF		2.50	0	700	0.14	45	FORM	99.43	4,500	5,200
	CONCRETE		EST	40	CY		105.00	0	4,200	1.50	69	CONP	79.64	5,500	9,700
	MUD MAT		EST	25	CY		105.00	0	2,600	1.50	43	CONP	79.64	3,400	6,000
	EMBEDDED STEEL		EST	200	LB		2.50	0	500	0.06	14	CARP	71.88	1,000	1,500
18.9	LIGHTING/ TRANSFORMERS & PANELS							52,000	135,000					104,500	291,500
	LIGHT FIXTURES		EST	180	EA		750	0	135,000	4.00	828	WIRE	98.84	81,800	216,800
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	10000		20,000	0	40.00	92	WIRE	98.84	9,100	29,100
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	7500		15,000	0	32.00	74	WIRE	98.84	7,300	22,300
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	2	EA	5000		10,000	0	16.00	37	WIRE	98.84	3,600	13,600
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	2	EA	3500		7,000	0	12.00	28	WIRE	98.84	2,700	9,700
18.10	GROUNDING							5,100	0					13,400	18,500
	GROUND ROD	3/4" - 20' LONG	EST	2	EA	150		300	0	4.00	9	WIRE	98.84	900	1,200
	500 MCM	BARE COPPER WIRE	EST	600	FT	7.65		4,600	0	0.12	83	WIRE	98.84	8,200	12,800
	CADWELD		EST	16	EA	15		200	0	2.00	37	WIRE	98.84	3,600	3,800
	GROUNDING TEST	TEST, CALIBRATION & DOCUMENTATION	EST	2	EA			0	0	3.00	7	WIRE	98.84	700	700
18.11	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE ARE INCLUDED IN SECTION 20.0 - ABSORBER ISLAND													
18.12	COMMUNICATIONS		EST	1	LT		34,000.00	0	34,000	229.00	263	WIRE	98.84	26,000	60,000
18.13	LIGHTNING PROTECTION		EST	1	LT		23,000.00	0	23,000	141.00	162	WIRE	98.84	16,000	39,000
18.14	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							15,812,400	6,132,200		208,865			18,748,600	40,693,200
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														

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Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										3,342,514
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						18,162		89.76	1,630,000	1,630,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						22,703			1,712,514	1,712,514
	PER DIEM	NONE		0.00	HR						249,730			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				30,661					93,743	124,404
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				306,610						306,610
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			790,620							790,620
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				306,610					937,430	1,244,040
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				919,830					2,812,290	3,732,120
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							790,600	1,563,700					7,186,000	9,540,300
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	REAGENT (LIMESTONE) PREPARATION ISLAND						16,603,000	7,695,900					25,934,600	50,233,500
19.0	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)														0
19.1	MECHANICAL EQUIPMENT	PRIMARY & SECONDARY DEWATERING INCLUDING HYDROCLONE FEED TANKS, HYDROCLONES, PUMPS, INTEGRAL PIPING AND BELT VACUUM FILTERS	EST	1	LT	8,701,000		8,701,000	0	65000.00	74,750	MECH	88.89	6,644,500	15,345,500
19.2	PUMPS & AGITATORS							250,000	0					137,000	387,000
	GYPSUM SLURRY TRANSFER PUMPS	1500 GPM, 150 HP	EST	2	EA	40000		80,000	0	220.00	506	MECH	88.89	45,000	125,000
	RECLAIM WATER PUMPS	350 GPM, 25 HP	EST	2	EA	15000		30,000	0	120.00	276	MECH	88.89	24,500	54,500
	RECLAIM WATER TRANSFER PUMPS	500 GPM, 100 HP	EST	2	EA	30000		60,000	0	165.00	380	MECH	88.89	33,700	93,700
	SUMP PUMPS	AUXILIARY PUMPHOUSE BUILDING SUMP PUMPS - DUPLEX. INCLUDES CHECK & ISOLATION VALVES		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
	AGITATOR FOR SUMP PUMPS	AUXILIARY PUMPHOUSE BUILDING SUMP AGITATORS - 5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
	SUMP PUMPS	BYPRODUCT DEWATERING BUILDING SUMP PUMPS - DUPLEX. INCLUDES CHECK & ISOLATION VALVES		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
	AGITATOR FOR SUMP PUMPS	BYPRODUCT DEWATERING BUILDING SUMP AGITATORS - 5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
19.3	PIPING - MECHANICAL		EST	1	LT			282,700	3,555,700					7,786,000	11,624,400
	LARGE BORE PIPING	4" FRP	EST	2,050	LF		28.40	0	58,200	0.38	896	SPNG	94.41	84,600	142,800
	LARGE BORE PIPING	6" FRP	EST	3,300	LF		33.90	0	111,900	0.67	2,543	SPNG	94.41	240,100	352,000
	LARGE BORE PIPING	8" FRP	EST	6,250	LF		51.30	0	320,600	0.95	6,828	SPNG	94.41	644,600	965,200
	LARGE BORE PIPING	10" FRP	EST	6,400	LF		68.00	0	435,200	1.18	8,685	SPNG	94.41	819,900	1,255,100
	LARGE BORE PIPING	12" FRP	EST	1,000	LF		80.90	0	80,900	1.41	1,622	SPNG	94.41	153,100	234,000
	LARGE BORE PIPING	14" FRP	EST	16,500	LF		133.90	0	2,209,400	2.67	50,663	SPNG	94.41	4,783,100	6,992,500
	LARGE BORE PIPING	16" FRP	EST	100	LF		152.20	0	15,200	2.88	331	SPNG	94.41	31,300	46,500
	LARGE BORE PIPING	20" FRP	EST	125	LF		165.00	0	20,600	3.31	476	SPNG	94.41	44,900	65,500
	VALVE	4" BFLY, 150 #, CS, FLANGED	EST	6	EA	625		3,800	0	7.20	50	SPNG	94.41	4,700	8,500
	VALVE	6" BFLY, 150 #, CS, FLANGED	EST	6	EA	850		5,100	0	8.70	60	SPNG	94.41	5,700	10,800

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Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	VALVE	8" BFLY, 150 #, CS, FLANGED	EST	12	EA	1,400		16,800	0	9.10	126	SPNG	94.41	11,900	28,700
	VALVE	10" BFLY, 150 #, CS, FLANGED	EST	10	EA	2,300		23,000	0	13.80	159	SPNG	94.41	15,000	38,000
	VALVE	12" BFLY, 150 #, CS, FLANGED	EST	3	EA	3,000		9,000	0	14.60	50	SPNG	94.41	4,800	13,800
	VALVE	6" AIR OPERATED, 150 #, CS, FLANGED	EST	10	EA	14,000		140,000	0	17.30	199	SPNG	94.41	18,800	158,800
	VALVE	8" AIR OPERATED, 150 #, CS, FLANGED	EST	5	EA	17,000		85,000	0	19.30	111	SPNG	94.41	10,500	95,500
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	3,573	EA		85.00	0	303,700	2.50	10,271	MECH	88.89	913,000	1,216,700
19.4	MATERIAL HANDLING EQUIPMENT							724,000	7,500					614,100	1,345,600
	CONVEYOR GH-1A	36" W x 75' L		75	LF	1,000		75,000	0	7.50	647	MECH	88.89	57,500	132,500
	CONVEYOR GH-1B	36" W x 75' L		75	LF	1,000		75,000	0	30.00	2,588	MECH	88.89	230,000	305,000
	BELT SCALES	CONVEYORS GH-1A AND GH-1B		2	EA	30,000		60,000	0	180.00	414	MECH	88.89	36,800	96,800
	STACKOUT CONVEYOR GH-2A	36" W X 120' L		120	LF	1,100		132,000	0	7.50	1,035	MECH	88.89	92,000	224,000
	STACKOUT CONVEYOR GH-2B	36" W X 120' L		120	LF	1,100		132,000	0	7.50	1,035	MECH	88.89	92,000	224,000
	TELESCOPIC CHUTES	CONVEYORS GH-2A AND GH-2B		2	EA	125,000		250,000	0	375.00	863	MECH	88.89	76,700	326,700
	FRONT END LOADER	NOT INCLUDED						0	0	30.00	0	MECH	88.89	0	0
	DUMP TRUCK	NOT INCLUDED						0	0	700.00	0	MECH	88.89	0	0
	WATER SPRAY AT DISCHARGE OF GH-2A & GH-2B	ALLOWANCE FOR 200 LF SMALL BORE PIPING AND SPRAYS AND VALVVING		300	LF		25.0	0	7,500	0.95	328	MECH	88.89	29,100	36,600
19.5	FIRE PROTECTION SYSTEM FOR BELT CONVEYORS	DELUGE SYSTEM, DRY PIPE, SENSORS, ACTIVATION VALVE AND FM APPROVED PANEL - SUBCONTRACT PRICE FOR ALL CONVEYORS INCLUDES LABOR		1	LT	170,000		170,000	0	0.00	0	MECH	88.89	0	170,000
19.6	CONVEYOR STRUCTURE SUPPORT STEEL	THREE-COAT SHOP PAINT	EST	34	TN		2,900.00	0	99,000	24.00	942	STST	105.71	99,600	198,600
19.7	PIPE RACK SUPPORT STEEL	THREE-COAT SHOP PAINT	EST	68	TN		2,900.00	0	197,200	24.00	1,877	STST	105.71	198,400	395,600
19.8	TANKS							0	3,825,300					846,700	4,672,000
	LANDFILL SERVICE WATER TANKS	70,000 GAL, CS, 20' DIA X 30' - SUBCONTRACT PRICE INCLUDES LABOR WITH EXTERIOR PRIMED AND FIELD PAINTED	EST	2	EA		157500.0	0	315,000	0.00	0	TANK	89.16	0	315,000
	BLEED TANKS	120,000 GAL, CS, 27' DIA X 27' - SUBCONTRACT PRICE INCLUDES LABOR WITH EXTERIOR PRIMED AND FIELD PAINTED	EST	2	EA		216000.0	0	432,000	0.00	0	TANK	89.16	0	432,000
	RECLAIM WATER TANKS	230,000 GAL, CS, 29' DIA X 33' - SUBCONTRACT PRICE INCLUDES LABOR WITH EXTERIOR PRIMED AND FIELD PAINTED	EST	2	EA		330000.0	0	660,000	0.00	0	TANK	89.16	0	660,000
	RECLAIM WATER TANKS - INTERIOR LINING	FLAKECOAT VINYL ESTER TOTAL FOR TWO TANKS	EST	8,656	SF		15.0	0	129,800	0.35	3,484	PNTR	66.72	232,500	362,300
	LANDFILL RECLAIM WATER TANKS	230,000 GAL, CS, 29' DIA X 33' - SUBCONTRACT PRICE INCLUDES LABOR WITH EXTERIOR PRIMED AND FIELD PAINTED	EST	2	EA		330000.0	0	660,000	0.00	0	TANK	89.16	0	660,000
	LANDFILL RECLAIM WATER TANKS - INTERIOR LINING	FLAKECOAT VINYL ESTER TOTAL FOR TWO TANKS	EST	8,656	SF		15.0	0	129,800	0.35	3,484	PNTR	66.72	232,500	362,300
	MAINTENANCE STORAGE TANK	1,250,000 GAL, CS, 58' DIA X 62' - SUBCONTRACT PRICE INCLUDES LABOR WITH EXTERIOR PRIMED AND FIELD PAINTED	EST	1	EA		1250000.0	0	1,250,000	0.00	0	TANK	89.16	0	1,250,000
	MAINTENANCE STORAGE TANK - INTERIOR LINING	FLAKECOAT VINYL ESTER	EST	16,581	SF		15.0	0	248,700	0.30	5,720	PNTR	66.72	381,700	630,400
19.9	RECLAIM WATER TANKS & PUMPS - FOUNDATIONS							0	26,000					54,000	80,000
	EXCAVATION / BACKFILL		EST	295	CY			0	0	0.36	122	EXFD	90.00	11,000	11,000
	REINFORCING		EST	10.0	TN		1,150.00	0	11,500	20.00	230	REIN	78.27	18,000	29,500
	FORMWORK		EST	384	SF		2.50	0	1,000	0.14	62	FORM	99.43	6,100	7,100
	CONCRETE		EST	103	CY		105.00	0	10,800	1.50	178	CONP	79.64	14,200	25,000
	MUD MAT		EST	9	CY		105.00	0	900	1.50	16	CONP	79.64	1,200	2,100
	EMBEDDED STEEL		EST	705	LB		2.50	0	1,800	0.06	49	CARP	71.88	3,500	5,300

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19.10	MAINTENANCE STORAGE TANK & PUMPS - FOUNDATIONS							0	100,000					177,300	277,300
	EXCAVATION / BACKFILL		EST	614	CY			0	0	0.36	254	EXFD	90.00	22,900	22,900
	REINFORCING		EST	42.0	TN		1,150.00	0	48,300	20.00	966	REIN	78.27	75,600	123,900
	FORMWORK		EST	795	SF		2.50	0	2,000	0.14	128	FORM	99.43	12,700	14,700
	CONCRETE		EST	420	CY		105.00	0	44,100	1.50	725	CONP	79.64	57,700	101,800
	MUD MAT		EST	36	CY		105.00	0	3,800	1.50	62	CONP	79.64	4,900	8,700
	EMBEDDED STEEL		EST	705	LB		2.50	0	1,800	0.06	49	CARP	71.88	3,500	5,300
19.11	LANDFILL SERVICE WATER TANKS & PUMP - FOUNDATIONS							0	80,900					155,100	236,000
	EXCAVATION / BACKFILL		EST	614	CY			0	0	0.36	254	EXFD	90.00	22,900	22,900
	REINFORCING		EST	42.0	TN		1,150.00	0	48,300	20.00	966	REIN	78.27	75,600	123,900
	FORMWORK		EST	795	SF		2.50	0	2,000	0.14	128	FORM	99.43	12,700	14,700
	CONCRETE		EST	221	CY		105.00	0	23,200	1.50	381	CONP	79.64	30,400	53,600
	MUD MAT		EST	18	CY		105.00	0	1,900	1.50	31	CONP	79.64	2,500	4,400
	EMBEDDED STEEL		EST	2,210	LB		2.50	0	5,500	0.06	152	CARP	71.88	11,000	16,500
19.12	LANDFILL RECLAIM WATER TANKS & PUMPS - FOUNDATIONS							0	26,000					54,000	80,000
	EXCAVATION / BACKFILL		EST	295	CY			0	0	0.36	122	EXFD	90.00	11,000	11,000
	REINFORCING		EST	10.0	TN		1,150.00	0	11,500	20.00	230	REIN	78.27	18,000	29,500
	FORMWORK		EST	384	SF		2.50	0	1,000	0.14	62	FORM	99.43	6,100	7,100
	CONCRETE		EST	103	CY		105.00	0	10,800	1.50	178	CONP	79.64	14,200	25,000
	MUD MAT		EST	9	CY		105.00	0	900	1.50	16	CONP	79.64	1,200	2,100
	EMBEDDED STEEL		EST	705	LB		2.50	0	1,800	0.06	49	CARP	71.88	3,500	5,300
19.13	HYDROCLONE FEED TANKS & BLEED TANKS - FOUNDATIONS	TOTAL FOR HYDROCLONE AND BLEED TANKS						0	340,200					618,900	959,100
	EXCAVATION / BACKFILL		EST	1,915	CY			0	0	0.36	793	EXFD	90.00	71,400	71,400
	REINFORCING		EST	212.0	TN		1,150.00	0	243,800	20.00	4,876	REIN	78.27	381,600	625,400
	FORMWORK		EST	2,400	SF		2.50	0	6,000	0.14	386	FORM	99.43	38,400	44,400
	CONCRETE		EST	671	CY		105.00	0	70,500	1.50	1,157	CONP	79.64	92,200	162,700
	MUD MAT		EST	58	CY		105.00	0	6,100	1.50	100	CONP	79.64	8,000	14,100
	EMBEDDED STEEL		EST	5,500	LB		2.50	0	13,800	0.06	380	CARP	71.88	27,300	41,100
19.14	BYPRODUCT STACKOUT CONVEYOR & TRANSFER TOWER - FOUNDATIONS							0	16,100					34,700	50,800
	EXCAVATION / BACKFILL		EST	140	CY			0	0	0.36	58	EXFD	90.00	5,200	5,200
	REINFORCING		EST	6	TN		1,150.00	0	6,900	20.00	138	REIN	78.27	10,800	17,700
	FORMWORK		EST	480	SF		2.50	0	1,200	0.14	77	FORM	99.43	7,700	8,900
	CONCRETE		EST	59	CY		105.00	0	6,200	1.50	102	CONP	79.64	8,100	14,300
	MUD MAT		EST	10	CY		105.00	0	1,100	1.50	17	CONP	79.64	1,400	2,500
	EMBEDDED STEEL		EST	295	LB		2.50	0	700	0.06	20	CARP	71.88	1,500	2,200
19.15	BYPRODUCT STACKOUT PILE - FOUNDATIONS	INCLUDES CONTAINMENT AREA SLAB						0	891,700					1,427,400	2,319,100
	EXCAVATION / BACKFILL		EST	2,900	CY			0	0	0.36	1,201	EXFD	90.00	108,100	108,100
	REINFORCING		EST	360	TN		1,150.00	0	414,000	20.00	8,280	REIN	78.27	648,100	1,062,100
	FORMWORK		EST	2,365	SF		2.50	0	5,900	0.14	381	FORM	99.43	37,900	43,800
	CONCRETE		EST	3,813	CY		105.00	0	400,400	1.50	6,577	CONP	79.64	523,800	924,200
	MUD MAT		EST	453	CY		105.00	0	47,600	1.50	781	CONP	79.64	62,200	109,800
	EMBEDDED STEEL		EST	9,533	LB		2.50	0	23,800	0.06	658	CARP	71.88	47,300	71,100
19.16	PIPE RACK	SUPPORTS AT 15' C/C						0	60,800					149,400	210,200
	EXCAVATION / BACKFILL		EST	1,120	CY			0	0	0.36	464	EXFD	90.00	41,700	41,700
	REINFORCING		EST	24	TN		1,150.00	0	27,600	20.00	552	REIN	78.27	43,200	70,800
	FORMWORK		EST	1,500	SF		2.50	0	3,800	0.14	242	FORM	99.43	24,000	27,800
	CONCRETE		EST	250	CY		105.00	0	26,300	1.50	431	CONP	79.64	34,300	60,600
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	1,250	LB		2.50	0	3,100	0.06	86	CARP	71.88	6,200	9,300
19.17	BYPRODUCT CONTAINMENT WALLS							0	137,300					235,000	372,300
	EXCAVATION / BACKFILL		EST	489	CY			0	0	0.36	202	EXFD	90.00	18,200	18,200

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		Cost Type:												Reviewer:	JMK
		Est=Estimated												Approver:	PEF
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	REINFORCING		EST	46	TN		1,150.00	0	52,900	20.00	1,058	REIN	78.27	82,800	135,700
	FORMWORK		EST	1,520	SF		2.50	0	3,800	0.14	245	FORM	99.43	24,300	28,100
	CONCRETE		EST	489	CY		105.00	0	51,300	1.50	844	CONP	79.64	67,200	118,500
	MUD MAT		EST	221	CY		105.00	0	23,200	1.50	381	CONP	79.64	30,400	53,600
	EMBEDDED STEEL		EST	2,445	LB		2.50	0	6,100	0.06	169	CARP	71.88	12,100	18,200
19.18	INSTALL WIND SCREEN		EST	700	LF		750.00	0	525,000	3.00	2,415	CONP	79.64	192,300	717,300
19.19	BYPRODUCT DEWATERING BUILDING - FOUNDATIONS							0	291,400					482,800	774,200
	EXCAVATION / BACKFILL		EST	1,220	CY			0	0	0.36	505	EXFD	90.00	45,500	45,500
	REINFORCING		EST	121	TN		1,150.00	0	139,200	20.00	2,783	REIN	78.27	217,800	357,000
	FORMWORK		EST	1,520	SF		2.50	0	3,800	0.14	245	FORM	99.43	24,300	28,100
	CONCRETE		EST	1,278	CY		105.00	0	134,200	1.50	2,205	CONP	79.64	175,600	309,800
	MUD MAT		EST	121	CY		105.00	0	12,700	1.50	209	CONP	79.64	16,600	29,300
	EMBEDDED STEEL		EST	605	LB		2.50	0	1,500	0.06	42	CARP	71.88	3,000	4,500
19.20	BYPRODUCT DEWATERING BUILDING	120' L X 75' W X 65' H						145,200	1,595,300					1,495,900	3,236,400
	STRUCTURAL STEEL		EST	322	TN		2650	0	852,600	16.00	5,920	STST	105.71	625,800	1,478,400
	INSULATED METAL SIDING		EST	25,350	SF		12	0	304,200	0.11	3,207	SDNG	93.41	299,500	603,700
	ROLLING OVERHEAD DOOR		EST	640	SF		27	0	17,300	0.25	184	CARP	71.88	13,200	30,500
	METAL ROOF DECKING		EST	9,000	SF		2.7	0	24,300	0.06	621	STST	105.71	65,600	89,900
	RIGID ROOF INSULATION		EST	9,000	SF		2.4	0	21,600	0.02	155	ROOF	69.12	10,700	32,300
	ROOFING (4-PLY TAR & GRAVEL)		EST	9,000	SF		1.55	0	14,000	0.04	414	ROOF	69.12	28,600	42,600
	LIGHTWEIGHT CONCRETE FILL 1"		EST	28	CY		100	0	2,800	1.30	42	ROOF	69.12	2,900	5,700
	ROOF FLASHING		EST	390	LF		14.45	0	5,600	0.12	54	ROOF	69.12	3,700	9,300
	ROOF DRAINS		EST	1	LT		40000	0	15,000	450.00	518	PLMB	79.42	41,100	56,100
	FLOOR DRAINS		EST	1	LT		32500	0	20,000	350.00	403	PLMB	79.42	32,000	52,000
	FLOOR SLABS		EST	50	CY		210	0	10,500	7.50	431	CONP	79.64	34,300	44,800
	FLOOR FINISHES	MAIN LEVEL	EST	6,750	SF		2.5	0	16,900	0.05	388	CONP	79.64	30,900	47,800
	LOUVERS/WINDOWS/DOORS		EST	2,535	SF		40	0	101,400	0.35	1,020	CARP	71.88	73,300	174,700
	ROOF VENTILATORS		EST	4	EA		15000	0	60,000	24.00	110	HVAC	81.24	9,000	69,000
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	1,800	SF		45	0	81,000	0.40	828	GALL	84.61	70,100	151,100
	H&V		EST	1	LT	70200	28080	70,200	28,100	1310.67	1,507	HVAC	81.24	122,500	220,800
	HVAC	40T PACKAGED UNIT FOR ELECTRICAL EQUIPMENT ROOM. INCLUDES ALLOWANCE FOR CONCRETE PAD AND ELECTRICAL WORK	EST	1	LT	75000	20000	75,000	20,000	350.00	403	HVAC	81.24	32,700	127,700
19.21	PIPE SUPPORT PAD							0	18,300					36,000	54,300
	EXCAVATION / BACKFILL		EST	92	CY			0	0	0.36	38	EXFD	90.00	3,400	3,400
	REINFORCING		EST	6.0	TN		1,150.00	0	6,900	20.00	138	REIN	78.27	10,800	17,700
	FORMWORK		EST	492	SF		2.50	0	1,200	0.14	79	FORM	99.43	7,900	9,100
	CONCRETE		EST	68	CY		105.00	0	7,100	1.50	117	CONP	79.64	9,300	16,400
	MUD MAT		EST	21	CY		105.00	0	2,200	1.50	36	CONP	79.64	2,900	5,100
	EMBEDDED STEEL		EST	340	LB		2.50	0	900	0.06	23	CARP	71.88	1,700	2,600
19.22	AUXILIARY PUMPHOUSE BUILDING WITH ELECTRICAL ROOM - FOUNDATIONS							0	32,300					60,800	93,100
	EXCAVATION / BACKFILL		EST	210	CY			0	0	0.36	87	EXFD	90.00	7,800	7,800
	REINFORCING		EST	11	TN		1,150.00	0	12,900	20.00	258	REIN	78.27	20,200	33,100
	FORMWORK		EST	500	SF		2.50	0	1,300	0.14	81	FORM	99.43	8,000	9,300
	CONCRETE		EST	140	CY		105.00	0	14,700	1.50	242	CONP	79.64	19,200	33,900
	MUD MAT		EST	15	CY		105.00	0	1,600	1.50	26	CONP	79.64	2,100	3,700
	EMBEDDED STEEL		EST	700	LB		2.50	0	1,800	0.06	48	CARP	71.88	3,500	5,300
19.23	AUXILIARY PUMPHOUSE BUILDING	50'L X 35' W X 20'H						101,300	252,500					269,800	623,600
	STRUCTURAL STEEL		EST	20	TN		2650	0	53,000	16.00	368	STST	105.71	38,900	91,900
	INSULATED METAL SIDING		EST	3,400	SF		12	0	40,800	0.11	430	SDNG	93.41	40,200	81,000
	ROLLING OVERHEAD DOOR		EST	320	SF		27	0	8,600	0.25	92	CARP	71.88	6,600	15,200
	METAL ROOF DECKING		EST	1,750	SF		2.7	0	4,700	0.06	121	STST	105.71	12,800	17,500
	RIGID ROOF INSULATION		EST	1,750	SF		2.4	0	4,200	0.02	30	ROOF	69.12	2,100	6,300
	ROOFING (4-PLY TAR & GRAVEL)		EST	1,750	SF		1.55	0	2,700	0.04	81	ROOF	69.12	5,600	8,300
	LIGHTWEIGHT CONCRETE FILL 1"		EST	5	CY		100	0	500	1.30	8	ROOF	69.12	600	1,100
	ROOF FLASHING		EST	170	LF		14.45	0	2,500	0.12	23	ROOF	69.12	1,600	4,100
	ROOF DRAINS		EST	1	LT		20000	0	15,000	250.00	288	PLMB	79.42	22,800	37,800

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	FLOOR DRAINS		EST	1	LT		18000	0	20,000	220.00	253	PLMB	79.42	20,100	40,100
	FLOOR SLABS		EST	16	CY		210	0	3,400	7.50	138	CONP	79.64	11,000	14,400
	FLOOR FINISHES	MAIN LEVEL	EST	1,313	SF		2.5	0	3,300	0.05	75	CONP	79.64	6,000	9,300
	LOUVERS/WINDOWS/DOORS		EST	340	SF		40	0	13,600	0.35	137	CARP	71.88	9,800	23,400
	ROOF VENTILATORS		EST	2	EA		15000	0	30,000	24.00	55	HVAC	81.24	4,500	34,500
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	438	SF		45	0	19,700	0.40	201	GALL	84.61	17,000	36,700
	H&V		EST	1	LT	26250	10500	26,300	10,500	490.67	564	HVAC	81.24	45,800	82,600
	ADDITONAL HVAC UNIT FOR ELECTRICAL ROOM & CONTROLS	40T PACKAGED UNIT FOR ELECTRICAL EQUIPMENT ROOM. INCLUDES ALLOWANCE FOR CONCRETE PAD AND ELECTRICAL WORK	EST	1	LT	75000	20000	75,000	20,000	350.00	300	HVAC	81.24	24,400	119,400
19.24	SITE GRADING - GYPSUM HANDLING AREA							0	0					587,800	587,800
	CUT		EST	18,000	CY			0	0	0.08	1,656	ETWK	177.49	293,900	293,900
	FILL		EST	18,000	CY			0	0	0.08	1,656	ETWK	177.49	293,900	293,900
19.25	ROADS & SURFACING - GYPSUM HANDLING AREA							0	188,000					427,900	615,900
	CONCRETE PAD BUILDING ENTRANCES	10" REINFORCED CONCRETE	EST	100	SY		80	0	8,000	1.50	173	CONP	79.64	13,700	21,700
	AGGREGATE AREA SURFACING	INCLUDES: 6" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST	20,000	SY		9	0	180,000	0.17	3,910	BCSE	105.94	414,200	594,200
19.26	GYPSUM HANDLING & STORAGE							0	1,179,900					1,854,100	3,034,000
	GYPSUM AREA SURFACING	12" REINFORCED CONCRETE	EST	11,500	SY		96	0	1,104,000	1.60	21,160	CONP	79.64	1,685,200	2,789,200
	GYPSUM RUNOFF DRAINAGE DITCH	6" REINFORCED CONCRETE	EST	1,300	SY		48	0	62,400	1.20	1,794	CONP	79.64	142,900	205,300
	DRAINAGE CULVERTS	24" DIA CHDPE	EST	150	LF		84.7	0	12,700	1.41	243	YDPP	90.14	21,900	34,600
	EXCAVATION / BACKFILL	FOR UNDERGROUND PIPING	EST	167	CY			0	0	0.20	38	EXFD	90.00	3,500	3,500
	BEDDING	FOR UNDERGROUND PIPING	EST	22	CY		35.0	0	800	0.25	6	EXFD	90.00	600	1,400
19.27	GYPSUM RUNOFF POND							68,000	110,400					315,700	494,100
	SAND EXCAVATION		EST	4,000	CY			0	0	0.03	120	ETWK	177.49	21,200	21,200
	ROCK EXCAVATION	ASSUME ROCK IS RIPPABLE	EST	500	CY			0	0	0.05	28	ETWK	177.49	4,900	4,900
	POND SURFACING	6" REINFORCED CONCRETE	EST	2,300	SY		48	0	110,400	1.20	3,174	CONP	79.64	252,800	363,200
	PUMPS	500 GPM, 100 PSIG	EST	2	EA	34000		68,000	0	180.00	414	MECH	88.89	36,800	104,800
19.28	GYPSUM RUNOFF POND PUMP STRUCTURE - CONCRETE							0	47,000					105,400	152,400
	EXCAVATION / BACKFILL		EST	0	CY			0	0	0.36	0	EXFD	90.00	0	0
	REINFORCING		EST	7	TN		1,150.00	0	8,100	20.00	161	REIN	78.27	12,600	20,700
	FORMWORK		EST	3,968	SF		2.50	0	9,900	0.14	639	FORM	99.43	63,500	73,400
	CONCRETE		EST	76	CY		105.00	0	8,000	1.50	131	CONP	79.64	10,400	18,400
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	380	LB		2.50	0	1,000	0.06	26	CARP	71.88	1,900	2,900
	BYPRODUCT POND PUMP STRUCTURE - GALLERY		EST	5	TN		4,000.00	0	20,000	35.00	201	GALL	84.61	17,000	37,000
19.29	OILY WATER SEWER - GYPSUM HANDLING AREA							1,500	9,000					14,200	24,700
	PIPING	6" CISP	EST	200	LF		21.5	0	4,300	0.33	76	YDPP	90.14	6,800	11,100
	POST INDICATOR VALVE		EST	2	EA	750		1,500	0	6.00	14	YDPP	90.14	1,200	2,700
	MANHOLES		EST	3	EA		1575.0	0	4,700	20.00	69	YDPP	90.14	6,200	10,900
19.30	OIL SEPARATOR - GYPSUM HANDLING AREA	500 GPM W/ INTEGRAL LIFT STATION	EST	1	EA	50000		50,000	0	560.00	644	YDPP	90.14	58,100	108,100
19.31	EROSION & SEDIMENT CONTROL - GYPSUM HANDLING AREA							0	18,000					28,300	46,300
	SILT FENCE		EST	8,000	LF		1.0	0	8,000	0.02	184	LAND	61.45	11,300	19,300
	ROCK CHECK DAMS		EST	20	EA		500.0	0	10,000	12.00	276	LAND	61.45	17,000	27,000
19.32	SITE GRADING - ACCESS ROAD WIDENING & CONTAINMENT DITCH	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA						0	0					60,400	60,400
	CUT		EST	2,700	CY			0	0	0.08	248	ETWK	177.49	44,100	44,100
	FILL		EST	1,000	CY			0	0	0.08	92	ETWK	177.49	16,300	16,300

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19.33	ROADS & SURFACING - GYPSUM DEWATERING AREA	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA						0	66,300					190,800	257,100
	WIDENING OF EXISTING ROAD	INCLUDES: 6" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST	3,700	SY		9	0	33,300	0.17	723	BCSE	105.94	76,600	109,900
	GUARDRAIL	INCLUDES POSTS	EST	2,200	SY		15	0	33,000	0.50	1,265	PBIT	90.25	114,200	147,200
19.34	PIPELINE CONTAINMENT & DRAINAGE	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA						0	271,600					429,200	700,800
	CONTAINMENT / DICTH SURFACING	4" SHOTCRETE W/ WELDED WIRE FABRIC	EST	5,800	SY		46	0	265,800	0.78	5,188	CONP	79.64	413,200	679,000
	CONCRETE ENERGY DISSIPATION STRUCTURE		EST	25	CY		230	0	5,800	7.00	201	CONP	79.64	16,000	21,800
19.35	CONTAINMENT RUNOFF POND	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA						68,000	114,300					344,300	526,600
	SAND EXCAVATION		EST	4,000	CY			0	0	0.03	120	ETWK	177.49	21,200	21,200
	ROCK EXCAVATION	ASSUME ROCK IS RIPPABLE	EST	500	CY			0	0	0.05	28	ETWK	177.49	4,900	4,900
	POND SURFACING	6" REINFORCED CONCRETE	EST	2,300	SY		48	0	110,400	1.20	3,174	CONP	79.64	252,800	363,200
	PUMPS	500 GPM, 100 PSIG	EST	2	EA	34000		68,000	0	180.00	414	MECH	88.89	36,800	104,800
	LARGE BORE PIPING	6" HDPE, SDR 9	EST	400	LF		9.8	0	3,900	0.69	317	YDPP	90.14	28,600	32,500
19.36	CONTAINMENT POND PUMP STRUCTURE - CONCRETE	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA						0	47,000					105,400	152,400
	EXCAVATION / BACKFILL		EST	0	CY			0	0	0.36	0	EXFD	90.00	0	0
	REINFORCING		EST	7	TN		1,150.00	0	8,100	20.00	161	REIN	78.27	12,600	20,700
	FORMWORK		EST	3,968	SF		2.50	0	9,900	0.14	639	FORM	99.43	63,500	73,400
	CONCRETE		EST	76	CY		105.00	0	8,000	1.50	131	CONP	79.64	10,400	18,400
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	380	LB		2.50	0	1,000	0.06	26	CARP	71.88	1,900	2,900
	BYPRODUCT POND PUMP STRUCTURE - GALLERY		EST	5	TN		4,000.00	0	20,000	35.00	201	GALL	84.61	17,000	37,000
19.37	SITE GRADING - PIPELINE CONTAINMENT & DRAINAGE	SOUTH OF HWY 23						0	0					30,200	30,200
	CUT		EST	1,600	CY			0	0	0.08	147	ETWK	177.49	26,100	26,100
	FILL		EST	250	CY			0	0	0.08	23	ETWK	177.49	4,100	4,100
19.38	PIPELINE CONTAINMENT & DRAINAGE	SOUTH OF HWY 23						0	169,600					263,600	433,200
	CONTAINMENT / DICTH SURFACING	4" SHOTCRETE W/ WELDED WIRE FABRIC	EST	3,700	SY		46	0	169,600	0.78	3,309	CONP	79.64	263,600	433,200
19.39	PIPE BORING PIT	SOUTH OF HWY 23						0	5,300					50,900	56,200
	SAND EXCAVATION		EST	950	CY			0	0	0.08	87	ETWK	177.49	15,500	15,500
	ROCK EXCAVATION	ASSUMED ROCK IS RIPPABLE	EST	400	CY			0	0	0.08	37	ETWK	177.49	6,500	6,500
	BACKFILL		EST	1,350	CY			0	0	0.10	155	ETWK	177.49	27,600	27,600
	4" TOPSOIL		EST	100	SY		45	0	4,500	0.07	7	LAND	61.45	500	5,000
	GRASS SEEDING, FERTILIZER AND MULCH		EST	0.2	AC		4000	0	800	60.00	14	LAND	61.45	800	1,600
19.40	PIPE RECEIVING PIT	NORTH OF HWY 23						0	4,900					43,500	48,400
	SAND EXCAVATION		EST	800	CY			0	0	0.08	74	ETWK	177.49	13,100	13,100
	ROCK EXCAVATION	ASSUMED ROCK IS RIPPABLE	EST	350	CY			0	0	0.08	32	ETWK	177.49	5,700	5,700
	BACKFILL		EST	1,150	CY			0	0	0.10	132	ETWK	177.49	23,500	23,500
	4" TOPSOIL		EST	90	SY		45	0	4,100	0.07	7	LAND	61.45	400	4,500
	GRASS SEEDING, FERTILIZER AND MULCH		EST	0.2	AC		4000	0	800	60.00	14	LAND	61.45	800	1,600
19.41	DIRECTIONAL BORING FOR BURIED PIPE	BENEATH HWY 23						28,000	652,500					277,000	957,500
	MOBILIZATION / DEMOBILIZATION	BORING EQUIPMENT, MUD TRAILER, OPERATORS AND LABORERS	EST	1	LT		12000	0	12,000	80.00	92	EXFD	90.00	8,300	20,300
	EQUIPMENT RENTAL	BORING EQUIPMENT, MUD TRAILER. BASED ON 2 WEEKS RENTAL	EST	1	LT	28000		28,000	0	400.00	460	EXFD	90.00	41,400	69,400
	DIRECTIONAL BORING	7-24" DIA 320FT LONG EACH	EST	2,240	LF			0	0	0.32	824	EXFD	90.00	74,200	74,200
	LARGE BORE PIPING	FOR UNDERGROUND SLEEVE, 24" CS PIPE, 40 FT SPOOL PIECES	EST	2,240	LF		285	0	638,400	0.65	1,674	YDPP	90.14	150,900	789,300
	RUBBER END SEALS	NEOPRENE	EST	14	EA		150	0	2,100	1.50	24	YDPP	90.14	2,200	4,300

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19.42	TRANSFORMERS							470,000	0					136,500	606,500
	SST TRANSFORMERS: 23F & 23G	13.8KV-4160V, 2 WINDING XFMR	EST	2	EA	150000		300,000	0	450.00	1,035	EHEA	79.16	81,900	381,900
	SUS TRANSFORMERS: 36F/G	13.8KV-480V,3PHASE, CAST COIL	EST	2	EA	85000		170,000	0	300.00	690	EHEA	79.16	54,600	224,600
19.43	SWITCHGEAR							825,600	0					500,700	1,326,300
	13.8 KV MEDIUM VOLTAGE SWITCHGEAR (13F/G))	PRICE PER SECTION	EST	6	EA	50000		300,000	0	325.00	2,243	EHEA	79.16	177,500	477,500
	4.16KV MEDIUM VOLTAGE SWITCHGEAR& MCCS (21F/G)	PRICE PER SECTION	EST	8	EA	41200		329,600	0	300.00	2,760	EHEA	79.16	218,500	548,100
	480V LOW VOLTAGE SWITCHGEAR (31F/G ; 32F/G)	PRICE PER SECTION	EST	5	EA	39200		196,000	0	230.00	1,323	EHEA	79.16	104,700	300,700
19.44	CABLE BUS & TERMINATIONS							355,500	39,400					730,700	1,125,600
	5KV CABLE BUS		EST	300	FT	567		170,100	0	9.00	3,105	WIRE	98.84	306,900	477,000
	480V CABLE BUS		EST	300	FT	618		185,400	0	10.30	3,554	WIRE	98.84	351,200	536,600
	CABLE BUS TERMINATION	5KV TERMINATIONS	EST	4	EA		4,440.00	0	17,800	51.60	237	WIRE	98.84	23,500	41,300
	CABLE BUS TERMINATION	480V TERMINATIONS	EST	8	EA		2,700.00	0	21,600	54.00	497	WIRE	98.84	49,100	70,700
19.45	MCC							123,600	0					6,300	129,900
	480V MCC	PER MCC LINEUP	EST	4	EA	30900		123,600	0	16.00	64	WIRE	98.84	6,300	129,900
19.46	MIMIC PANELS		EST	1	EA	17500		17,500	0	16.00	16	WIRE	98.84	1,600	19,100
19.47	EMERGENCY POWER SYSTEM							285,500	0					38,900	324,400
	DC PANEL BOADRD		EST	1	EA	15500		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	UPS PANEL BOARDS		EST	2	EA	15500		31,000	0	40.00	92	WIRE	98.84	9,100	40,100
	UPS		EST	1	EA	60000		60,000	0	32.00	37	WIRE	98.84	3,600	63,600
	SWITCHBOARD		EST	1	EA	40000		40,000	0	40.00	46	WIRE	98.84	4,500	44,500
	BYPASS TRANSFORMERS		EST	1	EA	25000		25,000	0	40.00	46	WIRE	98.84	4,500	29,500
	BATTERY CHARGER		EST	2	EA	32000		64,000	0	16.00	37	WIRE	98.84	3,600	67,600
	BATTERIES		EST	1	LT	50000		50,000	0	80.00	92	WIRE	98.84	9,100	59,100
19.48	GROUNDING							9,400	0					25,400	34,800
	GROUND ROD	3/4" - 20' LONG	EST	8	EA	150		1,200	0	4.00	37	WIRE	98.84	3,600	4,800
	500 MCM	BARE COPPER WIRE	EST	1,000	FT	7.65		7,700	0	0.12	138	WIRE	98.84	13,600	21,300
	CADWELD		EST	32	EA	15		500	0	2.00	74	WIRE	98.84	7,300	7,800
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	8.00	9	WIRE	98.84	900	900
19.49	LIGHTING/ TRANSFORMERS & PANELS							52,000	135,000					104,500	291,500
	LIGHT FIXTURES		EST	180	EA		750	0	135,000	4.00	828	WIRE	98.84	81,800	216,800
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	10000		20,000	0	40.00	92	WIRE	98.84	9,100	29,100
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	7500		15,000	0	32.00	74	WIRE	98.84	7,300	22,300
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	2	EA	5000		10,000	0	16.00	37	WIRE	98.84	3,600	13,600
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	2	EA	3500		7,000	0	12.00	28	WIRE	98.84	2,700	9,700
19.50	RACEWAY, CABLE TRAY, & CONDUIT							0	354,700					1,514,100	1,868,800
	12" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,000	LF		18.25	0	18,300	1.10	1,100	WIRE	98.84	108700	127,000
	18" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,000	LF		21.50	0	21,500	1.45	1,450	WIRE	98.84	143300	164,800
	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,000	LF		27.10	0	27,100	1.75	1,750	WIRE	98.84	173000	200,100
	36" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,000	LF		30.30	0	30,300	1.95	1,950	WIRE	98.84	192700	223,000
	5" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	900	LF		61.00	0	54,900	1.13	1,014	WIRE	98.84	100300	155,200
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,800	LF		31.00	0	55,800	0.81	1,453	WIRE	98.84	143600	199,400

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	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,900	LF		21.50	0	40,900	0.65	1,226	WIRE	98.84	121100	162,000
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	2,800	LF		9.25	0	25,900	0.35	986	WIRE	98.84	97400	123,300
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	3,500	LF		7.15	0	25,000	0.28	994	WIRE	98.84	98200	123,200
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	6,000	LF		4.44	0	26,600	0.24	1,434	WIRE	98.84	141700	168,300
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	8,800	LF		3.23	0	28,400	0.19	1,963	WIRE	98.84	194100	222,500
19.51	13.8 KV OH LINE OPGW	INCLUDES POLES, CONDUCTORS, INSULATORS & GROUNDING	EST	5,250	LF		45.75	0	240,200	0.49	2,958	WIRE	98.84	292400	532,600
19.52	HIGH VOLTAGE POWER CABLE & TERMINATION							0	88,400					256,600	345,000
	1/C # 500KCMIL-15KV	1/C # 500KCMIL-15KV	EST	1,800	LF		9.27	0	16,700	0.23	476	WIRE	98.84	47100	63,800
	1/C # 4/0-15KV	1/C # 4/0-15KV	EST	15,750	LF		4.55	0	71,700	0.12	2,119	WIRE	98.84	209500	281,200
19.53	MEDIUM VOLTAGE POWER CABLE & TERMINATION	1/C # 350KCMIL-5KV	EST	3,000	LF		6.13	0	18,400	0.23	794	WIRE	98.84	78400	96,800
19.54	LOW VOLTAGE POWER CABLE & TERMINATION							0	62,700					547,400	610,100
	3/C # 500KCMIL- 600V		EST	2,400	LF		26.12	0	62,700	0.69	1,904	WIRE	98.84	188200	250,900
	#4/0 - #12 AWG-600V		EST	40,000	LF		7.22			0.08	3,634	WIRE	98.84	359200	359,200
19.55	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	EST	35,000	LF		3.20	0	112,000	0.08	3,180	WIRE	98.84	314300	426,300
19.56	FOUNDATIONS FOR TRANSFORMERS							0	70,200					205,400	275,600
	EXCAVATION / BACKFILL		EST	1,000	CY			0	0	0.36	414	EXFD	90.00	37,300	37,300
	REINFORCING		EST	20	TN		1,150.00	0	23,000	20.00	460	REIN	78.27	36,000	59,000
	FORMWORK		EST	5,000	SF		2.50	0	12,500	0.14	805	FORM	99.43	80,000	92,500
	CONCRETE		EST	190	CY		105.00	0	20,000	1.50	328	CONP	79.64	26,100	46,100
	MUD MAT		EST	45	CY		105.00	0	4,700	1.50	78	CONP	79.64	6,200	10,900
	EMBEDDED STEEL		EST	4,000	LB		2.50	0	10,000	0.06	276	CARP	71.88	19,800	29,800
19.57	FIREWALL FOR TRANSFORMERS							0	3,200					8,300	11,500
	REINFORCING		EST	1.2	TN		1,150.00	0	1,400	20.00	28	REIN	78.27	2,200	3,600
	FORMWORK		EST	80	SF		2.50	0	200	0.14	13	FORM	99.43	1,300	1,500
	CONCRETE		EST	15	CY		105.00	0	1,600	3.50	60	CONP	79.64	4,800	6,400
19.58	COMMUNICATIONS		EST	1	LT		34,000.00	0	34,000	229.00	263	WIRE	98.84	26,000	60,000
19.59	LIGHTNING PROTECTION		EST	1	LT		13,000.00	0	13,000	91.00	105	WIRE	98.84	10,300	23,300
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							12,728,800	16,133,500		354,068			31,754,300	60,616,600
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										5,661,466
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						30,789		89.68	2,761,000	2,761,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						38,486			2,900,466	2,900,466
	PER DIEM	NONE		0.00	HR						423,342			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				80,668					158,772	239,439
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				806,675						806,675
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			636,440							636,440
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				806,675					1,587,715	2,394,390

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	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				2,420,025					4,763,145	7,183,170
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							636,400	4,114,000					12,171,100	16,921,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BY-PRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)						13,365,200	20,247,500					43,925,400	77,538,200
20.0	WET FGD ABSORBER ISLAND														0
20.1	MECHANICAL EQUIPMENT	INCLUDES ABSORBER MODULE (A2205) WITH INTERNALS, INLET DUCT ONLY THROUGH WET/DRY INTERFACE, PIPING INSIDE ABSORBER BUILDING TO TERMINAL POINTS, RECYCLE PUMPS, OXIDATION BLOWERS, MIST ELIMINATOR AND WASH PUMPS AND OTHER MISC. EQUIPMENT AND MATERIAL	EST	1	LT	41363000		41,363,000	0	400000.00	460,000	MECH	88.89	40,889,400	82,252,400
20.2	ADDITIONAL COST FOR C276 ABSORBER SHELL MATERIAL ABOVE THE PRICE OF A2205 ABSORBER SHELL	INCLUDES MATERIAL AND WELDING ROD COST DIFFERENTIAL - 49,800 TOTAL SF	EST	49,800	SF		308.00	0	15,338,400	0.00	0	MECH	88.89	0	15,338,400
20.3	SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
20.4	AGITATOR FOR SUMP PUMPS	5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
20.5	EMERGENCY DIESEL DRIVEN QUENCH PUMP	WITH FUEL DAY TANK. FOUNDATIONS INCLUDED WITH ABSORBER BUILDING FOUNDATIONS		1	EA	150,000		150,000	0	300.00	345	MECH	88.89	30,700	180,700
20.6	PIPING - MECHANICAL	ALL PIPING INCLUDED IN OEM EQUIPMENT COST. NO BOP PIPING						0	0					0	0
20.7	ABSORBER VESSEL - FOUNDATIONS							0	366,900					672,900	1,039,800
	EXCAVATION / BACKFILL		EST	2,921	CY			0	0	0.36	1,209	EXFD	90.00	108,800	108,800
	REINFORCING		EST	148	TN		1,150.00	0	170,200	20.00	3,404	REIN	78.27	266,400	436,600
	FORMWORK		EST	2,121	SF		2.50	0	5,300	0.14	341	FORM	99.43	34,000	39,300
	CONCRETE		EST	1,571	CY		105.00	0	165,000	1.50	2,710	CONP	79.64	215,800	380,800
	MUD MAT		EST	65	CY		105.00	0	6,800	1.50	112	CONP	79.64	8,900	15,700
	EMBEDDED STEEL		EST	7,855	LB		2.50	0	19,600	0.06	542	CARP	71.88	39,000	58,600
20.8	ABSORBER BUILDING - FOUNDATIONS							0	579,500					961,200	1,540,700
	EXCAVATION / BACKFILL		EST	2,440	CY			0	0	0.36	1,010	EXFD	90.00	90,900	90,900
	REINFORCING		EST	240	TN		1,150.00	0	276,000	20.00	5,520	REIN	78.27	432,100	708,100
	FORMWORK		EST	2,400	SF		2.50	0	6,000	0.14	386	FORM	99.43	38,400	44,400
	CONCRETE		EST	2,500	CY		105.00	0	262,500	1.50	4,313	CONP	79.64	343,400	605,900
	MUD MAT		EST	185	CY		105.00	0	19,400	1.50	319	CONP	79.64	25,400	44,800
	EMBEDDED STEEL		EST	6,250	LB		2.50	0	15,600	0.06	431	CARP	71.88	31,000	46,600
20.9	ABSORBER BUILDING	150' L X 90' W X 60' H						164,500	2,622,800					2,402,700	5,190,000
	STRUCTURAL STEEL		EST	560	TN		2650	0	1,484,000	16.00	10,304	STST	105.71	1,089,200	2,573,200
	INSULATED METAL SIDING		EST	28,800	SF		12	0	345,600	0.11	3,643	SDNG	93.41	340,300	685,900
	ROLLING OVERHEAD DOOR		EST	960	SF		27	0	25,900	0.25	276	CARP	71.88	19,800	45,700
	METAL ROOF DECKING		EST	13,500	SF		2.7	0	36,500	0.06	932	STST	105.71	98,500	135,000
	RIGID ROOF INSULATION		EST	13,500	SF		2.4	0	32,400	0.02	233	ROOF	69.12	16,100	48,500
	ROOFING (4-PLY TAR & GRAVEL)		EST	13,500	SF		1.55	0	20,900	0.04	621	ROOF	69.12	42,900	63,800

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	LIGHTWEIGHT CONCRETE FILL 1"		EST	39	CY		100	0	3,900	1.30	58	ROOF	69.12	4,000	7,900
	ROOF FLASHING		EST	480	LF		14.45	0	6,900	0.12	66	ROOF	69.12	4,600	11,500
	ROOF DRAINS		EST	1	LT		45000	0	15,000	500.00	575	PLMB	79.42	45,700	60,700
	FLOOR DRAINS		EST	1	LT		37500	0	20,000	375.00	431	PLMB	79.42	34,200	54,200
	FLOOR SLABS	INCLUDES METAL DECKING AND FORMWORK	EST	58	CY		210	0	12,300	7.50	503	CONP	79.64	40,100	52,400
	FLOOR FINISHES		EST	8,370	SF		2.5	0	20,900	0.05	481	CONP	79.64	38,300	59,200
	LOUVERS/WINDOWS/DOORS		EST	5,760	SF		40	0	230,400	0.35	2,318	CARP	71.88	166,600	397,000
	ROOF VENTILATORS		EST	6	EA		20000	0	120,000	32.00	221	HVAC	81.24	17,900	137,900
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	4,050	SF		45	0	182,300	0.40	1,863	GALL	84.61	157,600	339,900
	H&V		EST	1	LT	164500	65800	164,500	65,800	3070.67	3,531	HVAC	81.24	286,900	517,200
20.10	PIPE SUPPORT PAD - ABSORBER BUILDING							0	7,700					16,100	23,800
	EXCAVATION / BACKFILL		EST	95	CY			0	0	0.36	39	EXFD	90.00	3,500	3,500
	REINFORCING		EST	5.0	TN		1,150.00	0	5,800	20.00	115	REIN	78.27	9,000	14,800
	FORMWORK		EST	80	SF		2.50	0	200	0.14	13	FORM	99.43	1,300	1,500
	CONCRETE		EST	10	CY		105.00	0	1,100	1.50	17	CONP	79.64	1,400	2,500
	MUD MAT		EST	5	CY		105.00	0	500	1.50	9	CONP	79.64	700	1,200
	EMBEDDED STEEL		EST	50	LB		2.50	0	100	0.06	3	CARP	71.88	200	300
20.11	OXIDATION AIR BLOWER BUILDING - FOUNDATIONS							0	37,000					67,300	104,300
	EXCAVATION / BACKFILL		EST	188	CY			0	0	0.36	78	EXFD	90.00	7,000	7,000
	REINFORCING		EST	16.0	TN		1,150.00	0	18,400	20.00	368	REIN	78.27	28,800	47,200
	FORMWORK		EST	480	SF		2.50	0	1,200	0.14	77	FORM	99.43	7,700	8,900
	CONCRETE		EST	133	CY		105.00	0	14,000	1.50	229	CONP	79.64	18,300	32,300
	MUD MAT		EST	16	CY		105.00	0	1,700	1.50	28	CONP	79.64	2,200	3,900
	EMBEDDED STEEL		EST	665	LB		2.50	0	1,700	0.06	46	CARP	71.88	3,300	5,000
20.12	OXIDATION AIR BLOWER BUILDING	30' L X 30' W X 25' H						33,800	191,000					201,400	426,200
	STRUCTURAL STEEL		EST	14	TN		2650	0	35,800	16.00	248	STST	105.71	26,300	62,100
	INSULATED METAL SIDING		EST	3,000	SF		12	0	36,000	0.11	380	SDNG	93.41	35,400	71,400
	ROLLING OVERHEAD DOOR		EST	320	SF		27	0	8,600	0.25	92	CARP	71.88	6,600	15,200
	METAL ROOF DECKING		EST	900	SF		2.7	0	2,400	0.06	62	STST	105.71	6,600	9,000
	RIGID ROOF INSULATION		EST	900	SF		2.4	0	2,200	0.02	16	ROOF	69.12	1,100	3,300
	ROOFING (4-PLY TAR & GRAVEL)		EST	900	SF		1.55	0	1,400	0.04	41	ROOF	69.12	2,900	4,300
	LIGHTWEIGHT CONCRETE FILL 1"		EST	3	CY		100	0	300	1.30	4	ROOF	69.12	300	600
	ROOF FLASHING		EST	120	LF		14.45	0	1,700	0.12	17	ROOF	69.12	1,100	2,800
	ROOF DRAINS		EST	1	LT		7000	0	15,000	50.00	58	PLMB	79.42	4,600	19,600
	FLOOR DRAINS		EST	1	LT		7500	0	20,000	60.00	69	PLMB	79.42	5,500	25,500
	FLOOR SLABS	NONE	EST	0	CY		210	0	0	7.50	0	CONP	79.64	0	0
	FLOOR FINISHES	MAIN LEVEL	EST	810	SF		2.5	0	2,000	0.05	47	CONP	79.64	3,700	5,700
	BLOCK WALLS	SOUND ATTENUATING INTERIOR BLOCK WALLS	EST	3,000	SF		8	0	24,000	0.18	621	MSRY	73.39	45,600	69,600
	LOUVERS/WINDOWS/DOORS & VENTILATORS	SOUND ATTENUATING	EST	300	SF	75	40	22,500	12,000	1.25	431	CARP	71.88	31,000	65,500
	ROOF VENTILATORS		EST	1	EA		15000	0	15,000	24.00	28	HVAC	81.24	2,200	17,200
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	225	SF		45	0	10,100	0.40	104	GALL	84.61	8,800	18,900
	H&V		EST	1	LT	11250	4500	11,300	4,500	210.67	242	HVAC	81.24	19,700	35,500
20.13	PIPE SUPPORT PAD - OXIDATION BUILDING							0	7,700					13,700	21,400
	EXCAVATION / BACKFILL		EST	30	CY			0	0	0.36	12	EXFD	90.00	1,100	1,100
	REINFORCING		EST	5.0	TN		1,150.00	0	5,800	20.00	115	REIN	78.27	9,000	14,800
	FORMWORK		EST	80	SF		2.50	0	200	0.14	13	FORM	99.43	1,300	1,500
	CONCRETE		EST	10	CY		105.00	0	1,100	1.50	17	CONP	79.64	1,400	2,500
	MUD MAT		EST	5	CY		105.00	0	500	1.50	9	CONP	79.64	700	1,200
	EMBEDDED STEEL		EST	50	LB		2.50	0	100	0.06	3	CARP	71.88	200	300
20.14	DUCTWORK	INCLUDES INTERNAL BRACING AND TURNING VANES	EST	115	TN		3,250.00	0	373,800	50.00	6,613	FLDU	107.96	713,900	1,087,700
20.15	DUCT SUPPORT STEEL	THREE-COAT SHOP PAINT	EST	58	TN		2,900.00	0	168,200	24.00	1,601	STST	105.71	169,200	337,400
20.16	DUCTWORK INSULATION & LAGGING		EST	11,000	SF		12.00	0	132,000	0.25	3,163	DINS	81.75	258,500	390,500

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20.17	FOUNDATIONS FOR DUCT SUPPORT STEEL							0	17,700					35,300	53,000
	EXCAVATION / BACKFILL		EST	144	CY			0	0	0.36	60	EXFD	90.00	5,400	5,400
	REINFORCING		EST	6	TN		1,150.00	0	7,400	20.00	147	REIN	78.27	11,500	18,900
	FORMWORK		EST	360	SF		2.50	0	900	0.14	58	FORM	99.43	5,800	6,700
	CONCRETE		EST	72	CY		105.00	0	7,600	1.50	124	CONP	79.64	9,900	17,500
	MUD MAT		EST	11	CY		105.00	0	1,200	1.50	19	CONP	79.64	1,500	2,700
	EMBEDDED STEEL		EST	240	LB		2.50	0	600	0.06	17	CARP	71.88	1,200	1,800
20.18	TRANSFORMERS							981,000	0					209,300	1,190,300
	SST TRANSFORMERS: 22F & 22G	13.8KV-4160V, 2 WINDING XFMR	EST	2	EA	320500		641,000	0	550.00	1,265	EHEA	79.16	100,100	741,100
	SUS TRANSFORMERS: 34F/G; 35F/G	13.8KV-480V,3PHASE, CAST COIL	EST	4	EA	85000		340,000	0	300.00	1,380	EHEA	79.16	109,200	449,200
20.19	SWITCHGEAR							1,162,800	0					673,700	1,836,500
	13.8 KV MEDIUM VOLTAGE SWITCHGEAR	PRICE PER SECTION	EST	8	EA	50000		400,000	0	300.00	2,760	EHEA	79.16	218,500	618,500
	4.16KV MEDIUM VOLTAGE SWITCHGEAR& MCCS	PRICE PER SECTION	EST	9	EA	41200		370,800	0	300.00	3,105	EHEA	79.16	245,800	616,600
	480V LOW VOLTAGE SWITCHGEAR	PRICE PER SECTION	EST	10	EA	39200		392,000	0	230.00	2,645	EHEA	79.16	209,400	601,400
20.20	CABLE BUS & TERMINATIONS							867,100	46,600					1,634,100	2,547,800
	15KV CABLE BUS	CABLE BUS	EST	700	FT	466		326,200	0	6.75	5,434	WIRE	98.84	537,100	863,300
	5KV CABLE BUS	CABLE BUS	EST	300	FT	567		170,100	0	9.00	3,105	WIRE	98.84	306,900	477,000
	480V CABLE BUS	CABLE BUS	EST	600	FT	618		370,800	0	10.30	7,107	WIRE	98.84	702,500	1,073,300
	CABLE BUS TERMINATION	500MCM- 15KV TERMINATIONS	EST	4	EA		1,800.00	0	7,200	33.00	152	WIRE	98.84	15,000	22,200
	CABLE BUS TERMINATION	1000MCM- 5KV TERMINATIONS	EST	4	EA		4,440.00	0	17,800	51.60	237	WIRE	98.84	23,500	41,300
	CABLE BUS TERMINATION	750MCM- 480V TERMINATIONS	EST	8	EA		2,700.00	0	21,600	54.00	497	WIRE	98.84	49,100	70,700
20.21	MCC							216,300	0					11,100	227,400
	480V MCC	PER MCC LINE UP	EST	7	EA	30900		216,300	0	16.00	112	WIRE	98.84	11,100	227,400
20.22	MIMIC PANELS		EST	2	EA	17500		35,000	0	40.00	80	WIRE	98.84	7,900	42,900
20.23	GROUNDING							16,000	0					46,100	62,100
	GROUND ROD	3/4" - 20' LONG	EST	16	EA	150		2,400	0	4.00	74	WIRE	98.84	7,300	9,700
	500 MCM	BARE COPPER WIRE	EST	1,650	FT	7.65		12,600	0	0.12	228	WIRE	98.84	22,500	35,100
	CADWELD		EST	64	EA	15		1,000	0	2.00	147	WIRE	98.84	14,500	15,500
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	16.00	18	WIRE	98.84	1,800	1,800
20.24	LIGHTING/ TRANSFORMERS & PANELS							164,500	165,000					171,300	500,800
	LIGHT FIXTURES		EST	220	EA		750	0	165,000	4.00	1,012	WIRE	98.84	100,000	265,000
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	6	EA	10000		60,000	0	40.00	276	WIRE	98.84	27,300	87,300
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	6	EA	7500		45,000	0	32.00	221	WIRE	98.84	21,800	66,800
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	7	EA	5000		35,000	0	16.00	129	WIRE	98.84	12,700	47,700
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	7	EA	3500		24,500	0	12.00	97	WIRE	98.84	9,500	34,000
20.25	EMERGENCY POWER SYSTEM							108,300	0					24,400	132,700
	DC PANEL BOADRD		EST	1	EA	15450		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	UPS PANEL BOARDS		EST	1	EA	15450		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	SATELLITE UPS		EST	1	EA	41200		41,200	0	16.00	18	WIRE	98.84	1,800	43,000
	VRLA BATTERIES		EST	1	LT	36050		36,100	0	120.00	138	WIRE	98.84	13,600	49,700

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20.26	RACEWAY, CABLE TRAY, & CONDUIT							0	1,515,700					5,849,000	7,364,700
	12" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	2,450	LF		18.25	0	44,700	1.10	2,695	WIRE	98.84	266400	311,100
	18" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,650	LF		21.50	0	35,500	1.45	2,393	WIRE	98.84	236500	272,000
	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	2,950	LF		27.10	0	79,900	1.75	5,163	WIRE	98.84	510300	590,200
	36" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,650	LF		30.30	0	50,000	1.95	3,218	WIRE	98.84	318000	368,000
	5" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	4,500	LF		61.00	0	274,500	1.13	5,072	WIRE	98.84	501300	775,800
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	8,000	LF		31.00	0	248,000	0.81	6,456	WIRE	98.84	638100	886,100
	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	8,000	LF		21.50	0	172,000	0.65	5,160	WIRE	98.84	510000	682,000
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	13,000	LF		9.25	0	120,300	0.35	4,576	WIRE	98.84	452300	572,600
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	16,000	LF		7.15	0	114,400	0.28	4,544	WIRE	98.84	449100	563,500
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	29,000	LF		4.44	0	128,800	0.24	6,931	WIRE	98.84	685100	813,900
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	53,000	LF		3.23	0	171,200	0.19	11,824	WIRE	98.84	1168700	1,339,900
	DUCT BANK WITH 12-5" & 6-3" CONDUITS	3.08' H X 5.2' W	EST	200	LF		381.96	0	76,400	6.48	1,490	ECND	75.97	113200	189,600
20.27	HIGH VOLTAGE POWER CABLE & TERMINATION							0	58,400					164,700	223,100
	1/C # 500KCMIL-15KV		EST	6,300	LF		9.27	0	58,400	0.23	1,666	WIRE	98.84	164700	223,100
20.28	MEDIUM VOLTAGE POWER CABLE & TERMINATION							0	114,600		0			431,700	546,300
	1/C # 500KCMIL-5KV		EST	6,000	LF		8.08	0	48,500	0.17	1,194	WIRE	98.84	118000	166,500
	1/C # 350KCMIL-5KV		EST	6,600	LF		6.13	0	40,500	0.23	1,746	WIRE	98.84	172500	213,000
	1/C # 250KCMIL-5KV		EST	5,400	LF		4.74	0	25,600	0.23	1,428	WIRE	98.84	141200	166,800
20.29	LOW VOLTAGE POWER CABLE & TERMINATION							0	795,900					1,500,700	2,296,600
	3/C # 500KCMIL- 600V		EST	11,120	LF		26.12	0	290,500	0.69	8,824	WIRE	98.84	872100	1,162,600
	#4/0 - #12 AWG-600V		EST	70,000	LF		7.22	0	505,400	0.08	6,360	WIRE	98.84	628600	1,134,000
20.30	CONTROL & INSTRUMENT CABLE							0	512,000					1,436,700	1,948,700
	#14, #16 & PR # 20 FD & SHLD WIRE		EST	160,000	LF		3.20	0	512,000	0.08	14,536	WIRE	98.84	1436700	1,948,700
20.31	FOUNDATION FOR TRANSFORMERS							0	59,000					173,700	232,700
	FOR 21F & 21G	WITH OIL PIT	EST	178	CY		250	0	44,500	8.00	1,638	CONP	79.64	130,400	174,900
	FOR 31F, 31G, 32F, 32G, 33F & 33G		EST	63.0	CY		230	0	14,500	7.50	543	CONP	79.64	43,300	57,800
20.32	TRANSFORMER FIRE WALLS							0	3,500					9,600	13,100
	FOR 21F & 21G		EST	15	CY		230	0	3,500	7.00	121	CONP	79.64	9,600	13,100
20.33	COMMUNICATIONS		EST	1	LT		34,000.00	0	34,000	229.00	263	WIRE	98.84	26,000	60,000
20.34	LIGHTNING PROTECTION		EST	1	LT		19,500.00	0	19,500	128.00	147	WIRE	98.84	14,500	34,000
20.35	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							45,302,300	23,174,900		650,727			58,840,700	127,317,900
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														

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	ADDITIONAL CRANE ALLOWANCE			9	MN	75000		675,000		720.00	7,452	MECH	88.89	662400	1,337,400
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										10,611,110
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						57,233		90.42	5,175,000	5,175,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						71,541			5,436,110	5,436,110
	PER DIEM	NONE		0.00	HR						786,953			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				115,875					294,204	410,078
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				1,158,745						1,158,745
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			2,265,115							2,265,115
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				1,158,745					2,942,035	4,100,780
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				3,476,235					8,826,105	12,302,340
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							2,940,100	5,909,600					23,335,900	32,185,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	WET FGD ABSORBER ISLAND						48,242,400	29,084,500					82,176,600	159,503,500
21.0	COMPRESSED AIR SYSTEM (BYPRODUCT DEWATERING AREA)														0
21.1	AIR COMPRESSOR & AUXILIARIES							205,200	0					53,200	258,400
	AIR COMPRESSOR	250 CFM, OIL FREE	EST	2	EA	48600		97,200	0	180.00	414	MECH	88.89	36,800	134,000
	DRYERS	DESSICANT TYPE	EST	4	EA	25000		100,000	0	30.00	138	MECH	88.89	12,300	112,300
	RECEIVERS	150 GAL WITH SAFETY RELIEF VALVE AND PRESSURE GAUGE	EST	2	EA	4000		8,000	0	20.00	46	MECH	88.89	4,100	12,100
21.2	PIPING - MECHANICAL							241,100	166,200					633,100	1,040,400
	LARGE BORE PIPING	4" CS, SCHEDULE 40, WELDED	EST	150	LF		23.0	0	3,500	1.48	255	SPNG	94.41	24,100	27,600
	LARGE BORE PIPING	4" SS, SCHEDULE 40, WELDED	EST	150	LF		68.3	0	10,200	1.82	314	SPNG	94.41	29,600	39,800
	VALVE	4" GATE, 150 #, CS, WELDED	EST	25	EA	2,500		62,500	0	7.70	221	SPNG	94.41	20,900	83,400
	VALVE	4" GATE, 150 #, SS, WELDED	EST	25	EA	4,250		106,300	0	9.24	266	SPNG	94.41	25,100	131,400
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE SS, SCH 80 WELDED	EST	1,500	LF		33.70	0	50,600	1.32	2,277	SPNG	94.41	215,000	265,600
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE CS, SCH 80 WELDED	EST	1,500	LF		33.70	0	50,600	1.32	2,277	SPNG	94.41	215,000	265,600
	VALVE	<2" GLOBE, 150# CS, WELDED	EST	50	EA	450		22,500	0	3.40	196	SPNG	94.41	18,500	41,000
	VALVE	<2" GLOBE, 150# SS, WELDED	EST	50	EA	750	750.00	37,500	37,500	4.08	235	SPNG	94.41	22,100	97,100
	VALVE	2" GLOBE, 150# CS, WELDED	EST	10	EA	850		8,500	0	4.20	48	SPNG	94.41	4,600	13,100
	VALVE	2.5" GLOBE, 150 #, CS, WELDED	EST	4	EA	955		3,800	0	4.70	22	SPNG	94.41	2,000	5,800
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	275	EA		50.00	0	13,800	2.00	633	MECH	88.89	56,200	70,000
21.3	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE ARE INCLUDED IN SECTION 19.0 - BYPRODUCT DEWATERING ISLAND													
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							446,300	166,200		7,341			686,300	1,298,800
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										122,687
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						638		93.49	60,000	60,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						798			62,687	62,687

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	PER DIEM	NONE		0.00	HR						8,777			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				831					3,432	4,263
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				8,310						8,310
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			22,315							22,315
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				8,310					34,315	42,625
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				24,930					102,945	127,875
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							22,300	42,400					263,400	328,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	COMPRESSED AIR SYSTEM (BYPRODUCT DEWATERING AREA)						468,600	208,600					949,700	1,626,900
22.0	POTABLE WATER SYSTEM	INCLUDED WITH ACCOUNT 11.0													
22.1	PIPING - MECHANICAL		EST	0	LT			0	0					0	0
	LARGE BORE PIPING	4" HDPE (UNDERGROUND)	EST	0	LF		3.4	0	0	0.46	0	SPNG	94.41	0	0
	VALVE	4" GATE, 150 #, SS, WELDED	EST	0	EA	4,250		0	0	9.24	0	SPNG	94.41	0	0
	EXCAVATION / BACKFILL	FOR UNDERGROUND PIPING	EST	0	CY			0	0	0.20	0	EXFD	90.00	0	0
	BEDDING	FOR UNDERGROUND PIPING	EST	0	CY		35.0	0	0	0.25	0	EXFD	90.00	0	0
22.2	TANKS							0	0					0	0
	POTABLE WATER TANK	1,000 GAL, SS, 5' DIA X 8' - SUBCONTRACT PRICE INCLUDES LABOR	EST	0	EA		8500.0	0	0	0.00	0	TANK	89.16	0	0
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							0	0		0			0	0
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						0		0.00	0	0
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						0			0	0
	PER DIEM	NONE		0.00	HR						0			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				0					0	0
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				0						0
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			0							0
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				0					0	0
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				0					0	0
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							0	0					0	0
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	POTABLE WATER SYSTEM						0	0					0	0
23.0	SCR SUBSTATION UPGRADE														
23.1	TRANSFORMERS							1,126,000	150,000					414,700	1,690,700
	SCR AUX TRANSFORMERS 2F & 2R	138KV - 13.8 KV, 2 WINDING TRANSFORMER	EST	2	EA	550000		1,100,000	0	1200.00	2,760	EHEA	79.16	218,500	1,318,500
	EXISTING 138KV-13.8KV TRANSFORMER REMOVAL	138KV - 13.8 KV, 2 WINDING TRANSFORMER	EST	2	EA		75000	0	150,000	600.00	1,380	EHEA	79.16	109,200	259,200
	MODIFICATIONS TO FOUNDATIONS FOR EXISTING 138KV-13.8KV TRANSFORMER	ALLOWANCE FOR 100 CY. INCLUDES REMOVAL AND MODS	EST	100	CY	260		26,000	0	9.50	1,093	CONP	79.64	87,000	113,000
23.2	SWITCHGEAR							250,000	0					136,600	386,600

				AEP										Estimate No.:	30720C
				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED										Date:	9/29/2010
				ORDER OF MAGNITUDE COST ESTIMATE										Preparer:	MNO
		Cost Type:												Reviewer:	JMK
		Est=Estimated												Approver:	PEF
		Allow.=Allowance								Wage Rates Based on:		BIG SANDY			
		Q=Vendor Quote								Labor Productivity =		1.15			

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	13.8 KV MEDIUM VOLTAGE SWITCHGEAR (2F/2FR)	PRICE PER SECTION	EST	5	EA	50000		250,000	0	300.00	1,725	EHEA	79.16	136,600	386,600
23.3	138 KV OH LINE UPGRADE	6-200FT QUAIL #200	EST	1,200	EA		8.5	0	10,200	0.50	690	EHEA	79.16	54,600	64,800
23.4	FOUNDATION FOR AUX TRANSFORMER							0	63,500					134,400	197,900
	EXCAVATION / BACKFILL		EST	600	CY			0	0	0.36	248	EXFD	90.00	22,400	22,400
	REINFORCING		EST	21.3	TN		1,150.00	0	24,500	20.00	491	REIN	78.27	38,400	62,900
	FORMWORK		EST	1,600	SF		2.50	0	4,000	0.14	258	FORM	99.43	25,600	29,600
	CONCRETE		EST	267	CY		105.00	0	28,000	1.50	460	CONP	79.64	36,600	64,600
	MUD MAT		EST	35	CY		105.00	0	3,700	1.50	60	CONP	79.64	4,800	8,500
	EMBEDDED STEEL		EST	1,333	LB		2.50	0	3,300	0.06	92	CARP	71.88	6,600	9,900
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							1,376,000	223,700		9,257			740,300	2,340,000
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										131,620
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						805		79.98	64,000	64,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						1,006			67,620	67,620
	PER DIEM	NONE		0.00	HR						11,068			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				1,119					3,702	4,820
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				11,185						11,185
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			68,800							68,800
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				11,185					37,015	48,200
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				33,555					111,045	144,600
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							68,800	57,000					283,381	409,200
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SCR SUBSTATION UPGRADE						1,444,800	280,700					1,023,700	2,749,200
24.0	FGD DCS SYSTEM	INCLUDED WITH ACCOUNT 13.0													0
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							0	0		0			0	0
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						0		0.00	0	0
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						0			0	0
	PER DIEM	NONE		0.00	HR						0			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				0					0	0
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				0						0
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			0							0
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				0					0	0
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				0					0	0

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	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							0	0					0	0
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FGD DCS SYSTEM						0	0					0	0
25.0	SITE IMPROVEMENTS - CIVIL WORK	INCLUDED WITH ACCOUNT 16.0													
25.1	SITE GRADING							0	0					0	0
	CUT		EST		CY			0	0	0.08	0	ETWK	177.49	0	0
	FILL		EST		CY			0	0	0.08	0	ETWK	177.49	0	0
25.2	ROADS & SURFACING							0	0					0	0
	20' WIDE ACCESS ROAD	INCLUDES: 1.5" ASPHALT SURFACE COURSE 1.5" ASPHALT BINDER COURSE 12" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST		SY		47	0	0	0.40	0	PBIT	90.25	0	0
	24' WIDE EXISTING ACCESS ROAD RESURFACING	INCLUDES: MILL & DISPOSE OFF 3" ASPHALT 1.5" ASPHALT SURFACE COURSE 1.5" ASPHALT BINDER COURSE	EST		SY		22	0	0	0.18	0	PBIT	90.25	0	0
	CONCRETE PAD BUILDING ENTRANCES	10" REINFORCED CONCRETE	EST		SY		80	0	0	1.50	0	CONP	79.64	0	0
	AGGREGATE AREA SURFACING	INCLUDES: 6" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST		SY		9	0	0	0.17	0	BCSE	105.94	0	0
25.3	LIMESTONE HANDLING & STORAGE							0	0					0	0
	CUT	CUT AND SPREAD IN COAL PILE AREA	EST		CY			0	0	0.40	0	ETWK	177.49	0	0
	FILL	FROM AN OFF SOURCE FILL	EST		CY		16	0	0	0.04	0	ETWK	177.49	0	0
	AREA SURFACING	INCLUDES: 18" CRUSHED AGGREGATE 10 OZ/SY GEOTEXTILE	EST		SY		9	0	0	0.02	0	BCSE	105.94	0	0
25.4	RAILROAD CROSSING	50' WIDE CROSSING THREE TRACKS - CUSTOM BUILT	EST		EA		120000	0	0	1500.00	0	RRTK	88.26	0	0
25.5	STORMWATER DRAINAGE TRENCH	2' W X 3' DEEP CAST-IN-PLACE CONCRETE TRENCH W/REINFORCING & HS-20 RATED GRATE COVERS	EST		LF		135	0	0	1.50	0	CONP	79.64	0	0
25.6	OILY WATER SEWER							0	0					0	0
	PIPING	6" CISP	EST		LF		21.5	0	0	0.33	0	YDPP	90.14	0	0
	PIPING	8" CISP	EST		LF		33.5	0	0	0.54	0	YDPP	90.14	0	0
	POST INDICATOR VALVE		EST		EA	750		0	0	6.00	0	YDPP	90.14	0	0
	MANHOLES		EST		EA		1575.0	0	0	20.00	0	YDPP	90.14	0	0
25.7	SANITARY SEWER							0	0					0	0
	PIPING	6" CISP	EST		LF		21.5	0	0	0.33	0	YDPP	90.14	0	0
	MANHOLES		EST		EA		1575.0	0	0	20.00	0	YDPP	90.14	0	0
25.8	EROSION & SEDIMENT CONTROL							0	0					0	0
	SILT FENCE		EST		LF		1.0	0	0	0.02	0	LAND	61.45	0	0
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							0	0		0			0	0
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														

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	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						0		0.00	0	0
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						0			0	0
	PER DIEM	NONE		0.00	HR						0			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				0					0	0
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				0						0
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			0							0
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				0					0	0
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				0					0	0
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							0	0					0	0
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SITE IMPROVEMENTS - CIVIL WORK						0	0					0	0
26.0	BOP ITEMS														
26.1	PIPE INSULATION	AVERAGE 6" PIPE SIZE	EST	9,400	LF		10	0	94,000	0.39	4,216	PINS	69.50	293,000	387,000
26.2	HEAT TRACING							0	454,500					660,200	1,114,700
	CABLE	AVERAGE 6" PIPE SIZE	EST	7,000	LF		10.35	0	72,500	0.05	403	WIRE	98.84	39,800	112,300
	POWER CONNECTOR AND OTHER ACCESSORIES INCLUDING THERMOSTATS FOR HEAT TRACING (BY ZONES)		EST	182	EA		450	0	82,000	8.00	1,677	WIRE	98.84	165,700	247,700
	HEAT TRACING BALANCE OF PLANT INCL PANELS, POWER WIRING AND CONDUITS		EST	10	LT		30000	0	300,000	400.00	4,600	WIRE	98.84	454,700	754,700
26.3	TOUCH UP PAINT (INCLUDES PAINTING CS PIPE)							0	301,500					1,156,700	1,458,200
	TOUCH UP PAINT FOR SHOP PAINTED STEEL		EST	42,000	SF		3	0	126,000	0.15	7,245	PNTR	66.72	483,400	609,400
	TOUCH UP PAINT FOR EQUIPMENT		EST	24,000	SF		3	0	72,000	0.15	4,140	PNTR	66.72	276,200	348,200
	PAINTING CS PIPE ONLY	AVERAGE 6" PIPE SIZE, ALLOWANCE FOR 12,000 LF CS PIPE	EST	34,500	SF		3	0	103,500	0.15	5,951	PNTR	66.72	397,100	500,600
26.4	HOISTS & TROLLEYS							330,000	385,000					449,800	1,164,800
	MISC HOISTS & TROLLEYS	IN BUILDINGS FOR EQUIPMENT MAINTENANCE AND FOR ID FANS. INCLUDES TROLLEY BEAMS	EST	22	EA	15000	17500	330,000	385,000	200.00	5,060	MECH	88.89	449,800	1,164,800
26.5	MISC AUX STEEL FOR PIPE SUPPORTS	FIELD FABRICATED	EST	70	TN		3500	0	245,000	120.00	9,660	STST	105.71	1,021,200	1,266,200
26.6	MISC PIPE SUPPORT FOUNDATIONS							0	32,000					59,700	91,700
	EXCAVATION / BACKFILL		EST	125	CY			0	0	0.36	52	EXFD	90.00	4,700	4,700
	REINFORCING		EST	20.0	TN		1,150.00	0	23,000	20.00	460	REIN	78.27	36,000	59,000
	FORMWORK		EST	510	SF		2.50	0	1,300	0.14	82	FORM	99.43	8,200	9,500
	CONCRETE		EST	47	CY		105.00	0	4,900	1.50	81	CONP	79.64	6,500	11,400
	MUD MAT		EST	18	CY		105.00	0	1,900	1.50	31	CONP	79.64	2,500	4,400
	EMBEDDED STEEL		EST	360	LB		2.50	0	900	0.06	25	CARP	71.88	1,800	2,700
26.7	EYE WASH STATIONS							60,000	10,000					61,300	131,300
	EYE WASH STATIONS	WITH 50 KW HEATERS	EST	10	EA	6000	1000	60,000	10,000	60.00	690	MECH	88.89	61,300	131,300
26.8	FIRE PROTECTION FOR MISC BUILDINGS & AREAS							0	720,000					588,800	1,308,800
	STAND PIPE FOR BUILDINGS & LIMESTONE RECLAIM TUNNELS		EST	24	EA		30000	0	720,000	240.00	6,624	MECH	88.89	588,800	1,308,800
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							390,000	2,242,000		50,996			4,290,700	6,922,700

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	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										764,916
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						4,434		84.14	373,000	373,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						5,543			391,916	391,916
	PER DIEM	NONE		0.00	HR						60,974			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				11,210					21,454	32,664
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				112,100						112,100
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			19,500							19,500
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				112,100					214,535	326,635
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				336,300					643,605	979,905
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							19,500	571,710					1,644,510	2,235,720
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BOP ITEMS						409,500	2,813,700					5,935,200	9,158,400
27.0	CAPITAL REPLACEMENTS - REMOVAL AND RELOCATION OF EXISTING EQUIPMENT AND INFRASTRUCTURE														0
27.1	RELOCATE HYDROGEN STORAGE TANK							0	15,600					86,800	102,400
	LABOR ALLOWANCE TO RELOCATED THE TANK	LABOR ALLOWANCE TO RELOCATE THE TANK	EST	1	LT			0	0	500.00	575	MECH	88.89	51,100	51,100
	NEW FOUNDATION ALLOWANCE FOR THE RELOCATED TANK		EST	35	CY		230	0	8,100	6.00	242	MECH	88.89	21,500	29,600
	ELECTRICAL ALLOWANCE FOR THE RELOCATED TANK	INCLUDES LIGHTING	EST	1	LT		7500	0	7,500	125.00	144	WIRE	98.84	14,200	21,700
27.2	NEW HYDROGEN LINE TO PLANT							0	62,100					150,600	212,700
	LARGE BORE PIPE	DOUBLE WALL PIPE	EST	800	LF		75	0	60,000	1.65	1,518	YDPP	90.14	136,800	196,800
	EXCAVATION / BACKFILL	FOR UNDERGROUND PIPING	EST	593	CY			0	0	0.20	136	EXFD	90.00	12,300	12,300
	BEDDING	FOR UNDERGROUND PIPING	EST	59	CY		35	0	2,100	0.25	17	EXFD	90.00	1,500	3,600
27.3	RELOCATE MISC. UNDERGROUND UTILITIES	ALLOWANCE	EST	1	LT		125000	0	125,000	1500.00	1,725	WIRE	98.84	170,500	295,500
27.4	REROUTED 138KV LINE .	TWO NEW TOWERS, NEW FOUNDATIONS, NEW OH LINES, LINE & TOWER ACCESSORIES INCLUDING INSULATORS	EST	1	LT	500000		500,000	0	2250.00	2,588	WIRE	98.84	255,700	755,700
27.5	OUTAGE TIE-IN DUCTWORK	ALLOWANCE FOR 85 TON DUCTWORK	ALLOW	85	TN		3250	0	276,300	50.00	4,888	FLDU	107.96	527,700	804,000
27.6	RELOCATED WAREHOUSE - FOUNDATIONS							0	342,600					534,900	877,500
	EXCAVATION / BACKFILL		EST	1,152	CY			0	0	0.15	199	EXFD	90.00	17,900	17,900
	REINFORCING		EST	134	TN		1,150.00	0	154,100	20.00	3,082	REIN	78.27	241,200	395,300
	FORMWORK		EST	1,356	SF		2.50	0	3,400	0.14	218	FORM	99.43	21,700	25,100
	CONCRETE		EST	1,419	CY		105.00	0	149,000	1.50	2,448	CONP	79.64	194,900	343,900
	MUD MAT		EST	175	CY		105.00	0	18,400	1.50	302	CONP	79.64	24,000	42,400
	EMBEDDED STEEL		EST	7,095	LB		2.50	0	17,700	0.06	490	CARP	71.88	35,200	52,900
27.7	RELOCATE EXISTING WAREHOUSE BUILDING	150' L X 75' W X 25' H						0	95,600					1,121,500	1,217,100
	CAREFULLY REMOVE BUILDING SIDING, STEEL AND ROOF & PIECE MARK FOR RELOCATION		EST	11,250	SF			0	0	0.22	2,846	STST	105.71	300,900	300,900

				AEP										Estimate No.:	30720C
				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED										Date:	9/29/2010
				ORDER OF MAGNITUDE COST ESTIMATE										Preparer:	MNO
		Cost Type:												Reviewer:	JMK
		Est=Estimated												Approver:	PEF
		Allow.=Allowance								Wage Rates Based on:		BIG SANDY			
		Q=Vendor Quote								Labor Productivity =		1.15			

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	ASSEMBLE REMOVED BUILDING STEEL, ROOFING, SIDING, WINDOWS AND DOORS INCLUDING OVERHEAD DOORS	INCLUDES 10-15% NEW MATERIAL ALLOWANCE AS SOME REMOVED PIECES MAY NOT BE SALVAGEABLE	EST	11,250	SF		8.5	0	95,600	0.60	7,763	STST	105.71	820,600	916,200
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							500,000	917,200		29,179			2,847,700	4,264,900
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										434,491
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						2,537		83.48	212,000	212,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						3,172			222,491	222,491
	PER DIEM	NONE		0.00	HR						34,887			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				4,586					14,239	18,825
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				45,860						45,860
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			25,000							25,000
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				45,860					142,385	188,245
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				137,580					427,155	564,735
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							25,000	233,900					1,018,300	1,277,200
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	CAPITAL REPLACEMENTS - REMOVAL AND RELOCATION OF EXISTING EQUIPMENT AND INFRASTRUCTURE						525,000	1,151,100					3,866,000	5,542,100
28.0	ARSENIC, ASBESTOS , LEAD ABATEMENT														0
28.1	ARSENIC, ASBESTOS , LEAD ABATEMENT	PROVIDED BY AEP		1	LT										750,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS														750,000
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				0						112,500
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														112,500
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	ARSENIC, ASBESTOS , LEAD ABATEMENT													862,500
99.00	OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS							186,435,400	102,207,500		2,890,652			264,512,600	585,280,500
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE							1,485,000	0	2,160	22,356	MECH	88.89	2,185,920	3,670,920
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										44,899,788
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						252,009		91.51	21,847,000	21,847,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						316,502			23,052,788	23,052,788
	PER DIEM	NONE		0.00	HR									0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				508,338					1,321,013	1,829,351
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				5,083,375						5,083,375
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			9,258,770							9,258,770
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				5,083,375					13,210,130	18,293,505

				AEP											Estimate No.:	30720C
				BIG SANDY UNIT 2											Project No.:	12721-000
				FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED											Date:	9/29/2010
				ORDER OF MAGNITUDE COST ESTIMATE											Preparer:	MNO
		Cost Type:													Reviewer:	JMK
		Est=Estimated													Approver:	PEF
		Allow.=Allowance								Wage Rates Based on:		BIG SANDY				
		Q=Vendor Quote								Labor Productivity =		1.15				

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				15,331,125					39,630,390	60,031,515
	OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							10,743,800	26,006,200					101,247,200	143,067,200
	OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST							197,179,200	128,213,700					365,759,800	728,347,700
	TOTAL DIRECT AND CONSTRUCTION INDIRECT COSTS							197,179,200	128,213,700					365,759,800	728,347,700
								0	0					0	0
	INDIRECT COSTS														
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES			1.0	LT										45,000,000
	CONSTRUCTION MANAGEMENT			3.0	%										21,850,400
	S-U / COMMISSIONING			1.0											7,283,500
	CRAFT START-UP SUPPORT	1% OF TOTAL LABOR MANHOURS (INCLUDES OVERTIME INEFFICIENCY & COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - BASED ON ASSUMED 5X10 WORKWEEK)		1.0	%						31,427		91.51	3,117,400	3,117,400
	INITIAL FILLS			0.3	%										2,185,000
	OPERATOR & TRAINING MANUALS			1.0	LT										600,000
	SUBCONTRACTORS (NOISE & DUCTWORK CONSULTANT, GEOTECHNICAL INVESTIGATION)			1.0	LT										750,000
	NOISE ABATEMENT FOR 85 DBA REQUIREMENT	FOR ID FAN, SDA ENCLOSURE, TRANSFORMERS, BOP, DUCTWORK, ACOUSTIC BARRIERS FOR BOUNDARY LIMITS		1.0	LT										4,500,000
	SUBTOTAL - INDIRECT COSTS														85,286,300
	TOTAL DIRECT AND INDIRECT COSTS														813,634,000
	SPARE PARTS			1.5	%			2,957,700							2,957,700
	SPARE PARTS - CAPITALIZED			0.90	%			1,774,620							1,774,620
	SPARE PARTS - FIRST YEAR OF OPERATION			0.60	%			1,183,080							1,183,080
	CONTINGENCY			13.9	%										113,200,600
	ESCALATION														101,295,000
	EQUIPMENT	4.0%/yr		4.0	%			29,379,300							29,379,300
	MATERIAL	2.0%/yr		2.0	%				13,609,300						13,609,300
	LABOR	2.5%/yr		2.5	%									48,448,900	48,448,900
	INDIRECTS	2.5%/yr		2.5	%									9,857,500	9,857,500
	TOTAL PROJECT COST														1,031,087,300
	REFERENCE COSTS:														
A	ESP DEMOLITION	ALLOWANCE FOR 1000T STRUCTURE	ALLOW	1,000	TN			0	0	6.00	6,900	WRKG	120.63	832,300	832,300
B	REMOVE BOOSTER AIR FANS		ALLOW	2	EA			0	0	400.00	920	WRKG	120.63	111,000	111,000

				AEP											Estimate No.:	30720C
				BIG SANDY UNIT 2											Project No.:	12721-000
				FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED											Date:	9/29/2010
				ORDER OF MAGNITUDE COST ESTIMATE											Preparer:	MNO
		Cost Type:													Reviewer:	JMK
		Est=Estimated													Approver:	PEF
		Allow.=Allowance								Wage Rates Based on:		BIG SANDY				
		Q=Vendor Quote								Labor Productivity =		1.15				

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
C	REMOVAL OF FUEL OIL TANK							1,200,000	80,000					469,400	1,749,400
	REMOVE FUEL OIL TANK & SOIL REMEDIATION	LABOR COST IS FOR REMOVAL OF TANK ONLY. ALLOWANCE FOR SOIL REMEDIATION AND DISPOSAL IN AN EPA APPROVED LANDFILL. SUBCONTRACT COST INCLUDES LABOR. USED LOWER END OF THE RANGE $118-355/CY. COST COULD BE LOWER ($59-118/CY) IF SOLD TO A BITUMINOUS CONCRETE BATCH PLANT	EST	8,000	CY	150		1,200,000	0		0	MECH	88.89	0	1,200,000
	REMOVE DIKE & RECOMPACT FILL IN TANK AREA		EST	3,500	CY			0	0	0.60	2,415	ETWK	177.49	428,600	428,600
	FILL FROM OFF SITE COURSE		EST	5,000	CY		16	0	80,000	0.04	230	ETWK	177.49	40,800	120,800

ATTACHMENT 4-8
IAQCS Detailed Capital Cost Estimate No. 30714 Est-2A ESP in Service*
(1.7 lb SO_2/MMbtu)

* - Due to the significant differences in layout between the phased and non-phased cost estimates the "bases" for comparison purposes were 1B for the non-phased cost estimates and 3B for the phased cost estimates. Therefore cost estimates 2A, 2B, 3A (Phased) and 1A, 4A and 4B (Non-Phased) contain only accounts whose costs are different from the corresponding base estimates 3B and 1B respectively.

AEP

BIG SANDY UNIT 2

FGD PROJECT - IAQCS (ESP)-2A - 1.7 LB/MM BTU - PHASED

ORDER OF MAGNITUDE COST ESTIMATE

Estimate No.: 30714C
Project No.: 12721-000
Date: 9/29/2010
Preparer: MNO
Reviewer: JMK
Approver: PEF

Cost Type:
Est=Estimated
Allow.=Allowance
Q=Vendor Quote

Wage Rates Based on: BIG SANDY
Labor Productivity = 1.15

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	PHASE I - DRY FGD														
1.0	ID FANS														
1.1	ID FANS - OEM EQUIPMENT	1,800,000 ACFM WITH 19,700 HP MOTORS ($750,000 EACH). INCLUDES HYDRAULIC OIL UNITS, SEAL AIR FAN SKIDS, VIBRATION MONITORING EQUIPMENT, FAN STALL EQUIPMENT, FIELD SERVICE REP FOR 140 DAYS	EST	2	EA	3,460,000.000		6,920,000	0	8190.00	18,837	MECH	88.89	1,674,400	8,594,400
1.2	PIPING & SUPPORTS - MECHANICAL							21,800	28,700					120,500	171,000
	LARGE BORE PIPING	6" CS, SCH 40 WELDED	EST	200	LF		41.7	0	8,300	1.61	370	SPNG	94.41	35,000	43,300
	SMALL BORE PIPING	2" CS, SCH 80 WELDED	EST	50	LF		22.20	0	1,100	1.26	72	SPNG	94.41	6,800	7,900
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	250	LF		48.80	0	12,200	1.44	414	SPNG	94.41	39,100	51,300
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	100	LF		33.70	0	3,400	1.32	152	SPNG	94.41	14,300	17,700
	VALVE	2" GLOBE, 150# SS, WELDED	EST	15	EA	1,450		21,800	0	5.64	97	SPNG	94.41	9,200	31,000
	PIPE SUPPORTS		EST	105	EA		35.00	0	3,700	1.50	181	MECH	88.89	16,100	19,800
1.3	DAMPERS							781,000	0					352,600	1,133,600
	INLET DAMPERS	2X50% DOUBLE LOUVER TYPE WITH SEAL AIR FANS TOTAL FOR TWO FANS	EST	580	SF	450		261,000	0	2.50	1,668	MECH	88.89	148,200	409,200
	OUTLET DAMPERS	2X50% GUILLOTINE DAMPERS, WITH SEAL AIR FANS TOTAL FOR TWO FANS	EST	800	SF	650		520,000	0	2.50	2,300	MECH	88.89	204,400	724,400
1.4	EXPANSION JOINTS		EST	570	LF		230.00	0	131,100	2.00	1,311	MECH	88.89	116,500	247,600
	2.983050847														
1.5	DUCTWORK	FABRIC FILTER OUTLET TO ID FANS AND FROM ID FANS TO STACK - INCLUDES INTERNAL BRACING AND TURNING VANES	EST	1,095	TN		3,250.00	0	3,558,800	50.00	62,963	FLDU	107.96	6,797,400	10,356,200
1.6	DUCT SUPPORT STEEL	THREE COAT SHOP PAINT	EST	550	TN		2,900.00	0	1,595,000	24.00	15,180	STST	105.71	1,604,700	3,199,700
1.7	ID FAN INSULATION & LAGGING	TOTAL FOR TWO FANS. PRICING REFLECTS STANDARD ACOUSTICAL INSULATION	EST	4,200	SF		40.00	0	168,000	0.55	2,657	DINS	81.75	217,200	385,200
1.8	DUCTWORK INSULATION & LAGGING	INCLUDES INSULATION FOR SPRAY DRYER OUTLET DUCT TO FABRIC FILTERS SUPPLIED WITH THE OEM EQUIPMENT	EST	113,620	SF		12.00	0	1,363,400	0.25	32,666	DINS	81.75	2,670,400	4,033,800
1.9	DUCT SUPPORT STEEL - FOUNDATIONS							0	440,200					855,200	1,295,400
	EXCAVATION / BACKFILL		EST	2,831	CY			0	0	0.36	1,172	EXFD	90.00	105,500	105,500
	REINFORCING		EST	164	TN		1,150.00	0	188,500	20.00	3,770	REIN	78.27	295,100	483,600
	FORMWORK		EST	9,238	SF		2.50	0	23,100	0.14	1,487	FORM	99.43	147,900	171,000
	CONCRETE		EST	1,788	CY		105.00	0	187,700	1.50	3,084	CONP	79.64	245,600	433,300
	MUD MAT		EST	283	CY		105.00	0	29,700	1.50	488	CONP	79.64	38,900	68,600
	EMBEDDED STEEL		EST	4,470	LB		2.50	0	11,200	0.06	308	CARP	71.88	22,200	33,400
1.10	ID FAN FOUNDATIONS INCLUDING ID FAN AUX EQUIPMENT							0	106,000					198,700	304,700
	EXCAVATION / BACKFILL		EST	600	CY			0	0	0.36	248	EXFD	90.00	22,400	22,400
	REINFORCING		EST	40	TN		1,150.00	0	46,000	20.00	920	REIN	78.27	72,000	118,000
	FORMWORK		EST	1,500	SF		2.50	0	3,800	0.14	242	FORM	99.43	24,000	27,800
	CONCRETE		EST	400	CY		105.00	0	42,000	1.50	690	CONP	79.64	55,000	97,000
	MUD MAT		EST	40	CY		105.00	0	4,200	1.50	69	CONP	79.64	5,500	9,700
	EMBEDDED STEEL		EST	4,000	LB		2.50	0	10,000	0.06	276	CARP	71.88	19,800	29,800
1.11	ID FAN IAQCS CONTROL ROOM - FOUNDATIONS							0	270,100					508,600	778,700
	EXCAVATION / BACKFILL		EST	800	CY			0	0	0.36	331	EXFD	90.00	29,800	29,800
	REINFORCING		EST	100	TN		1,150.00	0	115,000	20.00	2,300	REIN	78.27	180,000	295,000

				AEP										Estimate No.:	30714C
				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS (ESP)-2A - 1.7 LB/MM BTU - PHASED										Date:	9/29/2010
				ORDER OF MAGNITUDE COST ESTIMATE										Preparer:	MNO
		Cost Type:												Reviewer:	JMK
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Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	FORMWORK		EST	7,000	SF		2.50	0	17,500	0.14	1,127	FORM	99.43	112,100	129,600
	CONCRETE		EST	1,100	CY		105.00	0	115,500	1.50	1,898	CONP	79.64	151,100	266,600
	MUD MAT		EST	115	CY		105.00	0	12,100	1.50	198	CONP	79.64	15,800	27,900
	EMBEDDED STEEL		EST	4,000	LB		2.50	0	10,000	0.06	276	CARP	71.88	19,800	29,800
1.12	ID FAN IAQCS CONTROL ROOM	SUBCONTRACT PRICE INCLUDES LABOR. COMPLETE WITH HVAC, FINISHES AND SANITARY FACILITIES	EST	7,875	SF		500.00	0	3,937,500	0.00	0	STST	105.71	0	3,937,500
1.13	TRANSFORMERS							770,000	0					145,600	915,600
	SST TRANSFORMERS: 21F & 21G	13.8KV-4160V, 3 PHASE, 2 WINDING	EST	2	EA	300000		600,000	0	500.00	1,150	EHEA	79.16	91,000	691,000
	SUS TRANSFORMERS: 31F, 31G	13.8KV-480V, 3 PHASE, CAST COIL	EST	2	EA	85000		170,000	0	300.00	690	EHEA	79.16	54,600	224,600
1.14	SWITCHGEAR							1,132,000	0		0			589,900	1,721,900
	480V LOW VOLTAGE (31F/G)	PRICE PER SECTION	EST	5	EA	38000		190,000	0	230.00	1,323	EHEA	79.16	104,700	294,700
	4.16 KV MEDIUM VOLTAGE (21A/B)	PRICE PER SECTION	EST	10	EA	39200		392,000	0	280.00	3,220	EHEA	79.16	254,900	646,900
	13KV MEDIUM VOLTAGE (13F/G)	PRICE PER SECTION	EST	11	EA	50000		550,000	0	230.00	2,910	EHEA	79.16	230,300	780,300
1.15	CABLE BUS & TERMINATIONS							1,129,100	35,800		0			1,930,000	3,094,900
	15KV CABLE BUS TO 13F/G)	CABLE BUS	EST	2,100	FT	466		978,600	0	6.75	16,301	WIRE	98.84	1,611,200	2,589,800
	5KV CABLE BUS	CABLE BUS	EST	150	FT	385		57,800	0	4.70	811	WIRE	98.84	80,100	137,900
	480V CABLE BUS	CABLE BUS	EST	150	FT	618		92,700	0	10.30	1,777	WIRE	98.84	175,600	268,300
	CABLE BUS TERMINATION	15KV TERMINATIONS	EST	4	EA		1,800.00	0	7,200	33.00	152	WIRE	98.84	15,000	22,200
	CABLE BUS TERMINATION	5KV TERMINATIONS	EST	4	EA		4,440.00	0	17,800	51.60	237	WIRE	98.84	23,500	41,300
	CABLE BUS TERMINATION	480V TERMINATIONS	EST	4	EA		2,700.00	0	10,800	54.00	248	WIRE	98.84	24,600	35,400
1.16	MCC							180,000	0					10,900	190,900
	480V MCC	PER LINE UP	EST	4	EA	30,000		120,000	0	16.00	74	WIRE	98.84	7,300	127,300
	DC MCC	PER LINE UP	EST	2	EA	30,000		60,000	0	16.00	37	WIRE	98.84	3,600	63,600
1.17	MIMIC PANELS		EST	1	EA	17500		17,500	0	40.00	46	WIRE	98.84	4,500	22,000
1.18	RACEWAY, CABLE TRAY, & CONDUIT							0	1,664,200					8,196,600	9,860,800
	12" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	5,000	LF		18.25	0	91,300	1.10	6,325	WIRE	98.84	625,200	716,500
	18" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	3,000	LF		21.50	0	64,500	1.45	5,003	WIRE	98.84	494,400	558,900
	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	9,320	LF		27.10	0	252,600	1.75	18,757	WIRE	98.84	1,853,900	2,106,500
	36" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	2,400	LF		30.30	0	72,700	1.95	5,382	WIRE	98.84	532,000	604,700
	5" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	4,000	LF		61.00	0	244,000	1.13	5,184	WIRE	98.84	512,400	756,400
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	8,600	LF		31.00	0	266,600	0.81	7,981	WIRE	98.84	788,900	1,055,500
	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	8,000	LF		21.50	0	172,000	0.65	5,934	WIRE	98.84	586,500	758,500
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	12,000	LF		9.25	0	111,000	0.35	4,858	WIRE	98.84	480,100	591,100
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	15,000	LF		7.15	0	107,300	0.28	4,899	WIRE	98.84	484,200	591,500

AEP
BIG SANDY UNIT 2
FGD PROJECT - IAQCS (ESP)-2A - 1.7 LB/MM BTU - PHASED
ORDER OF MAGNITUDE COST ESTIMATE

Estimate No.: 30714C
Project No.: 12721-000
Date: 9/29/2010
Preparer: MNO
Reviewer: JMK
Approver: PEF

Cost Type:
Est=Estimated
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Wage Rates Based on: BIG SANDY
Labor Productivity = 1.15

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	28,000	LF		4.44	0	124,300	0.24	7,696	WIRE	98.84	760,700	885,000
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	48,900	LF		3.23	0	157,900	0.19	10,910	WIRE	98.84	1,078,300	1,236,200
1.19	HIGH VOLTAGE POWER CABLE & TERMINATION							0	288,500					666,700	955,200
	1/C # 750KCMIL-15KV - 14400' ID FAN		EST	14,400	LF		12.89	0	185,600	0.23	3,809	WIRE	98.84	376,500	562,100
	1/C # 500KCMIL-15KV		EST	11,100	LF		9.27	0	102,900	0.23	2,936	WIRE	98.84	290,200	393,100
1.20	MEDIUM VOLTAGE POWER CABLE & TERMINATION							0	100,200					427,400	527,600
	1/C # 350KCMIL-5KV		EST	16,350	LF		6.13	0	100,200	0.23	4,325	WIRE	98.84	427,400	527,600
1.21	LOW VOLTAGE POWER CABLE & TERMINATIONS		EST	1,800	LF		26.12	0	229,800	0.69	1,428	WIRE	98.84	732,100	961,900
	3/C # 500KCMIL-600V		EST	1,800	LF		26.12	0	148,900	0.69	1,428	WIRE	98.84	141,200	290,100
	#4/0 - #12 AWG-600V		EST	65,800	LF		7.22	0	80,900	0.08	5,978	WIRE	98.84	590,900	671,800
1.22	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	EST	112,800	LF		3.20	0	361,000	0.08	10,248	WIRE	98.84	1,012,900	1,373,900
1.23	EMERGENCY POWER SYSTEM							285,500	0					38,900	324,400
	DC PANEL BOADRD		EST	1	EA	20150		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	UPS PANEL BOARDS		EST	2	EA	20150		31,000	0	40.00	92	WIRE	98.84	9,100	40,100
	UPS		EST	1	EA	78000		60,000	0	32.00	37	WIRE	98.84	3,600	63,600
	SWITCHBOARD		EST	1	EA	52000		40,000	0	40.00	46	WIRE	98.84	4,500	44,500
	BYPASS TRANSFORMERS		EST	1	EA	32500		25,000	0	40.00	46	WIRE	98.84	4,500	29,500
	BATTERY CHARGER		EST	2	EA	41600		64,000	0	16.00	37	WIRE	98.84	3,600	67,600
	BATTERIES		EST	1	LT	65000		50,000	0	80.00	92	WIRE	98.84	9,100	59,100
1.24	GROUNDING							14,100	0					42,700	56,800
	GROUND ROD	3/4" - 20' LONG EACH	EST	16	EA	150		2,400	0	4.00	74	WIRE	98.84	7,300	9,700
	500 MCM	BARE COPPER WIRE	EST	1,400	FT	7.65		10,700	0	0.12	193	WIRE	98.84	19,100	29,800
	CADWELD		EST	64	EA	15		1,000	0	2.00	147	WIRE	98.84	14,500	15,500
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	16.00	18	WIRE	98.84	1,800	1,800
1.25	LIGHTING/ TRANSFORMERS & PANELS							26,000	30,000					29,500	85,500
	LIGHT FIXTURES		EST	40	EA		750	0	30,000	4.00	184	WIRE	98.84	18,200	48,200
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	1	EA	10000		10,000	0	40.00	46	WIRE	98.84	4,500	14,500
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	1	EA	7500		7,500	0	32.00	37	WIRE	98.84	3,600	11,100
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	1	EA	5000		5,000	0	16.00	18	WIRE	98.84	1,800	6,800
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	1	EA	3500		3,500	0	12.00	14	WIRE	98.84	1,400	4,900
1.26	DUCT BANK							0	136,000					192,700	328,700
	DUCT BANK WITH 12-5" & 4-3" CONDUITS		EST	100	LF		361.21	0	38,000	6.24	717	ECND	75.97	54,500	92,500
	DUCT BANK WITH 6-5" & 2-3" CONDUITS		EST	180	LF		230.91	0	71,400	5.45	1,128	ECND	75.97	85,700	157,100
	DUCT BANK WITH 6-5" & 6-3" CONDUITS		EST	100	LF		265.88	0	26,600	6.01	691	ECND	75.97	52,500	79,100
1.27	FOUNDATION FOR TRANSFORMERS							0	61,900		0			162,600	224,500
	EXCAVATION / BACKFILL		EST	1,000	CY			0	0	0.36	414	EXFD	90.00	37,300	37,300
	REINFORCING		EST	20	TN		1,150.00	0	23,000	20.00	460	REIN	78.27	36,000	59,000
	FORMWORK		EST	2,500	SF		2.50	0	6,300	0.14	403	FORM	99.43	40,000	46,300
	CONCRETE		EST	190	CY		105.00	0	20,000	1.50	328	CONP	79.64	26,100	46,100
	MUD MAT		EST	25	CY		105.00	0	2,600	1.50	43	CONP	79.64	3,400	6,000
	EMBEDDED STEEL		EST	4,000	LB		2.50	0	10,000	0.06	276	CARP	71.88	19,800	29,800
1.28	FIREWALL FOR TRANSFORMERS							0	3,200					8,300	11,500
	REINFORCING		EST	1.2	TN		1,150.00	0	1,400	20.00	28	REIN	78.27	2,200	3,600
	FORMWORK		EST	80	SF		2.50	0	200	0.14	13	FORM	99.43	1,300	1,500
	CONCRETE		EST	15	CY		105.00	0	1,600	3.50	60	CONP	79.64	4,800	6,400
1.29	EARLY COMMISSIONING COSTS TEMPORARY HIGH VOLTAGE POWER CABLE & TERMINATION FROM EAST SIDE OF SCR BUILDING TO TRANSFORMER PDC		EST	300	LF		466	0	139,800	6.75	2,329	WIRE	98.84	230,200	370,000
1.30	COMMUNICATIONS		EST	1	LT		17,000.00	0	17,000	114.00	131	WIRE	98.84	13,000	30,000
1.31	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000

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1.32	EMERGENCY DIESEL DRIVEN QUENCH PUMP	WITH FUEL DAY TANK. FOUNDATIONS INCLUDED WITH ABSORBER BUILDING FOUNDATIONS. INCLUDES PIPING AND DRAINS		1	EA	150,000	200,000	150,000	200,000	3250.00	3,738	MECH	88.89	332,200	682,200
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							11,427,000	14,874,200		311,764			29,889,900	56,191,100
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										4,640,242
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						27,110		83.48	2,263,000	2,263,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						33,887			2,377,242	2,377,242
	PER DIEM	NONE		0.00	HR						372,761			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				74,371					149,450	223,821
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				743,710						743,710
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			571,350							571,350
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				743,710					1,494,495	2,238,205
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				2,231,130					4,483,485	6,714,615
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							571,400	3,792,900					10,767,700	15,131,900
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	ID FANS						11,998,400	18,667,100					40,657,600	71,323,000
2.0	FABRIC FILTERS														
2.1	MECHANICAL EQUIPMENT	A SINGLE FABRIC FILTER (225' X 130') UNIT INCLUDING ALL INTERNAL FABRIC FILTER ELEMENTS SUCH AS BAGS, CAGES, ASH HOPPERS, 2 BROKEN BAG DETECTORS PER COMPARTMENT	EST	1	LT	19,409,000		19,409,000	0	122000.00	140,300	MECH	88.89	12,471,300	31,880,300
2.2	INSULATION FOR FABRIC FILTER	SUBCONTRACT COST INCLUDES LABOR	EST	81,000	SF	30		2,430,000	0	0.00	0	DINS	81.75	0	2,430,000
2.3	PENTHOUSE FOR FABRIC FILTER	SUPPORT STEEL AND PURLINS INCLUDED WITH OEM EQUIPMENT		29,500	SF			70,200	787,000					1,007,600	1,864,800
	SIDING FOR PENTHOUSE		EST	14,200	SF		12.00	0	170,400	0.11	1,796	SDNG	93.41	167,800	338,200
	CONCRETE FLOOR FOR PENTHOUSE		EST	250	CY		230.00	0	57,500	7.50	2,156	SDNG	93.41	201,400	258,900
	ROOFING FOR PENTHOUSE		EST	29,500	SF		18.00	0	531,000	0.22	7,464	ROOF	69.12	515,900	1,046,900
	H&V		EST	1	LT	70200	28080	70,200	28,100	1310.67	1,507	HVAC	81.24	122,500	220,800
2.4	BOTTOM ENCLOSURE FOR BAGHOUSE							60,000	1,204,000					1,359,800	2,623,800
	SUPPORT STEEL, GIRTS AND SIDING		EST	29,500	SF		40.00	0	1,180,000	0.35	11,874	STST	105.71	1,255,200	2,435,200
	H&V		EST	1	LT	60000	24000	60,000	24,000	1120.00	1,288	HVAC	81.24	104,600	188,600
2.5	PIPING & SUPPORTS - MECHANICAL							30,900	101,400					209,500	341,800
	LARGE BORE PIPING	6" SS, SCH 40 WELDED	EST	100	LF		111.00	0	11,100	2.02	232	SPNG	94.41	21,900	33,000
	LARGE BORE PIPING	12" CS, SCH 40 WELDED	EST	400	LF		188.70	0	75,500	2.80	1,288	SPNG	94.41	121,600	197,100
	SMALL BORE PIPING	2" CS, SCH 80 WELDED	EST	50	LF		22.20	0	1,100	1.26	72	SPNG	94.41	6,800	7,900
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	50	LF		48.80	0	2,400	1.44	83	SPNG	94.41	7,800	10,200
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	100	LF		33.70	0	3,400	1.32	152	SPNG	94.41	14,300	17,700
	VALVE	12" GATE, 150 #, CS, WELDED	EST	2	EA	8,200		16,400	0	19.20	44	SPNG	94.41	4,200	20,600
	VALVE	2" GLOBE, 150# SS, WELDED	EST	10	EA	1,450		14,500	0	5.64	65	SPNG	94.41	6,100	20,600
	PIPE SUPPORTS		EST	105	EA		75.00	0	7,900	2.50	302	MECH	88.89	26,800	34,700

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2.6	FABRIC FILTER - FOUNDATIONS							0	550,700					1,081,100	1,631,800
	EXCAVATION / BACKFILL		EST	4,945	CY			0	0	0.36	2,047	EXFD	90.00	184,300	184,300
	REINFORCING		EST	192	TN		1,150.00	0	220,800	20.00	4,416	REIN	78.27	345,600	566,400
	FORMWORK		EST	7,800	SF		2.50	0	19,500	0.14	1,256	FORM	99.43	124,900	144,400
	CONCRETE		EST	2,400	CY		105.00	0	252,000	1.50	4,140	CONP	79.64	329,700	581,700
	MUD MAT		EST	270	CY		105.00	0	28,400	1.50	466	CONP	79.64	37,100	65,500
	EMBEDDED STEEL		EST	12,000	LB		2.50	0	30,000	0.06	828	CARP	71.88	59,500	89,500
2.7	FABRIC FILTER - SUPPORT STEEL AND ACCESS GALLERY							0	360,000					1,186,700	1,546,700
	SUPPORT STEEL	MATERIAL INCLUDED WITH OEM EQUIPMENT	EST	300	TN			0	0	24.00	8,280	STST	105.71	875,300	875,300
	ACCESS GALLERY		EST	8,000	SF		45.00	0	360,000	0.40	3,680	GALL	84.61	311,400	671,400
2.8	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE INCLUDED IN SECTION 1.0 - ID FANS													
2.9	LIGHTING/ TRANSFORMERS & PANELS							30,000	75,000					58,200	163,200
	LIGHT FIXTURES		EST	100	EA		750	0	75,000	4.00	460	WIRE	98.84	45,500	120,500
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	10000		20,000	0	40.00	92	WIRE	98.84	9,100	29,100
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	2	EA	5000		10,000	0	16.00	37	WIRE	98.84	3,600	13,600
2.10	GROUNDING							7,300	0					17,500	24,800
	GROUND ROD	3/4" - 20' LONG	EST	4	EA	150		600	0	4.00	18	WIRE	98.84	1,800	2,400
	500 MCM	BARE COPPER WIRE	EST	850	FT	7.65		6,500	0	0.12	117	WIRE	98.84	11,600	18,100
	CADWELD		EST	16	EA	15		200	0	2.00	37	WIRE	98.84	3,600	3,800
	GROUNDING TEST	TEST, CALIBRATION & DOCUMENTATION	EST	1	EA			0	0	4.00	5	WIRE	98.84	500	500
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							22,067,400	3,153,100		194,502			17,391,700	42,507,200
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										2,895,104
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						16,913		83.48	1,412,000	1,412,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						21,142			1,483,104	1,483,104
	PER DIEM	NONE		0.00	HR						232,557			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				15,766					86,959	102,724
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				157,655						157,655
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			1,103,370							1,103,370
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				157,655					869,585	1,027,240
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				472,965					2,608,755	3,081,720
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							1,103,400	804,000					6,460,400	8,367,800
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FABRIC FILTERS						23,170,800	3,957,100					23,852,100	50,875,000
3.0	NEW STACK														
4.0	LIME HANDLING SYSTEM														
4.1	LIME STORAGE SILO							3,054,000	0					0	3,054,000
	SILO	CONCRETE SILO 65' DIA X 114' H - 6900 TONS -SUBCONTRACT COST INCLUDES LABOR	EST	1	EA	2,764,000.00		2,764,000	0	0.00	0	CONP	79.64	0	2,764,000

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	ELEVATOR	MAINTENANCE ELEVATOR - SUBCONTRACT COST INCLUDES LABOR	EST	1	EA	290,000.00		290,000	0	0.00	0	MECH	88.89	0	290,000
4.2	LIME UNLOADING SYSTEM	INCLUDES PNEUMATIC HANDLING SYSTEM, THREE VACUUM EXHAUSTER, TWO FILTER SEPARATORS	EST	1	LT	350,000		350,000	0	2750.00	3,163	MECH	88.89	281,100	631,100
4.3	PIPING - MECHANICAL							29,000	15,600					77,900	122,500
	SMALL BORE PIPING	2" CS, SCH 80 WELDED	EST	100	LF		22.20	0	2,200	1.26	145	SPNG	94.41	13,700	15,900
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	100	LF		48.80	0	4,900	1.44	166	SPNG	94.41	15,600	20,500
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	200	LF		33.70	0	6,700	1.32	304	SPNG	94.41	28,700	35,400
	VALVE	2" GLOBE, 150# SS, WELDED	EST	20	EA	1,450		29,000	0	5.64	130	SPNG	94.41	12,200	41,200
	PIPE SUPPORTS		EST	50	EA		35.00	0	1,800	1.50	86	MECH	88.89	7,700	9,500
4.4	LIME STORAGE SILO ACCESS STAIR TOWER	THREE COAT SHOP PAINT	EST	50	TN		2,900.00	0	145,000	24.00	1,380	STST	105.71	145,900	290,900
4.5	PIPE RACK FOR LIME HANDLING, WASTE HANDLING AND MISC MECHANICAL PIPING	THREE COAT SHOP PAINT	EST	270	TN		2,900.00	0	783,000	24.00	7,452	STST	105.71	787,800	1,570,800
4.6	RAIL CAR UNLOADING AREA - FOUNDATIONS	20 X 250 - NO SIDING						0	85,300					180,200	265,500
	EXCAVATION / BACKFILL		EST	1,000	CY			0	0	0.36	414	EXFD	90.00	37,300	37,300
	REINFORCING		EST	30	TN		1,150.00	0	34,500	20.00	690	REIN	78.27	54,000	88,500
	FORMWORK		EST	1,500	SF		2.50	0	3,800	0.14	242	FORM	99.43	24,000	27,800
	CONCRETE		EST	400	CY		105.00	0	42,000	1.50	690	CONP	79.64	55,000	97,000
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	2,000	LB		2.50	0	5,000	0.06	138	CARP	71.88	9,900	14,900
4.7	LIME UNLOADING BLOWER / ELECTRICAL BUILDING - FOUNDATIONS							0	74,500					187,800	262,300
	EXCAVATION / BACKFILL		EST	1,900	CY			0	0	0.36	787	EXFD	90.00	70,800	70,800
	REINFORCING		EST	25	TN		1,150.00	0	28,800	20.00	575	REIN	78.27	45,000	73,800
	FORMWORK		EST	640	SF		2.50	0	1,600	0.14	103	FORM	99.43	10,200	11,800
	CONCRETE		EST	300	CY		105.00	0	31,500	1.50	518	CONP	79.64	41,200	72,700
	MUD MAT		EST	60	CY		105.00	0	6,300	1.50	104	CONP	79.64	8,200	14,500
	EMBEDDED STEEL		EST	2,500	LB		2.50	0	6,300	0.06	173	CARP	71.88	12,400	18,700
4.8	LIME UNLOADING BLOWER / ELECTRICAL BUILDING	130' L X 30' W X 30' H						75,000	351,500					24,400	450,900
	PREENGINEERED BUILDING INCLUDING H&V AND LIGHTING	SUBCONTRACT PRICE, INCLUDES LABOR	EST	3,900	SF		85	0	331,500	0.00	0	STST	105.71	0	331,500
	ADDITONAL HVAC UNIT FOR ELECTRICAL ROOM & CONTROLS	40T PACKAGED UNIT FOR ELECTRICAL EQUIPMENT ROOM. INCLUDES ALLOWANCE FOR CONCRETE PAD AND ELECTRICAL WORK	EST	1	LT	75000	20000	75,000	20,000	350.00	300	HVAC	81.24	24,400	119,400
4.9	CONCRETE PIT FOR THE ELEVATOR		EST	10	CY		230.00	0	2,300	7.50	86	CONP	79.64	6,900	9,200
4.10	LIME STORAGE SILO - FOUNDATIONS							0	182,500					338,600	521,100
	EXCAVATION / BACKFILL		EST	1,500	CY			0	0	0.36	621	EXFD	90.00	55,900	55,900
	REINFORCING		EST	70.0	TN		1,150.00	0	80,500	20.00	1,610	REIN	78.27	126,000	206,500
	FORMWORK		EST	1,300	SF		2.50	0	3,300	0.14	209	FORM	99.43	20,800	24,100
	CONCRETE		EST	800	CY		105.00	0	84,000	1.50	1,380	CONP	79.64	109,900	193,900
	MUD MAT		EST	45	CY		105.00	0	4,700	1.50	78	CONP	79.64	6,200	10,900
	EMBEDDED STEEL		EST	4,000	LB		2.50	0	10,000	0.06	276	CARP	71.88	19,800	29,800
4.11	LIME STORAGE SILO ACCESS STAIR TOWER - FOUNDATIONS							0	14,200					28,600	42,800
	EXCAVATION / BACKFILL		EST	110	CY			0	0	0.36	46	EXFD	90.00	4,100	4,100
	REINFORCING		EST	4.8	TN		1,150.00	0	5,500	20.00	110	REIN	78.27	8,600	14,100

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	FORMWORK		EST	320	SF		2.50	0	800	0.14	52	FORM	99.43	5,100	5,900
	CONCRETE		EST	60	CY		105.00	0	6,300	1.50	104	CONP	79.64	8,200	14,500
	MUD MAT		EST	8	CY		105.00	0	800	1.50	14	CONP	79.64	1,100	1,900
	EMBEDDED STEEL		EST	300	LB		2.50	0	800	0.06	21	CARP	71.88	1,500	2,300
4.12	PIPE RACK - FOUNDATIONS							0	94,200					237,800	332,000
	EXCAVATION / BACKFILL		EST	1,360	CY			0	0	0.36	563	EXFD	90.00	50,700	50,700
	REINFORCING		EST	32.2	TN		1,150.00	0	37,000	20.00	740	REIN	78.27	57,900	94,900
	FORMWORK		EST	4,000	SF		2.50	0	10,000	0.14	644	FORM	99.43	64,000	74,000
	CONCRETE		EST	402	CY		105.00	0	42,200	1.50	693	CONP	79.64	55,200	97,400
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	2,010	LB		2.50	0	5,000	0.06	139	CARP	71.88	10,000	15,000
4.13	TRANSFORMERS: 33F, 33G,	SUS TRANSFORMERS: 33F, 33G, 13.8KV-480V,3PHASE, 3 WINDING XFMR 2/2.24/3-2MVA (DELTA TO DELTA)	EST	2	EA	85000		170,000	0	300.00	690	EHEA	79.16	54,600	224,600
4.14	480V LOW VOLTAGE (33F/G) SWITCHGEAR	PER LINE UP	EST	5	EA	39200		196,000	0	230.00	1,323	EHEA	79.16	104,700	300,700
4.15	CABLE BUS DUCT							134,700	10,800					200,200	345,700
	480V CABLE BUS	BUST DUCT ONLY	EST	150	FT	898		134,700	0	10.30	1,777	WIRE	98.84	175,600	310,300
	CABLE BUS TERMINATION	480V TERMINATIONS	EST	4	EA		2,700.00	0	10,800	54.00	248	WIRE	98.84	24,600	35,400
4.16	MCC							61,800	0					3,600	65,400
	480V MCC	PER LINE UP	EST	2	EA	30900		61,800	0	16.00	37	WIRE	98.84	3,600	65,400
4.17	MIMIC PANELS		EST	1	EA	17500		17,500	0	12.00	14	WIRE	98.84	1,400	18,900
4.18	EMERGENCY POWER SYSTEM							108,300	0					24,400	132,700
	DC PANEL BOARD		EST	1	EA	15450		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	UPS PANEL BOARDS		EST	1	EA	15450		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	SATELLITE UPS		EST	1	EA	41200		41,200	0	16.00	18	WIRE	98.84	1,800	43,000
	VRLA BATTERIES		EST	1	LT	36050		36,100	0	120.00	138	WIRE	98.84	13,600	49,700
4.19	GROUNDING							13,300	0					41,300	54,600
	GROUND ROD	3/4" - 20' LONG	EST	16	EA	150		2,400	0	4.00	74	WIRE	98.84	7,300	9,700
	500 MCM	BARE COPPER WIRE	EST	1,300	FT	7.65		9,900	0	0.12	179	WIRE	98.84	17,700	27,600
	CADWELD		EST	64	EA	15		1,000	0	2.00	147	WIRE	98.84	14,500	15,500
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	16.00	18	WIRE	98.84	1,800	1,800
4.20	LIGHTING/ TRANSFORMERS & PANELS							52,000	135,000					104,500	291,500
	LIGHT FIXTURES		EST	180	EA		750	0	135,000	4.00	828	WIRE	98.84	81,800	216,800
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	10000		20,000	0	40.00	92	WIRE	98.84	9,100	29,100
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	7500		15,000	0	32.00	74	WIRE	98.84	7,300	22,300
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	2	EA	5000		10,000	0	16.00	37	WIRE	98.84	3,600	13,600
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	2	EA	3500		7,000	0	12.00	28	WIRE	98.84	2,700	9,700
4.21	RACEWAY, CABLE TRAY, & CONDUIT							0	310,900					1,537,100	1,848,000
	12" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,050	LF		18.25	0	19,200	1.10	1,328	WIRE	98.84	131,300	150,500
	18" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	600	LF		21.50	0	12,900	1.45	1,001	WIRE	98.84	98,900	111,800
	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,700	LF		27.10	0	46,100	1.75	3,421	WIRE	98.84	338,200	384,300
	36" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	500	LF		30.30	0	15,200	1.95	1,121	WIRE	98.84	110,800	126,000
	5" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	750	LF		61.00	0	45,800	1.13	972	WIRE	98.84	96,100	141,900
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,450	LF		31.00	0	45,000	0.81	1,346	WIRE	98.84	133,000	178,000

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	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,550	LF		21.50	0	33,300	0.65	1,150	WIRE	98.84	113,600	146,900
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	2,400	LF		9.25	0	22,200	0.35	972	WIRE	98.84	96,000	118,200
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	3,050	LF		7.15	0	21,800	0.28	996	WIRE	98.84	98,500	120,300
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	5,150	LF		4.44	0	22,900	0.24	1,415	WIRE	98.84	139,900	162,800
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	8,200	LF		3.23	0	26,500	0.19	1,829	WIRE	98.84	180,800	207,300
4.22	HIGH VOLTAGE POWER CABLE & TERMINATION	1/C # 500KCMIL-15KV	EST	5,400	LF		9.27	0	50,100	0.23	1,428	WIRE	98.84	141,200	191,300
4.23	MEDIUM VOLTAGE POWER CABLE & TERMINATION	1/C # 350KCMIL-5KV	EST	10,800	LF		6.13	0	66,200	0.23	2,857	WIRE	98.84	282,300	348,500
4.24	LOW VOLTAGE POWER CABLE & TERMINATION							0	93,000					143,200	236,200
	3/C # 500KCMIL- 600V		EST	600	LF		26.12	0	15,700	0.69	476	WIRE	98.84	47,100	62,800
	#4/0 - #12 AWG-600V		EST	10,700	LF		7.22	0	77,300	0.08	972	WIRE	98.84	96,100	173,400
4.25	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	EST	8,200	LF		3.20	0	26,200	0.08	745	WIRE	98.84	73,600	99,800
4.26	DUCT BANK	DUCT BANK WITH 4-5" & 4-3" CONDUITS, 2.38' H X 3.79' W	EST	350	LF		174.67	0	61,100	3.80	1,530	ECND	75.97	116,200	177,300
4.27	FOUNDATIONS FOR TRANSFORMERS	FOR XFMR 33F, 33G, INCLUDES MUD MAT	EST	14.0	CY		250	0	3,500	8.00	129	CONP	79.64	10,300	13,800
4.28	COMMUNICATIONS		EST	1	LT		17,000.00	0	17,000	114.00	131	WIRE	98.84	13,000	30,000
4.29	LIGHTNING PROTECTION		EST	1	LT		14,000.00	0	14,000	79.00	91	WIRE	98.84	9,000	23,000
4.30	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							4,261,600	2,543,900		54,735			5,164,600	11,970,100
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										814,360
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						4,760		83.48	397,000	397,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						5,949			417,360	417,360
	PER DIEM	NONE		0.00	HR						65,444			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				12,720					25,823	38,543
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				127,195						127,195
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			213,080							213,080
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				127,195					258,230	385,425
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				381,585					774,690	1,156,275
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							213,100	648,700					1,873,100	2,734,900
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME HANDLING SYSTEM						4,474,700	3,192,600					7,037,700	14,705,000
5.0	LIME SLAKER BUILDING														0

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5.1	MECHANICAL EQUIPMENT	INCLUDES:CHAIN CONVEYOR, SLAKERS THROUGH THE LIME SLURRY PUMPS, PIPING, AND LIME SLURRY STORAGE TANKS.	EST	1	LT	5,914,000		5,914,000	0	40400.00	46,460	MECH	88.89	4,129,800	10,043,800
5.2	REAGENT AREA SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
5.3	AGITATOR FOR SUMP PUMPS	5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
5.4	PIPING - MECHANICAL		EST	1	LT			117,800	111,400					381,100	610,300
	LARGE BORE PIPING	6" CS, SCH 40 WELDED	EST	200	LF		41.7	0	8,300	1.61	370	SPNG	94.41	35,000	43,300
	LARGE BORE PIPING	8" HDPE (UNDERGROUND)	EST	1,200	LF		14.1	0	16,900	0.83	1,145	SPNG	94.41	108,100	125,000
	LARGE BORE PIPING	10" CS, SCH 40 WELDED	EST	400	LF		110.3	0	44,100	2.40	1,104	SPNG	94.41	104,200	148,300
	LARGE BORE PIPING	14" CS, SCH 40 WELDED	EST	100	LF		205.9	0	20,600	2.87	330	SPNG	94.41	31,200	51,800
	SMALL BORE PIPING	2" CS, SCH 80 WELDED	EST	50	LF		22.20	0	1,100	1.26	72	SPNG	94.41	6,800	7,900
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	50	LF		48.80	0	2,400	1.44	83	SPNG	94.41	7,800	10,200
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	100	LF		33.70	0	3,400	1.32	152	SPNG	94.41	14,300	17,700
	VALVE	2" GLOBE, 150# SS, WELDED	EST	15	EA	1,450		21,800	0	5.64	97	SPNG	94.41	9,200	31,000
	VALVE	6" AIR OPERATED, 150 #, CS, FLANGED	EST	2	EA	14,000		28,000	0	17.30	40	SPNG	94.41	3,800	31,800
	VALVE	8" AIR OPERATED, 150 #, CS, FLANGED	EST	4	EA	17,000		68,000	0	19.30	89	SPNG	94.41	8,400	76,400
	EXCAVATION / BACKFILL	FOR UNDERGROUND PIPING	EST	1,000	CY			0	0	0.20	230	EXFD	90.00	20,700	20,700
	BEDDING	FOR UNDERGROUND PIPING	EST	133	CY		35.0	0	4,700	0.25	38	EXFD	90.00	3,500	8,200
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	110	EA		90.00	0	9,900	2.50	316	MECH	88.89	28,100	38,000
5.5	LIME SLURRY TANKS - FOUNDATIONS							0	166,400					299,400	465,800
	EXCAVATION / BACKFILL		EST	969	CY			0	0	0.36	401	EXFD	90.00	36,100	36,100
	REINFORCING		EST	90	TN		1,150.00	0	103,500	20.00	2,070	REIN	78.27	162,000	265,500
	FORMWORK		EST	1,166	SF		2.50	0	2,900	0.14	188	FORM	99.43	18,700	21,600
	CONCRETE		EST	475	CY		105.00	0	49,900	1.50	819	CONP	79.64	65,300	115,200
	MUD MAT		EST	40	CY		105.00	0	4,200	1.50	69	CONP	79.64	5,500	9,700
	EMBEDDED STEEL		EST	2,375	LB		2.50	0	5,900	0.06	164	CARP	71.88	11,800	17,700
5.6	LIME SLAKER BUILDING - FOUNDATIONS							0	119,200					204,000	323,200
	EXCAVATION / BACKFILL		EST	450	CY			0	0	0.36	186	EXFD	90.00	16,800	16,800
	REINFORCING		EST	50	TN		1,150.00	0	57,500	20.00	1,150	REIN	78.27	90,000	147,500
	FORMWORK		EST	1,000	SF		2.50	0	2,500	0.14	161	FORM	99.43	16,000	18,500
	CONCRETE		EST	450	CY		105.00	0	47,300	1.50	776	CONP	79.64	61,800	109,100
	MUD MAT		EST	60	CY		105.00	0	6,300	1.50	104	CONP	79.64	8,200	14,500
	EMBEDDED STEEL		EST	2,250	LB		2.50	0	5,600	0.06	155	CARP	71.88	11,200	16,800
5.7	LIME SLAKER BUILDING	135' L X 30' W X 50' H						40,500	803,300					740,500	1,584,300
	STRUCTURAL STEEL		EST	110	TN		2650	0	291,500	16.00	2,024	STST	105.71	214,000	505,500
	INSULATED METAL SIDING		EST	16,500	SF		12	0	198,000	0.11	2,087	SDNG	93.41	195,000	393,000
	ROLLING OVERHEAD DOOR		EST	320	SF		27	0	8,600	0.25	92	CARP	71.88	6,600	15,200
	METAL ROOF DECKING		EST	4,050	SF		2.7	0	10,900	0.06	279	STST	105.71	29,500	40,400
	RIGID ROOF INSULATION		EST	4,050	SF		2.4	0	9,700	0.02	70	ROOF	69.12	4,800	14,500
	ROOFING (4-PLY TAR & GRAVEL)		EST	4,050	SF		1.55	0	6,300	0.04	186	ROOF	69.12	12,900	19,200
	LIGHTWEIGHT CONCRETE FILL 1"		EST	50	CY		100	0	5,000	1.30	75	ROOF	69.12	5,200	10,200
	ROOF FLASHING		EST	350	LF		14.45	0	5,100	0.12	48	ROOF	69.12	3,300	8,400
	ROOF DRAINS		EST	1	LT		25000	0	25,000	240.00	276	PLMB	79.42	21,900	46,900
	FLOOR DRAINS		EST	1	LT		30000	0	30,000	280.00	322	PLMB	79.42	25,600	55,600
	FLOOR SLABS	INCLUDES METAL DECKING AND FORMWORK	EST	50	CY		210	0	10,500	7.50	431	CONP	79.64	34,300	44,800
	FLOOR FINISHES		EST	3,102	SF		2.5	0	7,800	0.05	178	CONP	79.64	14,200	22,000
	LOUVERS/WINDOWS/DOORS		EST	1,601	SF		40	0	64,000	0.35	644	CARP	71.88	46,300	110,300
	ROOF VENTILATORS		EST	4	EA		15000	0	60,000	24.00	110	HVAC	81.24	9,000	69,000
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	1,215	SF		45	0	54,700	0.40	559	GALL	84.61	47,300	102,000

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		Allow.=Allowance								Wage Rates Based on:		BIG SANDY			
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Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	H&V		EST	1	LT	40500	16200	40,500	16,200	756.00	869	HVAC	81.24	70,600	127,300
5.8	ELECTRICAL	INCLUDED WITH LIME HANDLING SYSTEM, ACCOUNT 4.0													
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							6,112,300	1,200,300		65,213			5,771,700	13,084,300
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										970,257
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						5,671		83.48	473,000	473,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						7,088			497,257	497,257
	PER DIEM	NONE		0.00	HR						77,972			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				6,002					28,859	34,860
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				60,015						60,015
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			305,615							305,615
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				60,015					288,585	348,600
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				180,045					865,755	1,045,800
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							305,600	306,100					2,153,500	2,765,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME SLAKER BUILDING						6,417,900	1,506,400					7,925,200	15,849,400
6.0	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS														0
6.1	BYPRODUCT WASTE ASH HANDLING - MECHANICAL EQUIPMENT	INCLUDES PNEUMATIC HANDLING SYSTEM, THREE PRESSURE BLOWERS, ONE BIN VENT FILTER, ASH UNLOADING SYSTEM	EST	1	LT	2,047,000		2,047,000	0	13500.00	15,525	MECH	88.89	1,380,000	3,427,000
6.2	FLY ASH HANDLING - MECHANICAL EQUIPMENT	INCLUDES PNEUMATIC HANDLING SYSTEM, TWO PRESSURE EXHAUSTERS, TRANSFER STATION, ONE BIN VENT FILTER, ASH UNLOADING SYSTEM	EST	1	LT	2,285,000		2,285,000	0	14000.00	16,100	MECH	88.89	1,431,100	3,716,100
6.3	BUILDING SUMP PUMPS	FOR BUILDINGS - DUPLEX. INCLUDES CHECK & ISOLATION VALVES.		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
6.4	AGITATOR FOR SUMP PUMPS	5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
6.5	PIPING - MECHANICAL		EST	1	LT			142,800	240,900					759,100	1,142,800
	LARGE BORE PIPING	4" CS, SCHEDULE 40, WELDED	EST	300	LF		23.0	0	6,900	1.48	511	SPNG	94.41	48,200	55,100
	LARGE BORE PIPING	4" SS, SCHEDULE 40, WELDED	EST	300	LF		68.3	0	20,500	1.82	628	SPNG	94.41	59,300	79,800
	LARGE BORE PIPING	6" CS, SCH 40 WELDED	EST	400	LF		41.7	0	16,700	1.61	741	SPNG	94.41	69,900	86,600
	LARGE BORE PIPING	8" HDPE (UNDERGROUND)	EST	800	LF		14.1	0	11,300	0.83	764	SPNG	94.41	72,100	83,400
	LARGE BORE PIPING	10" CS, SCH 40 WELDED	EST	300	LF		110.3	0	33,100	2.40	828	SPNG	94.41	78,200	111,300
	LARGE BORE PIPING	20" HDPE (UNDERGROUND)	EST	1,600	LF		72.8	0	116,500	1.45	2,668	SPNG	94.41	251,900	368,400
	SMALL BORE PIPING	2" CS, SCH 80 WELDED	EST	100	LF		22.20	0	2,200	1.26	145	SPNG	94.41	13,700	15,900
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	100	LF		48.80	0	4,900	1.44	166	SPNG	94.41	15,600	20,500

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	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	200	LF		33.70	0	6,700	1.32	304	SPNG	94.41	28,700	35,400
	VALVE	2" GLOBE, 150# SS, WELDED	EST	15	EA	1,450		21,800	0	5.64	97	SPNG	94.41	9,200	31,000
	VALVE	4" GATE, 150 #, CS, WELDED	EST	10	EA	2,500		25,000	0	7.70	89	SPNG	94.41	8,400	33,400
	VALVE	6" AIR OPERATED, 150 #, CS, FLANGED	EST	2	EA	14,000		28,000	0	17.30	40	SPNG	94.41	3,800	31,800
	VALVE	8" AIR OPERATED, 150 #, CS, FLANGED	EST	4	EA	17,000		68,000	0	19.30	89	SPNG	94.41	8,400	76,400
	EXCAVATION / BACKFILL	FOR UNDERGROUND PIPING	EST	2,000	CY			0	0	0.20	460	EXFD	90.00	41,400	41,400
	BEDDING	FOR UNDERGROUND PIPING	EST	267	CY		35.0	0	9,300	0.25	77	EXFD	90.00	6,900	16,200
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	170	EA		75.00	0	12,800	2.50	489	MECH	88.89	43,400	56,200
6.6	BYPRODUCT WASTE SILO	CONCRETE SILO 45' DIA X 80' H - 1625 TONS -SUBCONTRACT COST INCLUDES LABOR	EST	1	EA	1,375,000		1,375,000	0	0.00	0	CONP	79.64	0	1,375,000
6.7	SDA RECYCLE SILO	INCLUDED WITH OEM EQUIPMENT													
6.8	FLY ASH SILO	46T STEEL -STORAGE SILO, 15' DIA X 19' H						45,000	23,200					64,300	132,500
	SILO BIN	PIN MIXERS INCLUDED WITH FLY ASH HANDLING MECHANICAL EQUIPMENT	EST	1	EA	45,000		45,000	0	400.00	460	TANK	89.16	41,000	86,000
	SUPPORT STEEL FOR SILO	THREE-COAT SHOP PAINT	EST	8	TN		2,900.00	0	23,200	24.00	221	STST	105.71	23,300	46,500
6.9	BYPRODUCT WASTE SILO SILO - FOUNDATIONS							0	92,200					179,200	271,400
	EXCAVATION / BACKFILL		EST	900	CY			0	0	0.36	373	EXFD	90.00	33,500	33,500
	REINFORCING		EST	35.0	TN		1,150.00	0	40,300	20.00	805	REIN	78.27	63,000	103,300
	FORMWORK		EST	900	SF		2.50	0	2,300	0.14	145	FORM	99.43	14,400	16,700
	CONCRETE		EST	400	CY		105.00	0	42,000	1.50	690	CONP	79.64	55,000	97,000
	MUD MAT		EST	25	CY		105.00	0	2,600	1.50	43	CONP	79.64	3,400	6,000
	EMBEDDED STEEL		EST	2,000	LB		2.50	0	5,000	0.06	138	CARP	71.88	9,900	14,900
6.10	FLY ASH SILO - FOUNDATIONS							0	10,800					24,500	35,300
	EXCAVATION / BACKFILL		EST	160	CY			0	0	0.36	66	EXFD	90.00	6,000	6,000
	REINFORCING		EST	5.0	TN		1,150.00	0	5,800	20.00	115	REIN	78.27	9,000	14,800
	FORMWORK		EST	200	SF		2.50	0	500	0.14	32	FORM	99.43	3,200	3,700
	CONCRETE		EST	30	CY		105.00	0	3,200	1.50	52	CONP	79.64	4,100	7,300
	MUD MAT		EST	5	CY		105.00	0	500	1.50	9	CONP	79.64	700	1,200
	EMBEDDED STEEL		EST	300	LB		2.50	0	800	0.06	21	CARP	71.88	1,500	2,300
6.11	FLY ASH BLOWER AND ELECTRICAL BUILDING - FOUNDATIONS							0	49,600					105,700	155,300
	EXCAVATION / BACKFILL		EST	578	CY			0	0	0.36	239	EXFD	90.00	21,500	21,500
	REINFORCING		EST	17	TN		1,150.00	0	19,600	20.00	391	REIN	78.27	30,600	50,200
	FORMWORK		EST	890	SF		2.50	0	2,200	0.14	143	FORM	99.43	14,200	16,400
	CONCRETE		EST	222	CY		105.00	0	23,300	1.50	383	CONP	79.64	30,500	53,800
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	1,800	LB		2.50	0	4,500	0.06	124	CARP	71.88	8,900	13,400
6.12	FLY ASH BLOWER AND ELECTRICAL BUILDING	90' L X 30' W X 25' H						28,000	244,500					24,400	296,900
	PREENGINEERED BUILDING INCLUDING H&V AND LIGHTING	SUBCONTRACT PRICE, INCLUDES LABOR	EST	2,700	SF		85	0	229,500	0.00	0	STST	105.71	0	229,500
	ADDITONAL HVAC UNIT FOR ELECTRICAL ROOM & CONTROLS	10T PACKAGED UNIT. INCLUDES ALLOANCE FOR CONCRETE PAD AND ELECTRICAL WORK	EST	1	LT	28000	15000	28,000	15,000	0.00	300	HVAC	81.24	24,400	67,400
6.13	RECYCLE ASH BUILDING - FOUNDATIONS							0	234,300					393,800	628,100

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	EXCAVATION / BACKFILL		EST	950	CY			0	0	0.36	393	EXFD	90.00	35,400	35,400
	REINFORCING		EST	90	TN		1,150.00	0	103,500	20.00	2,070	REIN	78.27	162,000	265,500
	FORMWORK		EST	1,320	SF		2.50	0	3,300	0.14	213	FORM	99.43	21,100	24,400
	CONCRETE		EST	1,000	CY		105.00	0	105,000	1.50	1,725	CONP	79.64	137,400	242,400
	MUD MAT		EST	95	CY		105.00	0	10,000	1.50	164	CONP	79.64	13,100	23,100
	EMBEDDED STEEL		EST	5,000	LB		2.50	0	12,500	0.06	345	CARP	71.88	24,800	37,300
6.14	RECYCLE ASH BUILDING	100' L X 65' W X 50' H						58,500	1,306,700					1,194,500	2,559,700
	STRUCTURAL STEEL		EST	180	TN		2650	0	477,000	16.00	3,312	STST	105.71	350,100	827,100
	INSULATED METAL SIDING		EST	16,500	SF		12	0	198,000	0.11	2,087	SDNG	93.41	195,000	393,000
	ROLLING OVERHEAD DOOR		EST	640	SF		27	0	17,300	0.25	184	CARP	71.88	13,200	30,500
	METAL ROOF DECKING		EST	6,500	SF		2.7	0	17,600	0.06	449	STST	105.71	47,400	65,000
	RIGID ROOF INSULATION		EST	6,500	SF		2.4	0	15,600	0.02	112	ROOF	69.12	7,800	23,400
	ROOFING (4-PLY TAR & GRAVEL)		EST	6,500	SF		1.55	0	10,100	0.04	299	ROOF	69.12	20,700	30,800
	LIGHTWEIGHT CONCRETE FILL 1"		EST	60	CY		100	0	6,000	1.30	90	ROOF	69.12	6,200	12,200
	ROOF FLASHING		EST	350	LF		14.45	0	5,100	0.12	48	ROOF	69.12	3,300	8,400
	ROOF DRAINS		EST	1	LT		25000	0	25,000	240.00	276	PLMB	79.42	21,900	46,900
	FLOOR DRAINS		EST	1	LT		30000	0	30,000	280.00	322	PLMB	79.42	25,600	55,600
	FLOOR SLABS	INCLUDES METAL DECKING AND FORMWORK	EST	60	CY		210	0	12,600	7.50	518	CONP	79.64	41,200	53,800
	FLOOR FINISHES		EST	5,000	SF		2.5	0	12,500	0.05	288	CONP	79.64	22,900	35,400
	LOUVERS/WINDOWS/DOORS		EST	2,600	SF		40	0	104,000	0.35	1,047	CARP	71.88	75,200	179,200
	ROOF VENTILATORS		EST	4	EA		15000	0	60,000	24.00	110	HVAC	81.24	9,000	69,000
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	6,500	SF		45	0	292,500	0.40	2,990	GALL	84.61	253,000	545,500
	H&V		EST	1	LT	58500	23400	58,500	23,400	1092.00	1,256	HVAC	81.24	102,000	183,900
6.15	MCC	480V MCC PER LINE UP	EST	4	EA	30000		120,000	0	16.00	74	WIRE	98.84	7,300	127,300
6.16	EMERGENCY POWER SYSTEM							185,500	0					40,000	225,500
	UPS PANEL BOARDS		EST	2	EA	15500		31,000	0	40.00	92	WIRE	98.84	9,100	40,100
	SATELLITE UPS		EST	2	EA	41200		82,400	0	16.00	37	WIRE	98.84	3,600	86,000
	VRLA BATTERIES		EST	2	LT	36050		72,100	0	120.00	276	WIRE	98.84	27,300	99,400
6.17	LIGHTING/ TRANSFORMERS & PANELS							18,500	75,000					53,200	146,700
	LIGHT FIXTURES		EST	100	EA		750	0	75,000	4.00	460	WIRE	98.84	45,500	120,500
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	1	EA	10000		10,000	0	40.00	46	WIRE	98.84	4,500	14,500
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	1	EA	5000		5,000	0	16.00	18	WIRE	98.84	1,800	6,800
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	1	EA	3500		3,500	0	12.00	14	WIRE	98.84	1,400	4,900
6.18	RACEWAY, CABLE TRAY, & CONDUIT							0	40,700					236,200	276,900
	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	350	LF		27.10	0	9,500	1.75	704	WIRE	98.84	69600	79,100
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	350	LF		31.00	0	10,900	0.81	325	WIRE	98.84	32100	43,000
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,300	LF		4.44	0	5,800	0.24	357	WIRE	98.84	35300	41,100
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	4,500	LF		3.23	0	14,500	0.19	1,004	WIRE	98.84	99200	113,700
6.19	LOW VOLTAGE POWER CABLE & TERMINATION	#4/0 - #12 AWG-600V	EST	11,200	LF		7.22	0	80,900	0.08	1,018	WIRE	98.84	100600	181,500
6.20	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	EST	12,000	LF		3.20	0	38,400	0.08	1,090	WIRE	98.84	107,800	146,200
6.21	GROUNDING							0	4,500					10,900	15,400
	GROUND ROD	3/4" - 20' LONG EACH	EST	4	EA		150	0	600	4.00	18	WIRE	98.84	1,800	2,400
	500 MCM	BARE COPPER WIRE	EST	500	FT		7.65	0	3,800	0.12	69	WIRE	98.84	6,800	10,600
	CADWELD		EST	8	EA		15	0	100	2.00	18	WIRE	98.84	1,800	1,900
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	4.00	5	WIRE	98.84	500	500
6.22	DUCT BANK	DUCT BANK WITH 12-5" & 6-3" CONDUITS, 5.2' H X 2.08" W	EST	300	LF		371.60	0	111,500	7.02	2,422	ECND	75.97	184000	295,500
6.23	COMMUNICATIONS		EST	1	LT		70,000.00	0	70,000	440.00	506	WIRE	98.84	50,000	120,000
6.24	LIGHTNING PROTECTION		EST	1	LT		19,000.00	0	19,000	123.00	141	WIRE	98.84	14,000	33,000
6.25	SECURITY SYSTEM		EST	1	LT		16,000.00	0	16,000	123.00	141	WIRE	98.84	14,000	30,000

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90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							6,345,300	2,658,200		71,789			6,391,500	15,395,000
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										1,068,403
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						6,243		83.48	521,000	521,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						7,803			547,403	547,403
	PER DIEM	NONE		0.00	HR						85,835			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				13,291					31,958	45,249
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				132,910						132,910
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			317,265							317,265
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				132,910					319,575	452,485
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				398,730					958,725	1,357,455
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							317,300	677,800					2,378,700	3,373,800
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS						6,662,600	3,336,000					8,770,200	18,768,800
7.0	SPRAY DRYER ABSORBER ISLAND														0
7.1	MECHANICAL EQUIPMENT	INCLUDES: ABSORBER MODULES AND ATOMIZERS WITH LUBE OIL, DUCT WORK FROM THE ABSORBERS TO THE FABRIC FILTER, AND COMPLETE RECYCLE SYSTEM WITH PIPING INSIDE FGD BUILDINGS.	EST	1	LT	39438000		39,438,000	0	236600	272,090	MECH	88.89	24,186,100	63,624,100
7.2	ELEVATOR	MAINTENANCE ELEVATOR - SUBCONTRACT COST INCLUDES LABOR	EST	1	EA	325,000.00		325,000	0	0.00	0	MECH	88.89	0	325,000
7.3	ABSORBER AREA SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES.		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
7.4	AGITATOR FOR SUMP PUMPS	5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
7.5	PIPING - MECHANICAL							142,800	36,900					227,900	407,600
	LARGE BORE PIPING	4" CS, SCHEDULE 40, WELDED	EST	300	LF		23.0	0	6,900	1.48	511	SPNG	94.41	48,200	55,100
	LARGE BORE PIPING	6" CS, SCH 40 WELDED	EST	100	LF		41.7	0	4,200	1.61	185	SPNG	94.41	17,500	21,700
	LARGE BORE PIPING	8" HDPE (UNDERGROUND)	EST	800	LF		14.1	0	11,300	0.83	764	SPNG	94.41	72,100	83,400
	SMALL BORE PIPING	2" CS, SCH 80 WELDED	EST	50	LF		22.20	0	1,100	1.26	72	SPNG	94.41	6,800	7,900
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	50	LF		48.80	0	2,400	1.44	83	SPNG	94.41	7,800	10,200
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	100	LF		33.70	0	3,400	1.32	152	SPNG	94.41	14,300	17,700
	VALVE	2" GLOBE, 150# SS, WELDED	EST	15	EA	1,450		21,800	0	5.64	97	SPNG	94.41	9,200	31,000
	VALVE	4" GATE, 150 #, CS, WELDED	EST	10	EA	2,500		25,000	0	7.70	89	SPNG	94.41	8,400	33,400
	VALVE	6" AIR OPERATED, 150 #, CS, FLANGED	EST	2	EA	14,000		28,000	0	17.30	40	SPNG	94.41	3,800	31,800
	VALVE	8" AIR OPERATED, 150 #, CS, FLANGED	EST	4	EA	17,000		68,000	0	19.30	89	SPNG	94.41	8,400	76,400
	EXCAVATION / BACKFILL	FOR UNDERGROUND PIPING	EST	667	CY			0	0	0.20	153	EXFD	90.00	13,800	13,800

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	BEDDING	FOR UNDERGROUND PIPING	EST	89	CY		35.0	0	3,100	0.25	26	EXFD	90.00	2,300	5,400
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	60	EA		75.00	0	4,500	2.50	173	MECH	88.89	15,300	19,800
7.6	SDA SUPERSTRUCTURE							75,000	764,900					1,227,300	2,067,200
	PENTHOUSE FOR SDA'S	TOTAL SUPPORT STEEL AND PURLINS	EST	138	TN		2650.0	0	364,400	30.00	4,744	STST	105.71	501,500	865,900
	ROOFING FOR SDA PENTHOUSE	STANDING SEAM TYPE	EST	10,000	SF		18.00	0	180,000	0.22	2,530	ROOF	69.12	174,900	354,900
	SIDING		EST	13,000	SF		12.00	0	156,000	0.11	1,645	SDNG	93.41	153,600	309,600
	CONCRETE FLOOR FOR PENTHOUSE	INCLUDES DECKING AND FORMWORK	EST	150	CY		230.00	0	34,500	7.50	1,294	CONP	79.64	103,000	137,500
	H&V		EST	3	LT	25000	10000	75,000	30,000	1050.00	3,623	HVAC	81.24	294,300	399,300
7.7	SDA BOTTOM ENCLOSURE - SUPPORT STEEL, GIRTS AND SIDING	TOTAL FOR THREE ABSORBERS	EST	9,053	SF		40.00	0	362,100	0.35	3,644	STST	105.71	385,200	747,300
7.8	SDA SHELL / ROOF INSULATION	61,000 SF. SUBCONTRACT COST INCLUDES LABOR	EST	61,000	SF	30		1,830,000	0		0	DINS	81.75	0	1,830,000
7.9	SDA - SUPPORT STEEL & ACCESS GALLERY							0	711,000					1,884,100	2,595,100
	SUPPORT STEEL	MATERIAL INCLUDED WITH OEM EQUIPMENT	EST	435	TN			0	0	24.00	12,006	STST	105.71	1,269,200	1,269,200
	ACCESS GALLERY		EST	15,800	SF		45.00	0	711,000	0.40	7,268	GALL	84.61	614,900	1,325,900
7.10	EXPANSION JOINTS		EST	850	LF		230.00	0	195,500	2.00	1,955	MECH	88.89	173,800	369,300
7.11	DUCTWORK							0	6,175,000					13,113,700	19,288,700
	SPRAY DRYER INLET	INCLUDES INTERNAL BRACING AND TURNING VANES	EST	1,900	TN		3,250.00	0	6,175,000	50.00	109,250	FLDU	107.96	11,794,600	17,969,600
	SPRAY DRYER OUTLET TO FABRIC FILTER INLET	INSTALLATION ONLY - MATERIAL INCLUDED WITH OEM EQUIPMENT	EST	213	TN			0	0	50.00	12,219	FLDU	107.96	1,319,100	1,319,100
7.12	DUCT SUPPORT STEEL	THREE COAT SHOP PAINT	EST	950	TN		2,900.00	0	2,755,000	24.00	26,220	STST	105.71	2,771,700	5,526,700
7.13	DUCTWORK INSULATION & LAGGING		EST	170,000	SF		12.00	0	2,040,000	0.25	48,875	DINS	81.75	3,995,500	6,035,500
7.14	CONCRETE PIT FOR ELEVATOR		EST	12	CY		230.00	0	2,800	7.50	104	CONP	79.64	8,200	11,000
7.15	SPRAY DRYER ABSORBER - FOUNDATIONS	TOTAL FOR THREE TOWERS						0	1,678,600					3,323,400	5,002,000
	EXCAVATION / BACKFILL		EST	16,000	CY			0	0	0.36	6,624	EXFD	90.00	596,200	596,200
	REINFORCING		EST	600	TN		1,150.00	0	690,000	20.00	13,800	REIN	78.27	1,080,100	1,770,100
	FORMWORK		EST	23,000	SF		2.50	0	57,500	0.14	3,703	FORM	99.43	368,200	425,700
	CONCRETE		EST	7,500	CY		105.00	0	787,500	1.50	12,938	CONP	79.64	1,030,300	1,817,800
	MUD MAT		EST	510	CY		105.00	0	53,600	1.50	880	CONP	79.64	70,100	123,700
	EMBEDDED STEEL		EST	36,000	LB		2.50	0	90,000	0.06	2,484	CARP	71.88	178,500	268,500
7.16	FOUNDATIONS FOR SUPPORT STEEL							0	69,000					143,000	212,000
	EXCAVATION / BACKFILL		EST	784	CY			0	0	0.36	324	EXFD	90.00	29,200	29,200
	REINFORCING		EST	23	TN		1,150.00	0	26,100	20.00	522	REIN	78.27	40,900	67,000
	FORMWORK		EST	1,125	SF		2.50	0	2,800	0.14	181	FORM	99.43	18,000	20,800
	CONCRETE		EST	303	CY		105.00	0	31,800	1.50	522	CONP	79.64	41,600	73,400
	MUD MAT		EST	43	CY		105.00	0	4,500	1.50	73	CONP	79.64	5,800	10,300
	EMBEDDED STEEL		EST	1,513	LB		2.50	0	3,800	0.06	104	CARP	71.88	7,500	11,300
7.17	GROUNDING							0	16,000		0			46,100	62,100
	GROUND ROD	3/4" - 20' LONG	EST	16	EA		150	0	2,400	4.00	74	WIRE	98.84	7,300	9,700
	500 MCM	BARE COPPER WIRE	EST	1,650	FT		7.65	0	12,600	0.12	228	WIRE	98.84	22,500	35,100
	CADWELD		EST	64	EA		15	0	1,000	2.00	147	WIRE	98.84	14,500	15,500
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	16.00	18	WIRE	98.84	1,800	1,800
7.18	LIGHTING/ TRANSFORMERS & PANELS							156,000	150,000		0			159,100	465,100
	LIGHT FIXTURES		EST	200	EA		750	0	150,000	4.00	920	WIRE	98.84	90,900	240,900
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	6	EA	10000		60,000	0	40.00	276	WIRE	98.84	27,300	87,300
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	6	EA	7500		45,000	0	32.00	221	WIRE	98.84	21,800	66,800
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	6	EA	5000		30,000	0	16.00	110	WIRE	98.84	10,900	40,900

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	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	6	EA	3500		21,000	0	12.00	83	WIRE	98.84	8,200	29,200
7.19	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE INCLUDED IN SECTION 1.0 - ID FANS													
7.20	COMMUNICATIONS		EST	1	LT		17,000.00	0	17,000	114.00	131	WIRE	98.84	13,000	30,000
7.21	LIGHTNING PROTECTION		EST	1	LT		25,500.00	0	25,500	163.00	187	WIRE	98.84	18,500	44,000
7.22	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							42,006,800	15,007,300		554,709			51,700,500	108,714,600
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE	2 CRANES		9	MN	90,000.00		810,000	0	1440.00	14,904	MECH	88.89	1,523,520	2,333,520
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										8,361,283
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						48,236		83.48	4,027,000	4,027,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						61,785			4,334,283	4,334,283
	PER DIEM	NONE		0.00	HR						679,633			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				75,037					258,503	333,539
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				750,365						750,365
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			2,100,340							2,100,340
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				750,365					2,585,025	3,335,390
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				2,251,095					7,755,075	10,006,170
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							2,910,300	3,826,900					20,483,400	27,220,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SPRAY DRYER ABSORBER ISLAND						44,917,100	18,834,200					72,183,900	135,935,200
8.0	ACTIVATED CARBON INJECTION SYSTEM														0
9.0	COMPRESSED AIR SYSTEM														0
10.0	SERVICE WATER SYSTEM														
11.0	POTABLE WATER SYSTEM														
12.0	FGD SUBSTATION														
12.1	TRANSFORMERS							1,560,000	0					273,100	1,833,100
	FGD SUBSTATION-AUX TRANSFORMERS: 11A & 11B	138KV-13.8KV- 2 WINDING XFMR	EST	2	EA	695000		1,390,000	0	1200.00	2,760	EHEA	79.16	218,500	1,608,500
	TRANSFORMERS: 32F, 32G	13.8KV-480V,3PHASE, 2 WINDING CAST COIL	EST	2	EA	85000		170,000	0	300.00	690	EHEA	79.16	54,600	224,600
12.2	TRANSFORMER PDC	15W X 45' X 10'H. SUBCONTRACT PRICE INCLUDES LABOR	EST	675.0	SF	300.0		202500.0	0.0	0.0	0.0	STST	105.71	0.0	202500.0
12.3	TRANSFORMER PDC - FOUNDATION							0	73,200					146,900	220,100
	EXCAVATION / BACKFILL		EST	700	CY			0	0	0.36	290	EXFD	90.00	26,100	26,100
	REINFORCING		EST	26	TN		1,150.00	0	30,200	20.00	604	REIN	78.27	47,300	77,500
	FORMWORK		EST	1,100	SF		2.50	0	2,800	0.14	177	FORM	99.43	17,600	20,400
	CONCRETE		EST	300	CY		105.00	0	31,500	1.50	518	CONP	79.64	41,200	72,700
	MUD MAT		EST	35	CY		105.00	0	3,700	1.50	60	CONP	79.64	4,800	8,500
	EMBEDDED STEEL		EST	2,000	LB		2.50	0	5,000	0.06	138	CARP	71.88	9,900	14,900

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12.4	138KV MAIN FEEDER & TERMINATIONS							264,000	0					254,000	518,000
	138KV STRUCTURE AND SWITCH	STRUCTURE STEEL	EST	1	LT	103500		103,500	0	450.00	518	STST	105.71	54,700	158,200
	138KV MAIN FEEDER	1/C 750KCMIL- 138KV	EST	2,100	LF	51.75		108,700	0	0.69	1,671	WIRE	98.84	165,200	273,900
	138KV ACCESSORIES		EST	1	LT	51750		51,800	0	300.00	345	WIRE	98.84	34,100	85,900
12.5	SWITCHGEAR							814,200	0					128,900	943,100
	13.8 KV MEDIUM VOLTAGE (11A/B)	PRICE PER SECTION	EST	10	EA	50000		500,000	0	40.00	460	EHEA	79.16	36,400	536,400
	480V LOW VOLTAGE (32F/G)	PRICE PER SECTION	EST	5	EA	38000		190,000	0	16.00	92	EHEA	79.16	7,300	197,300
	EXISTING SCR SWITCHGEAR MODIFICATION	TURNKEY INCLUDING INSTALLATION & MATERIAL (EATON QUOTE 7/16/10)	Q	1	LT	124,200		124,200	0	750.00	863	WIRE	98.84	85,200	209,400
12.6	MCC	480V MCC, PER LINE UP	EST	2	EA	30000		60,000	0	16.00	37	WIRE	98.84	3,600	63,600
12.7	CABLE BUS							181,100	18,000					290,200	489,300
	15KV CABLE BUS DUCT	BUS DUCT ONLY	EST	200	FT	442		88,400	0	3.30	759	WIRE	98.84	75,000	163,400
	480V CABLE BUS DUCT	BUS DUCT ONLY	EST	150	FT	618		92,700	0	10.30	1,777	WIRE	98.84	175,600	268,300
	CABLE BUS TERMINATION	500MCM - 15KV TERMINATIONS	EST	4	EA		1,800.00	0	7,200	33.00	152	WIRE	98.84	15,000	22,200
	CABLE BUS TERMINATION	750MCM- 480V TERMINATIONS	EST	4	EA		2,700.00	0	10,800	54.00	248	WIRE	98.84	24,600	35,400
12.8	PANELS - RELAY							100,000	0					9,100	109,100
	RELAY PANELS & INTERLOCK	ALLOWANCE	EST	1	LT	100000		100,000	0	80.00	92	WIRE	98.84	9,100	109,100
12.9	MIMIC PANELS		EST	1	EA	17500		17,500	0	40.00	46	WIRE	98.84	4,500	22,000
12.10	EMERGENCY POWER SYSTEM							108,300	0					24,400	132,700
	DC PANEL BOADRD		EST	1	EA	15500		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	UPS PANEL BOARDS		EST	1	EA	15500		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	SATELLITE UPS		EST	1	EA	41200		41,200	0	16.00	18	WIRE	98.84	1,800	43,000
	VRLA BATTERIES	8HR-400A, 480V	EST	1	LT	36050		36,100	0	120.00	138	WIRE	98.84	13,600	49,700
12.11	GROUNDING							23,300	0					59,100	82,400
	GROUND ROD	3/4" - 20' LONG EACH	EST	16	EA	150		2,400	0	4.00	74	WIRE	98.84	7,300	9,700
	500 MCM	BARE COPPER WIRE	EST	2,600	FT	7.65		19,900	0	0.12	359	WIRE	98.84	35,500	55,400
	CADWELD		EST	64	EA	15		1,000	0	2.00	147	WIRE	98.84	14,500	15,500
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	16.00	18	WIRE	98.84	1,800	1,800
12.12	LIGHTING/ TRANSFORMERS & PANELS							26,000	30,000					29,500	85,500
	LIGHT FIXTURES		EST	40	EA		750	0	30,000	4.00	184	WIRE	98.84	18,200	48,200
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	1	EA	10000		10,000	0	40.00	46	WIRE	98.84	4,500	14,500
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	1	EA	7500		7,500	0	32.00	37	WIRE	98.84	3,600	11,100
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	1	EA	5000		5,000	0	16.00	18	WIRE	98.84	1,800	6,800
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	1	EA	3500		3,500	0	12.00	14	WIRE	98.84	1,400	4,900
12.13	OUTDOOR LIGHTING	NEW AUX YARD LIGHTING - ALLOWANCE	EST	1	LT	25000		25,000	0	500.00	575	WIRE	98.84	56,800	81,800
12.14	RACEWAY, CABLE TRAY, & CONDUIT							0	390,600					1,918,600	2,309,200
	12" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,250	LF		18.25	0	22,800	1.10	1,581	WIRE	98.84	156,300	179,100
	18" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	750	LF		21.50	0	16,100	1.45	1,251	WIRE	98.84	123,600	139,700
	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	2,200	LF		27.10	0	59,600	1.75	4,428	WIRE	98.84	437,600	497,200
	36" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	600	LF		30.30	0	18,200	1.95	1,346	WIRE	98.84	133,000	151,200
	5" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,000	LF		61.00	0	61,000	1.13	1,296	WIRE	98.84	128,100	189,100
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,800	LF		31.00	0	55,800	0.81	1,670	WIRE	98.84	165,100	220,900
	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	2,000	LF		21.50	0	43,000	0.65	1,484	WIRE	98.84	146,600	189,600
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	3,000	LF		9.25	0	27,800	0.35	1,214	WIRE	98.84	120,000	147,800
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	3,700	LF		7.15	0	26,500	0.28	1,208	WIRE	98.84	119,400	145,900
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	6,200	LF		4.44	0	27,500	0.24	1,704	WIRE	98.84	168,400	195,900
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	10,000	LF		3.23	0	32,300	0.19	2,231	WIRE	98.84	220,500	252,800
12.15	DUCT BANK							0	26,200					54,300	80,500
	UNDERGROUND SURVEY FOR NEW DUCT BANK RUN	MAIN FEEDER BETWEEN EXISTING SCR SUBSTATION TO FGD AUX XFMR	EST	200	LF			0	0	0.80	184	ECND	75.97	14,000	14,000

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Labor Productivity = 1.15

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	4' X 4' DUCT BANK (138KV SCR TO FGD AUX XFMR SUBSTATION)	6 - 6" PVC	EST	40	LF		375	0	15,000	6.25	288	ECND	75.97	21,800	36,800
	DUCT BANK WITH 6-5" & 4-3" CONDUITS	2.38' H X 4' W	EST	50	LF		223.02	0	11,200	4.24	244	ECND	75.97	18,500	29,700
12.16	HIGH VOLTAGE POWER CABLE & TERMINATION	1/C # 500KCMIL-15KV	EST	3,000	LF		9.27	0	27,800	0.23	794	WIRE	98.84	78400	106,200
12.17	LOW VOLTAGE POWER CABLE & TERMINATION							0	263,700		0			649,600	913,300
	3/C # 500KCMIL- 600V		EST	7,000	LF		26.12	0	182,800	0.69	5,555	WIRE	98.84	549000	731,800
	#4/0 - #12 AWG-600V		EST	11,200	LF		7.22	0	80,900	0.08	1,018	WIRE	98.84	100,600	181,500
12.18	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	EST	6,800	LF		3.20	0	21,800	0.08	618	WIRE	98.84	61,100	82,900
12.19	FOUNDATION FOR AUX TRANSFORMER							0	70,200					205,400	275,600
	EXCAVATION / BACKFILL		EST	1,000	CY			0	0	0.36	414	EXFD	90.00	37,300	37,300
	REINFORCING		EST	20.0	TN		1,150.00	0	23,000	20.00	460	REIN	78.27	36,000	59,000
	FORMWORK		EST	5,000	SF		2.50	0	12,500	0.14	805	FORM	99.43	80,000	92,500
	CONCRETE		EST	190	CY		105.00	0	20,000	1.50	328	CONP	79.64	26,100	46,100
	MUD MAT		EST	45	CY		105.00	0	4,700	1.50	78	CONP	79.64	6,200	10,900
	EMBEDDED STEEL		EST	4,000	LB		2.50	0	10,000	0.06	276	CARP	71.88	19,800	29,800
12.20	FIREWALL FOR TRANSFORMERS							0	3,000					5,200	8,200
	REINFORCING		EST	1.0	TN		1,150.00	0	1,200	20.00	23	REIN	78.27	1,800	3,000
	FORMWORK		EST	80	SF		2.50	0	200	0.14	13	FORM	99.43	1,300	1,500
	CONCRETE		EST	15	CY		105.00	0	1,600	1.50	26	CONP	79.64	2,100	3,700
12.21	COMMUNICATIONS		EST	1	LT		17,000.00	0	17,000	114.00	131	WIRE	98.84	13,000	30,000
12.22	LIGHTNING PROTECTION		EST	1	LT		4,000.00	0	4,000	18.00	21	WIRE	98.84	2,000	6,000
12.23	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							3,381,900	953,500		44,772			4,274,700	8,610,100
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										666,396
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						3,893		83.48	325,000	325,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						4,867			341,396	341,396
	PER DIEM	NONE		0.00	HR						53,532			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				4,768					21,374	26,141
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				47,675						47,675
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			169,095							169,095
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				47,675					213,735	261,410
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				143,025					641,205	784,230
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							169,100	243,100					1,542,710	1,954,900
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FGD SUBSTATION						3,551,000	1,196,600					5,817,400	10,565,000
13.0	FGD DCS SYSTEM														0
14.0	CEM SYSTEM														0
15.0	TRUCK & RAIL INFRASTRUCTURE														0
16.0	SITE IMPROVEMENTS - CIVIL WORK														
16.1	SITE GRADING							0	0					627,000	627,000

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				ORDER OF MAGNITUDE COST ESTIMATE											Preparer:	MNO
		Cost Type:													Reviewer:	JMK
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		Q=Vendor Quote								Labor Productivity =		1.15				

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	CUT		EST	19,200	CY			0	0	0.08	1,766	ETWK	177.49	313,500	313,500
	FILL		EST	19,200	CY			0	0	0.08	1,766	ETWK	177.49	313,500	313,500
16.2	ROADS & SURFACING							0	996,600					1,358,800	2,355,400
	20' WIDE ACCESS ROAD	INCLUDES: 1.5" ASPHALT SURFACE COURSE 1.5" ASPHALT BINDER COURSE 12" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST	4,100	SY		47	0	192,700	0.40	1,886	PBIT	90.25	170,200	362,900
	24' WIDE ACCESS ROAD	INCLUDES: 1.5" ASPHALT SURFACE COURSE 1.5" ASPHALT BINDER COURSE 12" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST	7,100	SY		47	0	333,700	0.40	3,266	PBIT	90.25	294,800	628,500
	24' WIDE ACCESS ROAD AGGREGATE SHOULDERS	INCLUDES: 12" BASE COURSE 10 OZ/SY GEOTEXTILE	EST	1,800	SY		17.5	0	31,500	0.10	207	BCSE	105.94	21,900	53,400
	LIME UNLOADING AREA	INCLUDES: 1.5" ASPHALT SURFACE COURSE 1.5" ASPHALT BINDER COURSE 12" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST	1,300	SY		47	0	61,100	0.40	598	PBIT	90.25	54,000	115,100
	ASH LOADING AREA - SURFACING	12" REINFORCED CONCRETE	EST	750	SY		96	0	72,000	1.60	1,380	CONP	79.64	109,900	181,900
	ASH LOADING AREA	6" CONCRETE CURB	EST	330	LF		6.5	0	2,100	0.96	364	COND	70.04	25,500	27,600
	CONCRETE PAD BUILDING ENTRANCES	10" REINFORCED CONCRETE	EST	340	SY		80	0	27,200	1.50	587	CONP	79.64	46,700	73,900
	AGGREGATE AREA SURFACING	INCLUDES: 6" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST	30,700	SY		9	0	276,300	0.17	6,002	BCSE	105.94	635,800	912,100
16.3	RAILROAD CROSSING	50' WIDE CROSSING THREE TRACKS - CUSTOM BUILT	EST	1	EA		120000	0	120,000	1500.00	1,725	RRTK	88.26	152,200	272,200
16.4	NEW CONCRETE ENCASEMENT	16' X 4' X 40' - FOR EXISTING ASH PIPE HAUL ROAD CROSSING						0	144,300					286,600	430,900
	EXCAVATION / BACKFILL		EST	1,100	CY			0	0	0.36	455	EXFD	90.00	41,000	41,000
	REINFORCING		EST	100.0	TN		1,150.00	0	115,000	20.00	2,300	REIN	78.27	180,000	295,000
	FORMWORK		EST	2,000	SF		2.50	0	5,000	0.14	322	FORM	99.43	32,000	37,000
	CONCRETE		EST	200	CY		105.00	0	21,000	1.50	345	CONP	79.64	27,500	48,500
	MUD MAT		EST	8	CY		105.00	0	800	1.50	14	CONP	79.64	1,100	1,900
	EMBEDDED STEEL		EST	1,000	LB		2.50	0	2,500	0.06	69	CARP	71.88	5,000	7,500
16.5	TRUCK WASH AREA - CONCRETE PAD							0	47,300					83,100	130,400
	EXCAVATION / BACKFILL		EST	190	CY			0	0	0.36	79	EXFD	90.00	7,100	7,100
	REINFORCING		EST	20	TN		1,150.00	0	23,000	20.00	460	REIN	78.27	36,000	59,000
	FORMWORK		EST	510	SF		2.50	0	1,300	0.14	82	FORM	99.43	8,200	9,500
	CONCRETE		EST	170	CY		105.00	0	17,900	1.50	293	CONP	79.64	23,400	41,300
	MUD MAT		EST	25	CY		105.00	0	2,600	1.50	43	CONP	79.64	3,400	6,000
	EMBEDDED STEEL		EST	1,000	LB		2.50	0	2,500	0.06	69	CARP	71.88	5,000	7,500
16.6	TRUCK SCALE & CONCRETE APPROACH							170,000	27,300					92,000	289,300
	TRUCK SCALE	SUBCONTRACT COST, INCLUDES FOUNDATIONS AND LABOR	EST	2	EA	85000		170,000	0	0.00	0	MECH	88.89	0	170,000
	CONCRETE APPROACH FOR TRUCK SCALE	20' x 40' - TOTAL FOR TWO SCALES	EST	119	CY		230.0	0	27,300	7.50	1,022	EXFD	90.00	92,000	119,300
16.7	PROCESS WATER STORAGE BASIN							60,000	110,400					312,600	483,000
	SAND EXCAVATION		EST	4,000	CY			0	0	0.03	120	ETWK	177.49	21,200	21,200
	ROCK EXCAVATION	ASSUME ROCK IS RIPPABLE	EST	500	CY			0	0	0.05	28	ETWK	177.49	4,900	4,900

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	BASIN SURFACING	6" REINFORCED CONCRETE	EST	2,300	SY		48	0	110,400	1.20	3,174	CONP	79.64	252,800	363,200
	PUMPS	500 GPM, 75 PSIG	EST	2	EA	30000		60,000	0	165.00	380	MECH	88.89	33,700	93,700
16.8	PROCESS WATER STORAGE BASIN PUMP STRUCTURE - CONCRETE							0	47,000					105,400	152,400
	EXCAVATION / BACKFILL		EST	0	CY			0	0	0.36	0	EXFD	90.00	0	0
	REINFORCING		EST	7	TN		1,150.00	0	8,100	20.00	161	REIN	78.27	12,600	20,700
	FORMWORK		EST	3,968	SF		2.50	0	9,900	0.14	639	FORM	99.43	63,500	73,400
	CONCRETE		EST	76	CY		105.00	0	8,000	1.50	131	CONP	79.64	10,400	18,400
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	380	LB		2.50	0	1,000	0.06	26	CARP	71.88	1,900	2,900
	PROCESS WATER STORAGE BASIN PUMP STRUCTURE - GALLERY		EST	5	TN		4,000.00	0	20,000	35.00	201	GALL	84.61	17,000	37,000
16.9	STORMWATER DRAINAGE TRENCH	2' W X 3' DEEP CAST-IN-PLACE CONCRETE TRENCH W/REINFORCING & HS-20 RATED GRATE COVERS	EST	3,200	LF		135	0	432,000	1.50	5,520	CONP	79.64	439,600	871,600
16.10	STORMWATER RUNOFF POND							0	15,000					122,600	137,600
	SAND EXCAVATION		EST	11,000	CY			0	0	0.03	329	ETWK	177.49	58,400	58,400
	ROCK EXCAVATION	ASSUME ROCK IS RIPPABLE	EST	3,700	CY			0	0	0.05	204	ETWK	177.49	36,300	36,300
	4" TOPSOIL		EST	650	CY		14	0	9,100	0.03	22	LAND	61.45	1,400	10,500
	GRASS SEEDING, FERTILIZER AND MULCH		EST	1.2	AC		4930	0	5,900	240.00	331	MSTR	80.04	26,500	32,400
16.11	STORM WATER POND PUMP STRUCTURE - CONCRETE							90,000	42,300					182,200	314,500
	EXCAVATION / BACKFILL		EST	0	CY			0	0	0.36	0	EXFD	90.00	0	0
	REINFORCING		EST	3	TN		1,150.00	0	3,500	20.00	69	REIN	78.27	5,400	8,900
	FORMWORK		EST	2,025	SF		2.50	0	5,100	0.14	326	FORM	99.43	32,400	37,500
	CONCRETE		EST	33	CY		105.00	0	3,500	1.50	57	CONP	79.64	4,500	8,000
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	165	LB		2.50	0	400	0.06	11	CARP	71.88	800	1,200
	STORM WATER POND PUMP STRUCTURE - GALLERY		EST	5	TN		4,000.00	0	20,000	35.00	201	GALL	84.61	17,000	37,000
	PUMPS	500 GPM, 75 PSIG	EST	3	EA	30000		90,000	0	165.00	569	MECH	88.89	50,600	140,600
	PIPING	6" HDPE, SDR 9	EST	1,000	LF		9.8	0	9,800	0.69	794	YDPP	90.14	71,500	81,300
16.12	OILY WATER SEWER							104,500	96,600					326,100	311,100
	PIPING	6" CISP	EST	1,150	LF		21.5	0	24,700	0.33	436	YDPP	90.14	39,300	64,000
	PIPING	8" CISP	EST	1,150	LF		33.5	0	38,500	0.54	714	YDPP	90.14	64,400	102,900
	PIPING	6" HDPE, SDR 9	EST	1,000	LF		9.8	0	9,800	0.69	794	YDPP	90.14	71,500	81,300
	POST INDICATOR VALVE		EST	6	EA	750		4,500	0	6.00	41	YDPP	90.14	3,700	8,200
	MANHOLES		EST	15	EA		1575.0	0	23,600	20.00	345	YDPP	90.14	31,100	54,700
16.13	OIL SEPARATOR	500 GPM W/ INTEGRAL LIFT STATION	EST	2	EA	50000		100,000	0	560.00	1,288	YDPP	90.14	116,100	216,100
16.14	SANITARY SEWER							0	22,200					96,900	119,100
	PIPING	6" CISP	EST	500	LF		21.5	0	10,800	0.33	190	YDPP	90.14	17,100	27,900
	MANHOLES		EST	4	EA		1575.0	0	6,300	20.00	92	YDPP	90.14	8,300	14,600
	PIPING	4" HDPE (UNDERGROUND)	EST	1,500	LF		3.4	0	5,100	0.46	794	YDPP	90.14	71,500	76,600
16.15	SANITARY LIFT STATION	PACKAGED TYPE COMPLETE WITH PUMPS 100,000 GPD	EST	1	EA	150,000		150,000	0	475.00	546	YDPP	90.14	49,200	199,200
16.16	CONSTRUCTION LAYDOWN AREA - (TO BE USED FOR PHASE I AND PHASE II)	ALLOWANCE FOR 10 ACRES, DOES NOT INCLUDE LAND ACQUISITION, IF REQUIRED	EST	10	AC		70,000.0	0	700,000	800.00	9,200	EXFD	90.00	828,000	1,528,000
16.17	CRAFT PARKING (TO BE USED FOR PHASE I AND PHASE II)	DOES NOT INCLUDE LAND ACQUISITION, IF REQUIRED. ALLOWANCE FOR 20,000 SY INCLUDES: 6" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST	20,000	SY		9	0	180,000	0.17	3,910	BCSE	105.94	414,200	594,200

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16.18	CONTRACTOR OFFICES (AREA) - (TO BE USED FOR PHASE I AND PHASE II)	DOES NOT INCLUDE LAND ACQUISITION, IF REQUIRED. ALLOWANCE FOR 5,000 SY AREA (TRAILERS BY CONTRACTORS) INCLUDES: 6" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST	5,000	SY		9	0	45,000	0.17	978	BCSE	105.94	103,600	148,600
16.19	NEW PERMANENT STORAGE	INCLUDES LIGHTING AND H&V. SUBCONTRACT PRICE INCLUDES ELECTRICAL AND H&V		30,000	SF	85		2,550,000	0		0	STST	105.71	0	2,550,000
16.20	FOUNDATIONS FOR THE NEW WAREHOUSE							0	803,800					1,301,600	2,105,400
	EXCAVATION / BACKFILL		EST	2,600	CY			0	0	0.36	1,076	EXFD	90.00	96,900	96,900
	REINFORCING		EST	320	TN		1,150.00	0	368,000	20.00	7,360	REIN	78.27	576,100	944,100
	FORMWORK		EST	2,400	SF		2.50	0	6,000	0.14	386	FORM	99.43	38,400	44,400
	CONCRETE		EST	3,300	CY		105.00	0	346,500	1.50	5,693	CONP	79.64	453,400	799,900
	MUD MAT		EST	400	CY		105.00	0	42,000	1.50	690	CONP	79.64	55,000	97,000
	EMBEDDED STEEL		EST	16,500	LB		2.50	0	41,300	0.06	1,139	CARP	71.88	81,800	123,100
16.21	NEW TEMPORARY STORAGE	WEATHER TIGHT CANVAS ENCLOSURE. INCLUDES LIGHTING AND H&V. SUBCONTRACT PRICE INCLUDES ELECTRICAL AND H&V		10,000	SF	45		450,000	0		0	STST	105.71	0	450,000
16.22	FOUNDATIONS FOR TEMPORARY STORAGE							0	99,500					157,200	256,700
	EXCAVATION / BACKFILL		EST	230	CY			0	0	0.36	95	EXFD	90.00	8,600	8,600
	REINFORCING		EST	35	TN		1,150.00	0	40,300	20.00	805	REIN	78.27	63,000	103,300
	FORMWORK		EST	400	SF		2.50	0	1,000	0.14	64	FORM	99.43	6,400	7,400
	CONCRETE		EST	370	CY		105.00	0	38,900	1.50	638	CONP	79.64	50,800	89,700
	MUD MAT		EST	140	CY		105.00	0	14,700	1.50	242	CONP	79.64	19,200	33,900
	EMBEDDED STEEL		EST	1,850	LB		2.50	0	4,600	0.06	128	CARP	71.88	9,200	13,800
16.23	LABOR BUS SERVICE FROM PARKING LOT TO CONSTRUCTION AREA AND ACCESS CONTROL	ALLOWANCE FOR 36 MONTHS BASED ON 2 BUSES OPERATING CONTINUOUSLY FOR 5X10 WORKWEEK. SUBCONTRACT COST INCLUDES EQUIPMENT, MATERIAL AND LABOR	ALLOW	36	MN	38000		1,368,000	0					0	1,368,000
16.24	EROSION & SEDIMENT CONTROL							0	12,600					20,700	33,300
	SILT FENCE		EST	2,600	LF		1.0	0	2,600	0.02	60	LAND	61.45	3,700	6,300
	ROCK CHECK DAMS		EST	20	EA		500.0	0	10,000	12.00	276	LAND	61.45	17,000	27,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							4,942,500	3,941,900		76,373			7,059,600	15,944,000
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										1,136,357
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						6,641		83.48	554,000	554,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						8,301			582,357	582,357
	PER DIEM	NONE		0.00	HR						91,316			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				19,710					35,298	55,008
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				197,095						197,095
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			247,125							247,125
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				197,095					352,980	550,075

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				FGD PROJECT - IAQCS (ESP)-2A - 1.7 LB/MM BTU - PHASED										Date:	9/29/2010
				ORDER OF MAGNITUDE COST ESTIMATE										Preparer:	MNO
		Cost Type:												Reviewer:	JMK
		Est=Estimated												Approver:	PEF
		Allow.=Allowance								Wage Rates Based on:		BIG SANDY			
		Q=Vendor Quote								Labor Productivity =		1.15			

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				591,285					1,058,940	1,650,225
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							247,100	1,005,200					2,583,600	3,835,900
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SITE IMPROVEMENTS - CIVIL WORK						5,189,600	4,947,100					9,643,200	19,779,900
17.0	BOP ITEMS														0
18.0	CAPITAL REPLACEMENTS - REMOVAL AND RELOCATION OF EXISTING EQUIPMENT AND INFRASTRUCTURE														0
19.0	ARSENIC, ASBESTOS , LEAD ABATEMENT														0
99.00	PHASE I - OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS							111,209,000	53,275,500		1,570,552			145,792,800	342,402,300
	PHASE I - OVERALL OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE							810,000	0		14,904			1,523,520	2,333,520
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										23,480,231
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						136,570		92.83	11,400,000	11,400,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						172,203			12,080,231	12,080,231
	PER DIEM	NONE		0.00	HR									0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				263,678					727,414	991,092
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				2,636,775						2,636,775
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			5,497,450							5,497,450
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				2,636,775					7,274,140	9,910,915
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				7,991,325					21,822,420	34,883,745
	PHASE I - OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							6,307,500	13,528,600					54,827,700	79,733,700
	PHASE I - OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST	DRY FGD						117,516,500	66,804,100					200,620,500	422,136,000
	TOTAL PHASE I DIRECT AND CONSTRUCTION INDIRECT COSTS							117,516,500	66,804,100					200,620,500	422,136,000
								0	0					0	0
	INDIRECT COSTS - PHASE I														
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES			1.0	LT										28,000,000
	CONSTRUCTION MANAGEMENT			3.0	%										12,664,100
	S-U / COMMISSIONING			1.0											4,221,400
	CRAFT START-UP SUPPORT	1% OF TOTAL LABOR MANHOURS (INCLUDES OVERTIME INEFFICIENCY & COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - BASED ON ASSUMED 5X10 WORKWEEK)		1.0	%						17,071		92.83	1,717,900	1,717,900
	INITIAL FILLS			0.3	%										1,266,400
	OPERATOR & TRAINING MANUALS			1.0	LT										300,000
	SUBCONTRACTORS (NOISE & DUCTWORK CONSULTANT, GEOTECHNICAL INVESTIGATION)			1.0	LT										400,000

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Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	SUBTOTAL - INDIRECT COSTS														48,569,800
	TOTAL PHASE I DIRECT AND INDIRECT COSTS														470,705,800
	SPARE PARTS - PHASE I			1.5	%			1,762,700							1,762,700
	SPARE PARTS - CAPITALIZED			0.90	%			1,057,620							1,057,620
	SPARE PARTS - FIRST YEAR OF OPERATION			0.60	%			705,080							705,080
	CONTINGENCY - PHASE I			14.5	%										68,724,200
	ESCALATION - PHASE I														59,514,200
	EQUIPMENT	4.0%/yr		4.0	%			18,713,400							18,713,400
	MATERIAL	2.0%/yr		2.0	%				7,406,700						7,406,700
	LABOR	2.5%/yr		2.5	%									27,682,500	27,682,500
	INDIRECTS	2.5%/yr		2.5	%									5,711,600	5,711,600
	PHASE I - TOTAL PROJECT COST														600,706,900
	PHASE II - WET FGD														
20.0	LIMESTONE HANDLING SYSTEM														0
21.0	REAGENT (LIMESTONE) PREPARATION ISLAND														0
21.1	MECHANICAL EQUIPMENT	INCLUDES LIMESTONE FEEDERS, FROM THE DAY SILOS THROUGH THE SLURRY STORAGE TANKS AND TRANSFER PUMPS WITH INTEGRAL PIPING	EST	1	LT	11,425,000		11,425,000	0	101240.00	116,426	MECH	88.89	10,349,100	21,774,100
21.2	SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
21.3	AGITATOR FOR SUMP PUMPS	5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
21.4	PIPING - MECHANICAL		EST	1	LT			278,900	205,000					587,300	1,071,200
	LARGE BORE PIPING	4.0" CS, SCH 40 WELDED	EST	500	LF		23.00	0	11,500	1.48	851	SPNG	94.41	80,300	91,800
	LARGE BORE PIPING	6" FRP	EST	2,000	LF		33.90	0	67,800	0.67	1,541	SPNG	94.41	145,500	213,300
	LARGE BORE PIPING	8" FRP	EST	1,000	LF		51.30	0	51,300	0.95	1,093	SPNG	94.41	103,100	154,400
	LARGE BORE PIPING	10" FRP	EST	300	LF		68.00	0	20,400	1.18	407	SPNG	94.41	38,400	58,800
	LARGE BORE PIPING	12" FRP	EST	250	LF		80.90	0	20,200	1.41	405	SPNG	94.41	38,300	58,500
	VALVE	6" BFLY, 150 #, CS, FLANGED	EST	6	EA	850		5,100	0	8.70	60	SPNG	94.41	5,700	10,800
	VALVE	8" BFLY, 150 #, CS, FLANGED	EST	12	EA	1,400		16,800	0	9.10	126	SPNG	94.41	11,900	28,700
	VALVE	10" BFLY, 150 #, CS, FLANGED	EST	10	EA	2,300		23,000	0	13.80	159	SPNG	94.41	15,000	38,000
	VALVE	12" BFLY, 150 #, CS, FLANGED	EST	3	EA	3,000		9,000	0	14.60	50	SPNG	94.41	4,800	13,800
	VALVE	6" AIR OPERATED, 150 #, CS, FLANGED	EST	10	EA	14,000		140,000	0	17.30	199	SPNG	94.41	18,800	158,800
	VALVE	8" AIR OPERATED, 150 #, CS, FLANGED	EST	5	EA	17,000		85,000	0	19.30	111	SPNG	94.41	10,500	95,500
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	450	EA		75.00	0	33,800	2.50	1,294	MECH	88.89	115,000	148,800
21.5	LIMESTONE SLURRY TANKS - FOUNDATIONS							0	166,400					299,400	465,800
	EXCAVATION / BACKFILL		EST	969	CY			0	0	0.36	401	EXFD	90.00	36,100	36,100
	REINFORCING		EST	90	TN		1,150.00	0	103,500	20.00	2,070	REIN	78.27	162,000	265,500
	FORMWORK		EST	1,166	SF		2.50	0	2,900	0.14	188	FORM	99.43	18,700	21,600
	CONCRETE		EST	475	CY		105.00	0	49,900	1.50	819	CONP	79.64	65,300	115,200
	MUD MAT		EST	40	CY		105.00	0	4,200	1.50	69	CONP	79.64	5,500	9,700
	EMBEDDED STEEL		EST	2,375	LB		2.50	0	5,900	0.06	164	CARP	71.88	11,800	17,700
21.6	REAGENT PREPARATION BUILDING - FOUNDATIONS							0	649,100					1,077,400	1,726,500
	EXCAVATION / BACKFILL		EST	2,630	CY			0	0	0.36	1,089	EXFD	90.00	98,000	98,000

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	REINFORCING		EST	260	TN		1,150.00	0	299,000	20.00	5,980	REIN	78.27	468,100	767,100
	FORMWORK		EST	2,380	SF		2.50	0	6,000	0.14	383	FORM	99.43	38,100	44,100
	CONCRETE		EST	2,750	CY		105.00	0	288,800	1.50	4,744	CONP	79.64	377,800	666,600
	MUD MAT		EST	200	CY		105.00	0	21,000	1.50	345	CONP	79.64	27,500	48,500
	EMBEDDED STEEL		EST	13,700	LB		2.50	0	34,300	0.06	945	CARP	71.88	67,900	102,200
21.7	REAGENT PREPARATION BUILDING	120' L X 125' W X 130' H						269,400	4,684,200					4,106,700	9,060,300
	STRUCTURAL STEEL		EST	1,160	TN		2650	0	3,074,000	16.00	21,344	STST	105.71	2,256,300	5,330,300
	INSULATED METAL SIDING		EST	63,700	SF		12	0	764,400	0.11	8,058	SDNG	93.41	752,700	1,517,100
	ROLLING OVERHEAD DOOR		EST	640	SF		27	0	17,300	0.25	184	CARP	71.88	13,200	30,500
	METAL ROOF DECKING		EST	15,000	SF		2.7	0	40,500	0.06	1,035	STST	105.71	109,400	149,900
	RIGID ROOF INSULATION		EST	15,000	SF		2.4	0	36,000	0.02	259	ROOF	69.12	17,900	53,900
	ROOFING (4-PLY TAR & GRAVEL)		EST	15,000	SF		1.55	0	23,300	0.04	690	ROOF	69.12	47,700	71,000
	LIGHTWEIGHT CONCRETE FILL 1"		EST	45	CY		100	0	4,500	1.30	67	ROOF	69.12	4,700	9,200
	ROOF FLASHING		EST	490	LF		14.45	0	7,100	0.12	68	ROOF	69.12	4,700	11,800
	ROOF DRAINS		EST	1	LT		45000	0	15,000	500.00	575	PLMB	79.42	45,700	60,700
	FLOOR DRAINS		EST	1	LT		37500	0	20,000	375.00	431	PLMB	79.42	34,200	54,200
	FLOOR SLABS	INCLUDES METAL DECKING AND FORMWORK	EST	45	CY		210	0	9,500	7.50	388	CONP	79.64	30,900	40,400
	FLOOR FINISHES		EST	8,900	SF		2.5	0	22,300	0.05	512	CONP	79.64	40,800	63,100
	LOUVERS/WINDOWS/DOORS		EST	6,500	SF		40	0	260,000	0.35	2,616	CARP	71.88	188,100	448,100
	ROOF VENTILATORS		EST	6	EA		15000	0	90,000	24.00	166	HVAC	81.24	13,500	103,500
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	4,500	SF		45	0	202,500	0.40	2,070	GALL	84.61	175,100	377,600
	H&V		EST	1	LT	194400	77760	194,400	77,800	3629.33	4,174	HVAC	81.24	339,100	611,300
	HVAC	40T PACKAGED UNIT FOR ELECTRICAL EQUIPMENT ROOM. INCLUDES ALLOWANCE FOR CONCRETE PAD AND ELECTRICAL WORK	EST	1	LT	75000	20000	75,000	20,000	350.00	403	HVAC	81.24	32,700	127,700
21.8	PIPE SUPPORT PAD - REAGENT PREP BUILDING							0	13,800					27,100	40,900
	EXCAVATION / BACKFILL		EST	105	CY			0	0	0.36	43	EXFD	90.00	3,900	3,900
	REINFORCING		EST	5.0	TN		1,150.00	0	5,800	20.00	115	REIN	78.27	9,000	14,800
	FORMWORK		EST	270	SF		2.50	0	700	0.14	43	FORM	99.43	4,300	5,000
	CONCRETE		EST	40	CY		105.00	0	4,200	1.50	69	CONP	79.64	5,500	9,700
	MUD MAT		EST	25	CY		105.00	0	2,600	1.50	43	CONP	79.64	3,400	6,000
	EMBEDDED STEEL		EST	200	LB		2.50	0	500	0.06	14	CARP	71.88	1,000	1,500
21.9	LIGHTING/ TRANSFORMERS & PANELS							52,000	135,000					104,500	291,500
	LIGHT FIXTURES		EST	180	EA		750	0	135,000	4.00	828	WIRE	98.84	81,800	216,800
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	10000		20,000	0	40.00	92	WIRE	98.84	9,100	29,100
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	7500		15,000	0	32.00	74	WIRE	98.84	7,300	22,300
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	2	EA	5000		10,000	0	16.00	37	WIRE	98.84	3,600	13,600
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	2	EA	3500		7,000	0	12.00	28	WIRE	98.84	2,700	9,700
21.10	GROUNDING							5,100	0					13,400	18,500
	GROUND ROD	3/4" - 20' LONG	EST	2	EA	150		300	0	4.00	9	WIRE	98.84	900	1,200
	500 MCM	BARE COPPER WIRE	EST	600	FT	7.65		4,600	0	0.12	83	WIRE	98.84	8,200	12,800
	CADWELD		EST	16	EA	15		200	0	2.00	37	WIRE	98.84	3,600	3,800
	GROUNDING TEST	TEST, CALIBRATION & DOCUMENTATION	EST	2	EA			0	0	3.00	7	WIRE	98.84	700	700
21.11	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE ARE INCLUDED IN SECTION 23.0 - ABSORBER ISLAND													
21.12	COMMUNICATIONS		EST	1	LT		34,000.00	0	34,000	229.00	263	WIRE	98.84	26,000	60,000
21.13	LIGHTNING PROTECTION		EST	1	LT		23,000.00	0	23,000	141.00	162	WIRE	98.84	16,000	39,000
21.14	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000

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90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							12,070,400	5,918,500		184,669			16,630,800	34,619,700
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										2,965,072
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						16,058		90.06	1,446,000	1,446,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						20,073			1,519,072	1,519,072
	PER DIEM	NONE		0.00	HR						220,800			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				29,593					83,154	112,747
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				295,925						295,925
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			603,520							603,520
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				295,925					831,540	1,127,465
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				887,775					2,494,620	3,382,395
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							603,500	1,509,200					6,374,400	8,487,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	REAGENT (LIMESTONE) PREPARATION ISLAND						12,673,900	7,427,700					23,005,200	43,106,800
22.0	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)														0
22.1	MECHANICAL EQUIPMENT	PRIMARY & SECONDARY DEWATERING INCLUDING HYDROCLONE FEED TANKS, HYDROCLONES, PUMPS, INTEGRAL PIPING AND BELT VACUUM FILTERS	EST	1	LT	5,688,000		5,688,000	0	50367.00	57,922	MECH	88.89	5,148,700	10,836,700
22.2	PUMPS & AGITATORS							250,000	0					137,000	387,000
	GYPSUM SLURRY TRANSFER PUMPS	1500 GPM, 150 HP	EST	2	EA	40000		80,000	0	220.00	506	MECH	88.89	45,000	125,000
	RECLAIM WATER PUMPS	350 GPM, 25 HP	EST	2	EA	15000		30,000	0	120.00	276	MECH	88.89	24,500	54,500
	RECLAIM WATER TRANSFER PUMPS	500 GPM, 100 HP	EST	2	EA	30000		60,000	0	165.00	380	MECH	88.89	33,700	93,700
	SUMP PUMPS	AUXILIARY PUMPHOUSE BUILDING SUMP PUMPS - DUPLEX. INCLUDES CHECK & ISOLATION VALVES		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
	AGITATOR FOR SUMP PUMPS	AUXILIARY PUMPHOUSE BUILDING SUMP AGITATORS - 5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
	SUMP PUMPS	BYPRODUCT DEWATERING BUILDING SUMP PUMPS - DUPLEX. INCLUDES CHECK & ISOLATION VALVES		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
	AGITATOR FOR SUMP PUMPS	BYPRODUCT DEWATERING BUILDING SUMP AGITATORS - 5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
22.3	PIPING - MECHANICAL		EST	1	LT			282,700	3,555,700					7,786,000	11,624,400
	LARGE BORE PIPING	4" FRP	EST	2,050	LF		28.40	0	58,200	0.38	896	SPNG	94.41	84,600	142,800
	LARGE BORE PIPING	6" FRP	EST	3,300	LF		33.90	0	111,900	0.67	2,543	SPNG	94.41	240,100	352,000
	LARGE BORE PIPING	8" FRP	EST	6,250	LF		51.30	0	320,600	0.95	6,828	SPNG	94.41	644,600	965,200
	LARGE BORE PIPING	10" FRP	EST	6,400	LF		68.00	0	435,200	1.18	8,685	SPNG	94.41	819,900	1,255,100
	LARGE BORE PIPING	12" FRP	EST	1,000	LF		80.90	0	80,900	1.41	1,622	SPNG	94.41	153,100	234,000
	LARGE BORE PIPING	14" FRP	EST	16,500	LF		133.90	0	2,209,400	2.67	50,663	SPNG	94.41	4,783,100	6,992,500
	LARGE BORE PIPING	16" FRP	EST	100	LF		152.20	0	15,200	2.88	331	SPNG	94.41	31,300	46,500

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	LARGE BORE PIPING	20" FRP	EST	125	LF		165.00	0	20,600	3.31	476	SPNG	94.41	44,900	65,500
	VALVE	4" BFLY, 150 #, CS, FLANGED	EST	6	EA	625		3,800	0	7.20	50	SPNG	94.41	4,700	8,500
	VALVE	6" BFLY, 150 #, CS, FLANGED	EST	6	EA	850		5,100	0	8.70	60	SPNG	94.41	5,700	10,800
	VALVE	8" BFLY, 150 #, CS, FLANGED	EST	12	EA	1,400		16,800	0	9.10	126	SPNG	94.41	11,900	28,700
	VALVE	10" BFLY, 150 #, CS, FLANGED	EST	10	EA	2,300		23,000	0	13.80	159	SPNG	94.41	15,000	38,000
	VALVE	12" BFLY, 150 #, CS, FLANGED	EST	3	EA	3,000		9,000	0	14.60	50	SPNG	94.41	4,800	13,800
	VALVE	6" AIR OPERATED, 150 #, CS, FLANGED	EST	10	EA	14,000		140,000	0	17.30	199	SPNG	94.41	18,800	158,800
	VALVE	8" AIR OPERATED, 150 #, CS, FLANGED	EST	5	EA	17,000		85,000	0	19.30	111	SPNG	94.41	10,500	95,500
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	3,573	EA		85.00	0	303,700	2.50	10,271	MECH	88.89	913,000	1,216,700
22.4	MATERIAL HANDLING EQUIPMENT							724,000	7,500					614,100	1,345,600
	CONVEYOR GH-1A	36" W x 75' L		75	LF	1,000		75,000	0	7.50	647	MECH	88.89	57,500	132,500
	CONVEYOR GH-1B	36" W x 75' L		75	LF	1,000		75,000	0	30.00	2,588	MECH	88.89	230,000	305,000
	BELT SCALES	CONVEYORS GH-1A AND GH-1B		2	EA	30,000		60,000	0	180.00	414	MECH	88.89	36,800	96,800
	STACKOUT CONVEYOR GH-2A	36" W X 120' L		120	LF	1,100		132,000	0	7.50	1,035	MECH	88.89	92,000	224,000
	STACKOUT CONVEYOR GH-2B	36" W X 120' L		120	LF	1,100		132,000	0	7.50	1,035	MECH	88.89	92,000	224,000
	TELESCOPIC CHUTES	CONVEYORS GH-2A AND GH-2B		2	EA	125,000		250,000	0	375.00	863	MECH	88.89	76,700	326,700
	FRONT END LOADER	NOT INCLUDED						0	0	30.00	0	MECH	88.89	0	0
	DUMP TRUCK	NOT INCLUDED						0	0	700.00	0	MECH	88.89	0	0
	WATER SPRAY AT DISCHARGE OF GH-2A & GH-2B	ALLOWANCE FOR 200 LF SMALL BORE PIPING AND SPRAYS AND VALVVING		300	LF		25.0	0	7,500	0.95	328	MECH	88.89	29,100	36,600
22.5	FIRE PROTECTION SYSTEM FOR BELT CONVEYORS	DELUGE SYSTEM, DRY PIPE, SENSORS, ACTIVATION VALVE AND FM APPROVED PANEL - SUBCONTRACT PRICE FOR ALL CONVEYORS INCLUDES LABOR		1	LT	170,000		170,000	0	0.00	0	MECH	88.89	0	170,000
22.6	CONVEYOR STRUCTURE SUPPORT STEEL	THREE-COAT SHOP PAINT	EST	34	TN		2,900.00	0	99,000	24.00	942	STST	105.71	99,600	198,600
22.7	PIPE RACK SUPPORT STEEL	THREE-COAT SHOP PAINT	EST	68	TN		2,900.00	0	197,200	24.00	1,877	STST	105.71	198,400	395,600
22.8	TANKS							0	3,825,300					846,700	4,672,000
	LANDFILL SERVICE WATER TANKS	70,000 GAL, CS, 20' DIA X 30' - SUBCONTRACT PRICE INCLUDES LABOR WITH EXTERIOR PRIMED AND FIELD PAINTED	EST	2	EA		157500.0	0	315,000	0.00	0	TANK	89.16	0	315,000
	BLEED TANKS	120,000 GAL, CS, 27' DIA X 27' - SUBCONTRACT PRICE INCLUDES LABOR WITH EXTERIOR PRIMED AND FIELD PAINTED	EST	2	EA		216000.0	0	432,000	0.00	0	TANK	89.16	0	432,000
	RECLAIM WATER TANKS	230,000 GAL, CS, 29' DIA X 33' - SUBCONTRACT PRICE INCLUDES LABOR WITH EXTERIOR PRIMED AND FIELD PAINTED	EST	2	EA		330000.0	0	660,000	0.00	0	TANK	89.16	0	660,000
	RECLAIM WATER TANKS - INTERIOR LINING	FLAKECOAT VINYL ESTER TOTAL FOR TWO TANKS	EST	8,656	SF		15.0	0	129,800	0.35	3,484	PNTR	66.72	232,500	362,300
	LANDFILL RECLAIM WATER TANKS	230,000 GAL, CS, 29' DIA X 33' - SUBCONTRACT PRICE INCLUDES LABOR WITH EXTERIOR PRIMED AND FIELD PAINTED	EST	2	EA		330000.0	0	660,000	0.00	0	TANK	89.16	0	660,000
	LANDFILL RECLAIM WATER TANKS - INTERIOR LINING	FLAKECOAT VINYL ESTER TOTAL FOR TWO TANKS	EST	8,656	SF		15.0	0	129,800	0.35	3,484	PNTR	66.72	232,500	362,300
	MAINTENANCE STORAGE TANK	1,250,000 GAL, CS, 58' DIA X 62' - SUBCONTRACT PRICE INCLUDES LABOR WITH EXTERIOR PRIMED AND FIELD PAINTED	EST	1	EA		1250000.0	0	1,250,000	0.00	0	TANK	89.16	0	1,250,000
	MAINTENANCE STORAGE TANK - INTERIOR LINING	FLAKECOAT VINYL ESTER	EST	16,581	SF		15.0	0	248,700	0.30	5,720	PNTR	66.72	381,700	630,400
22.9	RECLAIM WATER TANKS & PUMPS - FOUNDATIONS							0	26,000					54,000	80,000
	EXCAVATION / BACKFILL		EST	295	CY			0	0	0.36	122	EXFD	90.00	11,000	11,000
	REINFORCING		EST	10.0	TN		1,150.00	0	11,500	20.00	230	REIN	78.27	18,000	29,500
	FORMWORK		EST	384	SF		2.50	0	1,000	0.14	62	FORM	99.43	6,100	7,100
	CONCRETE		EST	103	CY		105.00	0	10,800	1.50	178	CONP	79.64	14,200	25,000
	MUD MAT		EST	9	CY		105.00	0	900	1.50	16	CONP	79.64	1,200	2,100

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	EMBEDDED STEEL		EST	705	LB		2.50	0	1,800	0.06	49	CARP	71.88	3,500	5,300
22.10	MAINTENANCE STORAGE TANK & PUMPS - FOUNDATIONS							0	100,000					177,300	277,300
	EXCAVATION / BACKFILL		EST	614	CY			0	0	0.36	254	EXFD	90.00	22,900	22,900
	REINFORCING		EST	42.0	TN		1,150.00	0	48,300	20.00	966	REIN	78.27	75,600	123,900
	FORMWORK		EST	795	SF		2.50	0	2,000	0.14	128	FORM	99.43	12,700	14,700
	CONCRETE		EST	420	CY		105.00	0	44,100	1.50	725	CONP	79.64	57,700	101,800
	MUD MAT		EST	36	CY		105.00	0	3,800	1.50	62	CONP	79.64	4,900	8,700
	EMBEDDED STEEL		EST	705	LB		2.50	0	1,800	0.06	49	CARP	71.88	3,500	5,300
22.11	LANDFILL SERVICE WATER TANKS & PUMP - FOUNDATIONS							0	80,900					155,100	236,000
	EXCAVATION / BACKFILL		EST	614	CY			0	0	0.36	254	EXFD	90.00	22,900	22,900
	REINFORCING		EST	42.0	TN		1,150.00	0	48,300	20.00	966	REIN	78.27	75,600	123,900
	FORMWORK		EST	795	SF		2.50	0	2,000	0.14	128	FORM	99.43	12,700	14,700
	CONCRETE		EST	221	CY		105.00	0	23,200	1.50	381	CONP	79.64	30,400	53,600
	MUD MAT		EST	18	CY		105.00	0	1,900	1.50	31	CONP	79.64	2,500	4,400
	EMBEDDED STEEL		EST	2,210	LB		2.50	0	5,500	0.06	152	CARP	71.88	11,000	16,500
22.12	LANDFILL RECLAIM WATER TANKS & PUMPS - FOUNDATIONS							0	26,000					54,000	80,000
	EXCAVATION / BACKFILL		EST	295	CY			0	0	0.36	122	EXFD	90.00	11,000	11,000
	REINFORCING		EST	10.0	TN		1,150.00	0	11,500	20.00	230	REIN	78.27	18,000	29,500
	FORMWORK		EST	384	SF		2.50	0	1,000	0.14	62	FORM	99.43	6,100	7,100
	CONCRETE		EST	103	CY		105.00	0	10,800	1.50	178	CONP	79.64	14,200	25,000
	MUD MAT		EST	9	CY		105.00	0	900	1.50	16	CONP	79.64	1,200	2,100
	EMBEDDED STEEL		EST	705	LB		2.50	0	1,800	0.06	49	CARP	71.88	3,500	5,300
22.13	HYDROCLONE FEED TANKS & BLEED TANKS - FOUNDATIONS	TOTAL FOR HYDROCLONE AND BLEED TANKS						0	340,200					618,900	959,100
	EXCAVATION / BACKFILL		EST	1,915	CY			0	0	0.36	793	EXFD	90.00	71,400	71,400
	REINFORCING		EST	212.0	TN		1,150.00	0	243,800	20.00	4,876	REIN	78.27	381,600	625,400
	FORMWORK		EST	2,400	SF		2.50	0	6,000	0.14	386	FORM	99.43	38,400	44,400
	CONCRETE		EST	671	CY		105.00	0	70,500	1.50	1,157	CONP	79.64	92,200	162,700
	MUD MAT		EST	58	CY		105.00	0	6,100	1.50	100	CONP	79.64	8,000	14,100
	EMBEDDED STEEL		EST	5,500	LB		2.50	0	13,800	0.06	380	CARP	71.88	27,300	41,100
22.14	BYPRODUCT STACKOUT CONVEYOR & TRANSFER TOWER - FOUNDATIONS							0	16,100					34,700	50,800
	EXCAVATION / BACKFILL		EST	140	CY			0	0	0.36	58	EXFD	90.00	5,200	5,200
	REINFORCING		EST	6	TN		1,150.00	0	6,900	20.00	138	REIN	78.27	10,800	17,700
	FORMWORK		EST	480	SF		2.50	0	1,200	0.14	77	FORM	99.43	7,700	8,900
	CONCRETE		EST	59	CY		105.00	0	6,200	1.50	102	CONP	79.64	8,100	14,300
	MUD MAT		EST	10	CY		105.00	0	1,100	1.50	17	CONP	79.64	1,400	2,500
	EMBEDDED STEEL		EST	295	LB		2.50	0	700	0.06	20	CARP	71.88	1,500	2,200
22.15	BYPRODUCT STACKOUT PILE - FOUNDATIONS	INCLUDES CONTAINMENT AREA SLAB						0	891,700					1,427,400	2,319,100
	EXCAVATION / BACKFILL		EST	2,900	CY			0	0	0.36	1,201	EXFD	90.00	108,100	108,100
	REINFORCING		EST	360	TN		1,150.00	0	414,000	20.00	8,280	REIN	78.27	648,100	1,062,100
	FORMWORK		EST	2,365	SF		2.50	0	5,900	0.14	381	FORM	99.43	37,900	43,800
	CONCRETE		EST	3,813	CY		105.00	0	400,400	1.50	6,577	CONP	79.64	523,800	924,200
	MUD MAT		EST	453	CY		105.00	0	47,600	1.50	781	CONP	79.64	62,200	109,800
	EMBEDDED STEEL		EST	9,533	LB		2.50	0	23,800	0.06	658	CARP	71.88	47,300	71,100
22.16	PIPE RACK	SUPPORTS AT 15' C/C						0	60,800					149,400	210,200
	EXCAVATION / BACKFILL		EST	1,120	CY			0	0	0.36	464	EXFD	90.00	41,700	41,700
	REINFORCING		EST	24	TN		1,150.00	0	27,600	20.00	552	REIN	78.27	43,200	70,800
	FORMWORK		EST	1,500	SF		2.50	0	3,800	0.14	242	FORM	99.43	24,000	27,800
	CONCRETE		EST	250	CY		105.00	0	26,300	1.50	431	CONP	79.64	34,300	60,600
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	1,250	LB		2.50	0	3,100	0.06	86	CARP	71.88	6,200	9,300

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22.17	BYPRODUCT CONTAINMENT WALLS							0	137,300					235,000	372,300
	EXCAVATION / BACKFILL		EST	489	CY			0	0	0.36	202	EXFD	90.00	18,200	18,200
	REINFORCING		EST	46	TN		1,150.00	0	52,900	20.00	1,058	REIN	78.27	82,800	135,700
	FORMWORK		EST	1,520	SF		2.50	0	3,800	0.14	245	FORM	99.43	24,300	28,100
	CONCRETE		EST	489	CY		105.00	0	51,300	1.50	844	CONP	79.64	67,200	118,500
	MUD MAT		EST	221	CY		105.00	0	23,200	1.50	381	CONP	79.64	30,400	53,600
	EMBEDDED STEEL		EST	2,445	LB		2.50	0	6,100	0.06	169	CARP	71.88	12,100	18,200
22.18	INSTALL WIND SCREEN		EST	700	LF		750.00	0	525,000	3.00	2,415	CONP	79.64	192,300	717,300
22.19	BYPRODUCT DEWATERING BUILDING - FOUNDATIONS							0	275,500					458,500	734,000
	EXCAVATION / BACKFILL		EST	1,200	CY			0	0	0.36	497	EXFD	90.00	44,700	44,700
	REINFORCING		EST	115	TN		1,150.00	0	132,300	20.00	2,645	REIN	78.27	207,000	339,300
	FORMWORK		EST	1,440	SF		2.50	0	3,600	0.14	232	FORM	99.43	23,100	26,700
	CONCRETE		EST	1,200	CY		105.00	0	126,000	1.50	2,070	CONP	79.64	164,900	290,900
	MUD MAT		EST	115	CY		105.00	0	12,100	1.50	198	CONP	79.64	15,800	27,900
	EMBEDDED STEEL		EST	605	LB		2.50	0	1,500	0.06	42	CARP	71.88	3,000	4,500
22.20	BYPRODUCT DEWATERING BUILDING	120' L X 71' W X 65' H						145,200	1,536,000					1,446,100	3,127,300
	STRUCTURAL STEEL		EST	305	TN		2650	0	808,300	16.00	5,612	STST	105.71	593,200	1,401,500
	INSULATED METAL SIDING		EST	24,830	SF		12	0	298,000	0.11	3,141	SDNG	93.41	293,400	591,400
	ROLLING OVERHEAD DOOR		EST	640	SF		27	0	17,300	0.25	184	CARP	71.88	13,200	30,500
	METAL ROOF DECKING		EST	8,520	SF		2.7	0	23,000	0.06	588	STST	105.71	62,100	85,100
	RIGID ROOF INSULATION		EST	8,520	SF		2.4	0	20,400	0.02	147	ROOF	69.12	10,200	30,600
	ROOFING (4-PLY TAR & GRAVEL)		EST	8,520	SF		1.55	0	13,200	0.04	392	ROOF	69.12	27,100	40,300
	LIGHTWEIGHT CONCRETE FILL 1"		EST	28	CY		100	0	2,800	1.30	42	ROOF	69.12	2,900	5,700
	ROOF FLASHING		EST	382	LF		14.45	0	5,500	0.12	53	ROOF	69.12	3,600	9,100
	ROOF DRAINS		EST	1	LT		40000	0	15,000	450.00	518	PLMB	79.42	41,100	56,100
	FLOOR DRAINS		EST	1	LT		32500	0	20,000	350.00	403	PLMB	79.42	32,000	52,000
	FLOOR SLABS		EST	50	CY		210	0	10,500	7.50	431	CONP	79.64	34,300	44,800
	FLOOR FINISHES	MAIN LEVEL	EST	6,400	SF		2.5	0	16,000	0.05	368	CONP	79.64	29,300	45,300
	LOUVERS/WINDOWS/DOORS		EST	2,535	SF		40	0	101,400	0.35	1,020	CARP	71.88	73,300	174,700
	ROOF VENTILATORS		EST	4	EA		15000	0	60,000	24.00	110	HVAC	81.24	9,000	69,000
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	1,700	SF		45	0	76,500	0.40	782	GALL	84.61	66,200	142,700
	H&V		EST	1	LT	70200	28080	70,200	28,100	1310.67	1,507	HVAC	81.24	122,500	220,800
	HVAC	40T PACKAGED UNIT FOR ELECTRICAL EQUIPMENT ROOM. INCLUDES ALLOWANCE FOR CONCRETE PAD AND ELECTRICAL WORK	EST	1	LT	75000	20000	75,000	20,000	350.00	403	HVAC	81.24	32,700	127,700
22.21	PIPE SUPPORT PAD							0	13,800					26,700	40,500
	EXCAVATION / BACKFILL		EST	95	CY			0	0	0.36	39	EXFD	90.00	3,500	3,500
	REINFORCING		EST	5.0	TN		1,150.00	0	5,800	20.00	115	REIN	78.27	9,000	14,800
	FORMWORK		EST	270	SF		2.50	0	700	0.14	43	FORM	99.43	4,300	5,000
	CONCRETE		EST	40	CY		105.00	0	4,200	1.50	69	CONP	79.64	5,500	9,700
	MUD MAT		EST	25	CY		105.00	0	2,600	1.50	43	CONP	79.64	3,400	6,000
	EMBEDDED STEEL		EST	200	LB		2.50	0	500	0.06	14	CARP	71.88	1,000	1,500
22.22	AUXILIARY PUMPHOUSE BUILDING WITH ELECTRICAL ROOM - FOUNDATIONS							0	32,300					60,800	93,100
	EXCAVATION / BACKFILL		EST	210	CY			0	0	0.36	87	EXFD	90.00	7,800	7,800
	REINFORCING		EST	11	TN		1,150.00	0	12,900	20.00	258	REIN	78.27	20,200	33,100
	FORMWORK		EST	500	SF		2.50	0	1,300	0.14	81	FORM	99.43	8,000	9,300
	CONCRETE		EST	140	CY		105.00	0	14,700	1.50	242	CONP	79.64	19,200	33,900
	MUD MAT		EST	15	CY		105.00	0	1,600	1.50	26	CONP	79.64	2,100	3,700
	EMBEDDED STEEL		EST	700	LB		2.50	0	1,800	0.06	48	CARP	71.88	3,500	5,300
22.23	AUXILIARY PUMPHOUSE BUILDING	50'L X 35' W X 20'H						101,300	252,500					269,800	623,600
	STRUCTURAL STEEL		EST	20	TN		2650	0	53,000	16.00	368	STST	105.71	38,900	91,900
	INSULATED METAL SIDING		EST	3,400	SF		12	0	40,800	0.11	430	SDNG	93.41	40,200	81,000
	ROLLING OVERHEAD DOOR		EST	320	SF		27	0	8,600	0.25	92	CARP	71.88	6,600	15,200
	METAL ROOF DECKING		EST	1,750	SF		2.7	0	4,700	0.06	121	STST	105.71	12,800	17,500
	RIGID ROOF INSULATION		EST	1,750	SF		2.4	0	4,200	0.02	30	ROOF	69.12	2,100	6,300
	ROOFING (4-PLY TAR & GRAVEL)		EST	1,750	SF		1.55	0	2,700	0.04	81	ROOF	69.12	5,600	8,300

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	LIGHTWEIGHT CONCRETE FILL 1"		EST	5	CY		100	0	500	1.30	8	ROOF	69.12	600	1,100
	ROOF FLASHING		EST	170	LF		14.45	0	2,500	0.12	23	ROOF	69.12	1,600	4,100
	ROOF DRAINS		EST	1	LT		20000	0	15,000	250.00	288	PLMB	79.42	22,800	37,800
	FLOOR DRAINS		EST	1	LT		18000	0	20,000	220.00	253	PLMB	79.42	20,100	40,100
	FLOOR SLABS		EST	16	CY		210	0	3,400	7.50	138	CONP	79.64	11,000	14,400
	FLOOR FINISHES	MAIN LEVEL	EST	1,313	SF		2.5	0	3,300	0.05	75	CONP	79.64	6,000	9,300
	LOUVERS/WINDOWS/DOORS		EST	340	SF		40	0	13,600	0.35	137	CARP	71.88	9,800	23,400
	ROOF VENTILATORS		EST	2	EA		15000	0	30,000	24.00	55	HVAC	81.24	4,500	34,500
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	438	SF		45	0	19,700	0.40	201	GALL	84.61	17,000	36,700
	H&V		EST	1	LT	26250	10500	26,300	10,500	490.67	564	HVAC	81.24	45,800	82,600
	ADDITONAL HVAC UNIT FOR ELECTRICAL ROOM & CONTROLS	40T PACKAGED UNIT FOR ELECTRICAL EQUIPMENT ROOM. INCLUDES ALLOWANCE FOR CONCRETE PAD AND ELECTRICAL WORK	EST	1	LT	75000	20000	75,000	20,000	350.00	300	HVAC	81.24	24,400	119,400
22.24	SITE GRADING - GYPSUM HANDLING AREA							0	0					587,800	587,800
	CUT		EST	18,000	CY			0	0	0.08	1,656	ETWK	177.49	293,900	293,900
	FILL		EST	18,000	CY			0	0	0.08	1,656	ETWK	177.49	293,900	293,900
22.25	ROADS & SURFACING - GYPSUM HANDLING AREA							0	188,000					427,900	615,900
	CONCRETE PAD BUILDING ENTRANCES	10" REINFORCED CONCRETE	EST	100	SY		80	0	8,000	1.50	173	CONP	79.64	13,700	21,700
	AGGREGATE AREA SURFACING	INCLUDES: 6" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST	20,000	SY		9	0	180,000	0.17	3,910	BCSE	105.94	414,200	594,200
22.26	GYPSUM HANDLING & STORAGE							0	1,179,900					1,854,100	3,034,000
	GYPSUM AREA SURFACING	12" REINFORCED CONCRETE	EST	11,500	SY		96	0	1,104,000	1.60	21,160	CONP	79.64	1,685,200	2,789,200
	GYPSUM RUNOFF DRAINAGE DITCH	6" REINFORCED CONCRETE	EST	1,300	SY		48	0	62,400	1.20	1,794	CONP	79.64	142,900	205,300
	DRAINAGE CULVERTS	24" DIA CHDPE	EST	150	LF		84.7	0	12,700	1.41	243	YDPP	90.14	21,900	34,600
	EXCAVATION / BACKFILL	FOR UNDERGROUND PIPING	EST	167	CY			0	0	0.20	38	EXFD	90.00	3,500	3,500
	BEDDING	FOR UNDERGROUND PIPING	EST	22	CY		35.0	0	800	0.25	6	EXFD	90.00	600	1,400
22.27	GYPSUM RUNOFF POND							68,000	110,400					315,700	494,100
	SAND EXCAVATION		EST	4,000	CY			0	0	0.03	120	ETWK	177.49	21,200	21,200
	ROCK EXCAVATION	ASSUME ROCK IS RIPPABLE	EST	500	CY			0	0	0.05	28	ETWK	177.49	4,900	4,900
	POND SURFACING	6" REINFORCED CONCRETE	EST	2,300	SY		48	0	110,400	1.20	3,174	CONP	79.64	252,800	363,200
	PUMPS	500 GPM, 100 PSIG	EST	2	EA	34000		68,000	0	180.00	414	MECH	88.89	36,800	104,800
22.28	GYPSUM RUNOFF POND PUMP STRUCTURE - CONCRETE							0	47,000					105,400	152,400
	EXCAVATION / BACKFILL		EST	0	CY			0	0	0.36	0	EXFD	90.00	0	0
	REINFORCING		EST	7	TN		1,150.00	0	8,100	20.00	161	REIN	78.27	12,600	20,700
	FORMWORK		EST	3,968	SF		2.50	0	9,900	0.14	639	FORM	99.43	63,500	73,400
	CONCRETE		EST	76	CY		105.00	0	8,000	1.50	131	CONP	79.64	10,400	18,400
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	380	LB		2.50	0	1,000	0.06	26	CARP	71.88	1,900	2,900
	BYPRODUCT POND PUMP STRUCTURE - GALLERY		EST	5	TN		4,000.00	0	20,000	35.00	201	GALL	84.61	17,000	37,000
22.29	OILY WATER SEWER - GYPSUM HANDLING AREA							1,500	9,000					14,200	24,700
	PIPING	6" CISP	EST	200	LF		21.5	0	4,300	0.33	76	YDPP	90.14	6,800	11,100
	POST INDICATOR VALVE		EST	2	EA	750		1,500	0	6.00	14	YDPP	90.14	1,200	2,700
	MANHOLES		EST	3	EA		1575.0	0	4,700	20.00	69	YDPP	90.14	6,200	10,900
22.30	OIL SEPARATOR - GYPSUM HANDLING AREA	500 GPM W/ INTEGRAL LIFT STATION	EST	1	EA	50000		50,000	0	560.00	644	YDPP	90.14	58,100	108,100
22.31	EROSION & SEDIMENT CONTROL - GYPSUM HANDLING AREA							0	18,000					28,300	46,300
	SILT FENCE		EST	8,000	LF		1.0	0	8,000	0.02	184	LAND	61.45	11,300	19,300
	ROCK CHECK DAMS		EST	20	EA		500.0	0	10,000	12.00	276	LAND	61.45	17,000	27,000
22.32	SITE GRADING - ACCESS ROAD WIDENING & CONTAINMENT DITCH	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA						0	0					60,400	60,400

AEP

BIG SANDY UNIT 2

FGD PROJECT - IAQCS (ESP)-2A - 1.7 LB/MM BTU - PHASED

ORDER OF MAGNITUDE COST ESTIMATE

Estimate No.: 30714C
Project No.: 12721-000
Date: 9/29/2010
Preparer: MNO
Reviewer: JMK
Approver: PEF

Cost Type:
Est=Estimated
Allow.=Allowance
Q=Vendor Quote

Wage Rates Based on: BIG SANDY
Labor Productivity = 1.15

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	CUT		EST	2,700	CY			0	0	0.08	248	ETWK	177.49	44,100	44,100
	FILL		EST	1,000	CY			0	0	0.08	92	ETWK	177.49	16,300	16,300
22.33	ROADS & SURFACING - GYPSUM DEWATERING AREA	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA						0	66,300					190,800	257,100
	WIDENING OF EXISTING ROAD	INCLUDES: 6" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST	3,700	SY		9	0	33,300	0.17	723	BCSE	105.94	76,600	109,900
	GUARDRAIL	INCLUDES POSTS	EST	2,200	SY		15	0	33,000	0.50	1,265	PBIT	90.25	114,200	147,200
22.34	PIPELINE CONTAINMENT & DRAINAGE	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA						0	271,600					429,200	700,800
	CONTAINMENT / DICTH SURFACING	4" SHOTCRETE W/ WELDED WIRE FABRIC	EST	5,800	SY		46	0	265,800	0.78	5,188	CONP	79.64	413,200	679,000
	CONCRETE ENERGY DISSIPATION STRUCTURE		EST	25	CY		230	0	5,800	7.00	201	CONP	79.64	16,000	21,800
22.35	CONTAINMENT RUNOFF POND	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA						68,000	114,300					344,300	526,600
	SAND EXCAVATION		EST	4,000	CY			0	0	0.03	120	ETWK	177.49	21,200	21,200
	ROCK EXCAVATION	ASSUME ROCK IS RIPPABLE	EST	500	CY			0	0	0.05	28	ETWK	177.49	4,900	4,900
	POND SURFACING	6" REINFORCED CONCRETE	EST	2,300	SY		48	0	110,400	1.20	3,174	CONP	79.64	252,800	363,200
	PUMPS	500 GPM, 100 PSIG	EST	2	EA	34000		68,000	0	180.00	414	MECH	88.89	36,800	104,800
	LARGE BORE PIPING	6" HDPE, SDR 9	EST	400	LF		9.8	0	3,900	0.69	317	YDPP	90.14	28,600	32,500
22.36	CONTAINMENT POND PUMP STRUCTURE - CONCRETE	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA						0	47,000					105,400	152,400
	EXCAVATION / BACKFILL		EST	0	CY			0	0	0.36	0	EXFD	90.00	0	0
	REINFORCING		EST	7	TN		1,150.00	0	8,100	20.00	161	REIN	78.27	12,600	20,700
	FORMWORK		EST	3,968	SF		2.50	0	9,900	0.14	639	FORM	99.43	63,500	73,400
	CONCRETE		EST	76	CY		105.00	0	8,000	1.50	131	CONP	79.64	10,400	18,400
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	380	LB		2.50	0	1,000	0.06	26	CARP	71.88	1,900	2,900
	BYPRODUCT POND PUMP STRUCTURE - GALLERY		EST	5	TN		4,000.00	0	20,000	35.00	201	GALL	84.61	17,000	37,000
22.37	SITE GRADING - PIPELINE CONTAINMENT & DRAINAGE	SOUTH OF HWY 23						0	0					30,200	30,200
	CUT		EST	1,600	CY			0	0	0.08	147	ETWK	177.49	26,100	26,100
	FILL		EST	250	CY			0	0	0.08	23	ETWK	177.49	4,100	4,100
22.38	PIPELINE CONTAINMENT & DRAINAGE	SOUTH OF HWY 23						0	169,600					263,600	433,200
	CONTAINMENT / DICTH SURFACING	4" SHOTCRETE W/ WELDED WIRE FABRIC	EST	3,700	SY		46	0	169,600	0.78	3,309	CONP	79.64	263,600	433,200
22.39	PIPE BORING PIT	SOUTH OF HWY 23						0	5,300					50,900	56,200
	SAND EXCAVATION		EST	950	CY			0	0	0.08	87	ETWK	177.49	15,500	15,500
	ROCK EXCAVATION	ASSUMED ROCK IS RIPPABLE	EST	400	CY			0	0	0.08	37	ETWK	177.49	6,500	6,500
	BACKFILL		EST	1,350	CY			0	0	0.10	155	ETWK	177.49	27,600	27,600
	4" TOPSOIL		EST	100	SY		45	0	4,500	0.07	7	LAND	61.45	500	5,000
	GRASS SEEDING, FERTILIZER AND MULCH		EST	0.2	AC		4000	0	800	60.00	14	LAND	61.45	800	1,600
22.40	PIPE RECEIVING PIT	NORTH OF HWY 23						0	4,900					43,500	48,400
	SAND EXCAVATION		EST	800	CY			0	0	0.08	74	ETWK	177.49	13,100	13,100
	ROCK EXCAVATION	ASSUMED ROCK IS RIPPABLE	EST	350	CY			0	0	0.08	32	ETWK	177.49	5,700	5,700
	BACKFILL		EST	1,150	CY			0	0	0.10	132	ETWK	177.49	23,500	23,500
	4" TOPSOIL		EST	90	SY		45	0	4,100	0.07	7	LAND	61.45	400	4,500
	GRASS SEEDING, FERTILIZER AND MULCH		EST	0.2	AC		4000	0	800	60.00	14	LAND	61.45	800	1,600
22.41	DIRECTIONAL BORING FOR BURIED PIPE	BENEATH HWY 23						28,000	652,500					277,000	957,500
	MOBILIZATION / DEMOBILIZATION	BORING EQUIPMENT, MUD TRAILER, OPERATORS AND LABORERS	EST	1	LT		12000	0	12,000	80.00	92	EXFD	90.00	8,300	20,300
	EQUIPMENT RENTAL	BORING EQUIPMENT, MUD TRAILER. BASED ON 2 WEEKS RENTAL	EST	1	LT	28000		28,000	0	400.00	460	EXFD	90.00	41,400	69,400
	DIRECTIONAL BORING	7-24" DIA 320FT LONG EACH	EST	2,240	LF			0	0	0.32	824	EXFD	90.00	74,200	74,200

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				BIG SANDY UNIT 2										Project No.:	12721-000
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	LARGE BORE PIPING	FOR UNDERGROUND SLEEVE, 24" CS PIPE, 40 FT SPOOL PIECES	EST	2,240	LF		285	0	638,400	0.65	1,674	YDPP	90.14	150,900	789,300
	RUBBER END SEALS	NEOPRENE	EST	14	EA		150	0	2,100	1.50	24	YDPP	90.14	2,200	4,300
22.42	TRANSFORMERS							470,000	0					136,500	606,500
	SST TRANSFORMERS: 23F & 23G	13.8KV-4160V, 2 WINDING XFMR	EST	2	EA	150000		300,000	0	450.00	1,035	EHEA	79.16	81,900	381,900
	SUS TRANSFORMERS: 36F/G	13.8KV-480V,3PHASE, CAST COIL	EST	2	EA	85000		170,000	0	300.00	690	EHEA	79.16	54,600	224,600
22.43	SWITCHGEAR							825,600	0					500,700	1,326,300
	13.8 KV MEDIUM VOLTAGE SWITCHGEAR (13F/G))	PRICE PER SECTION	EST	6	EA	50000		300,000	0	325.00	2,243	EHEA	79.16	177,500	477,500
	4.16KV MEDIUM VOLTAGE SWITCHGEAR& MCCS (21A/B)	PRICE PER SECTION	EST	8	EA	41200		329,600	0	300.00	2,760	EHEA	79.16	218,500	548,100
	480V LOW VOLTAGE SWITCHGEAR (31F/G ; 32F/G)	PRICE PER SECTION	EST	5	EA	39200		196,000	0	230.00	1,323	EHEA	79.16	104,700	300,700
22.44	CABLE BUS & TERMINATIONS							355,500	39,400					730,700	1,125,600
	5KV CABLE BUS		EST	300	FT	567		170,100	0	9.00	3,105	WIRE	98.84	306,900	477,000
	480V CABLE BUS		EST	300	FT	618		185,400	0	10.30	3,554	WIRE	98.84	351,200	536,600
	CABLE BUS TERMINATION	5KV TERMINATIONS	EST	4	EA		4,440.00	0	17,800	51.60	237	WIRE	98.84	23,500	41,300
	CABLE BUS TERMINATION	480V TERMINATIONS	EST	8	EA		2,700.00	0	21,600	54.00	497	WIRE	98.84	49,100	70,700
22.45	MCC							123,600	0					6,300	129,900
	480V MCC	PER MCC LINEUP	EST	4	EA	30900		123,600	0	16.00	64	WIRE	98.84	6,300	129,900
22.46	MIMIC PANELS		EST	1	EA	17500		17,500	0	16.00	16	WIRE	98.84	1,600	19,100
22.47	EMERGENCY POWER SYSTEM							285,500	0					38,900	324,400
	DC PANEL BOADRD		EST	1	EA	15500		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	UPS PANEL BOARDS		EST	2	EA	15500		31,000	0	40.00	92	WIRE	98.84	9,100	40,100
	UPS		EST	1	EA	60000		60,000	0	32.00	37	WIRE	98.84	3,600	63,600
	SWITCHBOARD		EST	1	EA	40000		40,000	0	40.00	46	WIRE	98.84	4,500	44,500
	BYPASS TRANSFORMERS		EST	1	EA	25000		25,000	0	40.00	46	WIRE	98.84	4,500	29,500
	BATTERY CHARGER		EST	2	EA	32000		64,000	0	16.00	37	WIRE	98.84	3,600	67,600
	BATTERIES		EST	1	LT	50000		50,000	0	80.00	92	WIRE	98.84	9,100	59,100
22.48	GROUNDING							9,400	0					25,400	34,800
	GROUND ROD	3/4" - 20' LONG	EST	8	EA	150		1,200	0	4.00	37	WIRE	98.84	3,600	4,800
	500 MCM	BARE COPPER WIRE	EST	1,000	FT	7.65		7,700	0	0.12	138	WIRE	98.84	13,600	21,300
	CADWELD		EST	32	EA	15		500	0	2.00	74	WIRE	98.84	7,300	7,800
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	8.00	9	WIRE	98.84	900	900
22.49	LIGHTING/ TRANSFORMERS & PANELS							52,000	135,000					104,500	291,500
	LIGHT FIXTURES		EST	180	EA		750	0	135,000	4.00	828	WIRE	98.84	81,800	216,800
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	10000		20,000	0	40.00	92	WIRE	98.84	9,100	29,100
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	7500		15,000	0	32.00	74	WIRE	98.84	7,300	22,300
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	2	EA	5000		10,000	0	16.00	37	WIRE	98.84	3,600	13,600
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	2	EA	3500		7,000	0	12.00	28	WIRE	98.84	2,700	9,700
22.50	RACEWAY, CABLE TRAY, & CONDUIT							0	354,700					1,514,100	1,868,800
	12" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,000	LF		18.25	0	18,300	1.10	1,100	WIRE	98.84	108700	127,000
	18" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,000	LF		21.50	0	21,500	1.45	1,450	WIRE	98.84	143300	164,800
	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,000	LF		27.10	0	27,100	1.75	1,750	WIRE	98.84	173000	200,100
	36" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,000	LF		30.30	0	30,300	1.95	1,950	WIRE	98.84	192700	223,000

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	5" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	900	LF		61.00	0	54,900	1.13	1,014	WIRE	98.84	100300	155,200
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,800	LF		31.00	0	55,800	0.81	1,453	WIRE	98.84	143600	199,400
	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,900	LF		21.50	0	40,900	0.65	1,226	WIRE	98.84	121100	162,000
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	2,800	LF		9.25	0	25,900	0.35	986	WIRE	98.84	97400	123,300
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	3,500	LF		7.15	0	25,000	0.28	994	WIRE	98.84	98200	123,200
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	6,000	LF		4.44	0	26,600	0.24	1,434	WIRE	98.84	141700	168,300
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	8,800	LF		3.23	0	28,400	0.19	1,963	WIRE	98.84	194100	222,500
22.51	13.8 KV OH LINE OPGW	INCLUDES POLES, CONDUCTORS, INSULATORS & GROUNDING	EST	5,250	LF		45.75	0	240,200	0.49	2,958	WIRE	98.84	292400	532,600
22.52	HIGH VOLTAGE POWER CABLE & TERMINATION							0	88,400					256,600	345,000
	1/C # 500KCMIL-15KV	1/C # 500KCMIL-15KV	EST	1,800	LF		9.27	0	16,700	0.23	476	WIRE	98.84	47100	63,800
	1/C # 4/0-15KV	1/C # 4/0-15KV	EST	15,750	LF		4.55	0	71,700	0.12	2,119	WIRE	98.84	209500	281,200
22.53	MEDIUM VOLTAGE POWER CABLE & TERMINATION	1/C # 350KCMIL-5KV	EST	3,000	LF		6.13	0	18,400	0.23	794	WIRE	98.84	78400	96,800
22.54	LOW VOLTAGE POWER CABLE & TERMINATION							0	62,700					547,400	610,100
	3/C # 500KCMIL- 600V		EST	2,400	LF		26.12	0	62,700	0.69	1,904	WIRE	98.84	188200	250,900
	#4/0 - #12 AWG-600V		EST	40,000	LF		7.22			0.08	3,634	WIRE	98.84	359200	359,200
22.55	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	EST	35,000	LF		3.20	0	112,000	0.08	3,180	WIRE	98.84	314300	426,300
22.56	FOUNDATIONS FOR TRANSFORMERS							0	70,200					205,400	275,600
	EXCAVATION / BACKFILL		EST	1,000	CY			0	0	0.36	414	EXFD	90.00	37,300	37,300
	REINFORCING		EST	20	TN		1,150.00	0	23,000	20.00	460	REIN	78.27	36,000	59,000
	FORMWORK		EST	5,000	SF		2.50	0	12,500	0.14	805	FORM	99.43	80,000	92,500
	CONCRETE		EST	190	CY		105.00	0	20,000	1.50	328	CONP	79.64	26,100	46,100
	MUD MAT		EST	45	CY		105.00	0	4,700	1.50	78	CONP	79.64	6,200	10,900
	EMBEDDED STEEL		EST	4,000	LB		2.50	0	10,000	0.06	276	CARP	71.88	19,800	29,800
22.57	FIREWALL FOR TRANSFORMERS							0	3,200					8,300	11,500
	REINFORCING		EST	1.2	TN		1,150.00	0	1,400	20.00	28	REIN	78.27	2,200	3,600
	FORMWORK		EST	80	SF		2.50	0	200	0.14	13	FORM	99.43	1,300	1,500
	CONCRETE		EST	15	CY		105.00	0	1,600	3.50	60	CONP	79.64	4,800	6,400
22.58	COMMUNICATIONS		EST	1	LT		34,000.00	0	34,000	229.00	263	WIRE	98.84	26,000	60,000
22.59	LIGHTNING PROTECTION		EST	1	LT		13,000.00	0	13,000	91.00	105	WIRE	98.84	10,300	23,300
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							9,715,800	16,053,800		336,323			30,175,100	55,944,700
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										5,380,220
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						29,245		89.72	2,624,000	2,624,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						36,557			2,756,220	2,756,220
	PER DIEM	NONE		0.00	HR						402,125			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				80,269					150,876	231,145

AEP
BIG SANDY UNIT 2
FGD PROJECT - IAQCS (ESP)-2A - 1.7 LB/MM BTU - PHASED
ORDER OF MAGNITUDE COST ESTIMATE

Estimate No.: 30714C
Project No.: 12721-000
Date: 9/29/2010
Preparer: MNO
Reviewer: JMK
Approver: PEF

Cost Type:
Est=Estimated
Allow.=Allowance
Q=Vendor Quote

Wage Rates Based on: BIG SANDY
Labor Productivity = 1.15

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				802,690						802,690
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			485,790							485,790
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				802,690					1,508,755	2,311,445
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				2,408,070					4,526,265	6,934,335
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							485,800	4,093,700					11,566,100	16,145,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BY-PRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)						10,201,600	20,147,500					41,741,200	72,090,300
23.0	WET FGD ABSORBER ISLAND														
23.1	MECHANICAL EQUIPMENT	INCLUDES ABSORBER MODULE (A2205) WITH INTERNALS, INLET DUCT ONLY THROUGH WET/DRY INTERFACE, PIPING INSIDE ABSORBER BUILDING TO TERMINAL POINTS, RECYCLE PUMPS, OXIDATION BLOWERS, MIST ELIMINATOR AND WASH PUMPS AND OTHER MISC. EQUIPMENT AND MATERIAL	EST	1	LT	40589000		40,589,000	0	395500.00	454,825	MECH	88.89	40,429,400	81,018,400
23.2	ADDITIONAL COST FOR C276 ABSORBER SHELL MATERIAL ABOVE THE PRICE OF A2205 ABSORBER SHELL	INCLUDES MATERIAL AND WELDING ROD COST DIFFERENTIAL - 49,800 TOTAL SF	EST	49,800	SF		308.00	0	15,338,400	0.00	0	MECH	88.89	0	15,338,400
23.3	SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
23.4	AGITATOR FOR SUMP PUMPS	5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
23.5	EMERGENCY DIESEL DRIVEN QUENCH PUMP	INCLUDED WITH SECTION 1, ID FANS.													
23.6	PIPING - MECHANICAL	ALL PIPING INCLUDED IN OEM EQUIPMENT COST. NO BOP PIPING						0	0					0	0
23.7	ABSORBER VESSEL - FOUNDATIONS							0	366,900					672,900	1,039,800
	EXCAVATION / BACKFILL		EST	2,921	CY			0	0	0.36	1,209	EXFD	90.00	108,800	108,800
	REINFORCING		EST	148	TN		1,150.00	0	170,200	20.00	3,404	REIN	78.27	266,400	436,600
	FORMWORK		EST	2,121	SF		2.50	0	5,300	0.14	341	FORM	99.43	34,000	39,300
	CONCRETE		EST	1,571	CY		105.00	0	165,000	1.50	2,710	CONP	79.64	215,800	380,800
	MUD MAT		EST	65	CY		105.00	0	6,800	1.50	112	CONP	79.64	8,900	15,700
	EMBEDDED STEEL		EST	7,855	LB		2.50	0	19,600	0.06	542	CARP	71.88	39,000	58,600
23.8	ABSORBER BUILDING - FOUNDATIONS							0	544,300					902,800	1,447,100
	EXCAVATION / BACKFILL		EST	2,300	CY			0	0	0.36	952	EXFD	90.00	85,700	85,700
	REINFORCING		EST	220	TN		1,150.00	0	253,000	20.00	5,060	REIN	78.27	396,000	649,000
	FORMWORK		EST	2,350	SF		2.50	0	5,900	0.14	378	FORM	99.43	37,600	43,500
	CONCRETE		EST	2,400	CY		105.00	0	252,000	1.50	4,140	CONP	79.64	329,700	581,700
	MUD MAT		EST	175	CY		105.00	0	18,400	1.50	302	CONP	79.64	24,000	42,400
	EMBEDDED STEEL		EST	6,000	LB		2.50	0	15,000	0.06	414	CARP	71.88	29,800	44,800
23.9	ABSORBER BUILDING	150' L X 85' W X 60' H						164,500	2,501,100					2,297,900	4,963,500
	STRUCTURAL STEEL		EST	530	TN		2650	0	1,404,500	16.00	9,752	STST	105.71	1,030,900	2,435,400
	INSULATED METAL SIDING		EST	28,200	SF		12	0	338,400	0.11	3,567	SDNG	93.41	333,200	671,600
	ROLLING OVERHEAD DOOR		EST	960	SF		27	0	25,900	0.25	276	CARP	71.88	19,800	45,700

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				BIG SANDY UNIT 2											Project No.:	12721-000
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Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	METAL ROOF DECKING		EST	12,750	SF		2.7	0	34,400	0.06	880	STST	105.71	93,000	127,400
	RIGID ROOF INSULATION		EST	12,750	SF		2.4	0	30,600	0.02	220	ROOF	69.12	15,200	45,800
	ROOFING (4-PLY TAR & GRAVEL)		EST	12,750	SF		1.55	0	19,800	0.04	587	ROOF	69.12	40,500	60,300
	LIGHTWEIGHT CONCRETE FILL 1"		EST	39	CY		100	0	3,900	1.30	58	ROOF	69.12	4,000	7,900
	ROOF FLASHING		EST	470	LF		14.45	0	6,800	0.12	65	ROOF	69.12	4,500	11,300
	ROOF DRAINS		EST	1	LT		45000	0	15,000	500.00	575	PLMB	79.42	45,700	60,700
	FLOOR DRAINS		EST	1	LT		37500	0	20,000	375.00	431	PLMB	79.42	34,200	54,200
	FLOOR SLABS	INCLUDES METAL DECKING AND FORMWORK	EST	50	CY		210	0	10,500	7.50	431	CONP	79.64	34,300	44,800
	FLOOR FINISHES		EST	7,800	SF		2.5	0	19,500	0.05	449	CONP	79.64	35,700	55,200
	LOUVERS/WINDOWS/DOORS		EST	5,600	SF		40	0	224,000	0.35	2,254	CARP	71.88	162,000	386,000
	ROOF VENTILATORS		EST	6	EA		20000	0	120,000	32.00	221	HVAC	81.24	17,900	137,900
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	3,600	SF		45	0	162,000	0.40	1,656	GALL	84.61	140,100	302,100
	H&V		EST	1	LT	164500	65800	164,500	65,800	3070.67	3,531	HVAC	81.24	286,900	517,200
23.10	PIPE SUPPORT PAD - ABSORBER BUILDING							0	7,700					16,100	23,800
	EXCAVATION / BACKFILL		EST	95	CY			0	0	0.36	39	EXFD	90.00	3,500	3,500
	REINFORCING		EST	5.0	TN		1,150.00	0	5,800	20.00	115	REIN	78.27	9,000	14,800
	FORMWORK		EST	80	SF		2.50	0	200	0.14	13	FORM	99.43	1,300	1,500
	CONCRETE		EST	10	CY		105.00	0	1,100	1.50	17	CONP	79.64	1,400	2,500
	MUD MAT		EST	5	CY		105.00	0	500	1.50	9	CONP	79.64	700	1,200
	EMBEDDED STEEL		EST	50	LB		2.50	0	100	0.06	3	CARP	71.88	200	300
23.11	OXIDATION AIR BLOWER BUILDING - FOUNDATIONS							0	37,000					67,300	104,300
	EXCAVATION / BACKFILL		EST	188	CY			0	0	0.36	78	EXFD	90.00	7,000	7,000
	REINFORCING		EST	16.0	TN		1,150.00	0	18,400	20.00	368	REIN	78.27	28,800	47,200
	FORMWORK		EST	480	SF		2.50	0	1,200	0.14	77	FORM	99.43	7,700	8,900
	CONCRETE		EST	133	CY		105.00	0	14,000	1.50	229	CONP	79.64	18,300	32,300
	MUD MAT		EST	16	CY		105.00	0	1,700	1.50	28	CONP	79.64	2,200	3,900
	EMBEDDED STEEL		EST	665	LB		2.50	0	1,700	0.06	46	CARP	71.88	3,300	5,000
23.12	OXIDATION AIR BLOWER BUILDING	30' L X 30' W X 25' H						33,800	191,000					201,400	426,200
	STRUCTURAL STEEL		EST	14	TN		2650	0	35,800	16.00	248	STST	105.71	26,300	62,100
	INSULATED METAL SIDING		EST	3,000	SF		12	0	36,000	0.11	380	SDNG	93.41	35,400	71,400
	ROLLING OVERHEAD DOOR		EST	320	SF		27	0	8,600	0.25	92	CARP	71.88	6,600	15,200
	METAL ROOF DECKING		EST	900	SF		2.7	0	2,400	0.06	62	STST	105.71	6,600	9,000
	RIGID ROOF INSULATION		EST	900	SF		2.4	0	2,200	0.02	16	ROOF	69.12	1,100	3,300
	ROOFING (4-PLY TAR & GRAVEL)		EST	900	SF		1.55	0	1,400	0.04	41	ROOF	69.12	2,900	4,300
	LIGHTWEIGHT CONCRETE FILL 1"		EST	3	CY		100	0	300	1.30	4	ROOF	69.12	300	600
	ROOF FLASHING		EST	120	LF		14.45	0	1,700	0.12	17	ROOF	69.12	1,100	2,800
	ROOF DRAINS		EST	1	LT		7000	0	15,000	50.00	58	PLMB	79.42	4,600	19,600
	FLOOR DRAINS		EST	1	LT		7500	0	20,000	60.00	69	PLMB	79.42	5,500	25,500
	FLOOR SLABS	NONE	EST	0	CY		210	0	0	7.50	0	CONP	79.64	0	0
	FLOOR FINISHES	MAIN LEVEL	EST	810	SF		2.5	0	2,000	0.05	47	CONP	79.64	3,700	5,700
	BLOCK WALLS	SOUND ATTENUATING INTERIOR BLOCK WALLS	EST	3,000	SF		8	0	24,000	0.18	621	MSRY	73.39	45,600	69,600
	LOUVERS/WINDOWS/DOORS & VENTILATORS	SOUND ATTENUATING	EST	300	SF	75	40	22,500	12,000	1.25	431	CARP	71.88	31,000	65,500
	ROOF VENTILATORS		EST	1	EA		15000	0	15,000	24.00	28	HVAC	81.24	2,200	17,200
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	225	SF		45	0	10,100	0.40	104	GALL	84.61	8,800	18,900
	H&V		EST	1	LT	11250	4500	11,300	4,500	210.67	242	HVAC	81.24	19,700	35,500
23.13	PIPE SUPPORT PAD - OXIDATION BUILDING							0	7,700					13,700	21,400
	EXCAVATION / BACKFILL		EST	30	CY			0	0	0.36	12	EXFD	90.00	1,100	1,100
	REINFORCING		EST	5.0	TN		1,150.00	0	5,800	20.00	115	REIN	78.27	9,000	14,800
	FORMWORK		EST	80	SF		2.50	0	200	0.14	13	FORM	99.43	1,300	1,500
	CONCRETE		EST	10	CY		105.00	0	1,100	1.50	17	CONP	79.64	1,400	2,500
	MUD MAT		EST	5	CY		105.00	0	500	1.50	9	CONP	79.64	700	1,200
	EMBEDDED STEEL		EST	50	LB		2.50	0	100	0.06	3	CARP	71.88	200	300
23.14	DUCTWORK	INCLUDES INTERNAL BRACING AND TURNING VANES	EST	160	TN		3,250.00	0	520,000	50.00	9,200	FLDU	107.96	993,200	1,513,200

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23.15	DUCT SUPPORT STEEL	THREE-COAT SHOP PAINT	EST	80	TN		2,900.00	0	232,000	24.00	2,208	STST	105.71	233,400	465,400
23.16	DUCTWORK INSULATION & LAGGING		EST	12,250	SF		12.00	0	147,000	0.25	3,522	DINS	81.75	287,900	434,900
23.17	FOUNDATIONS FOR DUCT SUPPORT STEEL							0	27,800					53,200	81,000
	EXCAVATION / BACKFILL		EST	180	CY			0	0	0.36	75	EXFD	90.00	6,700	6,700
	REINFORCING		EST	12	TN		1,150.00	0	13,800	20.00	276	REIN	78.27	21,600	35,400
	FORMWORK		EST	450	SF		2.50	0	1,100	0.14	72	FORM	99.43	7,200	8,300
	CONCRETE		EST	95	CY		105.00	0	10,000	1.50	164	CONP	79.64	13,100	23,100
	MUD MAT		EST	15	CY		105.00	0	1,600	1.50	26	CONP	79.64	2,100	3,700
	EMBEDDED STEEL		EST	500	LB		2.50	0	1,300	0.06	35	CARP	71.88	2,500	3,800
23.18	TRANSFORMERS							981,000	0					209,300	1,190,300
	SST TRANSFORMERS: 22F & 22G	13.8KV-4160V, 2 WINDING XFMR	EST	2	EA	320500		641,000	0	550.00	1,265	EHEA	79.16	100,100	741,100
	SUS TRANSFORMERS: 34F/G; 35F/G	13.8KV-480V,3PHASE, CAST COIL	EST	4	EA	85000		340,000	0	300.00	1,380	EHEA	79.16	109,200	449,200
23.19	SWITCHGEAR							1,162,800	0					673,700	1,836,500
	13.8 KV MEDIUM VOLTAGE SWITCHGEAR	PRICE PER SECTION	EST	8	EA	50000		400,000	0	300.00	2,760	EHEA	79.16	218,500	618,500
	4.16KV MEDIUM VOLTAGE SWITCHGEAR& MCCS	PRICE PER SECTION	EST	9	EA	41200		370,800	0	300.00	3,105	EHEA	79.16	245,800	616,600
	480V LOW VOLTAGE SWITCHGEAR	PRICE PER SECTION	EST	10	EA	39200		392,000	0	230.00	2,645	EHEA	79.16	209,400	601,400
23.20	CABLE BUS & TERMINATIONS							867,100	46,600					1,634,100	2,547,800
	15KV CABLE BUS	CABLE BUS	EST	700	FT	466		326,200	0	6.75	5,434	WIRE	98.84	537,100	863,300
	5KV CABLE BUS	CABLE BUS	EST	300	FT	567		170,100	0	9.00	3,105	WIRE	98.84	306,900	477,000
	480V CABLE BUS	CABLE BUS	EST	600	FT	618		370,800	0	10.30	7,107	WIRE	98.84	702,500	1,073,300
	CABLE BUS TERMINATION	500MCM- 15KV TERMINATIONS	EST	4	EA		1,800.00	0	7,200	33.00	152	WIRE	98.84	15,000	22,200
	CABLE BUS TERMINATION	1000MCM- 5KV TERMINATIONS	EST	4	EA		4,440.00	0	17,800	51.60	237	WIRE	98.84	23,500	41,300
	CABLE BUS TERMINATION	750MCM- 480V TERMINATIONS	EST	8	EA		2,700.00	0	21,600	54.00	497	WIRE	98.84	49,100	70,700
23.21	MCC							216,300	0					11,100	227,400
	480V MCC	PER MCC LINE UP	EST	7	EA	30900		216,300	0	16.00	112	WIRE	98.84	11,100	227,400
23.22	MIMIC PANELS		EST	2	EA	17500		35,000	0	40.00	80	WIRE	98.84	7,900	42,900
23.23	GROUNDING							16,000	0					46,100	62,100
	GROUND ROD	3/4" - 20' LONG	EST	16	EA	150		2,400	0	4.00	74	WIRE	98.84	7,300	9,700
	500 MCM	BARE COPPER WIRE	EST	1,650	FT	7.65		12,600	0	0.12	228	WIRE	98.84	22,500	35,100
	CADWELD		EST	64	EA	15		1,000	0	2.00	147	WIRE	98.84	14,500	15,500
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	16.00	18	WIRE	98.84	1,800	1,800
23.24	LIGHTING/ TRANSFORMERS & PANELS							164,500	165,000					171,300	500,800
	LIGHT FIXTURES		EST	220	EA		750	0	165,000	4.00	1,012	WIRE	98.84	100,000	265,000
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	6	EA	10000		60,000	0	40.00	276	WIRE	98.84	27,300	87,300
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	6	EA	7500		45,000	0	32.00	221	WIRE	98.84	21,800	66,800
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	7	EA	5000		35,000	0	16.00	129	WIRE	98.84	12,700	47,700
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	7	EA	3500		24,500	0	12.00	97	WIRE	98.84	9,500	34,000
23.25	EMERGENCY POWER SYSTEM							108,300	0					24,400	132,700
	DC PANEL BOADRD		EST	1	EA	15450		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	UPS PANEL BOARDS		EST	1	EA	15450		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	SATELLITE UPS		EST	1	EA	41200		41,200	0	16.00	18	WIRE	98.84	1,800	43,000

AEP
BIG SANDY UNIT 2
FGD PROJECT - IAQCS (ESP)-2A - 1.7 LB/MM BTU - PHASED
ORDER OF MAGNITUDE COST ESTIMATE

Estimate No.: 30714C
Project No.: 12721-000
Date: 9/29/2010
Preparer: MNO
Reviewer: JMK
Approver: PEF

Cost Type:
Est=Estimated
Allow.=Allowance
Q=Vendor Quote

Wage Rates Based on: BIG SANDY
Labor Productivity = 1.15

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	VRLA BATTERIES		EST	1	LT	36050		36,100	0	120.00	138	WIRE	98.84	13,600	49,700
23.26	RACEWAY, CABLE TRAY, & CONDUIT							0	1,515,700					5,849,000	7,364,700
	12" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	2,450	LF		18.25	0	44,700	1.10	2,695	WIRE	98.84	266400	311,100
	18" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,650	LF		21.50	0	35,500	1.45	2,393	WIRE	98.84	236500	272,000
	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	2,950	LF		27.10	0	79,900	1.75	5,163	WIRE	98.84	510300	590,200
	36" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,650	LF		30.30	0	50,000	1.95	3,218	WIRE	98.84	318000	368,000
	5" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	4,500	LF		61.00	0	274,500	1.13	5,072	WIRE	98.84	501300	775,800
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	8,000	LF		31.00	0	248,000	0.81	6,456	WIRE	98.84	638100	886,100
	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	8,000	LF		21.50	0	172,000	0.65	5,160	WIRE	98.84	510000	682,000
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	13,000	LF		9.25	0	120,300	0.35	4,576	WIRE	98.84	452300	572,600
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	16,000	LF		7.15	0	114,400	0.28	4,544	WIRE	98.84	449100	563,500
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	29,000	LF		4.44	0	128,800	0.24	6,931	WIRE	98.84	685100	813,900
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	53,000	LF		3.23	0	171,200	0.19	11,824	WIRE	98.84	1168700	1,339,900
	DUCT BANK WITH 12-5" & 6-3" CONDUITS	3.08' H X 5.2' W	EST	200	LF		381.96	0	76,400	6.48	1,490	ECND	75.97	113200	189,600
23.27	HIGH VOLTAGE POWER CABLE & TERMINATION							0	58,400					164,700	223,100
	1/C # 500KCMIL-15KV		EST	6,300	LF		9.27	0	58,400	0.23	1,666	WIRE	98.84	164700	223,100
23.28	MEDIUM VOLTAGE POWER CABLE & TERMINATION							0	114,600		0			431,700	546,300
	1/C # 500KCMIL-5KV		EST	6,000	LF		8.08	0	48,500	0.17	1,194	WIRE	98.84	118000	166,500
	1/C # 350KCMIL-5KV		EST	6,600	LF		6.13	0	40,500	0.23	1,746	WIRE	98.84	172500	213,000
	1/C # 250KCMIL-5KV		EST	5,400	LF		4.74	0	25,600	0.23	1,428	WIRE	98.84	141200	166,800
23.29	LOW VOLTAGE POWER CABLE & TERMINATION							0	795,900					1,500,700	2,296,600
	3/C # 500KCMIL- 600V		EST	11,120	LF		26.12	0	290,500	0.69	8,824	WIRE	98.84	872100	1,162,600
	#4/0 - #12 AWG-600V		EST	70,000	LF		7.22	0	505,400	0.08	6,360	WIRE	98.84	628600	1,134,000
23.30	CONTROL & INSTRUMENT CABLE							0	512,000					1,436,700	1,948,700
	#14, #16 & PR # 20 FD & SHLD WIRE		EST	160,000	LF		3.20	0	512,000	0.08	14,536	WIRE	98.84	1436700	1,948,700
23.31	FOUNDATION FOR TRANSFORMERS							0	59,000					173,700	232,700
	FOR 21A & 21B	WITH OIL PIT	EST	178	CY		250	0	44,500	8.00	1,638	CONP	79.64	130,400	174,900
	FOR 31F, 31G, 32F, 32G, 33F & 33G		EST	63.0	CY		230	0	14,500	7.50	543	CONP	79.64	43,300	57,800
23.32	TRANSFORMER FIRE WALLS							0	3,500					9,600	13,100
	FOR 21A & 21B		EST	15	CY		230	0	3,500	7.00	121	CONP	79.64	9,600	13,100
23.33	COMMUNICATIONS		EST	1	LT		34,000.00	0	34,000	229.00	263	WIRE	98.84	26,000	60,000
23.34	LIGHTNING PROTECTION		EST	1	LT		19,500.00	0	19,500	128.00	147	WIRE	98.84	14,500	34,000
23.35	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000

				AEP											Estimate No.:	30714C
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				ORDER OF MAGNITUDE COST ESTIMATE											Preparer:	MNO
		Cost Type:													Reviewer:	JMK
		Est=Estimated													Approver:	PEF
		Allow.=Allowance								Wage Rates Based on:		BIG SANDY				
		Q=Vendor Quote								Labor Productivity =		1.15				

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							44,378,300	23,253,100		647,146			58,577,600	126,209,000
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE			9	MN	75000		675,000		720.00	7,452	MECH	88.89	662400	1,337,400
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										10,564,142
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						56,922		90.52	5,152,000	5,152,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						71,152			5,412,142	5,412,142
	PER DIEM	NONE		0.00	HR						782,672			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				116,266					292,888	409,154
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				1,162,655						1,162,655
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			2,218,915							2,218,915
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				1,162,655					2,928,880	4,091,535
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				3,487,965					8,786,640	12,274,605
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							2,893,900	5,929,500					23,235,000	32,058,400
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	WET FGD ABSORBER ISLAND						47,272,200	29,182,600					81,812,600	158,267,400
24.0	COMPRESSED AIR SYSTEM (BYPRODUCT DEWATERING AREA)														0
25.0	POTABLE WATER SYSTEM														
26.0	SCR SUBSTATION UPGRADE														
27.0	FGD DCS SYSTEM														0
28.0	SITE IMPROVEMENTS - CIVIL WORK														
29.0	BOP ITEMS														
30.0	SERVICE WATER SYSTEM														
99.00	PHASE II - OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS							75,097,000	55,933,300		1,390,396			125,796,900	256,827,200
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE							675,000	0		7,452			662,400	1,337,400
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										22,549,012
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						121,552		90.48	10,997,000	10,997,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						151,940			11,552,012	11,552,012
	PER DIEM	NONE		0.00	HR									0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				279,667					628,985	908,651
	FREIGHT ON MATERIAL - % of ACCT NO. 90	3,900		5.0	%				2,796,665						2,796,665
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			3,754,850							3,754,850
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				2,796,665					6,289,845	9,086,510

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				ORDER OF MAGNITUDE COST ESTIMATE											Preparer:	MNO
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		Allow.=Allowance								Wage Rates Based on:		BIG SANDY				
		Q=Vendor Quote								Labor Productivity =		1.15				

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				8,389,995					18,869,535	27,259,530
	PHASE II - OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							4,429,900	14,263,000					48,999,800	67,692,600
	PHASE II - OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST	WET FGD						79,526,900	70,196,300					174,796,700	324,519,800
	TOTAL PHASE II DIRECT AND CONSTRUCTION INDIRECT COSTS							79,526,900	70,196,300					174,796,700	324,519,800
								0	0					0	0
	INDIRECT COSTS - PHASE II														
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES			1.0	LT										23,000,000
	CONSTRUCTION MANAGEMENT			3.0	%										9,735,600
	S-U / COMMISSIONING			1.0											3,245,200
	CRAFT START-UP SUPPORT	1% OF TOTAL LABOR MANHOURS (INCLUDES OVERTIME INEFFICIENCY & COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - BASED ON ASSUMED 5X10 WORKWEEK)		1.0	%						15,119		90.48	1,482,900	1,482,900
	INITIAL FILLS			0.3	%										973,600
	OPERATOR & TRAINING MANUALS			1.0	LT										300,000
	SUBCONTRACTORS (NOISE CONSULTANT)			1.0	LT										100,000
	SUBTOTAL - INDIRECT COSTS														38,837,300
	TOTAL PHASE II DIRECT AND INDIRECT COSTS														363,357,100
	SPARE PARTS - PHASE II			1.5	%			1,192,900							1,192,900
	SPARE PARTS - CAPITALIZED			0.90	%			715,740							715,740
	SPARE PARTS - FIRST YEAR OF OPERATION			0.60	%			477,160							477,160
	CONTINGENCY - PHASE II.			15.6	%										56,854,100
	ESCALATION - PHASE II														105,002,400
	EQUIPMENT	3.0%/yr		3.0	%			32,360,800							32,360,800
	MATERIAL	2.0%/yr		2.0	%				14,514,400						14,514,400
	LABOR	2.5%/yr		2.5	%									47,937,800	47,937,800
	INDIRECTS	2.5%/yr		2.5	%									10,189,400	10,189,400
	PHASE II - TOTAL PROJECT COST														526,406,500
99.00	PHASE I + PHASE II OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS							186,306,000	109,208,800		2,960,949			271,589,700	599,229,500
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE							1,485,000	0					2,185,920	3,670,920
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										46,029,243
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						258,122		91.72	22,397,000	22,397,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						324,143			23,632,243	23,632,243
	PER DIEM	NONE		0.00	HR									0	0

				AEP											Estimate No.:	30714C
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				ORDER OF MAGNITUDE COST ESTIMATE											Preparer:	MNO
		Cost Type:													Reviewer:	JMK
		Est=Estimated													Approver:	PEF
		Allow.=Allowance								Wage Rates Based on:		BIG SANDY				
		Q=Vendor Quote								Labor Productivity =		1.15				

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	CONSUMABLES - % of ACCT NO. 90			0.5	%				543,344					1,356,399	1,899,743
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				5,433,440						5,433,440
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			9,252,300							9,252,300
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				5,433,440					13,563,985	18,997,425
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				16,381,320					40,691,955	62,143,275
	PHASE I + PHASE II OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							10,737,300	27,791,500					103,827,500	147,426,300
	PHASE I + PHASE II OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST							197,043,300	137,000,300					375,417,200	746,655,800
	TOTAL PHASE I + PHASE II DIRECT AND CONSTRUCTION INDIRECT COSTS							197,043,400	137,000,400					375,417,200	746,655,800
	TOTAL PHASE I + PHASE II INDIRECT COSTS														
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES			1.0	LT										51,000,000
	CONSTRUCTION MANAGEMENT			3.0	%										22,399,700
	S-U / COMMISSIONING			1.0											7,466,600
	CRAFT START-UP SUPPORT	1% OF TOTAL LABOR MANHOURS (INCLUDES OVERTIME INEFFICIENCY & COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - BASED ON ASSUMED 5X10 WORKWEEK)		1.0	%										3,200,800
	INITIAL FILLS			0.3	%										2,240,000
	OPERATOR & TRAINING MANUALS			1.0	LT										600,000
	SUBCONTRACTORS (PHASE I - NOISE & DUCTWORK CONSULTANT, GEOTECHNICAL INVESTIGATION, PHASE II - NOISE CONSULTANT ONLY)			1.0	LT										500,000
	NOISE ABATEMENT FOR 85 DBA REQUIREMENT	FOR ID FAN, SDA ENCLOSURE, TRANSFORMERS, BOP, DUCTWORK, ACOUSTIC BARRIERS FOR BOUNDARY LIMITS		1.0	LT										4,500,000
	SUBTOTAL - INDIRECT COSTS														91,907,100
	TOTAL PROJECT DIRECT AND INDIRECT COSTS														838,562,900
	SPARE PARTS - PHASE I + PHASE II			1.5	%			2,955,700							2,955,700
	SPARE PARTS - CAPITALIZED			0.90	%			1,773,360							1,773,360
	SPARE PARTS - FIRST YEAR OF OPERATION			0.60	%			1,182,240							1,182,240
	CONTINGENCY - PHASE I + PHASE II														125,578,300
	ESCALATION - PHASE I + PHASE II														164,516,600
	EQUIPMENT							51,074,200							51,074,200
	MATERIAL								21,921,100						21,921,100
	LABOR													75,620,300	75,620,300
	INDIRECTS													15,901,000	15,901,000
	TOTAL PROJECT COST - (PHASE I + PHASE II)														1,131,613,500
	REFERENCE COSTS:														
A	REMOVAL OF FUEL OIL TANK							1,200,000	80,000					469,400	1,749,400

				AEP											Estimate No.:	30714C
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		Q=Vendor Quote								Labor Productivity =		1.15				

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	REMOVE FUEL OIL TANK & SOIL REMEDIATION	LABOR COST IS FOR REMOVAL OF TANK ONLY. ALLOWANCE FOR SOIL REMEDIATION AND DISPOSAL IN AN EPA APPROVED LANDFILL. SUBCONTRACT COST INCLUDES LABOR. USED LOWER END OF THE RANGE $118-355/CY. COST COULD BE LOWER ($59-118/CY) IF SOLD TO A BITUMINOUS CONCRETE BATCH PLANT	EST	8,000	CY	150		1,200,000	0		0	MECH	88.89	0	1,200,000
	REMOVE DIKE & RECOMPACT FILL IN TANK AREA		EST	3,500	CY			0	0	0.60	2,415	ETWK	177.49	428,600	428,600
	FILL FROM OFF SITE COURSE		EST	5,000	CY		16	0	80,000	0.04	230	ETWK	177.49	40,800	120,800

ATTACHMENT 4-9
IAQCS Detailed Capital Cost Estimate No. 30718 Est-2B ESP not in Service*
(1.7 lb SO_2/MMbtu)

* - Due to the significant differences in layout between the phased and non-phased cost estimates the "bases" for comparison purposes were 1B for the non-phased cost estimates and 3B for the phased cost estimates. Therefore cost estimates 2A, 2B, 3A (Phased) and 1A, 4A and 4B (Non-Phased) contain only accounts whose costs are different from the corresponding base estimates 3B and 1B respectively.

				AEP										Estimate No.:	30718C
				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS (N/ESP)-2B - 1.7 LB/MM BTU - PHASED										Date:	9/29/2010
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Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	PHASE I - DRY FGD														
1.0	ID FANS														
1.1	ID FANS - OEM EQUIPMENT	1,865,000 ACFM WITH 24,500 HP MOTORS ($875,000 EACH). INCLUDES HYDRAULIC OIL UNITS, SEAL AIR FAN SKIDS, VIBRATION MONITORING EQUIPMENT, FAN STALL EQUIPMENT, FIELD SERVICE REP FOR 140 DAYS	EST	2	EA	3,844,000.000		7,688,000	0	8500.00	19,550	MECH	88.89	1,737,800	9,425,800
1.2	PIPING & SUPPORTS - MECHANICAL							21,800	28,700					120,500	171,000
	LARGE BORE PIPING	6" CS, SCH 40 WELDED	EST	200	LF		41.7	0	8,300	1.61	370	SPNG	94.41	35,000	43,300
	SMALL BORE PIPING	2" CS, SCH 80 WELDED	EST	50	LF		22.20	0	1,100	1.26	72	SPNG	94.41	6,800	7,900
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	250	LF		48.80	0	12,200	1.44	414	SPNG	94.41	39,100	51,300
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	100	LF		33.70	0	3,400	1.32	152	SPNG	94.41	14,300	17,700
	VALVE	2" GLOBE, 150# SS, WELDED	EST	15	EA	1,450		21,800	0	5.64	97	SPNG	94.41	9,200	31,000
	PIPE SUPPORTS		EST	105	EA		35.00	0	3,700	1.50	181	MECH	88.89	16,100	19,800
1.3	DAMPERS							781,000	0					352,600	1,133,600
	INLET DAMPERS	2X50% DOUBLE LOUVER TYPE WITH SEAL AIR FANS TOTAL FOR TWO FANS	EST	580	SF	450		261,000	0	2.50	1,668	MECH	88.89	148,200	409,200
	OUTLET DAMPERS	2X50% GUILLOTINE DAMPERS, WITH SEAL AIR FANS TOTAL FOR TWO FANS	EST	800	SF	650		520,000	0	2.50	2,300	MECH	88.89	204,400	724,400
1.4	EXPANSION JOINTS		EST	570	LF		230.00	0	131,100	2.00	1,311	MECH	88.89	116,500	247,600
1.5	DUCTWORK	FABRIC FILTER OUTLET TO ID FANS AND FROM ID FANS TO STACK - INCLUDES INTERNAL BRACING AND TURNING VANES	EST	1,095	TN		3,250.00	0	3,558,800	50.00	62,963	FLDU	107.96	6,797,400	10,356,200
1.6	DUCT SUPPORT STEEL	THREE COAT SHOP PAINT	EST	550	TN		2,900.00	0	1,595,000	24.00	15,180	STST	105.71	1,604,700	3,199,700
1.7	ID FAN INSULATION & LAGGING	TOTAL FOR TWO FANS. PRICING REFLECTS STANDARD ACOUSTICAL INSULATION	EST	5,000	SF		40.00	0	200,000	0.55	3,163	DINS	81.75	258,500	458,500
1.8	DUCTWORK INSULATION & LAGGING	INCLUDES INSULATION FOR SPRAY DRYER OUTLET DUCT TO FABRIC FILTERS SUPPLIED WITH THE OEM EQUIPMENT	EST	113,620	SF		12.00	0	1,363,400	0.25	32,666	DINS	81.75	2,670,400	4,033,800
1.9	DUCT SUPPORT STEEL - FOUNDATIONS							0	440,200					855,200	1,295,400
	EXCAVATION / BACKFILL		EST	2,831	CY			0	0	0.36	1,172	EXFD	90.00	105,500	105,500
	REINFORCING		EST	164	TN		1,150.00	0	188,500	20.00	3,770	REIN	78.27	295,100	483,600
	FORMWORK		EST	9,238	SF		2.50	0	23,100	0.14	1,487	FORM	99.43	147,900	171,000
	CONCRETE		EST	1,788	CY		105.00	0	187,700	1.50	3,084	CONP	79.64	245,600	433,300
	MUD MAT		EST	283	CY		105.00	0	29,700	1.50	488	CONP	79.64	38,900	68,600
	EMBEDDED STEEL		EST	4,470	LB		2.50	0	11,200	0.06	308	CARP	71.88	22,200	33,400
1.10	ID FAN FOUNDATIONS INCLUDING ID FAN AUX EQUIPMENT							0	229,300					415,700	645,000
	EXCAVATION / BACKFILL		EST	1,300	CY			0	0	0.36	538	EXFD	90.00	48,400	48,400
	REINFORCING		EST	100	TN		1,150.00	0	115,000	20.00	2,300	REIN	78.27	180,000	295,000
	FORMWORK		EST	2,400	SF		2.50	0	6,000	0.14	386	FORM	99.43	38,400	44,400
	CONCRETE		EST	850	CY		105.00	0	89,300	1.50	1,466	CONP	79.64	116,800	206,100
	MUD MAT		EST	80	CY		105.00	0	8,400	1.50	138	CONP	79.64	11,000	19,400
	EMBEDDED STEEL		EST	4,250	LB		2.50	0	10,600	0.06	293	CARP	71.88	21,100	31,700
1.11	ID FAN IAQCS CONTROL ROOM - FOUNDATIONS							0	270,100					508,600	778,700
	EXCAVATION / BACKFILL		EST	800	CY			0	0	0.36	331	EXFD	90.00	29,800	29,800
	REINFORCING		EST	100	TN		1,150.00	0	115,000	20.00	2,300	REIN	78.27	180,000	295,000

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	FORMWORK		EST	7,000	SF		2.50	0	17,500	0.14	1,127	FORM	99.43	112,100	129,600
	CONCRETE		EST	1,100	CY		105.00	0	115,500	1.50	1,898	CONP	79.64	151,100	266,600
	MUD MAT		EST	115	CY		105.00	0	12,100	1.50	198	CONP	79.64	15,800	27,900
	EMBEDDED STEEL		EST	4,000	LB		2.50	0	10,000	0.06	276	CARP	71.88	19,800	29,800
1.12	ID FAN IAQCS CONTROL ROOM	SUBCONTRACT PRICE INCLUDES LABOR. COMPLETE WITH HVAC, FINISHES AND SANITARY FACILITIES	EST	7,875	SF		500.00	0	3,937,500	0.00	0	STST	105.71	0	3,937,500
1.13	TRANSFORMERS							770,000	0					145,600	915,600
	SST TRANSFORMERS: 21F & 21G	13.8KV-4160V, 3 PHASE, 2 WINDING	EST	2	EA	300000		600,000	0	500.00	1,150	EHEA	79.16	91,000	691,000
	SUS TRANSFORMERS: 31F, 31G	13.8KV-480V, 3 PHASE, CAST COIL	EST	2	EA	85000		170,000	0	300.00	690	EHEA	79.16	54,600	224,600
1.14	SWITCHGEAR							1,132,000	0		0			589,900	1,721,900
	480V LOW VOLTAGE (31F/G)	PRICE PER SECTION	EST	5	EA	38000		190,000	0	230.00	1,323	EHEA	79.16	104,700	294,700
	4.16 KV MEDIUM VOLTAGE (21A/B)	PRICE PER SECTION	EST	10	EA	39200		392,000	0	280.00	3,220	EHEA	79.16	254,900	646,900
	13KV MEDIUM VOLTAGE (13F/G)	PRICE PER SECTION	EST	11	EA	50000		550,000	0	230.00	2,910	EHEA	79.16	230,300	780,300
1.15	CABLE BUS & TERMINATIONS							1,129,100	35,800		0			1,930,000	3,094,900
	15KV CABLE BUS TO 13F/G)	CABLE BUS	EST	2,100	FT	466		978,600	0	6.75	16,301	WIRE	98.84	1,611,200	2,589,800
	5KV CABLE BUS	CABLE BUS	EST	150	FT	385		57,800	0	4.70	811	WIRE	98.84	80,100	137,900
	480V CABLE BUS	CABLE BUS	EST	150	FT	618		92,700	0	10.30	1,777	WIRE	98.84	175,600	268,300
	CABLE BUS TERMINATION	15KV TERMINATIONS	EST	4	EA		1,800.00	0	7,200	33.00	152	WIRE	98.84	15,000	22,200
	CABLE BUS TERMINATION	5KV TERMINATIONS	EST	4	EA		4,440.00	0	17,800	51.60	237	WIRE	98.84	23,500	41,300
	CABLE BUS TERMINATION	480V TERMINATIONS	EST	4	EA		2,700.00	0	10,800	54.00	248	WIRE	98.84	24,600	35,400
1.16	MCC							180,000	0					10,900	190,900
	480V MCC	PER LINE UP	EST	4	EA	30,000		120,000	0	16.00	74	WIRE	98.84	7,300	127,300
	DC MCC	PER LINE UP	EST	2	EA	30,000		60,000	0	16.00	37	WIRE	98.84	3,600	63,600
1.17	MIMIC PANELS		EST	1	EA	17500		17,500	0	40.00	46	WIRE	98.84	4,500	22,000
1.18	RACEWAY, CABLE TRAY, & CONDUIT							0	1,664,200					8,196,600	9,860,800
	12" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	5,000	LF		18.25	0	91,300	1.10	6,325	WIRE	98.84	625,200	716,500
	18" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	3,000	LF		21.50	0	64,500	1.45	5,003	WIRE	98.84	494,400	558,900
	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	9,320	LF		27.10	0	252,600	1.75	18,757	WIRE	98.84	1,853,900	2,106,500
	36" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	2,400	LF		30.30	0	72,700	1.95	5,382	WIRE	98.84	532,000	604,700
	5" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	4,000	LF		61.00	0	244,000	1.13	5,184	WIRE	98.84	512,400	756,400
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	8,600	LF		31.00	0	266,600	0.81	7,981	WIRE	98.84	788,900	1,055,500
	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	8,000	LF		21.50	0	172,000	0.65	5,934	WIRE	98.84	586,500	758,500
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	12,000	LF		9.25	0	111,000	0.35	4,858	WIRE	98.84	480,100	591,100
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	15,000	LF		7.15	0	107,300	0.28	4,899	WIRE	98.84	484,200	591,500
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	28,000	LF		4.44	0	124,300	0.24	7,696	WIRE	98.84	760,700	885,000
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	48,900	LF		3.23	0	157,900	0.19	10,910	WIRE	98.84	1,078,300	1,236,200
1.19	HIGH VOLTAGE POWER CABLE & TERMINATION							0	288,500					666,700	955,200
	1/C # 750KCMIL-15KV - 14400' ID FAN		EST	14,400	LF		12.89	0	185,600	0.23	3,809	WIRE	98.84	376,500	562,100
	1/C # 500KCMIL-15KV		EST	11,100	LF		9.27	0	102,900	0.23	2,936	WIRE	98.84	290,200	393,100
1.20	MEDIUM VOLTAGE POWER CABLE & TERMINATION							0	100,200					427,400	527,600
	1/C # 350KCMIL-5KV		EST	16,350	LF		6.13	0	100,200	0.23	4,325	WIRE	98.84	427,400	527,600

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1.21	LOW VOLTAGE POWER CABLE & TERMINATIONS		EST	1,800	LF		26.12	0	229,800	0.69	1,428	WIRE	98.84	732,100	961,900
	3/C # 500KCMIL-600V		EST	1,800	LF		26.12	0	148,900	0.69	1,428	WIRE	98.84	141,200	290,100
	#4/0 - #12 AWG-600V		EST	65,800	LF		7.22	0	80,900	0.08	5,978	WIRE	98.84	590,900	671,800
1.22	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	EST	112,800	LF		3.20	0	361,000	0.08	10,248	WIRE	98.84	1,012,900	1,373,900
1.23	EMERGENCY POWER SYSTEM							285,500	0					38,900	324,400
	DC PANEL BOADRD		EST	1	EA	20150		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	UPS PANEL BOARDS		EST	2	EA	20150		31,000	0	40.00	92	WIRE	98.84	9,100	40,100
	UPS		EST	1	EA	78000		60,000	0	32.00	37	WIRE	98.84	3,600	63,600
	SWITCHBOARD		EST	1	EA	52000		40,000	0	40.00	46	WIRE	98.84	4,500	44,500
	BYPASS TRANSFORMERS		EST	1	EA	32500		25,000	0	40.00	46	WIRE	98.84	4,500	29,500
	BATTERY CHARGER		EST	2	EA	41600		64,000	0	16.00	37	WIRE	98.84	3,600	67,600
	BATTERIES		EST	1	LT	65000		50,000	0	80.00	92	WIRE	98.84	9,100	59,100
1.24	GROUNDING							14,100	0					42,700	56,800
	GROUND ROD	3/4" - 20' LONG EACH	EST	16	EA	150		2,400	0	4.00	74	WIRE	98.84	7,300	9,700
	500 MCM	BARE COPPER WIRE	EST	1,400	FT	7.65		10,700	0	0.12	193	WIRE	98.84	19,100	29,800
	CADWELD		EST	64	EA	15		1,000	0	2.00	147	WIRE	98.84	14,500	15,500
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	16.00	18	WIRE	98.84	1,800	1,800
1.25	LIGHTING/ TRANSFORMERS & PANELS							26,000	30,000					29,500	85,500
	LIGHT FIXTURES		EST	40	EA		750	0	30,000	4.00	184	WIRE	98.84	18,200	48,200
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	1	EA	10000		10,000	0	40.00	46	WIRE	98.84	4,500	14,500
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	1	EA	7500		7,500	0	32.00	37	WIRE	98.84	3,600	11,100
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	1	EA	5000		5,000	0	16.00	18	WIRE	98.84	1,800	6,800
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	1	EA	3500		3,500	0	12.00	14	WIRE	98.84	1,400	4,900
1.26	DUCT BANK							0	136,000					192,700	328,700
	DUCT BANK WITH 12-5" & 4-3" CONDUITS		EST	100	LF		361.21	0	38,000	6.24	717	ECND	75.97	54,500	92,500
	DUCT BANK WITH 6-5" & 2-3" CONDUITS		EST	180	LF		230.91	0	71,400	5.45	1,128	ECND	75.97	85,700	157,100
	DUCT BANK WITH 6-5" & 6-3" CONDUITS		EST	100	LF		265.88	0	26,600	6.01	691	ECND	75.97	52,500	79,100
1.27	FOUNDATION FOR TRANSFORMERS							0	61,900		0			162,600	224,500
	EXCAVATION / BACKFILL		EST	1,000	CY			0	0	0.36	414	EXFD	90.00	37,300	37,300
	REINFORCING		EST	20	TN		1,150.00	0	23,000	20.00	460	REIN	78.27	36,000	59,000
	FORMWORK		EST	2,500	SF		2.50	0	6,300	0.14	403	FORM	99.43	40,000	46,300
	CONCRETE		EST	190	CY		105.00	0	20,000	1.50	328	CONP	79.64	26,100	46,100
	MUD MAT		EST	25	CY		105.00	0	2,600	1.50	43	CONP	79.64	3,400	6,000
	EMBEDDED STEEL		EST	4,000	LB		2.50	0	10,000	0.06	276	CARP	71.88	19,800	29,800
1.28	FIREWALL FOR TRANSFORMERS							0	3,200					8,300	11,500
	REINFORCING		EST	1.2	TN		1,150.00	0	1,400	20.00	28	REIN	78.27	2,200	3,600
	FORMWORK		EST	80	SF		2.50	0	200	0.14	13	FORM	99.43	1,300	1,500
	CONCRETE		EST	15	CY		105.00	0	1,600	3.50	60	CONP	79.64	4,800	6,400
1.29	EARLY COMMISSIONING COSTS TEMPORARY HIGH VOLTAGE POWER CABLE & TERMINATION FROM EAST SIDE OF SCR BUILDING TO TRANSFORMER PDC		EST	300	LF		466	0	139,800	6.75	2,329	WIRE	98.84	230,200	370,000
1.30	COMMUNICATIONS		EST	1	LT		17,000.00	0	17,000	114.00	131	WIRE	98.84	13,000	30,000
1.31	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000
1.32	EMERGENCY DIESEL DRIVEN QUENCH PUMP	WITH FUEL DAY TANK. FOUNDATIONS INCLUDED WITH ABSORBER BUILDING FOUNDATIONS. INCLUDES PIPING AND DRAINS		1	EA	150,000	200,000	150,000	200,000	3250.00	3,738	MECH	88.89	332,200	682,200
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							12,195,000	15,029,500		315,660			30,211,600	57,436,100
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0

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	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										4,697,951
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						27,449		83.48	2,291,000	2,291,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						34,311			2,406,951	2,406,951
	PER DIEM	NONE		0.00	HR						377,420			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				75,148					151,058	226,206
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				751,475						751,475
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			609,750							609,750
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				751,475					1,510,580	2,262,055
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				2,254,425					4,531,740	6,786,165
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							609,800	3,832,500					10,891,300	15,333,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	ID FANS						12,804,800	18,862,000					41,102,900	72,769,700
2.0	FABRIC FILTERS														
2.1	MECHANICAL EQUIPMENT	A SINGLE FABRIC FILTER (225' X 130') UNIT INCLUDING ALL INTERNAL FABRIC FILTER ELEMENTS SUCH AS BAGS, CAGES, ASH HOPPERS, 2 BROKEN BAG DETECTORS PER COMPARTMENT	EST	1	LT	19,980,000		19,980,000	0	124100.00	142,715	MECH	88.89	12,685,900	32,665,900
2.2	INSULATION FOR FABRIC FILTER	SUBCONTRACT COST INCLUDES LABOR	EST	81,000	SF	30		2,430,000	0	0.00	0	DINS	81.75	0	2,430,000
2.3	PENTHOUSE FOR FABRIC FILTER	SUPPORT STEEL AND PRLINS INCLUDED WITH OEM EQUIPMENT		29,500	SF			70,200	787,000					1,007,600	1,864,800
	SIDING FOR PENTHOUSE		EST	14,200	SF		12.00	0	170,400	0.11	1,796	SDNG	93.41	167,800	338,200
	CONCRETE FLOOR FOR PENTHOUSE		EST	250	CY		230.00	0	57,500	7.50	2,156	SDNG	93.41	201,400	258,900
	ROOFING FOR PENTHOUSE		EST	29,500	SF		18.00	0	531,000	0.22	7,464	ROOF	69.12	515,900	1,046,900
	H&V		EST	1	LT	70200	28080	70,200	28,100	1310.67	1,507	HVAC	81.24	122,500	220,800
2.4	BOTTOM ENCLOSURE FOR BAGHOUSE							60,000	1,204,000					1,359,800	2,623,800
	SUPPORT STEEL, GIRTS AND SIDING		EST	29,500	SF		40.00	0	1,180,000	0.35	11,874	STST	105.71	1,255,200	2,435,200
	H&V		EST	1	LT	60000	24000	60,000	24,000	1120.00	1,288	HVAC	81.24	104,600	188,600
2.5	PIPING & SUPPORTS - MECHANICAL							30,900	101,400					209,500	341,800
	LARGE BORE PIPING	6" SS, SCH 40 WELDED	EST	100	LF		111.00	0	11,100	2.02	232	SPNG	94.41	21,900	33,000
	LARGE BORE PIPING	12" CS, SCH 40 WELDED	EST	400	LF		188.70	0	75,500	2.80	1,288	SPNG	94.41	121,600	197,100
	SMALL BORE PIPING	2" CS, SCH 80 WELDED	EST	50	LF		22.20	0	1,100	1.26	72	SPNG	94.41	6,800	7,900
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	50	LF		48.80	0	2,400	1.44	83	SPNG	94.41	7,800	10,200
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	100	LF		33.70	0	3,400	1.32	152	SPNG	94.41	14,300	17,700
	VALVE	12" GATE, 150 #, CS, WELDED	EST	2	EA	8,200		16,400	0	19.20	44	SPNG	94.41	4,200	20,600
	VALVE	2" GLOBE, 150# SS, WELDED	EST	10	EA	1,450		14,500	0	5.64	65	SPNG	94.41	6,100	20,600
	PIPE SUPPORTS		EST	105	EA		75.00	0	7,900	2.50	302	MECH	88.89	26,800	34,700
2.6	FABRIC FILTER - FOUNDATIONS							0	550,700					1,081,100	1,631,800
	EXCAVATION / BACKFILL		EST	4,945	CY			0	0	0.36	2,047	EXFD	90.00	184,300	184,300
	REINFORCING		EST	192	TN		1,150.00	0	220,800	20.00	4,416	REIN	78.27	345,600	566,400
	FORMWORK		EST	7,800	SF		2.50	0	19,500	0.14	1,256	FORM	99.43	124,900	144,400
	CONCRETE		EST	2,400	CY		105.00	0	252,000	1.50	4,140	CONP	79.64	329,700	581,700
	MUD MAT		EST	270	CY		105.00	0	28,400	1.50	466	CONP	79.64	37,100	65,500
	EMBEDDED STEEL		EST	12,000	LB		2.50	0	30,000	0.06	828	CARP	71.88	59,500	89,500
2.7	FABRIC FILTER - SUPPORT STEEL AND ACCESS GALLERY							0	360,000					1,186,700	1,546,700
	SUPPORT STEEL	MATERIAL INCLUDED WITH OEM EQUIPMENT	EST	300	TN			0	0	24.00	8,280	STST	105.71	875,300	875,300

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	ACCESS GALLERY		EST	8,000	SF		45.00	0	360,000	0.40	3,680	GALL	84.61	311,400	671,400
2.8	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE INCLUDED IN SECTION 1.0 - ID FANS													
2.9	LIGHTING/ TRANSFORMERS & PANELS							30,000	75,000					58,200	163,200
	LIGHT FIXTURES		EST	100	EA		750	0	75,000	4.00	460	WIRE	98.84	45,500	120,500
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	10000		20,000	0	40.00	92	WIRE	98.84	9,100	29,100
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	2	EA	5000		10,000	0	16.00	37	WIRE	98.84	3,600	13,600
2.10	GROUNDING							7,300	0					17,500	24,800
	GROUND ROD	3/4" - 20' LONG	EST	4	EA	150		600	0	4.00	18	WIRE	98.84	1,800	2,400
	500 MCM	BARE COPPER WIRE	EST	850	FT	7.65		6,500	0	0.12	117	WIRE	98.84	11,600	18,100
	CADWELD		EST	16	EA	15		200	0	2.00	37	WIRE	98.84	3,600	3,800
	GROUNDING TEST	TEST, CALIBRATION & DOCUMENTATION	EST	1	EA			0	0	4.00	5	WIRE	98.84	500	500
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							22,638,400	3,153,100		196,917			17,606,300	43,292,800
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										2,930,519
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						17,123		83.48	1,429,000	1,429,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						21,404			1,501,519	1,501,519
	PER DIEM	NONE		0.00	HR						235,444			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				15,766					88,032	103,797
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				157,655						157,655
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			1,131,920							1,131,920
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				157,655					880,315	1,037,970
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				472,965					2,640,945	3,113,910
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							1,131,900	804,000					6,539,800	8,475,800
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FABRIC FILTERS						23,770,300	3,957,100					24,146,100	51,768,600
3.0	NEW STACK														
4.0	LIME HANDLING SYSTEM														
4.1	LIME STORAGE SILO							2,680,000	0					0	2,680,000
	SILO	CONCRETE SILO 65' DIA X 100' H - 5975 TONS -SUBCONTRACT COST INCLUDES LABOR	EST	1	EA	2,390,000.00		2,390,000	0	0.00	0	CONP	79.64	0	2,390,000
	ELEVATOR	MAINTENANCE ELEVATOR - SUBCONTRACT COST INCLUDES LABOR	EST	1	EA	290,000.00		290,000	0	0.00	0	MECH	88.89	0	290,000
4.2	LIME UNLOADING SYSTEM	INCLUDES PNEUMATIC HANDLING SYSTEM, THREE VACUUM EXHAUSTER, TWO FILTER SEPARATORS	EST	1	LT	350,000		350,000	0	2750.00	3,163	MECH	88.89	281,100	631,100
4.3	PIPING - MECHANICAL							29,000	15,600					77,900	122,500
	SMALL BORE PIPING	2" CS, SCH 80 WELDED	EST	100	LF		22.20	0	2,200	1.26	145	SPNG	94.41	13,700	15,900
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	100	LF		48.80	0	4,900	1.44	166	SPNG	94.41	15,600	20,500

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	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	200	LF		33.70	0	6,700	1.32	304	SPNG	94.41	28,700	35,400
	VALVE	2" GLOBE, 150# SS, WELDED	EST	20	EA	1,450		29,000	0	5.64	130	SPNG	94.41	12,200	41,200
	PIPE SUPPORTS		EST	50	EA		35.00	0	1,800	1.50	86	MECH	88.89	7,700	9,500
4.4	LIME STORAGE SILO ACCESS STAIR TOWER	THREE COAT SHOP PAINT	EST	50	TN		2,900.00	0	145,000	24.00	1,380	STST	105.71	145,900	290,900
4.5	PIPE RACK FOR LIME HANDLING, WASTE HANDLING AND MISC MECHANICAL PIPING	THREE COAT SHOP PAINT	EST	270	TN		2,900.00	0	783,000	24.00	7,452	STST	105.71	787,800	1,570,800
4.6	RAIL CAR UNLOADING AREA - FOUNDATIONS	20 X 250 - NO SIDING						0	85,300					180,200	265,500
	EXCAVATION / BACKFILL		EST	1,000	CY			0	0	0.36	414	EXFD	90.00	37,300	37,300
	REINFORCING		EST	30	TN		1,150.00	0	34,500	20.00	690	REIN	78.27	54,000	88,500
	FORMWORK		EST	1,500	SF		2.50	0	3,800	0.14	242	FORM	99.43	24,000	27,800
	CONCRETE		EST	400	CY		105.00	0	42,000	1.50	690	CONP	79.64	55,000	97,000
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	2,000	LB		2.50	0	5,000	0.06	138	CARP	71.88	9,900	14,900
4.7	LIME UNLOADING BLOWER / ELECTRICAL BUILDING - FOUNDATIONS							0	74,500					187,800	262,300
	EXCAVATION / BACKFILL		EST	1,900	CY			0	0	0.36	787	EXFD	90.00	70,800	70,800
	REINFORCING		EST	25	TN		1,150.00	0	28,800	20.00	575	REIN	78.27	45,000	73,800
	FORMWORK		EST	640	SF		2.50	0	1,600	0.14	103	FORM	99.43	10,200	11,800
	CONCRETE		EST	300	CY		105.00	0	31,500	1.50	518	CONP	79.64	41,200	72,700
	MUD MAT		EST	60	CY		105.00	0	6,300	1.50	104	CONP	79.64	8,200	14,500
	EMBEDDED STEEL		EST	2,500	LB		2.50	0	6,300	0.06	173	CARP	71.88	12,400	18,700
4.8	LIME UNLOADING BLOWER / ELECTRICAL BUILDING	130' L X 30' W X 30' H						75,000	351,500					24,400	450,900
	PREENGINEERED BUILDING INCLUDING H&V AND LIGHTING	SUBCONTRACT PRICE, INCLUDES LABOR	EST	3,900	SF		85	0	331,500	0.00	0	STST	105.71	0	331,500
	ADDITONAL HVAC UNIT FOR ELECTRICAL ROOM & CONTROLS	40T PACKAGED UNIT FOR ELECTRICAL EQUIPMENT ROOM. INCLUDES ALLOWANCE FOR CONCRETE PAD AND ELECTRICAL WORK	EST	1	LT	75000	20000	75,000	20,000	350.00	300	HVAC	81.24	24,400	119,400
4.9	CONCRETE PIT FOR THE ELEVATOR		EST	10	CY		230.00	0	2,300	7.50	86	CONP	79.64	6,900	9,200
4.10	LIME STORAGE SILO - FOUNDATIONS							0	172,300					317,800	490,100
	EXCAVATION / BACKFILL		EST	1,350	CY			0	0	0.36	559	EXFD	90.00	50,300	50,300
	REINFORCING		EST	70.0	TN		1,150.00	0	80,500	20.00	1,610	REIN	78.27	126,000	206,500
	FORMWORK		EST	1,200	SF		2.50	0	3,000	0.14	193	FORM	99.43	19,200	22,200
	CONCRETE		EST	720	CY		105.00	0	75,600	1.50	1,242	CONP	79.64	98,900	174,500
	MUD MAT		EST	40	CY		105.00	0	4,200	1.50	69	CONP	79.64	5,500	9,700
	EMBEDDED STEEL		EST	3,600	LB		2.50	0	9,000	0.06	248	CARP	71.88	17,900	26,900
4.11	LIME STORAGE SILO ACCESS STAIR TOWER - FOUNDATIONS							0	14,200					28,600	42,800
	EXCAVATION / BACKFILL		EST	110	CY			0	0	0.36	46	EXFD	90.00	4,100	4,100
	REINFORCING		EST	4.8	TN		1,150.00	0	5,500	20.00	110	REIN	78.27	8,600	14,100
	FORMWORK		EST	320	SF		2.50	0	800	0.14	52	FORM	99.43	5,100	5,900
	CONCRETE		EST	60	CY		105.00	0	6,300	1.50	104	CONP	79.64	8,200	14,500
	MUD MAT		EST	8	CY		105.00	0	800	1.50	14	CONP	79.64	1,100	1,900
	EMBEDDED STEEL		EST	300	LB		2.50	0	800	0.06	21	CARP	71.88	1,500	2,300
4.12	PIPE RACK - FOUNDATIONS							0	94,200					237,800	332,000
	EXCAVATION / BACKFILL		EST	1,360	CY			0	0	0.36	563	EXFD	90.00	50,700	50,700
	REINFORCING		EST	32.2	TN		1,150.00	0	37,000	20.00	740	REIN	78.27	57,900	94,900
	FORMWORK		EST	4,000	SF		2.50	0	10,000	0.14	644	FORM	99.43	64,000	74,000
	CONCRETE		EST	402	CY		105.00	0	42,200	1.50	693	CONP	79.64	55,200	97,400
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	2,010	LB		2.50	0	5,000	0.06	139	CARP	71.88	10,000	15,000

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4.13	TRANSFORMERS: 33F, 33G,	SUS TRANSFORMERS: 33F, 33G, 13.8KV-480V	EST	2	EA	85000		170,000	0	300.00	690	EHEA	79.16	54,600	224,600
4.14	480V LOW VOLTAGE (33F/G) SWITCHGEAR	PER LINE UP	EST	5	EA	39200		196,000	0	230.00	1,323	EHEA	79.16	104,700	300,700
4.15	CABLE BUS DUCT							134,700	10,800					200,200	345,700
	480V CABLE BUS	BUST DUCT ONLY	EST	150	FT	898		134,700	0	10.30	1,777	WIRE	98.84	175,600	310,300
	CABLE BUS TERMINATION	750MCM- 480V TERMINATIONS	EST	4	EA		2,700.00	0	10,800	54.00	248	WIRE	98.84	24,600	35,400
4.16	MCC							61,800	0					3,600	65,400
	480V MCC	PER LINE UP	EST	2	EA	30900		61,800	0	16.00	37	WIRE	98.84	3,600	65,400
4.17	MIMIC PANELS		EST	1	EA	17500		17,500	0	12.00	14	WIRE	98.84	1,400	18,900
4.18	EMERGENCY POWER SYSTEM							108,300	0					24,400	132,700
	DC PANEL BOARD		EST	1	EA	15450		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	UPS PANEL BOARDS		EST	1	EA	15450		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	SATELLITE UPS		EST	1	EA	41200		41,200	0	16.00	18	WIRE	98.84	1,800	43,000
	VRLA BATTERIES	8HR-400A, 480V	EST	1	LT	36050		36,100	0	120.00	138	WIRE	98.84	13,600	49,700
4.19	GROUNDING							13,300	0					41,300	54,600
	GROUND ROD	3/4" - 20' LONG	EST	16	EA	150		2,400	0	4.00	74	WIRE	98.84	7,300	9,700
	500 MCM	BARE COPPER WIRE	EST	1,300	FT	7.65		9,900	0	0.12	179	WIRE	98.84	17,700	27,600
	CADWELD		EST	64	EA	15		1,000	0	2.00	147	WIRE	98.84	14,500	15,500
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	16.00	18	WIRE	98.84	1,800	1,800
4.20	LIGHTING/ TRANSFORMERS & PANELS							52,000	135,000					104,500	291,500
	LIGHT FIXTURES		EST	180	EA		750	0	135,000	4.00	828	WIRE	98.84	81,800	216,800
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	10000		20,000	0	40.00	92	WIRE	98.84	9,100	29,100
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	7500		15,000	0	32.00	74	WIRE	98.84	7,300	22,300
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	2	EA	5000		10,000	0	16.00	37	WIRE	98.84	3,600	13,600
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	2	EA	3500		7,000	0	12.00	28	WIRE	98.84	2,700	9,700
4.21	RACEWAY, CABLE TRAY, & CONDUIT							0	310,900					1,537,100	1,848,000
	12" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,050	LF		18.25	0	19,200	1.10	1,328	WIRE	98.84	131,300	150,500
	18" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	600	LF		21.50	0	12,900	1.45	1,001	WIRE	98.84	98,900	111,800
	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,700	LF		27.10	0	46,100	1.75	3,421	WIRE	98.84	338,200	384,300
	36" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	500	LF		30.30	0	15,200	1.95	1,121	WIRE	98.84	110,800	126,000
	5" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	750	LF		61.00	0	45,800	1.13	972	WIRE	98.84	96,100	141,900
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,450	LF		31.00	0	45,000	0.81	1,346	WIRE	98.84	133,000	178,000
	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,550	LF		21.50	0	33,300	0.65	1,150	WIRE	98.84	113,600	146,900
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	2,400	LF		9.25	0	22,200	0.35	972	WIRE	98.84	96,000	118,200
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	3,050	LF		7.15	0	21,800	0.28	996	WIRE	98.84	98,500	120,300
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	5,150	LF		4.44	0	22,900	0.24	1,415	WIRE	98.84	139,900	162,800
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	8,200	LF		3.23	0	26,500	0.19	1,829	WIRE	98.84	180,800	207,300
				200	LF		381.96								
4.22	HIGH VOLTAGE POWER CABLE & TERMINATION	1/C # 500KCMIL-15KV	EST	5,400	LF		9.27	0	50,100	0.23	1,428	WIRE	98.84	141,200	191,300
4.23	MEDIUM VOLTAGE POWER CABLE & TERMINATION	1/C # 350KCMIL-5KV	EST	10,800	LF		6.13	0	66,200	0.23	2,857	WIRE	98.84	282,300	348,500

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4.24	LOW VOLTAGE POWER CABLE & TERMINATION							0	93,000					143,200	236,200
	3/C # 500KCMIL- 600V		EST	600	LF		26.12	0	15,700	0.69	476	WIRE	98.84	47,100	62,800
	#4/0 - #12 AWG-600V		EST	10,700	LF		7.22	0	77,300	0.08	972	WIRE	98.84	96,100	173,400
4.25	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	EST	8,200	LF		3.20	0	26,200	0.08	745	WIRE	98.84	73,600	99,800
4.26	DUCT BANK	DUCT BANK WITH 4-5" & 4-3" CONDUITS, 2.38' H X 3.79' W	EST	350	LF		174.67	0	61,100	3.80	1,530	ECND	75.97	116,200	177,300
4.27	FOUNDATIONS FOR TRANSFORMERS	FOR XFMR 33F, 33G, INCLUDES MUD MAT	EST	14.0	CY		250	0	3,500	8.00	129	CONP	79.64	10,300	13,800
4.28	COMMUNICATIONS		EST	1	LT		17,000.00	0	17,000	114.00	131	WIRE	98.84	13,000	30,000
4.29	LIGHTNING PROTECTION		EST	1	LT		14,000.00	0	14,000	79.00	91	WIRE	98.84	9,000	23,000
4.30	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							3,887,600	2,533,700		54,482			5,143,800	11,565,100
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										810,435
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						4,738		83.48	395,000	395,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						5,922			415,435	415,435
	PER DIEM	NONE		0.00	HR						65,142			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				12,669					25,719	38,388
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				126,685						126,685
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			194,380							194,380
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				126,685					257,190	383,875
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				380,055					771,570	1,151,625
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							194,400	646,100					1,864,900	2,705,400
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME HANDLING SYSTEM						4,082,000	3,179,800					7,008,700	14,270,500
5.0	LIME SLAKER BUILDING														0
5.1	MECHANICAL EQUIPMENT	INCLUDES:CHAIN CONVEYOR, SLAKERS THROUGH THE LIME SLURRY PUMPS, PIPING, AND LIME SLURRY STORAGE TANKS.	EST	1	LT	5,560,000		5,560,000	0	38900.00	44,735	MECH	88.89	3,976,500	9,536,500
5.2	REAGENT AREA SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
5.3	AGITATOR FOR SUMP PUMPS	5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
5.4	PIPING - MECHANICAL		EST	1	LT			117,800	111,400					381,100	610,300
	LARGE BORE PIPING	6" CS, SCH 40 WELDED	EST	200	LF		41.7	0	8,300	1.61	370	SPNG	94.41	35,000	43,300
	LARGE BORE PIPING	8" HDPE (UNDERGROUND)	EST	1,200	LF		14.1	0	16,900	0.83	1,145	SPNG	94.41	108,100	125,000
	LARGE BORE PIPING	10" CS, SCH 40 WELDED	EST	400	LF		110.3	0	44,100	2.40	1,104	SPNG	94.41	104,200	148,300
	LARGE BORE PIPING	14" CS, SCH 40 WELDED	EST	100	LF		205.9	0	20,600	2.87	330	SPNG	94.41	31,200	51,800

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Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	SMALL BORE PIPING	2" CS, SCH 80 WELDED	EST	50	LF		22.20	0	1,100	1.26	72	SPNG	94.41	6,800	7,900
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	50	LF		48.80	0	2,400	1.44	83	SPNG	94.41	7,800	10,200
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	100	LF		33.70	0	3,400	1.32	152	SPNG	94.41	14,300	17,700
	VALVE	2" GLOBE, 150# SS, WELDED	EST	15	EA	1,450		21,800	0	5.64	97	SPNG	94.41	9,200	31,000
	VALVE	6" AIR OPERATED, 150 #, CS, FLANGED	EST	2	EA	14,000		28,000	0	17.30	40	SPNG	94.41	3,800	31,800
	VALVE	8" AIR OPERATED, 150 #, CS, FLANGED	EST	4	EA	17,000		68,000	0	19.30	89	SPNG	94.41	8,400	76,400
	EXCAVATION / BACKFILL	FOR UNDERGROUND PIPING	EST	1,000	CY			0	0	0.20	230	EXFD	90.00	20,700	20,700
	BEDDING	FOR UNDERGROUND PIPING	EST	133	CY		35.0	0	4,700	0.25	38	EXFD	90.00	3,500	8,200
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	110	EA		90.00	0	9,900	2.50	316	MECH	88.89	28,100	38,000
5.5	LIME SLURRY TANKS - FOUNDATIONS							0	166,400					299,400	465,800
	EXCAVATION / BACKFILL		EST	969	CY			0	0	0.36	401	EXFD	90.00	36,100	36,100
	REINFORCING		EST	90	TN		1,150.00	0	103,500	20.00	2,070	REIN	78.27	162,000	265,500
	FORMWORK		EST	1,166	SF		2.50	0	2,900	0.14	188	FORM	99.43	18,700	21,600
	CONCRETE		EST	475	CY		105.00	0	49,900	1.50	819	CONP	79.64	65,300	115,200
	MUD MAT		EST	40	CY		105.00	0	4,200	1.50	69	CONP	79.64	5,500	9,700
	EMBEDDED STEEL		EST	2,375	LB		2.50	0	5,900	0.06	164	CARP	71.88	11,800	17,700
5.6	LIME SLAKER BUILDING - FOUNDATIONS							0	119,200					204,000	323,200
	EXCAVATION / BACKFILL		EST	450	CY			0	0	0.36	186	EXFD	90.00	16,800	16,800
	REINFORCING		EST	50	TN		1,150.00	0	57,500	20.00	1,150	REIN	78.27	90,000	147,500
	FORMWORK		EST	1,000	SF		2.50	0	2,500	0.14	161	FORM	99.43	16,000	18,500
	CONCRETE		EST	450	CY		105.00	0	47,300	1.50	776	CONP	79.64	61,800	109,100
	MUD MAT		EST	60	CY		105.00	0	6,300	1.50	104	CONP	79.64	8,200	14,500
	EMBEDDED STEEL		EST	2,250	LB		2.50	0	5,600	0.06	155	CARP	71.88	11,200	16,800
5.7	LIME SLAKER BUILDING	135' L X 30' W X 50' H						40,500	803,300					740,500	1,584,300
	STRUCTURAL STEEL		EST	110	TN		2650	0	291,500	16.00	2,024	STST	105.71	214,000	505,500
	INSULATED METAL SIDING		EST	16,500	SF		12	0	198,000	0.11	2,087	SDNG	93.41	195,000	393,000
	ROLLING OVERHEAD DOOR		EST	320	SF		27	0	8,600	0.25	92	CARP	71.88	6,600	15,200
	METAL ROOF DECKING		EST	4,050	SF		2.7	0	10,900	0.06	279	STST	105.71	29,500	40,400
	RIGID ROOF INSULATION		EST	4,050	SF		2.4	0	9,700	0.02	70	ROOF	69.12	4,800	14,500
	ROOFING (4-PLY TAR & GRAVEL)		EST	4,050	SF		1.55	0	6,300	0.04	186	ROOF	69.12	12,900	19,200
	LIGHTWEIGHT CONCRETE FILL 1"		EST	50	CY		100	0	5,000	1.30	75	ROOF	69.12	5,200	10,200
	ROOF FLASHING		EST	350	LF		14.45	0	5,100	0.12	48	ROOF	69.12	3,300	8,400
	ROOF DRAINS		EST	1	LT		25000	0	25,000	240.00	276	PLMB	79.42	21,900	46,900
	FLOOR DRAINS		EST	1	LT		30000	0	30,000	280.00	322	PLMB	79.42	25,600	55,600
	FLOOR SLABS	INCLUDES METAL DECKING AND FORMWORK	EST	50	CY		210	0	10,500	7.50	431	CONP	79.64	34,300	44,800
	FLOOR FINISHES		EST	3,102	SF		2.5	0	7,800	0.05	178	CONP	79.64	14,200	22,000
	LOUVERS/WINDOWS/DOORS		EST	1,601	SF		40	0	64,000	0.35	644	CARP	71.88	46,300	110,300
	ROOF VENTILATORS		EST	4	EA		15000	0	60,000	24.00	110	HVAC	81.24	9,000	69,000
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	1,215	SF		45	0	54,700	0.40	559	GALL	84.61	47,300	102,000
	H&V		EST	1	LT	40500	16200	40,500	16,200	756.00	869	HVAC	81.24	70,600	127,300
5.8	ELECTRICAL	INCLUDED WITH LIME HANDLING SYSTEM, ACCOUNT 4.0													
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							5,758,300	1,200,300		63,488			5,618,400	12,577,000
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										945,104
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						5,521		83.48	461,000	461,000

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	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						6,901			484,104	484,104
	PER DIEM	NONE		0.00	HR						75,909			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				6,002					28,092	34,094
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				60,015						60,015
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			287,915							287,915
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				60,015					280,920	340,935
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				180,045					842,760	1,022,805
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							287,900	306,100					2,096,900	2,690,900
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME SLAKER BUILDING						6,046,200	1,506,400					7,715,300	15,267,900
6.0	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS														0
6.1	BYPRODUCT WASTE ASH HANDLING - MECHANICAL EQUIPMENT	INCLUDES PNEUMATIC HANDLING SYSTEM, THREE PRESSURE BLOWERS, ONE BIN VENT FILTER, ASH UNLOADING SYSTEM	EST	1	LT	2,047,000		2,047,000	0	13500.00	15,525	MECH	88.89	1,380,000	3,427,000
6.2	ECONOMIZER ASH HANDLING - MECHANICAL EQUIPMENT	INCLUDES JET PUMPS AND PIPING / SUPPORTS TO THE BOTTOM ASH POND	EST	1	LT	400,000		400,000	0	2900.00	3,335	MECH	88.89	296,400	696,400
6.3	BUILDING SUMP PUMPS	FOR BUILDINGS - DUPLEX. INCLUDES CHECK & ISOLATION VALVES.		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
6.4	AGITATOR FOR SUMP PUMPS	5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
6.5	PIPING - MECHANICAL		EST	1	LT			142,800	240,900					759,100	1,142,800
	LARGE BORE PIPING	4" CS, SCHEDULE 40, WELDED	EST	300	LF		23.0	0	6,900	1.48	511	SPNG	94.41	48,200	55,100
	LARGE BORE PIPING	4" SS, SCHEDULE 40, WELDED	EST	300	LF		68.3	0	20,500	1.82	628	SPNG	94.41	59,300	79,800
	LARGE BORE PIPING	6" CS, SCH 40 WELDED	EST	400	LF		41.7	0	16,700	1.61	741	SPNG	94.41	69,900	86,600
	LARGE BORE PIPING	8" HDPE (UNDERGROUND)	EST	800	LF		14.1	0	11,300	0.83	764	SPNG	94.41	72,100	83,400
	LARGE BORE PIPING	10" CS, SCH 40 WELDED	EST	300	LF		110.3	0	33,100	2.40	828	SPNG	94.41	78,200	111,300
	LARGE BORE PIPING	20" HDPE (UNDERGROUND)	EST	1,600	LF		72.8	0	116,500	1.45	2,668	SPNG	94.41	251,900	368,400
	SMALL BORE PIPING	2" CS, SCH 80 WELDED	EST	100	LF		22.20	0	2,200	1.26	145	SPNG	94.41	13,700	15,900
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	100	LF		48.80	0	4,900	1.44	166	SPNG	94.41	15,600	20,500
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	200	LF		33.70	0	6,700	1.32	304	SPNG	94.41	28,700	35,400
	VALVE	2" GLOBE, 150# SS, WELDED	EST	15	EA	1,450		21,800	0	5.64	97	SPNG	94.41	9,200	31,000
	VALVE	4" GATE, 150 #, CS, WELDED	EST	10	EA	2,500		25,000	0	7.70	89	SPNG	94.41	8,400	33,400
	VALVE	6" AIR OPERATED, 150 #, CS, FLANGED	EST	2	EA	14,000		28,000	0	17.30	40	SPNG	94.41	3,800	31,800
	VALVE	8" AIR OPERATED, 150 #, CS, FLANGED	EST	4	EA	17,000		68,000	0	19.30	89	SPNG	94.41	8,400	76,400
	EXCAVATION / BACKFILL	FOR UNDERGROUND PIPING	EST	2,000	CY			0	0	0.20	460	EXFD	90.00	41,400	41,400
	BEDDING	FOR UNDERGROUND PIPING	EST	267	CY		35.0	0	9,300	0.25	77	EXFD	90.00	6,900	16,200
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	170	EA		75.00	0	12,800	2.50	489	MECH	88.89	43,400	56,200
6.6	BYPRODUCT WASTE SILO	CONCRETE SILO 55' DIA X 111' H - 4700 TONS -SUBCONTRACT COST INCLUDES LABOR	EST	1	EA	1,800,000		1,800,000	0	0.00	0	CONP	79.64	0	1,800,000
6.7	SDA RECYCLE SILO	INCLUDED WITH OEM EQUIPMENT													

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6.8	FLY ASH SILO	NOT REQUIRED - ECONOMIZER FLY ASH SLUICED TO BOTTOM ASH POND						0	0					0	0
	SILO BIN	PIN MIXERS INCLUDED WITH FLY ASH HANDLING MECHANICAL EQUIPMENT	EST	0	EA	45,000		0	0	400.00	0	TANK	89.16	0	0
	SUPPORT STEEL FOR SILO	THREE-COAT SHOP PAINT	EST	0	TN		2,900.00	0	0	24.00	0	STST	105.71	0	0
6.9	BYPRODUCT WASTE SILO - FOUNDATIONS							0	132,100					247,800	379,900
	EXCAVATION / BACKFILL		EST	1,100	CY			0	0	0.36	455	EXFD	90.00	41,000	41,000
	REINFORCING		EST	52.0	TN		1,150.00	0	59,800	20.00	1,196	REIN	78.27	93,600	153,400
	FORMWORK		EST	1,100	SF		2.50	0	2,800	0.14	177	FORM	99.43	17,600	20,400
	CONCRETE		EST	560	CY		105.00	0	58,800	1.50	966	CONP	79.64	76,900	135,700
	MUD MAT		EST	35	CY		105.00	0	3,700	1.50	60	CONP	79.64	4,800	8,500
	EMBEDDED STEEL		EST	2,800	LB		2.50	0	7,000	0.06	193	CARP	71.88	13,900	20,900
6.10	FLY ASH SILO - FOUNDATIONS	NOT REQUIRED						0	0					0	0
	EXCAVATION / BACKFILL		EST	0	CY			0	0	0.36	0	EXFD	90.00	0	0
	REINFORCING		EST	0.0	TN		1,150.00	0	0	20.00	0	REIN	78.27	0	0
	FORMWORK		EST	0	SF		2.50	0	0	0.14	0	FORM	99.43	0	0
	CONCRETE		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	0	LB		2.50	0	0	0.06	0	CARP	71.88	0	0
6.11	FLY ASH BLOWER AND ELECTRICAL BUILDING - FOUNDATIONS	NOT REQUIRED						0	0					0	0
	EXCAVATION / BACKFILL		EST	0	CY			0	0	0.36	0	EXFD	90.00	0	0
	REINFORCING		EST	0	TN		1,150.00	0	0	20.00	0	REIN	78.27	0	0
	FORMWORK		EST	0	SF		2.50	0	0	0.14	0	FORM	99.43	0	0
	CONCRETE		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	0	LB		2.50	0	0	0.06	0	CARP	71.88	0	0
6.12	FLY ASH BLOWER AND ELECTRICAL BUILDING	NOT REQUIRED						0	0					0	0
	PREENGINEERED BUILDING INCLUDING H&V AND LIGHTING		EST	0	SF		85	0	0	0.00	0	STST	105.71	0	0
	ADDITONAL HVAC UNIT FOR ELECTRICAL ROOM & CONTROLS		EST	0	LT	28000	15000	0	0	0.00	0	HVAC	81.24	0	0
6.13	RECYCLE ASH BUILDING - FOUNDATIONS							0	234,300					393,800	628,100
	EXCAVATION / BACKFILL		EST	950	CY			0	0	0.36	393	EXFD	90.00	35,400	35,400
	REINFORCING		EST	90	TN		1,150.00	0	103,500	20.00	2,070	REIN	78.27	162,000	265,500
	FORMWORK		EST	1,320	SF		2.50	0	3,300	0.14	213	FORM	99.43	21,100	24,400
	CONCRETE		EST	1,000	CY		105.00	0	105,000	1.50	1,725	CONP	79.64	137,400	242,400
	MUD MAT		EST	95	CY		105.00	0	10,000	1.50	164	CONP	79.64	13,100	23,100
	EMBEDDED STEEL		EST	5,000	LB		2.50	0	12,500	0.06	345	CARP	71.88	24,800	37,300
6.14	RECYCLE ASH BUILDING	100' L X 65' W X 50' H						58,500	1,306,700					1,194,500	2,559,700
	STRUCTURAL STEEL		EST	180	TN		2650	0	477,000	16.00	3,312	STST	105.71	350,100	827,100
	INSULATED METAL SIDING		EST	16,500	SF		12	0	198,000	0.11	2,087	SDNG	93.41	195,000	393,000
	ROLLING OVERHEAD DOOR		EST	640	SF		27	0	17,300	0.25	184	CARP	71.88	13,200	30,500
	METAL ROOF DECKING		EST	6,500	SF		2.7	0	17,600	0.06	449	STST	105.71	47,400	65,000
	RIGID ROOF INSULATION		EST	6,500	SF		2.4	0	15,600	0.02	112	ROOF	69.12	7,800	23,400
	ROOFING (4-PLY TAR & GRAVEL)		EST	6,500	SF		1.55	0	10,100	0.04	299	ROOF	69.12	20,700	30,800
	LIGHTWEIGHT CONCRETE FILL 1"		EST	60	CY		100	0	6,000	1.30	90	ROOF	69.12	6,200	12,200
	ROOF FLASHING		EST	350	LF		14.45	0	5,100	0.12	48	ROOF	69.12	3,300	8,400
	ROOF DRAINS		EST	1	LT		25000	0	25,000	240.00	276	PLMB	79.42	21,900	46,900
	FLOOR DRAINS		EST	1	LT		30000	0	30,000	280.00	322	PLMB	79.42	25,600	55,600
	FLOOR SLABS	INCLUDES METAL DECKING AND FORMWORK	EST	60	CY		210	0	12,600	7.50	518	CONP	79.64	41,200	53,800

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	FLOOR FINISHES		EST	5,000	SF		2.5	0	12,500	0.05	288	CONP	79.64	22,900	35,400
	LOUVERS/WINDOWS/DOORS		EST	2,600	SF		40	0	104,000	0.35	1,047	CARP	71.88	75,200	179,200
	ROOF VENTILATORS		EST	4	EA		15000	0	60,000	24.00	110	HVAC	81.24	9,000	69,000
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	6,500	SF		45	0	292,500	0.40	2,990	GALL	84.61	253,000	545,500
	H&V		EST	1	LT	58500	23400	58,500	23,400	1092.00	1,256	HVAC	81.24	102,000	183,900
6.15	MCC	480V MCC PER LINE UP	EST	2	EA	30000		60,000	0	16.00	37	WIRE	98.84	3,600	63,600
6.16	EMERGENCY POWER SYSTEM							92,800	0					19,900	112,700
	UPS PANEL BOARDS		EST	1	EA	15500		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	SATELLITE UPS		EST	1	EA	41200		41,200	0	16.00	18	WIRE	98.84	1,800	43,000
	VRLA BATTERIES		EST	1	LT	36050		36,100	0	120.00	138	WIRE	98.84	13,600	49,700
6.17	LIGHTING/ TRANSFORMERS & PANELS							18,500	60,000					44,100	122,600
	LIGHT FIXTURES		EST	80	EA		750	0	60,000	4.00	368	WIRE	98.84	36,400	96,400
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	1	EA	10000		10,000	0	40.00	46	WIRE	98.84	4,500	14,500
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	1	EA	5000		5,000	0	16.00	18	WIRE	98.84	1,800	6,800
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	1	EA	3500		3,500	0	12.00	14	WIRE	98.84	1,400	4,900
6.18	RACEWAY, CABLE TRAY, & CONDUIT							0	32,500					189,100	221,600
	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	280	LF		27.10	0	7,600	1.75	564	WIRE	98.84	55700	63,300
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	280	LF		31.00	0	8,700	0.81	260	WIRE	98.84	25700	34,400
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,040	LF		4.44	0	4,600	0.24	286	WIRE	98.84	28300	32,900
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	3,600	LF		3.23	0	11,600	0.19	803	WIRE	98.84	79400	91,000
6.19	LOW VOLTAGE POWER CABLE & TERMINATION	#4/0 - #12 AWG-600V	EST	8,960	LF		7.22	0	64,700	0.08	814	WIRE	98.84	80500	145,200
6.20	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	EST	9,600	LF		3.20	0	30,700	0.08	872	WIRE	98.84	86,200	116,900
6.21	GROUNDING							0	4,500					10,900	15,400
	GROUND ROD	3/4" - 20' LONG EACH	EST	4	EA		150	0	600	4.00	18	WIRE	98.84	1,800	2,400
	500 MCM	BARE COPPER WIRE	EST	500	FT		7.65	0	3,800	0.12	69	WIRE	98.84	6,800	10,600
	CADWELD		EST	8	EA		15	0	100	2.00	18	WIRE	98.84	1,800	1,900
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	4.00	5	WIRE	98.84	500	500
6.22	DUCT BANK	DUCT BANK WITH 12-5" & 6-3" CONDUITS, 5.2' H X 2.08" W	EST	300	LF		371.60	0	111,500	7.02	2,422	ECND	75.97	184000	295,500
6.23	COMMUNICATIONS		EST	1	LT		34,000.00	0	34,000	229.00	263	WIRE	98.84	26,000	60,000
6.24	LIGHTNING PROTECTION		EST	1	LT		16,000.00	0	16,000	123.00	141	WIRE	98.84	14,000	30,000
6.25	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							4,659,600	2,275,900		55,779			4,953,800	11,889,300
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										830,323
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						4,850		83.48	405,000	405,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						6,063			425,323	425,323
	PER DIEM	NONE		0.00	HR						66,692			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				11,380					24,769	36,149
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				113,795						113,795
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			232,980							232,980
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				113,795					247,690	361,485

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Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				341,385					743,070	1,084,455
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							233,000	580,400					1,845,900	2,659,200
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS						4,892,600	2,856,300					6,799,700	14,548,500
7.0	SPRAY DRYER ABSORBER ISLAND														0
7.1	MECHANICAL EQUIPMENT	INCLUDES: ABSORBER MODULES AND ATOMIZERS WITH LUBE OIL, DUCT WORK FROM THE ABSORBERS TO THE FABRIC FILTER, AND COMPLETE RECYCLE SYSTEM WITH PIPING INSIDE FGD BUILDINGS.	EST	1	LT	39438000		39,438,000	0	236600	272,090	MECH	88.89	24,186,100	63,624,100
7.2	ELEVATOR	MAINTENANCE ELEVATOR - SUBCONTRACT COST INCLUDES LABOR	EST	1	EA	325,000.00		325,000	0	0.00	0	MECH	88.89	0	325,000
7.3	ABSORBER AREA SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES.		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
7.4	AGITATOR FOR SUMP PUMPS	5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
7.5	PIPING - MECHANICAL							142,800	36,900					227,900	407,600
	LARGE BORE PIPING	4" CS, SCHEDULE 40, WELDED	EST	300	LF		23.0	0	6,900	1.48	511	SPNG	94.41	48,200	55,100
	LARGE BORE PIPING	6" CS, SCH 40 WELDED	EST	100	LF		41.7	0	4,200	1.61	185	SPNG	94.41	17,500	21,700
	LARGE BORE PIPING	8" HDPE (UNDERGROUND)	EST	800	LF		14.1	0	11,300	0.83	764	SPNG	94.41	72,100	83,400
	SMALL BORE PIPING	2" CS, SCH 80 WELDED	EST	50	LF		22.20	0	1,100	1.26	72	SPNG	94.41	6,800	7,900
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	50	LF		48.80	0	2,400	1.44	83	SPNG	94.41	7,800	10,200
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	100	LF		33.70	0	3,400	1.32	152	SPNG	94.41	14,300	17,700
	VALVE	2" GLOBE, 150# SS, WELDED	EST	15	EA	1,450		21,800	0	5.64	97	SPNG	94.41	9,200	31,000
	VALVE	4" GATE, 150 #, CS, WELDED	EST	10	EA	2,500		25,000	0	7.70	89	SPNG	94.41	8,400	33,400
	VALVE	6" AIR OPERATED, 150 #, CS, FLANGED	EST	2	EA	14,000		28,000	0	17.30	40	SPNG	94.41	3,800	31,800
	VALVE	8" AIR OPERATED, 150 #, CS, FLANGED	EST	4	EA	17,000		68,000	0	19.30	89	SPNG	94.41	8,400	76,400
	EXCAVATION / BACKFILL	FOR UNDERGROUND PIPING	EST	667	CY			0	0	0.20	153	EXFD	90.00	13,800	13,800
	BEDDING	FOR UNDERGROUND PIPING	EST	89	CY		35.0	0	3,100	0.25	26	EXFD	90.00	2,300	5,400
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	60	EA		75.00	0	4,500	2.50	173	MECH	88.89	15,300	19,800
7.6	SDA SUPERSTRUCTURE							75,000	764,900					1,227,300	2,067,200
	PENTHOUSE FOR SDA'S	TOTAL SUPPORT STEEL AND PURLINS	EST	138	TN		2650.0	0	364,400	30.00	4,744	STST	105.71	501,500	865,900
	ROOFING FOR SDA PENTHOUSE	STANDING SEAM TYPE	EST	10,000	SF		18.00	0	180,000	0.22	2,530	ROOF	69.12	174,900	354,900
	SIDING		EST	13,000	SF		12.00	0	156,000	0.11	1,645	SDNG	93.41	153,600	309,600
	CONCRETE FLOOR FOR PENTHOUSE	INCLUDES DECKING AND FORMWORK	EST	150	CY		230.00	0	34,500	7.50	1,294	CONP	79.64	103,000	137,500
	H&V		EST	3	LT	25000	10000	75,000	30,000	1050.00	3,623	HVAC	81.24	294,300	399,300
7.7	SDA BOTTOM ENCLOSURE - SUPPORT STEEL, GIRTS AND SIDING	TOTAL FOR THREE ABSORBERS	EST	9,053	SF		40.00	0	362,100	0.35	3,644	STST	105.71	385,200	747,300
7.8	SDA SHELL / ROOF INSULATION	61,000 SF. SUBCONTRACT COST INCLUDES LABOR	EST	61,000	SF	30		1,830,000	0		0	DINS	81.75	0	1,830,000
7.9	SDA - SUPPORT STEEL & ACCESS GALLERY							0	711,000					1,884,100	2,595,100
	SUPPORT STEEL	MATERIAL INCLUDED WITH OEM EQUIPMENT	EST	435	TN			0	0	24.00	12,006	STST	105.71	1,269,200	1,269,200

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	ACCESS GALLERY		EST	15,800	SF		45.00	0	711,000	0.40	7,268	GALL	84.61	614,900	1,325,900
7.10	EXPANSION JOINTS		EST	850	LF		230.00	0	195,500	2.00	1,955	MECH	88.89	173,800	369,300
7.11	DUCTWORK							0	4,797,000					10,481,700	15,278,700
	SPRAY DRYER INLET	INCLUDES INTERNAL BRACING AND TURNING VANES	EST	1,476	TN		3,250.00	0	4,797,000	50.00	84,870	FLDU	107.96	9,162,600	13,959,600
	SPRAY DRYER OUTLET TO FABRIC FILTER INLET	INSTALLATION ONLY - MATERIAL INCLUDED WITH OEM EQUIPMENT	EST	213	TN			0	0	50.00	12,219	FLDU	107.96	1,319,100	1,319,100
7.12	DUCT SUPPORT STEEL	THREE COAT SHOP PAINT	EST	738	TN		2,900.00	0	2,140,200	24.00	20,369	STST	105.71	2,153,200	4,293,400
7.13	DUCTWORK INSULATION & LAGGING		EST	136,000	SF		12.00	0	1,632,000	0.25	39,100	DINS	81.75	3,196,400	4,828,400
7.14	CONCRETE PIT FOR ELEVATOR		EST	12	CY		230.00	0	2,800	7.50	104	CONP	79.64	8,200	11,000
7.15	SPRAY DRYER ABSORBER - FOUNDATIONS	TOTAL FOR THREE TOWERS						0	1,678,600					3,323,400	5,002,000
	EXCAVATION / BACKFILL		EST	16,000	CY			0	0	0.36	6,624	EXFD	90.00	596,200	596,200
	REINFORCING		EST	600	TN		1,150.00	0	690,000	20.00	13,800	REIN	78.27	1,080,100	1,770,100
	FORMWORK		EST	23,000	SF		2.50	0	57,500	0.14	3,703	FORM	99.43	368,200	425,700
	CONCRETE		EST	7,500	CY		105.00	0	787,500	1.50	12,938	CONP	79.64	1,030,300	1,817,800
	MUD MAT		EST	510	CY		105.00	0	53,600	1.50	880	CONP	79.64	70,100	123,700
	EMBEDDED STEEL		EST	36,000	LB		2.50	0	90,000	0.06	2,484	CARP	71.88	178,500	268,500
7.16	FOUNDATIONS FOR SUPPORT STEEL							0	69,000					143,000	212,000
	EXCAVATION / BACKFILL		EST	784	CY			0	0	0.36	324	EXFD	90.00	29,200	29,200
	REINFORCING		EST	23	TN		1,150.00	0	26,100	20.00	522	REIN	78.27	40,900	67,000
	FORMWORK		EST	1,125	SF		2.50	0	2,800	0.14	181	FORM	99.43	18,000	20,800
	CONCRETE		EST	303	CY		105.00	0	31,800	1.50	522	CONP	79.64	41,600	73,400
	MUD MAT		EST	43	CY		105.00	0	4,500	1.50	73	CONP	79.64	5,800	10,300
	EMBEDDED STEEL		EST	1,513	LB		2.50	0	3,800	0.06	104	CARP	71.88	7,500	11,300
7.17	GROUNDING							0	16,000		0			46,100	62,100
	GROUND ROD	3/4" - 20' LONG	EST	16	EA		150	0	2,400	4.00	74	WIRE	98.84	7,300	9,700
	500 MCM	BARE COPPER WIRE	EST	1,650	FT		7.65	0	12,600	0.12	228	WIRE	98.84	22,500	35,100
	CADWELD		EST	64	EA		15	0	1,000	2.00	147	WIRE	98.84	14,500	15,500
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	16.00	18	WIRE	98.84	1,800	1,800
7.18	LIGHTING/ TRANSFORMERS & PANELS							156,000	150,000		0			159,100	465,100
	LIGHT FIXTURES		EST	200	EA		750	0	150,000	4.00	920	WIRE	98.84	90,900	240,900
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	6	EA	10000		60,000	0	40.00	276	WIRE	98.84	27,300	87,300
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	6	EA	7500		45,000	0	32.00	221	WIRE	98.84	21,800	66,800
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	6	EA	5000		30,000	0	16.00	110	WIRE	98.84	10,900	40,900
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	6	EA	3500		21,000	0	12.00	83	WIRE	98.84	8,200	29,200
7.19	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE INCLUDED IN SECTION 1.0 - ID FANS													
7.20	COMMUNICATIONS		EST	1	LT		17,000.00	0	17,000	114.00	131	WIRE	98.84	13,000	30,000
7.21	LIGHTNING PROTECTION		EST	1	LT		25,500.00	0	25,500	163.00	187	WIRE	98.84	18,500	44,000
7.22	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							42,006,800	12,606,500		514,702			47,650,900	102,264,200
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE	2 CRANES		9	MN	90,000.00		810,000	0	1440.00	14,904	MECH	88.89	1,523,520	2,333,520
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										7,765,230

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	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						44,757		83.48	3,736,000	3,736,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						57,436			4,029,230	4,029,230
	PER DIEM	NONE		0.00	HR						631,800			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				63,033					238,255	301,287
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				630,325						630,325
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			2,100,340							2,100,340
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				630,325					2,382,545	3,012,870
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				1,890,975					7,147,635	9,038,610
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							2,910,300	3,214,700					19,057,200	25,182,200
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SPRAY DRYER ABSORBER ISLAND						44,917,100	15,821,200					66,708,100	127,446,400
8.0	ACTIVATED CARBON INJECTION SYSTEM														0
9.0	COMPRESSED AIR SYSTEM														0
10.0	SERVICE WATER SYSTEM														
11.0	POTABLE WATER SYSTEM														
12.0	FGD SUBSTATION														
12.1	TRANSFORMERS							1,670,000	0					282,200	1,952,200
	FGD SUBSTATION-AUX TRANSFORMERS: 11A & 11B	138KV-13.8KV- 2 WINDING XFMR	EST	2	EA	750000		1,500,000	0	1250.00	2,875	EHEA	79.16	227,600	1,727,600
	TRANSFORMERS: 32F, 32G	13.8KV-480V,3PHASE, 2 WINDING CAST COIL	EST	2	EA	85000		170,000	0	300.00	690	EHEA	79.16	54,600	224,600
12.2	TRANSFORMER PDC	15W X 45' X 10'H. SUBCONTRACT PRICE INCLUDES LABOR	EST	675.0	SF	300.0		202500.0	0.0	0.0	0.0	STST	105.71	0.0	202500.0
12.3	TRANSFORMER PDC - FOUNDATION							0	73,200					146,900	220,100
	EXCAVATION / BACKFILL		EST	700	CY			0	0	0.36	290	EXFD	90.00	26,100	26,100
	REINFORCING		EST	26	TN		1,150.00	0	30,200	20.00	604	REIN	78.27	47,300	77,500
	FORMWORK		EST	1,100	SF		2.50	0	2,800	0.14	177	FORM	99.43	17,600	20,400
	CONCRETE		EST	300	CY		105.00	0	31,500	1.50	518	CONP	79.64	41,200	72,700
	MUD MAT		EST	35	CY		105.00	0	3,700	1.50	60	CONP	79.64	4,800	8,500
	EMBEDDED STEEL		EST	2,000	LB		2.50	0	5,000	0.06	138	CARP	71.88	9,900	14,900
12.4	138KV MAIN FEEDER & TERMINATIONS							264,000	0					254,000	518,000
	138KV STRUCTURE AND SWITCH	STRUCTURE STEEL	EST	1	LT	103500		103,500	0	450.00	518	STST	105.71	54,700	158,200
	138KV MAIN FEEDER	1/C 750KCMIL- 138KV	EST	2,100	LF	51.75		108,700	0	0.69	1,671	WIRE	98.84	165,200	273,900
	138KV ACCESSORIES		EST	1	LT	51750		51,800	0	300.00	345	WIRE	98.84	34,100	85,900
12.5	SWITCHGEAR							994,200	0					121,600	1,115,800
	13.8 KV MEDIUM VOLTAGE (11A/B)	PRICE PER SECTION	EST	8	EA	85000		680,000	0	40.00	368	EHEA	79.16	29,100	709,100
	480V LOW VOLTAGE (32F/G)	PRICE PER SECTION	EST	5	EA	38000		190,000	0	16.00	92	EHEA	79.16	7,300	197,300
	EXISTING SCR SWITCHGEAR MODIFICATION	TURNKEY INCLUDING INSTALLATION & MATERIAL (EATON QUOTE 7/16/10)	Q	1	LT	124,200		124,200	0	750.00	863	WIRE	98.84	85,200	209,400
12.6	MCC	480V MCC, PER LINE UP	EST	2	EA	30000		60,000	0	16.00	37	WIRE	98.84	3,600	63,600
12.7	CABLE BUS							181,100	18,000					290,200	489,300
	15KV CABLE BUS DUCT	BUS DUCT ONLY	EST	200	FT	442		88,400	0	3.30	759	WIRE	98.84	75,000	163,400
	480V CABLE BUS DUCT	BUS DUCT ONLY	EST	150	FT	618		92,700	0	10.30	1,777	WIRE	98.84	175,600	268,300
	CABLE BUS TERMINATION	500MCM - 15KV TERMINATIONS	EST	4	EA		1,800.00	0	7,200	33.00	152	WIRE	98.84	15,000	22,200
	CABLE BUS TERMINATION	750MCM- 480V TERMINATIONS	EST	4	EA		2,700.00	0	10,800	54.00	248	WIRE	98.84	24,600	35,400

AEP
BIG SANDY UNIT 2
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12.8	PANELS - RELAY							100,000	0					9,100	109,100
	RELAY PANELS & INTERLOCK	ALLOWANCE	EST	1	LT	100000		100,000	0	80.00	92	WIRE	98.84	9,100	109,100
12.9	MIMIC PANELS		EST	1	EA	17500		17,500	0	40.00	46	WIRE	98.84	4,500	22,000
12.10	EMERGENCY POWER SYSTEM							108,300	0					24,400	132,700
	DC PANEL BOADRD		EST	1	EA	15500		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	UPS PANEL BOARDS		EST	1	EA	15500		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	SATELLITE UPS		EST	1	EA	41200		41,200	0	16.00	18	WIRE	98.84	1,800	43,000
	VRLA BATTERIES	8HR-400A, 480V	EST	1	LT	36050		36,100	0	120.00	138	WIRE	98.84	13,600	49,700
12.11	GROUNDING							23,300	0					59,100	82,400
	GROUND ROD	3/4" - 20' LONG EACH	EST	16	EA	150		2,400	0	4.00	74	WIRE	98.84	7,300	9,700
	500 MCM	BARE COPPER WIRE	EST	2,600	FT	7.65		19,900	0	0.12	359	WIRE	98.84	35,500	55,400
	CADWELD		EST	64	EA	15		1,000	0	2.00	147	WIRE	98.84	14,500	15,500
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	16.00	18	WIRE	98.84	1,800	1,800
12.12	LIGHTING/ TRANSFORMERS & PANELS							26,000	30,000					29,500	85,500
	LIGHT FIXTURES		EST	40	EA		750	0	30,000	4.00	184	WIRE	98.84	18,200	48,200
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	1	EA	10000		10,000	0	40.00	46	WIRE	98.84	4,500	14,500
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	1	EA	7500		7,500	0	32.00	37	WIRE	98.84	3,600	11,100
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	1	EA	5000		5,000	0	16.00	18	WIRE	98.84	1,800	6,800
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	1	EA	3500		3,500	0	12.00	14	WIRE	98.84	1,400	4,900
12.13	OUTDOOR LIGHTING	NEW AUX YARD LIGHTING - ALLOWANCE	EST	1	LT	25000		25,000	0	500.00	575	WIRE	98.84	56,800	81,800
12.14	RACEWAY, CABLE TRAY, & CONDUIT							0	390,600					1,918,600	2,309,200
	12" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,250	LF		18.25	0	22,800	1.10	1,581	WIRE	98.84	156,300	179,100
	18" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	750	LF		21.50	0	16,100	1.45	1,251	WIRE	98.84	123,600	139,700
	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	2,200	LF		27.10	0	59,600	1.75	4,428	WIRE	98.84	437,600	497,200
	36" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	600	LF		30.30	0	18,200	1.95	1,346	WIRE	98.84	133,000	151,200
	5" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,000	LF		61.00	0	61,000	1.13	1,296	WIRE	98.84	128,100	189,100
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,800	LF		31.00	0	55,800	0.81	1,670	WIRE	98.84	165,100	220,900
	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	2,000	LF		21.50	0	43,000	0.65	1,484	WIRE	98.84	146,600	189,600
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	3,000	LF		9.25	0	27,800	0.35	1,214	WIRE	98.84	120,000	147,800
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	3,700	LF		7.15	0	26,500	0.28	1,208	WIRE	98.84	119,400	145,900
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	6,200	LF		4.44	0	27,500	0.24	1,704	WIRE	98.84	168,400	195,900
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	10,000	LF		3.23	0	32,300	0.19	2,231	WIRE	98.84	220,500	252,800
12.15	DUCT BANK							0	26,200	0.05	0			54,300	80,500
	UNDERGROUND SURVEY FOR NEW DUCT BANK RUN	MAIN FEEDER BETWEEN EXISTING SCR SUBSTATION TO FGD AUX XFMR	EST	200	LF			0	0	0.80	184	ECND	75.97	14,000	14,000
	4' X 4' DUCT BANK (138KV SCR TO FGD AUX XFMR SUBSTATION)	6 - 6" PVC	EST	40	LF		375	0	15,000	6.25	288	ECND	75.97	21,800	36,800
	DUCT BANK WITH 6-5" & 4-3" CONDUITS	2.38' H X 4' W	EST	50	LF		223.02	0	11,200	4.24	244	ECND	75.97	18,500	29,700
12.16	HIGH VOLTAGE POWER CABLE & TERMINATION	1/C # 500KCMIL-15KV	EST	3,000	LF		9.27	0	27,800	0.23	794	WIRE	98.84	78400	106,200
12.17	LOW VOLTAGE POWER CABLE & TERMINATION							0	263,700		0			649,600	913,300
	3/C # 500KCMIL- 600V		EST	7,000	LF		26.12	0	182,800	0.69	5,555	WIRE	98.84	549000	731,800
	#4/0 - #12 AWG-600V		EST	11,200	LF		7.22	0	80,900	0.08	1,018	WIRE	98.84	100,600	181,500
12.18	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	EST	6,800	LF		3.20	0	21,800	0.08	618	WIRE	98.84	61,100	82,900
12.19	FOUNDATION FOR AUX TRANSFORMER							0	70,200					205,400	275,600
	EXCAVATION / BACKFILL		EST	1,000	CY			0	0	0.36	414	EXFD	90.00	37,300	37,300
	REINFORCING		EST	20.0	TN		1,150.00	0	23,000	20.00	460	REIN	78.27	36,000	59,000
	FORMWORK		EST	5,000	SF		2.50	0	12,500	0.14	805	FORM	99.43	80,000	92,500
	CONCRETE		EST	190	CY		105.00	0	20,000	1.50	328	CONP	79.64	26,100	46,100
	MUD MAT		EST	45	CY		105.00	0	4,700	1.50	78	CONP	79.64	6,200	10,900
	EMBEDDED STEEL		EST	4,000	LB		2.50	0	10,000	0.06	276	CARP	71.88	19,800	29,800

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12.20	FIREWALL FOR TRANSFORMERS							0	3,000					5,200	8,200
	REINFORCING		EST	1.0	TN		1,150.00	0	1,200	20.00	23	REIN	78.27	1,800	3,000
	FORMWORK		EST	80	SF		2.50	0	200	0.14	13	FORM	99.43	1,300	1,500
	CONCRETE		EST	15	CY		105.00	0	1,600	1.50	26	CONP	79.64	2,100	3,700
12.21	COMMUNICATIONS		EST	1	LT		17,000.00	0	17,000	114.00	131	WIRE	98.84	13,000	30,000
12.22	LIGHTNING PROTECTION		EST	1	LT		4,000.00	0	4,000	18.00	21	WIRE	98.84	2,000	6,000
12.23	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							3,671,900	953,500		44,795			4,276,500	8,901,900
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										666,572
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						3,895		83.48	325,000	325,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						4,869			341,572	341,572
	PER DIEM	NONE		0.00	HR						53,560			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				4,768					21,383	26,150
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				47,675						47,675
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			183,595							183,595
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				47,675					213,825	261,500
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				143,025					641,475	784,500
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							183,600	243,100					1,543,254	1,970,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FGD SUBSTATION						3,855,500	1,196,600					5,819,800	10,871,900
13.0	FGD DCS SYSTEM														0
14.0	CEM SYSTEM														0
15.0	TRUCK & RAIL INFRASTRUCTURE														0
16.0	SITE IMPROVEMENTS - CIVIL WORK														
16.1	SITE GRADING							0	0					627,000	627,000
	CUT		EST	19,200	CY			0	0	0.08	1,766	ETWK	177.49	313,500	313,500
	FILL		EST	19,200	CY			0	0	0.08	1,766	ETWK	177.49	313,500	313,500
16.2	ROADS & SURFACING							0	996,600					1,358,800	2,355,400
	20' WIDE ACCESS ROAD	INCLUDES: 1.5" ASPHALT SURFACE COURSE 1.5" ASPHALT BINDER COURSE 12" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST	4,100	SY		47	0	192,700	0.40	1,886	PBIT	90.25	170,200	362,900
	24' WIDE ACCESS ROAD	INCLUDES: 1.5" ASPHALT SURFACE COURSE 1.5" ASPHALT BINDER COURSE 12" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST	7,100	SY		47	0	333,700	0.40	3,266	PBIT	90.25	294,800	628,500
	24' WIDE ACCESS ROAD AGGREGATE SHOULDERS	INCLUDES: 12" BASE COURSE 10 OZ/SY GEOTEXTILE	EST	1,800	SY		17.5	0	31,500	0.10	207	BCSE	105.94	21,900	53,400

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	LIME UNLOADING AREA	INCLUDES: 1.5" ASPHALT SURFACE COURSE 1.5" ASPHALT BINDER COURSE 12" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST	1,300	SY		47	0	61,100	0.40	598	PBIT	90.25	54,000	115,100
	ASH LOADING AREA - SURFACING	12" REINFORCED CONCRETE	EST	750	SY		96	0	72,000	1.60	1,380	CONP	79.64	109,900	181,900
	ASH LOADING AREA	6" CONCRETE CURB	EST	330	LF		6.5	0	2,100	0.96	364	COND	70.04	25,500	27,600
	CONCRETE PAD BUILDING ENTRANCES	10" REINFORCED CONCRETE	EST	340	SY		80	0	27,200	1.50	587	CONP	79.64	46,700	73,900
	AGGREGATE AREA SURFACING	INCLUDES: 6" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST	30,700	SY		9	0	276,300	0.17	6,002	BCSE	105.94	635,800	912,100
16.3	RAILROAD CROSSING	50' WIDE CROSSING THREE TRACKS - CUSTOM BUILT	EST	1	EA		120000	0	120,000	1500.00	1,725	RRTK	78.27	135,000	255,000
16.4	NEW CONCRETE ENCASEMENT	16' X 4' X 40' - FOR EXISTING ASH PIPE HAUL ROAD CROSSING						0	144,300					286,600	430,900
	EXCAVATION / BACKFILL		EST	1,100	CY			0	0	0.36	455	EXFD	90.00	41,000	41,000
	REINFORCING		EST	100.0	TN		1,150.00	0	115,000	20.00	2,300	REIN	78.27	180,000	295,000
	FORMWORK		EST	2,000	SF		2.50	0	5,000	0.14	322	FORM	99.43	32,000	37,000
	CONCRETE		EST	200	CY		105.00	0	21,000	1.50	345	CONP	79.64	27,500	48,500
	MUD MAT		EST	8	CY		105.00	0	800	1.50	14	CONP	79.64	1,100	1,900
	EMBEDDED STEEL		EST	1,000	LB		2.50	0	2,500	0.06	69	CARP	71.88	5,000	7,500
16.5	TRUCK WASH AREA - CONCRETE PAD							0	47,300					83,100	130,400
	EXCAVATION / BACKFILL		EST	190	CY			0	0	0.36	79	EXFD	90.00	7,100	7,100
	REINFORCING		EST	20	TN		1,150.00	0	23,000	20.00	460	REIN	78.27	36,000	59,000
	FORMWORK		EST	510	SF		2.50	0	1,300	0.14	82	FORM	99.43	8,200	9,500
	CONCRETE		EST	170	CY		105.00	0	17,900	1.50	293	CONP	79.64	23,400	41,300
	MUD MAT		EST	25	CY		105.00	0	2,600	1.50	43	CONP	79.64	3,400	6,000
	EMBEDDED STEEL		EST	1,000	LB		2.50	0	2,500	0.06	69	CARP	71.88	5,000	7,500
16.6	TRUCK SCALE & CONCRETE APPROACH							170,000	27,300					92,000	289,300
	TRUCK SCALE	SUBCONTRACT COST, INCLUDES FOUNDATIONS AND LABOR	EST	2	EA	85000		170,000	0	0.00	0	MECH	88.89	0	170,000
	CONCRETE APPROACH FOR TRUCK SCALE	20' x 40' - TOTAL FOR TWO SCALES	EST	119	CY		230.0	0	27,300	7.50	1,022	EXFD	90.00	92,000	119,300
16.7	PROCESS WATER STORAGE BASIN							60,000	110,400					312,600	483,000
	SAND EXCAVATION		EST	4,000	CY			0	0	0.03	120	ETWK	177.49	21,200	21,200
	ROCK EXCAVATION	ASSUME ROCK IS RIPPABLE	EST	500	CY			0	0	0.05	28	ETWK	177.49	4,900	4,900
	BASIN SURFACING	6" REINFORCED CONCRETE	EST	2,300	SY		48	0	110,400	1.20	3,174	CONP	79.64	252,800	363,200
	PUMPS	500 GPM, 75 PSIG	EST	2	EA	30000		60,000	0	165.00	380	MECH	88.89	33,700	93,700
16.8	PROCESS WATER STORAGE BASIN PUMP STRUCTURE - CONCRETE							0	47,000					105,400	152,400
	EXCAVATION / BACKFILL		EST	0	CY			0	0	0.36	0	EXFD	90.00	0	0
	REINFORCING		EST	7	TN		1,150.00	0	8,100	20.00	161	REIN	78.27	12,600	20,700
	FORMWORK		EST	3,968	SF		2.50	0	9,900	0.14	639	FORM	99.43	63,500	73,400
	CONCRETE		EST	76	CY		105.00	0	8,000	1.50	131	CONP	79.64	10,400	18,400
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	380	LB		2.50	0	1,000	0.06	26	CARP	71.88	1,900	2,900
	PROCESS WATER STORAGE BASIN PUMP STRUCTURE - GALLERY		EST	5	TN		4,000.00	0	20,000	35.00	201	GALL	84.61	17,000	37,000
16.9	STORMWATER DRAINAGE TRENCH	2' W X 3' DEEP CAST-IN-PLACE CONCRETE TRENCH W/REINFORCING & HS-20 RATED GRATE COVERS	EST	3,200	LF		135	0	432,000	1.50	5,520	CONP	79.64	439,600	871,600
16.10	STORMWATER RUNOFF POND							0	15,000					122,600	137,600

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	SAND EXCAVATION		EST	11,000	CY			0	0	0.03	329	ETWK	177.49	58,400	58,400
	ROCK EXCAVATION	ASSUME ROCK IS RIPPABLE	EST	3,700	CY			0	0	0.05	204	ETWK	177.49	36,300	36,300
	4" TOPSOIL		EST	650	CY		14	0	9,100	0.03	22	LAND	61.45	1,400	10,500
	GRASS SEEDING, FERTILIZER AND MULCH		EST	1.2	AC		4930	0	5,900	240.00	331	MSTR	80.04	26,500	32,400
16.11	STORM WATER POND PUMP STRUCTURE - CONCRETE							90,000	42,300					182,200	314,500
	EXCAVATION / BACKFILL		EST	0	CY			0	0	0.36	0	EXFD	90.00	0	0
	REINFORCING		EST	3	TN		1,150.00	0	3,500	20.00	69	REIN	78.27	5,400	8,900
	FORMWORK		EST	2,025	SF		2.50	0	5,100	0.14	326	FORM	99.43	32,400	37,500
	CONCRETE		EST	33	CY		105.00	0	3,500	1.50	57	CONP	79.64	4,500	8,000
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	165	LB		2.50	0	400	0.06	11	CARP	71.88	800	1,200
	STORM WATER POND PUMP STRUCTURE - GALLERY		EST	5	TN		4,000.00	0	20,000	35.00	201	GALL	84.61	17,000	37,000
	PUMPS	500 GPM, 75 PSIG	EST	3	EA	30000		90,000	0	165.00	569	MECH	88.89	50,600	140,600
	PIPING	6" HDPE, SDR 9	EST	1,000	LF		9.8	0	9,800	0.69	794	YDPP	90.14	71,500	81,300
16.12	OILY WATER SEWER							4,500	96,600					210,000	311,100
	PIPING	6" CISP	EST	1,150	LF		21.5	0	24,700	0.33	436	YDPP	90.14	39,300	64,000
	PIPING	8" CISP	EST	1,150	LF		33.5	0	38,500	0.54	714	YDPP	90.14	64,400	102,900
	PIPING	6" HDPE, SDR 9	EST	1,000	LF		9.8	0	9,800	0.69	794	YDPP	90.14	71,500	81,300
	POST INDICATOR VALVE		EST	6	EA	750		4,500	0	6.00	41	YDPP	90.14	3,700	8,200
	MANHOLES		EST	15	EA		1575.0	0	23,600	20.00	345	YDPP	90.14	31,100	54,700
16.13	OIL SEPARATOR	500 GPM W/ INTEGRAL LIFT STATION	EST	2	EA	50000		100,000	0	560.00	1,288	YDPP	90.14	116,100	216,100
16.14	SANITARY SEWER							0	22,200					96,900	119,100
	PIPING	6" CISP	EST	500	LF		21.5	0	10,800	0.33	190	YDPP	90.14	17,100	27,900
	MANHOLES		EST	4	EA		1575.0	0	6,300	20.00	92	YDPP	90.14	8,300	14,600
	PIPING	4" HDPE (UNDERGROUND)	EST	1,500	LF		3.4	0	5,100	0.46	794	YDPP	90.14	71,500	76,600
16.15	SANITARY LIFT STATION	PACKAGED TYPE COMPLETE WITH PUMPS 100,000 GPD	EST	1	EA	150,000		150,000	0	475.00	546	YDPP	90.14	49,200	199,200
16.16	CONSTRUCTION LAYDOWN AREA - (TO BE USED FOR PHASE I AND PHASE II)	ALLOWANCE FOR 10 ACRES, DOES NOT INCLUDE LAND ACQUISITION, IF REQUIRED	EST	10	AC		70,000.0	0	700,000	800.00	9,200	EXFD	90.00	828,000	1,528,000
16.17	CRAFT PARKING (TO BE USED FOR PHASE I AND PHASE II)	DOES NOT INCLUDE LAND ACQUISITION, IF REQUIRED. ALLOWANCE FOR 20,000 SY INCLUDES: 6" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST	20,000	SY		9	0	180,000	0.17	3,910	BCSE	105.94	414,200	594,200
16.18	CONTRACTOR OFFICES (AREA) - (TO BE USED FOR PHASE I AND PHASE II)	DOES NOT INCLUDE LAND ACQUISITION, IF REQUIRED. ALLOWANCE FOR 5,000 SY AREA (TRAILERS BY CONTRACTORS) INCLUDES: 6" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST	5,000	SY		9	0	45,000	0.17	978	BCSE	105.94	103,600	148,600
16.19	NEW PERMANENT STORAGE	INCLUDES LIGHTING AND H&V. SUBCONTRACT PRICE INCLUDES ELECTRICAL AND H&V		30,000	SF	85		2,550,000	0		0	STST	105.71	0	2,550,000
16.20	FOUNDATIONS FOR THE NEW WAREHOUSE							0	803,800					1,301,600	2,105,400
	EXCAVATION / BACKFILL		EST	2,600	CY			0	0	0.36	1,076	EXFD	90.00	96,900	96,900
	REINFORCING		EST	320	TN		1,150.00	0	368,000	20.00	7,360	REIN	78.27	576,100	944,100
	FORMWORK		EST	2,400	SF		2.50	0	6,000	0.14	386	FORM	99.43	38,400	44,400
	CONCRETE		EST	3,300	CY		105.00	0	346,500	1.50	5,693	CONP	79.64	453,400	799,900
	MUD MAT		EST	400	CY		105.00	0	42,000	1.50	690	CONP	79.64	55,000	97,000

AEP
BIG SANDY UNIT 2
FGD PROJECT - IAQCS (N/ESP)-2B - 1.7 LB/MM BTU - PHASED
ORDER OF MAGNITUDE COST ESTIMATE

Estimate No.: 30718C
Project No.: 12721-000
Date: 9/29/2010
Preparer: MNO
Reviewer: JMK
Approver: PEF

Cost Type:
Est=Estimated
Allow.=Allowance
Q=Vendor Quote

Wage Rates Based on: BIG SANDY
Labor Productivity = 1.15

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	EMBEDDED STEEL		EST	16,500	LB		2.50	0	41,300	0.06	1,139	CARP	71.88	81,800	123,100
16.21	NEW TEMPORARY STORAGE	WEATHER TIGHT CANVAS ENCLOSURE. INCLUDES LIGHTING AND H&V. SUBCONTRACT PRICE INCLUDES ELECTRICAL AND H&V		10,000	SF	45		450,000	0		0	STST	105.71	0	450,000
16.22	FOUNDATIONS FOR TEMPORARY STORAGE							0	99,500					157,200	256,700
	EXCAVATION / BACKFILL		EST	230	CY			0	0	0.36	95	EXFD	90.00	8,600	8,600
	REINFORCING		EST	35	TN		1,150.00	0	40,300	20.00	805	REIN	78.27	63,000	103,300
	FORMWORK		EST	400	SF		2.50	0	1,000	0.14	64	FORM	99.43	6,400	7,400
	CONCRETE		EST	370	CY		105.00	0	38,900	1.50	638	CONP	79.64	50,800	89,700
	MUD MAT		EST	140	CY		105.00	0	14,700	1.50	242	CONP	79.64	19,200	33,900
	EMBEDDED STEEL		EST	1,850	LB		2.50	0	4,600	0.06	128	CARP	71.88	9,200	13,800
16.23	LABOR BUS SERVICE FROM PARKING LOT TO CONSTRUCTION AREA AND ACCESS CONTROL	ALLOWANCE FOR 36 MONTHS BASED ON 2 BUSES OPERATING CONTINUOUSLY FOR 5X10 WORKWEEK. SUBCONTRACT COST INCLUDES EQUIPMENT, MATERIAL AND LABOR	ALLOW	36	MN	38000		1,368,000	0					0	1,368,000
16.24	EROSION & SEDIMENT CONTROL							0	12,600					20,700	33,300
	SILT FENCE		EST	2,600	LF		1.0	0	2,600	0.02	60	LAND	61.45	3,700	6,300
	ROCK CHECK DAMS		EST	20	EA		500.0	0	10,000	12.00	276	LAND	61.45	17,000	27,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							4,942,500	3,941,900		76,373			7,042,400	15,926,800
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										1,136,357
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						6,641		83.48	554,000	554,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						8,301			582,357	582,357
	PER DIEM	NONE		0.00	HR						91,316			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				19,710					35,212	54,922
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				197,095						197,095
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			247,125							247,125
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				197,095					352,120	549,215
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				591,285					1,056,360	1,647,645
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							247,100	1,005,200					2,580,000	3,832,400
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SITE IMPROVEMENTS - CIVIL WORK						5,189,600	4,947,100					9,622,400	19,759,200
17.0	BOP ITEMS														0
18.0	CAPITAL REPLACEMENTS - REMOVAL AND RELOCATION OF EXISTING EQUIPMENT AND INFRASTRUCTURE														0
19.0	ARSENIC, ASBESTOS , LEAD ABATEMENT														0
99.00	PHASE I - OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS							110,424,300	50,637,300		1,518,881			140,651,500	333,838,100
	PHASE I - OVERALL OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														

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Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	ADDITIONAL CRANE ALLOWANCE							810,000	0		14,904			1,523,520	2,333,520
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										22,710,230
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						132,077		92.60	11,024,000	11,024,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						166,586			11,686,230	11,686,230
	PER DIEM	NONE		0.00	HR									0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				250,487					701,708	952,194
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				2,504,865						2,504,865
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			5,458,215							5,458,215
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				2,504,865					7,017,075	9,521,940
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				7,595,595					21,051,225	33,716,820
	PHASE I - OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							6,268,200	12,855,800					53,003,800	77,197,800
	PHASE I - OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST	DRY FGD						116,692,500	63,493,100					193,655,300	411,035,900
	TOTAL PHASE I DIRECT AND CONSTRUCTION INDIRECT COSTS							116,692,500	63,493,100					193,655,300	411,035,900
								0	0					0	0
	INDIRECT COSTS - PHASE I														
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES			1.0	LT										28,000,000
	CONSTRUCTION MANAGEMENT			3.0	%										12,331,100
	S-U / COMMISSIONING			1.0											4,110,400
	CRAFT START-UP SUPPORT	1% OF TOTAL LABOR MANHOURS (INCLUDES OVERTIME INEFFICIENCY & COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - BASED ON ASSUMED 5X10 WORKWEEK)		1.0	%						16,510		92.60	1,657,300	1,657,300
	INITIAL FILLS			0.3	%										1,233,100
	OPERATOR & TRAINING MANUALS			1.0	LT										300,000
	SUBCONTRACTORS (NOISE & DUCTWORK CONSULTANT, GEOTECHNICAL INVESTIGATION)			1.0	LT										400,000
	SUBTOTAL - INDIRECT COSTS														48,031,900
	TOTAL PHASE I DIRECT AND INDIRECT COSTS														459,067,800
	SPARE PARTS - PHASE I			1.5	%			1,750,400							1,750,400
	SPARE PARTS - CAPITALIZED			0.90	%			1,050,240							1,050,240
	SPARE PARTS - FIRST YEAR OF OPERATION			0.60	%			700,160							700,160
	CONTINGENCY - PHASE I			14.4	%										66,458,800
	ESCALATION - PHASE I														58,150,200
	EQUIPMENT	4.0%/yr		4.0	%			18,582,200							18,582,200
	MATERIAL	2.0%/yr		2.0	%				7,119,600						7,119,600
	LABOR	2.5%/yr		2.5	%									26,800,200	26,800,200
	INDIRECTS	2.5%/yr		2.5	%									5,648,200	5,648,200
	PHASE I - TOTAL PROJECT COST														585,427,200
	PHASE II - WET FGD														

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20.0	LIMESTONE HANDLING SYSTEM														0
21.0	REAGENT (LIMESTONE) PREPARATION ISLAND														0
21.1	MECHANICAL EQUIPMENT	INCLUDES LIMESTONE FEEDERS, FROM THE DAY SILOS THROUGH THE SLURRY STORAGE TANKS AND TRANSFER PUMPS WITH INTEGRAL PIPING	EST	1	LT	11,425,000		11,425,000	0	101240.00	116,426	MECH	88.89	10,349,100	21,774,100
21.2	SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
21.3	AGITATOR FOR SUMP PUMPS	5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
21.4	PIPING - MECHANICAL		EST	1	LT			278,900	205,000					587,300	1,071,200
	LARGE BORE PIPING	4.0" CS, SCH 40 WELDED	EST	500	LF		23.00	0	11,500	1.48	851	SPNG	94.41	80,300	91,800
	LARGE BORE PIPING	6" FRP	EST	2,000	LF		33.90	0	67,800	0.67	1,541	SPNG	94.41	145,500	213,300
	LARGE BORE PIPING	8" FRP	EST	1,000	LF		51.30	0	51,300	0.95	1,093	SPNG	94.41	103,100	154,400
	LARGE BORE PIPING	10" FRP	EST	300	LF		68.00	0	20,400	1.18	407	SPNG	94.41	38,400	58,800
	LARGE BORE PIPING	12" FRP	EST	250	LF		80.90	0	20,200	1.41	405	SPNG	94.41	38,300	58,500
	VALVE	6" BFLY, 150 #, CS, FLANGED	EST	6	EA	850		5,100	0	8.70	60	SPNG	94.41	5,700	10,800
	VALVE	8" BFLY, 150 #, CS, FLANGED	EST	12	EA	1,400		16,800	0	9.10	126	SPNG	94.41	11,900	28,700
	VALVE	10" BFLY, 150 #, CS, FLANGED	EST	10	EA	2,300		23,000	0	13.80	159	SPNG	94.41	15,000	38,000
	VALVE	12" BFLY, 150 #, CS, FLANGED	EST	3	EA	3,000		9,000	0	14.60	50	SPNG	94.41	4,800	13,800
	VALVE	6" AIR OPERATED, 150 #, CS, FLANGED	EST	10	EA	14,000		140,000	0	17.30	199	SPNG	94.41	18,800	158,800
	VALVE	8" AIR OPERATED, 150 #, CS, FLANGED	EST	5	EA	17,000		85,000	0	19.30	111	SPNG	94.41	10,500	95,500
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	450	EA		75.00	0	33,800	2.50	1,294	MECH	88.89	115,000	148,800
21.5	LIMESTONE SLURRY TANKS - FOUNDATIONS							0	166,400					299,400	465,800
	EXCAVATION / BACKFILL		EST	969	CY			0	0	0.36	401	EXFD	90.00	36,100	36,100
	REINFORCING		EST	90	TN		1,150.00	0	103,500	20.00	2,070	REIN	78.27	162,000	265,500
	FORMWORK		EST	1,166	SF		2.50	0	2,900	0.14	188	FORM	99.43	18,700	21,600
	CONCRETE		EST	475	CY		105.00	0	49,900	1.50	819	CONP	79.64	65,300	115,200
	MUD MAT		EST	40	CY		105.00	0	4,200	1.50	69	CONP	79.64	5,500	9,700
	EMBEDDED STEEL		EST	2,375	LB		2.50	0	5,900	0.06	164	CARP	71.88	11,800	17,700
21.6	REAGENT PREPARATION BUILDING - FOUNDATIONS							0	649,100					1,077,400	1,726,500
	EXCAVATION / BACKFILL		EST	2,630	CY			0	0	0.36	1,089	EXFD	90.00	98,000	98,000
	REINFORCING		EST	260	TN		1,150.00	0	299,000	20.00	5,980	REIN	78.27	468,100	767,100
	FORMWORK		EST	2,380	SF		2.50	0	6,000	0.14	383	FORM	99.43	38,100	44,100
	CONCRETE		EST	2,750	CY		105.00	0	288,800	1.50	4,744	CONP	79.64	377,800	666,600
	MUD MAT		EST	200	CY		105.00	0	21,000	1.50	345	CONP	79.64	27,500	48,500
	EMBEDDED STEEL		EST	13,700	LB		2.50	0	34,300	0.06	945	CARP	71.88	67,900	102,200
21.7	REAGENT PREPARATION BUILDING	120' L X 125' W X 130' H						269,400	4,684,200					4,106,700	9,060,300
	STRUCTURAL STEEL		EST	1,160	TN		2650	0	3,074,000	16.00	21,344	STST	105.71	2,256,300	5,330,300
	INSULATED METAL SIDING		EST	63,700	SF		12	0	764,400	0.11	8,058	SDNG	93.41	752,700	1,517,100
	ROLLING OVERHEAD DOOR		EST	640	SF		27	0	17,300	0.25	184	CARP	71.88	13,200	30,500
	METAL ROOF DECKING		EST	15,000	SF		2.7	0	40,500	0.06	1,035	STST	105.71	109,400	149,900
	RIGID ROOF INSULATION		EST	15,000	SF		2.4	0	36,000	0.02	259	ROOF	69.12	17,900	53,900
	ROOFING (4-PLY TAR & GRAVEL)		EST	15,000	SF		1.55	0	23,300	0.04	690	ROOF	69.12	47,700	71,000
	LIGHTWEIGHT CONCRETE FILL 1"		EST	45	CY		100	0	4,500	1.30	67	ROOF	69.12	4,700	9,200
	ROOF FLASHING		EST	490	LF		14.45	0	7,100	0.12	68	ROOF	69.12	4,700	11,800
	ROOF DRAINS		EST	1	LT		45000	0	15,000	500.00	575	PLMB	79.42	45,700	60,700
	FLOOR DRAINS		EST	1	LT		37500	0	20,000	375.00	431	PLMB	79.42	34,200	54,200
	FLOOR SLABS	INCLUDES METAL DECKING AND FORMWORK	EST	45	CY		210	0	9,500	7.50	388	CONP	79.64	30,900	40,400
	FLOOR FINISHES		EST	8,900	SF		2.5	0	22,300	0.05	512	CONP	79.64	40,800	63,100
	LOUVERS/WINDOWS/DOORS		EST	6,500	SF		40	0	260,000	0.35	2,616	CARP	71.88	188,100	448,100

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	ROOF VENTILATORS		EST	6	EA		15000	0	90,000	24.00	166	HVAC	81.24	13,500	103,500
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	4,500	SF		45	0	202,500	0.40	2,070	GALL	84.61	175,100	377,600
	H&V		EST	1	LT	194400	77760	194,400	77,800	3629.33	4,174	HVAC	81.24	339,100	611,300
	HVAC	40T PACKAGED UNIT FOR ELECTRICAL EQUIPMENT ROOM. INCLUDES ALLOWANCE FOR CONCRETE PAD AND ELECTRICAL WORK	EST	1	LT	75000	20000	75,000	20,000	350.00	403	HVAC	81.24	32,700	127,700
21.8	PIPE SUPPORT PAD - REAGENT PREP BUILDING							0	13,800					27,100	40,900
	EXCAVATION / BACKFILL		EST	105	CY			0	0	0.36	43	EXFD	90.00	3,900	3,900
	REINFORCING		EST	5.0	TN		1,150.00	0	5,800	20.00	115	REIN	78.27	9,000	14,800
	FORMWORK		EST	270	SF		2.50	0	700	0.14	43	FORM	99.43	4,300	5,000
	CONCRETE		EST	40	CY		105.00	0	4,200	1.50	69	CONP	79.64	5,500	9,700
	MUD MAT		EST	25	CY		105.00	0	2,600	1.50	43	CONP	79.64	3,400	6,000
	EMBEDDED STEEL		EST	200	LB		2.50	0	500	0.06	14	CARP	71.88	1,000	1,500
21.9	LIGHTING/ TRANSFORMERS & PANELS							52,000	135,000					104,500	291,500
	LIGHT FIXTURES		EST	180	EA		750	0	135,000	4.00	828	WIRE	98.84	81,800	216,800
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	10000		20,000	0	40.00	92	WIRE	98.84	9,100	29,100
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	7500		15,000	0	32.00	74	WIRE	98.84	7,300	22,300
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	2	EA	5000		10,000	0	16.00	37	WIRE	98.84	3,600	13,600
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	2	EA	3500		7,000	0	12.00	28	WIRE	98.84	2,700	9,700
21.10	GROUNDING							5,100	0					13,400	18,500
	GROUND ROD	3/4" - 20' LONG	EST	2	EA	150		300	0	4.00	9	WIRE	98.84	900	1,200
	500 MCM	BARE COPPER WIRE	EST	600	FT	7.65		4,600	0	0.12	83	WIRE	98.84	8,200	12,800
	CADWELD		EST	16	EA	15		200	0	2.00	37	WIRE	98.84	3,600	3,800
	GROUNDING TEST	TEST, CALIBRATION & DOCUMENTATION	EST	2	EA			0	0	3.00	7	WIRE	98.84	700	700
21.11	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE ARE INCLUDED IN SECTION 28.0 - ABSORBER ISLAND													
21.12	COMMUNICATIONS		EST	1	LT		34,000.00	0	34,000	229.00	263	WIRE	98.84	26,000	60,000
21.13	LIGHTNING PROTECTION		EST	1	LT		23,000.00	0	23,000	141.00	162	WIRE	98.84	16,000	39,000
21.14	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							12,070,400	5,918,500		185,166			16,630,800	34,619,700
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										2,965,072
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						16,101		89.82	1,446,000	1,446,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						20,127			1,519,072	1,519,072
	PER DIEM	NONE		0.00	HR						221,394			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				29,593					83,154	112,747
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				295,925						295,925
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			603,520							603,520
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				295,925					831,540	1,127,465

				AEP										Estimate No.:	30718C
				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS (N/ESP)-2B - 1.7 LB/MM BTU - PHASED										Date:	9/29/2010
				ORDER OF MAGNITUDE COST ESTIMATE										Preparer:	MNO
		Cost Type:												Reviewer:	JMK
		Est=Estimated												Approver:	PEF
		Allow.=Allowance								Wage Rates Based on:		BIG SANDY			
		Q=Vendor Quote								Labor Productivity =		1.15			

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				887,775					2,494,620	3,382,395
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							603,500	1,509,200					6,374,400	8,487,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	REAGENT (LIMESTONE) PREPARATION ISLAND						12,673,900	7,427,700					23,005,200	43,106,800
22.0	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)														0
22.1	MECHANICAL EQUIPMENT	PRIMARY & SECONDARY DEWATERING INCLUDING HYDROCLONE FEED TANKS, HYDROCLONES, PUMPS, INTEGRAL PIPING AND BELT VACUUM FILTERS	EST	1	LT	5,688,000		5,688,000	0	50367.00	57,922	MECH	88.89	5,148,700	10,836,700
22.2	PUMPS & AGITATORS							250,000	0					137,000	387,000
	GYPSUM SLURRY TRANSFER PUMPS	1500 GPM, 150 HP	EST	2	EA	40000		80,000	0	220.00	506	MECH	88.89	45,000	125,000
	RECLAIM WATER PUMPS	350 GPM, 25 HP	EST	2	EA	15000		30,000	0	120.00	276	MECH	88.89	24,500	54,500
	RECLAIM WATER TRANSFER PUMPS	500 GPM, 100 HP	EST	2	EA	30000		60,000	0	165.00	380	MECH	88.89	33,700	93,700
	SUMP PUMPS	AUXILIARY PUMPHOUSE BUILDING SUMP PUMPS - DUPLEX. INCLUDES CHECK & ISOLATION VALVES		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
	AGITATOR FOR SUMP PUMPS	AUXILIARY PUMPHOUSE BUILDING SUMP AGITATORS - 5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
	SUMP PUMPS	BYPRODUCT DEWATERING BUILDING SUMP PUMPS - DUPLEX. INCLUDES CHECK & ISOLATION VALVES		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
	AGITATOR FOR SUMP PUMPS	BYPRODUCT DEWATERING BUILDING SUMP AGITATORS - 5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
22.3	PIPING - MECHANICAL		EST	1	LT			282,700	3,555,700					7,786,000	11,624,400
	LARGE BORE PIPING	4" FRP	EST	2,050	LF		28.40	0	58,200	0.38	896	SPNG	94.41	84,600	142,800
	LARGE BORE PIPING	6" FRP	EST	3,300	LF		33.90	0	111,900	0.67	2,543	SPNG	94.41	240,100	352,000
	LARGE BORE PIPING	8" FRP	EST	6,250	LF		51.30	0	320,600	0.95	6,828	SPNG	94.41	644,600	965,200
	LARGE BORE PIPING	10" FRP	EST	6,400	LF		68.00	0	435,200	1.18	8,685	SPNG	94.41	819,900	1,255,100
	LARGE BORE PIPING	12" FRP	EST	1,000	LF		80.90	0	80,900	1.41	1,622	SPNG	94.41	153,100	234,000
	LARGE BORE PIPING	14" FRP	EST	16,500	LF		133.90	0	2,209,400	2.67	50,663	SPNG	94.41	4,783,100	6,992,500
	LARGE BORE PIPING	16" FRP	EST	100	LF		152.20	0	15,200	2.88	331	SPNG	94.41	31,300	46,500
	LARGE BORE PIPING	20" FRP	EST	125	LF		165.00	0	20,600	3.31	476	SPNG	94.41	44,900	65,500
	VALVE	4" BFLY, 150 #, CS, FLANGED	EST	6	EA	625		3,800	0	7.20	50	SPNG	94.41	4,700	8,500
	VALVE	6" BFLY, 150 #, CS, FLANGED	EST	6	EA	850		5,100	0	8.70	60	SPNG	94.41	5,700	10,800
	VALVE	8" BFLY, 150 #, CS, FLANGED	EST	12	EA	1,400		16,800	0	9.10	126	SPNG	94.41	11,900	28,700
	VALVE	10" BFLY, 150 #, CS, FLANGED	EST	10	EA	2,300		23,000	0	13.80	159	SPNG	94.41	15,000	38,000
	VALVE	12" BFLY, 150 #, CS, FLANGED	EST	3	EA	3,000		9,000	0	14.60	50	SPNG	94.41	4,800	13,800
	VALVE	6" AIR OPERATED, 150 #, CS, FLANGED	EST	10	EA	14,000		140,000	0	17.30	199	SPNG	94.41	18,800	158,800
	VALVE	8" AIR OPERATED, 150 #, CS, FLANGED	EST	5	EA	17,000		85,000	0	19.30	111	SPNG	94.41	10,500	95,500
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	3,573	EA		85.00	0	303,700	2.50	10,271	MECH	88.89	913,000	1,216,700
22.4	MATERIAL HANDLING EQUIPMENT							724,000	7,500					614,100	1,345,600
	CONVEYOR GH-1A	36" W x 75' L		75	LF	1,000		75,000	0	7.50	647	MECH	88.89	57,500	132,500
	CONVEYOR GH-1B	36" W x 75' L		75	LF	1,000		75,000	0	30.00	2,588	MECH	88.89	230,000	305,000
	BELT SCALES	CONVEYORS GH-1A AND GH-1B		2	EA	30,000		60,000	0	180.00	414	MECH	88.89	36,800	96,800
	STACKOUT CONVEYOR GH-2A	36" W X 120' L		120	LF	1,100		132,000	0	7.50	1,035	MECH	88.89	92,000	224,000
	STACKOUT CONVEYOR GH-2B	36" W X 120' L		120	LF	1,100		132,000	0	7.50	1,035	MECH	88.89	92,000	224,000
	TELESCOPIC CHUTES	CONVEYORS GH-2A AND GH-2B		2	EA	125,000		250,000	0	375.00	863	MECH	88.89	76,700	326,700
	FRONT END LOADER	NOT INCLUDED						0	0	30.00	0	MECH	88.89	0	0

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				ORDER OF MAGNITUDE COST ESTIMATE										Preparer:	MNO
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		Q=Vendor Quote								Labor Productivity =		1.15			

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	DUMP TRUCK	NOT INCLUDED						0	0	700.00	0	MECH	88.89	0	0
	WATER SPRAY AT DISCHARGE OF GH-2A & GH-2B	ALLOWANCE FOR 200 LF SMALL BORE PIPING AND SPRAYS AND VALVVING		300	LF		25.0	0	7,500	0.95	328	MECH	88.89	29,100	36,600
22.5	FIRE PROTECTION SYSTEM FOR BELT CONVEYORS	DELUGE SYSTEM, DRY PIPE, SENSORS, ACTIVATION VALVE AND FM APPROVED PANEL - SUBCONTRACT PRICE FOR ALL CONVEYORS INCLUDES LABOR		1	LT	170,000		170,000	0	0.00	0	MECH	88.89	0	170,000
22.6	CONVEYOR STRUCTURE SUPPORT STEEL	THREE-COAT SHOP PAINT	EST	34	TN		2,900.00	0	99,000	24.00	942	STST	105.71	99,600	198,600
22.7	PIPE RACK SUPPORT STEEL	THREE-COAT SHOP PAINT	EST	68	TN		2,900.00	0	197,200	24.00	1,877	STST	105.71	198,400	395,600
22.8	TANKS							0	3,825,300					846,700	4,672,000
	LANDFILL SERVICE WATER TANKS	70,000 GAL, CS, 20' DIA X 30' - SUBCONTRACT PRICE INCLUDES LABOR WITH EXTERIOR PRIMED AND FIELD PAINTED	EST	2	EA		157500.0	0	315,000	0.00	0	TANK	89.16	0	315,000
	BLEED TANKS	120,000 GAL, CS, 27' DIA X 27' - SUBCONTRACT PRICE INCLUDES LABOR WITH EXTERIOR PRIMED AND FIELD PAINTED	EST	2	EA		216000.0	0	432,000	0.00	0	TANK	89.16	0	432,000
	RECLAIM WATER TANKS	230,000 GAL, CS, 29' DIA X 33' - SUBCONTRACT PRICE INCLUDES LABOR WITH EXTERIOR PRIMED AND FIELD PAINTED	EST	2	EA		330000.0	0	660,000	0.00	0	TANK	89.16	0	660,000
	RECLAIM WATER TANKS - INTERIOR LINING	FLAKECOAT VINYL ESTER TOTAL FOR TWO TANKS	EST	8,656	SF		15.0	0	129,800	0.35	3,484	PNTR	66.72	232,500	362,300
	LANDFILL RECLAIM WATER TANKS	230,000 GAL, CS, 29' DIA X 33' - SUBCONTRACT PRICE INCLUDES LABOR WITH EXTERIOR PRIMED AND FIELD PAINTED	EST	2	EA		330000.0	0	660,000	0.00	0	TANK	89.16	0	660,000
	LANDFILL RECLAIM WATER TANKS - INTERIOR LINING	FLAKECOAT VINYL ESTER TOTAL FOR TWO TANKS	EST	8,656	SF		15.0	0	129,800	0.35	3,484	PNTR	66.72	232,500	362,300
	MAINTENANCE STORAGE TANK	1,250,000 GAL, CS, 58' DIA X 62' - SUBCONTRACT PRICE INCLUDES LABOR WITH EXTERIOR PRIMED AND FIELD PAINTED	EST	1	EA		1250000.0	0	1,250,000	0.00	0	TANK	89.16	0	1,250,000
	MAINTENANCE STORAGE TANK - INTERIOR LINING	FLAKECOAT VINYL ESTER	EST	16,581	SF		15.0	0	248,700	0.30	5,720	PNTR	66.72	381,700	630,400
22.9	RECLAIM WATER TANKS & PUMPS - FOUNDATIONS							0	26,000					54,000	80,000
	EXCAVATION / BACKFILL		EST	295	CY			0	0	0.36	122	EXFD	90.00	11,000	11,000
	REINFORCING		EST	10.0	TN		1,150.00	0	11,500	20.00	230	REIN	78.27	18,000	29,500
	FORMWORK		EST	384	SF		2.50	0	1,000	0.14	62	FORM	99.43	6,100	7,100
	CONCRETE		EST	103	CY		105.00	0	10,800	1.50	178	CONP	79.64	14,200	25,000
	MUD MAT		EST	9	CY		105.00	0	900	1.50	16	CONP	79.64	1,200	2,100
	EMBEDDED STEEL		EST	705	LB		2.50	0	1,800	0.06	49	CARP	71.88	3,500	5,300
22.10	MAINTENANCE STORAGE TANK & PUMPS - FOUNDATIONS							0	100,000					177,300	277,300
	EXCAVATION / BACKFILL		EST	614	CY			0	0	0.36	254	EXFD	90.00	22,900	22,900
	REINFORCING		EST	42.0	TN		1,150.00	0	48,300	20.00	966	REIN	78.27	75,600	123,900
	FORMWORK		EST	795	SF		2.50	0	2,000	0.14	128	FORM	99.43	12,700	14,700
	CONCRETE		EST	420	CY		105.00	0	44,100	1.50	725	CONP	79.64	57,700	101,800
	MUD MAT		EST	36	CY		105.00	0	3,800	1.50	62	CONP	79.64	4,900	8,700
	EMBEDDED STEEL		EST	705	LB		2.50	0	1,800	0.06	49	CARP	71.88	3,500	5,300
22.11	LANDFILL SERVICE WATER TANKS & PUMP - FOUNDATIONS							0	80,900					155,100	236,000
	EXCAVATION / BACKFILL		EST	614	CY			0	0	0.36	254	EXFD	90.00	22,900	22,900
	REINFORCING		EST	42.0	TN		1,150.00	0	48,300	20.00	966	REIN	78.27	75,600	123,900
	FORMWORK		EST	795	SF		2.50	0	2,000	0.14	128	FORM	99.43	12,700	14,700
	CONCRETE		EST	221	CY		105.00	0	23,200	1.50	381	CONP	79.64	30,400	53,600
	MUD MAT		EST	18	CY		105.00	0	1,900	1.50	31	CONP	79.64	2,500	4,400
	EMBEDDED STEEL		EST	2,210	LB		2.50	0	5,500	0.06	152	CARP	71.88	11,000	16,500

AEP

BIG SANDY UNIT 2

FGD PROJECT - IAQCS (N/ESP)-2B - 1.7 LB/MM BTU - PHASED

ORDER OF MAGNITUDE COST ESTIMATE

Estimate No.: 30718C
Project No.: 12721-000
Date: 9/29/2010
Preparer: MNO
Reviewer: JMK
Approver: PEF

Cost Type:
Est=Estimated
Allow.=Allowance
Q=Vendor Quote

Wage Rates Based on: BIG SANDY
Labor Productivity = 1.15

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
22.12	LANDFILL RECLAIM WATER TANKS & PUMPS - FOUNDATIONS							0	26,000					54,000	80,000
	EXCAVATION / BACKFILL		EST	295	CY			0	0	0.36	122	EXFD	90.00	11,000	11,000
	REINFORCING		EST	10.0	TN		1,150.00	0	11,500	20.00	230	REIN	78.27	18,000	29,500
	FORMWORK		EST	384	SF		2.50	0	1,000	0.14	62	FORM	99.43	6,100	7,100
	CONCRETE		EST	103	CY		105.00	0	10,800	1.50	178	CONP	79.64	14,200	25,000
	MUD MAT		EST	9	CY		105.00	0	900	1.50	16	CONP	79.64	1,200	2,100
	EMBEDDED STEEL		EST	705	LB		2.50	0	1,800	0.06	49	CARP	71.88	3,500	5,300
22.13	HYDROCLONE FEED TANKS & BLEED TANKS - FOUNDATIONS	TOTAL FOR HYDROCLONE AND BLEED TANKS						0	340,200					618,900	959,100
	EXCAVATION / BACKFILL		EST	1,915	CY			0	0	0.36	793	EXFD	90.00	71,400	71,400
	REINFORCING		EST	212.0	TN		1,150.00	0	243,800	20.00	4,876	REIN	78.27	381,600	625,400
	FORMWORK		EST	2,400	SF		2.50	0	6,000	0.14	386	FORM	99.43	38,400	44,400
	CONCRETE		EST	671	CY		105.00	0	70,500	1.50	1,157	CONP	79.64	92,200	162,700
	MUD MAT		EST	58	CY		105.00	0	6,100	1.50	100	CONP	79.64	8,000	14,100
	EMBEDDED STEEL		EST	5,500	LB		2.50	0	13,800	0.06	380	CARP	71.88	27,300	41,100
22.14	BYPRODUCT STACKOUT CONVEYOR & TRANSFER TOWER - FOUNDATIONS							0	16,100					34,700	50,800
	EXCAVATION / BACKFILL		EST	140	CY			0	0	0.36	58	EXFD	90.00	5,200	5,200
	REINFORCING		EST	6	TN		1,150.00	0	6,900	20.00	138	REIN	78.27	10,800	17,700
	FORMWORK		EST	480	SF		2.50	0	1,200	0.14	77	FORM	99.43	7,700	8,900
	CONCRETE		EST	59	CY		105.00	0	6,200	1.50	102	CONP	79.64	8,100	14,300
	MUD MAT		EST	10	CY		105.00	0	1,100	1.50	17	CONP	79.64	1,400	2,500
	EMBEDDED STEEL		EST	295	LB		2.50	0	700	0.06	20	CARP	71.88	1,500	2,200
22.15	BYPRODUCT STACKOUT PILE - FOUNDATIONS	INCLUDES CONTAINMENT AREA SLAB						0	891,700					1,427,400	2,319,100
	EXCAVATION / BACKFILL		EST	2,900	CY			0	0	0.36	1,201	EXFD	90.00	108,100	108,100
	REINFORCING		EST	360	TN		1,150.00	0	414,000	20.00	8,280	REIN	78.27	648,100	1,062,100
	FORMWORK		EST	2,365	SF		2.50	0	5,900	0.14	381	FORM	99.43	37,900	43,800
	CONCRETE		EST	3,813	CY		105.00	0	400,400	1.50	6,577	CONP	79.64	523,800	924,200
	MUD MAT		EST	453	CY		105.00	0	47,600	1.50	781	CONP	79.64	62,200	109,800
	EMBEDDED STEEL		EST	9,533	LB		2.50	0	23,800	0.06	658	CARP	71.88	47,300	71,100
22.16	PIPE RACK	SUPPORTS AT 15' C/C						0	60,800					149,400	210,200
	EXCAVATION / BACKFILL		EST	1,120	CY			0	0	0.36	464	EXFD	90.00	41,700	41,700
	REINFORCING		EST	24	TN		1,150.00	0	27,600	20.00	552	REIN	78.27	43,200	70,800
	FORMWORK		EST	1,500	SF		2.50	0	3,800	0.14	242	FORM	99.43	24,000	27,800
	CONCRETE		EST	250	CY		105.00	0	26,300	1.50	431	CONP	79.64	34,300	60,600
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	1,250	LB		2.50	0	3,100	0.06	86	CARP	71.88	6,200	9,300
22.17	BYPRODUCT CONTAINMENT WALLS							0	137,300					235,000	372,300
	EXCAVATION / BACKFILL		EST	489	CY			0	0	0.36	202	EXFD	90.00	18,200	18,200
	REINFORCING		EST	46	TN		1,150.00	0	52,900	20.00	1,058	REIN	78.27	82,800	135,700
	FORMWORK		EST	1,520	SF		2.50	0	3,800	0.14	245	FORM	99.43	24,300	28,100
	CONCRETE		EST	489	CY		105.00	0	51,300	1.50	844	CONP	79.64	67,200	118,500
	MUD MAT		EST	221	CY		105.00	0	23,200	1.50	381	CONP	79.64	30,400	53,600
	EMBEDDED STEEL		EST	2,445	LB		2.50	0	6,100	0.06	169	CARP	71.88	12,100	18,200
22.18	INSTALL WIND SCREEN		EST	700	LF		750.00	0	525,000	3.00	2,415	CONP	79.64	192,300	717,300
22.19	BYPRODUCT DEWATERING BUILDING - FOUNDATIONS							0	275,500					458,500	734,000
	EXCAVATION / BACKFILL		EST	1,200	CY			0	0	0.36	497	EXFD	90.00	44,700	44,700
	REINFORCING		EST	115	TN		1,150.00	0	132,300	20.00	2,645	REIN	78.27	207,000	339,300
	FORMWORK		EST	1,440	SF		2.50	0	3,600	0.14	232	FORM	99.43	23,100	26,700
	CONCRETE		EST	1,200	CY		105.00	0	126,000	1.50	2,070	CONP	79.64	164,900	290,900
	MUD MAT		EST	115	CY		105.00	0	12,100	1.50	198	CONP	79.64	15,800	27,900
	EMBEDDED STEEL		EST	605	LB		2.50	0	1,500	0.06	42	CARP	71.88	3,000	4,500
22.20	BYPRODUCT DEWATERING BUILDING	120' L X 71' W X 65' H						145,200	1,536,000					1,446,100	3,127,300

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				FGD PROJECT - IAQCS (N/ESP)-2B - 1.7 LB/MM BTU - PHASED										Date:	9/29/2010
				ORDER OF MAGNITUDE COST ESTIMATE										Preparer:	MNO
		Cost Type:												Reviewer:	JMK
		Est=Estimated												Approver:	PEF
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	STRUCTURAL STEEL		EST	305	TN		2650	0	808,300	16.00	5,612	STST	105.71	593,200	1,401,500
	INSULATED METAL SIDING		EST	24,830	SF		12	0	298,000	0.11	3,141	SDNG	93.41	293,400	591,400
	ROLLING OVERHEAD DOOR		EST	640	SF		27	0	17,300	0.25	184	CARP	71.88	13,200	30,500
	METAL ROOF DECKING		EST	8,520	SF		2.7	0	23,000	0.06	588	STST	105.71	62,100	85,100
	RIGID ROOF INSULATION		EST	8,520	SF		2.4	0	20,400	0.02	147	ROOF	69.12	10,200	30,600
	ROOFING (4-PLY TAR & GRAVEL)		EST	8,520	SF		1.55	0	13,200	0.04	392	ROOF	69.12	27,100	40,300
	LIGHTWEIGHT CONCRETE FILL 1"		EST	28	CY		100	0	2,800	1.30	42	ROOF	69.12	2,900	5,700
	ROOF FLASHING		EST	382	LF		14.45	0	5,500	0.12	53	ROOF	69.12	3,600	9,100
	ROOF DRAINS		EST	1	LT		40000	0	15,000	450.00	518	PLMB	79.42	41,100	56,100
	FLOOR DRAINS		EST	1	LT		32500	0	20,000	350.00	403	PLMB	79.42	32,000	52,000
	FLOOR SLABS		EST	50	CY		210	0	10,500	7.50	431	CONP	79.64	34,300	44,800
	FLOOR FINISHES	MAIN LEVEL	EST	6,400	SF		2.5	0	16,000	0.05	368	CONP	79.64	29,300	45,300
	LOUVERS/WINDOWS/DOORS		EST	2,535	SF		40	0	101,400	0.35	1,020	CARP	71.88	73,300	174,700
	ROOF VENTILATORS		EST	4	EA		15000	0	60,000	24.00	110	HVAC	81.24	9,000	69,000
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	1,700	SF		45	0	76,500	0.40	782	GALL	84.61	66,200	142,700
	H&V		EST	1	LT	70200	28080	70,200	28,100	1310.67	1,507	HVAC	81.24	122,500	220,800
	HVAC	40T PACKAGED UNIT FOR ELECTRICAL EQUIPMENT ROOM. INCLUDES ALLOWANCE FOR CONCRETE PAD AND ELECTRICAL WORK	EST	1	LT	75000	20000	75,000	20,000	350.00	403	HVAC	81.24	32,700	127,700
22.21	PIPE SUPPORT PAD							0	13,800					26,700	40,500
	EXCAVATION / BACKFILL		EST	95	CY			0	0	0.36	39	EXFD	90.00	3,500	3,500
	REINFORCING		EST	5.0	TN		1,150.00	0	5,800	20.00	115	REIN	78.27	9,000	14,800
	FORMWORK		EST	270	SF		2.50	0	700	0.14	43	FORM	99.43	4,300	5,000
	CONCRETE		EST	40	CY		105.00	0	4,200	1.50	69	CONP	79.64	5,500	9,700
	MUD MAT		EST	25	CY		105.00	0	2,600	1.50	43	CONP	79.64	3,400	6,000
	EMBEDDED STEEL		EST	200	LB		2.50	0	500	0.06	14	CARP	71.88	1,000	1,500
22.22	AUXILIARY PUMPHOUSE BUILDING WITH ELECTRICAL ROOM - FOUNDATIONS							0	32,300					60,800	93,100
	EXCAVATION / BACKFILL		EST	210	CY			0	0	0.36	87	EXFD	90.00	7,800	7,800
	REINFORCING		EST	11	TN		1,150.00	0	12,900	20.00	258	REIN	78.27	20,200	33,100
	FORMWORK		EST	500	SF		2.50	0	1,300	0.14	81	FORM	99.43	8,000	9,300
	CONCRETE		EST	140	CY		105.00	0	14,700	1.50	242	CONP	79.64	19,200	33,900
	MUD MAT		EST	15	CY		105.00	0	1,600	1.50	26	CONP	79.64	2,100	3,700
	EMBEDDED STEEL		EST	700	LB		2.50	0	1,800	0.06	48	CARP	71.88	3,500	5,300
22.23	AUXILIARY PUMPHOUSE BUILDING	50'L X 35' W X 20'H						101,300	252,500					269,800	623,600
	STRUCTURAL STEEL		EST	20	TN		2650	0	53,000	16.00	368	STST	105.71	38,900	91,900
	INSULATED METAL SIDING		EST	3,400	SF		12	0	40,800	0.11	430	SDNG	93.41	40,200	81,000
	ROLLING OVERHEAD DOOR		EST	320	SF		27	0	8,600	0.25	92	CARP	71.88	6,600	15,200
	METAL ROOF DECKING		EST	1,750	SF		2.7	0	4,700	0.06	121	STST	105.71	12,800	17,500
	RIGID ROOF INSULATION		EST	1,750	SF		2.4	0	4,200	0.02	30	ROOF	69.12	2,100	6,300
	ROOFING (4-PLY TAR & GRAVEL)		EST	1,750	SF		1.55	0	2,700	0.04	81	ROOF	69.12	5,600	8,300
	LIGHTWEIGHT CONCRETE FILL 1"		EST	5	CY		100	0	500	1.30	8	ROOF	69.12	600	1,100
	ROOF FLASHING		EST	170	LF		14.45	0	2,500	0.12	23	ROOF	69.12	1,600	4,100
	ROOF DRAINS		EST	1	LT		20000	0	15,000	250.00	288	PLMB	79.42	22,800	37,800
	FLOOR DRAINS		EST	1	LT		18000	0	20,000	220.00	253	PLMB	79.42	20,100	40,100
	FLOOR SLABS		EST	16	CY		210	0	3,400	7.50	138	CONP	79.64	11,000	14,400
	FLOOR FINISHES	MAIN LEVEL	EST	1,313	SF		2.5	0	3,300	0.05	75	CONP	79.64	6,000	9,300
	LOUVERS/WINDOWS/DOORS		EST	340	SF		40	0	13,600	0.35	137	CARP	71.88	9,800	23,400
	ROOF VENTILATORS		EST	2	EA		15000	0	30,000	24.00	55	HVAC	81.24	4,500	34,500
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	438	SF		45	0	19,700	0.40	201	GALL	84.61	17,000	36,700
	H&V		EST	1	LT	26250	10500	26,300	10,500	490.67	564	HVAC	81.24	45,800	82,600
	ADDITONAL HVAC UNIT FOR ELECTRICAL ROOM & CONTROLS	40T PACKAGED UNIT FOR ELECTRICAL EQUIPMENT ROOM. INCLUDES ALLOWANCE FOR CONCRETE PAD AND ELECTRICAL WORK	EST	1	LT	75000	20000	75,000	20,000	350.00	300	HVAC	81.24	24,400	119,400
22.24	SITE GRADING - GYPSUM HANDLING AREA							0	0					587,800	587,800
	CUT		EST	18,000	CY			0	0	0.08	1,656	ETWK	177.49	293,900	293,900
	FILL		EST	18,000	CY			0	0	0.08	1,656	ETWK	177.49	293,900	293,900

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22.25	ROADS & SURFACING - GYPSUM HANDLING AREA							0	188,000					427,900	615,900
	CONCRETE PAD BUILDING ENTRANCES	10" REINFORCED CONCRETE	EST	100	SY		80	0	8,000	1.50	173	CONP	79.64	13,700	21,700
	AGGREGATE AREA SURFACING	INCLUDES: 6" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST	20,000	SY		9	0	180,000	0.17	3,910	BCSE	105.94	414,200	594,200
22.26	GYPSUM HANDLING & STORAGE							0	1,179,900					1,854,100	3,034,000
	GYPSUM AREA SURFACING	12" REINFORCED CONCRETE	EST	11,500	SY		96	0	1,104,000	1.60	21,160	CONP	79.64	1,685,200	2,789,200
	GYPSUM RUNOFF DRAINAGE DITCH	6" REINFORCED CONCRETE	EST	1,300	SY		48	0	62,400	1.20	1,794	CONP	79.64	142,900	205,300
	DRAINAGE CULVERTS	24" DIA CHDPE	EST	150	LF		84.7	0	12,700	1.41	243	YDPP	90.14	21,900	34,600
	EXCAVATION / BACKFILL	FOR UNDERGROUND PIPING	EST	167	CY			0	0	0.20	38	EXFD	90.00	3,500	3,500
	BEDDING	FOR UNDERGROUND PIPING	EST	22	CY		35.0	0	800	0.25	6	EXFD	90.00	600	1,400
22.27	GYPSUM RUNOFF POND							68,000	110,400					315,700	494,100
	SAND EXCAVATION		EST	4,000	CY			0	0	0.03	120	ETWK	177.49	21,200	21,200
	ROCK EXCAVATION	ASSUME ROCK IS RIPPABLE	EST	500	CY			0	0	0.05	28	ETWK	177.49	4,900	4,900
	POND SURFACING	6" REINFORCED CONCRETE	EST	2,300	SY		48	0	110,400	1.20	3,174	CONP	79.64	252,800	363,200
	PUMPS	500 GPM, 100 PSIG	EST	2	EA	34000		68,000	0	180.00	414	MECH	88.89	36,800	104,800
22.28	GYPSUM RUNOFF POND PUMP STRUCTURE - CONCRETE							0	47,000					105,400	152,400
	EXCAVATION / BACKFILL		EST	0	CY			0	0	0.36	0	EXFD	90.00	0	0
	REINFORCING		EST	7	TN		1,150.00	0	8,100	20.00	161	REIN	78.27	12,600	20,700
	FORMWORK		EST	3,968	SF		2.50	0	9,900	0.14	639	FORM	99.43	63,500	73,400
	CONCRETE		EST	76	CY		105.00	0	8,000	1.50	131	CONP	79.64	10,400	18,400
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	380	LB		2.50	0	1,000	0.06	26	CARP	71.88	1,900	2,900
	BYPRODUCT POND PUMP STRUCTURE - GALLERY		EST	5	TN		4,000.00	0	20,000	35.00	201	GALL	84.61	17,000	37,000
22.29	OILY WATER SEWER - GYPSUM HANDLING AREA							1,500	9,000					14,200	24,700
	PIPING	6" CISP	EST	200	LF		21.5	0	4,300	0.33	76	YDPP	90.14	6,800	11,100
	POST INDICATOR VALVE		EST	2	EA	750		1,500	0	6.00	14	YDPP	90.14	1,200	2,700
	MANHOLES		EST	3	EA		1575.0	0	4,700	20.00	69	YDPP	90.14	6,200	10,900
22.30	OIL SEPARATOR - GYPSUM HANDLING AREA	500 GPM W/ INTEGRAL LIFT STATION	EST	1	EA	50000		50,000	0	560.00	644	YDPP	90.14	58,100	108,100
22.31	EROSION & SEDIMENT CONTROL - GYPSUM HANDLING AREA							0	18,000					28,300	46,300
	SILT FENCE		EST	8,000	LF		1.0	0	8,000	0.02	184	LAND	61.45	11,300	19,300
	ROCK CHECK DAMS		EST	20	EA		500.0	0	10,000	12.00	276	LAND	61.45	17,000	27,000
22.32	SITE GRADING - ACCESS ROAD WIDENING & CONTAINMENT DITCH	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA						0	0					60,400	60,400
	CUT		EST	2,700	CY			0	0	0.08	248	ETWK	177.49	44,100	44,100
	FILL		EST	1,000	CY			0	0	0.08	92	ETWK	177.49	16,300	16,300
22.33	ROADS & SURFACING - GYPSUM DEWATERING AREA	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA						0	66,300					190,800	257,100
	WIDENING OF EXISTING ROAD	INCLUDES: 6" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST	3,700	SY		9	0	33,300	0.17	723	BCSE	105.94	76,600	109,900
	GUARDRAIL	INCLUDES POSTS	EST	2,200	SY		15	0	33,000	0.50	1,265	PBIT	90.25	114,200	147,200
22.34	PIPELINE CONTAINMENT & DRAINAGE	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA						0	271,600					429,200	700,800
	CONTAINMENT / DICTH SURFACING	4" SHOTCRETE W/ WELDED WIRE FABRIC	EST	5,800	SY		46	0	265,800	0.78	5,188	CONP	79.64	413,200	679,000
	CONCRETE ENERGY DISSIPATION STRUCTURE		EST	25	CY		230	0	5,800	7.00	201	CONP	79.64	16,000	21,800
22.35	CONTAINMENT RUNOFF POND	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA						68,000	114,300					344,300	526,600
	SAND EXCAVATION		EST	4,000	CY			0	0	0.03	120	ETWK	177.49	21,200	21,200

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Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	ROCK EXCAVATION	ASSUME ROCK IS RIPPABLE	EST	500	CY			0	0	0.05	28	ETWK	177.49	4,900	4,900
	POND SURFACING	6" REINFORCED CONCRETE	EST	2,300	SY		48	0	110,400	1.20	3,174	CONP	79.64	252,800	363,200
	PUMPS	500 GPM, 100 PSIG	EST	2	EA	34000		68,000	0	180.00	414	MECH	88.89	36,800	104,800
	LARGE BORE PIPING	6" HDPE, SDR 9	EST	400	LF		9.8	0	3,900	0.69	317	YDPP	90.14	28,600	32,500
22.36	CONTAINMENT POND PUMP STRUCTURE - CONCRETE	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA						0	47,000					105,400	152,400
	EXCAVATION / BACKFILL		EST	0	CY			0	0	0.36	0	EXFD	90.00	0	0
	REINFORCING		EST	7	TN		1,150.00	0	8,100	20.00	161	REIN	78.27	12,600	20,700
	FORMWORK		EST	3,968	SF		2.50	0	9,900	0.14	639	FORM	99.43	63,500	73,400
	CONCRETE		EST	76	CY		105.00	0	8,000	1.50	131	CONP	79.64	10,400	18,400
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	380	LB		2.50	0	1,000	0.06	26	CARP	71.88	1,900	2,900
	BYPRODUCT POND PUMP STRUCTURE - GALLERY		EST	5	TN		4,000.00	0	20,000	35.00	201	GALL	84.61	17,000	37,000
22.37	SITE GRADING - PIPELINE CONTAINMENT & DRAINAGE	SOUTH OF HWY 23						0	0					30,200	30,200
	CUT		EST	1,600	CY			0	0	0.08	147	ETWK	177.49	26,100	26,100
	FILL		EST	250	CY			0	0	0.08	23	ETWK	177.49	4,100	4,100
22.38	PIPELINE CONTAINMENT & DRAINAGE	SOUTH OF HWY 23						0	169,600					263,600	433,200
	CONTAINMENT / DICTH SURFACING	4" SHOTCRETE W/ WELDED WIRE FABRIC	EST	3,700	SY		46	0	169,600	0.78	3,309	CONP	79.64	263,600	433,200
22.39	PIPE BORING PIT	SOUTH OF HWY 23						0	5,300					50,900	56,200
	SAND EXCAVATION		EST	950	CY			0	0	0.08	87	ETWK	177.49	15,500	15,500
	ROCK EXCAVATION	ASSUMED ROCK IS RIPPABLE	EST	400	CY			0	0	0.08	37	ETWK	177.49	6,500	6,500
	BACKFILL		EST	1,350	CY			0	0	0.10	155	ETWK	177.49	27,600	27,600
	4" TOPSOIL		EST	100	SY		45	0	4,500	0.07	7	LAND	61.45	500	5,000
	GRASS SEEDING, FERTILIZER AND MULCH		EST	0.2	AC		4000	0	800	60.00	14	LAND	61.45	800	1,600
22.40	PIPE RECEIVING PIT	NORTH OF HWY 23						0	4,900					43,500	48,400
	SAND EXCAVATION		EST	800	CY			0	0	0.08	74	ETWK	177.49	13,100	13,100
	ROCK EXCAVATION	ASSUMED ROCK IS RIPPABLE	EST	350	CY			0	0	0.08	32	ETWK	177.49	5,700	5,700
	BACKFILL		EST	1,150	CY			0	0	0.10	132	ETWK	177.49	23,500	23,500
	4" TOPSOIL		EST	90	SY		45	0	4,100	0.07	7	LAND	61.45	400	4,500
	GRASS SEEDING, FERTILIZER AND MULCH		EST	0.2	AC		4000	0	800	60.00	14	LAND	61.45	800	1,600
22.41	DIRECTIONAL BORING FOR BURIED PIPE	BENEATH HWY 23						28,000	652,500					277,000	957,500
	MOBILIZATION / DEMOBILIZATION	BORING EQUIPMENT, MUD TRAILER, OPERATORS AND LABORERS	EST	1	LT		12000	0	12,000	80.00	92	EXFD	90.00	8,300	20,300
	EQUIPMENT RENTAL	BORING EQUIPMENT, MUD TRAILER. BASED ON 2 WEEKS RENTAL	EST	1	LT	28000		28,000	0	400.00	460	EXFD	90.00	41,400	69,400
	DIRECTIONAL BORING	7-24" DIA 320FT LONG EACH	EST	2,240	LF			0	0	0.32	824	EXFD	90.00	74,200	74,200
	LARGE BORE PIPING	FOR UNDERGROUND SLEEVE, 24" CS PIPE. 40 FT SPOOL PIECES	EST	2,240	LF		285	0	638,400	0.65	1,674	YDPP	90.14	150,900	789,300
	RUBBER END SEALS	NEOPRENE	EST	14	EA		150	0	2,100	1.50	24	YDPP	90.14	2,200	4,300
22.42	TRANSFORMERS							470,000	0					136,500	606,500
	SST TRANSFORMERS: 23F & 23G	13.8KV-4160V, 2 WINDING XFMR	EST	2	EA	150000		300,000	0	450.00	1,035	EHEA	79.16	81,900	381,900
	SUS TRANSFORMERS: 36F/G	13.8KV-480V,3PHASE, CAST COIL	EST	2	EA	85000		170,000	0	300.00	690	EHEA	79.16	54,600	224,600
22.43	SWITCHGEAR							825,600	0					500,700	1,326,300
	13.8 KV MEDIUM VOLTAGE SWITCHGEAR (13F/G))	PRICE PER SECTION	EST	6	EA	50000		300,000	0	325.00	2,243	EHEA	79.16	177,500	477,500
	4.16KV MEDIUM VOLTAGE SWITCHGEAR& MCCS (21A/B)	PRICE PER SECTION	EST	8	EA	41200		329,600	0	300.00	2,760	EHEA	79.16	218,500	548,100
	480V LOW VOLTAGE SWITCHGEAR (31F/G ; 32F/G)	PRICE PER SECTION	EST	5	EA	39200		196,000	0	230.00	1,323	EHEA	79.16	104,700	300,700
22.44	CABLE BUS & TERMINATIONS							355,500	39,400					730,700	1,125,600
	5KV CABLE BUS		EST	300	FT	567		170,100	0	9.00	3,105	WIRE	98.84	306,900	477,000
	480V CABLE BUS		EST	300	FT	618		185,400	0	10.30	3,554	WIRE	98.84	351,200	536,600

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	CABLE BUS TERMINATION	5KV TERMINATIONS	EST	4	EA		4,440.00	0	17,800	51.60	237	WIRE	98.84	23,500	41,300
	CABLE BUS TERMINATION	480V TERMINATIONS	EST	8	EA		2,700.00	0	21,600	54.00	497	WIRE	98.84	49,100	70,700
22.45	MCC							123,600	0					6,300	129,900
	480V MCC	PER MCC LINEUP	EST	4	EA	30900		123,600	0	16.00	64	WIRE	98.84	6,300	129,900
22.46	MIMIC PANELS		EST	1	EA	17500		17,500	0	16.00	16	WIRE	98.84	1,600	19,100
22.47	EMERGENCY POWER SYSTEM							285,500	0					38,900	324,400
	DC PANEL BOADRD		EST	1	EA	15500		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	UPS PANEL BOARDS		EST	2	EA	15500		31,000	0	40.00	92	WIRE	98.84	9,100	40,100
	UPS		EST	1	EA	60000		60,000	0	32.00	37	WIRE	98.84	3,600	63,600
	SWITCHBOARD		EST	1	EA	40000		40,000	0	40.00	46	WIRE	98.84	4,500	44,500
	BYPASS TRANSFORMERS		EST	1	EA	25000		25,000	0	40.00	46	WIRE	98.84	4,500	29,500
	BATTERY CHARGER		EST	2	EA	32000		64,000	0	16.00	37	WIRE	98.84	3,600	67,600
	BATTERIES		EST	1	LT	50000		50,000	0	80.00	92	WIRE	98.84	9,100	59,100
22.48	GROUNDING							9,400	0					25,400	34,800
	GROUND ROD	3/4" - 20' LONG	EST	8	EA	150		1,200	0	4.00	37	WIRE	98.84	3,600	4,800
	500 MCM	BARE COPPER WIRE	EST	1,000	FT	7.65		7,700	0	0.12	138	WIRE	98.84	13,600	21,300
	CADWELD		EST	32	EA	15		500	0	2.00	74	WIRE	98.84	7,300	7,800
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	8.00	9	WIRE	98.84	900	900
22.49	LIGHTING/ TRANSFORMERS & PANELS							52,000	135,000					104,500	291,500
	LIGHT FIXTURES		EST	180	EA		750	0	135,000	4.00	828	WIRE	98.84	81,800	216,800
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	10000		20,000	0	40.00	92	WIRE	98.84	9,100	29,100
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	7500		15,000	0	32.00	74	WIRE	98.84	7,300	22,300
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	2	EA	5000		10,000	0	16.00	37	WIRE	98.84	3,600	13,600
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	2	EA	3500		7,000	0	12.00	28	WIRE	98.84	2,700	9,700
22.50	RACEWAY, CABLE TRAY, & CONDUIT							0	354,700					1,514,100	1,868,800
	12" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,000	LF		18.25	0	18,300	1.10	1,100	WIRE	98.84	108700	127,000
	18" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,000	LF		21.50	0	21,500	1.45	1,450	WIRE	98.84	143300	164,800
	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,000	LF		27.10	0	27,100	1.75	1,750	WIRE	98.84	173000	200,100
	36" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,000	LF		30.30	0	30,300	1.95	1,950	WIRE	98.84	192700	223,000
	5" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	900	LF		61.00	0	54,900	1.13	1,014	WIRE	98.84	100300	155,200
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,800	LF		31.00	0	55,800	0.81	1,453	WIRE	98.84	143600	199,400
	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,900	LF		21.50	0	40,900	0.65	1,226	WIRE	98.84	121100	162,000
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	2,800	LF		9.25	0	25,900	0.35	986	WIRE	98.84	97400	123,300
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	3,500	LF		7.15	0	25,000	0.28	994	WIRE	98.84	98200	123,200
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	6,000	LF		4.44	0	26,600	0.24	1,434	WIRE	98.84	141700	168,300
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	8,800	LF		3.23	0	28,400	0.19	1,963	WIRE	98.84	194100	222,500
22.51	13.8 KV OH LINE OPGW	INCLUDES POLES, CONDUCTORS, INSULATORS & GROUNDING	EST	5,250	LF		45.75	0	240,200	0.49	2,958	WIRE	98.84	292400	532,600
22.52	HIGH VOLTAGE POWER CABLE & TERMINATION							0	88,400					256,600	345,000
	1/C # 500KCMIL-15KV	1/C # 500KCMIL-15KV	EST	1,800	LF		9.27	0	16,700	0.23	476	WIRE	98.84	47100	63,800

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	1/C # 4/0-15KV	1/C # 4/0-15KV	EST	15,750	LF		4.55	0	71,700	0.12	2,119	WIRE	98.84	209500	281,200
22.53	MEDIUM VOLTAGE POWER CABLE & TERMINATION	1/C # 350KCMIL-5KV	EST	3,000	LF		6.13	0	18,400	0.23	794	WIRE	98.84	78400	96,800
22.54	LOW VOLTAGE POWER CABLE & TERMINATION							0	62,700					547,400	610,100
	3/C # 500KCMIL- 600V		EST	2,400	LF		26.12	0	62,700	0.69	1,904	WIRE	98.84	188200	250,900
	#4/0 - #12 AWG-600V		EST	40,000	LF		7.22			0.08	3,634	WIRE	98.84	359200	359,200
22.55	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	EST	35,000	LF		3.20	0	112,000	0.08	3,180	WIRE	98.84	314300	426,300
22.56	FOUNDATIONS FOR TRANSFORMERS							0	70,200					205,400	275,600
	EXCAVATION / BACKFILL		EST	1,000	CY			0	0	0.36	414	EXFD	90.00	37,300	37,300
	REINFORCING		EST	20	TN		1,150.00	0	23,000	20.00	460	REIN	78.27	36,000	59,000
	FORMWORK		EST	5,000	SF		2.50	0	12,500	0.14	805	FORM	99.43	80,000	92,500
	CONCRETE		EST	190	CY		105.00	0	20,000	1.50	328	CONP	79.64	26,100	46,100
	MUD MAT		EST	45	CY		105.00	0	4,700	1.50	78	CONP	79.64	6,200	10,900
	EMBEDDED STEEL		EST	4,000	LB		2.50	0	10,000	0.06	276	CARP	71.88	19,800	29,800
22.57	FIREWALL FOR TRANSFORMERS							0	3,200					8,300	11,500
	REINFORCING		EST	1.2	TN		1,150.00	0	1,400	20.00	28	REIN	78.27	2,200	3,600
	FORMWORK		EST	80	SF		2.50	0	200	0.14	13	FORM	99.43	1,300	1,500
	CONCRETE		EST	15	CY		105.00	0	1,600	3.50	60	CONP	79.64	4,800	6,400
22.58	COMMUNICATIONS		EST	1	LT		34,000.00	0	34,000	229.00	263	WIRE	98.84	26,000	60,000
22.59	LIGHTNING PROTECTION		EST	1	LT		13,000.00	0	13,000	91.00	105	WIRE	98.84	10,300	23,300
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							9,715,800	16,053,800		336,323			30,175,100	55,944,700
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										5,380,220
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						29,245		89.72	2,624,000	2,624,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						36,557			2,756,220	2,756,220
	PER DIEM	NONE		0.00	HR						402,125			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				80,269					150,876	231,145
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				802,690						802,690
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			485,790							485,790
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				802,690					1,508,755	2,311,445
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				2,408,070					4,526,265	6,934,335
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							485,800	4,093,700					11,566,100	16,145,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BY-PRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)						10,201,600	20,147,500					41,741,200	72,090,300
23.0	WET FGD ABSORBER ISLAND														0

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23.1	MECHANICAL EQUIPMENT	INCLUDES ABSORBER MODULE (A2205) WITH INTERNALS, INLET DUCT ONLY THROUGH WET/DRY INTERFACE, PIPING INSIDE ABSORBER BUILDING TO TERMINAL POINTS, RECYCLE PUMPS, OXIDATION BLOWERS, MIST ELIMINATOR AND WASH PUMPS AND OTHER MISC. EQUIPMENT AND MATERIAL	EST	1	LT	40589000		40,589,000	0	395500.00	454,825	MECH	88.89	40,429,400	81,018,400
23.2	ADDITIONAL COST FOR C276 ABSORBER SHELL MATERIAL ABOVE THE PRICE OF A2205 ABSORBER SHELL	INCLUDES MATERIAL AND WELDING ROD COST DIFFERENTIAL - 49,800 TOTAL SF	EST	49,800	SF		308.00	0	15,338,400	0.00	0	MECH	88.89	0	15,338,400
23.3	SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
23.4	AGITATOR FOR SUMP PUMPS	5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
23.5	EMERGENCY DIESEL DRIVEN QUENCH PUMP	INCLUDED WITH SECTION 1, ID FANS.													
23.6	PIPING - MECHANICAL	ALL PIPING INCLUDED IN OEM EQUIPMENT COST. NO BOP PIPING						0	0					0	0
23.7	ABSORBER VESSEL - FOUNDATIONS							0	366,900					672,900	1,039,800
	EXCAVATION / BACKFILL		EST	2,921	CY			0	0	0.36	1,209	EXFD	90.00	108,800	108,800
	REINFORCING		EST	148	TN		1,150.00	0	170,200	20.00	3,404	REIN	78.27	266,400	436,600
	FORMWORK		EST	2,121	SF		2.50	0	5,300	0.14	341	FORM	99.43	34,000	39,300
	CONCRETE		EST	1,571	CY		105.00	0	165,000	1.50	2,710	CONP	79.64	215,800	380,800
	MUD MAT		EST	65	CY		105.00	0	6,800	1.50	112	CONP	79.64	8,900	15,700
	EMBEDDED STEEL		EST	7,855	LB		2.50	0	19,600	0.06	542	CARP	71.88	39,000	58,600
23.8	ABSORBER BUILDING - FOUNDATIONS							0	544,300					902,800	1,447,100
	EXCAVATION / BACKFILL		EST	2,300	CY			0	0	0.36	952	EXFD	90.00	85,700	85,700
	REINFORCING		EST	220	TN		1,150.00	0	253,000	20.00	5,060	REIN	78.27	396,000	649,000
	FORMWORK		EST	2,350	SF		2.50	0	5,900	0.14	378	FORM	99.43	37,600	43,500
	CONCRETE		EST	2,400	CY		105.00	0	252,000	1.50	4,140	CONP	79.64	329,700	581,700
	MUD MAT		EST	175	CY		105.00	0	18,400	1.50	302	CONP	79.64	24,000	42,400
	EMBEDDED STEEL		EST	6,000	LB		2.50	0	15,000	0.06	414	CARP	71.88	29,800	44,800
23.9	ABSORBER BUILDING	150' L X 85' W X 60' H						164,500	2,501,100					2,297,900	4,963,500
	STRUCTURAL STEEL		EST	530	TN		2650	0	1,404,500	16.00	9,752	STST	105.71	1,030,900	2,435,400
	INSULATED METAL SIDING		EST	28,200	SF		12	0	338,400	0.11	3,567	SDNG	93.41	333,200	671,600
	ROLLING OVERHEAD DOOR		EST	960	SF		27	0	25,900	0.25	276	CARP	71.88	19,800	45,700
	METAL ROOF DECKING		EST	12,750	SF		2.7	0	34,400	0.06	880	STST	105.71	93,000	127,400
	RIGID ROOF INSULATION		EST	12,750	SF		2.4	0	30,600	0.02	220	ROOF	69.12	15,200	45,800
	ROOFING (4-PLY TAR & GRAVEL)		EST	12,750	SF		1.55	0	19,800	0.04	587	ROOF	69.12	40,500	60,300
	LIGHTWEIGHT CONCRETE FILL 1"		EST	39	CY		100	0	3,900	1.30	58	ROOF	69.12	4,000	7,900
	ROOF FLASHING		EST	470	LF		14.45	0	6,800	0.12	65	ROOF	69.12	4,500	11,300
	ROOF DRAINS		EST	1	LT		45000	0	15,000	500.00	575	PLMB	79.42	45,700	60,700
	FLOOR DRAINS		EST	1	LT		37500	0	20,000	375.00	431	PLMB	79.42	34,200	54,200
	FLOOR SLABS	INCLUDES METAL DECKING AND FORMWORK	EST	50	CY		210	0	10,500	7.50	431	CONP	79.64	34,300	44,800
	FLOOR FINISHES		EST	7,800	SF		2.5	0	19,500	0.05	449	CONP	79.64	35,700	55,200

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	LOUVERS/WINDOWS/DOORS		EST	5,600	SF		40	0	224,000	0.35	2,254	CARP	71.88	162,000	386,000
	ROOF VENTILATORS		EST	6	EA		20000	0	120,000	32.00	221	HVAC	81.24	17,900	137,900
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	3,600	SF		45	0	162,000	0.40	1,656	GALL	84.61	140,100	302,100
	H&V		EST	1	LT	164500	65800	164,500	65,800	3070.67	3,531	HVAC	81.24	286,900	517,200
23.10	PIPE SUPPORT PAD - ABSORBER BUILDING							0	7,700					16,100	23,800
	EXCAVATION / BACKFILL		EST	95	CY			0	0	0.36	39	EXFD	90.00	3,500	3,500
	REINFORCING		EST	5.0	TN		1,150.00	0	5,800	20.00	115	REIN	78.27	9,000	14,800
	FORMWORK		EST	80	SF		2.50	0	200	0.14	13	FORM	99.43	1,300	1,500
	CONCRETE		EST	10	CY		105.00	0	1,100	1.50	17	CONP	79.64	1,400	2,500
	MUD MAT		EST	5	CY		105.00	0	500	1.50	9	CONP	79.64	700	1,200
	EMBEDDED STEEL		EST	50	LB		2.50	0	100	0.06	3	CARP	71.88	200	300
23.11	OXIDATION AIR BLOWER BUILDING - FOUNDATIONS							0	37,000					67,300	104,300
	EXCAVATION / BACKFILL		EST	188	CY			0	0	0.36	78	EXFD	90.00	7,000	7,000
	REINFORCING		EST	16.0	TN		1,150.00	0	18,400	20.00	368	REIN	78.27	28,800	47,200
	FORMWORK		EST	480	SF		2.50	0	1,200	0.14	77	FORM	99.43	7,700	8,900
	CONCRETE		EST	133	CY		105.00	0	14,000	1.50	229	CONP	79.64	18,300	32,300
	MUD MAT		EST	16	CY		105.00	0	1,700	1.50	28	CONP	79.64	2,200	3,900
	EMBEDDED STEEL		EST	665	LB		2.50	0	1,700	0.06	46	CARP	71.88	3,300	5,000
23.12	OXIDATION AIR BLOWER BUILDING	30' L X 30' W X 25' H						33,800	191,000					201,400	426,200
	STRUCTURAL STEEL		EST	14	TN		2650	0	35,800	16.00	248	STST	105.71	26,300	62,100
	INSULATED METAL SIDING		EST	3,000	SF		12	0	36,000	0.11	380	SDNG	93.41	35,400	71,400
	ROLLING OVERHEAD DOOR		EST	320	SF		27	0	8,600	0.25	92	CARP	71.88	6,600	15,200
	METAL ROOF DECKING		EST	900	SF		2.7	0	2,400	0.06	62	STST	105.71	6,600	9,000
	RIGID ROOF INSULATION		EST	900	SF		2.4	0	2,200	0.02	16	ROOF	69.12	1,100	3,300
	ROOFING (4-PLY TAR & GRAVEL)		EST	900	SF		1.55	0	1,400	0.04	41	ROOF	69.12	2,900	4,300
	LIGHTWEIGHT CONCRETE FILL 1"		EST	3	CY		100	0	300	1.30	4	ROOF	69.12	300	600
	ROOF FLASHING		EST	120	LF		14.45	0	1,700	0.12	17	ROOF	69.12	1,100	2,800
	ROOF DRAINS		EST	1	LT		7000	0	15,000	50.00	58	PLMB	79.42	4,600	19,600
	FLOOR DRAINS		EST	1	LT		7500	0	20,000	60.00	69	PLMB	79.42	5,500	25,500
	FLOOR SLABS	NONE	EST	0	CY		210	0	0	7.50	0	CONP	79.64	0	0
	FLOOR FINISHES	MAIN LEVEL	EST	810	SF		2.5	0	2,000	0.05	47	CONP	79.64	3,700	5,700
	BLOCK WALLS	SOUND ATTENUATING INTERIOR BLOCK WALLS	EST	3,000	SF		8	0	24,000	0.18	621	MSRY	73.39	45,600	69,600
	LOUVERS/WINDOWS/DOORS & VENTILATORS	SOUND ATTENUATING	EST	300	SF	75	40	22,500	12,000	1.25	431	CARP	71.88	31,000	65,500
	ROOF VENTILATORS		EST	1	EA		15000	0	15,000	24.00	28	HVAC	81.24	2,200	17,200
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	225	SF		45	0	10,100	0.40	104	GALL	84.61	8,800	18,900
	H&V		EST	1	LT	11250	4500	11,300	4,500	210.67	242	HVAC	81.24	19,700	35,500
23.13	PIPE SUPPORT PAD - OXIDATION BUILDING							0	7,700					13,700	21,400
	EXCAVATION / BACKFILL		EST	30	CY			0	0	0.36	12	EXFD	90.00	1,100	1,100
	REINFORCING		EST	5.0	TN		1,150.00	0	5,800	20.00	115	REIN	78.27	9,000	14,800
	FORMWORK		EST	80	SF		2.50	0	200	0.14	13	FORM	99.43	1,300	1,500
	CONCRETE		EST	10	CY		105.00	0	1,100	1.50	17	CONP	79.64	1,400	2,500
	MUD MAT		EST	5	CY		105.00	0	500	1.50	9	CONP	79.64	700	1,200
	EMBEDDED STEEL		EST	50	LB		2.50	0	100	0.06	3	CARP	71.88	200	300
23.14	DUCTWORK	INCLUDES INTERNAL BRACING AND TURNING VANES	EST	160	TN		3,250.00	0	520,000	50.00	9,200	FLDU	107.96	993,200	1,513,200
23.15	DUCT SUPPORT STEEL	THREE-COAT SHOP PAINT	EST	80	TN		2,900.00	0	232,000	24.00	2,208	STST	105.71	233,400	465,400
23.16	DUCTWORK INSULATION & LAGGING		EST	12,250	SF		12.00	0	147,000	0.25	3,522	DINS	81.75	287,900	434,900
23.17	FOUNDATIONS FOR DUCT SUPPORT STEEL							0	27,800					53,200	81,000
	EXCAVATION / BACKFILL		EST	180	CY			0	0	0.36	75	EXFD	90.00	6,700	6,700
	REINFORCING		EST	12	TN		1,150.00	0	13,800	20.00	276	REIN	78.27	21,600	35,400
	FORMWORK		EST	450	SF		2.50	0	1,100	0.14	72	FORM	99.43	7,200	8,300
	CONCRETE		EST	95	CY		105.00	0	10,000	1.50	164	CONP	79.64	13,100	23,100
	MUD MAT		EST	15	CY		105.00	0	1,600	1.50	26	CONP	79.64	2,100	3,700

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		Cost Type:												Reviewer:	JMK
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		Allow.=Allowance								Wage Rates Based on:		BIG SANDY			
		Q=Vendor Quote								Labor Productivity =		1.15			

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	EMBEDDED STEEL		EST	500	LB		2.50	0	1,300	0.06	35	CARP	71.88	2,500	3,800
23.18	TRANSFORMERS							981,000	0					209,300	1,190,300
	SST TRANSFORMERS: 22F & 22G	13.8KV-4160V, 2 WINDING XFMR	EST	2	EA	320500		641,000	0	550.00	1,265	EHEA	79.16	100,100	741,100
	SUS TRANSFORMERS: 34F/G; 35F/G	13.8KV-480V,3PHASE, CAST COIL	EST	4	EA	85000		340,000	0	300.00	1,380	EHEA	79.16	109,200	449,200
23.19	SWITCHGEAR							1,162,800	0					673,700	1,836,500
	13.8 KV MEDIUM VOLTAGE SWITCHGEAR	PRICE PER SECTION	EST	8	EA	50000		400,000	0	300.00	2,760	EHEA	79.16	218,500	618,500
	4.16KV MEDIUM VOLTAGE SWITCHGEAR& MCCS	PRICE PER SECTION	EST	9	EA	41200		370,800	0	300.00	3,105	EHEA	79.16	245,800	616,600
	480V LOW VOLTAGE SWITCHGEAR	PRICE PER SECTION	EST	10	EA	39200		392,000	0	230.00	2,645	EHEA	79.16	209,400	601,400
23.20	CABLE BUS & TERMINATIONS							867,100	46,600					1,634,100	2,547,800
	15KV CABLE BUS	CABLE BUS	EST	700	FT	466		326,200	0	6.75	5,434	WIRE	98.84	537,100	863,300
	5KV CABLE BUS	CABLE BUS	EST	300	FT	567		170,100	0	9.00	3,105	WIRE	98.84	306,900	477,000
	480V CABLE BUS	CABLE BUS	EST	600	FT	618		370,800	0	10.30	7,107	WIRE	98.84	702,500	1,073,300
	CABLE BUS TERMINATION	500MCM- 15KV TERMINATIONS	EST	4	EA		1,800.00	0	7,200	33.00	152	WIRE	98.84	15,000	22,200
	CABLE BUS TERMINATION	1000MCM- 5KV TERMINATIONS	EST	4	EA		4,440.00	0	17,800	51.60	237	WIRE	98.84	23,500	41,300
	CABLE BUS TERMINATION	750MCM- 480V TERMINATIONS	EST	8	EA		2,700.00	0	21,600	54.00	497	WIRE	98.84	49,100	70,700
23.21	MCC							216,300	0					11,100	227,400
	480V MCC	PER MCC LINE UP	EST	7	EA	30900		216,300	0	16.00	112	WIRE	98.84	11,100	227,400
23.22	MIMIC PANELS		EST	2	EA	17500		35,000	0	40.00	80	WIRE	98.84	7,900	42,900
23.23	GROUNDING							16,000	0					46,100	62,100
	GROUND ROD	3/4" - 20' LONG	EST	16	EA	150		2,400	0	4.00	74	WIRE	98.84	7,300	9,700
	500 MCM	BARE COPPER WIRE	EST	1,650	FT	7.65		12,600	0	0.12	228	WIRE	98.84	22,500	35,100
	CADWELD		EST	64	EA	15		1,000	0	2.00	147	WIRE	98.84	14,500	15,500
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	16.00	18	WIRE	98.84	1,800	1,800
23.24	LIGHTING/ TRANSFORMERS & PANELS							164,500	165,000					171,300	500,800
	LIGHT FIXTURES		EST	220	EA		750	0	165,000	4.00	1,012	WIRE	98.84	100,000	265,000
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	6	EA	10000		60,000	0	40.00	276	WIRE	98.84	27,300	87,300
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	6	EA	7500		45,000	0	32.00	221	WIRE	98.84	21,800	66,800
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	7	EA	5000		35,000	0	16.00	129	WIRE	98.84	12,700	47,700
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	7	EA	3500		24,500	0	12.00	97	WIRE	98.84	9,500	34,000
23.25	EMERGENCY POWER SYSTEM							108,300	0					24,400	132,700
	DC PANEL BOADRD		EST	1	EA	15450		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	UPS PANEL BOARDS		EST	1	EA	15450		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	SATELLITE UPS		EST	1	EA	41200		41,200	0	16.00	18	WIRE	98.84	1,800	43,000
	VRLA BATTERIES		EST	1	LT	36050		36,100	0	120.00	138	WIRE	98.84	13,600	49,700
23.26	RACEWAY, CABLE TRAY, & CONDUIT							0	1,515,700					5,849,000	7,364,700
	12" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	2,450	LF		18.25	0	44,700	1.10	2,695	WIRE	98.84	266400	311,100
	18" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,650	LF		21.50	0	35,500	1.45	2,393	WIRE	98.84	236500	272,000

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	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	2,950	LF		27.10	0	79,900	1.75	5,163	WIRE	98.84	510300	590,200
	36" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,650	LF		30.30	0	50,000	1.95	3,218	WIRE	98.84	318000	368,000
	5" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	4,500	LF		61.00	0	274,500	1.13	5,072	WIRE	98.84	501300	775,800
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	8,000	LF		31.00	0	248,000	0.81	6,456	WIRE	98.84	638100	886,100
	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	8,000	LF		21.50	0	172,000	0.65	5,160	WIRE	98.84	510000	682,000
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	13,000	LF		9.25	0	120,300	0.35	4,576	WIRE	98.84	452300	572,600
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	16,000	LF		7.15	0	114,400	0.28	4,544	WIRE	98.84	449100	563,500
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	29,000	LF		4.44	0	128,800	0.24	6,931	WIRE	98.84	685100	813,900
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	53,000	LF		3.23	0	171,200	0.19	11,824	WIRE	98.84	1168700	1,339,900
	DUCT BANK WITH 12-5" & 6-3" CONDUITS	3.08' H X 5.2' W	EST	200	LF		381.96	0	76,400	6.48	1,490	ECND	75.97	113200	189,600
23.27	HIGH VOLTAGE POWER CABLE & TERMINATION							0	58,400					164,700	223,100
	1/C # 500KCMIL-15KV		EST	6,300	LF		9.27	0	58,400	0.23	1,666	WIRE	98.84	164700	223,100
23.28	MEDIUM VOLTAGE POWER CABLE & TERMINATION							0	114,600		0			431,700	546,300
	1/C # 500KCMIL-5KV		EST	6,000	LF		8.08	0	48,500	0.17	1,194	WIRE	98.84	118000	166,500
	1/C # 350KCMIL-5KV		EST	6,600	LF		6.13	0	40,500	0.23	1,746	WIRE	98.84	172500	213,000
	1/C # 250KCMIL-5KV		EST	5,400	LF		4.74	0	25,600	0.23	1,428	WIRE	98.84	141200	166,800
23.29	LOW VOLTAGE POWER CABLE & TERMINATION							0	795,900					1,500,700	2,296,600
	3/C # 500KCMIL- 600V		EST	11,120	LF		26.12	0	290,500	0.69	8,824	WIRE	98.84	872100	1,162,600
	#4/0 - #12 AWG-600V		EST	70,000	LF		7.22	0	505,400	0.08	6,360	WIRE	98.84	628600	1,134,000
23.30	CONTROL & INSTRUMENT CABLE							0	512,000					1,436,700	1,948,700
	#14, #16 & PR # 20 FD & SHLD WIRE		EST	160,000	LF		3.20	0	512,000	0.08	14,536	WIRE	98.84	1436700	1,948,700
23.31	FOUNDATION FOR TRANSFORMERS							0	59,000					173,700	232,700
	FOR 21A & 21B	WITH OIL PIT	EST	178	CY		250	0	44,500	8.00	1,638	CONP	79.64	130400	174,900
	FOR 31F, 31G, 32F, 32G, 33F & 33G		EST	63.0	CY		230	0	14,500	7.50	543	CONP	79.64	43300	57,800
23.32	TRANSFORMER FIRE WALLS							0	3,500					9,600	13,100
	FOR 21A & 21B		EST	15	CY		230	0	3,500	7.00	121	CONP	79.64	9,600	13,100
23.33	COMMUNICATIONS		EST	1	LT		34,000.00	0	34,000	229.00	263	WIRE	98.84	26,000	60,000
23.34	LIGHTNING PROTECTION		EST	1	LT		19,500.00	0	19,500	128.00	147	WIRE	98.84	14,500	34,000
23.35	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							44,378,300	23,253,100		647,146			58,577,600	126,209,000
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE			9	MN	75000		675,000		720.00	7,452	MECH	88.89	662400	1,337,400
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										10,564,142

AEP

BIG SANDY UNIT 2

FGD PROJECT - IAQCS (N/ESP)-2B - 1.7 LB/MM BTU - PHASED

ORDER OF MAGNITUDE COST ESTIMATE

Estimate No.: 30718C
Project No.: 12721-000
Date: 9/29/2010
Preparer: MNO
Reviewer: JMK
Approver: PEF

Cost Type:
Est=Estimated
Allow.=Allowance
Q=Vendor Quote

Wage Rates Based on: BIG SANDY
Labor Productivity = 1.15

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	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						56,922		90.52	5,152,000	5,152,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						71,152			5,412,142	5,412,142
	PER DIEM	NONE		0.00	HR						782,672			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				116,266					292,888	409,154
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				1,162,655						1,162,655
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			2,218,915							2,218,915
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				1,162,655					2,928,880	4,091,535
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				3,487,965					8,786,640	12,274,605
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							2,893,900	5,929,500					23,235,000	32,058,400
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	WET FGD ABSORBER ISLAND						47,272,200	29,182,600					81,812,600	158,267,400
24.0	COMPRESSED AIR SYSTEM (BYPRODUCT DEWATERING AREA)														0
25.0	POTABLE WATER SYSTEM														
26.0	SCR SUBSTATION UPGRADE														
27.0	FGD DCS SYSTEM														0
28.0	SITE IMPROVEMENTS - CIVIL WORK														
29.0	BOP ITEMS														
30.0	SERVICE WATER SYSTEM														
99.00	PHASE II - OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS							75,097,000	55,933,300		1,390,893			125,796,900	256,827,200
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE							675,000	0		7,452			662,400	1,337,400
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										22,549,012
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						121,595		90.44	10,997,000	10,997,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						151,994			11,552,012	11,552,012
	PER DIEM	NONE		0.00	HR									0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				279,667					628,985	908,651
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				2,796,665						2,796,665
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			3,754,850	0						3,754,850
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				2,796,665					6,289,845	9,086,510
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				8,389,995					18,869,535	27,259,530
	PHASE II - OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							4,429,900	14,263,000					48,999,800	67,692,600
	PHASE II - OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST	WET FGD						79,526,900	70,196,300					174,796,700	324,519,800

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	TOTAL PHASE II DIRECT AND CONSTRUCTION INDIRECT COSTS							79,526,900	70,196,300					174,796,700	324,519,800
									0					0	0
	INDIRECT COSTS - PHASE II														
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES			1.0	LT										23,000,000
	CONSTRUCTION MANAGEMENT			3.0	%										9,735,600
	S-U / COMMISSIONING			1.0											3,245,200
	CRAFT START-UP SUPPORT	1% OF TOTAL LABOR MANHOURS (INCLUDES OVERTIME INEFFICIENCY & COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - BASED ON ASSUMED 5X10 WORKWEEK)		1.0	%						15,125		90.44	1,482,900	1,482,900
	INITIAL FILLS			0.3	%										973,600
	OPERATOR & TRAINING MANUALS			1.0	LT										300,000
	SUBCONTRACTORS (NOISE CONSULTANT)			1.0	LT										100,000
	SUBTOTAL - INDIRECT COSTS														38,837,300
	TOTAL PHASE II DIRECT AND INDIRECT COSTS														363,357,100
	SPARE PARTS - PHASE II			1.5	%			1,192,900							1,192,900
	SPARE PARTS - CAPITALIZED			0.90	%			715,740							715,740
	SPARE PARTS - FIRST YEAR OF OPERATION			0.60	%			477,160							477,160
	CONTINGENCY - PHASE II.			15.5	%										56,411,200
	ESCALATION - PHASE II														104,993,300
	EQUIPMENT	3.0%/yr		3.0	%			32,360,800							32,360,800
	MATERIAL	2.0%/yr		2.0	%				14,511,000						14,511,000
	LABOR	2.5%/yr		2.5	%									47,932,700	47,932,700
	INDIRECTS	2.5%/yr		2.5	%									10,188,800	10,188,800
	PHASE II - TOTAL PROJECT COST														525,954,500
99.00	PHASE I + PHASE II OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS							185,521,300	106,570,600		2,909,774			266,448,400	590,665,300
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE							1,485,000	0					2,185,920	3,670,920
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										45,259,242
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						253,672		91.57	22,021,000	22,021,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						318,580			23,238,242	23,238,242
	PER DIEM	NONE		0.00	HR									0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				530,153					1,330,692	1,860,845
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				5,301,530						5,301,530
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			9,213,065							9,213,065
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				5,301,530					13,306,920	18,608,450
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				15,985,590					39,920,760	60,976,350
	PHASE I + PHASE II OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							10,698,100	27,118,800					102,003,500	144,890,400

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		Cost Type:												Reviewer:	JMK
		Est=Estimated												Approver:	PEF
		Allow.=Allowance								Wage Rates Based on:		BIG SANDY			
		Q=Vendor Quote								Labor Productivity =		1.15			

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	PHASE I + PHASE II OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST							196,219,400	133,689,400					368,451,900	735,555,700
	TOTAL PHASE I + PHASE II DIRECT AND CONSTRUCTION INDIRECT COSTS							196,219,400	133,689,400					368,452,000	735,555,700
	TOTAL PHASE I + PHASE II INDIRECT COSTS														
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES			1.0	LT										51,000,000
	CONSTRUCTION MANAGEMENT			3.0	%										22,066,700
	S-U / COMMISSIONING			1.0											7,355,600
	CRAFT START-UP SUPPORT														3,140,200
	INITIAL FILLS														2,206,700
	OPERATOR & TRAINING MANUALS			1.0	LT										600,000
	SUBCONTRACTORS (PHASE I - NOISE & DUCTWORK CONSULTANT, GEOTECHNICAL INVESTIGATION, PHASE II - NOISE CONSULTANT ONLY)			1.0	LT										500,000
	NOISE ABATEMENT FOR 85 DBA REQUIREMENT	FOR ID FAN, SDA ENCLOSURE, TRANSFORMERS, BOP, DUCTWORK, ACOUSTIC BARRIERS FOR BOUNDARY LIMITS		1.0	LT										4,500,000
	SUBTOTAL - INDIRECT COSTS														91,369,200
	TOTAL PROJECT DIRECT AND INDIRECT COSTS														826,924,900
	SPARE PARTS - PHASE I + PHASE II			1.5	%			2,943,300							2,943,300
	SPARE PARTS - CAPITALIZED			0.90	%			1,765,980							1,765,980
	SPARE PARTS - FIRST YEAR OF OPERATION			0.60	%			1,177,320							1,177,320
	CONTINGENCY - PHASE I + PHASE II														122,870,000
	ESCALATION - PHASE I + PHASE II														163,143,500
	EQUIPMENT							50,943,000							50,943,000
	MATERIAL								21,630,600						21,630,600
	LABOR													74,732,900	74,732,900
	INDIRECTS													15,837,000	15,837,000
	TOTAL PROJECT COST - (PHASE I + PHASE II)														1,115,881,700
	REFERENCE COSTS:														
A	ESP DEMOLITION	ALLOWANCE FOR 1000T STRUCTURE	EST	1,000	TN			0	0	6.00	6,900	WRKG	120.63	832,300	832,300
B	REMOVE BOOSTER AIR FANS		EST	2	EA			0	0	400.00	920	WRKG	120.63	111,000	111,000
C	REMOVAL OF FUEL OIL TANK							1,200,000	80,000					469,400	1,749,400
	REMOVE FUEL OIL TANK & SOIL REMEDIATION	LABOR COST IS FOR REMOVAL OF TANK ONLY. ALLOWANCE FOR SOIL REMEDIATION AND DISPOSAL IN AN EPA APPROVED LANDFILL. SUBCONTRACT COST INCLUDES LABOR. USED LOWER END OF THE RANGE $118-355/CY. COST COULD BE LOWER ($59-118/CY) IF SOLD TO A BITUMINOUS CONCRETE BATCH PLANT	EST	8,000	CY	150		1,200,000	0		0	MECH	88.89	0	1,200,000
	REMOVE DIKE & RECOMPACT FILL IN TANK AREA		EST	3,500	CY			0	0	0.60	2,415	ETWK	177.49	428,600	428,600
	FILL FROM OFF SITE COURSE		EST	5,000	CY		16	0	80,000	0.04	230	ETWK	177.49	40,800	120,800

ATTACHMENT 4-10
IAQCS Detailed Capital Cost Estimate No. 30715 Est-3A ESP in Service*
(3.0 lb SO_2/MMbtu)

* - Due to the significant differences in layout between the phased and non-phased cost estimates the "bases" for comparison purposes were 1B for the non-phased cost estimates and 3B for the phased cost estimates. Therefore cost estimates 2A, 2B, 3A (Phased) and 1A, 4A and 4B (Non-Phased) contain only accounts whose costs are different from the corresponding base estimates 3B and 1B respectively.

				AEP										Estimate No.:	30715C
				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS (ESP)-3A - 3.0 LB/MM BTU - PHASED										Date:	9/29/2010
				ORDER OF MAGNITUDE COST ESTIMATE										Preparer:	MNO
		Cost Type:												Reviewer:	JMK
		Est=Estimated												Approver:	PEF
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		Q=Vendor Quote								Labor Productivity =		1.15			

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	PHASE I - DRY FGD														
1.0	ID FANS														
1.1	ID FANS - OEM EQUIPMENT	1,800,000 ACFM WITH 19,700 HP MOTORS ($750,000 EACH). INCLUDES HYDRAULIC OIL UNITS, SEAL AIR FAN SKIDS, VIBRATION MONITORING EQUIPMENT, FAN STALL EQUIPMENT, FIELD SERVICE REP FOR 140 DAYS	EST	2	EA	3,460,000.000		6,920,000	0	8190.00	18,837	MECH	88.89	1,674,400	8,594,400
1.2	PIPING & SUPPORTS - MECHANICAL							21,800	28,700					120,500	171,000
	LARGE BORE PIPING	6" CS, SCH 40 WELDED	EST	200	LF		41.7	0	8,300	1.61	370	SPNG	94.41	35,000	43,300
	SMALL BORE PIPING	2" CS, SCH 80 WELDED	EST	50	LF		22.20	0	1,100	1.26	72	SPNG	94.41	6,800	7,900
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	250	LF		48.80	0	12,200	1.44	414	SPNG	94.41	39,100	51,300
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	100	LF		33.70	0	3,400	1.32	152	SPNG	94.41	14,300	17,700
	VALVE	2" GLOBE, 150# SS, WELDED	EST	15	EA	1,450		21,800	0	5.64	97	SPNG	94.41	9,200	31,000
	PIPE SUPPORTS		EST	105	EA		35.00	0	3,700	1.50	181	MECH	88.89	16,100	19,800
1.3	DAMPERS							781,000	0					352,600	1,133,600
	INLET DAMPERS	2X50% DOUBLE LOUVER TYPE WITH SEAL AIR FANS TOTAL FOR TWO FANS	EST	580	SF	450		261,000	0	2.50	1,668	MECH	88.89	148,200	409,200
	OUTLET DAMPERS	2X50% GUILLOTINE DAMPERS, WITH SEAL AIR FANS TOTAL FOR TWO FANS	EST	800	SF	650		520,000	0	2.50	2,300	MECH	88.89	204,400	724,400
1.4	EXPANSION JOINTS		EST	570	LF		230.00	0	131,100	2.00	1,311	MECH	88.89	116,500	247,600
1.5	DUCTWORK	FABRIC FILTER OUTLET TO ID FANS AND FROM ID FANS TO STACK - INCLUDES INTERNAL BRACING AND TURNING VANES	EST	1,095	TN		3,250.00	0	3,558,800	50.00	62,963	FLDU	107.96	6,797,400	10,356,200
1.6	DUCT SUPPORT STEEL	THREE COAT SHOP PAINT	EST	550	TN		2,900.00	0	1,595,000	24.00	15,180	STST	105.71	1,604,700	3,199,700
1.7	ID FAN INSULATION & LAGGING	TOTAL FOR TWO FANS. PRICING REFLECTS STANDARD ACOUSTICAL INSULATION	EST	4,200	SF		40.00	0	168,000	0.55	2,657	DINS	81.75	217,200	385,200
1.8	DUCTWORK INSULATION & LAGGING	INCLUDES INSULATION FOR SPRAY DRYER OUTLET DUCT TO FABRIC FILTERS SUPPLIED WITH THE OEM EQUIPMENT	EST	113,620	SF		12.00	0	1,363,400	0.25	32,666	DINS	81.75	2,670,400	4,033,800
1.9	DUCT SUPPORT STEEL - FOUNDATIONS							0	440,200					855,200	1,295,400
	EXCAVATION / BACKFILL		EST	2,831	CY			0	0	0.36	1,172	EXFD	90.00	105,500	105,500
	REINFORCING		EST	164	TN		1,150.00	0	188,500	20.00	3,770	REIN	78.27	295,100	483,600
	FORMWORK		EST	9,238	SF		2.50	0	23,100	0.14	1,487	FORM	99.43	147,900	171,000
	CONCRETE		EST	1,788	CY		105.00	0	187,700	1.50	3,084	CONP	79.64	245,600	433,300
	MUD MAT		EST	283	CY		105.00	0	29,700	1.50	488	CONP	79.64	38,900	68,600
	EMBEDDED STEEL		EST	4,470	LB		2.50	0	11,200	0.06	308	CARP	71.88	22,200	33,400
1.10	ID FAN FOUNDATIONS INCLUDING ID FAN AUX EQUIPMENT							0	106,000					198,700	304,700
	EXCAVATION / BACKFILL		EST	600	CY			0	0	0.36	248	EXFD	90.00	22,400	22,400
	REINFORCING		EST	40	TN		1,150.00	0	46,000	20.00	920	REIN	78.27	72,000	118,000
	FORMWORK		EST	1,500	SF		2.50	0	3,800	0.14	242	FORM	99.43	24,000	27,800
	CONCRETE		EST	400	CY		105.00	0	42,000	1.50	690	CONP	79.64	55,000	97,000
	MUD MAT		EST	40	CY		105.00	0	4,200	1.50	69	CONP	79.64	5,500	9,700
	EMBEDDED STEEL		EST	4,000	LB		2.50	0	10,000	0.06	276	CARP	71.88	19,800	29,800
1.11	ID FAN IAQCS CONTROL ROOM - FOUNDATIONS							0	270,100					508,600	778,700
	EXCAVATION / BACKFILL		EST	800	CY			0	0	0.36	331	EXFD	90.00	29,800	29,800
	REINFORCING		EST	100	TN		1,150.00	0	115,000	20.00	2,300	REIN	78.27	180,000	295,000

				AEP										Estimate No.:	30715C
				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS (ESP)-3A - 3.0 LB/MM BTU - PHASED										Date:	9/29/2010
				ORDER OF MAGNITUDE COST ESTIMATE										Preparer:	MNO
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Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	FORMWORK		EST	7,000	SF		2.50	0	17,500	0.14	1,127	FORM	99.43	112,100	129,600
	CONCRETE		EST	1,100	CY		105.00	0	115,500	1.50	1,898	CONP	79.64	151,100	266,600
	MUD MAT		EST	115	CY		105.00	0	12,100	1.50	198	CONP	79.64	15,800	27,900
	EMBEDDED STEEL		EST	4,000	LB		2.50	0	10,000	0.06	276	CARP	71.88	19,800	29,800
1.12	ID FAN IAQCS CONTROL ROOM	SUBCONTRACT PRICE INCLUDES LABOR. COMPLETE WITH HVAC, FINISHES AND SANITARY FACILITIES	EST	7,875	SF		500.00	0	3,937,500	0.00	0	STST	105.71	0	3,937,500
1.13	TRANSFORMERS							770,000	0					145,600	915,600
	SST TRANSFORMERS: 21F & 21G	13.8KV-4160V, 3 PHASE, 2 WINDING	EST	2	EA	300000		600,000	0	500.00	1,150	EHEA	79.16	91,000	691,000
	SUS TRANSFORMERS: 31F, 31G	13.8KV-480V, 3 PHASE, CAST COIL	EST	2	EA	85000		170,000	0	300.00	690	EHEA	79.16	54,600	224,600
1.14	SWITCHGEAR							1,132,000	0		0			589,900	1,721,900
	480V LOW VOLTAGE (31F/G)	PRICE PER SECTION	EST	5	EA	38000		190,000	0	230.00	1,323	EHEA	79.16	104,700	294,700
	4.16 KV MEDIUM VOLTAGE (21A/B)	PRICE PER SECTION	EST	10	EA	39200		392,000	0	280.00	3,220	EHEA	79.16	254,900	646,900
	13KV MEDIUM VOLTAGE (13F/G)	PRICE PER SECTION	EST	11	EA	50000		550,000	0	230.00	2,910	EHEA	79.16	230,300	780,300
1.15	CABLE BUS & TERMINATIONS							1,129,100	35,800		0			1,930,000	3,094,900
	15KV CABLE BUS TO 13F/G)	CABLE BUS	EST	2,100	FT	466		978,600	0	6.75	16,301	WIRE	98.84	1,611,200	2,589,800
	5KV CABLE BUS	CABLE BUS	EST	150	FT	385		57,800	0	4.70	811	WIRE	98.84	80,100	137,900
	480V CABLE BUS	CABLE BUS	EST	150	FT	618		92,700	0	10.30	1,777	WIRE	98.84	175,600	268,300
	CABLE BUS TERMINATION	15KV TERMINATIONS	EST	4	EA		1,800.00	0	7,200	33.00	152	WIRE	98.84	15,000	22,200
	CABLE BUS TERMINATION	5KV TERMINATIONS	EST	4	EA		4,440.00	0	17,800	51.60	237	WIRE	98.84	23,500	41,300
	CABLE BUS TERMINATION	480V TERMINATIONS	EST	4	EA		2,700.00	0	10,800	54.00	248	WIRE	98.84	24,600	35,400
1.16	MCC							180,000	0					10,900	190,900
	480V MCC	PER LINE UP	EST	4	EA	30,000		120,000	0	16.00	74	WIRE	98.84	7,300	127,300
	DC MCC	PER LINE UP	EST	2	EA	30,000		60,000	0	16.00	37	WIRE	98.84	3,600	63,600
1.17	MIMIC PANELS		EST	1	EA	17500		17,500	0	40.00	46	WIRE	98.84	4,500	22,000
1.18	RACEWAY, CABLE TRAY, & CONDUIT							0	1,664,200					8,196,600	9,860,800
	12" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	5,000	LF		18.25	0	91,300	1.10	6,325	WIRE	98.84	625,200	716,500
	18" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	3,000	LF		21.50	0	64,500	1.45	5,003	WIRE	98.84	494,400	558,900
	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	9,320	LF		27.10	0	252,600	1.75	18,757	WIRE	98.84	1,853,900	2,106,500
	36" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	2,400	LF		30.30	0	72,700	1.95	5,382	WIRE	98.84	532,000	604,700
	5" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	4,000	LF		61.00	0	244,000	1.13	5,184	WIRE	98.84	512,400	756,400
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	8,600	LF		31.00	0	266,600	0.81	7,981	WIRE	98.84	788,900	1,055,500
	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	8,000	LF		21.50	0	172,000	0.65	5,934	WIRE	98.84	586,500	758,500
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	12,000	LF		9.25	0	111,000	0.35	4,858	WIRE	98.84	480,100	591,100
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	15,000	LF		7.15	0	107,300	0.28	4,899	WIRE	98.84	484,200	591,500
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	28,000	LF		4.44	0	124,300	0.24	7,696	WIRE	98.84	760,700	885,000
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	48,900	LF		3.23	0	157,900	0.19	10,910	WIRE	98.84	1,078,300	1,236,200
1.19	HIGH VOLTAGE POWER CABLE & TERMINATION							0	288,500					666,700	955,200
	1/C # 750KCMIL-15KV - 14400' ID FAN		EST	14,400	LF		12.89	0	185,600	0.23	3,809	WIRE	98.84	376,500	562,100
	1/C # 500KCMIL-15KV		EST	11,100	LF		9.27	0	102,900	0.23	2,936	WIRE	98.84	290,200	393,100
1.20	MEDIUM VOLTAGE POWER CABLE & TERMINATION							0	100,200					427,400	527,600
	1/C # 350KCMIL-5KV		EST	16,350	LF		6.13	0	100,200	0.23	4,325	WIRE	98.84	427,400	527,600
1.21	LOW VOLTAGE POWER CABLE & TERMINATIONS		EST	1,800	LF		26.12	0	229,800	0.69	1,428	WIRE	98.84	732,100	961,900

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	3/C # 500KCMIL-600V		EST	1,800	LF		26.12	0	148,900	0.69	1,428	WIRE	98.84	141,200	290,100
	#4/0 - #12 AWG-600V		EST	65,800	LF		7.22	0	80,900	0.08	5,978	WIRE	98.84	590,900	671,800
1.22	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	EST	112,800	LF		3.20	0	361,000	0.08	10,248	WIRE	98.84	1,012,900	1,373,900
1.23	EMERGENCY POWER SYSTEM							285,500	0					38,900	324,400
	DC PANEL BOADRD		EST	1	EA	20150		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	UPS PANEL BOARDS		EST	2	EA	20150		31,000	0	40.00	92	WIRE	98.84	9,100	40,100
	UPS		EST	1	EA	78000		60,000	0	32.00	37	WIRE	98.84	3,600	63,600
	SWITCHBOARD		EST	1	EA	52000		40,000	0	40.00	46	WIRE	98.84	4,500	44,500
	BYPASS TRANSFORMERS		EST	1	EA	32500		25,000	0	40.00	46	WIRE	98.84	4,500	29,500
	BATTERY CHARGER		EST	2	EA	41600		64,000	0	16.00	37	WIRE	98.84	3,600	67,600
	BATTERIES		EST	1	LT	65000		50,000	0	80.00	92	WIRE	98.84	9,100	59,100
1.24	GROUNDING							14,100	0					42,700	56,800
	GROUND ROD	3/4" - 20' LONG EACH	EST	16	EA	150		2,400	0	4.00	74	WIRE	98.84	7,300	9,700
	500 MCM	BARE COPPER WIRE	EST	1,400	FT	7.65		10,700	0	0.12	193	WIRE	98.84	19,100	29,800
	CADWELD		EST	64	EA	15		1,000	0	2.00	147	WIRE	98.84	14,500	15,500
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	16.00	18	WIRE	98.84	1,800	1,800
1.25	LIGHTING/ TRANSFORMERS & PANELS							26,000	30,000					29,500	85,500
	LIGHT FIXTURES		EST	40	EA		750	0	30,000	4.00	184	WIRE	98.84	18,200	48,200
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	1	EA	10000		10,000	0	40.00	46	WIRE	98.84	4,500	14,500
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	1	EA	7500		7,500	0	32.00	37	WIRE	98.84	3,600	11,100
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	1	EA	5000		5,000	0	16.00	18	WIRE	98.84	1,800	6,800
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	1	EA	3500		3,500	0	12.00	14	WIRE	98.84	1,400	4,900
1.26	DUCT BANK							0	136,000					192,700	328,700
	DUCT BANK WITH 12-5" & 4-3" CONDUITS		EST	100	LF		361.21	0	38,000	6.24	717	ECND	75.97	54,500	92,500
	DUCT BANK WITH 6-5" & 2-3" CONDUITS		EST	180	LF		230.91	0	71,400	5.45	1,128	ECND	75.97	85,700	157,100
	DUCT BANK WITH 6-5" & 6-3" CONDUITS		EST	100	LF		265.88	0	26,600	6.01	691	ECND	75.97	52,500	79,100
1.27	FOUNDATION FOR TRANSFORMERS							0	61,900		0			162,600	224,500
	EXCAVATION / BACKFILL		EST	1,000	CY			0	0	0.36	414	EXFD	90.00	37,300	37,300
	REINFORCING		EST	20	TN		1,150.00	0	23,000	20.00	460	REIN	78.27	36,000	59,000
	FORMWORK		EST	2,500	SF		2.50	0	6,300	0.14	403	FORM	99.43	40,000	46,300
	CONCRETE		EST	190	CY		105.00	0	20,000	1.50	328	CONP	79.64	26,100	46,100
	MUD MAT		EST	25	CY		105.00	0	2,600	1.50	43	CONP	79.64	3,400	6,000
	EMBEDDED STEEL		EST	4,000	LB		2.50	0	10,000	0.06	276	CARP	71.88	19,800	29,800
1.28	FIREWALL FOR TRANSFORMERS							0	3,200					8,300	11,500
	REINFORCING		EST	1.2	TN		1,150.00	0	1,400	20.00	28	REIN	78.27	2,200	3,600
	FORMWORK		EST	80	SF		2.50	0	200	0.14	13	FORM	99.43	1,300	1,500
	CONCRETE		EST	15	CY		105.00	0	1,600	3.50	60	CONP	79.64	4,800	6,400
1.29	EARLY COMMISSIONING COSTS TEMPORARY HIGH VOLTAGE POWER CABLE & TERMINATION FROM EAST SIDE OF SCR BUILDING TO TRANSFORMER PDC		EST	300	LF		466	0	139,800	6.75	2,329	WIRE	98.84	230,200	370,000
1.30	COMMUNICATIONS		EST	1	LT		17,000.00	0	17,000	114.00	131	WIRE	98.84	13,000	30,000
1.31	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000
1.32	EMERGENCY DIESEL DRIVEN QUENCH PUMP	WITH FUEL DAY TANK. FOUNDATIONS INCLUDED WITH ABSORBER BUILDING FOUNDATIONS. INCLUDES PIPING AND DRAINS		1	EA	150,000	200,000	150,000	200,000	3250.00	3,738	MECH	88.89	332,200	682,200
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							11,427,000	14,874,200		311,764			29,889,900	56,191,100
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0

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Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										4,640,242
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						27,110		83.48	2,263,000	2,263,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						33,887			2,377,242	2,377,242
	PER DIEM	NONE		0.00	HR						372,761			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				74,371					149,450	223,821
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				743,710						743,710
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			571,350							571,350
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				743,710					1,494,495	2,238,205
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				2,231,130					4,483,485	6,714,615
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							571,400	3,792,900					10,767,700	15,131,900
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	ID FANS						11,998,400	18,667,100					40,657,600	71,323,000
2.0	FABRIC FILTERS														
2.1	MECHANICAL EQUIPMENT	A SINGLE FABRIC FILTER (225' X 130') UNIT INCLUDING ALL INTERNAL FABRIC FILTER ELEMENTS SUCH AS BAGS, CAGES, ASH HOPPERS, 2 BROKEN BAG DETECTORS PER COMPARTMENT	EST	1	LT	19,276,000		19,276,000	0	121500.00	139,725	MECH	88.89	12,420,200	31,696,200
2.2	INSULATION FOR FABRIC FILTER	SUBCONTRACT COST INCLUDES LABOR	EST	81,000	SF	30		2,430,000	0	0.00	0	DINS	81.75	0	2,430,000
2.3	PENTHOUSE FOR FABRIC FILTER	SUPPORT STEEL AND PRLINS INCLUDED WITH OEM EQUIPMENT		29,500	SF			70,200	787,000					1,007,600	1,864,800
	SIDING FOR PENTHOUSE		EST	14,200	SF		12.00	0	170,400	0.11	1,796	SDNG	93.41	167,800	338,200
	CONCRETE FLOOR FOR PENTHOUSE		EST	250	CY		230.00	0	57,500	7.50	2,156	SDNG	93.41	201,400	258,900
	ROOFING FOR PENTHOUSE		EST	29,500	SF		18.00	0	531,000	0.22	7,464	ROOF	69.12	515,900	1,046,900
	H&V		EST	1	LT	70200	28080	70,200	28,100	1310.67	1,507	HVAC	81.24	122,500	220,800
2.4	BOTTOM ENCLOSURE FOR BAGHOUSE							60,000	1,204,000					1,359,800	2,623,800
	SUPPORT STEEL, GIRTS AND SIDING		EST	29,500	SF		40.00	0	1,180,000	0.35	11,874	STST	105.71	1,255,200	2,435,200
	H&V		EST	1	LT	60000	24000	60,000	24,000	1120.00	1,288	HVAC	81.24	104,600	188,600
2.5	PIPING & SUPPORTS - MECHANICAL							30,900	101,400					209,500	341,800
	LARGE BORE PIPING	6" SS, SCH 40 WELDED	EST	100	LF		111.00	0	11,100	2.02	232	SPNG	94.41	21,900	33,000
	LARGE BORE PIPING	12" CS, SCH 40 WELDED	EST	400	LF		188.70	0	75,500	2.80	1,288	SPNG	94.41	121,600	197,100
	SMALL BORE PIPING	2" CS, SCH 80 WELDED	EST	50	LF		22.20	0	1,100	1.26	72	SPNG	94.41	6,800	7,900
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	50	LF		48.80	0	2,400	1.44	83	SPNG	94.41	7,800	10,200
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	100	LF		33.70	0	3,400	1.32	152	SPNG	94.41	14,300	17,700
	VALVE	12" GATE, 150 #, CS, WELDED	EST	2	EA	8,200		16,400	0	19.20	44	SPNG	94.41	4,200	20,600
	VALVE	2" GLOBE, 150# SS, WELDED	EST	10	EA	1,450		14,500	0	5.64	65	SPNG	94.41	6,100	20,600
	PIPE SUPPORTS		EST	105	EA		75.00	0	7,900	2.50	302	MECH	88.89	26,800	34,700
2.6	FABRIC FILTER - FOUNDATIONS							0	550,700					1,081,100	1,631,800
	EXCAVATION / BACKFILL		EST	4,945	CY			0	0	0.36	2,047	EXFD	90.00	184,300	184,300
	REINFORCING		EST	192	TN		1,150.00	0	220,800	20.00	4,416	REIN	78.27	345,600	566,400
	FORMWORK		EST	7,800	SF		2.50	0	19,500	0.14	1,256	FORM	99.43	124,900	144,400
	CONCRETE		EST	2,400	CY		105.00	0	252,000	1.50	4,140	CONP	79.64	329,700	581,700
	MUD MAT		EST	270	CY		105.00	0	28,400	1.50	466	CONP	79.64	37,100	65,500
	EMBEDDED STEEL		EST	12,000	LB		2.50	0	30,000	0.06	828	CARP	71.88	59,500	89,500
2.7	FABRIC FILTER - SUPPORT STEEL AND ACCESS GALLERY							0	360,000					1,186,700	1,546,700
	SUPPORT STEEL	MATERIAL INCLUDED WITH OEM EQUIPMENT	EST	300	TN			0	0	24.00	8,280	STST	105.71	875,300	875,300

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	ACCESS GALLERY		EST	8,000	SF		45.00	0	360,000	0.40	3,680	GALL	84.61	311,400	671,400
2.8	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE INCLUDED IN SECTION 1.0 - ID FANS													
2.9	LIGHTING/ TRANSFORMERS & PANELS							30,000	75,000					58,200	163,200
	LIGHT FIXTURES		EST	100	EA		750	0	75,000	4.00	460	WIRE	98.84	45,500	120,500
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	10000		20,000	0	40.00	92	WIRE	98.84	9,100	29,100
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	2	EA	5000		10,000	0	16.00	37	WIRE	98.84	3,600	13,600
2.10	GROUNDING							7,300	0					17,500	24,800
	GROUND ROD	3/4" - 20' LONG	EST	4	EA	150		600	0	4.00	18	WIRE	98.84	1,800	2,400
	500 MCM	BARE COPPER WIRE	EST	850	FT	7.65		6,500	0	0.12	117	WIRE	98.84	11,600	18,100
	CADWELD		EST	16	EA	15		200	0	2.00	37	WIRE	98.84	3,600	3,800
	GROUNDING TEST	TEST, CALIBRATION & DOCUMENTATION	EST	1	EA			0	0	4.00	5	WIRE	98.84	500	500
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							21,934,400	3,153,100		193,927			17,340,600	42,323,100
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										2,886,720
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						16,863		83.48	1,408,000	1,408,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						21,079			1,478,720	1,478,720
	PER DIEM	NONE		0.00	HR						231,869			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				15,766					86,703	102,469
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				157,655						157,655
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			1,096,720							1,096,720
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				157,655					867,030	1,024,685
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				472,965					2,601,090	3,074,055
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							1,096,700	804,000					6,441,500	8,342,300
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FABRIC FILTERS						23,031,100	3,957,100					23,782,100	50,665,400
3.0	NEW STACK														
4.0	LIME HANDLING SYSTEM														
4.1	LIME STORAGE SILO							6,770,000	0					0	6,770,000
	SILO	CONCRETE SILO 65' DIA X 126' H - 8100 TONS -SUBCONTRACT COST INCLUDES LABOR	EST	2	EA	3,240,000.00		6,480,000	0	0.00	0	CONP	79.64	0	6,480,000
	ELEVATOR	MAINTENANCE ELEVATOR - SUBCONTRACT COST INCLUDES LABOR	EST	1	EA	290,000.00		290,000	0	0.00	0	MECH	88.89	0	290,000
4.2	LIME UNLOADING SYSTEM	INCLUDES PNEUMATIC HANDLING SYSTEM, THREE VACUUM EXHAUSTER, TWO FILTER SEPARATORS	EST	1	LT	640,000		640,000	0	4000.00	4,600	MECH	88.89	408,900	1,048,900
4.3	PIPING - MECHANICAL							29,000	15,600					77,900	122,500
	SMALL BORE PIPING	2" CS, SCH 80 WELDED	EST	100	LF		22.20	0	2,200	1.26	145	SPNG	94.41	13,700	15,900
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	100	LF		48.80	0	4,900	1.44	166	SPNG	94.41	15,600	20,500

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	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	200	LF		33.70	0	6,700	1.32	304	SPNG	94.41	28,700	35,400
	VALVE	2" GLOBE, 150# SS, WELDED	EST	20	EA	1,450		29,000	0	5.64	130	SPNG	94.41	12,200	41,200
	PIPE SUPPORTS		EST	50	EA		35.00	0	1,800	1.50	86	MECH	88.89	7,700	9,500
4.4	LIME STORAGE SILO ACCESS STAIR TOWER	THREE COAT SHOP PAINT	EST	50	TN		2,900.00	0	145,000	24.00	1,380	STST	105.71	145,900	290,900
4.5	PIPE RACK FOR LIME HANDLING, WASTE HANDLING AND MISC MECHANICAL PIPING	THREE COAT SHOP PAINT	EST	270	TN		2,900.00	0	783,000	24.00	7,452	STST	105.71	787,800	1,570,800
4.6	RAIL CAR UNLOADING AREA - FOUNDATIONS	20 X 250 - NO SIDING						0	85,300					180,200	265,500
	EXCAVATION / BACKFILL		EST	1,000	CY			0	0	0.36	414	EXFD	90.00	37,300	37,300
	REINFORCING		EST	30	TN		1,150.00	0	34,500	20.00	690	REIN	78.27	54,000	88,500
	FORMWORK		EST	1,500	SF		2.50	0	3,800	0.14	242	FORM	99.43	24,000	27,800
	CONCRETE		EST	400	CY		105.00	0	42,000	1.50	690	CONP	79.64	55,000	97,000
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	2,000	LB		2.50	0	5,000	0.06	138	CARP	71.88	9,900	14,900
4.7	LIME UNLOADING BLOWER / ELECTRICAL BUILDING - FOUNDATIONS							0	74,500					187,800	262,300
	EXCAVATION / BACKFILL		EST	1,900	CY			0	0	0.36	787	EXFD	90.00	70,800	70,800
	REINFORCING		EST	25	TN		1,150.00	0	28,800	20.00	575	REIN	78.27	45,000	73,800
	FORMWORK		EST	640	SF		2.50	0	1,600	0.14	103	FORM	99.43	10,200	11,800
	CONCRETE		EST	300	CY		105.00	0	31,500	1.50	518	CONP	79.64	41,200	72,700
	MUD MAT		EST	60	CY		105.00	0	6,300	1.50	104	CONP	79.64	8,200	14,500
	EMBEDDED STEEL		EST	2,500	LB		2.50	0	6,300	0.06	173	CARP	71.88	12,400	18,700
4.8	LIME UNLOADING BLOWER / ELECTRICAL BUILDING	130' L X 30' W X 30' H						75,000	351,500					24,400	450,900
	PREENGINEERED BUILDING INCLUDING H&V AND LIGHTING	SUBCONTRACT PRICE, INCLUDES LABOR	EST	3,900	SF		85	0	331,500	0.00	0	STST	105.71	0	331,500
	ADDITONAL HVAC UNIT FOR ELECTRICAL ROOM & CONTROLS	40T PACKAGED UNIT FOR ELECTRICAL EQUIPMENT ROOM. INCLUDES ALLOWANCE FOR CONCRETE PAD AND ELECTRICAL WORK	EST	1	LT	75000	20000	75,000	20,000	350.00	300	HVAC	81.24	24,400	119,400
4.9	CONCRETE PIT FOR THE ELEVATOR		EST	10	CY		230.00	0	2,300	7.50	86	CONP	79.64	6,900	9,200
4.10	LIME STORAGE SILO - FOUNDATIONS							0	563,700					1,023,400	1,587,100
	EXCAVATION / BACKFILL		EST	4,320	CY			0	0	0.36	1,788	EXFD	90.00	161,000	161,000
	REINFORCING		EST	240.0	TN		1,150.00	0	276,000	20.00	5,520	REIN	78.27	432,100	708,100
	FORMWORK		EST	3,600	SF		2.50	0	9,000	0.14	580	FORM	99.43	57,600	66,600
	CONCRETE		EST	2,400	CY		105.00	0	252,000	1.50	4,140	CONP	79.64	329,700	581,700
	MUD MAT		EST	140	CY		105.00	0	14,700	1.50	242	CONP	79.64	19,200	33,900
	EMBEDDED STEEL		EST	4,800	LB		2.50	0	12,000	0.06	331	CARP	71.88	23,800	35,800
4.11	LIME STORAGE SILO ACCESS STAIR TOWER - FOUNDATIONS							0	14,200					28,600	42,800
	EXCAVATION / BACKFILL		EST	110	CY			0	0	0.36	46	EXFD	90.00	4,100	4,100
	REINFORCING		EST	4.8	TN		1,150.00	0	5,500	20.00	110	REIN	78.27	8,600	14,100
	FORMWORK		EST	320	SF		2.50	0	800	0.14	52	FORM	99.43	5,100	5,900
	CONCRETE		EST	60	CY		105.00	0	6,300	1.50	104	CONP	79.64	8,200	14,500
	MUD MAT		EST	8	CY		105.00	0	800	1.50	14	CONP	79.64	1,100	1,900
	EMBEDDED STEEL		EST	300	LB		2.50	0	800	0.06	21	CARP	71.88	1,500	2,300
4.12	PIPE RACK - FOUNDATIONS							0	94,200					237,800	332,000
	EXCAVATION / BACKFILL		EST	1,360	CY			0	0	0.36	563	EXFD	90.00	50,700	50,700
	REINFORCING		EST	32.2	TN		1,150.00	0	37,000	20.00	740	REIN	78.27	57,900	94,900
	FORMWORK		EST	4,000	SF		2.50	0	10,000	0.14	644	FORM	99.43	64,000	74,000
	CONCRETE		EST	402	CY		105.00	0	42,200	1.50	693	CONP	79.64	55,200	97,400
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	2,010	LB		2.50	0	5,000	0.06	139	CARP	71.88	10,000	15,000

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4.13	TRANSFORMERS: 33F, 33G,	SUS TRANSFORMERS: 33F, 33G, 13.8KV-480V,3PHASE, 3 WINDING XFMR 2/2.24/3-2MVA (DELTA TO DELTA)	EST	2	EA	85000		170,000	0	300.00	690	EHEA	79.16	54,600	224,600
4.14	480V LOW VOLTAGE (33F/G) SWITCHGEAR	480V LOW VOLTAGE (33F/G), SWITCHGEAR WITH 1-4000A BRKR & 3-600A BRKRs & 1-4000A TIE BRKR-2-5 VER SEC	EST	5	EA	39200		196,000	0	230.00	1,323	EHEA	79.16	104,700	300,700
4.15	CABLE BUS DUCT							134,700	10,800					200,200	345,700
	480V CABLE BUS	BUST DUCT ONLY	EST	150	FT	898		134,700	0	10.30	1,777	WIRE	98.84	175,600	310,300
	CABLE BUS TERMINATION	750MCM- 480V TERMINATIONS	EST	4	EA		2,700.00	0	10,800	54.00	248	WIRE	98.84	24,600	35,400
4.16	MCC							61,800	0					3,600	65,400
	480V MCC	PER LINE UP	EST	2	EA	30900		61,800	0	16.00	37	WIRE	98.84	3,600	65,400
4.17	MIMIC PANELS		EST	1	EA	17500		17,500	0	12.00	14	WIRE	98.84	1,400	18,900
4.18	EMERGENCY POWER SYSTEM							108,300	0					24,400	132,700
	DC PANEL BOARD		EST	1	EA	15450		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	UPS PANEL BOARDS		EST	1	EA	15450		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	SATELLITE UPS		EST	1	EA	41200		41,200	0	16.00	18	WIRE	98.84	1,800	43,000
	VRLA BATTERIES	8HR-400A, 480V	EST	1	LT	36050		36,100	0	120.00	138	WIRE	98.84	13,600	49,700
4.19	GROUNDING							13,300	0					41,300	54,600
	GROUND ROD	3/4" - 20' LONG	EST	16	EA	150		2,400	0	4.00	74	WIRE	98.84	7,300	9,700
	500 MCM	BARE COPPER WIRE	EST	1,300	FT	7.65		9,900	0	0.12	179	WIRE	98.84	17,700	27,600
	CADWELD		EST	64	EA	15		1,000	0	2.00	147	WIRE	98.84	14,500	15,500
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	16.00	18	WIRE	98.84	1,800	1,800
4.20	LIGHTING/ TRANSFORMERS & PANELS							52,000	135,000					104,500	291,500
	LIGHT FIXTURES		EST	180	EA		750	0	135,000	4.00	828	WIRE	98.84	81,800	216,800
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	10000		20,000	0	40.00	92	WIRE	98.84	9,100	29,100
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	7500		15,000	0	32.00	74	WIRE	98.84	7,300	22,300
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	2	EA	5000		10,000	0	16.00	37	WIRE	98.84	3,600	13,600
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	2	EA	3500		7,000	0	12.00	28	WIRE	98.84	2,700	9,700
4.21	RACEWAY, CABLE TRAY, & CONDUIT							0	310,900					1,537,100	1,848,000
	12" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,050	LF		18.25	0	19,200	1.10	1,328	WIRE	98.84	131,300	150,500
	18" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	600	LF		21.50	0	12,900	1.45	1,001	WIRE	98.84	98,900	111,800
	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,700	LF		27.10	0	46,100	1.75	3,421	WIRE	98.84	338,200	384,300
	36" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	500	LF		30.30	0	15,200	1.95	1,121	WIRE	98.84	110,800	126,000
	5" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	750	LF		61.00	0	45,800	1.13	972	WIRE	98.84	96,100	141,900
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,450	LF		31.00	0	45,000	0.81	1,346	WIRE	98.84	133,000	178,000
	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,550	LF		21.50	0	33,300	0.65	1,150	WIRE	98.84	113,600	146,900
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	2,400	LF		9.25	0	22,200	0.35	972	WIRE	98.84	96,000	118,200
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	3,050	LF		7.15	0	21,800	0.28	996	WIRE	98.84	98,500	120,300
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	5,150	LF		4.44	0	22,900	0.24	1,415	WIRE	98.84	139,900	162,800
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	8,200	LF		3.23	0	26,500	0.19	1,829	WIRE	98.84	180,800	207,300

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4.22	HIGH VOLTAGE POWER CABLE & TERMINATION	1/C # 500KCMIL-15KV, 12000' UNIT 2 + 3600' LIME UNLOAD	EST	5,400	LF		9.27	0	50,100	0.23	1,428	WIRE	98.84	141,200	191,300
4.23	MEDIUM VOLTAGE POWER CABLE & TERMINATION	1/C # 350KCMIL-5KV	EST	10,800	LF		6.13	0	66,200	0.23	2,857	WIRE	98.84	282,300	348,500
4.24	LOW VOLTAGE POWER CABLE & TERMINATION							0	93,000					143,200	236,200
	3/C # 500KCMIL- 600V		EST	600	LF		26.12	0	15,700	0.69	476	WIRE	98.84	47,100	62,800
	#4/0 - #12 AWG-600V		EST	10,700	LF		7.22	0	77,300	0.08	972	WIRE	98.84	96,100	173,400
4.25	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	EST	8,200	LF		3.20	0	26,200	0.08	745	WIRE	98.84	73,600	99,800
4.26	DUCT BANK	DUCT BANK WITH 4-5" & 4-3" CONDUITS, 2.38' H X 3.79' W	EST	350	LF		174.67	0	61,100	3.80	1,530	ECND	75.97	116,200	177,300
4.27	FOUNDATIONS FOR TRANSFORMERS	FOR XFMR 33F, 33G, INCLUDES MUD MAT	EST	14.0	CY		250	0	3,500	8.00	129	CONP	79.64	10,300	13,800
4.28	COMMUNICATIONS		EST	1	LT		17,000.00	0	17,000	114.00	131	WIRE	98.84	13,000	30,000
4.29	LIGHTNING PROTECTION		EST	1	LT		14,000.00	0	14,000	79.00	91	WIRE	98.84	9,000	23,000
4.30	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							8,267,600	2,925,100		64,599			5,977,200	17,169,900
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										961,577
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						5,617		83.48	469,000	469,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						7,022			492,577	492,577
	PER DIEM	NONE		0.00	HR						77,238			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				14,626					29,886	44,512
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				146,255						146,255
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			413,380							413,380
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				146,255					298,860	445,115
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				438,765					896,580	1,335,345
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							413,400	745,900					2,186,900	3,346,200
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME HANDLING SYSTEM						8,681,000	3,671,000					8,164,100	20,516,100
5.0	LIME SLAKER BUILDING														0
5.1	MECHANICAL EQUIPMENT	INCLUDES:CHAIN CONVEYOR, SLAKERS THROUGH THE LIME SLURRY PUMPS, PIPING, AND LIME SLURRY STORAGE TANKS.	EST	1	LT	8,616,000		8,616,000	0	50584.53	58,172	MECH	88.89	5,170,900	13,786,900
5.2	REAGENT AREA SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
5.3	AGITATOR FOR SUMP PUMPS	5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
5.4	PIPING - MECHANICAL		EST	1	LT			117,800	111,400					381,100	610,300

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	LARGE BORE PIPING	6" CS, SCH 40 WELDED	EST	200	LF		41.7	0	8,300	1.61	370	SPNG	94.41	35,000	43,300
	LARGE BORE PIPING	8" HDPE (UNDERGROUND)	EST	1,200	LF		14.1	0	16,900	0.83	1,145	SPNG	94.41	108,100	125,000
	LARGE BORE PIPING	10" CS, SCH 40 WELDED	EST	400	LF		110.3	0	44,100	2.40	1,104	SPNG	94.41	104,200	148,300
	LARGE BORE PIPING	14" CS, SCH 40 WELDED	EST	100	LF		205.9	0	20,600	2.87	330	SPNG	94.41	31,200	51,800
	SMALL BORE PIPING	2" CS, SCH 80 WELDED	EST	50	LF		22.20	0	1,100	1.26	72	SPNG	94.41	6,800	7,900
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	50	LF		48.80	0	2,400	1.44	83	SPNG	94.41	7,800	10,200
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	100	LF		33.70	0	3,400	1.32	152	SPNG	94.41	14,300	17,700
	VALVE	2" GLOBE, 150# SS, WELDED	EST	15	EA	1,450		21,800	0	5.64	97	SPNG	94.41	9,200	31,000
	VALVE	6" AIR OPERATED, 150 #, CS, FLANGED	EST	2	EA	14,000		28,000	0	17.30	40	SPNG	94.41	3,800	31,800
	VALVE	8" AIR OPERATED, 150 #, CS, FLANGED	EST	4	EA	17,000		68,000	0	19.30	89	SPNG	94.41	8,400	76,400
	EXCAVATION / BACKFILL	FOR UNDERGROUND PIPING	EST	1,000	CY			0	0	0.20	230	EXFD	90.00	20,700	20,700
	BEDDING	FOR UNDERGROUND PIPING	EST	133	CY		35.0	0	4,700	0.25	38	EXFD	90.00	3,500	8,200
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	110	EA		90.00	0	9,900	2.50	316	MECH	88.89	28,100	38,000
5.5	LIME SLURRY TANKS - FOUNDATIONS							0	166,400					299,400	465,800
	EXCAVATION / BACKFILL		EST	969	CY			0	0	0.36	401	EXFD	90.00	36,100	36,100
	REINFORCING		EST	90	TN		1,150.00	0	103,500	20.00	2,070	REIN	78.27	162,000	265,500
	FORMWORK		EST	1,166	SF		2.50	0	2,900	0.14	188	FORM	99.43	18,700	21,600
	CONCRETE		EST	475	CY		105.00	0	49,900	1.50	819	CONP	79.64	65,300	115,200
	MUD MAT		EST	40	CY		105.00	0	4,200	1.50	69	CONP	79.64	5,500	9,700
	EMBEDDED STEEL		EST	2,375	LB		2.50	0	5,900	0.06	164	CARP	71.88	11,800	17,700
5.6	LIME SLAKER BUILDING - FOUNDATIONS							0	119,200					204,000	323,200
	EXCAVATION / BACKFILL		EST	450	CY			0	0	0.36	186	EXFD	90.00	16,800	16,800
	REINFORCING		EST	50	TN		1,150.00	0	57,500	20.00	1,150	REIN	78.27	90,000	147,500
	FORMWORK		EST	1,000	SF		2.50	0	2,500	0.14	161	FORM	99.43	16,000	18,500
	CONCRETE		EST	450	CY		105.00	0	47,300	1.50	776	CONP	79.64	61,800	109,100
	MUD MAT		EST	60	CY		105.00	0	6,300	1.50	104	CONP	79.64	8,200	14,500
	EMBEDDED STEEL		EST	2,250	LB		2.50	0	5,600	0.06	155	CARP	71.88	11,200	16,800
5.7	LIME SLAKER BUILDING	135' L X 30' W X 50' H						40,500	803,300					740,500	1,584,300
	STRUCTURAL STEEL		EST	110	TN		2650	0	291,500	16.00	2,024	STST	105.71	214,000	505,500
	INSULATED METAL SIDING		EST	16,500	SF		12	0	198,000	0.11	2,087	SDNG	93.41	195,000	393,000
	ROLLING OVERHEAD DOOR		EST	320	SF		27	0	8,600	0.25	92	CARP	71.88	6,600	15,200
	METAL ROOF DECKING		EST	4,050	SF		2.7	0	10,900	0.06	279	STST	105.71	29,500	40,400
	RIGID ROOF INSULATION		EST	4,050	SF		2.4	0	9,700	0.02	70	ROOF	69.12	4,800	14,500
	ROOFING (4-PLY TAR & GRAVEL)		EST	4,050	SF		1.55	0	6,300	0.04	186	ROOF	69.12	12,900	19,200
	LIGHTWEIGHT CONCRETE FILL 1"		EST	50	CY		100	0	5,000	1.30	75	ROOF	69.12	5,200	10,200
	ROOF FLASHING		EST	350	LF		14.45	0	5,100	0.12	48	ROOF	69.12	3,300	8,400
	ROOF DRAINS		EST	1	LT		25000	0	25,000	240.00	276	PLMB	79.42	21,900	46,900
	FLOOR DRAINS		EST	1	LT		30000	0	30,000	280.00	322	PLMB	79.42	25,600	55,600
	FLOOR SLABS	INCLUDES METAL DECKING AND FORMWORK	EST	50	CY		210	0	10,500	7.50	431	CONP	79.64	34,300	44,800
	FLOOR FINISHES		EST	3,102	SF		2.5	0	7,800	0.05	178	CONP	79.64	14,200	22,000
	LOUVERS/WINDOWS/DOORS		EST	1,601	SF		40	0	64,000	0.35	644	CARP	71.88	46,300	110,300
	ROOF VENTILATORS		EST	4	EA		15000	0	60,000	24.00	110	HVAC	81.24	9,000	69,000
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	1,215	SF		45	0	54,700	0.40	559	GALL	84.61	47,300	102,000
	H&V		EST	1	LT	40500	16200	40,500	16,200	756.00	869	HVAC	81.24	70,600	127,300
5.8	ELECTRICAL	INCLUDED WITH LIME HANDLING SYSTEM, ACCOUNT 4.0													
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							8,814,300	1,200,300		76,925			6,812,800	16,827,400
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										1,144,564

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	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						6,689		83.48	558,000	558,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						8,361			586,564	586,564
	PER DIEM	NONE		0.00	HR						91,976			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				6,002					34,064	40,066
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				60,015						60,015
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			440,715							440,715
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				60,015					340,640	400,655
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				180,045					1,021,920	1,201,965
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							440,700	306,100					2,541,200	3,288,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME SLAKER BUILDING						9,255,000	1,506,400					9,354,000	20,115,400
6.0	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS														0
6.1	BYPRODUCT WASTE ASH HANDLING - MECHANICAL EQUIPMENT	INCLUDES PNEUMATIC HANDLING SYSTEM, THREE PRESSURE BLOWERS, ONE BIN VENT FILTER, ASH UNLOADING SYSTEM	EST	1	LT	2,047,000		2,047,000	0	13500.00	15,525	MECH	88.89	1,380,000	3,427,000
6.2	FLY ASH HANDLING - MECHANICAL EQUIPMENT	INCLUDES PNEUMATIC HANDLING SYSTEM, TWO PRESSURE EXHAUSTERS, TRANSFER STATION, ONE BIN VENT FILTER, ASH UNLOADING SYSTEM	EST	1	LT	2,285,000		2,285,000	0	14000.00	16,100	MECH	88.89	1,431,100	3,716,100
6.3	BUILDING SUMP PUMPS	FOR BUILDINGS - DUPLEX. INCLUDES CHECK & ISOLATION VALVES.		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
6.4	AGITATOR FOR SUMP PUMPS	5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
6.5	PIPING - MECHANICAL		EST	1	LT			142,800	240,900					759,100	1,142,800
	LARGE BORE PIPING	4" CS, SCHEDULE 40, WELDED	EST	300	LF		23.0	0	6,900	1.48	511	SPNG	94.41	48,200	55,100
	LARGE BORE PIPING	4" SS, SCHEDULE 40, WELDED	EST	300	LF		68.3	0	20,500	1.82	628	SPNG	94.41	59,300	79,800
	LARGE BORE PIPING	6" CS, SCH 40 WELDED	EST	400	LF		41.7	0	16,700	1.61	741	SPNG	94.41	69,900	86,600
	LARGE BORE PIPING	8" HDPE (UNDERGROUND)	EST	800	LF		14.1	0	11,300	0.83	764	SPNG	94.41	72,100	83,400
	LARGE BORE PIPING	10" CS, SCH 40 WELDED	EST	300	LF		110.3	0	33,100	2.40	828	SPNG	94.41	78,200	111,300
	LARGE BORE PIPING	20" HDPE (UNDERGROUND)	EST	1,600	LF		72.8	0	116,500	1.45	2,668	SPNG	94.41	251,900	368,400
	SMALL BORE PIPING	2" CS, SCH 80 WELDED	EST	100	LF		22.20	0	2,200	1.26	145	SPNG	94.41	13,700	15,900
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	100	LF		48.80	0	4,900	1.44	166	SPNG	94.41	15,600	20,500
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	200	LF		33.70	0	6,700	1.32	304	SPNG	94.41	28,700	35,400
	VALVE	2" GLOBE, 150# SS, WELDED	EST	15	EA	1,450		21,800	0	5.64	97	SPNG	94.41	9,200	31,000
	VALVE	4" GATE, 150 #, CS, WELDED	EST	10	EA	2,500		25,000	0	7.70	89	SPNG	94.41	8,400	33,400
	VALVE	6" AIR OPERATED, 150 #, CS, FLANGED	EST	2	EA	14,000		28,000	0	17.30	40	SPNG	94.41	3,800	31,800
	VALVE	8" AIR OPERATED, 150 #, CS, FLANGED	EST	4	EA	17,000		68,000	0	19.30	89	SPNG	94.41	8,400	76,400
	EXCAVATION / BACKFILL	FOR UNDERGROUND PIPING	EST	2,000	CY			0	0	0.20	460	EXFD	90.00	41,400	41,400
	BEDDING	FOR UNDERGROUND PIPING	EST	267	CY		35.0	0	9,300	0.25	77	EXFD	90.00	6,900	16,200
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	170	EA		75.00	0	12,800	2.50	489	MECH	88.89	43,400	56,200

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6.6	BYPRODUCT WASTE SILO	CONCRETE SILO 60' DIA X 98' H - 3475 TONS -SUBCONTRACT COST INCLUDES LABOR	EST	1	EA	1,885,000		1,885,000	0	0.00	0	CONP	79.64	0	1,885,000
6.7	SDA RECYCLE SILO	INCLUDED WITH OEM EQUIPMENT													
6.8	FLY ASH SILO	46T STEEL -STORAGE SILO, 15' DIA X 19' H						45,000	23,200					64,300	132,500
	SILO BIN	PIN MIXERS INCLUDED WITH FLY ASH HANDLING MECHANICAL EQUIPMENT	EST	1	EA	45,000		45,000	0	400.00	460	TANK	89.16	41,000	86,000
	SUPPORT STEEL FOR SILO	THREE-COAT SHOP PAINT	EST	8	TN		2,900.00	0	23,200	24.00	221	STST	105.71	23,300	46,500
6.9	BYPRODUCT WASTE SILO - FOUNDATIONS							0	144,100					259,100	403,200
	EXCAVATION / BACKFILL		EST	980	CY			0	0	0.36	406	EXFD	90.00	36,500	36,500
	REINFORCING		EST	60.0	TN		1,150.00	0	69,000	20.00	1,380	REIN	78.27	108,000	177,000
	FORMWORK		EST	970	SF		2.50	0	2,400	0.14	156	FORM	99.43	15,500	17,900
	CONCRETE		EST	600	CY		105.00	0	63,000	1.50	1,035	CONP	79.64	82,400	145,400
	MUD MAT		EST	35	CY		105.00	0	3,700	1.50	60	CONP	79.64	4,800	8,500
	EMBEDDED STEEL		EST	2,400	LB		2.50	0	6,000	0.06	166	CARP	71.88	11,900	17,900
6.10	FLY ASH SILO - FOUNDATIONS							0	10,800					24,500	35,300
	EXCAVATION / BACKFILL		EST	160	CY			0	0	0.36	66	EXFD	90.00	6,000	6,000
	REINFORCING		EST	5.0	TN		1,150.00	0	5,800	20.00	115	REIN	78.27	9,000	14,800
	FORMWORK		EST	200	SF		2.50	0	500	0.14	32	FORM	99.43	3,200	3,700
	CONCRETE		EST	30	CY		105.00	0	3,200	1.50	52	CONP	79.64	4,100	7,300
	MUD MAT		EST	5	CY		105.00	0	500	1.50	9	CONP	79.64	700	1,200
	EMBEDDED STEEL		EST	300	LB		2.50	0	800	0.06	21	CARP	71.88	1,500	2,300
6.11	FLY ASH BLOWER AND ELECTRICAL BUILDING - FOUNDATIONS							0	49,600					105,700	155,300
	EXCAVATION / BACKFILL		EST	578	CY			0	0	0.36	239	EXFD	90.00	21,500	21,500
	REINFORCING		EST	17	TN		1,150.00	0	19,600	20.00	391	REIN	78.27	30,600	50,200
	FORMWORK		EST	890	SF		2.50	0	2,200	0.14	143	FORM	99.43	14,200	16,400
	CONCRETE		EST	222	CY		105.00	0	23,300	1.50	383	CONP	79.64	30,500	53,800
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	1,800	LB		2.50	0	4,500	0.06	124	CARP	71.88	8,900	13,400
6.12	FLY ASH BLOWER AND ELECTRICAL BUILDING	90' L X 30' W X 25' H						28,000	244,500					24,400	296,900
	PREENGINEERED BUILDING INCLUDING H&V AND LIGHTING	SUBCONTRACT PRICE, INCLUDES LABOR	EST	2,700	SF		85	0	229,500	0.00	0	STST	105.71	0	229,500
	ADDITONAL HVAC UNIT FOR ELECTRICAL ROOM & CONTROLS	10T PACKAGED UNIT. INCLUDES ALLOANCE FOR CONCRETE PAD AND ELECTRICAL WORK	EST	1	LT	28000	15000	28,000	15,000	0.00	300	HVAC	81.24	24,400	67,400
6.13	RECYCLE ASH BUILDING - FOUNDATIONS							0	234,300					393,800	628,100
	EXCAVATION / BACKFILL		EST	950	CY			0	0	0.36	393	EXFD	90.00	35,400	35,400
	REINFORCING		EST	90	TN		1,150.00	0	103,500	20.00	2,070	REIN	78.27	162,000	265,500
	FORMWORK		EST	1,320	SF		2.50	0	3,300	0.14	213	FORM	99.43	21,100	24,400
	CONCRETE		EST	1,000	CY		105.00	0	105,000	1.50	1,725	CONP	79.64	137,400	242,400
	MUD MAT		EST	95	CY		105.00	0	10,000	1.50	164	CONP	79.64	13,100	23,100
	EMBEDDED STEEL		EST	5,000	LB		2.50	0	12,500	0.06	345	CARP	71.88	24,800	37,300
6.14	RECYCLE ASH BUILDING	100' L X 65' W X 50' H						58,500	1,306,700					1,194,500	2,559,700
	STRUCTURAL STEEL		EST	180	TN		2650	0	477,000	16.00	3,312	STST	105.71	350,100	827,100
	INSULATED METAL SIDING		EST	16,500	SF		12	0	198,000	0.11	2,087	SDNG	93.41	195,000	393,000
	ROLLING OVERHEAD DOOR		EST	640	SF		27	0	17,300	0.25	184	CARP	71.88	13,200	30,500
	METAL ROOF DECKING		EST	6,500	SF		2.7	0	17,600	0.06	449	STST	105.71	47,400	65,000
	RIGID ROOF INSULATION		EST	6,500	SF		2.4	0	15,600	0.02	112	ROOF	69.12	7,800	23,400
	ROOFING (4-PLY TAR & GRAVEL)		EST	6,500	SF		1.55	0	10,100	0.04	299	ROOF	69.12	20,700	30,800

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	LIGHTWEIGHT CONCRETE FILL 1"		EST	60	CY		100	0	6,000	1.30	90	ROOF	69.12	6,200	12,200
	ROOF FLASHING		EST	350	LF		14.45	0	5,100	0.12	48	ROOF	69.12	3,300	8,400
	ROOF DRAINS		EST	1	LT		25000	0	25,000	240.00	276	PLMB	79.42	21,900	46,900
	FLOOR DRAINS		EST	1	LT		30000	0	30,000	280.00	322	PLMB	79.42	25,600	55,600
	FLOOR SLABS	INCLUDES METAL DECKING AND FORMWORK	EST	60	CY		210	0	12,600	7.50	518	CONP	79.64	41,200	53,800
	FLOOR FINISHES		EST	5,000	SF		2.5	0	12,500	0.05	288	CONP	79.64	22,900	35,400
	LOUVERS/WINDOWS/DOORS		EST	2,600	SF		40	0	104,000	0.35	1,047	CARP	71.88	75,200	179,200
	ROOF VENTILATORS		EST	4	EA		15000	0	60,000	24.00	110	HVAC	81.24	9,000	69,000
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	6,500	SF		45	0	292,500	0.40	2,990	GALL	84.61	253,000	545,500
	H&V		EST	1	LT	58500	23400	58,500	23,400	1092.00	1,256	HVAC	81.24	102,000	183,900
6.15	MCC	480V MCC PER LINE UP	EST	4	EA	30000		120,000	0	16.00	74	WIRE	98.84	7,300	127,300
6.16	EMERGENCY POWER SYSTEM							185,500	0					40,000	225,500
	UPS PANEL BOARDS		EST	2	EA	15500		31,000	0	40.00	92	WIRE	98.84	9,100	40,100
	SATELLITE UPS		EST	2	EA	41200		82,400	0	16.00	37	WIRE	98.84	3,600	86,000
	VRLA BATTERIES		EST	2	LT	36050		72,100	0	120.00	276	WIRE	98.84	27,300	99,400
6.17	LIGHTING/ TRANSFORMERS & PANELS							18,500	75,000					53,200	146,700
	LIGHT FIXTURES		EST	100	EA		750	0	75,000	4.00	460	WIRE	98.84	45,500	120,500
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	1	EA	10000		10,000	0	40.00	46	WIRE	98.84	4,500	14,500
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	1	EA	5000		5,000	0	16.00	18	WIRE	98.84	1,800	6,800
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	1	EA	3500		3,500	0	12.00	14	WIRE	98.84	1,400	4,900
6.18	RACEWAY, CABLE TRAY, & CONDUIT							0	40,700					236,200	276,900
	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	350	LF		27.10	0	9,500	1.75	704	WIRE	98.84	69600	79,100
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	350	LF		31.00	0	10,900	0.81	325	WIRE	98.84	32100	43,000
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,300	LF		4.44	0	5,800	0.24	357	WIRE	98.84	35300	41,100
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	4,500	LF		3.23	0	14,500	0.19	1,004	WIRE	98.84	99200	113,700
6.19	LOW VOLTAGE POWER CABLE & TERMINATION	#4/0 - #12 AWG-600V	EST	11,200	LF		7.22	0	80,900	0.08	1,018	WIRE	98.84	100600	181,500
6.20	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	EST	12,000	LF		3.20	0	38,400	0.08	1,090	WIRE	98.84	107,800	146,200
6.21	GROUNDING							0	4,500					10,900	15,400
	GROUND ROD	3/4" - 20' LONG EACH	EST	4	EA		150	0	600	4.00	18	WIRE	98.84	1,800	2,400
	500 MCM	BARE COPPER WIRE	EST	500	FT		7.65	0	3,800	0.12	69	WIRE	98.84	6,800	10,600
	CADWELD		EST	8	EA		15	0	100	2.00	18	WIRE	98.84	1,800	1,900
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	4.00	5	WIRE	98.84	500	500
6.22	DUCT BANK	DUCT BANK WITH 12-5" & 6-3" CONDUITS, 5.2' H X 2.08" W	EST	300	LF		371.60	0	111,500	7.02	2,422	ECND	75.97	184000	295,500
6.23	COMMUNICATIONS		EST	1	LT		70,000.00	0	70,000	440.00	506	WIRE	98.84	50,000	120,000
6.24	LIGHTNING PROTECTION		EST	1	LT		19,000.00	0	19,000	123.00	141	WIRE	98.84	14,000	33,000
6.25	SECURITY SYSTEM		EST	1	LT		16,000.00	0	16,000	123.00	141	WIRE	98.84	14,000	30,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							6,855,300	2,710,100		72,799			6,471,400	16,036,800
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										1,083,099
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						6,330		83.48	528,000	528,000

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	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						7,913			555,099	555,099
	PER DIEM	NONE		0.00	HR						87,042			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				13,551					32,357	45,908
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				135,505						135,505
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			342,765							342,765
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				135,505					323,570	459,075
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				406,515					970,710	1,377,225
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							342,800	691,100					2,409,700	3,443,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS						7,198,100	3,401,200					8,881,100	19,480,400
7.0	SPRAY DRYER ABSORBER ISLAND														0
7.1	MECHANICAL EQUIPMENT	INCLUDES: ABSORBER MODULES AND ATOMIZERS WITH LUBE OIL, DUCT WORK FROM THE ABSORBERS TO THE FABRIC FILTER, AND COMPLETE RECYCLE SYSTEM WITH PIPING INSIDE FGD BUILDINGS.	EST	1	LT	39438000		39,438,000	0	236600	272,090	MECH	88.89	24,186,100	63,624,100
7.2	ELEVATOR	MAINTENANCE ELEVATOR - SUBCONTRACT COST INCLUDES LABOR	EST	1	EA	325,000.00		325,000	0	0.00	0	MECH	88.89	0	325,000
7.3	ABSORBER AREA SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES.		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
7.4	AGITATOR FOR SUMP PUMPS	5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
7.5	PIPING - MECHANICAL							142,800	36,900					227,900	407,600
	LARGE BORE PIPING	4" CS, SCHEDULE 40, WELDED	EST	300	LF		23.0	0	6,900	1.48	511	SPNG	94.41	48,200	55,100
	LARGE BORE PIPING	6" CS, SCH 40 WELDED	EST	100	LF		41.7	0	4,200	1.61	185	SPNG	94.41	17,500	21,700
	LARGE BORE PIPING	8" HDPE (UNDERGROUND)	EST	800	LF		14.1	0	11,300	0.83	764	SPNG	94.41	72,100	83,400
	SMALL BORE PIPING	2" CS, SCH 80 WELDED	EST	50	LF		22.20	0	1,100	1.26	72	SPNG	94.41	6,800	7,900
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	50	LF		48.80	0	2,400	1.44	83	SPNG	94.41	7,800	10,200
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	100	LF		33.70	0	3,400	1.32	152	SPNG	94.41	14,300	17,700
	VALVE	2" GLOBE, 150# SS, WELDED	EST	15	EA	1,450		21,800	0	5.64	97	SPNG	94.41	9,200	31,000
	VALVE	4" GATE, 150 #, CS, WELDED	EST	10	EA	2,500		25,000	0	7.70	89	SPNG	94.41	8,400	33,400
	VALVE	6" AIR OPERATED, 150 #, CS, FLANGED	EST	2	EA	14,000		28,000	0	17.30	40	SPNG	94.41	3,800	31,800
	VALVE	8" AIR OPERATED, 150 #, CS, FLANGED	EST	4	EA	17,000		68,000	0	19.30	89	SPNG	94.41	8,400	76,400
	EXCAVATION / BACKFILL	FOR UNDERGROUND PIPING	EST	667	CY			0	0	0.20	153	EXFD	90.00	13,800	13,800
	BEDDING	FOR UNDERGROUND PIPING	EST	89	CY		35.0	0	3,100	0.25	26	EXFD	90.00	2,300	5,400
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	60	EA		75.00	0	4,500	2.50	173	MECH	88.89	15,300	19,800
7.6	SDA SUPERSTRUCTURE							75,000	764,900					1,227,300	2,067,200
	PENTHOUSE FOR SDA'S	TOTAL SUPPORT STEEL AND PURLINS	EST	138	TN		2650.0	0	364,400	30.00	4,744	STST	105.71	501,500	865,900
	ROOFING FOR SDA PENTHOUSE	STANDING SEAM TYPE	EST	10,000	SF		18.00	0	180,000	0.22	2,530	ROOF	69.12	174,900	354,900
	SIDING		EST	13,000	SF		12.00	0	156,000	0.11	1,645	SDNG	93.41	153,600	309,600
	CONCRETE FLOOR FOR PENTHOUSE	INCLUDES DECKING AND FORMWORK	EST	150	CY		230.00	0	34,500	7.50	1,294	CONP	79.64	103,000	137,500
	H&V		EST	3	LT	25000	10000	75,000	30,000	1050.00	3,623	HVAC	81.24	294,300	399,300

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7.7	SDA BOTTOM ENCLOSURE - SUPPORT STEEL, GIRTS AND SIDING	TOTAL FOR THREE ABSORBERS	EST	9,053	SF		40.00	0	362,100	0.35	3,644	STST	105.71	385,200	747,300
7.8	SDA SHELL / ROOF INSULATION	61,000 SF. SUBCONTRACT COST INCLUDES LABOR	EST	61,000	SF	30		1,830,000	0		0	DINS	81.75	0	1,830,000
7.9	SDA - SUPPORT STEEL & ACCESS GALLERY							0	711,000					1,884,100	2,595,100
	SUPPORT STEEL	MATERIAL INCLUDED WITH OEM EQUIPMENT	EST	435	TN			0	0	24.00	12,006	STST	105.71	1,269,200	1,269,200
	ACCESS GALLERY		EST	15,800	SF		45.00	0	711,000	0.40	7,268	GALL	84.61	614,900	1,325,900
7.10	EXPANSION JOINTS		EST	850	LF		230.00	0	195,500	2.00	1,955	MECH	88.89	173,800	369,300
7.11	DUCTWORK							0	6,175,000					13,113,700	19,288,700
	SPRAY DRYER INLET	INCLUDES INTERNAL BRACING AND TURNING VANES	EST	1,900	TN		3,250.00	0	6,175,000	50.00	109,250	FLDU	107.96	11,794,600	17,969,600
	SPRAY DRYER OUTLET TO FABRIC FILTER INLET	INSTALLATION ONLY - MATERIAL INCLUDED WITH OEM EQUIPMENT	EST	213	TN			0	0	50.00	12,219	FLDU	107.96	1,319,100	1,319,100
7.12	DUCT SUPPORT STEEL	THREE COAT SHOP PAINT	EST	950	TN		2,900.00	0	2,755,000	24.00	26,220	STST	105.71	2,771,700	5,526,700
7.13	DUCTWORK INSULATION & LAGGING		EST	170,000	SF		12.00	0	2,040,000	0.25	48,875	DINS	81.75	3,995,500	6,035,500
7.14	CONCRETE PIT FOR ELEVATOR		EST	12	CY		230.00	0	2,800	7.50	104	CONP	79.64	8,200	11,000
7.15	SPRAY DRYER ABSORBER - FOUNDATIONS	TOTAL FOR THREE TOWERS						0	1,678,600					3,323,400	5,002,000
	EXCAVATION / BACKFILL		EST	16,000	CY			0	0	0.36	6,624	EXFD	90.00	596,200	596,200
	REINFORCING		EST	600	TN		1,150.00	0	690,000	20.00	13,800	REIN	78.27	1,080,100	1,770,100
	FORMWORK		EST	23,000	SF		2.50	0	57,500	0.14	3,703	FORM	99.43	368,200	425,700
	CONCRETE		EST	7,500	CY		105.00	0	787,500	1.50	12,938	CONP	79.64	1,030,300	1,817,800
	MUD MAT		EST	510	CY		105.00	0	53,600	1.50	880	CONP	79.64	70,100	123,700
	EMBEDDED STEEL		EST	36,000	LB		2.50	0	90,000	0.06	2,484	CARP	71.88	178,500	268,500
7.16	FOUNDATIONS FOR SUPPORT STEEL							0	69,000					143,000	212,000
	EXCAVATION / BACKFILL		EST	784	CY			0	0	0.36	324	EXFD	90.00	29,200	29,200
	REINFORCING		EST	23	TN		1,150.00	0	26,100	20.00	522	REIN	78.27	40,900	67,000
	FORMWORK		EST	1,125	SF		2.50	0	2,800	0.14	181	FORM	99.43	18,000	20,800
	CONCRETE		EST	303	CY		105.00	0	31,800	1.50	522	CONP	79.64	41,600	73,400
	MUD MAT		EST	43	CY		105.00	0	4,500	1.50	73	CONP	79.64	5,800	10,300
	EMBEDDED STEEL		EST	1,513	LB		2.50	0	3,800	0.06	104	CARP	71.88	7,500	11,300
7.17	GROUNDING							0	16,000		0			46,100	62,100
	GROUND ROD	3/4" - 20' LONG	EST	16	EA		150	0	2,400	4.00	74	WIRE	98.84	7,300	9,700
	500 MCM	BARE COPPER WIRE	EST	1,650	FT		7.65	0	12,600	0.12	228	WIRE	98.84	22,500	35,100
	CADWELD		EST	64	EA		15	0	1,000	2.00	147	WIRE	98.84	14,500	15,500
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	16.00	18	WIRE	98.84	1,800	1,800
7.18	LIGHTING/ TRANSFORMERS & PANELS							156,000	150,000		0			159,100	465,100
	LIGHT FIXTURES		EST	200	EA		750	0	150,000	4.00	920	WIRE	98.84	90,900	240,900
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	6	EA	10000		60,000	0	40.00	276	WIRE	98.84	27,300	87,300
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	6	EA	7500		45,000	0	32.00	221	WIRE	98.84	21,800	66,800
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	6	EA	5000		30,000	0	16.00	110	WIRE	98.84	10,900	40,900
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	6	EA	3500		21,000	0	12.00	83	WIRE	98.84	8,200	29,200
7.19	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE INCLUDED IN SECTION 1.0 - ID FANS													
7.20	COMMUNICATIONS		EST	1	LT		17,000.00	0	17,000	114.00	131	WIRE	98.84	13,000	30,000
7.21	LIGHTNING PROTECTION		EST	1	LT		25,500.00	0	25,500	163.00	187	WIRE	98.84	18,500	44,000
7.22	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000

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Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							42,006,800	15,007,300		554,709			51,700,500	108,714,600
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE	2 CRANES		9	MN	90,000.00		810,000	0	1440.00	14,904	MECH	88.89	1,523,520	2,333,520
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										8,361,283
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						48,236		83.48	4,027,000	4,027,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						61,785			4,334,283	4,334,283
	PER DIEM	NONE		0.00	HR						679,633			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				75,037					258,503	333,539
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				750,365						750,365
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			2,100,340							2,100,340
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				750,365					2,585,025	3,335,390
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				2,251,095					7,755,075	10,006,170
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							2,910,300	3,826,900					20,483,400	27,220,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SPRAY DRYER ABSORBER ISLAND						44,917,100	18,834,200					72,183,900	135,935,200
8.0	ACTIVATED CARBON INJECTION SYSTEM														0
9.0	COMPRESSED AIR SYSTEM														0
10.0	SERVICE WATER SYSTEM														
11.0	POTABLE WATER SYSTEM														
12.0	FGD SUBSTATION														
12.1	TRANSFORMERS							1,560,000	0					273,100	1,833,100
	FGD SUBSTATION-AUX TRANSFORMERS: 11A & 11B	138KV-13.8KV- 2 WINDING XFMR	EST	2	EA	695000		1,390,000	0	1200.00	2,760	EHEA	79.16	218,500	1,608,500
	TRANSFORMERS: 32F, 32G	13.8KV-480V,3PHASE, 2 WINDING CAST COIL	EST	2	EA	85000		170,000	0	300.00	690	EHEA	79.16	54,600	224,600
12.2	TRANSFORMER PDC	15W X 45' X 10'H. SUBCONTRACT PRICE INCLUDES LABOR	EST	675.0	SF	300.0		202500.0	0.0	0.0	0.0	STST	105.71	0.0	202500.0
12.3	TRANSFORMER PDC - FOUNDATION							0	73,200					146,900	220,100
	EXCAVATION / BACKFILL		EST	700	CY			0	0	0.36	290	EXFD	90.00	26,100	26,100
	REINFORCING		EST	26	TN		1,150.00	0	30,200	20.00	604	REIN	78.27	47,300	77,500
	FORMWORK		EST	1,100	SF		2.50	0	2,800	0.14	177	FORM	99.43	17,600	20,400
	CONCRETE		EST	300	CY		105.00	0	31,500	1.50	518	CONP	79.64	41,200	72,700
	MUD MAT		EST	35	CY		105.00	0	3,700	1.50	60	CONP	79.64	4,800	8,500
	EMBEDDED STEEL		EST	2,000	LB		2.50	0	5,000	0.06	138	CARP	71.88	9,900	14,900
12.4	138KV MAIN FEEDER & TERMINATIONS							264,000	0					254,000	518,000
	138KV STRUCTURE AND SWITCH	STRUCTURE STEEL	EST	1	LT	103500		103,500	0	450.00	518	STST	105.71	54,700	158,200
	138KV MAIN FEEDER	1/C 750KCMIL- 138KV	EST	2,100	LF	51.75		108,700	0	0.69	1,671	WIRE	98.84	165,200	273,900
	138KV ACCESSORIES		EST	1	LT	51750		51,800	0	300.00	345	WIRE	98.84	34,100	85,900
12.5	SWITCHGEAR							814,200	0					128,900	943,100
	13.8 KV MEDIUM VOLTAGE (11A/B)	PRICE PER SECTION	EST	10	EA	50000		500,000	0	40.00	460	EHEA	79.16	36,400	536,400
	480V LOW VOLTAGE (32F/G)	PRICE PER SECTION	EST	5	EA	38000		190,000	0	16.00	92	EHEA	79.16	7,300	197,300
	EXISTING SCR SWITCHGEAR MODIFICATION	TURNKEY INCLUDING INSTALLATION & MATERIAL (EATON QUOTE 7/16/10)	Q	1	LT	124,200		124,200	0	750.00	863	WIRE	98.84	85,200	209,400

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12.6	MCC	480V MCC, PER LINE UP	EST	2	EA	30000		60,000	0	16.00	37	WIRE	98.84	3,600	63,600
12.7	CABLE BUS							181,100	18,000					290,200	489,300
	15KV CABLE BUS DUCT	BUS DUCT ONLY	EST	200	FT	442		88,400	0	3.30	759	WIRE	98.84	75,000	163,400
	480V CABLE BUS DUCT	BUS DUCT ONLY	EST	150	FT	618		92,700	0	10.30	1,777	WIRE	98.84	175,600	268,300
	CABLE BUS TERMINATION	500MCM - 15KV TERMINATIONS	EST	4	EA		1,800.00	0	7,200	33.00	152	WIRE	98.84	15,000	22,200
	CABLE BUS TERMINATION	750MCM- 480V TERMINATIONS	EST	4	EA		2,700.00	0	10,800	54.00	248	WIRE	98.84	24,600	35,400
12.8	PANELS - RELAY							100,000	0					9,100	109,100
	RELAY PANELS & INTERLOCK	ALLOWANCE	EST	1	LT	100000		100,000	0	80.00	92	WIRE	98.84	9,100	109,100
12.9	MIMIC PANELS		EST	1	EA	17500		17,500	0	40.00	46	WIRE	98.84	4,500	22,000
12.10	EMERGENCY POWER SYSTEM							108,300	0					24,400	132,700
	DC PANEL BOADRD		EST	1	EA	15500		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	UPS PANEL BOARDS		EST	1	EA	15500		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	SATELLITE UPS		EST	1	EA	41200		41,200	0	16.00	18	WIRE	98.84	1,800	43,000
	VRLA BATTERIES	8HR-400A, 480V	EST	1	LT	36050		36,100	0	120.00	138	WIRE	98.84	13,600	49,700
12.11	GROUNDING							23,300	0					59,100	82,400
	GROUND ROD	3/4" - 20' LONG EACH	EST	16	EA	150		2,400	0	4.00	74	WIRE	98.84	7,300	9,700
	500 MCM	BARE COPPER WIRE	EST	2,600	FT	7.65		19,900	0	0.12	359	WIRE	98.84	35,500	55,400
	CADWELD		EST	64	EA	15		1,000	0	2.00	147	WIRE	98.84	14,500	15,500
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	16.00	18	WIRE	98.84	1,800	1,800
12.12	LIGHTING/ TRANSFORMERS & PANELS							26,000	30,000					29,500	85,500
	LIGHT FIXTURES		EST	40	EA		750	0	30,000	4.00	184	WIRE	98.84	18,200	48,200
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	1	EA	10000		10,000	0	40.00	46	WIRE	98.84	4,500	14,500
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	1	EA	7500		7,500	0	32.00	37	WIRE	98.84	3,600	11,100
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	1	EA	5000		5,000	0	16.00	18	WIRE	98.84	1,800	6,800
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	1	EA	3500		3,500	0	12.00	14	WIRE	98.84	1,400	4,900
12.13	OUTDOOR LIGHTING	NEW AUX YARD LIGHTING - ALLOWANCE	EST	1	LT	25000		25,000	0	500.00	575	WIRE	98.84	56,800	81,800
12.14	RACEWAY, CABLE TRAY, & CONDUIT							0	390,600					1,918,600	2,309,200
	12" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,250	LF		18.25	0	22,800	1.10	1,581	WIRE	98.84	156,300	179,100
	18" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	750	LF		21.50	0	16,100	1.45	1,251	WIRE	98.84	123,600	139,700
	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	2,200	LF		27.10	0	59,600	1.75	4,428	WIRE	98.84	437,600	497,200
	36" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	600	LF		30.30	0	18,200	1.95	1,346	WIRE	98.84	133,000	151,200
	5" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,000	LF		61.00	0	61,000	1.13	1,296	WIRE	98.84	128,100	189,100
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,800	LF		31.00	0	55,800	0.81	1,670	WIRE	98.84	165,100	220,900
	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	2,000	LF		21.50	0	43,000	0.65	1,484	WIRE	98.84	146,600	189,600
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	3,000	LF		9.25	0	27,800	0.35	1,214	WIRE	98.84	120,000	147,800
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	3,700	LF		7.15	0	26,500	0.28	1,208	WIRE	98.84	119,400	145,900
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	6,200	LF		4.44	0	27,500	0.24	1,704	WIRE	98.84	168,400	195,900
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	10,000	LF		3.23	0	32,300	0.19	2,231	WIRE	98.84	220,500	252,800
12.15	DUCT BANK							0	26,200					54,300	80,500
	UNDERGROUND SURVEY FOR NEW DUCT BANK RUN	MAIN FEEDER BETWEEN EXISTING SCR SUBSTATION TO FGD AUX XFMR	EST	200	LF			0	0	0.80	184	ECND	75.97	14,000	14,000
	4' X 4' DUCT BANK (138KV SCR TO FGD AUX XFMR SUBSTATION)	6 - 6" PVC	EST	40	LF		375	0	15,000	6.25	288	ECND	75.97	21,800	36,800
	DUCT BANK WITH 6-5" & 4-3" CONDUITS	2.38' H X 4' W	EST	50	LF		223.02	0	11,200	4.24	244	ECND	75.97	18,500	29,700
12.16	HIGH VOLTAGE POWER CABLE & TERMINATION	1/C # 500KCMIL-15KV	EST	3,000	LF		9.27	0	27,800	0.23	794	WIRE	98.84	78400	106,200
12.17	LOW VOLTAGE POWER CABLE & TERMINATION							0	263,700		0			649,600	913,300
	3/C # 500KCMIL- 600V		EST	7,000	LF		26.12	0	182,800	0.69	5,555	WIRE	98.84	549000	731,800
	#4/0 - #12 AWG-600V		EST	11,200	LF		7.22	0	80,900	0.08	1,018	WIRE	98.84	100,600	181,500
12.18	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	EST	6,800	LF		3.20	0	21,800	0.08	618	WIRE	98.84	61,100	82,900

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12.19	FOUNDATION FOR AUX TRANSFORMER							0	70,200					205,400	275,600
	EXCAVATION / BACKFILL		EST	1,000	CY			0	0	0.36	414	EXFD	90.00	37,300	37,300
	REINFORCING		EST	20.0	TN		1,150.00	0	23,000	20.00	460	REIN	78.27	36,000	59,000
	FORMWORK		EST	5,000	SF		2.50	0	12,500	0.14	805	FORM	99.43	80,000	92,500
	CONCRETE		EST	190	CY		105.00	0	20,000	1.50	328	CONP	79.64	26,100	46,100
	MUD MAT		EST	45	CY		105.00	0	4,700	1.50	78	CONP	79.64	6,200	10,900
	EMBEDDED STEEL		EST	4,000	LB		2.50	0	10,000	0.06	276	CARP	71.88	19,800	29,800
12.20	FIREWALL FOR TRANSFORMERS							0	3,000					5,200	8,200
	REINFORCING		EST	1.0	TN		1,150.00	0	1,200	20.00	23	REIN	78.27	1,800	3,000
	FORMWORK		EST	80	SF		2.50	0	200	0.14	13	FORM	99.43	1,300	1,500
	CONCRETE		EST	15	CY		105.00	0	1,600	1.50	26	CONP	79.64	2,100	3,700
12.21	COMMUNICATIONS		EST	1	LT		17,000.00	0	17,000	114.00	131	WIRE	98.84	13,000	30,000
12.22	LIGHTNING PROTECTION		EST	1	LT		4,000.00	0	4,000	18.00	21	WIRE	98.84	2,000	6,000
12.23	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							3,381,900	953,500		44,772			4,274,700	8,610,100
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										666,396
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						3,893		83.48	325,000	325,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						4,867			341,396	341,396
	PER DIEM	NONE		0.00	HR						53,532			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				4,768					21,374	26,141
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				47,675						47,675
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			169,095							169,095
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				47,675					213,735	261,410
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				143,025					641,205	784,230
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							169,100	243,100					1,542,710	1,954,900
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FGD SUBSTATION						3,551,000	1,196,600					5,817,400	10,565,000
13.0	FGD DCS SYSTEM														0
14.0	CEM SYSTEM														0
15.0	TRUCK & RAIL INFRASTRUCTURE														0
16.0	SITE IMPROVEMENTS - CIVIL WORK														
16.1	SITE GRADING							0	0					627,000	627,000
	CUT		EST	19,200	CY			0	0	0.08	1,766	ETWK	177.49	313,500	313,500
	FILL		EST	19,200	CY			0	0	0.08	1,766	ETWK	177.49	313,500	313,500
16.2	ROADS & SURFACING							0	996,600					1,358,800	2,355,400
	20' WIDE ACCESS ROAD	INCLUDES: 1.5" ASPHALT SURFACE COURSE 1.5" ASPHALT BINDER COURSE 12" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST	4,100	SY		47	0	192,700	0.40	1,886	PBIT	90.25	170,200	362,900

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	24' WIDE ACCESS ROAD	INCLUDES: 1.5" ASPHALT SURFACE COURSE 1.5" ASPHALT BINDER COURSE 12" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST	7,100	SY		47	0	333,700	0.40	3,266	PBIT	90.25	294,800	628,500
	24' WIDE ACCESS ROAD AGGREGATE SHOULDERS	INCLUDES: 12" BASE COURSE 10 OZ/SY GEOTEXTILE	EST	1,800	SY		17.5	0	31,500	0.10	207	BCSE	105.94	21,900	53,400
	LIME UNLOADING AREA	INCLUDES: 1.5" ASPHALT SURFACE COURSE 1.5" ASPHALT BINDER COURSE 12" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST	1,300	SY		47	0	61,100	0.40	598	PBIT	90.25	54,000	115,100
	ASH LOADING AREA - SURFACING	12" REINFORCED CONCRETE	EST	750	SY		96	0	72,000	1.60	1,380	CONP	79.64	109,900	181,900
	ASH LOADING AREA	6" CONCRETE CURB	EST	330	LF		6.5	0	2,100	0.96	364	COND	70.04	25,500	27,600
	CONCRETE PAD BUILDING ENTRANCES	10" REINFORCED CONCRETE	EST	340	SY		80	0	27,200	1.50	587	CONP	79.64	46,700	73,900
	AGGREGATE AREA SURFACING	INCLUDES: 6" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST	30,700	SY		9	0	276,300	0.17	6,002	BCSE	105.94	635,800	912,100
16.3	RAILROAD CROSSING	50' WIDE CROSSING THREE TRACKS - CUSTOM BUILT	EST	1	EA		120000	0	120,000	1500.00	1,725	RRTK	88.26	152,200	272,200
16.4	NEW CONCRETE ENCASEMENT	16' X 4' X 40' - FOR EXISTING ASH PIPE HAUL ROAD CROSSING						0	144,300					286,600	430,900
	EXCAVATION / BACKFILL		EST	1,100	CY			0	0	0.36	455	EXFD	90.00	41,000	41,000
	REINFORCING		EST	100.0	TN		1,150.00	0	115,000	20.00	2,300	REIN	78.27	180,000	295,000
	FORMWORK		EST	2,000	SF		2.50	0	5,000	0.14	322	FORM	99.43	32,000	37,000
	CONCRETE		EST	200	CY		105.00	0	21,000	1.50	345	CONP	79.64	27,500	48,500
	MUD MAT		EST	8	CY		105.00	0	800	1.50	14	CONP	79.64	1,100	1,900
	EMBEDDED STEEL		EST	1,000	LB		2.50	0	2,500	0.06	69	CARP	71.88	5,000	7,500
16.5	TRUCK WASH AREA - CONCRETE PAD							0	47,300					83,100	130,400
	EXCAVATION / BACKFILL		EST	190	CY			0	0	0.36	79	EXFD	90.00	7,100	7,100
	REINFORCING		EST	20	TN		1,150.00	0	23,000	20.00	460	REIN	78.27	36,000	59,000
	FORMWORK		EST	510	SF		2.50	0	1,300	0.14	82	FORM	99.43	8,200	9,500
	CONCRETE		EST	170	CY		105.00	0	17,900	1.50	293	CONP	79.64	23,400	41,300
	MUD MAT		EST	25	CY		105.00	0	2,600	1.50	43	CONP	79.64	3,400	6,000
	EMBEDDED STEEL		EST	1,000	LB		2.50	0	2,500	0.06	69	CARP	71.88	5,000	7,500
16.6	TRUCK SCALE & CONCRETE APPROACH							170,000	27,300					92,000	289,300
	TRUCK SCALE	SUBCONTRACT COST, INCLUDES FOUNDATIONS AND LABOR	EST	2	EA	85000		170,000	0	0.00	0	MECH	88.89	0	170,000
	CONCRETE APPROACH FOR TRUCK SCALE	20' x 40' - TOTAL FOR TWO SCALES	EST	119	CY		230.0	0	27,300	7.50	1,022	EXFD	90.00	92,000	119,300
16.7	PROCESS WATER STORAGE BASIN							60,000	110,400					312,600	483,000
	SAND EXCAVATION		EST	4,000	CY			0	0	0.03	120	ETWK	177.49	21,200	21,200
	ROCK EXCAVATION	ASSUME ROCK IS RIPPABLE	EST	500	CY			0	0	0.05	28	ETWK	177.49	4,900	4,900
	BASIN SURFACING	6" REINFORCED CONCRETE	EST	2,300	SY		48	0	110,400	1.20	3,174	CONP	79.64	252,800	363,200
	PUMPS	500 GPM, 75 PSIG	EST	2	EA	30000		60,000	0	165.00	380	MECH	88.89	33,700	93,700
16.8	PROCESS WATER STORAGE BASIN PUMP STRUCTURE - CONCRETE							0	47,000					105,400	152,400
	EXCAVATION / BACKFILL		EST	0	CY			0	0	0.36	0	EXFD	90.00	0	0
	REINFORCING		EST	7	TN		1,150.00	0	8,100	20.00	161	REIN	78.27	12,600	20,700
	FORMWORK		EST	3,968	SF		2.50	0	9,900	0.14	639	FORM	99.43	63,500	73,400
	CONCRETE		EST	76	CY		105.00	0	8,000	1.50	131	CONP	79.64	10,400	18,400
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0

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	EMBEDDED STEEL		EST	380	LB		2.50	0	1,000	0.06	26	CARP	71.88	1,900	2,900
	PROCESS WATER STORAGE BASIN PUMP STRUCTURE - GALLERY		EST	5	TN		4,000.00	0	20,000	35.00	201	GALL	84.61	17,000	37,000
16.9	STORMWATER DRAINAGE TRENCH	2' W X 3' DEEP CAST-IN-PLACE CONCRETE TRENCH W/REINFORCING & HS-20 RATED GRATE COVERS	EST	3,200	LF		135	0	432,000	1.50	5,520	CONP	79.64	439,600	871,600
16.10	STORMWATER RUNOFF POND							0	15,000					122,600	137,600
	SAND EXCAVATION		EST	11,000	CY			0	0	0.03	329	ETWK	177.49	58,400	58,400
	ROCK EXCAVATION	ASSUME ROCK IS RIPPABLE	EST	3,700	CY			0	0	0.05	204	ETWK	177.49	36,300	36,300
	4" TOPSOIL		EST	650	CY		14	0	9,100	0.03	22	LAND	61.45	1,400	10,500
	GRASS SEEDING, FERTILIZER AND MULCH		EST	1.2	AC		4930	0	5,900	240.00	331	MSTR	80.04	26,500	32,400
16.11	STORM WATER POND PUMP STRUCTURE - CONCRETE							90,000	42,300					182,200	314,500
	EXCAVATION / BACKFILL		EST	0	CY			0	0	0.36	0	EXFD	90.00	0	0
	REINFORCING		EST	3	TN		1,150.00	0	3,500	20.00	69	REIN	78.27	5,400	8,900
	FORMWORK		EST	2,025	SF		2.50	0	5,100	0.14	326	FORM	99.43	32,400	37,500
	CONCRETE		EST	33	CY		105.00	0	3,500	1.50	57	CONP	79.64	4,500	8,000
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	165	LB		2.50	0	400	0.06	11	CARP	71.88	800	1,200
	STORM WATER POND PUMP STRUCTURE - GALLERY		EST	5	TN		4,000.00	0	20,000	35.00	201	GALL	84.61	17,000	37,000
	PUMPS	500 GPM, 75 PSIG	EST	3	EA	30000		90,000	0	165.00	569	MECH	88.89	50,600	140,600
	PIPING	6" HDPE, SDR 9	EST	1,000	LF		9.8	0	9,800	0.69	794	YDPP	90.14	71,500	81,300
16.12	OILY WATER SEWER							4,500	96,600					210,000	311,100
	PIPING	6" CISP	EST	1,150	LF		21.5	0	24,700	0.33	436	YDPP	90.14	39,300	64,000
	PIPING	8" CISP	EST	1,150	LF		33.5	0	38,500	0.54	714	YDPP	90.14	64,400	102,900
	PIPING	6" HDPE, SDR 9	EST	1,000	LF		9.8	0	9,800	0.69	794	YDPP	90.14	71,500	81,300
	POST INDICATOR VALVE		EST	6	EA	750		4,500	0	6.00	41	YDPP	90.14	3,700	8,200
	MANHOLES		EST	15	EA		1575.0	0	23,600	20.00	345	YDPP	90.14	31,100	54,700
16.13	OIL SEPARATOR	500 GPM W/ INTEGRAL LIFT STATION	EST	2	EA	50000		100,000	0	560.00	1,288	YDPP	90.14	116,100	216,100
16.14	SANITARY SEWER							0	22,200					96,900	119,100
	PIPING	6" CISP	EST	500	LF		21.5	0	10,800	0.33	190	YDPP	90.14	17,100	27,900
	MANHOLES		EST	4	EA		1575.0	0	6,300	20.00	92	YDPP	90.14	8,300	14,600
	PIPING	4" HDPE (UNDERGROUND)	EST	1,500	LF		3.4	0	5,100	0.46	794	YDPP	90.14	71,500	76,600
16.15	SANITARY LIFT STATION	PACKAGED TYPE COMPLETE WITH PUMPS 100,000 GPD	EST	1	EA	150,000		150,000	0	475.00	546	YDPP	90.14	49,200	199,200
16.16	CONSTRUCTION LAYDOWN AREA - (TO BE USED FOR PHASE I AND PHASE II)	ALLOWANCE FOR 10 ACRES, DOES NOT INCLUDE LAND ACQUISITION, IF REQUIRED	EST	10	AC		70,000.0	0	700,000	800.00	9,200	EXFD	90.00	828,000	1,528,000
16.17	CRAFT PARKING (TO BE USED FOR PHASE I AND PHASE II)	DOES NOT INCLUDE LAND ACQUISITION, IF REQUIRED. ALLOWANCE FOR 20,000 SY INCLUDES: 6" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST	20,000	SY		9	0	180,000	0.17	3,910	BCSE	105.94	414,200	594,200
16.18	CONTRACTOR OFFICES (AREA) - (TO BE USED FOR PHASE I AND PHASE II)	DOES NOT INCLUDE LAND ACQUISITION, IF REQUIRED. ALLOWANCE FOR 5,000 SY AREA (TRAILERS BY CONTRACTORS) INCLUDES: 6" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST	5,000	SY		9	0	45,000	0.17	978	BCSE	105.94	103,600	148,600

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16.19	NEW PERMANENT STORAGE	INCLUDES LIGHTING AND H&V. SUBCONTRACT PRICE INCLUDES ELECTRICAL AND H&V		30,000	SF	85		2,550,000	0		0	STST	105.71	0	2,550,000
16.20	FOUNDATIONS FOR THE NEW WAREHOUSE							0	803,800					1,301,600	2,105,400
	EXCAVATION / BACKFILL		EST	2,600	CY			0	0	0.36	1,076	EXFD	90.00	96,900	96,900
	REINFORCING		EST	320	TN		1,150.00	0	368,000	20.00	7,360	REIN	78.27	576,100	944,100
	FORMWORK		EST	2,400	SF		2.50	0	6,000	0.14	386	FORM	99.43	38,400	44,400
	CONCRETE		EST	3,300	CY		105.00	0	346,500	1.50	5,693	CONP	79.64	453,400	799,900
	MUD MAT		EST	400	CY		105.00	0	42,000	1.50	690	CONP	79.64	55,000	97,000
	EMBEDDED STEEL		EST	16,500	LB		2.50	0	41,300	0.06	1,139	CARP	71.88	81,800	123,100
16.21	NEW TEMPORARY STORAGE	WEATHER TIGHT CANVAS ENCLOSURE. INCLUDES LIGHTING AND H&V. SUBCONTRACT PRICE INCLUDES ELECTRICAL AND H&V		10,000	SF	45		450,000	0		0	STST	105.71	0	450,000
16.22	FOUNDATIONS FOR TEMPORARY STORAGE							0	99,500					157,200	256,700
	EXCAVATION / BACKFILL		EST	230	CY			0	0	0.36	95	EXFD	90.00	8,600	8,600
	REINFORCING		EST	35	TN		1,150.00	0	40,300	20.00	805	REIN	78.27	63,000	103,300
	FORMWORK		EST	400	SF		2.50	0	1,000	0.14	64	FORM	99.43	6,400	7,400
	CONCRETE		EST	370	CY		105.00	0	38,900	1.50	638	CONP	79.64	50,800	89,700
	MUD MAT		EST	140	CY		105.00	0	14,700	1.50	242	CONP	79.64	19,200	33,900
	EMBEDDED STEEL		EST	1,850	LB		2.50	0	4,600	0.06	128	CARP	71.88	9,200	13,800
16.23	LABOR BUS SERVICE FROM PARKING LOT TO CONSTRUCTION AREA AND ACCESS CONTROL	ALLOWANCE FOR 36 MONTHS BASED ON 2 BUSES OPERATING CONTINUOUSLY FOR 5X10 WORKWEEK. SUBCONTRACT COST INCLUDES EQUIPMENT, MATERIAL AND LABOR	ALLOW	36	MN	38000		1,368,000	0					0	1,368,000
16.24	EROSION & SEDIMENT CONTROL							0	12,600					20,700	33,300
	SILT FENCE		EST	2,600	LF		1.0	0	2,600	0.02	60	LAND	61.45	3,700	6,300
	ROCK CHECK DAMS		EST	20	EA		500.0	0	10,000	12.00	276	LAND	61.45	17,000	27,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							4,942,500	3,941,900		76,373			7,059,600	15,944,000
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										1,136,357
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						6,641		83.48	554,000	554,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						8,301			582,357	582,357
	PER DIEM	NONE		0.00	HR						91,316			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				19,710					35,298	55,008
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				197,095						197,095
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			247,125							247,125
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				197,095					352,980	550,075
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				591,285					1,058,940	1,650,225
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							247,100	1,005,200					2,583,600	3,835,900
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SITE IMPROVEMENTS - CIVIL WORK						5,189,600	4,947,100					9,643,200	19,779,900
17.0	BOP ITEMS														0

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18.0	CAPITAL REPLACEMENTS - REMOVAL AND RELOCATION OF EXISTING EQUIPMENT AND INFRASTRUCTURE														0
19.0	ARSENIC, ASBESTOS , LEAD ABATEMENT														0
99.00	PHASE I - OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS							118,294,000	53,708,600		1,592,563			147,675,300	351,802,900
	PHASE I - OVERALL OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE							810,000	0		14,904			1,523,520	2,333,520
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										23,808,066
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						138,484		92.73	11,560,000	11,560,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						174,595			12,248,066	12,248,066
	PER DIEM	NONE		0.00	HR									0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				265,843					736,827	1,002,670
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				2,658,430						2,658,430
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			5,851,700							5,851,700
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				2,658,430					7,368,265	10,026,695
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				8,056,290					22,104,795	35,231,085
	PHASE I - OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							6,661,700	13,639,000					55,541,500	80,912,200
	PHASE I - OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST	DRY FGD						124,955,700	67,347,600					203,216,800	432,715,100
	TOTAL PHASE I DIRECT AND CONSTRUCTION INDIRECT COSTS							124,955,700	67,347,600					203,216,800	432,715,100
								0	0					0	0
	INDIRECT COSTS - PHASE I														
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES			1.0	LT										28,000,000
	CONSTRUCTION MANAGEMENT			3.0	%										12,981,500
	S-U / COMMISSIONING			1.0											4,327,200
	CRAFT START-UP SUPPORT	1% OF TOTAL LABOR MANHOURS (INCLUDES OVERTIME INEFFICIENCY & COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - BASED ON ASSUMED 5X10 WORKWEEK)		1.0	%						17,310		92.73	1,740,100	1,740,100
	INITIAL FILLS			0.3	%										1,298,100
	OPERATOR & TRAINING MANUALS			1.0	LT										300,000
	SUBCONTRACTORS (NOISE & DUCTWORK CONSULTANT, GEOTECHNICAL INVESTIGATION)			1.0	LT										400,000
	SUBTOTAL - INDIRECT COSTS														49,046,900
	TOTAL PHASE I DIRECT AND INDIRECT COSTS														481,762,000
	SPARE PARTS - PHASE I			1.5	%			1,874,300							1,874,300
	SPARE PARTS - CAPITALIZED			0.90	%			1,124,580							1,124,580
	SPARE PARTS - FIRST YEAR OF OPERATION			0.60	%			749,720							749,720

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	CONTINGENCY - PHASE I			14.3	%										69,375,300
	ESCALATION - PHASE I														107,858,500
	EQUIPMENT	4.0%/yr		4.0	%			34,072,800							34,072,800
	MATERIAL	2.0%/yr		2.0	%				14,583,300						14,583,300
	LABOR	2.5%/yr		2.5	%									48,849,700	48,849,700
	INDIRECTS	2.5%/yr		2.5	%									10,352,700	10,352,700
	PHASE I - TOTAL PROJECT COST														660,870,100
	PHASE II - WET FGD														
20.0	LIMESTONE HANDLING SYSTEM														0
21.0	REAGENT (LIMESTONE) PREPARATION ISLAND														0
21.1	MECHANICAL EQUIPMENT	INCLUDES LIMESTONE FEEDERS, FROM THE DAY SILOS THROUGH THE SLURRY STORAGE TANKS AND TRANSFER PUMPS WITH INTEGRAL PIPING	EST	1	LT	13,430,000		13,430,000	0	111600.00	128,340	MECH	88.89	11,408,100	24,838,100
21.2	SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
21.3	AGITATOR FOR SUMP PUMPS	5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
21.4	PIPING - MECHANICAL		EST	1	LT			278,900	205,000					587,300	1,071,200
	LARGE BORE PIPING	4.0" CS, SCH 40 WELDED	EST	500	LF		23.00	0	11,500	1.48	851	SPNG	94.41	80,300	91,800
	LARGE BORE PIPING	6" FRP	EST	2,000	LF		33.90	0	67,800	0.67	1,541	SPNG	94.41	145,500	213,300
	LARGE BORE PIPING	8" FRP	EST	1,000	LF		51.30	0	51,300	0.95	1,093	SPNG	94.41	103,100	154,400
	LARGE BORE PIPING	10" FRP	EST	300	LF		68.00	0	20,400	1.18	407	SPNG	94.41	38,400	58,800
	LARGE BORE PIPING	12" FRP	EST	250	LF		80.90	0	20,200	1.41	405	SPNG	94.41	38,300	58,500
	VALVE	6" BFLY, 150 #, CS, FLANGED	EST	6	EA	850		5,100	0	8.70	60	SPNG	94.41	5,700	10,800
	VALVE	8" BFLY, 150 #, CS, FLANGED	EST	12	EA	1,400		16,800	0	9.10	126	SPNG	94.41	11,900	28,700
	VALVE	10" BFLY, 150 #, CS, FLANGED	EST	10	EA	2,300		23,000	0	13.80	159	SPNG	94.41	15,000	38,000
	VALVE	12" BFLY, 150 #, CS, FLANGED	EST	3	EA	3,000		9,000	0	14.60	50	SPNG	94.41	4,800	13,800
	VALVE	6" AIR OPERATED, 150 #, CS, FLANGED	EST	10	EA	14,000		140,000	0	17.30	199	SPNG	94.41	18,800	158,800
	VALVE	8" AIR OPERATED, 150 #, CS, FLANGED	EST	5	EA	17,000		85,000	0	19.30	111	SPNG	94.41	10,500	95,500
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	450	EA		75.00	0	33,800	2.50	1,294	MECH	88.89	115,000	148,800
21.5	LIMESTONE SLURRY TANKS - FOUNDATIONS							0	166,400					299,400	465,800
	EXCAVATION / BACKFILL		EST	969	CY			0	0	0.36	401	EXFD	90.00	36,100	36,100
	REINFORCING		EST	90	TN		1,150.00	0	103,500	20.00	2,070	REIN	78.27	162,000	265,500
	FORMWORK		EST	1,166	SF		2.50	0	2,900	0.14	188	FORM	99.43	18,700	21,600
	CONCRETE		EST	475	CY		105.00	0	49,900	1.50	819	CONP	79.64	65,300	115,200
	MUD MAT		EST	40	CY		105.00	0	4,200	1.50	69	CONP	79.64	5,500	9,700
	EMBEDDED STEEL		EST	2,375	LB		2.50	0	5,900	0.06	164	CARP	71.88	11,800	17,700
21.6	REAGENT PREPARATION BUILDING - FOUNDATIONS							0	674,900					1,120,500	1,795,400
	EXCAVATION / BACKFILL		EST	2,740	CY			0	0	0.36	1,134	EXFD	90.00	102,100	102,100
	REINFORCING		EST	270	TN		1,150.00	0	310,500	20.00	6,210	REIN	78.27	486,100	796,600
	FORMWORK		EST	2,480	SF		2.50	0	6,200	0.14	399	FORM	99.43	39,700	45,900
	CONCRETE		EST	2,860	CY		105.00	0	300,300	1.50	4,934	CONP	79.64	392,900	693,200
	MUD MAT		EST	210	CY		105.00	0	22,100	1.50	362	CONP	79.64	28,800	50,900
	EMBEDDED STEEL		EST	14,300	LB		2.50	0	35,800	0.06	987	CARP	71.88	70,900	106,700
21.7	REAGENT PREPARATION BUILDING	120' L X 129' W X 130' H						269,400	4,812,500					4,210,100	9,292,000
	STRUCTURAL STEEL		EST	1,200	TN		2650	0	3,180,000	16.00	22,080	STST	105.71	2,334,100	5,514,100
	INSULATED METAL SIDING		EST	64,740	SF		12	0	776,900	0.11	8,190	SDNG	93.41	765,000	1,541,900

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	ROLLING OVERHEAD DOOR		EST	640	SF		27	0	17,300	0.25	184	CARP	71.88	13,200	30,500
	METAL ROOF DECKING		EST	15,480	SF		2.7	0	41,800	0.06	1,068	STST	105.71	112,900	154,700
	RIGID ROOF INSULATION		EST	15,480	SF		2.4	0	37,200	0.02	267	ROOF	69.12	18,500	55,700
	ROOFING (4-PLY TAR & GRAVEL)		EST	15,480	SF		1.55	0	24,000	0.04	712	ROOF	69.12	49,200	73,200
	LIGHTWEIGHT CONCRETE FILL 1"		EST	48	CY		100	0	4,800	1.30	71	ROOF	69.12	4,900	9,700
	ROOF FLASHING		EST	498	LF		14.45	0	7,200	0.12	69	ROOF	69.12	4,800	12,000
	ROOF DRAINS		EST	1	LT		45000	0	15,000	500.00	575	PLMB	79.42	45,700	60,700
	FLOOR DRAINS		EST	1	LT		37500	0	20,000	375.00	431	PLMB	79.42	34,200	54,200
	FLOOR SLABS	INCLUDES METAL DECKING AND FORMWORK	EST	47	CY		210	0	9,900	7.50	405	CONP	79.64	32,300	42,200
	FLOOR FINISHES		EST	9,270	SF		2.5	0	23,200	0.05	533	CONP	79.64	42,500	65,700
	LOUVERS/WINDOWS/DOORS		EST	6,474	SF		40	0	259,000	0.35	2,606	CARP	71.88	187,300	446,300
	ROOF VENTILATORS		EST	6	EA		15000	0	90,000	24.00	166	HVAC	81.24	13,500	103,500
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	4,630	SF		45	0	208,400	0.40	2,130	GALL	84.61	180,200	388,600
	H&V		EST	1	LT	194400	77760	194,400	77,800	3629.33	4,174	HVAC	81.24	339,100	611,300
	HVAC	40T PACKAGED UNIT FOR ELECTRICAL EQUIPMENT ROOM. INCLUDES ALLOWANCE FOR CONCRETE PAD AND ELECTRICAL WORK	EST	1	LT	75000	20000	75,000	20,000	350.00	403	HVAC	81.24	32,700	127,700
21.8	PIPE SUPPORT PAD - REAGENT PREP BUILDING							0	13,800					27,200	41,000
	EXCAVATION / BACKFILL		EST	108	CY			0	0	0.36	45	EXFD	90.00	4,000	4,000
	REINFORCING		EST	5.0	TN		1,150.00	0	5,800	20.00	115	REIN	78.27	9,000	14,800
	FORMWORK		EST	270	SF		2.50	0	700	0.14	43	FORM	99.43	4,300	5,000
	CONCRETE		EST	40	CY		105.00	0	4,200	1.50	69	CONP	79.64	5,500	9,700
	MUD MAT		EST	25	CY		105.00	0	2,600	1.50	43	CONP	79.64	3,400	6,000
	EMBEDDED STEEL		EST	195	LB		2.50	0	500	0.06	13	CARP	71.88	1,000	1,500
21.9	LIGHTING/ TRANSFORMERS & PANELS							52,000	135,000					104,500	291,500
	LIGHT FIXTURES		EST	180	EA		750	0	135,000	4.00	828	WIRE	98.84	81,800	216,800
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	10000		20,000	0	40.00	92	WIRE	98.84	9,100	29,100
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	7500		15,000	0	32.00	74	WIRE	98.84	7,300	22,300
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	2	EA	5000		10,000	0	16.00	37	WIRE	98.84	3,600	13,600
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	2	EA	3500		7,000	0	12.00	28	WIRE	98.84	2,700	9,700
21.10	GROUNDING							5,100	0					13,400	18,500
	GROUND ROD	3/4" - 20' LONG	EST	2	EA	150		300	0	4.00	9	WIRE	98.84	900	1,200
	500 MCM	BARE COPPER WIRE	EST	600	FT	7.65		4,600	0	0.12	83	WIRE	98.84	8,200	12,800
	CADWELD		EST	16	EA	15		200	0	2.00	37	WIRE	98.84	3,600	3,800
	GROUNDING TEST	TEST, CALIBRATION & DOCUMENTATION	EST	2	EA			0	0	3.00	7	WIRE	98.84	700	700
21.11	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE ARE INCLUDED IN SECTION 28.0 - ABSORBER ISLAND													
21.12	COMMUNICATIONS		EST	1	LT		34,000.00	0	34,000	229.00	263	WIRE	98.84	26,000	60,000
21.13	LIGHTNING PROTECTION		EST	1	LT		23,000.00	0	23,000	141.00	162	WIRE	98.84	16,000	39,000
21.14	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							14,075,400	6,007,600		198,148			17,787,400	37,870,400
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0

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	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										3,171,717
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						17,230		89.77	1,547,000	1,547,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						21,538			1,624,717	1,624,717
	PER DIEM	NONE		0.00	HR						236,916			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				30,038					88,937	118,975
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				300,380						300,380
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			703,770							703,770
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				300,380					889,370	1,189,750
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				901,140					2,668,110	3,569,250
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							703,800	1,531,900					6,818,100	9,053,800
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	REAGENT (LIMESTONE) PREPARATION ISLAND						14,779,200	7,604,500					24,654,500	47,038,200
22.0	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)														0
22.1	MECHANICAL EQUIPMENT	PRIMARY & SECONDARY DEWATERING INCLUDING HYDROCLONE FEED TANKS, HYDROCLONES, PUMPS, INTEGRAL PIPING AND BELT VACUUM FILTERS	EST	1	LT	7,250,000		7,250,000	0	58300.00	67,045	MECH	88.89	5,959,600	13,209,600
22.2	PUMPS & AGITATORS							250,000	0					137,000	387,000
	GYPSUM SLURRY TRANSFER PUMPS	1500 GPM, 150 HP	EST	2	EA	40000		80,000	0	220.00	506	MECH	88.89	45,000	125,000
	RECLAIM WATER PUMPS	350 GPM, 25 HP	EST	2	EA	15000		30,000	0	120.00	276	MECH	88.89	24,500	54,500
	RECLAIM WATER TRANSFER PUMPS	500 GPM, 100 HP	EST	2	EA	30000		60,000	0	165.00	380	MECH	88.89	33,700	93,700
	SUMP PUMPS	AUXILIARY PUMPHOUSE BUILDING SUMP PUMPS - DUPLEX. INCLUDES CHECK & ISOLATION VALVES		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
	AGITATOR FOR SUMP PUMPS	AUXILIARY PUMPHOUSE BUILDING SUMP AGITATORS - 5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
	SUMP PUMPS	BYPRODUCT DEWATERING BUILDING SUMP PUMPS - DUPLEX. INCLUDES CHECK & ISOLATION VALVES		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
	AGITATOR FOR SUMP PUMPS	BYPRODUCT DEWATERING BUILDING SUMP AGITATORS - 5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
22.3	PIPING - MECHANICAL		EST	1	LT			282,700	3,555,700					7,786,000	11,624,400
	LARGE BORE PIPING	4" FRP	EST	2,050	LF		28.40	0	58,200	0.38	896	SPNG	94.41	84,600	142,800
	LARGE BORE PIPING	6" FRP	EST	3,300	LF		33.90	0	111,900	0.67	2,543	SPNG	94.41	240,100	352,000
	LARGE BORE PIPING	8" FRP	EST	6,250	LF		51.30	0	320,600	0.95	6,828	SPNG	94.41	644,600	965,200
	LARGE BORE PIPING	10" FRP	EST	6,400	LF		68.00	0	435,200	1.18	8,685	SPNG	94.41	819,900	1,255,100
	LARGE BORE PIPING	12" FRP	EST	1,000	LF		80.90	0	80,900	1.41	1,622	SPNG	94.41	153,100	234,000
	LARGE BORE PIPING	14" FRP	EST	16,500	LF		133.90	0	2,209,400	2.67	50,663	SPNG	94.41	4,783,100	6,992,500
	LARGE BORE PIPING	16" FRP	EST	100	LF		152.20	0	15,200	2.88	331	SPNG	94.41	31,300	46,500
	LARGE BORE PIPING	20" FRP	EST	125	LF		165.00	0	20,600	3.31	476	SPNG	94.41	44,900	65,500
	VALVE	4" BFLY, 150 #, CS, FLANGED	EST	6	EA	625		3,800	0	7.20	50	SPNG	94.41	4,700	8,500
	VALVE	6" BFLY, 150 #, CS, FLANGED	EST	6	EA	850		5,100	0	8.70	60	SPNG	94.41	5,700	10,800
	VALVE	8" BFLY, 150 #, CS, FLANGED	EST	12	EA	1,400		16,800	0	9.10	126	SPNG	94.41	11,900	28,700
	VALVE	10" BFLY, 150 #, CS, FLANGED	EST	10	EA	2,300		23,000	0	13.80	159	SPNG	94.41	15,000	38,000
	VALVE	12" BFLY, 150 #, CS, FLANGED	EST	3	EA	3,000		9,000	0	14.60	50	SPNG	94.41	4,800	13,800
	VALVE	6" AIR OPERATED, 150 #, CS, FLANGED	EST	10	EA	14,000		140,000	0	17.30	199	SPNG	94.41	18,800	158,800

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	VALVE	8" AIR OPERATED, 150 #, CS, FLANGED	EST	5	EA	17,000		85,000	0	19.30	111	SPNG	94.41	10,500	95,500
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	3,573	EA		85.00	0	303,700	2.50	10,271	MECH	88.89	913,000	1,216,700
22.4	MATERIAL HANDLING EQUIPMENT							724,000	7,500					614,100	1,345,600
	CONVEYOR GH-1A	36" W x 75' L		75	LF	1,000		75,000	0	7.50	647	MECH	88.89	57,500	132,500
	CONVEYOR GH-1B	36" W x 75' L		75	LF	1,000		75,000	0	30.00	2,588	MECH	88.89	230,000	305,000
	BELT SCALES	CONVEYORS GH-1A AND GH-1B		2	EA	30,000		60,000	0	180.00	414	MECH	88.89	36,800	96,800
	STACKOUT CONVEYOR GH-2A	36" W X 120' L		120	LF	1,100		132,000	0	7.50	1,035	MECH	88.89	92,000	224,000
	STACKOUT CONVEYOR GH-2B	36" W X 120' L		120	LF	1,100		132,000	0	7.50	1,035	MECH	88.89	92,000	224,000
	TELESCOPIC CHUTES	CONVEYORS GH-2A AND GH-2B		2	EA	125,000		250,000	0	375.00	863	MECH	88.89	76,700	326,700
	FRONT END LOADER	NOT INCLUDED						0	0	30.00	0	MECH	88.89	0	0
	DUMP TRUCK	NOT INCLUDED						0	0	700.00	0	MECH	88.89	0	0
	WATER SPRAY AT DISCHARGE OF GH-2A & GH-2B	ALLOWANCE FOR 200 LF SMALL BORE PIPING AND SPRAYS AND VALVVING		300	LF		25.0	0	7,500	0.95	328	MECH	88.89	29,100	36,600
22.5	FIRE PROTECTION SYSTEM FOR BELT CONVEYORS	DELUGE SYSTEM, DRY PIPE, SENSORS, ACTIVATION VALVE AND FM APPROVED PANEL - SUBCONTRACT PRICE FOR ALL CONVEYORS INCLUDES LABOR		1	LT	170,000		170,000	0	0.00	0	MECH	88.89	0	170,000
22.6	CONVEYOR STRUCTURE SUPPORT STEEL	THREE-COAT SHOP PAINT	EST	34	TN		2,900.00	0	99,000	24.00	942	STST	105.71	99,600	198,600
22.7	PIPE RACK SUPPORT STEEL	THREE-COAT SHOP PAINT	EST	68	TN		2,900.00	0	197,200	24.00	1,877	STST	105.71	198,400	395,600
22.8	TANKS							0	3,825,300					846,700	4,672,000
	LANDFILL SERVICE WATER TANKS	70,000 GAL, CS, 20' DIA X 30' - SUBCONTRACT PRICE INCLUDES LABOR WITH EXTERIOR PRIMED AND FIELD PAINTED	EST	2	EA		157500.0	0	315,000	0.00	0	TANK	89.16	0	315,000
	BLEED TANKS	120,000 GAL, CS, 27' DIA X 27' - SUBCONTRACT PRICE INCLUDES LABOR WITH EXTERIOR PRIMED AND FIELD PAINTED	EST	2	EA		216000.0	0	432,000	0.00	0	TANK	89.16	0	432,000
	RECLAIM WATER TANKS	230,000 GAL, CS, 29' DIA X 33' - SUBCONTRACT PRICE INCLUDES LABOR WITH EXTERIOR PRIMED AND FIELD PAINTED	EST	2	EA		330000.0	0	660,000	0.00	0	TANK	89.16	0	660,000
	RECLAIM WATER TANKS - INTERIOR LINING	FLAKECOAT VINYL ESTER TOTAL FOR TWO TANKS	EST	8,656	SF		15.0	0	129,800	0.35	3,484	PNTR	66.72	232,500	362,300
	LANDFILL RECLAIM WATER TANKS	230,000 GAL, CS, 29' DIA X 33' - SUBCONTRACT PRICE INCLUDES LABOR WITH EXTERIOR PRIMED AND FIELD PAINTED	EST	2	EA		330000.0	0	660,000	0.00	0	TANK	89.16	0	660,000
	LANDFILL RECLAIM WATER TANKS - INTERIOR LINING	FLAKECOAT VINYL ESTER TOTAL FOR TWO TANKS	EST	8,656	SF		15.0	0	129,800	0.35	3,484	PNTR	66.72	232,500	362,300
	MAINTENANCE STORAGE TANK	1,250,000 GAL, CS, 58' DIA X 62' - SUBCONTRACT PRICE INCLUDES LABOR WITH EXTERIOR PRIMED AND FIELD PAINTED	EST	1	EA		1250000.0	0	1,250,000	0.00	0	TANK	89.16	0	1,250,000
	MAINTENANCE STORAGE TANK - INTERIOR LINING	FLAKECOAT VINYL ESTER	EST	16,581	SF		15.0	0	248,700	0.30	5,720	PNTR	66.72	381,700	630,400
22.9	RECLAIM WATER TANKS & PUMPS - FOUNDATIONS							0	26,000					54,000	80,000
	EXCAVATION / BACKFILL		EST	295	CY			0	0	0.36	122	EXFD	90.00	11,000	11,000
	REINFORCING		EST	10.0	TN		1,150.00	0	11,500	20.00	230	REIN	78.27	18,000	29,500
	FORMWORK		EST	384	SF		2.50	0	1,000	0.14	62	FORM	99.43	6,100	7,100
	CONCRETE		EST	103	CY		105.00	0	10,800	1.50	178	CONP	79.64	14,200	25,000
	MUD MAT		EST	9	CY		105.00	0	900	1.50	16	CONP	79.64	1,200	2,100
	EMBEDDED STEEL		EST	705	LB		2.50	0	1,800	0.06	49	CARP	71.88	3,500	5,300
22.10	MAINTENANCE STORAGE TANK & PUMPS - FOUNDATIONS							0	100,000					177,300	277,300
	EXCAVATION / BACKFILL		EST	614	CY			0	0	0.36	254	EXFD	90.00	22,900	22,900
	REINFORCING		EST	42.0	TN		1,150.00	0	48,300	20.00	966	REIN	78.27	75,600	123,900
	FORMWORK		EST	795	SF		2.50	0	2,000	0.14	128	FORM	99.43	12,700	14,700

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		Cost Type:												Reviewer:	JMK
		Est=Estimated												Approver:	PEF
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Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	CONCRETE		EST	420	CY		105.00	0	44,100	1.50	725	CONP	79.64	57,700	101,800
	MUD MAT		EST	36	CY		105.00	0	3,800	1.50	62	CONP	79.64	4,900	8,700
	EMBEDDED STEEL		EST	705	LB		2.50	0	1,800	0.06	49	CARP	71.88	3,500	5,300
22.11	LANDFILL SERVICE WATER TANKS & PUMP - FOUNDATIONS							0	80,900					155,100	236,000
	EXCAVATION / BACKFILL		EST	614	CY			0	0	0.36	254	EXFD	90.00	22,900	22,900
	REINFORCING		EST	42.0	TN		1,150.00	0	48,300	20.00	966	REIN	78.27	75,600	123,900
	FORMWORK		EST	795	SF		2.50	0	2,000	0.14	128	FORM	99.43	12,700	14,700
	CONCRETE		EST	221	CY		105.00	0	23,200	1.50	381	CONP	79.64	30,400	53,600
	MUD MAT		EST	18	CY		105.00	0	1,900	1.50	31	CONP	79.64	2,500	4,400
	EMBEDDED STEEL		EST	2,210	LB		2.50	0	5,500	0.06	152	CARP	71.88	11,000	16,500
22.12	LANDFILL RECLAIM WATER TANKS & PUMPS - FOUNDATIONS							0	26,000					54,000	80,000
	EXCAVATION / BACKFILL		EST	295	CY			0	0	0.36	122	EXFD	90.00	11,000	11,000
	REINFORCING		EST	10.0	TN		1,150.00	0	11,500	20.00	230	REIN	78.27	18,000	29,500
	FORMWORK		EST	384	SF		2.50	0	1,000	0.14	62	FORM	99.43	6,100	7,100
	CONCRETE		EST	103	CY		105.00	0	10,800	1.50	178	CONP	79.64	14,200	25,000
	MUD MAT		EST	9	CY		105.00	0	900	1.50	16	CONP	79.64	1,200	2,100
	EMBEDDED STEEL		EST	705	LB		2.50	0	1,800	0.06	49	CARP	71.88	3,500	5,300
22.13	HYDROCLONE FEED TANKS & BLEED TANKS - FOUNDATIONS	TOTAL FOR HYDROCLONE AND BLEED TANKS						0	340,200					618,900	959,100
	EXCAVATION / BACKFILL		EST	1,915	CY			0	0	0.36	793	EXFD	90.00	71,400	71,400
	REINFORCING		EST	212.0	TN		1,150.00	0	243,800	20.00	4,876	REIN	78.27	381,600	625,400
	FORMWORK		EST	2,400	SF		2.50	0	6,000	0.14	386	FORM	99.43	38,400	44,400
	CONCRETE		EST	671	CY		105.00	0	70,500	1.50	1,157	CONP	79.64	92,200	162,700
	MUD MAT		EST	58	CY		105.00	0	6,100	1.50	100	CONP	79.64	8,000	14,100
	EMBEDDED STEEL		EST	5,500	LB		2.50	0	13,800	0.06	380	CARP	71.88	27,300	41,100
22.14	BYPRODUCT STACKOUT CONVEYOR & TRANSFER TOWER - FOUNDATIONS							0	16,100					34,700	50,800
	EXCAVATION / BACKFILL		EST	140	CY			0	0	0.36	58	EXFD	90.00	5,200	5,200
	REINFORCING		EST	6	TN		1,150.00	0	6,900	20.00	138	REIN	78.27	10,800	17,700
	FORMWORK		EST	480	SF		2.50	0	1,200	0.14	77	FORM	99.43	7,700	8,900
	CONCRETE		EST	59	CY		105.00	0	6,200	1.50	102	CONP	79.64	8,100	14,300
	MUD MAT		EST	10	CY		105.00	0	1,100	1.50	17	CONP	79.64	1,400	2,500
	EMBEDDED STEEL		EST	295	LB		2.50	0	700	0.06	20	CARP	71.88	1,500	2,200
22.15	BYPRODUCT STACKOUT PILE - FOUNDATIONS	INCLUDES CONTAINMENT AREA SLAB						0	891,700					1,427,400	2,319,100
	EXCAVATION / BACKFILL		EST	2,900	CY			0	0	0.36	1,201	EXFD	90.00	108,100	108,100
	REINFORCING		EST	360	TN		1,150.00	0	414,000	20.00	8,280	REIN	78.27	648,100	1,062,100
	FORMWORK		EST	2,365	SF		2.50	0	5,900	0.14	381	FORM	99.43	37,900	43,800
	CONCRETE		EST	3,813	CY		105.00	0	400,400	1.50	6,577	CONP	79.64	523,800	924,200
	MUD MAT		EST	453	CY		105.00	0	47,600	1.50	781	CONP	79.64	62,200	109,800
	EMBEDDED STEEL		EST	9,533	LB		2.50	0	23,800	0.06	658	CARP	71.88	47,300	71,100
22.16	PIPE RACK	SUPPORTS AT 15' C/C						0	60,800					149,400	210,200
	EXCAVATION / BACKFILL		EST	1,120	CY			0	0	0.36	464	EXFD	90.00	41,700	41,700
	REINFORCING		EST	24	TN		1,150.00	0	27,600	20.00	552	REIN	78.27	43,200	70,800
	FORMWORK		EST	1,500	SF		2.50	0	3,800	0.14	242	FORM	99.43	24,000	27,800
	CONCRETE		EST	250	CY		105.00	0	26,300	1.50	431	CONP	79.64	34,300	60,600
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	1,250	LB		2.50	0	3,100	0.06	86	CARP	71.88	6,200	9,300
22.17	BYPRODUCT CONTAINMENT WALLS							0	137,300					235,000	372,300
	EXCAVATION / BACKFILL		EST	489	CY			0	0	0.36	202	EXFD	90.00	18,200	18,200
	REINFORCING		EST	46	TN		1,150.00	0	52,900	20.00	1,058	REIN	78.27	82,800	135,700
	FORMWORK		EST	1,520	SF		2.50	0	3,800	0.14	245	FORM	99.43	24,300	28,100
	CONCRETE		EST	489	CY		105.00	0	51,300	1.50	844	CONP	79.64	67,200	118,500
	MUD MAT		EST	221	CY		105.00	0	23,200	1.50	381	CONP	79.64	30,400	53,600
	EMBEDDED STEEL		EST	2,445	LB		2.50	0	6,100	0.06	169	CARP	71.88	12,100	18,200

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22.18	INSTALL WIND SCREEN		EST	700	LF		750.00	0	525,000	3.00	2,415	CONP	79.64	192,300	717,300
22.19	BYPRODUCT DEWATERING BUILDING - FOUNDATIONS							0	288,700					478,000	766,700
	EXCAVATION / BACKFILL		EST	1,200	CY			0	0	0.36	497	EXFD	90.00	44,700	44,700
	REINFORCING		EST	120	TN		1,150.00	0	138,000	20.00	2,760	REIN	78.27	216,000	354,000
	FORMWORK		EST	1,500	SF		2.50	0	3,800	0.14	242	FORM	99.43	24,000	27,800
	CONCRETE		EST	1,265	CY		105.00	0	132,800	1.50	2,182	CONP	79.64	173,800	306,600
	MUD MAT		EST	120	CY		105.00	0	12,600	1.50	207	CONP	79.64	16,500	29,100
	EMBEDDED STEEL		EST	600	LB		2.50	0	1,500	0.06	41	CARP	71.88	3,000	4,500
22.20	BYPRODUCT DEWATERING BUILDING	120' L X 74' W X 65' H						145,200	1,586,400					1,488,000	3,219,600
	STRUCTURAL STEEL		EST	320	TN		2650	0	848,000	16.00	5,888	STST	105.71	622,400	1,470,400
	INSULATED METAL SIDING		EST	25,200	SF		12	0	302,400	0.11	3,188	SDNG	93.41	297,800	600,200
	ROLLING OVERHEAD DOOR		EST	640	SF		27	0	17,300	0.25	184	CARP	71.88	13,200	30,500
	METAL ROOF DECKING		EST	8,880	SF		2.7	0	24,000	0.06	613	STST	105.71	64,800	88,800
	RIGID ROOF INSULATION		EST	8,880	SF		2.4	0	21,300	0.02	153	ROOF	69.12	10,600	31,900
	ROOFING (4-PLY TAR & GRAVEL)		EST	8,880	SF		1.55	0	13,800	0.04	408	ROOF	69.12	28,200	42,000
	LIGHTWEIGHT CONCRETE FILL 1"		EST	28	CY		100	0	2,800	1.30	42	ROOF	69.12	2,900	5,700
	ROOF FLASHING		EST	388	LF		14.45	0	5,600	0.12	54	ROOF	69.12	3,700	9,300
	ROOF DRAINS		EST	1	LT		40000	0	15,000	450.00	518	PLMB	79.42	41,100	56,100
	FLOOR DRAINS		EST	1	LT		32500	0	20,000	350.00	403	PLMB	79.42	32,000	52,000
	FLOOR SLABS		EST	50	CY		210	0	10,500	7.50	431	CONP	79.64	34,300	44,800
	FLOOR FINISHES	MAIN LEVEL	EST	6,680	SF		2.5	0	16,700	0.05	384	CONP	79.64	30,600	47,300
	LOUVERS/WINDOWS/DOORS		EST	2,520	SF		40	0	100,800	0.35	1,014	CARP	71.88	72,900	173,700
	ROOF VENTILATORS		EST	4	EA		15000	0	60,000	24.00	110	HVAC	81.24	9,000	69,000
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	1,780	SF		45	0	80,100	0.40	819	GALL	84.61	69,300	149,400
	H&V		EST	1	LT	70200	28080	70,200	28,100	1310.67	1,507	HVAC	81.24	122,500	220,800
	HVAC	40T PACKAGED UNIT FOR ELECTRICAL EQUIPMENT ROOM. INCLUDES ALLOWANCE FOR CONCRETE PAD AND ELECTRICAL WORK	EST	1	LT	75000	20000	75,000	20,000	350.00	403	HVAC	81.24	32,700	127,700
22.21	PIPE SUPPORT PAD							0	18,300					36,000	54,300
	EXCAVATION / BACKFILL		EST	92	CY			0	0	0.36	38	EXFD	90.00	3,400	3,400
	REINFORCING		EST	6.0	TN		1,150.00	0	6,900	20.00	138	REIN	78.27	10,800	17,700
	FORMWORK		EST	492	SF		2.50	0	1,200	0.14	79	FORM	99.43	7,900	9,100
	CONCRETE		EST	68	CY		105.00	0	7,100	1.50	117	CONP	79.64	9,300	16,400
	MUD MAT		EST	21	CY		105.00	0	2,200	1.50	36	CONP	79.64	2,900	5,100
	EMBEDDED STEEL		EST	340	LB		2.50	0	900	0.06	23	CARP	71.88	1,700	2,600
22.22	AUXILIARY PUMPHOUSE BUILDING WITH ELECTRICAL ROOM - FOUNDATIONS							0	32,300					60,800	93,100
	EXCAVATION / BACKFILL		EST	210	CY			0	0	0.36	87	EXFD	90.00	7,800	7,800
	REINFORCING		EST	11	TN		1,150.00	0	12,900	20.00	258	REIN	78.27	20,200	33,100
	FORMWORK		EST	500	SF		2.50	0	1,300	0.14	81	FORM	99.43	8,000	9,300
	CONCRETE		EST	140	CY		105.00	0	14,700	1.50	242	CONP	79.64	19,200	33,900
	MUD MAT		EST	15	CY		105.00	0	1,600	1.50	26	CONP	79.64	2,100	3,700
	EMBEDDED STEEL		EST	700	LB		2.50	0	1,800	0.06	48	CARP	71.88	3,500	5,300
22.23	AUXILIARY PUMPHOUSE BUILDING	50'L X 35' W X 20'H						101,300	252,500					269,800	623,600
	STRUCTURAL STEEL		EST	20	TN		2650	0	53,000	16.00	368	STST	105.71	38,900	91,900
	INSULATED METAL SIDING		EST	3,400	SF		12	0	40,800	0.11	430	SDNG	93.41	40,200	81,000
	ROLLING OVERHEAD DOOR		EST	320	SF		27	0	8,600	0.25	92	CARP	71.88	6,600	15,200
	METAL ROOF DECKING		EST	1,750	SF		2.7	0	4,700	0.06	121	STST	105.71	12,800	17,500
	RIGID ROOF INSULATION		EST	1,750	SF		2.4	0	4,200	0.02	30	ROOF	69.12	2,100	6,300
	ROOFING (4-PLY TAR & GRAVEL)		EST	1,750	SF		1.55	0	2,700	0.04	81	ROOF	69.12	5,600	8,300
	LIGHTWEIGHT CONCRETE FILL 1"		EST	5	CY		100	0	500	1.30	8	ROOF	69.12	600	1,100
	ROOF FLASHING		EST	170	LF		14.45	0	2,500	0.12	23	ROOF	69.12	1,600	4,100
	ROOF DRAINS		EST	1	LT		20000	0	15,000	250.00	288	PLMB	79.42	22,800	37,800
	FLOOR DRAINS		EST	1	LT		18000	0	20,000	220.00	253	PLMB	79.42	20,100	40,100
	FLOOR SLABS		EST	16	CY		210	0	3,400	7.50	138	CONP	79.64	11,000	14,400
	FLOOR FINISHES	MAIN LEVEL	EST	1,313	SF		2.5	0	3,300	0.05	75	CONP	79.64	6,000	9,300
	LOUVERS/WINDOWS/DOORS		EST	340	SF		40	0	13,600	0.35	137	CARP	71.88	9,800	23,400
	ROOF VENTILATORS		EST	2	EA		15000	0	30,000	24.00	55	HVAC	81.24	4,500	34,500

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	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	438	SF		45	0	19,700	0.40	201	GALL	84.61	17,000	36,700
	H&V		EST	1	LT	26250	10500	26,300	10,500	490.67	564	HVAC	81.24	45,800	82,600
	ADDITONAL HVAC UNIT FOR ELECTRICAL ROOM & CONTROLS	40T PACKAGED UNIT FOR ELECTRICAL EQUIPMENT ROOM. INCLUDES ALLOWANCE FOR CONCRETE PAD AND ELECTRICAL WORK	EST	1	LT	75000	20000	75,000	20,000	350.00	300	HVAC	81.24	24,400	119,400
22.24	SITE GRADING - GYPSUM HANDLING AREA							0	0					587,800	587,800
	CUT		EST	18,000	CY			0	0	0.08	1,656	ETWK	177.49	293,900	293,900
	FILL		EST	18,000	CY			0	0	0.08	1,656	ETWK	177.49	293,900	293,900
22.25	ROADS & SURFACING - GYPSUM HANDLING AREA							0	188,000					427,900	615,900
	CONCRETE PAD BUILDING ENTRANCES	10" REINFORCED CONCRETE	EST	100	SY		80	0	8,000	1.50	173	CONP	79.64	13,700	21,700
	AGGREGATE AREA SURFACING	INCLUDES: 6" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST	20,000	SY		9	0	180,000	0.17	3,910	BCSE	105.94	414,200	594,200
22.26	GYPSUM HANDLING & STORAGE							0	1,179,900					1,854,100	3,034,000
	GYPSUM AREA SURFACING	12" REINFORCED CONCRETE	EST	11,500	SY		96	0	1,104,000	1.60	21,160	CONP	79.64	1,685,200	2,789,200
	GYPSUM RUNOFF DRAINAGE DITCH	6" REINFORCED CONCRETE	EST	1,300	SY		48	0	62,400	1.20	1,794	CONP	79.64	142,900	205,300
	DRAINAGE CULVERTS	24" DIA CHDPE	EST	150	LF		84.7	0	12,700	1.41	243	YDPP	90.14	21,900	34,600
	EXCAVATION / BACKFILL	FOR UNDERGROUND PIPING	EST	167	CY			0	0	0.20	38	EXFD	90.00	3,500	3,500
	BEDDING	FOR UNDERGROUND PIPING	EST	22	CY		35.0	0	800	0.25	6	EXFD	90.00	600	1,400
22.27	GYPSUM RUNOFF POND							68,000	110,400					315,700	494,100
	SAND EXCAVATION		EST	4,000	CY			0	0	0.03	120	ETWK	177.49	21,200	21,200
	ROCK EXCAVATION	ASSUME ROCK IS RIPPABLE	EST	500	CY			0	0	0.05	28	ETWK	177.49	4,900	4,900
	POND SURFACING	6" REINFORCED CONCRETE	EST	2,300	SY		48	0	110,400	1.20	3,174	CONP	79.64	252,800	363,200
	PUMPS	500 GPM, 100 PSIG	EST	2	EA	34000		68,000	0	180.00	414	MECH	88.89	36,800	104,800
22.28	GYPSUM RUNOFF POND PUMP STRUCTURE - CONCRETE							0	47,000					105,400	152,400
	EXCAVATION / BACKFILL		EST	0	CY			0	0	0.36	0	EXFD	90.00	0	0
	REINFORCING		EST	7	TN		1,150.00	0	8,100	20.00	161	REIN	78.27	12,600	20,700
	FORMWORK		EST	3,968	SF		2.50	0	9,900	0.14	639	FORM	99.43	63,500	73,400
	CONCRETE		EST	76	CY		105.00	0	8,000	1.50	131	CONP	79.64	10,400	18,400
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	380	LB		2.50	0	1,000	0.06	26	CARP	71.88	1,900	2,900
	BYPRODUCT POND PUMP STRUCTURE - GALLERY		EST	5	TN		4,000.00	0	20,000	35.00	201	GALL	84.61	17,000	37,000
22.29	OILY WATER SEWER - GYPSUM HANDLING AREA							1,500	9,000					14,200	24,700
	PIPING	6" CISP	EST	200	LF		21.5	0	4,300	0.33	76	YDPP	90.14	6,800	11,100
	POST INDICATOR VALVE		EST	2	EA	750		1,500	0	6.00	14	YDPP	90.14	1,200	2,700
	MANHOLES		EST	3	EA		1575.0	0	4,700	20.00	69	YDPP	90.14	6,200	10,900
22.30	OIL SEPARATOR - GYPSUM HANDLING AREA	500 GPM W/ INTEGRAL LIFT STATION	EST	1	EA	50000		50,000	0	560.00	644	YDPP	90.14	58,100	108,100
22.31	EROSION & SEDIMENT CONTROL - GYPSUM HANDLING AREA							0	18,000					28,300	46,300
	SILT FENCE		EST	8,000	LF		1.0	0	8,000	0.02	184	LAND	61.45	11,300	19,300
	ROCK CHECK DAMS		EST	20	EA		500.0	0	10,000	12.00	276	LAND	61.45	17,000	27,000
22.32	SITE GRADING - ACCESS ROAD WIDENING & CONTAINMENT DITCH	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA						0	0					60,400	60,400
	CUT		EST	2,700	CY			0	0	0.08	248	ETWK	177.49	44,100	44,100
	FILL		EST	1,000	CY			0	0	0.08	92	ETWK	177.49	16,300	16,300
22.33	ROADS & SURFACING - GYPSUM DEWATERING AREA	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA						0	66,300					190,800	257,100

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	WIDENING OF EXISTING ROAD	INCLUDES: 6" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST	3,700	SY		9	0	33,300	0.17	723	BCSE	105.94	76,600	109,900
	GUARDRAIL	INCLUDES POSTS	EST	2,200	SY		15	0	33,000	0.50	1,265	PBIT	90.25	114,200	147,200
22.34	PIPELINE CONTAINMENT & DRAINAGE	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA						0	271,600					429,200	700,800
	CONTAINMENT / DICTH SURFACING	4" SHOTCRETE W/ WELDED WIRE FABRIC	EST	5,800	SY		46	0	265,800	0.78	5,188	CONP	79.64	413,200	679,000
	CONCRETE ENERGY DISSIPATION STRUCTURE		EST	25	CY		230	0	5,800	7.00	201	CONP	79.64	16,000	21,800
22.35	CONTAINMENT RUNOFF POND	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA						68,000	114,300					344,300	526,600
	SAND EXCAVATION		EST	4,000	CY			0	0	0.03	120	ETWK	177.49	21,200	21,200
	ROCK EXCAVATION	ASSUME ROCK IS RIPPABLE	EST	500	CY			0	0	0.05	28	ETWK	177.49	4,900	4,900
	POND SURFACING	6" REINFORCED CONCRETE	EST	2,300	SY		48	0	110,400	1.20	3,174	CONP	79.64	252,800	363,200
	PUMPS	500 GPM, 100 PSIG	EST	2	EA	34000		68,000	0	180.00	414	MECH	88.89	36,800	104,800
	LARGE BORE PIPING	6" HDPE, SDR 9	EST	400	LF		9.8	0	3,900	0.69	317	YDPP	90.14	28,600	32,500
22.36	CONTAINMENT POND PUMP STRUCTURE - CONCRETE	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA						0	47,000					105,400	152,400
	EXCAVATION / BACKFILL		EST	0	CY			0	0	0.36	0	EXFD	90.00	0	0
	REINFORCING		EST	7	TN		1,150.00	0	8,100	20.00	161	REIN	78.27	12,600	20,700
	FORMWORK		EST	3,968	SF		2.50	0	9,900	0.14	639	FORM	99.43	63,500	73,400
	CONCRETE		EST	76	CY		105.00	0	8,000	1.50	131	CONP	79.64	10,400	18,400
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	380	LB		2.50	0	1,000	0.06	26	CARP	71.88	1,900	2,900
	BYPRODUCT POND PUMP STRUCTURE - GALLERY		EST	5	TN		4,000.00	0	20,000	35.00	201	GALL	84.61	17,000	37,000
22.37	SITE GRADING - PIPELINE CONTAINMENT & DRAINAGE	SOUTH OF HWY 23						0	0					30,200	30,200
	CUT		EST	1,600	CY			0	0	0.08	147	ETWK	177.49	26,100	26,100
	FILL		EST	250	CY			0	0	0.08	23	ETWK	177.49	4,100	4,100
22.38	PIPELINE CONTAINMENT & DRAINAGE	SOUTH OF HWY 23						0	169,600					263,600	433,200
	CONTAINMENT / DICTH SURFACING	4" SHOTCRETE W/ WELDED WIRE FABRIC	EST	3,700	SY		46	0	169,600	0.78	3,309	CONP	79.64	263,600	433,200
22.39	PIPE BORING PIT	SOUTH OF HWY 23						0	5,300					50,900	56,200
	SAND EXCAVATION		EST	950	CY			0	0	0.08	87	ETWK	177.49	15,500	15,500
	ROCK EXCAVATION	ASSUMED ROCK IS RIPPABLE	EST	400	CY			0	0	0.08	37	ETWK	177.49	6,500	6,500
	BACKFILL		EST	1,350	CY			0	0	0.10	155	ETWK	177.49	27,600	27,600
	4" TOPSOIL		EST	100	SY		45	0	4,500	0.07	7	LAND	61.45	500	5,000
	GRASS SEEDING, FERTILIZER AND MULCH		EST	0.2	AC		4000	0	800	60.00	14	LAND	61.45	800	1,600
22.40	PIPE RECEIVING PIT	NORTH OF HWY 23						0	4,900					43,500	48,400
	SAND EXCAVATION		EST	800	CY			0	0	0.08	74	ETWK	177.49	13,100	13,100
	ROCK EXCAVATION	ASSUMED ROCK IS RIPPABLE	EST	350	CY			0	0	0.08	32	ETWK	177.49	5,700	5,700
	BACKFILL		EST	1,150	CY			0	0	0.10	132	ETWK	177.49	23,500	23,500
	4" TOPSOIL		EST	90	SY		45	0	4,100	0.07	7	LAND	61.45	400	4,500
	GRASS SEEDING, FERTILIZER AND MULCH		EST	0.2	AC		4000	0	800	60.00	14	LAND	61.45	800	1,600
22.41	DIRECTIONAL BORING FOR BURIED PIPE	BENEATH HWY 23						28,000	652,500					277,000	957,500
	MOBILIZATION / DEMOBILIZATION	BORING EQUIPMENT, MUD TRAILER, OPERATORS AND LABORERS	EST	1	LT		12000	0	12,000	80.00	92	EXFD	90.00	8,300	20,300
	EQUIPMENT RENTAL	BORING EQUIPMENT, MUD TRAILER. BASED ON 2 WEEKS RENTAL	EST	1	LT	28000		28,000	0	400.00	460	EXFD	90.00	41,400	69,400
	DIRECTIONAL BORING	7-24" DIA 320FT LONG EACH	EST	2,240	LF			0	0	0.32	824	EXFD	90.00	74,200	74,200
	LARGE BORE PIPING	FOR UNDERGROUND SLEEVE, 24" CS PIPE. 40 FT SPOOL PIECES	EST	2,240	LF		285	0	638,400	0.65	1,674	YDPP	90.14	150,900	789,300
	RUBBER END SEALS	NEOPRENE	EST	14	EA		150	0	2,100	1.50	24	YDPP	90.14	2,200	4,300
22.42	TRANSFORMERS							470,000	0					136,500	606,500

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	SST TRANSFORMERS: 23F & 23G	13.8KV-4160V, 2 WINDING XFMR	EST	2	EA	150000		300,000	0	450.00	1,035	EHEA	79.16	81,900	381,900
	SUS TRANSFORMERS: 36F/G	13.8KV-480V,3PHASE, CAST COIL	EST	2	EA	85000		170,000	0	300.00	690	EHEA	79.16	54,600	224,600
22.43	SWITCHGEAR							825,600	0					500,700	1,326,300
	13.8 KV MEDIUM VOLTAGE SWITCHGEAR (13F/G))	PRICE PER SECTION	EST	6	EA	50000		300,000	0	325.00	2,243	EHEA	79.16	177,500	477,500
	4.16KV MEDIUM VOLTAGE SWITCHGEAR& MCCS (21A/B)	PRICE PER SECTION	EST	8	EA	41200		329,600	0	300.00	2,760	EHEA	79.16	218,500	548,100
	480V LOW VOLTAGE SWITCHGEAR (31F/G ; 32F/G)	PRICE PER SECTION	EST	5	EA	39200		196,000	0	230.00	1,323	EHEA	79.16	104,700	300,700
22.44	CABLE BUS & TERMINATIONS							355,500	39,400					730,700	1,125,600
	5KV CABLE BUS		EST	300	FT	567		170,100	0	9.00	3,105	WIRE	98.84	306,900	477,000
	480V CABLE BUS		EST	300	FT	618		185,400	0	10.30	3,554	WIRE	98.84	351,200	536,600
	CABLE BUS TERMINATION	5KV TERMINATIONS	EST	4	EA		4,440.00	0	17,800	51.60	237	WIRE	98.84	23,500	41,300
	CABLE BUS TERMINATION	480V TERMINATIONS	EST	8	EA		2,700.00	0	21,600	54.00	497	WIRE	98.84	49,100	70,700
22.45	MCC							123,600	0					6,300	129,900
	480V MCC	PER MCC LINEUP	EST	4	EA	30900		123,600	0	16.00	64	WIRE	98.84	6,300	129,900
22.46	MIMIC PANELS		EST	1	EA	17500		17,500	0	16.00	16	WIRE	98.84	1,600	19,100
22.47	EMERGENCY POWER SYSTEM							285,500	0					38,900	324,400
	DC PANEL BOADRD		EST	1	EA	15500		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	UPS PANEL BOARDS		EST	2	EA	15500		31,000	0	40.00	92	WIRE	98.84	9,100	40,100
	UPS		EST	1	EA	60000		60,000	0	32.00	37	WIRE	98.84	3,600	63,600
	SWITCHBOARD		EST	1	EA	40000		40,000	0	40.00	46	WIRE	98.84	4,500	44,500
	BYPASS TRANSFORMERS		EST	1	EA	25000		25,000	0	40.00	46	WIRE	98.84	4,500	29,500
	BATTERY CHARGER		EST	2	EA	32000		64,000	0	16.00	37	WIRE	98.84	3,600	67,600
	BATTERIES		EST	1	LT	50000		50,000	0	80.00	92	WIRE	98.84	9,100	59,100
22.48	GROUNDING							9,400	0					25,400	34,800
	GROUND ROD	3/4" - 20' LONG	EST	8	EA	150		1,200	0	4.00	37	WIRE	98.84	3,600	4,800
	500 MCM	BARE COPPER WIRE	EST	1,000	FT	7.65		7,700	0	0.12	138	WIRE	98.84	13,600	21,300
	CADWELD		EST	32	EA	15		500	0	2.00	74	WIRE	98.84	7,300	7,800
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	8.00	9	WIRE	98.84	900	900
22.49	LIGHTING/ TRANSFORMERS & PANELS							52,000	135,000					104,500	291,500
	LIGHT FIXTURES		EST	180	EA		750	0	135,000	4.00	828	WIRE	98.84	81,800	216,800
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	10000		20,000	0	40.00	92	WIRE	98.84	9,100	29,100
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	7500		15,000	0	32.00	74	WIRE	98.84	7,300	22,300
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	2	EA	5000		10,000	0	16.00	37	WIRE	98.84	3,600	13,600
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	2	EA	3500		7,000	0	12.00	28	WIRE	98.84	2,700	9,700
22.50	RACEWAY, CABLE TRAY, & CONDUIT							0	354,700					1,514,100	1,868,800
	12" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,000	LF		18.25	0	18,300	1.10	1,100	WIRE	98.84	108700	127,000
	18" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,000	LF		21.50	0	21,500	1.45	1,450	WIRE	98.84	143300	164,800
	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,000	LF		27.10	0	27,100	1.75	1,750	WIRE	98.84	173000	200,100
	36" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,000	LF		30.30	0	30,300	1.95	1,950	WIRE	98.84	192700	223,000
	5" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	900	LF		61.00	0	54,900	1.13	1,014	WIRE	98.84	100300	155,200
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,800	LF		31.00	0	55,800	0.81	1,453	WIRE	98.84	143600	199,400

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	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,900	LF		21.50	0	40,900	0.65	1,226	WIRE	98.84	121100	162,000
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	2,800	LF		9.25	0	25,900	0.35	986	WIRE	98.84	97400	123,300
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	3,500	LF		7.15	0	25,000	0.28	994	WIRE	98.84	98200	123,200
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	6,000	LF		4.44	0	26,600	0.24	1,434	WIRE	98.84	141700	168,300
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	8,800	LF		3.23	0	28,400	0.19	1,963	WIRE	98.84	194100	222,500
22.51	13.8 KV OH LINE OPGW	INCLUDES POLES, CONDUCTORS, INSULATORS & GROUNDING	EST	5,250	LF		45.75	0	240,200	0.49	2,958	WIRE	98.84	292400	532,600
22.52	HIGH VOLTAGE POWER CABLE & TERMINATION							0	88,400					256,600	345,000
	1/C # 500KCMIL-15KV	1/C # 500KCMIL-15KV	EST	1,800	LF		9.27	0	16,700	0.23	476	WIRE	98.84	47100	63,800
	1/C # 4/0-15KV	1/C # 4/0-15KV	EST	15,750	LF		4.55	0	71,700	0.12	2,119	WIRE	98.84	209500	281,200
22.53	MEDIUM VOLTAGE POWER CABLE & TERMINATION	1/C # 350KCMIL-5KV	EST	3,000	LF		6.13	0	18,400	0.23	794	WIRE	98.84	78400	96,800
22.54	LOW VOLTAGE POWER CABLE & TERMINATION							0	62,700					547,400	610,100
	3/C # 500KCMIL- 600V		EST	2,400	LF		26.12	0	62,700	0.69	1,904	WIRE	98.84	188200	250,900
	#4/0 - #12 AWG-600V		EST	40,000	LF		7.22			0.08	3,634	WIRE	98.84	359200	359,200
22.55	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	EST	35,000	LF		3.20	0	112,000	0.08	3,180	WIRE	98.84	314300	426,300
22.56	FOUNDATIONS FOR TRANSFORMERS							0	70,200					205,400	275,600
	EXCAVATION / BACKFILL		EST	1,000	CY			0	0	0.36	414	EXFD	90.00	37,300	37,300
	REINFORCING		EST	20	TN		1,150.00	0	23,000	20.00	460	REIN	78.27	36,000	59,000
	FORMWORK		EST	5,000	SF		2.50	0	12,500	0.14	805	FORM	99.43	80,000	92,500
	CONCRETE		EST	190	CY		105.00	0	20,000	1.50	328	CONP	79.64	26,100	46,100
	MUD MAT		EST	45	CY		105.00	0	4,700	1.50	78	CONP	79.64	6,200	10,900
	EMBEDDED STEEL		EST	4,000	LB		2.50	0	10,000	0.06	276	CARP	71.88	19,800	29,800
22.57	FIREWALL FOR TRANSFORMERS							0	3,200					8,300	11,500
	REINFORCING		EST	1.2	TN		1,150.00	0	1,400	20.00	28	REIN	78.27	2,200	3,600
	FORMWORK		EST	80	SF		2.50	0	200	0.14	13	FORM	99.43	1,300	1,500
	CONCRETE		EST	15	CY		105.00	0	1,600	3.50	60	CONP	79.64	4,800	6,400
22.58	COMMUNICATIONS		EST	1	LT		34,000.00	0	34,000	229.00	263	WIRE	98.84	26,000	60,000
22.59	LIGHTNING PROTECTION		EST	1	LT		13,000.00	0	13,000	91.00	105	WIRE	98.84	10,300	23,300
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							11,277,800	16,121,900		346,218			31,056,700	58,456,400
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										5,537,746
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						30,106		89.70	2,701,000	2,701,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						37,632			2,836,746	2,836,746
	PER DIEM	NONE		0.00	HR						413,956			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				80,610					155,284	235,893
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				806,095						806,095
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			563,890							563,890
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				806,095					1,552,835	2,358,930

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	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				2,418,285					4,658,505	7,076,790
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							563,900	4,111,100					11,904,400	16,579,300
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)						11,841,700	20,233,000					42,961,100	75,035,700
23.0	WET FGD ABSORBER ISLAND														0
23.1	MECHANICAL EQUIPMENT	INCLUDES ABSORBER MODULE (A2205) WITH INTERNALS, INLET DUCT ONLY THROUGH WET/DRY INTERFACE, PIPING INSIDE ABSORBER BUILDING TO TERMINAL POINTS, RECYCLE PUMPS, OXIDATION BLOWERS, MIST ELIMINATOR AND WASH PUMPS AND OTHER MISC. EQUIPMENT AND MATERIAL	EST	1	LT	41029000		41,029,000	0	398100.00	457,815	MECH	88.89	40,695,200	81,724,200
23.2	ADDITIONAL COST FOR C276 ABSORBER SHELL MATERIAL ABOVE THE PRICE OF A2205 ABSORBER SHELL	INCLUDES MATERIAL AND WELDING ROD COST DIFFERENTIAL - 49,800 TOTAL SF	EST	49,800	SF		308.00	0	15,338,400	0.00	0	MECH	88.89	0	15,338,400
23.3	SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
23.4	AGITATOR FOR SUMP PUMPS	5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
23.5	EMERGENCY DIESEL DRIVEN QUENCH PUMP	INCLUDED WITH SECTION 1, ID FANS.													
23.6	PIPING - MECHANICAL	ALL PIPING INCLUDED IN OEM EQUIPMENT COST. NO BOP PIPING						0	0					0	0
23.7	ABSORBER VESSEL - FOUNDATIONS							0	366,900					672,900	1,039,800
	EXCAVATION / BACKFILL		EST	2,921	CY			0	0	0.36	1,209	EXFD	90.00	108,800	108,800
	REINFORCING		EST	148	TN		1,150.00	0	170,200	20.00	3,404	REIN	78.27	266,400	436,600
	FORMWORK		EST	2,121	SF		2.50	0	5,300	0.14	341	FORM	99.43	34,000	39,300
	CONCRETE		EST	1,571	CY		105.00	0	165,000	1.50	2,710	CONP	79.64	215,800	380,800
	MUD MAT		EST	65	CY		105.00	0	6,800	1.50	112	CONP	79.64	8,900	15,700
	EMBEDDED STEEL		EST	7,855	LB		2.50	0	19,600	0.06	542	CARP	71.88	39,000	58,600
23.8	ABSORBER BUILDING - FOUNDATIONS							0	564,200					936,700	1,500,900
	EXCAVATION / BACKFILL		EST	2,410	CY			0	0	0.36	998	EXFD	90.00	89,800	89,800
	REINFORCING		EST	230	TN		1,150.00	0	264,500	20.00	5,290	REIN	78.27	414,000	678,500
	FORMWORK		EST	2,390	SF		2.50	0	6,000	0.14	385	FORM	99.43	38,300	44,300
	CONCRETE		EST	2,470	CY		105.00	0	259,400	1.50	4,261	CONP	79.64	339,300	598,700
	MUD MAT		EST	180	CY		105.00	0	18,900	1.50	311	CONP	79.64	24,700	43,600
	EMBEDDED STEEL		EST	6,175	LB		2.50	0	15,400	0.06	426	CARP	71.88	30,600	46,000
23.9	ABSORBER BUILDING	150' L X 89' W X 60' H						164,500	2,583,100					2,368,200	5,115,800
	STRUCTURAL STEEL		EST	550	TN		2650	0	1,457,500	16.00	10,120	STST	105.71	1,069,800	2,527,300
	INSULATED METAL SIDING		EST	28,680	SF		12	0	344,200	0.11	3,628	SDNG	93.41	338,900	683,100
	ROLLING OVERHEAD DOOR		EST	960	SF		27	0	25,900	0.25	276	CARP	71.88	19,800	45,700
	METAL ROOF DECKING		EST	13,350	SF		2.7	0	36,000	0.06	921	STST	105.71	97,400	133,400
	RIGID ROOF INSULATION		EST	13,350	SF		2.4	0	32,000	0.02	230	ROOF	69.12	15,900	47,900
	ROOFING (4-PLY TAR & GRAVEL)		EST	13,350	SF		1.55	0	20,700	0.04	614	ROOF	69.12	42,400	63,100

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	LIGHTWEIGHT CONCRETE FILL 1"		EST	39	CY		100	0	3,900	1.30	58	ROOF	69.12	4,000	7,900
	ROOF FLASHING		EST	478	LF		14.45	0	6,900	0.12	66	ROOF	69.12	4,600	11,500
	ROOF DRAINS		EST	1	LT		45000	0	15,000	500.00	575	PLMB	79.42	45,700	60,700
	FLOOR DRAINS		EST	1	LT		37500	0	20,000	375.00	431	PLMB	79.42	34,200	54,200
	FLOOR SLABS	INCLUDES METAL DECKING AND FORMWORK	EST	55	CY		210	0	11,600	7.50	474	CONP	79.64	37,800	49,400
	FLOOR FINISHES		EST	8,140	SF		2.5	0	20,400	0.05	468	CONP	79.64	37,300	57,700
	LOUVERS/WINDOWS/DOORS		EST	5,850	SF		40	0	234,000	0.35	2,355	CARP	71.88	169,300	403,300
	ROOF VENTILATORS		EST	6	EA		20000	0	120,000	32.00	221	HVAC	81.24	17,900	137,900
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	3,760	SF		45	0	169,200	0.40	1,730	GALL	84.61	146,300	315,500
	H&V		EST	1	LT	164500	65800	164,500	65,800	3070.67	3,531	HVAC	81.24	286,900	517,200
23.10	PIPE SUPPORT PAD - ABSORBER BUILDING							0	7,700					16,100	23,800
	EXCAVATION / BACKFILL		EST	95	CY			0	0	0.36	39	EXFD	90.00	3,500	3,500
	REINFORCING		EST	5.0	TN		1,150.00	0	5,800	20.00	115	REIN	78.27	9,000	14,800
	FORMWORK		EST	80	SF		2.50	0	200	0.14	13	FORM	99.43	1,300	1,500
	CONCRETE		EST	10	CY		105.00	0	1,100	1.50	17	CONP	79.64	1,400	2,500
	MUD MAT		EST	5	CY		105.00	0	500	1.50	9	CONP	79.64	700	1,200
	EMBEDDED STEEL		EST	50	LB		2.50	0	100	0.06	3	CARP	71.88	200	300
23.11	OXIDATION AIR BLOWER BUILDING - FOUNDATIONS							0	37,000					67,300	104,300
	EXCAVATION / BACKFILL		EST	188	CY			0	0	0.36	78	EXFD	90.00	7,000	7,000
	REINFORCING		EST	16.0	TN		1,150.00	0	18,400	20.00	368	REIN	78.27	28,800	47,200
	FORMWORK		EST	480	SF		2.50	0	1,200	0.14	77	FORM	99.43	7,700	8,900
	CONCRETE		EST	133	CY		105.00	0	14,000	1.50	229	CONP	79.64	18,300	32,300
	MUD MAT		EST	16	CY		105.00	0	1,700	1.50	28	CONP	79.64	2,200	3,900
	EMBEDDED STEEL		EST	665	LB		2.50	0	1,700	0.06	46	CARP	71.88	3,300	5,000
23.12	OXIDATION AIR BLOWER BUILDING	30' L X 30' W X 25' H						33,800	191,000					201,400	426,200
	STRUCTURAL STEEL		EST	14	TN		2650	0	35,800	16.00	248	STST	105.71	26,300	62,100
	INSULATED METAL SIDING		EST	3,000	SF		12	0	36,000	0.11	380	SDNG	93.41	35,400	71,400
	ROLLING OVERHEAD DOOR		EST	320	SF		27	0	8,600	0.25	92	CARP	71.88	6,600	15,200
	METAL ROOF DECKING		EST	900	SF		2.7	0	2,400	0.06	62	STST	105.71	6,600	9,000
	RIGID ROOF INSULATION		EST	900	SF		2.4	0	2,200	0.02	16	ROOF	69.12	1,100	3,300
	ROOFING (4-PLY TAR & GRAVEL)		EST	900	SF		1.55	0	1,400	0.04	41	ROOF	69.12	2,900	4,300
	LIGHTWEIGHT CONCRETE FILL 1"		EST	3	CY		100	0	300	1.30	4	ROOF	69.12	300	600
	ROOF FLASHING		EST	120	LF		14.45	0	1,700	0.12	17	ROOF	69.12	1,100	2,800
	ROOF DRAINS		EST	1	LT		7000	0	15,000	50.00	58	PLMB	79.42	4,600	19,600
	FLOOR DRAINS		EST	1	LT		7500	0	20,000	60.00	69	PLMB	79.42	5,500	25,500
	FLOOR SLABS	NONE	EST	0	CY		210	0	0	7.50	0	CONP	79.64	0	0
	FLOOR FINISHES	MAIN LEVEL	EST	810	SF		2.5	0	2,000	0.05	47	CONP	79.64	3,700	5,700
	BLOCK WALLS	SOUND ATTENUATING INTERIOR BLOCK WALLS	EST	3,000	SF		8	0	24,000	0.18	621	MSRY	73.39	45,600	69,600
	LOUVERS/WINDOWS/DOORS & VENTILATORS	SOUND ATTENUATING	EST	300	SF	75	40	22,500	12,000	1.25	431	CARP	71.88	31,000	65,500
	ROOF VENTILATORS		EST	1	EA		15000	0	15,000	24.00	28	HVAC	81.24	2,200	17,200
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	225	SF		45	0	10,100	0.40	104	GALL	84.61	8,800	18,900
	H&V		EST	1	LT	11250	4500	11,300	4,500	210.67	242	HVAC	81.24	19,700	35,500
23.13	PIPE SUPPORT PAD - OXIDATION BUILDING							0	7,700					13,700	21,400
	EXCAVATION / BACKFILL		EST	30	CY			0	0	0.36	12	EXFD	90.00	1,100	1,100
	REINFORCING		EST	5.0	TN		1,150.00	0	5,800	20.00	115	REIN	78.27	9,000	14,800
	FORMWORK		EST	80	SF		2.50	0	200	0.14	13	FORM	99.43	1,300	1,500
	CONCRETE		EST	10	CY		105.00	0	1,100	1.50	17	CONP	79.64	1,400	2,500
	MUD MAT		EST	5	CY		105.00	0	500	1.50	9	CONP	79.64	700	1,200
	EMBEDDED STEEL		EST	50	LB		2.50	0	100	0.06	3	CARP	71.88	200	300
23.14	DUCTWORK	INCLUDES INTERNAL BRACING AND TURNING VANES	EST	160	TN		3,250.00	0	520,000	50.00	9,200	FLDU	107.96	993,200	1,513,200
23.15	DUCT SUPPORT STEEL	THREE-COAT SHOP PAINT	EST	80	TN		2,900.00	0	232,000	24.00	2,208	STST	105.71	233,400	465,400
23.16	DUCTWORK INSULATION & LAGGING		EST	12,250	SF		12.00	0	147,000	0.25	3,522	DINS	81.75	287,900	434,900

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23.17	FOUNDATIONS FOR DUCT SUPPORT STEEL							0	27,800					53,200	81,000
	EXCAVATION / BACKFILL		EST	180	CY			0	0	0.36	75	EXFD	90.00	6,700	6,700
	REINFORCING		EST	12	TN		1,150.00	0	13,800	20.00	276	REIN	78.27	21,600	35,400
	FORMWORK		EST	450	SF		2.50	0	1,100	0.14	72	FORM	99.43	7,200	8,300
	CONCRETE		EST	95	CY		105.00	0	10,000	1.50	164	CONP	79.64	13,100	23,100
	MUD MAT		EST	15	CY		105.00	0	1,600	1.50	26	CONP	79.64	2,100	3,700
	EMBEDDED STEEL		EST	500	LB		2.50	0	1,300	0.06	35	CARP	71.88	2,500	3,800
23.18	TRANSFORMERS							981,000	0					209,300	1,190,300
	SST TRANSFORMERS: 22F & 22G	13.8KV-4160V, 2 WINDING XFMR	EST	2	EA	320500		641,000	0	550.00	1,265	EHEA	79.16	100,100	741,100
	SUS TRANSFORMERS: 34F/G; 35F/G	13.8KV-480V,3PHASE, CAST COIL	EST	4	EA	85000		340,000	0	300.00	1,380	EHEA	79.16	109,200	449,200
23.19	SWITCHGEAR							1,162,800	0					673,700	1,836,500
	13.8 KV MEDIUM VOLTAGE SWITCHGEAR	PRICE PER SECTION	EST	8	EA	50000		400,000	0	300.00	2,760	EHEA	79.16	218,500	618,500
	4.16KV MEDIUM VOLTAGE SWITCHGEAR& MCCS	PRICE PER SECTION	EST	9	EA	41200		370,800	0	300.00	3,105	EHEA	79.16	245,800	616,600
	480V LOW VOLTAGE SWITCHGEAR	PRICE PER SECTION	EST	10	EA	39200		392,000	0	230.00	2,645	EHEA	79.16	209,400	601,400
23.20	CABLE BUS & TERMINATIONS							867,100	46,600					1,634,100	2,547,800
	15KV CABLE BUS	CABLE BUS	EST	700	FT	466		326,200	0	6.75	5,434	WIRE	98.84	537,100	863,300
	5KV CABLE BUS	CABLE BUS	EST	300	FT	567		170,100	0	9.00	3,105	WIRE	98.84	306,900	477,000
	480V CABLE BUS	CABLE BUS	EST	600	FT	618		370,800	0	10.30	7,107	WIRE	98.84	702,500	1,073,300
	CABLE BUS TERMINATION	500MCM- 15KV TERMINATIONS	EST	4	EA		1,800.00	0	7,200	33.00	152	WIRE	98.84	15,000	22,200
	CABLE BUS TERMINATION	1000MCM- 5KV TERMINATIONS	EST	4	EA		4,440.00	0	17,800	51.60	237	WIRE	98.84	23,500	41,300
	CABLE BUS TERMINATION	750MCM- 480V TERMINATIONS	EST	8	EA		2,700.00	0	21,600	54.00	497	WIRE	98.84	49,100	70,700
23.21	MCC							216,300	0					11,100	227,400
	480V MCC	PER MCC LINE UP	EST	7	EA	30900		216,300	0	16.00	112	WIRE	98.84	11,100	227,400
23.22	MIMIC PANELS		EST	2	EA	17500		35,000	0	40.00	80	WIRE	98.84	7,900	42,900
23.23	GROUNDING							16,000	0					46,100	62,100
	GROUND ROD	3/4" - 20' LONG	EST	16	EA	150		2,400	0	4.00	74	WIRE	98.84	7,300	9,700
	500 MCM	BARE COPPER WIRE	EST	1,650	FT	7.65		12,600	0	0.12	228	WIRE	98.84	22,500	35,100
	CADWELD		EST	64	EA	15		1,000	0	2.00	147	WIRE	98.84	14,500	15,500
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	16.00	18	WIRE	98.84	1,800	1,800
23.24	LIGHTING/ TRANSFORMERS & PANELS							164,500	165,000					171,300	500,800
	LIGHT FIXTURES		EST	220	EA		750	0	165,000	4.00	1,012	WIRE	98.84	100,000	265,000
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	6	EA	10000		60,000	0	40.00	276	WIRE	98.84	27,300	87,300
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	6	EA	7500		45,000	0	32.00	221	WIRE	98.84	21,800	66,800
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	7	EA	5000		35,000	0	16.00	129	WIRE	98.84	12,700	47,700
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	7	EA	3500		24,500	0	12.00	97	WIRE	98.84	9,500	34,000
23.25	EMERGENCY POWER SYSTEM							108,300	0					24,400	132,700
	DC PANEL BOADRD		EST	1	EA	15450		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	UPS PANEL BOARDS		EST	1	EA	15450		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	SATELLITE UPS		EST	1	EA	41200		41,200	0	16.00	18	WIRE	98.84	1,800	43,000
	VRLA BATTERIES		EST	1	LT	36050		36,100	0	120.00	138	WIRE	98.84	13,600	49,700

AEP
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23.26	RACEWAY, CABLE TRAY, & CONDUIT							0	1,515,700					5,849,000	7,364,700
	12" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	2,450	LF		18.25	0	44,700	1.10	2,695	WIRE	98.84	266400	311,100
	18" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,650	LF		21.50	0	35,500	1.45	2,393	WIRE	98.84	236500	272,000
	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	2,950	LF		27.10	0	79,900	1.75	5,163	WIRE	98.84	510300	590,200
	36" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,650	LF		30.30	0	50,000	1.95	3,218	WIRE	98.84	318000	368,000
	5" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	4,500	LF		61.00	0	274,500	1.13	5,072	WIRE	98.84	501300	775,800
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	8,000	LF		31.00	0	248,000	0.81	6,456	WIRE	98.84	638100	886,100
	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	8,000	LF		21.50	0	172,000	0.65	5,160	WIRE	98.84	510000	682,000
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	13,000	LF		9.25	0	120,300	0.35	4,576	WIRE	98.84	452300	572,600
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	16,000	LF		7.15	0	114,400	0.28	4,544	WIRE	98.84	449100	563,500
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	29,000	LF		4.44	0	128,800	0.24	6,931	WIRE	98.84	685100	813,900
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	53,000	LF		3.23	0	171,200	0.19	11,824	WIRE	98.84	1168700	1,339,900
	DUCT BANK WITH 12-5" & 6-3" CONDUITS	3.08' H X 5.2' W	EST	200	LF		381.96	0	76,400	6.48	1,490	ECND	75.97	113200	189,600
23.27	HIGH VOLTAGE POWER CABLE & TERMINATION							0	58,400					164,700	223,100
	1/C # 500KCMIL-15KV		EST	6,300	LF		9.27	0	58,400	0.23	1,666	WIRE	98.84	164700	223,100
23.28	MEDIUM VOLTAGE POWER CABLE & TERMINATION							0	114,600		0			431,700	546,300
	1/C # 500KCMIL-5KV		EST	6,000	LF		8.08	0	48,500	0.17	1,194	WIRE	98.84	118000	166,500
	1/C # 350KCMIL-5KV		EST	6,600	LF		6.13	0	40,500	0.23	1,746	WIRE	98.84	172500	213,000
	1/C # 250KCMIL-5KV		EST	5,400	LF		4.74	0	25,600	0.23	1,428	WIRE	98.84	141200	166,800
23.29	LOW VOLTAGE POWER CABLE & TERMINATION							0	795,900					1,500,700	2,296,600
	3/C # 500KCMIL- 600V		EST	11,120	LF		26.12	0	290,500	0.69	8,824	WIRE	98.84	872100	1,162,600
	#4/0 - #12 AWG-600V		EST	70,000	LF		7.22	0	505,400	0.08	6,360	WIRE	98.84	628600	1,134,000
23.30	CONTROL & INSTRUMENT CABLE							0	512,000					1,436,700	1,948,700
	#14, #16 & PR # 20 FD & SHLD WIRE		EST	160,000	LF		3.20	0	512,000	0.08	14,536	WIRE	98.84	1436700	1,948,700
23.31	FOUNDATION FOR TRANSFORMERS							0	59,000					173,700	232,700
	FOR 21A & 21B	WITH OIL PIT	EST	178	CY		250	0	44,500	8.00	1,638	CONP	79.64	130,400	174,900
	FOR 31F, 31G, 32F, 32G, 33F & 33G		EST	63.0	CY		230	0	14,500	7.50	543	CONP	79.64	43,300	57,800
23.32	TRANSFORMER FIRE WALLS							0	3,500					9,600	13,100
	FOR 21A & 21B		EST	15	CY		230	0	3,500	7.00	121	CONP	79.64	9,600	13,100
23.33	COMMUNICATIONS		EST	1	LT		34,000.00	0	34,000	229.00	263	WIRE	98.84	26,000	60,000
23.34	LIGHTNING PROTECTION		EST	1	LT		19,500.00	0	19,500	128.00	147	WIRE	98.84	14,500	34,000
23.35	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							44,818,300	23,355,000		651,306			58,947,600	127,120,900

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	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE			9	MN	75000		675,000		720.00	7,452	MECH	88.89	662400	1,337,400
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										10,630,931
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						57,283		90.51	5,185,000	5,185,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						71,604			5,445,931	5,445,931
	PER DIEM	NONE		0.00	HR						787,645			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				116,775					294,738	411,513
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				1,167,750						1,167,750
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			2,240,915							2,240,915
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				1,167,750					2,947,380	4,115,130
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				3,503,250					8,842,140	12,345,390
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							2,915,900	5,955,500					23,377,600	32,249,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	WET FGD ABSORBER ISLAND						47,734,200	29,310,500					82,325,200	159,369,900
24.0	COMPRESSED AIR SYSTEM (BYPRODUCT DEWATERING AREA)														0
25.0	POTABLE WATER SYSTEM														
26.0	SCR SUBSTATION UPGRADE														
27.0	FGD DCS SYSTEM														0
28.0	SITE IMPROVEMENTS - CIVIL WORK														
29.0	BOP ITEMS														
30.0	SERVICE WATER SYSTEM														
99.00	PHASE II - OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS							79,104,000	56,192,400		1,417,929			128,205,100	263,501,500
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE							675,000	0		7,452			662,400	1,337,400
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										22,979,973
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						123,946		105.71	11,208,000	11,208,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						154,933			11,771,973	11,771,973
	PER DIEM	NONE		0.00	HR									0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				280,962					641,026	921,988
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				2,809,620						2,809,620
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			3,955,200							3,955,200
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				2,809,620					6,410,255	9,219,875
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				8,428,860					19,230,765	27,659,625
	PHASE II - OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							4,630,200	14,329,100					49,924,400	68,883,700

				AEP											Estimate No.:	30715C
				BIG SANDY UNIT 2											Project No.:	12721-000
				FGD PROJECT - IAQCS (ESP)-3A - 3.0 LB/MM BTU - PHASED											Date:	9/29/2010
				ORDER OF MAGNITUDE COST ESTIMATE											Preparer:	MNO
		Cost Type:													Reviewer:	JMK
		Est=Estimated													Approver:	PEF
		Allow.=Allowance								Wage Rates Based on:		BIG SANDY				
		Q=Vendor Quote								Labor Productivity =		1.15				

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	PHASE II - OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST	WET FGD						83,734,200	70,521,500					178,129,500	332,385,200
	TOTAL PHASE II DIRECT AND CONSTRUCTION INDIRECT COSTS							83,734,200	70,586,500					178,178,500	332,385,200
	INDIRECT COSTS - PHASE II														
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES			1.0	LT										23,000,000
	CONSTRUCTION MANAGEMENT			3.0	%										9,971,600
	S-U / COMMISSIONING			1.0											3,323,900
	CRAFT START-UP SUPPORT	1% OF TOTAL LABOR MANHOURS (INCLUDES OVERTIME INEFFICIENCY & COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - BASED ON ASSUMED 5X10 WORKWEEK)		1.0	%						15,419		105.71	1,766,900	1,766,900
	INITIAL FILLS			0.3	%										997,200
	OPERATOR & TRAINING MANUALS			1.0	LT										300,000
	SUBCONTRACTORS (NOISE CONSULTANT)			1.0	LT										100,000
	SUBTOTAL - INDIRECT COSTS														39,459,600
	TOTAL PHASE II DIRECT AND INDIRECT COSTS														371,844,800
	SPARE PARTS - PHASE II			1.5	%			1,256,000							1,256,000
	SPARE PARTS - CAPITALIZED			0.90	%			628,000							628,000
	SPARE PARTS - FIRST YEAR OF OPERATION			0.60	%			628,000							628,000
	CONTINGENCY - PHASE II.			15.4	%										57,575,200
	ESCALATION - PHASE II														107,858,500
	EQUIPMENT	3.0%/yr		3.0	%			34,072,800							34,072,800
	MATERIAL	2.0%/yr		2.0	%				14,583,300						14,583,300
	LABOR	2.5%/yr		2.5	%									48,849,700	48,849,700
	INDIRECTS	2.5%/yr		2.5	%									10,352,700	10,352,700
	PHASE II - TOTAL PROJECT COST														538,534,500
99.00	PHASE I + PHASE II OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS							197,398,000	109,901,000		3,010,493			275,880,400	615,304,400
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE							1,485,000	0					2,185,920	3,670,920
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										46,788,039
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						262,430		79.42	22,768,000	22,768,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						329,528			24,020,039	24,020,039
	PER DIEM	NONE		0.00	HR									0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				546,805					1,377,852	1,924,657
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				5,468,050						5,468,050
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			9,806,900							9,806,900
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				5,468,050					13,778,520	19,246,570
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				16,485,150					41,335,560	62,890,710

				AEP											Estimate No.:	30715C
				BIG SANDY UNIT 2											Project No.:	12721-000
				FGD PROJECT - IAQCS (ESP)-3A - 3.0 LB/MM BTU - PHASED											Date:	9/29/2010
				ORDER OF MAGNITUDE COST ESTIMATE											Preparer:	MNO
		Cost Type:													Reviewer:	JMK
		Est=Estimated													Approver:	PEF
		Allow.=Allowance								Wage Rates Based on:		BIG SANDY				
		Q=Vendor Quote								Labor Productivity =		1.15				

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	PHASE I + PHASE II OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							11,291,900	27,968,100					105,465,900	149,795,800
	PHASE I + PHASE II OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST							208,689,900	137,869,100					381,346,300	765,100,200
	TOTAL PHASE I + PHASE II DIRECT AND CONSTRUCTION INDIRECT COSTS							208,689,900	137,934,100					381,395,300	765,100,300
	TOTAL PHASE I + PHASE II INDIRECT COSTS														
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES			1.0	LT										51,000,000
	CONSTRUCTION MANAGEMENT			3.0	%										22,953,000
	S-U / COMMISSIONING			1.0											7,651,000
	CRAFT START-UP SUPPORT	1% OF TOTAL LABOR MANHOURS (INCLUDES OVERTIME INEFFICIENCY & COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - BASED ON ASSUMED 5X10 WORKWEEK)		1.0	%										3,507,000
	INITIAL FILLS			0.3	%										2,295,300
	OPERATOR & TRAINING MANUALS			1.0	LT										600,000
	SUBCONTRACTORS (PHASE I - NOISE & DUCTWORK CONSULTANT, GEOTECHNICAL INVESTIGATION, PHASE II - NOISE CONSULTANT ONLY)			1.0	LT										500,000
	NOISE ABATEMENT FOR 85 DBA REQUIREMENT	FOR ID FAN, SDA ENCLOSURE, TRANSFORMERS, BOP, DUCTWORK, ACOUSTIC BARRIERS FOR BOUNDARY LIMITS		1.0	LT										4,500,000
	SUBTOTAL - INDIRECT COSTS														93,006,300
	TOTAL PROJECT DIRECT AND INDIRECT COSTS														858,106,600
	SPARE PARTS - PHASE I + PHASE II			1.5	%			3,130,300							3,130,300
	SPARE PARTS - CAPITALIZED			0.90	%			1,752,580							1,752,580
	SPARE PARTS - FIRST YEAR OF OPERATION			0.60	%			1,377,720							1,377,720
	CONTINGENCY - PHASE I + PHASE II														126,950,500
	ESCALATION - PHASE I + PHASE II														215,717,000
	EQUIPMENT							68,145,600							68,145,600
	MATERIAL								29,166,600						29,166,600
	LABOR													97,699,400	97,699,400
	INDIRECTS													20,705,400	20,705,400
	TOTAL PROJECT COST - (PHASE I + PHASE II)														1,203,904,400
	REFERENCE COSTS:														
A	REMOVAL OF FUEL OIL TANK							1,200,000	80,000					469,400	1,749,400
	REMOVE FUEL OIL TANK & SOIL REMEDIATION	LABOR COST IS FOR REMOVAL OF TANK ONLY. ALLOWANCE FOR SOIL REMEDIATION AND DISPOSAL IN AN EPA APPROVED LANDFILL. SUBCONTRACT COST INCLUDES LABOR. USED LOWER END OF THE RANGE $118-355/CY. COST COULD BE LOWER ($59-118/CY) IF SOLD TO A BITUMINOUS CONCRETE BATCH PLANT	EST	8,000	CY	150		1,200,000	0		0	MECH	88.89	0	1,200,000
	REMOVE DIKE & RECOMPACT FILL IN TANK AREA		EST	3,500	CY			0	0	0.60	2,415	ETWK	177.49	428,600	428,600
	FILL FROM OFF SITE COURSE		EST	5,000	CY		16	0	80,000	0.04	230	ETWK	177.49	40,800	120,800

ATTACHMENT 4-11
IAQCS Detailed Capital Cost Estimate No. 30719 Est-3B ESP not in Service*
(3.0 lb SO_2/MMbtu)

				AEP										Estimate No.:	30719C
				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS (N/ESP)-3B - 3.0 LB/MM BTU - PHASED										Date:	9/29/2010
				ORDER OF MAGNITUDE COST ESTIMATE										Preparer:	MNO
		Cost Type:												Reviewer:	JMK
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		Q=Vendor Quote								Labor Productivity =		1.15			

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	PHASE I - DRY FGD														
1.0	ID FANS														
1.1	ID FANS - OEM EQUIPMENT	1,865,000 ACFM WITH 24,500 HP MOTORS ($875,000 EACH). INCLUDES HYDRAULIC OIL UNITS, SEAL AIR FAN SKIDS, VIBRATION MONITORING EQUIPMENT, FAN STALL EQUIPMENT, FIELD SERVICE REP FOR 140 DAYS	EST	2	EA	3,844,000.000		7,688,000	0	8500.00	19,550	MECH	88.89	1,737,800	9,425,800
1.2	PIPING & SUPPORTS - MECHANICAL							21,800	28,700					120,500	171,000
	LARGE BORE PIPING	6" CS, SCH 40 WELDED	EST	200	LF		41.7	0	8,300	1.61	370	SPNG	94.41	35,000	43,300
	SMALL BORE PIPING	2" CS, SCH 80 WELDED	EST	50	LF		22.20	0	1,100	1.26	72	SPNG	94.41	6,800	7,900
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	250	LF		48.80	0	12,200	1.44	414	SPNG	94.41	39,100	51,300
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	100	LF		33.70	0	3,400	1.32	152	SPNG	94.41	14,300	17,700
	VALVE	2" GLOBE, 150# SS, WELDED	EST	15	EA	1,450		21,800	0	5.64	97	SPNG	94.41	9,200	31,000
	PIPE SUPPORTS		EST	105	EA		35.00	0	3,700	1.50	181	MECH	88.89	16,100	19,800
1.3	DAMPERS							781,000	0					352,600	1,133,600
	INLET DAMPERS	2X50% DOUBLE LOUVER TYPE WITH SEAL AIR FANS TOTAL FOR TWO FANS	EST	580	SF	450		261,000	0	2.50	1,668	MECH	88.89	148,200	409,200
	OUTLET DAMPERS	2X50% GUILLOTINE DAMPERS, WITH SEAL AIR FANS TOTAL FOR TWO FANS	EST	800	SF	650		520,000	0	2.50	2,300	MECH	88.89	204,400	724,400
1.4	EXPANSION JOINTS		EST	570	LF		230.00	0	131,100	2.00	1,311	MECH	88.89	116,500	247,600
1.5	DUCTWORK	FABRIC FILTER OUTLET TO ID FANS AND FROM ID FANS TO STACK - INCLUDES INTERNAL BRACING AND TURNING VANES	EST	1,095	TN		3,250.00	0	3,558,800	50.00	62,963	FLDU	107.96	6,797,400	10,356,200
1.6	DUCT SUPPORT STEEL	THREE COAT SHOP PAINT	EST	550	TN		2,900.00	0	1,595,000	24.00	15,180	STST	105.71	1,604,700	3,199,700
1.7	ID FAN INSULATION & LAGGING	TOTAL FOR TWO FANS. PRICING REFLECTS STANDARD ACOUSTICAL INSULATION	EST	5,000	SF		40.00	0	200,000	0.55	3,163	DINS	81.75	258,500	458,500
1.8	DUCTWORK INSULATION & LAGGING	INCLUDES INSULATION FOR SPRAY DRYER OUTLET DUCT TO FABRIC FILTERS SUPPLIED WITH THE OEM EQUIPMENT	EST	113,620	SF		12.00	0	1,363,400	0.25	32,666	DINS	81.75	2,670,400	4,033,800
1.9	DUCT SUPPORT STEEL - FOUNDATIONS							0	440,200					855,200	1,295,400
	EXCAVATION / BACKFILL		EST	2,831	CY			0	0	0.36	1,172	EXFD	90.00	105,500	105,500
	REINFORCING		EST	164	TN		1,150.00	0	188,500	20.00	3,770	REIN	78.27	295,100	483,600
	FORMWORK		EST	9,238	SF		2.50	0	23,100	0.14	1,487	FORM	99.43	147,900	171,000
	CONCRETE		EST	1,788	CY		105.00	0	187,700	1.50	3,084	CONP	79.64	245,600	433,300
	MUD MAT		EST	283	CY		105.00	0	29,700	1.50	488	CONP	79.64	38,900	68,600
	EMBEDDED STEEL		EST	4,470	LB		2.50	0	11,200	0.06	308	CARP	71.88	22,200	33,400
1.10	ID FAN FOUNDATIONS INCLUDING ID FAN AUX EQUIPMENT							0	229,300					415,700	645,000
	EXCAVATION / BACKFILL		EST	1,300	CY			0	0	0.36	538	EXFD	90.00	48,400	48,400
	REINFORCING		EST	100	TN		1,150.00	0	115,000	20.00	2,300	REIN	78.27	180,000	295,000
	FORMWORK		EST	2,400	SF		2.50	0	6,000	0.14	386	FORM	99.43	38,400	44,400
	CONCRETE		EST	850	CY		105.00	0	89,300	1.50	1,466	CONP	79.64	116,800	206,100
	MUD MAT		EST	80	CY		105.00	0	8,400	1.50	138	CONP	79.64	11,000	19,400
	EMBEDDED STEEL		EST	4,250	LB		2.50	0	10,600	0.06	293	CARP	71.88	21,100	31,700
1.11	ID FAN IAQCS CONTROL ROOM - FOUNDATIONS							0	270,100					508,600	778,700
	EXCAVATION / BACKFILL		EST	800	CY			0	0	0.36	331	EXFD	90.00	29,800	29,800
	REINFORCING		EST	100	TN		1,150.00	0	115,000	20.00	2,300	REIN	78.27	180,000	295,000

				AEP										Estimate No.:	30719C
				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS (N/ESP)-3B - 3.0 LB/MM BTU - PHASED										Date:	9/29/2010
				ORDER OF MAGNITUDE COST ESTIMATE										Preparer:	MNO
		Cost Type:												Reviewer:	JMK
		Est=Estimated												Approver:	PEF
		Allow.=Allowance								Wage Rates Based on:		BIG SANDY			
		Q=Vendor Quote								Labor Productivity =		1.15			

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	FORMWORK		EST	7,000	SF		2.50	0	17,500	0.14	1,127	FORM	99.43	112,100	129,600
	CONCRETE		EST	1,100	CY		105.00	0	115,500	1.50	1,898	CONP	79.64	151,100	266,600
	MUD MAT		EST	115	CY		105.00	0	12,100	1.50	198	CONP	79.64	15,800	27,900
	EMBEDDED STEEL		EST	4,000	LB		2.50	0	10,000	0.06	276	CARP	71.88	19,800	29,800
1.12	ID FAN IAQCS CONTROL ROOM	SUBCONTRACT PRICE INCLUDES LABOR. COMPLETE WITH HVAC, FINISHES AND SANITARY FACILITIES	EST	7,875	SF		500.00	0	3,937,500	0.00	0	STST	105.71	0	3,937,500
1.13	TRANSFORMERS							770,000	0					145,600	915,600
	SST TRANSFORMERS: 21F & 21G	13.8KV-4160V, 3 PHASE, 2 WINDING	EST	2	EA	300000		600,000	0	500.00	1,150	EHEA	79.16	91,000	691,000
	SUS TRANSFORMERS: 31F, 31G	13.8KV-480V, 3 PHASE, CAST COIL	EST	2	EA	85000		170,000	0	300.00	690	EHEA	79.16	54,600	224,600
1.14	SWITCHGEAR							1,132,000	0		0			589,900	1,721,900
	480V LOW VOLTAGE (31F/G)	PRICE PER SECTION	EST	5	EA	38000		190,000	0	230.00	1,323	EHEA	79.16	104,700	294,700
	4.16 KV MEDIUM VOLTAGE (21A/B)	PRICE PER SECTION	EST	10	EA	39200		392,000	0	280.00	3,220	EHEA	79.16	254,900	646,900
	13KV MEDIUM VOLTAGE (13F/G)	PRICE PER SECTION	EST	11	EA	50000		550,000	0	230.00	2,910	EHEA	79.16	230,300	780,300
1.15	CABLE BUS & TERMINATIONS							1,129,100	35,800		0			1,930,000	3,094,900
	15KV CABLE BUS TO 13F/G)	CABLE BUS	EST	2,100	FT	466		978,600	0	6.75	16,301	WIRE	98.84	1,611,200	2,589,800
	5KV CABLE BUS	CABLE BUS	EST	150	FT	385		57,800	0	4.70	811	WIRE	98.84	80,100	137,900
	480V CABLE BUS	CABLE BUS	EST	150	FT	618		92,700	0	10.30	1,777	WIRE	98.84	175,600	268,300
	CABLE BUS TERMINATION	15KV TERMINATIONS	EST	4	EA		1,800.00	0	7,200	33.00	152	WIRE	98.84	15,000	22,200
	CABLE BUS TERMINATION	5KV TERMINATIONS	EST	4	EA		4,440.00	0	17,800	51.60	237	WIRE	98.84	23,500	41,300
	CABLE BUS TERMINATION	480V TERMINATIONS	EST	4	EA		2,700.00	0	10,800	54.00	248	WIRE	98.84	24,600	35,400
1.16	MCC							180,000	0					10,900	190,900
	480V MCC	PER LINE UP	EST	4	EA	30,000		120,000	0	16.00	74	WIRE	98.84	7,300	127,300
	DC MCC	PER LINE UP	EST	2	EA	30,000		60,000	0	16.00	37	WIRE	98.84	3,600	63,600
1.17	MIMIC PANELS		EST	1	EA	17500		17,500	0	40.00	46	WIRE	98.84	4,500	22,000
1.18	RACEWAY, CABLE TRAY, & CONDUIT							0	1,664,200					8,196,600	9,860,800
	12" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	5,000	LF		18.25	0	91,300	1.10	6,325	WIRE	98.84	625,200	716,500
	18" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	3,000	LF		21.50	0	64,500	1.45	5,003	WIRE	98.84	494,400	558,900
	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	9,320	LF		27.10	0	252,600	1.75	18,757	WIRE	98.84	1,853,900	2,106,500
	36" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	2,400	LF		30.30	0	72,700	1.95	5,382	WIRE	98.84	532,000	604,700
	5" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	4,000	LF		61.00	0	244,000	1.13	5,184	WIRE	98.84	512,400	756,400
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	8,600	LF		31.00	0	266,600	0.81	7,981	WIRE	98.84	788,900	1,055,500
	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	8,000	LF		21.50	0	172,000	0.65	5,934	WIRE	98.84	586,500	758,500
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	12,000	LF		9.25	0	111,000	0.35	4,858	WIRE	98.84	480,100	591,100
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	15,000	LF		7.15	0	107,300	0.28	4,899	WIRE	98.84	484,200	591,500
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	28,000	LF		4.44	0	124,300	0.24	7,696	WIRE	98.84	760,700	885,000
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	48,900	LF		3.23	0	157,900	0.19	10,910	WIRE	98.84	1,078,300	1,236,200
1.19	HIGH VOLTAGE POWER CABLE & TERMINATION							0	288,500					666,700	955,200
	1/C # 750KCMIL-15KV - 14400' ID FAN		EST	14,400	LF		12.89	0	185,600	0.23	3,809	WIRE	98.84	376,500	562,100
	1/C # 500KCMIL-15KV		EST	11,100	LF		9.27	0	102,900	0.23	2,936	WIRE	98.84	290,200	393,100
1.20	MEDIUM VOLTAGE POWER CABLE & TERMINATION							0	100,200					427,400	527,600
	1/C # 350KCMIL-5KV		EST	16,350	LF		6.13	0	100,200	0.23	4,325	WIRE	98.84	427,400	527,600
1.21	LOW VOLTAGE POWER CABLE & TERMINATIONS		EST	1,800	LF		26.12	0	229,800	0.69	1,428	WIRE	98.84	732,100	961,900

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		Q=Vendor Quote								Labor Productivity =		1.15			

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	3/C # 500KCMIL-600V		EST	1,800	LF		26.12	0	148,900	0.69	1,428	WIRE	98.84	141,200	290,100
	#4/0 - #12 AWG-600V		EST	65,800	LF		7.22	0	80,900	0.08	5,978	WIRE	98.84	590,900	671,800
1.22	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	EST	112,800	LF		3.20	0	361,000	0.08	10,248	WIRE	98.84	1,012,900	1,373,900
1.23	EMERGENCY POWER SYSTEM							285,500	0					38,900	324,400
	DC PANEL BOADRD		EST	1	EA	20150		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	UPS PANEL BOARDS		EST	2	EA	20150		31,000	0	40.00	92	WIRE	98.84	9,100	40,100
	UPS		EST	1	EA	78000		60,000	0	32.00	37	WIRE	98.84	3,600	63,600
	SWITCHBOARD		EST	1	EA	52000		40,000	0	40.00	46	WIRE	98.84	4,500	44,500
	BYPASS TRANSFORMERS		EST	1	EA	32500		25,000	0	40.00	46	WIRE	98.84	4,500	29,500
	BATTERY CHARGER		EST	2	EA	41600		64,000	0	16.00	37	WIRE	98.84	3,600	67,600
	BATTERIES		EST	1	LT	65000		50,000	0	80.00	92	WIRE	98.84	9,100	59,100
1.24	GROUNDING							14,100	0					42,700	56,800
	GROUND ROD	3/4" - 20' LONG EACH	EST	16	EA	150		2,400	0	4.00	74	WIRE	98.84	7,300	9,700
	500 MCM	BARE COPPER WIRE	EST	1,400	FT	7.65		10,700	0	0.12	193	WIRE	98.84	19,100	29,800
	CADWELD		EST	64	EA	15		1,000	0	2.00	147	WIRE	98.84	14,500	15,500
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	16.00	18	WIRE	98.84	1,800	1,800
1.25	LIGHTING/ TRANSFORMERS & PANELS							26,000	30,000					29,500	85,500
	LIGHT FIXTURES		EST	40	EA		750	0	30,000	4.00	184	WIRE	98.84	18,200	48,200
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	1	EA	10000		10,000	0	40.00	46	WIRE	98.84	4,500	14,500
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	1	EA	7500		7,500	0	32.00	37	WIRE	98.84	3,600	11,100
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	1	EA	5000		5,000	0	16.00	18	WIRE	98.84	1,800	6,800
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	1	EA	3500		3,500	0	12.00	14	WIRE	98.84	1,400	4,900
1.26	DUCT BANK							0	136,000					192,700	328,700
	DUCT BANK WITH 12-5" & 4-3" CONDUITS		EST	100	LF		361.21	0	38,000	6.24	717	ECND	75.97	54,500	92,500
	DUCT BANK WITH 6-5" & 2-3" CONDUITS		EST	180	LF		230.91	0	71,400	5.45	1,128	ECND	75.97	85,700	157,100
	DUCT BANK WITH 6-5" & 6-3" CONDUITS		EST	100	LF		265.88	0	26,600	6.01	691	ECND	75.97	52,500	79,100
1.27	FOUNDATION FOR TRANSFORMERS							0	61,900		0			162,600	224,500
	EXCAVATION / BACKFILL		EST	1,000	CY			0	0	0.36	414	EXFD	90.00	37,300	37,300
	REINFORCING		EST	20	TN		1,150.00	0	23,000	20.00	460	REIN	78.27	36,000	59,000
	FORMWORK		EST	2,500	SF		2.50	0	6,300	0.14	403	FORM	99.43	40,000	46,300
	CONCRETE		EST	190	CY		105.00	0	20,000	1.50	328	CONP	79.64	26,100	46,100
	MUD MAT		EST	25	CY		105.00	0	2,600	1.50	43	CONP	79.64	3,400	6,000
	EMBEDDED STEEL		EST	4,000	LB		2.50	0	10,000	0.06	276	CARP	71.88	19,800	29,800
1.28	FIREWALL FOR TRANSFORMERS							0	3,200					8,300	11,500
	REINFORCING		EST	1.2	TN		1,150.00	0	1,400	20.00	28	REIN	78.27	2,200	3,600
	FORMWORK		EST	80	SF		2.50	0	200	0.14	13	FORM	99.43	1,300	1,500
	CONCRETE		EST	15	CY		105.00	0	1,600	3.50	60	CONP	79.64	4,800	6,400
1.29	EARLY COMMISSIONING COSTS TEMPORARY HIGH VOLTAGE POWER CABLE & TERMINATION FROM EAST SIDE OF SCR BUILDING TO TRANSFORMER PDC		EST	300	LF		466	0	139,800	6.75	2,329	WIRE	98.84	230,200	370,000
1.30	COMMUNICATIONS		EST	1	LT		17,000.00	0	17,000	114.00	131	WIRE	98.84	13,000	30,000
1.31	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000
1.32	EMERGENCY DIESEL DRIVEN QUENCH PUMP	WITH FUEL DAY TANK. FOUNDATIONS INCLUDED WITH ABSORBER BUILDING FOUNDATIONS. INCLUDES PIPING AND DRAINS		1	EA	150,000	200,000	150,000	200,000	3250.00	3,738	MECH	88.89	332,200	682,200
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							12,195,000	15,029,500		315,660			30,211,600	57,436,100
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0

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	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										4,697,951
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						27,449		83.48	2,291,000	2,291,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						34,311			2,406,951	2,406,951
	PER DIEM	NONE		0.00	HR						377,420			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				75,148					151,058	226,206
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				751,475						751,475
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			609,750							609,750
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				751,475					1,510,580	2,262,055
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				2,254,425					4,531,740	6,786,165
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							609,800	3,832,500					10,891,300	15,333,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	ID FANS						12,804,800	18,862,000					41,102,900	72,769,700
2.0	FABRIC FILTERS														
2.1	MECHANICAL EQUIPMENT	A SINGLE FABRIC FILTER (225' X 130') UNIT INCLUDING ALL INTERNAL FABRIC FILTER ELEMENTS SUCH AS BAGS, CAGES, ASH HOPPERS, 2 BROKEN BAG DETECTORS PER COMPARTMENT	EST	1	LT	19,761,000		19,761,000	0	123300.00	141,795	MECH	88.89	12,604,200	32,365,200
2.2	INSULATION FOR FABRIC FILTER	SUBCONTRACT COST INCLUDES LABOR	EST	81,000	SF	30		2,430,000	0	0.00	0	DINS	81.75	0	2,430,000
2.3	PENTHOUSE FOR FABRIC FILTER	SUPPORT STEEL AND PRLINS INCLUDED WITH OEM EQUIPMENT		29,500	SF			70,200	787,000					1,007,600	1,864,800
	SIDING FOR PENTHOUSE		EST	14,200	SF		12.00	0	170,400	0.11	1,796	SDNG	93.41	167,800	338,200
	CONCRETE FLOOR FOR PENTHOUSE		EST	250	CY		230.00	0	57,500	7.50	2,156	SDNG	93.41	201,400	258,900
	ROOFING FOR PENTHOUSE		EST	29,500	SF		18.00	0	531,000	0.22	7,464	ROOF	69.12	515,900	1,046,900
	H&V		EST	1	LT	70200	28080	70,200	28,100	1310.67	1,507	HVAC	81.24	122,500	220,800
2.4	BOTTOM ENCLOSURE FOR BAGHOUSE							60,000	1,204,000					1,359,800	2,623,800
	SUPPORT STEEL, GIRTS AND SIDING		EST	29,500	SF		40.00	0	1,180,000	0.35	11,874	STST	105.71	1,255,200	2,435,200
	H&V		EST	1	LT	60000	24000	60,000	24,000	1120.00	1,288	HVAC	81.24	104,600	188,600
2.5	PIPING & SUPPORTS - MECHANICAL							30,900	101,400					209,500	341,800
	LARGE BORE PIPING	6" SS, SCH 40 WELDED	EST	100	LF		111.00	0	11,100	2.02	232	SPNG	94.41	21,900	33,000
	LARGE BORE PIPING	12" CS, SCH 40 WELDED	EST	400	LF		188.70	0	75,500	2.80	1,288	SPNG	94.41	121,600	197,100
	SMALL BORE PIPING	2" CS, SCH 80 WELDED	EST	50	LF		22.20	0	1,100	1.26	72	SPNG	94.41	6,800	7,900
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	50	LF		48.80	0	2,400	1.44	83	SPNG	94.41	7,800	10,200
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	100	LF		33.70	0	3,400	1.32	152	SPNG	94.41	14,300	17,700
	VALVE	12" GATE, 150 #, CS, WELDED	EST	2	EA	8,200		16,400	0	19.20	44	SPNG	94.41	4,200	20,600
	VALVE	2" GLOBE, 150# SS, WELDED	EST	10	EA	1,450		14,500	0	5.64	65	SPNG	94.41	6,100	20,600
	PIPE SUPPORTS		EST	105	EA		75.00	0	7,900	2.50	302	MECH	88.89	26,800	34,700
2.6	FABRIC FILTER - FOUNDATIONS							0	550,700					1,081,100	1,631,800
	EXCAVATION / BACKFILL		EST	4,945	CY			0	0	0.36	2,047	EXFD	90.00	184,300	184,300
	REINFORCING		EST	192	TN		1,150.00	0	220,800	20.00	4,416	REIN	78.27	345,600	566,400
	FORMWORK		EST	7,800	SF		2.50	0	19,500	0.14	1,256	FORM	99.43	124,900	144,400
	CONCRETE		EST	2,400	CY		105.00	0	252,000	1.50	4,140	CONP	79.64	329,700	581,700
	MUD MAT		EST	270	CY		105.00	0	28,400	1.50	466	CONP	79.64	37,100	65,500
	EMBEDDED STEEL		EST	12,000	LB		2.50	0	30,000	0.06	828	CARP	71.88	59,500	89,500
2.7	FABRIC FILTER - SUPPORT STEEL AND ACCESS GALLERY							0	360,000					1,186,700	1,546,700
	SUPPORT STEEL	MATERIAL INCLUDED WITH OEM EQUIPMENT	EST	300	TN			0	0	24.00	8,280	STST	105.71	875,300	875,300

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	ACCESS GALLERY		EST	8,000	SF		45.00	0	360,000	0.40	3,680	GALL	84.61	311,400	671,400
2.8	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE INCLUDED IN SECTION 1.0 - ID FANS													
2.9	LIGHTING/ TRANSFORMERS & PANELS							30,000	75,000					58,200	163,200
	LIGHT FIXTURES		EST	100	EA		750	0	75,000	4.00	460	WIRE	98.84	45,500	120,500
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	10000		20,000	0	40.00	92	WIRE	98.84	9,100	29,100
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	2	EA	5000		10,000	0	16.00	37	WIRE	98.84	3,600	13,600
2.10	GROUNDING							7,300	0					17,500	24,800
	GROUND ROD	3/4" - 20' LONG	EST	4	EA	150		600	0	4.00	18	WIRE	98.84	1,800	2,400
	500 MCM	BARE COPPER WIRE	EST	850	FT	7.65		6,500	0	0.12	117	WIRE	98.84	11,600	18,100
	CADWELD		EST	16	EA	15		200	0	2.00	37	WIRE	98.84	3,600	3,800
	GROUNDING TEST	TEST, CALIBRATION & DOCUMENTATION	EST	1	EA			0	0	4.00	5	WIRE	98.84	500	500
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							22,419,400	3,153,100		195,997			17,524,600	42,992,100
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										2,917,504
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						17,043		83.48	1,423,000	1,423,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						21,304			1,494,504	1,494,504
	PER DIEM	NONE		0.00	HR						234,344			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				15,766					87,623	103,389
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				157,655						157,655
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			1,120,970							1,120,970
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				157,655					876,230	1,033,885
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				472,965					2,628,690	3,101,655
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							1,121,000	804,000					6,510,000	8,435,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FABRIC FILTERS						23,540,400	3,957,100					24,034,600	51,427,200
3.0	NEW STACK														
3.1	CONCRETE STACK (WET)	PROVIDED BY AEP													31,480,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS														31,480,000
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT			15	%				0						4,722,000
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														4,722,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	NEW STACK													36,202,000
3.2	FOUNDATIONS FOR STACK	BY AEP													
3.3	ADDITIONAL BREECHING OPENING FOR PHASE II	BY AEP													
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS														
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE														
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														

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	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%										
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%										
	PER DIEM	NONE		0.00	hr										
	CONSUMABLES - % of ACCT NO. 90			0.5	%										
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%										
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%										
	SALES TAX - NOT INCLUDED														
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%										
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE - % of ACCT NO. 90			15	%										
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	NEW STACK													
4.0	LIME HANDLING SYSTEM														
4.1	LIME STORAGE SILO							5,762,000	0					0	5,762,000
	SILO	CONCRETE SILO 75' DIA X 100' H - 6840 TONS -SUBCONTRACT COST INCLUDES LABOR	EST	2	EA	2,736,000.00		5,472,000	0	0.00	0	CONP	79.64	0	5,472,000
	ELEVATOR	MAINTENANCE ELEVATOR - SUBCONTRACT COST INCLUDES LABOR	EST	1	EA	290,000.00		290,000	0	0.00	0	MECH	88.89	0	290,000
4.2	LIME UNLOADING SYSTEM	INCLUDES PNEUMATIC HANDLING SYSTEM, THREE VACUUM EXHAUSTER, TWO FILTER SEPARATORS	EST	1	LT	640,000		640,000	0	4000.00	4,600	MECH	88.89	408,900	1,048,900
4.3	PIPING - MECHANICAL							29,000	15,600					77,900	122,500
	SMALL BORE PIPING	2" CS, SCH 80 WELDED	EST	100	LF		22.20	0	2,200	1.26	145	SPNG	94.41	13,700	15,900
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	100	LF		48.80	0	4,900	1.44	166	SPNG	94.41	15,600	20,500
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	200	LF		33.70	0	6,700	1.32	304	SPNG	94.41	28,700	35,400
	VALVE	2" GLOBE, 150# SS, WELDED	EST	20	EA	1,450		29,000	0	5.64	130	SPNG	94.41	12,200	41,200
	PIPE SUPPORTS		EST	50	EA		35.00	0	1,800	1.50	86	MECH	88.89	7,700	9,500
4.4	LIME STORAGE SILO ACCESS STAIR TOWER	THREE COAT SHOP PAINT	EST	50	TN		2,900.00	0	145,000	24.00	1,380	STST	105.71	145,900	290,900
4.5	PIPE RACK FOR LIME HANDLING, WASTE HANDLING AND MISC MECHANICAL PIPING	THREE COAT SHOP PAINT	EST	270	TN		2,900.00	0	783,000	24.00	7,452	STST	105.71	787,800	1,570,800
4.6	RAIL CAR UNLOADING AREA - FOUNDATIONS	20 X 250 - NO SIDING						0	85,300					180,200	265,500
	EXCAVATION / BACKFILL		EST	1,000	CY			0	0	0.36	414	EXFD	90.00	37,300	37,300
	REINFORCING		EST	30	TN		1,150.00	0	34,500	20.00	690	REIN	78.27	54,000	88,500
	FORMWORK		EST	1,500	SF		2.50	0	3,800	0.14	242	FORM	99.43	24,000	27,800
	CONCRETE		EST	400	CY		105.00	0	42,000	1.50	690	CONP	79.64	55,000	97,000
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	2,000	LB		2.50	0	5,000	0.06	138	CARP	71.88	9,900	14,900
4.7	LIME UNLOADING BLOWER / ELECTRICAL BUILDING - FOUNDATIONS							0	74,500					187,800	262,300
	EXCAVATION / BACKFILL		EST	1,900	CY			0	0	0.36	787	EXFD	90.00	70,800	70,800
	REINFORCING		EST	25	TN		1,150.00	0	28,800	20.00	575	REIN	78.27	45,000	73,800
	FORMWORK		EST	640	SF		2.50	0	1,600	0.14	103	FORM	99.43	10,200	11,800
	CONCRETE		EST	300	CY		105.00	0	31,500	1.50	518	CONP	79.64	41,200	72,700
	MUD MAT		EST	60	CY		105.00	0	6,300	1.50	104	CONP	79.64	8,200	14,500
	EMBEDDED STEEL		EST	2,500	LB		2.50	0	6,300	0.06	173	CARP	71.88	12,400	18,700

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4.8	LIME UNLOADING BLOWER / ELECTRICAL BUILDING	130' L X 30' W X 30' H						75,000	351,500					24,400	450,900
	PREENGINEERED BUILDING INCLUDING H&V AND LIGHTING	SUBCONTRACT PRICE, INCLUDES LABOR	EST	3,900	SF		85	0	331,500	0.00	0	STST	105.71	0	331,500
	ADDITONAL HVAC UNIT FOR ELECTRICAL ROOM & CONTROLS	40T PACKAGED UNIT FOR ELECTRICAL EQUIPMENT ROOM. INCLUDES ALLOWANCE FOR CONCRETE PAD AND ELECTRICAL WORK	EST	1	LT	75000	20000	75,000	20,000	350.00	300	HVAC	81.24	24,400	119,400
4.9	CONCRETE PIT FOR THE ELEVATOR		EST	10	CY		230.00	0	2,300	7.50	86	CONP	79.64	6,900	9,200
4.10	LIME STORAGE SILO - FOUNDATIONS							0	469,600					852,500	1,322,100
	EXCAVATION / BACKFILL		EST	3,600	CY			0	0	0.36	1,490	EXFD	90.00	134,100	134,100
	REINFORCING		EST	200.0	TN		1,150.00	0	230,000	20.00	4,600	REIN	78.27	360,000	590,000
	FORMWORK		EST	3,000	SF		2.50	0	7,500	0.14	483	FORM	99.43	48,000	55,500
	CONCRETE		EST	2,000	CY		105.00	0	210,000	1.50	3,450	CONP	79.64	274,800	484,800
	MUD MAT		EST	115	CY		105.00	0	12,100	1.50	198	CONP	79.64	15,800	27,900
	EMBEDDED STEEL		EST	4,000	LB		2.50	0	10,000	0.06	276	CARP	71.88	19,800	29,800
4.11	LIME STORAGE SILO ACCESS STAIR TOWER - FOUNDATIONS							0	14,200					28,600	42,800
	EXCAVATION / BACKFILL		EST	110	CY			0	0	0.36	46	EXFD	90.00	4,100	4,100
	REINFORCING		EST	4.8	TN		1,150.00	0	5,500	20.00	110	REIN	78.27	8,600	14,100
	FORMWORK		EST	320	SF		2.50	0	800	0.14	52	FORM	99.43	5,100	5,900
	CONCRETE		EST	60	CY		105.00	0	6,300	1.50	104	CONP	79.64	8,200	14,500
	MUD MAT		EST	8	CY		105.00	0	800	1.50	14	CONP	79.64	1,100	1,900
	EMBEDDED STEEL		EST	300	LB		2.50	0	800	0.06	21	CARP	71.88	1,500	2,300
4.12	PIPE RACK - FOUNDATIONS							0	94,200					237,800	332,000
	EXCAVATION / BACKFILL		EST	1,360	CY			0	0	0.36	563	EXFD	90.00	50,700	50,700
	REINFORCING		EST	32.2	TN		1,150.00	0	37,000	20.00	740	REIN	78.27	57,900	94,900
	FORMWORK		EST	4,000	SF		2.50	0	10,000	0.14	644	FORM	99.43	64,000	74,000
	CONCRETE		EST	402	CY		105.00	0	42,200	1.50	693	CONP	79.64	55,200	97,400
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	2,010	LB		2.50	0	5,000	0.06	139	CARP	71.88	10,000	15,000
4.13	TRANSFORMERS: 33F, 33G,	SUS TRANSFORMERS: 33F, 33G, 13.8KV-480V	EST	2	EA	85000		170,000	0	300.00	690	EHEA	79.16	54,600	224,600
4.14	480V LOW VOLTAGE (33F/G) SWITCHGEAR	PER LINE UP	EST	5	EA	39200		196,000	0	230.00	1,323	EHEA	79.16	104,700	300,700
4.15	CABLE BUS DUCT							134,700	10,800					200,200	345,700
	480V CABLE BUS	BUST DUCT ONLY	EST	150	FT	898		134,700	0	10.30	1,777	WIRE	98.84	175,600	310,300
	CABLE BUS TERMINATION	750MCM- 480V TERMINATIONS	EST	4	EA		2,700.00	0	10,800	54.00	248	WIRE	98.84	24,600	35,400
4.16	MCC							61,800	0					3,600	65,400
	480V MCC	PER LINE UP	EST	2	EA	30900		61,800	0	16.00	37	WIRE	98.84	3,600	65,400
4.17	MIMIC PANELS		EST	1	EA	17500		17,500	0	12.00	14	WIRE	98.84	1,400	18,900
4.18	EMERGENCY POWER SYSTEM							108,300	0					24,400	132,700
	DC PANEL BOARD		EST	1	EA	15450		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	UPS PANEL BOARDS		EST	1	EA	15450		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	SATELLITE UPS		EST	1	EA	41200		41,200	0	16.00	18	WIRE	98.84	1,800	43,000
	VRLA BATTERIES	8HR-400A, 480V	EST	1	LT	36050		36,100	0	120.00	138	WIRE	98.84	13,600	49,700
4.19	GROUNDING							13,300	0					41,300	54,600
	GROUND ROD	3/4" - 20' LONG	EST	16	EA	150		2,400	0	4.00	74	WIRE	98.84	7,300	9,700
	500 MCM	BARE COPPER WIRE	EST	1,300	FT	7.65		9,900	0	0.12	179	WIRE	98.84	17,700	27,600
	CADWELD		EST	64	EA	15		1,000	0	2.00	147	WIRE	98.84	14,500	15,500
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	16.00	18	WIRE	98.84	1,800	1,800

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4.20	LIGHTING/ TRANSFORMERS & PANELS							52,000	135,000					104,500	291,500
	LIGHT FIXTURES		EST	180	EA		750	0	135,000	4.00	828	WIRE	98.84	81,800	216,800
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	10000		20,000	0	40.00	92	WIRE	98.84	9,100	29,100
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	7500		15,000	0	32.00	74	WIRE	98.84	7,300	22,300
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	2	EA	5000		10,000	0	16.00	37	WIRE	98.84	3,600	13,600
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	2	EA	3500		7,000	0	12.00	28	WIRE	98.84	2,700	9,700
4.21	RACEWAY, CABLE TRAY, & CONDUIT							0	310,900					1,537,100	1,848,000
	12" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,050	LF		18.25	0	19,200	1.10	1,328	WIRE	98.84	131,300	150,500
	18" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	600	LF		21.50	0	12,900	1.45	1,001	WIRE	98.84	98,900	111,800
	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,700	LF		27.10	0	46,100	1.75	3,421	WIRE	98.84	338,200	384,300
	36" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	500	LF		30.30	0	15,200	1.95	1,121	WIRE	98.84	110,800	126,000
	5" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	750	LF		61.00	0	45,800	1.13	972	WIRE	98.84	96,100	141,900
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,450	LF		31.00	0	45,000	0.81	1,346	WIRE	98.84	133,000	178,000
	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,550	LF		21.50	0	33,300	0.65	1,150	WIRE	98.84	113,600	146,900
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	2,400	LF		9.25	0	22,200	0.35	972	WIRE	98.84	96,000	118,200
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	3,050	LF		7.15	0	21,800	0.28	996	WIRE	98.84	98,500	120,300
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	5,150	LF		4.44	0	22,900	0.24	1,415	WIRE	98.84	139,900	162,800
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	8,200	LF		3.23	0	26,500	0.19	1,829	WIRE	98.84	180,800	207,300
4.22	HIGH VOLTAGE POWER CABLE & TERMINATION	1/C # 500KCMIL-15KV	EST	5,400	LF		9.27	0	50,100	0.23	1,428	WIRE	98.84	141,200	191,300
4.23	MEDIUM VOLTAGE POWER CABLE & TERMINATION	1/C # 350KCMIL-5KV	EST	10,800	LF		6.13	0	66,200	0.23	2,857	WIRE	98.84	282,300	348,500
4.24	LOW VOLTAGE POWER CABLE & TERMINATION							0	93,000					143,200	236,200
	3/C # 500KCMIL- 600V		EST	600	LF		26.12	0	15,700	0.69	476	WIRE	98.84	47,100	62,800
	#4/0 - #12 AWG-600V		EST	10,700	LF		7.22	0	77,300	0.08	972	WIRE	98.84	96,100	173,400
4.25	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	EST	8,200	LF		3.20	0	26,200	0.08	745	WIRE	98.84	73,600	99,800
4.26	DUCT BANK	DUCT BANK WITH 4-5" & 4-3" CONDUITS, 2.38' H X 3.79' W	EST	350	LF		174.67	0	61,100	3.80	1,530	ECND	75.97	116,200	177,300
4.27	FOUNDATIONS FOR TRANSFORMERS	FOR XFMR 33F, 33G, INCLUDES MUD MAT	EST	14.0	CY		250	0	3,500	8.00	129	CONP	79.64	10,300	13,800
4.28	COMMUNICATIONS		EST	1	LT		17,000.00	0	17,000	114.00	131	WIRE	98.84	13,000	30,000
4.29	LIGHTNING PROTECTION		EST	1	LT		14,000.00	0	14,000	79.00	91	WIRE	98.84	9,000	23,000
4.30	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							7,259,600	2,831,000		62,496			5,806,300	15,896,900
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0

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	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										930,542
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						5,434		83.48	454,000	454,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						6,793			476,542	476,542
	PER DIEM	NONE		0.00	HR						74,724			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				14,155					29,032	43,187
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				141,550						141,550
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			362,980							362,980
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				141,550					290,315	431,865
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				424,650					870,945	1,295,595
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							363,000	721,900					2,120,800	3,205,700
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME HANDLING SYSTEM						7,622,600	3,552,900					7,927,100	19,102,600
5.0	LIME SLAKER BUILDING														0
5.1	MECHANICAL EQUIPMENT	INCLUDES:CHAIN CONVEYOR, SLAKERS THROUGH THE LIME SLURRY PUMPS, PIPING, AND LIME SLURRY STORAGE TANKS.	EST	1	LT	7,985,000		7,985,000	0	48350.00	55,603	MECH	88.89	4,942,500	12,927,500
5.2	REAGENT AREA SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
5.3	AGITATOR FOR SUMP PUMPS	5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
5.4	PIPING - MECHANICAL		EST	1	LT			117,800	111,400					381,100	610,300
	LARGE BORE PIPING	6" CS, SCH 40 WELDED	EST	200	LF		41.7	0	8,300	1.61	370	SPNG	94.41	35,000	43,300
	LARGE BORE PIPING	8" HDPE (UNDERGROUND)	EST	1,200	LF		14.1	0	16,900	0.83	1,145	SPNG	94.41	108,100	125,000
	LARGE BORE PIPING	10" CS, SCH 40 WELDED	EST	400	LF		110.3	0	44,100	2.40	1,104	SPNG	94.41	104,200	148,300
	LARGE BORE PIPING	14" CS, SCH 40 WELDED	EST	100	LF		205.9	0	20,600	2.87	330	SPNG	94.41	31,200	51,800
	SMALL BORE PIPING	2" CS, SCH 80 WELDED	EST	50	LF		22.20	0	1,100	1.26	72	SPNG	94.41	6,800	7,900
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	50	LF		48.80	0	2,400	1.44	83	SPNG	94.41	7,800	10,200
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	100	LF		33.70	0	3,400	1.32	152	SPNG	94.41	14,300	17,700
	VALVE	2" GLOBE, 150# SS, WELDED	EST	15	EA	1,450		21,800	0	5.64	97	SPNG	94.41	9,200	31,000
	VALVE	6" AIR OPERATED, 150 #, CS, FLANGED	EST	2	EA	14,000		28,000	0	17.30	40	SPNG	94.41	3,800	31,800
	VALVE	8" AIR OPERATED, 150 #, CS, FLANGED	EST	4	EA	17,000		68,000	0	19.30	89	SPNG	94.41	8,400	76,400
	EXCAVATION / BACKFILL	FOR UNDERGROUND PIPING	EST	1,000	CY			0	0	0.20	230	EXFD	90.00	20,700	20,700
	BEDDING	FOR UNDERGROUND PIPING	EST	133	CY		35.0	0	4,700	0.25	38	EXFD	90.00	3,500	8,200
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	110	EA		90.00	0	9,900	2.50	316	MECH	88.89	28,100	38,000
5.5	LIME SLURRY TANKS - FOUNDATIONS							0	166,400					299,400	465,800
	EXCAVATION / BACKFILL		EST	969	CY			0	0	0.36	401	EXFD	90.00	36,100	36,100
	REINFORCING		EST	90	TN		1,150.00	0	103,500	20.00	2,070	REIN	78.27	162,000	265,500
	FORMWORK		EST	1,166	SF		2.50	0	2,900	0.14	188	FORM	99.43	18,700	21,600
	CONCRETE		EST	475	CY		105.00	0	49,900	1.50	819	CONP	79.64	65,300	115,200
	MUD MAT		EST	40	CY		105.00	0	4,200	1.50	69	CONP	79.64	5,500	9,700
	EMBEDDED STEEL		EST	2,375	LB		2.50	0	5,900	0.06	164	CARP	71.88	11,800	17,700
5.6	LIME SLAKER BUILDING - FOUNDATIONS							0	119,200					204,000	323,200
	EXCAVATION / BACKFILL		EST	450	CY			0	0	0.36	186	EXFD	90.00	16,800	16,800
	REINFORCING		EST	50	TN		1,150.00	0	57,500	20.00	1,150	REIN	78.27	90,000	147,500
	FORMWORK		EST	1,000	SF		2.50	0	2,500	0.14	161	FORM	99.43	16,000	18,500
	CONCRETE		EST	450	CY		105.00	0	47,300	1.50	776	CONP	79.64	61,800	109,100
	MUD MAT		EST	60	CY		105.00	0	6,300	1.50	104	CONP	79.64	8,200	14,500

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	EMBEDDED STEEL		EST	2,250	LB		2.50	0	5,600	0.06	155	CARP	71.88	11,200	16,800
5.7	LIME SLAKER BUILDING	135' L X 30' W X 50' H						40,500	803,300					740,500	1,584,300
	STRUCTURAL STEEL		EST	110	TN		2650	0	291,500	16.00	2,024	STST	105.71	214,000	505,500
	INSULATED METAL SIDING		EST	16,500	SF		12	0	198,000	0.11	2,087	SDNG	93.41	195,000	393,000
	ROLLING OVERHEAD DOOR		EST	320	SF		27	0	8,600	0.25	92	CARP	71.88	6,600	15,200
	METAL ROOF DECKING		EST	4,050	SF		2.7	0	10,900	0.06	279	STST	105.71	29,500	40,400
	RIGID ROOF INSULATION		EST	4,050	SF		2.4	0	9,700	0.02	70	ROOF	69.12	4,800	14,500
	ROOFING (4-PLY TAR & GRAVEL)		EST	4,050	SF		1.55	0	6,300	0.04	186	ROOF	69.12	12,900	19,200
	LIGHTWEIGHT CONCRETE FILL 1"		EST	50	CY		100	0	5,000	1.30	75	ROOF	69.12	5,200	10,200
	ROOF FLASHING		EST	350	LF		14.45	0	5,100	0.12	48	ROOF	69.12	3,300	8,400
	ROOF DRAINS		EST	1	LT		25000	0	25,000	240.00	276	PLMB	79.42	21,900	46,900
	FLOOR DRAINS		EST	1	LT		30000	0	30,000	280.00	322	PLMB	79.42	25,600	55,600
	FLOOR SLABS	INCLUDES METAL DECKING AND FORMWORK	EST	50	CY		210	0	10,500	7.50	431	CONP	79.64	34,300	44,800
	FLOOR FINISHES		EST	3,102	SF		2.5	0	7,800	0.05	178	CONP	79.64	14,200	22,000
	LOUVERS/WINDOWS/DOORS		EST	1,601	SF		40	0	64,000	0.35	644	CARP	71.88	46,300	110,300
	ROOF VENTILATORS		EST	4	EA		15000	0	60,000	24.00	110	HVAC	81.24	9,000	69,000
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	1,215	SF		45	0	54,700	0.40	559	GALL	84.61	47,300	102,000
	H&V		EST	1	LT	40500	16200	40,500	16,200	756.00	869	HVAC	81.24	70,600	127,300
5.8	ELECTRICAL	INCLUDED WITH LIME HANDLING SYSTEM, ACCOUNT 4.0													
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							8,183,300	1,200,300		74,355			6,584,400	15,968,000
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										1,106,970
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						6,466		83.48	540,000	540,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						8,082			566,970	566,970
	PER DIEM	NONE		0.00	HR						88,903			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				6,002					32,922	38,924
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				60,015						60,015
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			409,165							409,165
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				60,015					329,220	389,235
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				180,045					987,660	1,167,705
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							409,200	306,100					2,456,800	3,172,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME SLAKER BUILDING						8,592,500	1,506,400					9,041,200	19,140,000
6.0	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS														0
6.1	BYPRODUCT WASTE ASH HANDLING - MECHANICAL EQUIPMENT	INCLUDES PNEUMATIC HANDLING SYSTEM, THREE PRESSURE BLOWERS, ONE BIN VENT FILTER, ASH UNLOADING SYSTEM	EST	1	LT	2,047,000		2,047,000	0	13500.00	15,525	MECH	88.89	1,380,000	3,427,000
6.2	ECONOMIZER ASH HANDLING - MECHANICAL EQUIPMENT	INCLUDES JET PUMPS AND PIPING / SUPPORTS TO THE BOTTOM ASH POND	EST	1	LT	400,000		400,000	0	2900.00	3,335	MECH	88.89	296,400	696,400
6.3	BUILDING SUMP PUMPS	FOR BUILDINGS - DUPLEX. INCLUDES CHECK & ISOLATION VALVES.		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300

AEP
BIG SANDY UNIT 2
FGD PROJECT - IAQCS (N/ESP)-3B - 3.0 LB/MM BTU - PHASED
ORDER OF MAGNITUDE COST ESTIMATE

Estimate No.: 30719C
Project No.: 12721-000
Date: 9/29/2010
Preparer: MNO
Reviewer: JMK
Approver: PEF

Cost Type:
Est=Estimated
Allow.=Allowance
Q=Vendor Quote

Wage Rates Based on: BIG SANDY
Labor Productivity = 1.15

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
6.4	AGITATOR FOR SUMP PUMPS	5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
6.5	PIPING - MECHANICAL		EST	1	LT			142,800	240,900					759,100	1,142,800
	LARGE BORE PIPING	4" CS, SCHEDULE 40, WELDED	EST	300	LF		23.0	0	6,900	1.48	511	SPNG	94.41	48,200	55,100
	LARGE BORE PIPING	4" SS, SCHEDULE 40, WELDED	EST	300	LF		68.3	0	20,500	1.82	628	SPNG	94.41	59,300	79,800
	LARGE BORE PIPING	6" CS, SCH 40 WELDED	EST	400	LF		41.7	0	16,700	1.61	741	SPNG	94.41	69,900	86,600
	LARGE BORE PIPING	8" HDPE (UNDERGROUND)	EST	800	LF		14.1	0	11,300	0.83	764	SPNG	94.41	72,100	83,400
	LARGE BORE PIPING	10" CS, SCH 40 WELDED	EST	300	LF		110.3	0	33,100	2.40	828	SPNG	94.41	78,200	111,300
	LARGE BORE PIPING	20" HDPE (UNDERGROUND)	EST	1,600	LF		72.8	0	116,500	1.45	2,668	SPNG	94.41	251,900	368,400
	SMALL BORE PIPING	2" CS, SCH 80 WELDED	EST	100	LF		22.20	0	2,200	1.26	145	SPNG	94.41	13,700	15,900
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	100	LF		48.80	0	4,900	1.44	166	SPNG	94.41	15,600	20,500
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	200	LF		33.70	0	6,700	1.32	304	SPNG	94.41	28,700	35,400
	VALVE	2" GLOBE, 150# SS, WELDED	EST	15	EA	1,450		21,800	0	5.64	97	SPNG	94.41	9,200	31,000
	VALVE	4" GATE, 150 #, CS, WELDED	EST	10	EA	2,500		25,000	0	7.70	89	SPNG	94.41	8,400	33,400
	VALVE	6" AIR OPERATED, 150 #, CS, FLANGED	EST	2	EA	14,000		28,000	0	17.30	40	SPNG	94.41	3,800	31,800
	VALVE	8" AIR OPERATED, 150 #, CS, FLANGED	EST	4	EA	17,000		68,000	0	19.30	89	SPNG	94.41	8,400	76,400
	EXCAVATION / BACKFILL	FOR UNDERGROUND PIPING	EST	2,000	CY			0	0	0.20	460	EXFD	90.00	41,400	41,400
	BEDDING	FOR UNDERGROUND PIPING	EST	267	CY		35.0	0	9,300	0.25	77	EXFD	90.00	6,900	16,200
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	170	EA		75.00	0	12,800	2.50	489	MECH	88.89	43,400	56,200
6.6	BYPRODUCT WASTE SILO	CONCRETE SILO 65' DIA X 111' H - 4700 TONS -SUBCONTRACT COST INCLUDES LABOR	EST	1	EA	2,630,000		2,630,000	0	0.00	0	CONP	79.64	0	2,630,000
6.7	SDA RECYCLE SILO	INCLUDED WITH OEM EQUIPMENT													
6.8	FLY ASH SILO	NOT REQUIRED - ECONOMIZER FLY ASH SLUICED TO BOTTOM ASH POND						0	0					0	0
	SILO BIN	PIN MIXERS INCLUDED WITH FLY ASH HANDLING MECHANICAL EQUIPMENT	EST	0	EA	45,000		0	0	400.00	0	TANK	89.16	0	0
	SUPPORT STEEL FOR SILO	THREE-COAT SHOP PAINT	EST	0	TN		2,900.00	0	0	24.00	0	STST	105.71	0	0
6.9	BYPRODUCT WASTE SILO - FOUNDATIONS							0	186,400					343,900	530,300
	EXCAVATION / BACKFILL		EST	1,500	CY			0	0	0.36	621	EXFD	90.00	55,900	55,900
	REINFORCING		EST	75.0	TN		1,150.00	0	86,300	20.00	1,725	REIN	78.27	135,000	221,300
	FORMWORK		EST	1,300	SF		2.50	0	3,300	0.14	209	FORM	99.43	20,800	24,100
	CONCRETE		EST	800	CY		105.00	0	84,000	1.50	1,380	CONP	79.64	109,900	193,900
	MUD MAT		EST	45	CY		105.00	0	4,700	1.50	78	CONP	79.64	6,200	10,900
	EMBEDDED STEEL		EST	3,250	LB		2.50	0	8,100	0.06	224	CARP	71.88	16,100	24,200
6.10	FLY ASH SILO - FOUNDATIONS	NOT REQUIRED						0	0					0	0
	EXCAVATION / BACKFILL		EST	0	CY			0	0	0.36	0	EXFD	90.00	0	0
	REINFORCING		EST	0.0	TN		1,150.00	0	0	20.00	0	REIN	78.27	0	0
	FORMWORK		EST	0	SF		2.50	0	0	0.14	0	FORM	99.43	0	0
	CONCRETE		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	0	LB		2.50	0	0	0.06	0	CARP	71.88	0	0
6.11	FLY ASH BLOWER AND ELECTRICAL BUILDING - FOUNDATIONS	NOT REQUIRED						0	0					0	0
	EXCAVATION / BACKFILL		EST	0	CY			0	0	0.36	0	EXFD	90.00	0	0
	REINFORCING		EST	0	TN		1,150.00	0	0	20.00	0	REIN	78.27	0	0

				AEP										Estimate No.:	30719C
				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS (N/ESP)-3B - 3.0 LB/MM BTU - PHASED										Date:	9/29/2010
				ORDER OF MAGNITUDE COST ESTIMATE										Preparer:	MNO
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	FORMWORK		EST	0	SF		2.50	0	0	0.14	0	FORM	99.43	0	0
	CONCRETE		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	0	LB		2.50	0	0	0.06	0	CARP	71.88	0	0
6.12	FLY ASH BLOWER AND ELECTRICAL BUILDING	NOT REQUIRED						0	0					0	0
	PREENGINEERED BUILDING INCLUDING H&V AND LIGHTING		EST	0	SF		85	0	0	0.00	0	STST	105.71	0	0
	ADDITONAL HVAC UNIT FOR ELECTRICAL ROOM & CONTROLS		EST	0	LT	28000	15000	0	0	0.00	0	HVAC	81.24	0	0
6.13	RECYCLE ASH BUILDING - FOUNDATIONS							0	234,300					393,800	628,100
	EXCAVATION / BACKFILL		EST	950	CY			0	0	0.36	393	EXFD	90.00	35,400	35,400
	REINFORCING		EST	90	TN		1,150.00	0	103,500	20.00	2,070	REIN	78.27	162,000	265,500
	FORMWORK		EST	1,320	SF		2.50	0	3,300	0.14	213	FORM	99.43	21,100	24,400
	CONCRETE		EST	1,000	CY		105.00	0	105,000	1.50	1,725	CONP	79.64	137,400	242,400
	MUD MAT		EST	95	CY		105.00	0	10,000	1.50	164	CONP	79.64	13,100	23,100
	EMBEDDED STEEL		EST	5,000	LB		2.50	0	12,500	0.06	345	CARP	71.88	24,800	37,300
6.14	RECYCLE ASH BUILDING	100' L X 65' W X 50' H						58,500	1,306,700					1,194,500	2,559,700
	STRUCTURAL STEEL		EST	180	TN		2650	0	477,000	16.00	3,312	STST	105.71	350,100	827,100
	INSULATED METAL SIDING		EST	16,500	SF		12	0	198,000	0.11	2,087	SDNG	93.41	195,000	393,000
	ROLLING OVERHEAD DOOR		EST	640	SF		27	0	17,300	0.25	184	CARP	71.88	13,200	30,500
	METAL ROOF DECKING		EST	6,500	SF		2.7	0	17,600	0.06	449	STST	105.71	47,400	65,000
	RIGID ROOF INSULATION		EST	6,500	SF		2.4	0	15,600	0.02	112	ROOF	69.12	7,800	23,400
	ROOFING (4-PLY TAR & GRAVEL)		EST	6,500	SF		1.55	0	10,100	0.04	299	ROOF	69.12	20,700	30,800
	LIGHTWEIGHT CONCRETE FILL 1"		EST	60	CY		100	0	6,000	1.30	90	ROOF	69.12	6,200	12,200
	ROOF FLASHING		EST	350	LF		14.45	0	5,100	0.12	48	ROOF	69.12	3,300	8,400
	ROOF DRAINS		EST	1	LT		25000	0	25,000	240.00	276	PLMB	79.42	21,900	46,900
	FLOOR DRAINS		EST	1	LT		30000	0	30,000	280.00	322	PLMB	79.42	25,600	55,600
	FLOOR SLABS	INCLUDES METAL DECKING AND FORMWORK	EST	60	CY		210	0	12,600	7.50	518	CONP	79.64	41,200	53,800
	FLOOR FINISHES		EST	5,000	SF		2.5	0	12,500	0.05	288	CONP	79.64	22,900	35,400
	LOUVERS/WINDOWS/DOORS		EST	2,600	SF		40	0	104,000	0.35	1,047	CARP	71.88	75,200	179,200
	ROOF VENTILATORS		EST	4	EA		15000	0	60,000	24.00	110	HVAC	81.24	9,000	69,000
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	6,500	SF		45	0	292,500	0.40	2,990	GALL	84.61	253,000	545,500
	H&V		EST	1	LT	58500	23400	58,500	23,400	1092.00	1,256	HVAC	81.24	102,000	183,900
6.15	MCC	480V MCC PER LINE UP	EST	2	EA	30000		60,000	0	16.00	37	WIRE	98.84	3,600	63,600
6.16	EMERGENCY POWER SYSTEM							92,800	0					19,900	112,700
	UPS PANEL BOARDS		EST	1	EA	15500		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	SATELLITE UPS		EST	1	EA	41200		41,200	0	16.00	18	WIRE	98.84	1,800	43,000
	VRLA BATTERIES		EST	1	LT	36050		36,100	0	120.00	138	WIRE	98.84	13,600	49,700
6.17	LIGHTING/ TRANSFORMERS & PANELS							18,500	60,000					44,100	122,600
	LIGHT FIXTURES		EST	80	EA		750	0	60,000	4.00	368	WIRE	98.84	36,400	96,400
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	1	EA	10000		10,000	0	40.00	46	WIRE	98.84	4,500	14,500
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	1	EA	5000		5,000	0	16.00	18	WIRE	98.84	1,800	6,800
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	1	EA	3500		3,500	0	12.00	14	WIRE	98.84	1,400	4,900
6.18	RACEWAY, CABLE TRAY, & CONDUIT							0	32,500					189,100	221,600
	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	280	LF		27.10	0	7,600	1.75	564	WIRE	98.84	55700	63,300
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	280	LF		31.00	0	8,700	0.81	260	WIRE	98.84	25700	34,400
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,040	LF		4.44	0	4,600	0.24	286	WIRE	98.84	28300	32,900
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	3,600	LF		3.23	0	11,600	0.19	803	WIRE	98.84	79400	91,000
6.19	LOW VOLTAGE POWER CABLE & TERMINATION	#4/0 - #12 AWG-600V	EST	8,960	LF		7.22	0	64,700	0.08	814	WIRE	98.84	80500	145,200
															0

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6.20	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	EST	9,600	LF		3.20	0	30,700	0.08	872	WIRE	98.84	86,200	116,900
											0	WIRE	98.84	0	0
6.21	GROUNDING							0	4,500		0	WIRE	98.84	10,900	15,400
	GROUND ROD	3/4" - 20' LONG EACH	EST	4	EA		150	0	600	4.00	18	WIRE	98.84	1800	2,400
	500 MCM	BARE COPPER WIRE	EST	500	FT		7.65	0	3,800	0.12	69	WIRE	98.84	6800	10,600
	CADWELD		EST	8	EA		15	0	100	2.00	18	WIRE	98.84	1800	1,900
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	4.00	5	WIRE	98.84	500	500
6.22	DUCT BANK	DUCT BANK WITH 12-5" & 6-3" CONDUITS, 5.2' H X 2.08" W	EST	300	LF		371.60	0	111,500	7.02	2,422	ECND	75.97	184000	295,500
6.23	COMMUNICATIONS		EST	1	LT		34,000.00	0	34,000	229.00	263	WIRE	98.84	26,000	60,000
6.24	LIGHTNING PROTECTION		EST	1	LT		16,000.00	0	16,000	123.00	141	WIRE	98.84	14,000	30,000
6.25	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							5,489,600	2,330,200		56,968			5,049,900	12,869,700
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										848,390
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						4,954		83.48	414,000	414,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						6,192			434,390	434,390
	PER DIEM	NONE		0.00	HR						68,114			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				11,651					25,250	36,901
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				116,510						116,510
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			274,480							274,480
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				116,510					252,495	369,005
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				349,530					757,485	1,107,015
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							274,500	594,200					1,883,600	2,752,300
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS						5,764,100	2,924,400					6,933,500	15,622,000
7.0	SPRAY DRYER ABSORBER ISLAND														0
7.1	MECHANICAL EQUIPMENT	INCLUDES: ABSORBER MODULES AND ATOMIZERS WITH LUBE OIL, DUCT WORK FROM THE ABSORBERS TO THE FABRIC FILTER, AND COMPLETE RECYCLE SYSTEM WITH PIPING INSIDE FGD BUILDINGS.	EST	1	LT	39438000		39,438,000	0	236600	272,090	MECH	88.89	24,186,100	63,624,100
7.2	ELEVATOR	MAINTENANCE ELEVATOR - SUBCONTRACT COST INCLUDES LABOR	EST	1	EA	325,000.00		325,000	0	0.00	0	MECH	88.89	0	325,000
7.3	ABSORBER AREA SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES.		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
7.4	AGITATOR FOR SUMP PUMPS	5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600

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7.5	PIPING - MECHANICAL							142,800	36,900					227,900	407,600
	LARGE BORE PIPING	4" CS, SCHEDULE 40, WELDED	EST	300	LF		23.0	0	6,900	1.48	511	SPNG	94.41	48,200	55,100
	LARGE BORE PIPING	6" CS, SCH 40 WELDED	EST	100	LF		41.7	0	4,200	1.61	185	SPNG	94.41	17,500	21,700
	LARGE BORE PIPING	8" HDPE (UNDERGROUND)	EST	800	LF		14.1	0	11,300	0.83	764	SPNG	94.41	72,100	83,400
	SMALL BORE PIPING	2" CS, SCH 80 WELDED	EST	50	LF		22.20	0	1,100	1.26	72	SPNG	94.41	6,800	7,900
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	50	LF		48.80	0	2,400	1.44	83	SPNG	94.41	7,800	10,200
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	100	LF		33.70	0	3,400	1.32	152	SPNG	94.41	14,300	17,700
	VALVE	2" GLOBE, 150# SS, WELDED	EST	15	EA	1,450		21,800	0	5.64	97	SPNG	94.41	9,200	31,000
	VALVE	4" GATE, 150 #, CS, WELDED	EST	10	EA	2,500		25,000	0	7.70	89	SPNG	94.41	8,400	33,400
	VALVE	6" AIR OPERATED, 150 #, CS, FLANGED	EST	2	EA	14,000		28,000	0	17.30	40	SPNG	94.41	3,800	31,800
	VALVE	8" AIR OPERATED, 150 #, CS, FLANGED	EST	4	EA	17,000		68,000	0	19.30	89	SPNG	94.41	8,400	76,400
	EXCAVATION / BACKFILL	FOR UNDERGROUND PIPING	EST	667	CY			0	0	0.20	153	EXFD	90.00	13,800	13,800
	BEDDING	FOR UNDERGROUND PIPING	EST	89	CY		35.0	0	3,100	0.25	26	EXFD	90.00	2,300	5,400
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	60	EA		75.00	0	4,500	2.50	173	MECH	88.89	15,300	19,800
7.6	SDA SUPERSTRUCTURE							75,000	764,900					1,227,300	2,067,200
	PENTHOUSE FOR SDA'S	TOTAL SUPPORT STEEL AND PURLINS	EST	138	TN		2650.0	0	364,400	30.00	4,744	STST	105.71	501,500	865,900
	ROOFING FOR SDA PENTHOUSE	STANDING SEAM TYPE	EST	10,000	SF		18.00	0	180,000	0.22	2,530	ROOF	69.12	174,900	354,900
	SIDING		EST	13,000	SF		12.00	0	156,000	0.11	1,645	SDNG	93.41	153,600	309,600
	CONCRETE FLOOR FOR PENTHOUSE	INCLUDES DECKING AND FORMWORK	EST	150	CY		230.00	0	34,500	7.50	1,294	CONP	79.64	103,000	137,500
	H&V		EST	3	LT	25000	10000	75,000	30,000	1050.00	3,623	HVAC	81.24	294,300	399,300
7.7	SDA BOTTOM ENCLOSURE - SUPPORT STEEL, GIRTS AND SIDING	TOTAL FOR THREE ABSORBERS	EST	9,053	SF		40.00	0	362,100	0.35	3,644	STST	105.71	385,200	747,300
7.8	SDA SHELL / ROOF INSULATION	61,000 SF. SUBCONTRACT COST INCLUDES LABOR	EST	61,000	SF	30		1,830,000	0		0	DINS	81.75	0	1,830,000
7.9	SDA - SUPPORT STEEL & ACCESS GALLERY							0	711,000					1,884,100	2,595,100
	SUPPORT STEEL	MATERIAL INCLUDED WITH OEM EQUIPMENT	EST	435	TN			0	0	24.00	12,006	STST	105.71	1,269,200	1,269,200
	ACCESS GALLERY		EST	15,800	SF		45.00	0	711,000	0.40	7,268	GALL	84.61	614,900	1,325,900
7.10	EXPANSION JOINTS		EST	850	LF		230.00	0	195,500	2.00	1,955	MECH	88.89	173,800	369,300
7.11	DUCTWORK							0	4,797,000					10,481,700	15,278,700
	SPRAY DRYER INLET	INCLUDES INTERNAL BRACING AND TURNING VANES	EST	1,476	TN		3,250.00	0	4,797,000	50.00	84,870	FLDU	107.96	9,162,600	13,959,600
	SPRAY DRYER OUTLET TO FABRIC FILTER INLET	INSTALLATION ONLY - MATERIAL INCLUDED WITH OEM EQUIPMENT	EST	213	TN			0	0	50.00	12,219	FLDU	107.96	1,319,100	1,319,100
7.12	DUCT SUPPORT STEEL	THREE COAT SHOP PAINT	EST	738	TN		2,900.00	0	2,140,200	24.00	20,369	STST	105.71	2,153,200	4,293,400
7.13	DUCTWORK INSULATION & LAGGING		EST	136,000	SF		12.00	0	1,632,000	0.25	39,100	DINS	81.75	3,196,400	4,828,400
7.14	CONCRETE PIT FOR ELEVATOR		EST	12	CY		230.00	0	2,800	7.50	104	CONP	79.64	8,200	11,000
7.15	SPRAY DRYER ABSORBER - FOUNDATIONS	TOTAL FOR THREE TOWERS						0	1,678,600					3,323,400	5,002,000
	EXCAVATION / BACKFILL		EST	16,000	CY			0	0	0.36	6,624	EXFD	90.00	596,200	596,200
	REINFORCING		EST	600	TN		1,150.00	0	690,000	20.00	13,800	REIN	78.27	1,080,100	1,770,100
	FORMWORK		EST	23,000	SF		2.50	0	57,500	0.14	3,703	FORM	99.43	368,200	425,700
	CONCRETE		EST	7,500	CY		105.00	0	787,500	1.50	12,938	CONP	79.64	1,030,300	1,817,800
	MUD MAT		EST	510	CY		105.00	0	53,600	1.50	880	CONP	79.64	70,100	123,700
	EMBEDDED STEEL		EST	36,000	LB		2.50	0	90,000	0.06	2,484	CARP	71.88	178,500	268,500
7.16	FOUNDATIONS FOR SUPPORT STEEL							0	69,000					143,000	212,000
	EXCAVATION / BACKFILL		EST	784	CY			0	0	0.36	324	EXFD	90.00	29,200	29,200
	REINFORCING		EST	23	TN		1,150.00	0	26,100	20.00	522	REIN	78.27	40,900	67,000
	FORMWORK		EST	1,125	SF		2.50	0	2,800	0.14	181	FORM	99.43	18,000	20,800
	CONCRETE		EST	303	CY		105.00	0	31,800	1.50	522	CONP	79.64	41,600	73,400

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	MUD MAT		EST	43	CY		105.00	0	4,500	1.50	73	CONP	79.64	5,800	10,300
	EMBEDDED STEEL		EST	1,513	LB		2.50	0	3,800	0.06	104	CARP	71.88	7,500	11,300
7.17	GROUNDING							0	16,000		0			46,100	62,100
	GROUND ROD	3/4" - 20' LONG	EST	16	EA		150	0	2,400	4.00	74	WIRE	98.84	7,300	9,700
	500 MCM	BARE COPPER WIRE	EST	1,650	FT		7.65	0	12,600	0.12	228	WIRE	98.84	22,500	35,100
	CADWELD		EST	64	EA		15	0	1,000	2.00	147	WIRE	98.84	14,500	15,500
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	16.00	18	WIRE	98.84	1,800	1,800
7.18	LIGHTING/ TRANSFORMERS & PANELS							156,000	150,000		0			159,100	465,100
	LIGHT FIXTURES		EST	200	EA		750	0	150,000	4.00	920	WIRE	98.84	90,900	240,900
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	6	EA	10000		60,000	0	40.00	276	WIRE	98.84	27,300	87,300
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	6	EA	7500		45,000	0	32.00	221	WIRE	98.84	21,800	66,800
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	6	EA	5000		30,000	0	16.00	110	WIRE	98.84	10,900	40,900
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	6	EA	3500		21,000	0	12.00	83	WIRE	98.84	8,200	29,200
7.19	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE INCLUDED IN SECTION 1.0 - ID FANS													
7.20	COMMUNICATIONS		EST	1	LT		17,000.00	0	17,000	114.00	131	WIRE	98.84	13,000	30,000
7.21	LIGHTNING PROTECTION		EST	1	LT		25,500.00	0	25,500	163.00	187	WIRE	98.84	18,500	44,000
7.22	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							42,006,800	12,606,500		514,702			47,650,900	102,264,200
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE	2 CRANES		9	MN	90,000.00		810,000	0	1440.00	14,904	MECH	88.89	1,523,520	2,333,520
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										7,765,230
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						44,757		83.48	3,736,000	3,736,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						57,436			4,029,230	4,029,230
	PER DIEM	NONE		0.00	HR						631,800			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				63,033					238,255	301,287
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				630,325						630,325
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			2,100,340							2,100,340
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				630,325					2,382,545	3,012,870
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				1,890,975					7,147,635	9,038,610
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							2,910,300	3,214,700					19,057,200	25,182,200
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SPRAY DRYER ABSORBER ISLAND						44,917,100	15,821,200					66,708,100	127,446,400
8.0	ACTIVATED CARBON INJECTION SYSTEM														0
8.1	ACI MECHANICAL EQUIPMENT:		EST	1	LT	3046400		3,046,400	0	9900.00	11,385	MECH	88.89	1,012,000	4,058,400
	PAC CARBON STORAGE SILO	INCLUDED WITH ACI MECHANICAL EQUIPMENT	EST	1	LT			0	0		0	MECH	88.89	0	0
	BIN VENT FILTER	INCLUDED WITH ACI MECHANICAL EQUIPMENT	EST	1	LT			0	0		0	MECH	88.89	0	0
	SUPPORT STEEL	INCLUDED WITH ACI MECHANICAL EQUIPMENT	EST	1	LT			0	0		0	MECH	88.89	0	0
	ROOF ACCESS LADDER	INCLUDED WITH ACI MECHANICAL EQUIPMENT	EST	1	LT			0	0		0	MECH	88.89	0	0

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	ROOF MOUNTED JIB CRANE	INCLUDED WITH ACI MECHANICAL EQUIPMENT	EST	1	LT			0	0		0	MECH	88.89	0	0
	INSTRUMENTATION FOR SILO	INCLUDED WITH ACI MECHANICAL EQUIPMENT	EST	1	LT			0	0		0	MECH	88.89	0	0
	PRESSURE VACUUM RELIEF	INCLUDED WITH ACI MECHANICAL EQUIPMENT	EST	1	LT			0	0		0	MECH	88.89	0	0
	3X50% PAC FEED TRAIN	INCLUDED WITH ACI MECHANICAL EQUIPMENT	EST	1	LT			0	0		0	MECH	88.89	0	0
	FEED HOPPERS WITH ROTARY FEEDERS	INCLUDED WITH ACI MECHANICAL EQUIPMENT	EST	1	LT			0	0		0	MECH	88.89	0	0
	GRAVIMETRIC FEEDERS	INCLUDED WITH ACI MECHANICAL EQUIPMENT	EST	1	LT			0	0		0	MECH	88.89	0	0
	REGENERATIVE BLOWERS AND EDUCTORS	INCLUDED WITH ACI MECHANICAL EQUIPMENT	EST	1	LT			0	0		0	MECH	88.89	0	0
	PAC LOADING PIPE WITH CERAMIC BACKED ELBOWS	INCLUDED WITH ACI MECHANICAL EQUIPMENT	EST	1	LT			0	0		0	MECH	88.89	0	0
	PAC DISTRIBUTION MANIFOLD AND LANCES	INCLUDED WITH ACI MECHANICAL EQUIPMENT	EST	1	LT			0	0		0	MECH	88.89	0	0
8.2	PIPING - MECHANICAL		EST	1	LT			29,800	149,800					377,100	556,700
	LARGE BORE PIPING	2" CS, SCH 80 WELDED	EST	150	LF		22.2	0	3,300	1.26	217	SPNG	94.41	20,500	23,800
	LARGE BORE PIPING	10" CS, SCH 40 WELDED	EST	1,200	LF		110.3	0	132,400	2.40	3,312	SPNG	94.41	312,700	445,100
	VALVE	2" GATE 150 #, CS, WELDED	EST	4	EA	960		3,800	0	5.60	26	SPNG	94.41	2,400	6,200
	VALVE	10" GATE, 150 #, CS, WELDED	EST	4	EA	6,500		26,000	0	16.10	74	SPNG	94.41	7,000	33,000
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	113	EA		125.00	0	14,100	3.00	388	MECH	88.89	34,500	48,600
8.3	ACI SYSTEM - FOUNDATIONS							0	41,500					88,000	129,500
	EXCAVATION / BACKFILL		EST	404	CY			0	0	0.36	167	EXFD	90.00	15,100	15,100
	REINFORCING		EST	14.0	TN		1,150.00	0	16,100	20.00	322	REIN	78.27	25,200	41,300
	FORMWORK		EST	1,050	SF		2.50	0	2,600	0.14	169	FORM	99.43	16,800	19,400
	CONCRETE		EST	175	CY		105.00	0	18,400	1.50	302	CONP	79.64	24,000	42,400
	MUD MAT		EST	25	CY		105.00	0	2,600	1.50	43	CONP	79.64	3,400	6,000
	EMBEDDED STEEL		EST	705	LB		2.50	0	1,800	0.06	49	CARP	71.88	3,500	5,300
8.4	MCC							61,800	0					3,600	65,400
	480V MCC	PER LINE UP	EST	2	EA	30900		61,800	0	16.00	37	WIRE	98.84	3,600	65,400
8.5	GROUNDING							5,500	0					18,600	24,100
	GROUND ROD	3/4" - 20' LONG	EST	8	EA	150		1,200	0	4.00	37	WIRE	98.84	3,600	4,800
	500 MCM	BARE COPPER WIRE	EST	500	FT	7.65		3,800	0	0.12	69	WIRE	98.84	6,800	10,600
	CADWELD		EST	32	EA	15		500	0	2.00	74	WIRE	98.84	7,300	7,800
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	8.00	9	WIRE	98.84	900	900
8.6	LIGHTING / TRANSFORMERS & PANELS							26,000	15,000					20,400	61,400
	LIGHT FIXTURES		EST	20	EA		750	0	15,000	4.00	92	WIRE	98.84	9,100	24,100
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	1	EA	10000		10,000	0	40.00	46	WIRE	98.84	4,500	14,500
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	1	EA	7500		7,500	0	32.00	37	WIRE	98.84	3,600	11,100
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	1	EA	5000		5,000	0	16.00	18	WIRE	98.84	1,800	6,800
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	1	EA	3500		3,500	0	12.00	14	WIRE	98.84	1,400	4,900
8.7	RACEWAY, CABLE TRAY, & CONDUIT							0	89,900					302,900	392,800
	12" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	300	LF		18.25	0	5,500	1.10	330	WIRE	98.84	32600	38,100
	18" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	200	LF		21.50	0	4,300	1.45	290	WIRE	98.84	28700	33,000
	5" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	200	LF		61.00	0	12,200	1.13	225	WIRE	98.84	22300	34,500

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	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	250	LF		31.00	0	7,800	0.81	202	WIRE	98.84	19900	27,700
	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	300	LF		21.50	0	6,500	0.65	194	WIRE	98.84	19100	25,600
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	300	LF		9.25	0	2,800	0.35	106	WIRE	98.84	10400	13,200
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	500	LF		7.15	0	3,600	0.28	142	WIRE	98.84	14000	17,600
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	2,000	LF		4.44	0	8,900	0.24	478	WIRE	98.84	47200	56,100
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	3,000	LF		3.23	0	9,700	0.19	669	WIRE	98.84	66200	75,900
	DUCT BANK WITH 12-5" & 6-3" CONDUITS	3.08' H X 5.2' W	EST	75	LF		381.96	0	28,600	6.48	559	ECND	75.97	42500	71,100
8.8	LOW VOLTAGE POWER CABLE & TERMINATION							0	14,400					18,000	32,400
	#4/0 - #12 AWG-600V		EST	2,000	LF		7.22	0	14,400	0.08	182	WIRE	98.84	18000	32,400
8.9	CONTROL & INSTRUMENT CABLE							0	16,000					44,900	60,900
	#14, #16 & PR # 20 & SHLD WIRE	#14, #16 & PR # 20 & SHLD WIRE	EST	5,000	LF		3.20	0	16,000	0.08	454	WIRE	98.84	44900	60,900
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							3,169,500	326,600		20,717			1,885,500	5,381,600
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										307,970
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						1,801		83.48	150,000	150,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						2,252			157,970	157,970
	PER DIEM	NONE		0.00	HR						24,770			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				1,633					9,428	11,061
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				16,330						16,330
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			158,475							158,475
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				16,330					94,275	110,605
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				48,990					282,825	331,815
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							158,500	83,300					694,500	936,300
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	ACTIVATED CARBON INJECTION SYSTEM						3,328,000	409,900					2,580,000	6,317,900
9.0	COMPRESSED AIR SYSTEM														0
9.1	AIR COMPRESSOR & AUXILIARIES							832,000	0					184,600	1,016,600
	AIR COMPRESSOR	4000 CFM, OIL FREE	EST	2	EA	343000		686,000	0	750.00	1,725	MECH	88.89	153,300	839,300
	DRYERS	DESSICANT TYPE, HEATED AIR	EST	2	EA	59000		118,000	0	115.00	265	MECH	88.89	23,500	141,500
	RECEIVERS	3000 GAL WITH SAFETY RELIEF VALVE AND PRESSURE GAUGE	EST	2	EA	14000		28,000	0	38.00	87	MECH	88.89	7,800	35,800
9.2	PIPING - MECHANICAL							543,100	722,600					2,151,100	3,416,800
	LARGE BORE PIPING	4" CS, SCHEDULE 40, WELDED	EST	2,500	LF		23.0	0	57,500	1.48	4,255	SPNG	94.41	401,700	459,200
	LARGE BORE PIPING	6" CS, SCH 40 WELDED	EST	100	LF		41.7	0	4,200	1.61	185	SPNG	94.41	17,500	21,700
	LARGE BORE PIPING	4" SS, SCHEDULE 40, WELDED	EST	500	LF		68.3	0	34,200	1.82	1,047	SPNG	94.41	98,800	133,000
	LARGE BORE PIPING	6" SS, SCHEDULE 40, WELDED	EST	200	LF		111.0	0	22,200	2.02	465	SPNG	94.41	43,900	66,100
	LARGE BORE PIPING	8" SS, SCHEDULE 40, WELDED	EST	700	LF		179.9	0	125,900	2.49	2,004	SPNG	94.41	189,200	315,100
	SMALL BORE PIPING	2" CS, SCH 80 WELDED, UNDERGROUND WRAPPED	EST	2,500	LF		22.20	0	55,500	1.26	3,623	SPNG	94.41	342,000	397,500

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				ORDER OF MAGNITUDE COST ESTIMATE										Preparer:	MNO
		Cost Type:												Reviewer:	JMK
		Est=Estimated												Approver:	PEF
		Allow.=Allowance								Wage Rates Based on:		BIG SANDY			
		Q=Vendor Quote								Labor Productivity =		1.15			

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" CS, SCH 80 WELDED	EST	200	LF		19.30	0	3,900	1.16	267	SPNG	94.41	25,200	29,100
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	700	LF		48.80	0	34,200	1.44	1,159	SPNG	94.41	109,400	143,600
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	3,500	LF		33.70	0	118,000	1.32	5,313	SPNG	94.41	501,600	619,600
	VALVE	2" GLOBE, 150# SS, WELDED	EST	100	EA	1,450		145,000	0	5.64	649	SPNG	94.41	61,200	206,200
	VALVE	4" GATE, 150 #, CS, WELDED	EST	10	EA	2,500		25,000	0	7.70	89	SPNG	94.41	8,400	33,400
	VALVE	4" GATE, 150 #, SS, WELDED	EST	10	EA	3,400		34,000	0	9.24	106	SPNG	94.41	10,000	44,000
	VALVE	6" GATE, 150 #, SS, WELDED	EST	2	EA	4,700		9,400	0	12.96	30	SPNG	94.41	2,800	12,200
	VALVE	8" GATE, 150 #, SS, WELDED	EST	14	EA	6,240		87,400	0	15.96	257	SPNG	94.41	24,300	111,700
	VALVE	<2" GLOBE, 150# CS, WELDED	EST	10	EA	450		4,500	0	3.40	39	SPNG	94.41	3,700	8,200
	VALVE	<2" GLOBE, 150# SS, WELDED	EST	300	EA	750	750.00	225,000	225,000	4.08	1,408	SPNG	94.41	132,900	582,900
	VALVE	2" GLOBE, 150# CS, WELDED	EST	15	EA	850		12,800	0	4.20	72	SPNG	94.41	6,800	19,600
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	840	EA		50.00	0	42,000	2.00	1,932	MECH	88.89	171,700	213,700
9.3	AIR COMPRESSOR BUILDING - FOUNDATIONS							0	96,100					194,700	290,800
	EXCAVATION / BACKFILL		EST	950	CY			0	0	0.36	393	EXFD	90.00	35,400	35,400
	REINFORCING		EST	35	TN		1,150.00	0	40,300	20.00	805	REIN	78.27	63,000	103,300
	FORMWORK		EST	1,600	SF		2.50	0	4,000	0.14	258	FORM	99.43	25,600	29,600
	CONCRETE		EST	450	CY		105.00	0	47,300	1.50	776	CONP	79.64	61,800	109,100
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	1,800	LB		2.50	0	4,500	0.06	124	CARP	71.88	8,900	13,400
9.4	AIR COMPRESSOR BUILDING	100' L X 600' W X 20' H						0	510,000					0	510,000
	PREENGINEERED BUILDING INCLUDING H&V AND LIGHTING	SUBCONTRACT PRICE, INCLUDES LABOR	EST	6,000	SF		85	0	510,000	0.00	0	STST	105.71	0	510,000
9.5	LIGHTING/ TRANSFORMERS & PANELS							11,000	10,500					11,400	32,900
	LIGHT FIXTURES		EST	14	EA		750	0	10,500	4.00	64	WIRE	98.84	6,400	16,900
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	1	EA	7500		7,500	0	32.00	37	WIRE	98.84	3,600	11,100
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	1	EA	3500		3,500	0	12.00	14	WIRE	98.84	1,400	4,900
9.6	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE ARE INCLUDED IN SECTION 1.0 - ID FANS													
9.7	GROUNDING							4,500	0					10,900	15,400
	GROUND ROD	3/4" - 20' LONG EACH	EST	4	EA	150		600	0	4.00	18	WIRE	98.84	1,800	2,400
	500 MCM	BARE COPPER WIRE	EST	500	FT	7.65		3,800	0	0.12	69	WIRE	98.84	6,800	10,600
	CADWELD		EST	8	EA	15		100	0	2.00	18	WIRE	98.84	1,800	1,900
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	4.00	5	WIRE	98.84	500	500
9.8	DUCT BANK	3-5" & 3-3" CONDUITS	EST	150	LF		132.94	0	19,900	3.31	570	ECND	75.97	43,300	63,200
9.9	COMMUNICATIONS		EST	1	LT		34,000.00	0	34,000	229.00	263	WIRE	98.84	26,000	60,000
9.10	LIGHTNING PROTECTION		EST	1	LT		10,500.00	0	10,500	66.00	76	WIRE	98.84	7,500	18,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							1,390,600	1,403,600		28,467			2,629,500	5,423,700
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										424,062
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						2,475		83.48	207,000	207,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						3,094			217,062	217,062

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Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	PER DIEM	NONE		0.00	HR						34,036			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				7,018					13,148	20,166
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				70,180						70,180
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			69,530							69,530
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				70,180					131,475	201,655
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				210,540					394,425	604,965
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							69,500	357,900					963,100	1,390,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	COMPRESSED AIR SYSTEM						1,460,100	1,761,500					3,592,600	6,814,300
10.0	SERVICE WATER SYSTEM														
10.1	PUMPS	INCLUDES SELF-CLEANING STRAIINERS						260,000	0					110,500	370,500
	SERVICE WATER PUMPS	4000 GPM, 200 HP	EST	2	EA	60000		120,000	0	240.00	552	MECH	88.89	49,100	169,100
	RIVER WATER BOOSTER PUMPS	4000 GPM, 100 HP	EST	2	EA	48000		96,000	0	220.00	506	MECH	88.89	45,000	141,000
	SELF-CLEANING STRAIINERS	DUPLEX, 4000 GPM	EST	2	EA	22000		44,000	0	80.00	184	MECH	88.89	16,400	60,400
10.2	PIPING - MECHANICAL		EST	1	LT			177,400	535,300					1,006,000	1,718,700
	LARGE BORE PIPING	4" SS, SCHEDULE 40, WELDED	EST	780	LF		68.3	0	53,300	1.82	1,633	SPNG	94.41	154,100	207,400
	LARGE BORE PIPING	6" SS, SCHEDULE 40, WELDED	EST	810	LF		111.0	0	89,900	2.02	1,882	SPNG	94.41	177,600	267,500
	LARGE BORE PIPING	8" SS, SCHEDULE 40, WELDED	EST	510	LF		179.9	0	91,700	2.49	1,460	SPNG	94.41	137,900	229,600
	LARGE BORE PIPING	12" SS, SCHEDULE 40, WELDED	EST	600	LF		353.8	0	212,300	4.12	2,843	SPNG	94.41	268,400	480,700
	LARGE BORE PIPING	14" HDPE (UNDERGROUND)	EST	450	LF		65.5	0	29,500	1.02	528	SPNG	94.41	49,800	79,300
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	450	LF		48.80	0	22,000	1.44	745	SPNG	94.41	70,400	92,400
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	30	LF		33.70	0	1,000	1.32	46	SPNG	94.41	4,300	5,300
	VALVE	4" GATE, 150 #, SS, WELDED	EST	20	EA	3,400		68,000	0	9.24	213	SPNG	94.41	20,100	88,100
	VALVE	6" GATE, 150 #, SS, WELDED	EST	10	EA	4,700		47,000	0	12.96	149	SPNG	94.41	14,100	61,100
	VALVE	8" GATE, 150 #, SS, WELDED	EST	10	EA	6,240		62,400	0	15.96	184	SPNG	94.41	17,300	79,700
	VALVE	14" BFLY 150# SS, FLANGED	EST	0	EA	7,500		0	0	19.76	0	SPNG	94.41	0	0
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	270	EA		125.00	0	33,800	3.00	932	MECH	88.89	82,800	116,600
	EXCAVATION / BACKFILL	FOR UNDERGROUND PIPING	EST	380	CY			0	0	0.20	87	EXFD	90.00	7,900	7,900
	BEDDING	FOR UNDERGROUND PIPING	EST	50	CY		35.0	0	1,800	0.25	14	EXFD	90.00	1,300	3,100
10.3	PIPING - FIRE PROTECTION SYSTEM		EST	1	LT			434,900	415,600	89.55	10,821	0	1207.47	1,014,300	1,864,800
	LARGE BORE PIPING	4" CS, SCHEDULE 40, WELDED	EST	400	LF		24.4	0	9,800	0.73	336	SPNG	94.41	31,700	41,500
	LARGE BORE PIPING	8" CS, SCHEDULE 40, WELDED	EST	600	LF		64.2	0	38,500	0.98	676	SPNG	94.41	63,800	102,300
	LARGE BORE PIPING	12" CS, SCHEDULE 40, WELDED	EST	300	LF		174.6	0	52,400	1.43	493	SPNG	94.41	46,600	99,000
	LARGE BORE PIPING	20" HDPE (UNDERGROUND)	EST	4,000	LF		72.8	0	291,200	1.45	6,670	SPNG	94.41	629,700	920,900
	VALVE	4" GATE, 150 #, CS, WELDED	EST	15	EA	2,500		37,500	0	7.70	133	SPNG	94.41	12,500	50,000
	VALVE	8" GATE, 150 #, CS, WELDED	EST	12	EA	4,800		57,600	0	13.30	184	SPNG	94.41	17,300	74,900
	VALVE	10" GATE, 150 #, CS, WELDED	EST	8	EA	6,500		52,000	0	16.10	148	SPNG	94.41	14,000	66,000
	VALVE	10" GATE WITH PIV, 150 #, CS, WELDED	EST	30	EA	7,000		210,000	0	17.71	611	SPNG	94.41	57,700	267,700
	VALVE	12" GATE, 150 #, CS, WELDED	EST	4	EA	8,200		32,800	0	19.20	88	SPNG	94.41	8,300	41,100
	FIRE HYDRANTS		EST	30	EA	1,500		45,000	0	8.00	276	MECH	88.89	24,500	69,500
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	108	EA		75.00	0	8,100	2.50	311	MECH	88.89	27,700	35,800
	EXCAVATION / BACKFILL	FOR UNDERGROUND PIPING	EST	3,333	CY			0	0	0.20	767	EXFD	90.00	69,000	69,000
	BEDDING	FOR UNDERGROUND PIPING	EST	444	CY		35.0	0	15,600	0.25	128	EXFD	90.00	11,500	27,100
10.4	TANKS							0	150,000					0	150,000
	SERVICE WATER TANKS	25,000 GAL, CS, 16' DIA X 20' - SUBCONTRACT PRICE INCLUDES LABOR WITH EXTERIOR PRIMED AND FIELD PAINTED	EST	2	EA		75000.0	0	150,000	0.00	0	TANK	89.16	0	150,000
10.5	SERVICE WATER TANK & PUMP - FOUNDATIONS							0	69,800					117,200	187,000
	EXCAVATION / BACKFILL		EST	0	CY			0	0	0.36	0	EXFD	90.00	0	0
	REINFORCING		EST	35.0	TN		1,150.00	0	40,300	20.00	805	REIN	78.27	63,000	103,300
	FORMWORK		EST	1,100	SF		2.50	0	2,800	0.14	177	FORM	99.43	17,600	20,400
	CONCRETE		EST	100	CY		105.00	0	10,500	1.50	173	CONP	79.64	13,700	24,200
	MUD MAT		EST	130	CY		105.00	0	13,700	1.50	224	CONP	79.64	17,900	31,600
	EMBEDDED STEEL		EST	1,000	LB		2.50	0	2,500	0.06	69	CARP	71.88	5,000	7,500

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Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
10.6	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE ARE INCLUDED IN SECTION 1.0 - ID FANS													
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							872,300	1,170,700		24,225			2,248,000	4,291,000
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										360,721
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						2,107		83.48	176,000	176,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						2,633			184,721	184,721
	PER DIEM	NONE		0.00	HR						28,965			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				5,854					11,240	17,094
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				58,535						58,535
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			43,615							43,615
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				58,535					112,400	170,935
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				175,605					337,200	512,805
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							43,600	298,500					821,600	1,163,700
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SERVICE WATER SYSTEM						915,900	1,469,200					3,069,600	5,454,700
11.0	POTABLE WATER SYSTEM														
11.1	PUMPS							30,000	0					18,400	48,400
	POTABLE WATER BOOSTER PUMPS	50 GPM, 5 HP	EST	2	EA	15000		30,000	0	90.00	207	MECH	88.89	18,400	48,400
11.2	PIPING - MECHANICAL		EST	1	LT			99,500	235,600					673,200	1,008,300
	LARGE BORE PIPING	4" SS, SCHEDULE 40, WELDED	EST	1,000	LF		68.3	0	68,300	1.82	2,093	SPNG	94.41	197,600	265,900
	LARGE BORE PIPING	6" SS, SCHEDULE 40, WELDED	EST	800	LF		111.0	0	88,800	2.02	1,858	SPNG	94.41	175,500	264,300
	LARGE BORE PIPING	8" HDPE (UNDERGROUND)	EST	1,500	LF		14.1	0	21,200	0.83	1,432	SPNG	94.41	135,200	156,400
	SMALL BORE PIPING	2" D.I. SCH 80 (UNDERGROUND)	EST	500	LF		15.00	0	7,500	0.30	173	SPNG	94.41	16,300	23,800
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	200	LF		33.70	0	6,700	1.32	304	SPNG	94.41	28,700	35,400
	SMALL BORE PIPING	2" COPPER	EST	300	LF		28.50	0	8,600	0.43	148	SPNG	94.41	14,000	22,600
	VALVE	2" GLOBE, 150# CS, WELDED	EST	10	EA	850		8,500	0	4.20	48	SPNG	94.41	4,600	13,100
	VALVE	<2" GLOBE, 150# SS, WELDED	EST	8	EA	750	750.00	6,000	6,000	4.08	38	SPNG	94.41	3,500	15,500
	VALVE	4" GATE, 150 #, SS, WELDED	EST	20	EA	4,250		85,000	0	9.24	213	SPNG	94.41	20,100	105,100
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	150	EA		60.00	0	9,000	2.50	431	MECH	88.89	38,300	47,300
	EXCAVATION / BACKFILL	FOR UNDERGROUND PIPING	EST	1,250	CY			0	0	0.20	288	EXFD	90.00	25,900	25,900
	BEDDING	FOR UNDERGROUND PIPING	EST	167	CY		35.0	0	5,800	0.25	48	EXFD	90.00	4,300	10,100
11.3	TANKS							0	8,500					0	8,500
	POTABLE WATER TANK	1,000 GAL, SS, 5' DIA X 8' - SUBCONTRACT PRICE INCLUDES LABOR	EST	1	EA		8500.0	0	8,500	0.00	0	TANK	89.16	0	8,500
11.4	POTABLE WATER TANK & PUMP - FOUNDATIONS							0	5,200					9,200	14,400
	EXCAVATION / BACKFILL		EST	20	CY			0	0	0.36	8	EXFD	90.00	700	700
	REINFORCING		EST	3.0	TN		1,150.00	0	3,500	20.00	69	REIN	78.27	5,400	8,900
	FORMWORK		EST	75	SF		2.50	0	200	0.14	12	FORM	99.43	1,200	1,400
	CONCRETE		EST	12	CY		105.00	0	1,300	1.50	21	CONP	79.64	1,600	2,900
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	60	LB		2.50	0	200	0.06	4	CARP	71.88	300	500

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		Cost Type:												Reviewer:	JMK
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Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
11.5	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE ARE INCLUDED IN SECTION 1.0 - ID FANS													
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							129,500	235,600		7,394			691,600	1,056,700
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										110,379
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						643		83.48	54,000	54,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						804			56,379	56,379
	PER DIEM	NONE		0.00	HR						8,840			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				1,178					3,458	4,636
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				11,780						11,780
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			6,475							6,475
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				11,780					34,580	46,360
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				35,340					103,740	139,080
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							6,500	60,100					252,200	318,700
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	POTABLE WATER SYSTEM						135,975	295,678					943,757	1,375,410
12.0	FGD SUBSTATION														
12.1	TRANSFORMERS							1,670,000	0					282,200	1,952,200
	FGD SUBSTATION-AUX TRANSFORMERS: 11A & 11B	138KV-13.8KV- 2 WINDING XFMR	EST	2	EA	750000		1,500,000	0	1250.00	2,875	EHEA	79.16	227,600	1,727,600
	TRANSFORMERS: 32F, 32G	13.8KV-480V,3PHASE, 2 WINDING CAST COIL	EST	2	EA	85000		170,000	0	300.00	690	EHEA	79.16	54,600	224,600
12.2	TRANSFORMER PDC	15W X 45' X 10'H. SUBCONTRACT PRICE INCLUDES LABOR	EST	675.0	SF	300.0		202500.0	0.0	0.0	0.0	STST	105.71	0.0	202500.0
12.3	TRANSFORMER PDC - FOUNDATION							0	73,200					146,900	220,100
	EXCAVATION / BACKFILL		EST	700	CY			0	0	0.36	290	EXFD	90.00	26,100	26,100
	REINFORCING		EST	26	TN		1,150.00	0	30,200	20.00	604	REIN	78.27	47,300	77,500
	FORMWORK		EST	1,100	SF		2.50	0	2,800	0.14	177	FORM	99.43	17,600	20,400
	CONCRETE		EST	300	CY		105.00	0	31,500	1.50	518	CONP	79.64	41,200	72,700
	MUD MAT		EST	35	CY		105.00	0	3,700	1.50	60	CONP	79.64	4,800	8,500
	EMBEDDED STEEL		EST	2,000	LB		2.50	0	5,000	0.06	138	CARP	71.88	9,900	14,900
12.4	138KV MAIN FEEDER & TERMINATIONS							264,000	0					254,000	518,000
	138KV STRUCTURE AND SWITCH	STRUCTURE STEEL	EST	1	LT	103500		103,500	0	450.00	518	STST	105.71	54,700	158,200
	138KV MAIN FEEDER	1/C 750KCMIL- 138KV	EST	2,100	LF	51.75		108,700	0	0.69	1,671	WIRE	98.84	165,200	273,900
	138KV ACCESSORIES		EST	1	LT	51750		51,800	0	300.00	345	WIRE	98.84	34,100	85,900
12.5	SWITCHGEAR							994,200	0					121,600	1,115,800
	13.8 KV MEDIUM VOLTAGE (11A/B)	PRICE PER SECTION	EST	8	EA	85000		680,000	0	40.00	368	EHEA	79.16	29,100	709,100
	480V LOW VOLTAGE (32F/G)	PRICE PER SECTION	EST	5	EA	38000		190,000	0	16.00	92	EHEA	79.16	7,300	197,300
	EXISTING SCR SWITCHGEAR MODIFICATION	TURNKEY INCLUDING INSTALLATION & MATERIAL (EATON QUOTE 7/16/10)	Q	1	LT	124,200		124,200	0	750.00	863	WIRE	98.84	85,200	209,400
12.6	MCC	480V MCC, PER LINE UP	EST	2	EA	30000		60,000	0	16.00	37	WIRE	98.84	3,600	63,600
12.7	CABLE BUS							181,100	18,000					290,200	489,300

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	15KV CABLE BUS DUCT	BUS DUCT ONLY	EST	200	FT	442		88,400	0	3.30	759	WIRE	98.84	75,000	163,400
	480V CABLE BUS DUCT	BUS DUCT ONLY	EST	150	FT	618		92,700	0	10.30	1,777	WIRE	98.84	175,600	268,300
	CABLE BUS TERMINATION	500MCM - 15KV TERMINATIONS	EST	4	EA		1,800.00	0	7,200	33.00	152	WIRE	98.84	15,000	22,200
	CABLE BUS TERMINATION	750MCM- 480V TERMINATIONS	EST	4	EA		2,700.00	0	10,800	54.00	248	WIRE	98.84	24,600	35,400
12.8	PANELS - RELAY							100,000	0					9,100	109,100
	RELAY PANELS & INTERLOCK	ALLOWANCE	EST	1	LT	100000		100,000	0	80.00	92	WIRE	98.84	9,100	109,100
12.9	MIMIC PANELS		EST	1	EA	17500		17,500	0	40.00	46	WIRE	98.84	4,500	22,000
12.10	EMERGENCY POWER SYSTEM							108,300	0					24,400	132,700
	DC PANEL BOADRD		EST	1	EA	15500		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	UPS PANEL BOARDS		EST	1	EA	15500		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	SATELLITE UPS		EST	1	EA	41200		41,200	0	16.00	18	WIRE	98.84	1,800	43,000
	VRLA BATTERIES	8HR-400A, 480V	EST	1	LT	36050		36,100	0	120.00	138	WIRE	98.84	13,600	49,700
12.11	GROUNDING							23,300	0					59,100	82,400
	GROUND ROD	3/4" - 20' LONG EACH	EST	16	EA	150		2,400	0	4.00	74	WIRE	98.84	7,300	9,700
	500 MCM	BARE COPPER WIRE	EST	2,600	FT	7.65		19,900	0	0.12	359	WIRE	98.84	35,500	55,400
	CADWELD		EST	64	EA	15		1,000	0	2.00	147	WIRE	98.84	14,500	15,500
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	16.00	18	WIRE	98.84	1,800	1,800
12.12	LIGHTING/ TRANSFORMERS & PANELS							26,000	30,000					29,500	85,500
	LIGHT FIXTURES		EST	40	EA		750	0	30,000	4.00	184	WIRE	98.84	18,200	48,200
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	1	EA	10000		10,000	0	40.00	46	WIRE	98.84	4,500	14,500
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	1	EA	7500		7,500	0	32.00	37	WIRE	98.84	3,600	11,100
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	1	EA	5000		5,000	0	16.00	18	WIRE	98.84	1,800	6,800
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	1	EA	3500		3,500	0	12.00	14	WIRE	98.84	1,400	4,900
12.13	OUTDOOR LIGHTING	NEW AUX YARD LIGHTING - ALLOWANCE	EST	1	LT	25000		25,000	0	500.00	575	WIRE	98.84	56,800	81,800
12.14	RACEWAY, CABLE TRAY, & CONDUIT							0	390,600					1,918,600	2,309,200
	12" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,250	LF		18.25	0	22,800	1.10	1,581	WIRE	98.84	156,300	179,100
	18" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	750	LF		21.50	0	16,100	1.45	1,251	WIRE	98.84	123,600	139,700
	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	2,200	LF		27.10	0	59,600	1.75	4,428	WIRE	98.84	437,600	497,200
	36" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	600	LF		30.30	0	18,200	1.95	1,346	WIRE	98.84	133,000	151,200
	5" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,000	LF		61.00	0	61,000	1.13	1,296	WIRE	98.84	128,100	189,100
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,800	LF		31.00	0	55,800	0.81	1,670	WIRE	98.84	165,100	220,900
	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	2,000	LF		21.50	0	43,000	0.65	1,484	WIRE	98.84	146,600	189,600
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	3,000	LF		9.25	0	27,800	0.35	1,214	WIRE	98.84	120,000	147,800
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	3,700	LF		7.15	0	26,500	0.28	1,208	WIRE	98.84	119,400	145,900
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	6,200	LF		4.44	0	27,500	0.24	1,704	WIRE	98.84	168,400	195,900
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	10,000	LF		3.23	0	32,300	0.19	2,231	WIRE	98.84	220,500	252,800
12.15	DUCT BANK							0	26,200	0.05	0			54,300	80,500
	UNDERGROUND SURVEY FOR NEW DUCT BANK RUN	MAIN FEEDER BETWEEN EXISTING SCR SUBSTATION TO FGD AUX XFMR	EST	200	LF			0	0	0.80	184	ECND	75.97	14,000	14,000
	4' X 4' DUCT BANK (138KV SCR TO FGD AUX XFMR SUBSTATION)	6 - 6" PVC	EST	40	LF		375	0	15,000	6.25	288	ECND	75.97	21,800	36,800
	DUCT BANK WITH 6-5" & 4-3" CONDUITS	2.38' H X 4' W	EST	50	LF		223.02	0	11,200	4.24	244	ECND	75.97	18,500	29,700
12.16	HIGH VOLTAGE POWER CABLE & TERMINATION	1/C # 500KCMIL-15KV	EST	3,000	LF		9.27	0	27,800	0.23	794	WIRE	98.84	78400	106,200
12.17	LOW VOLTAGE POWER CABLE & TERMINATION							0	263,700		0			649,600	913,300
	3/C # 500KCMIL- 600V		EST	7,000	LF		26.12	0	182,800	0.69	5,555	WIRE	98.84	549000	731,800
	#4/0 - #12 AWG-600V		EST	11,200	LF		7.22	0	80,900	0.08	1,018	WIRE	98.84	100,600	181,500
12.18	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	EST	6,800	LF		3.20	0	21,800	0.08	618	WIRE	98.84	61,100	82,900
12.19	FOUNDATION FOR AUX TRANSFORMER							0	70,200					205,400	275,600
	EXCAVATION / BACKFILL		EST	1,000	CY			0	0	0.36	414	EXFD	90.00	37,300	37,300

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	REINFORCING		EST	20.0	TN		1,150.00	0	23,000	20.00	460	REIN	78.27	36,000	59,000
	FORMWORK		EST	5,000	SF		2.50	0	12,500	0.14	805	FORM	99.43	80,000	92,500
	CONCRETE		EST	190	CY		105.00	0	20,000	1.50	328	CONP	79.64	26,100	46,100
	MUD MAT		EST	45	CY		105.00	0	4,700	1.50	78	CONP	79.64	6,200	10,900
	EMBEDDED STEEL		EST	4,000	LB		2.50	0	10,000	0.06	276	CARP	71.88	19,800	29,800
12.20	FIREWALL FOR TRANSFORMERS							0	3,000					5,200	8,200
	REINFORCING		EST	1.0	TN		1,150.00	0	1,200	20.00	23	REIN	78.27	1,800	3,000
	FORMWORK		EST	80	SF		2.50	0	200	0.14	13	FORM	99.43	1,300	1,500
	CONCRETE		EST	15	CY		105.00	0	1,600	1.50	26	CONP	79.64	2,100	3,700
12.21	COMMUNICATIONS		EST	1	LT		17,000.00	0	17,000	114.00	131	WIRE	98.84	13,000	30,000
12.22	LIGHTNING PROTECTION		EST	1	LT		4,000.00	0	4,000	18.00	21	WIRE	98.84	2,000	6,000
12.23	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							3,671,900	953,500		44,795			4,276,500	8,901,900
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										666,572
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						3,895		83.48	325,000	325,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						4,869			341,572	341,572
	PER DIEM	NONE		0.00	HR						53,560			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				4,768					21,383	26,150
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				47,675						47,675
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			183,595							183,595
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				47,675					213,825	261,500
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				143,025					641,475	784,500
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							183,600	243,100					1,543,254	1,970,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FGD SUBSTATION						3,855,500	1,196,600					5,819,800	10,871,900
13.0	FGD DCS SYSTEM														0
13.1	DCS	3200 I/O POINTS	EST	3,200	EA	750		2,400,000	0	2.50	9,200	INEL	88.43	813,600	3,213,600
13.2	DCS - VENDOR FIELD SUPPORT	200 MANDAYS @ $1500/DAY - SHOWN AS SUBCONTRACT COST	EST	200	DAYS	1500		300,000	0		0	INEL	88.43	0	300,000
13.3	LOCALLY MOUNTED INSTRUMENTS							0	709,500					930,500	1,640,000
	LOCALLY MOUNTED INSTRUMENTS		EST	300	EA		2200	0	660,000	20.00	6,900	INEL	88.43	610,200	1,270,200
	INSTRUMENT RACKS	INCLUDED WITH INSTRUMENTS													
	INSTRUMENT TUBING	ALLOWANCE	EST	9,000	LF		5.5	0	49,500	0.35	3,623	INEL	88.43	320,300	369,800
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							2,700,000	709,500		19,723			1,744,100	5,153,600
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										293,387
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						1,715		83.48	143,000	143,000

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	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						2,144			150,387	150,387
	PER DIEM	NONE		0.00	HR						23,581			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				3,548					8,721	12,268
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				35,475						35,475
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			135,000							135,000
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				35,475					87,205	122,680
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				106,425					261,615	368,040
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							135,000	180,900					650,900	966,800
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FGD DCS SYSTEM						2,835,000	890,400					2,395,000	6,120,400
14.0	CEM SYSTEM														0
14.1	CEM	PROVIDED BY AEP		1	LT	1260000	540000	1,260,000	540,000					310,000	2,110,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							1,260,000	540,000					310,000	2,110,000
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				81,000						316,500
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														316,500
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	CEM SYSTEM													2,426,500
15.0	TRUCK & RAIL INFRASTRUCTURE														0
15.1	EXISTING RAILROAD IMPROVEMENTS	FOR FULL RAILCAR STORAGE TRACK IMPROVEMENTS - 3250 LF						0	660,200					689,200	1,349,400
	REMOVE AND REPLACE 8" OF THE BALLAST	INCLUDES DISPOSAL OF REMOVED BALLAST	EST	3,250	LF		12.25	0	39,800	0.16	598	RRTK	88.26	52,800	92,600
	REPLACE 75% OF THE EXISTING WOODEN RAILROAD TIES	INCLUDES TIE PLATES, SPIKES AND BOLTS	EST	1,950	LF		80	0	156,000	0.85	1,906	RRTK	88.26	168,200	324,200
	REMOVE THE EXISTING RAIL AND REPLACE WITH 132-LB RAIL		EST	3,250	LF		87.5	0	284,400	1.05	3,924	RRTK	88.26	346,400	630,800
	REPLACE EXISTING #8 TURNOUTS		EST	4	EA		45000	0	180,000	300.00	1,380	RRTK	88.26	121,800	301,800
15.2	EXISTING RAILROAD IMPROVEMENTS	FOR LOOP TRACK UPGRADE - 5000 LF						0	1,008,800					1,055,600	2,064,400
	REMOVE AND REPLACE 8" OF THE BALLAST	INCLUDES DISPOSAL OF REMOVED BALLAST	EST	5,000	LF		12.25	0	61,300	0.16	920	RRTK	88.26	81,200	142,500
	REPLACE 75% OF THE EXISTING WOODEN RAILROAD TIES	INCLUDES TIE PLATES, SPIKES AND BOLTS	EST	3,000	LF		80	0	240,000	0.85	2,933	RRTK	88.26	258,800	498,800
	REMOVE THE EXISTING RAIL AND REPLACE WITH 132-LB RAIL		EST	5,000	LF		87.5	0	437,500	1.05	6,038	RRTK	88.26	532,900	970,400
	REPLACE EXISTING #8 TURNOUTS		EST	6	EA		45000	0	270,000	300.00	2,070	RRTK	88.26	182,700	452,700
15.3	NEW RAILROAD TRACK	1400 LF. INCLUDES, 132LB RAIL, 7" TIMBERS, TIE PLATES, SPIKES, BOLTS, 12: SUBBALLAST, 12" BALLAST, 12 OZ/SY GEOTEXTILE MEMBRANE, 12" SUBGRADE PREP	EST	1,400	LF		180	0	252,000	1.50	2,415	RRTK	88.26	213,100	465,100
15.4	FIELD FABRICATED TURNOUTS	#8 TURNOUT	EST	2	EA		45000	0	90,000	270.00	621	RRTK	88.26	54,800	144,800
15.5	RAIL SCALE	SUBCONTRACT COST, INCLUDES FOUNDATIONS	EST	2	EA	106250		212,500	0	0.00	0	MECH	88.89	0	212,500
15.6	NEW CONCRETE ENCASEMENT	OVER AND AROUND DUCT BANK CONNECTING THE PLANT TO SWITCHYARD. THIS IS UNDER THE NEW TRACKWORK EXTENSION						0	33,200					71,400	104,600
	EXCAVATION / BACKFILL		EST	170	CY			0	0	0.36	70	EXFD	90.00	6,300	6,300
	REINFORCING		EST	13	TN		1,150.00	0	14,400	20.00	288	REIN	78.27	22,500	36,900
	FORMWORK		EST	1,350	SF		2.50	0	3,400	0.14	217	FORM	99.43	21,600	25,000
	CONCRETE		EST	113	CY		105.00	0	11,900	1.50	195	CONP	79.64	15,500	27,400
	MUD MAT		EST	20	CY		105.00	0	2,100	1.50	35	CONP	79.64	2,700	4,800

AEP
BIG SANDY UNIT 2
FGD PROJECT - IAQCS (N/ESP)-3B - 3.0 LB/MM BTU - PHASED
ORDER OF MAGNITUDE COST ESTIMATE

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Project No.: 12721-000
Date: 9/29/2010
Preparer: MNO
Reviewer: JMK
Approver: PEF

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Wage Rates Based on: BIG SANDY
Labor Productivity = 1.15

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	EMBEDDED STEEL		EST	567	LB		2.50	0	1,400	0.06	39	CARP	71.88	2,800	4,200
15.7	RAILCAR LIMESTONE UNLOADING HOPPER, CONVEYOR TUNNEL AND ESCAPE TUNNEL - FOUNDATIONS	FOR PHASE II INSTALLED IN PHASE I (FOR CONSTRUCTIBILITY)						0	542,000		0			1,613,400	2,155,400
	EXCAVATION / BACKFILL		EST	13,000	CY			0	0	0.36	5,382	EXFD	90.00	484,400	484,400
	REINFORCING		EST	200.0	TN		1,150.00	0	230,000	20.00	4,600	REIN	78.27	360,000	590,000
	FORMWORK		EST	27,000	SF		2.50	0	67,500	0.14	4,347	FORM	99.43	432,200	499,700
	CONCRETE		EST	2,000	CY		105.00	0	210,000	1.50	3,450	CONP	79.64	274,800	484,800
	MUD MAT		EST	90	CY		105.00	0	9,500	1.50	155	CONP	79.64	12,400	21,900
	EMBEDDED STEEL		EST	10,000	LB		2.50	0	25,000	0.06	690	CARP	71.88	49,600	74,600
15.8	MECHANICAL EQUIPMENT FOR LIMESTONE UNLOADING HOPPER	FOR PHASE II INSTALLED IN PHASE I						90,000	0					34,700	124,700
	SUMP PUMPS	2-EACH TRACK HOPPER PIT AND RECLAIM PIT. INCLUDES CHECK & ISOLATION VALVES		2	EA	35,000		70,000	0	140.00	322	MECH	88.89	28,600	98,600
	AGITATOR FOR SUMP PUMPS	10 HP		1	EA	20,000		20,000	0	60.00	69	MECH	88.89	6,100	26,100
15.9	PIPING - MECHANICAL	FOR PHASE II INSTALLED IN PHASE I						4,800	1,700		0			13,200	19,700
	LARGE BORE PIPING	2.5" CS, SCHEDULE 40, WELDED		125	LF		10.8	0	1,400	0.64	91	SPNG	94.41	8,600	10,000
	VALVE	2.5" GLOBE, 150 #, CS, WELDED	EST	5	EA	955		4,800	0	4.70	27	SPNG	94.41	2,600	7,400
	PIPE SUPPORTS			13	EA		25	0	300	1.50	22	MECH	88.89	2,000	2,300
15.10	TUNNEL HEATING & VENTILATION	TRACK HOPPER AND RECLAIM TUNNEL		1	EA	125,000		125,000	0	800.00	920	HVAC	81.24	74,700	199,700
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							432,300	2,587,900		43,724			3,820,100	6,840,300
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										650,405
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						3,802		83.48	317,000	317,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						4,753			333,405	333,405
	PER DIEM	NONE		0.00	HR						52,279			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				12,940					19,101	32,040
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				129,395						129,395
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			21,615							21,615
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				129,395					191,005	320,400
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				388,185					573,015	961,200
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							21,600	659,900					1,433,500	2,115,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	TRUCK & RAIL INFRASTRUCTURE						453,900	3,247,800					5,253,600	8,955,400
16.0	SITE IMPROVEMENTS - CIVIL WORK														
16.1	SITE GRADING							0	0					627,000	627,000
	CUT		EST	19,200	CY			0	0	0.08	1,766	ETWK	177.49	313,500	313,500
	FILL		EST	19,200	CY			0	0	0.08	1,766	ETWK	177.49	313,500	313,500
16.2	ROADS & SURFACING							0	996,600					1,358,800	2,355,400
	20' WIDE ACCESS ROAD	INCLUDES: 1.5" ASPHALT SURFACE COURSE 1.5" ASPHALT BINDER COURSE 12" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST	4,100	SY		47	0	192,700	0.40	1,886	PBIT	90.25	170,200	362,900

AEP
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	24' WIDE ACCESS ROAD	INCLUDES: 1.5" ASPHALT SURFACE COURSE 1.5" ASPHALT BINDER COURSE 12" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST	7,100	SY		47	0	333,700	0.40	3,266	PBIT	90.25	294,800	628,500
	24' WIDE ACCESS ROAD AGGREGATE SHOULDERS	INCLUDES: 12" BASE COURSE 10 OZ/SY GEOTEXTILE	EST	1,800	SY		17.5	0	31,500	0.10	207	BCSE	105.94	21,900	53,400
	LIME UNLOADING AREA	INCLUDES: 1.5" ASPHALT SURFACE COURSE 1.5" ASPHALT BINDER COURSE 12" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST	1,300	SY		47	0	61,100	0.40	598	PBIT	90.25	54,000	115,100
	ASH LOADING AREA - SURFACING	12" REINFORCED CONCRETE	EST	750	SY		96	0	72,000	1.60	1,380	CONP	79.64	109,900	181,900
	ASH LOADING AREA	6" CONCRETE CURB	EST	330	LF		6.5	0	2,100	0.96	364	COND	70.04	25,500	27,600
	CONCRETE PAD BUILDING ENTRANCES	10" REINFORCED CONCRETE	EST	340	SY		80	0	27,200	1.50	587	CONP	79.64	46,700	73,900
	AGGREGATE AREA SURFACING	INCLUDES: 6" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST	30,700	SY		9	0	276,300	0.17	6,002	BCSE	105.94	635,800	912,100
16.3	RAILROAD CROSSING	50' WIDE CROSSING THREE TRACKS - CUSTOM BUILT	EST	1	EA		120000	0	120,000	1500.00	1,725	RRTK	99.43	171,500	291,500
16.4	NEW CONCRETE ENCASEMENT	16' X 4' X 40' - FOR EXISTING ASH PIPE HAUL ROAD CROSSING						0	144,300					286,600	430,900
	EXCAVATION / BACKFILL		EST	1,100	CY			0	0	0.36	455	EXFD	90.00	41,000	41,000
	REINFORCING		EST	100.0	TN		1,150.00	0	115,000	20.00	2,300	REIN	78.27	180,000	295,000
	FORMWORK		EST	2,000	SF		2.50	0	5,000	0.14	322	FORM	99.43	32,000	37,000
	CONCRETE		EST	200	CY		105.00	0	21,000	1.50	345	CONP	79.64	27,500	48,500
	MUD MAT		EST	8	CY		105.00	0	800	1.50	14	CONP	79.64	1,100	1,900
	EMBEDDED STEEL		EST	1,000	LB		2.50	0	2,500	0.06	69	CARP	71.88	5,000	7,500
16.5	TRUCK WASH AREA - CONCRETE PAD							0	47,300					83,100	130,400
	EXCAVATION / BACKFILL		EST	190	CY			0	0	0.36	79	EXFD	90.00	7,100	7,100
	REINFORCING		EST	20	TN		1,150.00	0	23,000	20.00	460	REIN	78.27	36,000	59,000
	FORMWORK		EST	510	SF		2.50	0	1,300	0.14	82	FORM	99.43	8,200	9,500
	CONCRETE		EST	170	CY		105.00	0	17,900	1.50	293	CONP	79.64	23,400	41,300
	MUD MAT		EST	25	CY		105.00	0	2,600	1.50	43	CONP	79.64	3,400	6,000
	EMBEDDED STEEL		EST	1,000	LB		2.50	0	2,500	0.06	69	CARP	71.88	5,000	7,500
16.6	TRUCK SCALE & CONCRETE APPROACH							170,000	27,300					92,000	289,300
	TRUCK SCALE	SUBCONTRACT COST, INCLUDES FOUNDATIONS AND LABOR	EST	2	EA	85000		170,000	0	0.00	0	MECH	88.89	0	170,000
	CONCRETE APPROACH FOR TRUCK SCALE	20' x 40' - TOTAL FOR TWO SCALES	EST	119	CY		230.0	0	27,300	7.50	1,022	EXFD	90.00	92,000	119,300
16.7	PROCESS WATER STORAGE BASIN							60,000	110,400					312,600	483,000
	SAND EXCAVATION		EST	4,000	CY			0	0	0.03	120	ETWK	177.49	21,200	21,200
	ROCK EXCAVATION	ASSUME ROCK IS RIPPABLE	EST	500	CY			0	0	0.05	28	ETWK	177.49	4,900	4,900
	BASIN SURFACING	6" REINFORCED CONCRETE	EST	2,300	SY		48	0	110,400	1.20	3,174	CONP	79.64	252,800	363,200
	PUMPS	500 GPM, 75 PSIG	EST	2	EA	30000		60,000	0	165.00	380	MECH	88.89	33,700	93,700
16.8	PROCESS WATER STORAGE BASIN PUMP STRUCTURE - CONCRETE							0	47,000					105,400	152,400
	EXCAVATION / BACKFILL		EST	0	CY			0	0	0.36	0	EXFD	90.00	0	0
	REINFORCING		EST	7	TN		1,150.00	0	8,100	20.00	161	REIN	78.27	12,600	20,700
	FORMWORK		EST	3,968	SF		2.50	0	9,900	0.14	639	FORM	99.43	63,500	73,400
	CONCRETE		EST	76	CY		105.00	0	8,000	1.50	131	CONP	79.64	10,400	18,400
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0

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	EMBEDDED STEEL		EST	380	LB		2.50	0	1,000	0.06	26	CARP	71.88	1,900	2,900
	PROCESS WATER STORAGE BASIN PUMP STRUCTURE - GALLERY		EST	5	TN		4,000.00	0	20,000	35.00	201	GALL	84.61	17,000	37,000
16.9	STORMWATER DRAINAGE TRENCH	2' W X 3' DEEP CAST-IN-PLACE CONCRETE TRENCH W/REINFORCING & HS-20 RATED GRATE COVERS	EST	3,200	LF		135	0	432,000	1.50	5,520	CONP	79.64	439,600	871,600
16.10	STORMWATER RUNOFF POND							0	15,000					122,600	137,600
	SAND EXCAVATION		EST	11,000	CY			0	0	0.03	329	ETWK	177.49	58,400	58,400
	ROCK EXCAVATION	ASSUME ROCK IS RIPPABLE	EST	3,700	CY			0	0	0.05	204	ETWK	177.49	36,300	36,300
	4" TOPSOIL		EST	650	CY		14	0	9,100	0.03	22	LAND	61.45	1,400	10,500
	GRASS SEEDING, FERTILIZER AND MULCH		EST	1.2	AC		4930	0	5,900	240.00	331	MSTR	80.04	26,500	32,400
16.11	STORM WATER POND PUMP STRUCTURE - CONCRETE							90,000	42,300					182,200	314,500
	EXCAVATION / BACKFILL		EST	0	CY			0	0	0.36	0	EXFD	90.00	0	0
	REINFORCING		EST	3	TN		1,150.00	0	3,500	20.00	69	REIN	78.27	5,400	8,900
	FORMWORK		EST	2,025	SF		2.50	0	5,100	0.14	326	FORM	99.43	32,400	37,500
	CONCRETE		EST	33	CY		105.00	0	3,500	1.50	57	CONP	79.64	4,500	8,000
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	165	LB		2.50	0	400	0.06	11	CARP	71.88	800	1,200
	STORM WATER POND PUMP STRUCTURE - GALLERY		EST	5	TN		4,000.00	0	20,000	35.00	201	GALL	84.61	17,000	37,000
	PUMPS	500 GPM, 75 PSIG	EST	3	EA	30000		90,000	0	165.00	569	MECH	88.89	50,600	140,600
	PIPING	6" HDPE, SDR 9	EST	1,000	LF		9.8	0	9,800	0.69	794	YDPP	90.14	71,500	81,300
16.12	OILY WATER SEWER							4,500	96,600					210,000	311,100
	PIPING	6" CISP	EST	1,150	LF		21.5	0	24,700	0.33	436	YDPP	90.14	39,300	64,000
	PIPING	8" CISP	EST	1,150	LF		33.5	0	38,500	0.54	714	YDPP	90.14	64,400	102,900
	PIPING	6" HDPE, SDR 9	EST	1,000	LF		9.8	0	9,800	0.69	794	YDPP	90.14	71,500	81,300
	POST INDICATOR VALVE		EST	6	EA	750		4,500	0	6.00	41	YDPP	90.14	3,700	8,200
	MANHOLES		EST	15	EA		1575.0	0	23,600	20.00	345	YDPP	90.14	31,100	54,700
16.13	OIL SEPARATOR	500 GPM W/ INTEGRAL LIFT STATION	EST	2	EA	50000		100,000	0	560.00	1,288	YDPP	90.14	116,100	216,100
16.14	SANITARY SEWER							0	22,200					96,900	119,100
	PIPING	6" CISP	EST	500	LF		21.5	0	10,800	0.33	190	YDPP	90.14	17,100	27,900
	MANHOLES		EST	4	EA		1575.0	0	6,300	20.00	92	YDPP	90.14	8,300	14,600
	PIPING	4" HDPE (UNDERGROUND)	EST	1,500	LF		3.4	0	5,100	0.46	794	YDPP	90.14	71,500	76,600
16.15	SANITARY LIFT STATION	PACKAGED TYPE COMPLETE WITH PUMPS 100,000 GPD	EST	1	EA	150,000		150,000	0	475.00	546	YDPP	90.14	49,200	199,200
16.16	CONSTRUCTION LAYDOWN AREA - (TO BE USED FOR PHASE I AND PHASE II)	ALLOWANCE FOR 10 ACRES, DOES NOT INCLUDE LAND ACQUISITION, IF REQUIRED	EST	10	AC		70,000.0	0	700,000	800.00	9,200	EXFD	90.00	828,000	1,528,000
16.17	CRAFT PARKING (TO BE USED FOR PHASE I AND PHASE II)	DOES NOT INCLUDE LAND ACQUISITION, IF REQUIRED. ALLOWANCE FOR 20,000 SY INCLUDES: 6" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST	20,000	SY		9	0	180,000	0.17	3,910	BCSE	105.94	414,200	594,200
16.18	CONTRACTOR OFFICES (AREA) - (TO BE USED FOR PHASE I AND PHASE II)	DOES NOT INCLUDE LAND ACQUISITION, IF REQUIRED. ALLOWANCE FOR 5,000 SY AREA (TRAILERS BY CONTRACTORS) INCLUDES: 6" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST	5,000	SY		9	0	45,000	0.17	978	BCSE	105.94	103,600	148,600

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16.19	NEW PERMANENT STORAGE	INCLUDES LIGHTING AND H&V. SUBCONTRACT PRICE INCLUDES ELECTRICAL AND H&V		30,000	SF	85		2,550,000	0		0	STST	105.71	0	2,550,000
16.20	FOUNDATIONS FOR THE NEW WAREHOUSE							0	803,800					1,301,600	2,105,400
	EXCAVATION / BACKFILL		EST	2,600	CY			0	0	0.36	1,076	EXFD	90.00	96,900	96,900
	REINFORCING		EST	320	TN		1,150.00	0	368,000	20.00	7,360	REIN	78.27	576,100	944,100
	FORMWORK		EST	2,400	SF		2.50	0	6,000	0.14	386	FORM	99.43	38,400	44,400
	CONCRETE		EST	3,300	CY		105.00	0	346,500	1.50	5,693	CONP	79.64	453,400	799,900
	MUD MAT		EST	400	CY		105.00	0	42,000	1.50	690	CONP	79.64	55,000	97,000
	EMBEDDED STEEL		EST	16,500	LB		2.50	0	41,300	0.06	1,139	CARP	71.88	81,800	123,100
16.21	NEW TEMPORARY STORAGE	WEATHER TIGHT CANVAS ENCLOSURE. INCLUDES LIGHTING AND H&V. SUBCONTRACT PRICE INCLUDES ELECTRICAL AND H&V		10,000	SF	45		450,000	0		0	STST	105.71	0	450,000
16.22	FOUNDATIONS FOR TEMPORARY STORAGE							0	99,500					157,200	256,700
	EXCAVATION / BACKFILL		EST	230	CY			0	0	0.36	95	EXFD	90.00	8,600	8,600
	REINFORCING		EST	35	TN		1,150.00	0	40,300	20.00	805	REIN	78.27	63,000	103,300
	FORMWORK		EST	400	SF		2.50	0	1,000	0.14	64	FORM	99.43	6,400	7,400
	CONCRETE		EST	370	CY		105.00	0	38,900	1.50	638	CONP	79.64	50,800	89,700
	MUD MAT		EST	140	CY		105.00	0	14,700	1.50	242	CONP	79.64	19,200	33,900
	EMBEDDED STEEL		EST	1,850	LB		2.50	0	4,600	0.06	128	CARP	71.88	9,200	13,800
16.23	LABOR BUS SERVICE FROM PARKING LOT TO CONSTRUCTION AREA AND ACCESS CONTROL	ALLOWANCE FOR 36 MONTHS BASED ON 2 BUSES OPERATING CONTINUOUSLY FOR 5X10 WORKWEEK. SUBCONTRACT COST INCLUDES EQUIPMENT, MATERIAL AND LABOR	ALLOW	36	MN	38000		1,368,000	0					0	1,368,000
16.24	EROSION & SEDIMENT CONTROL							0	12,600					20,700	33,300
	SILT FENCE		EST	2,600	LF		1.0	0	2,600	0.02	60	LAND	61.45	3,700	6,300
	ROCK CHECK DAMS		EST	20	EA		500.0	0	10,000	12.00	276	LAND	61.45	17,000	27,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							4,942,500	3,941,900		76,373			7,078,900	15,963,300
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										1,136,357
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						6,641		83.48	554,000	554,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						8,301			582,357	582,357
	PER DIEM	NONE		0.00	HR						91,316			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				19,710					35,395	55,104
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				197,095						197,095
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			247,125							247,125
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				197,095					353,945	551,040
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				591,285					1,061,835	1,653,120
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							247,100	1,005,200					2,587,500	3,839,800
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SITE IMPROVEMENTS - CIVIL WORK						5,189,600	4,947,100					9,666,400	19,803,100
17.0	BOP ITEMS														0
17.1	PIPE INSULATION	AVERAGE 6" PIPE SIZE	EST	3,400	LF		10	0	34,000	0.39	1,525	PINS	69.50	106,000	140,000
17.2	HEAT TRACING							0	175,600					248,500	424,100

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	CABLE	AVERAGE 6" PIPE SIZE	EST	3,000	LF		10.35	0	31,100	0.05	173	WIRE	98.84	17,000	48,100
	POWER CONNECTOR AND OTHER ACCESSORIES INCLUDING THERMOSTATS FOR HEAT TRACING (BY ZONES)		EST	55	EA		450	0	24,500	8.00	502	WIRE	98.84	49,600	74,100
	HEAT TRACING BALANCE OF PLANT INCL PANELS, POWER WIRING AND CONDUITS		EST	4	LT		30000	0	120,000	400.00	1,840	WIRE	98.84	181,900	301,900
17.3	TOUCH UP PAINT (INCLUDESPAINTING CS PIPE)							0	134,200					514,800	649,000
	TOUCH UP PAINT FOR SHOP PAINTED STEEL		EST	17,033	SF		3	0	51,100	0.15	2,938	PNTR	66.72	196,000	247,100
	TOUCH UP PAINT FOR EQUIPMENT		EST	12,000	SF		3	0	36,000	0.15	2,070	PNTR	66.72	138,100	174,100
	PAINTING CS PIPE ONLY	AVERAGE 6" PIPE SIZE, ALLOWANCE FOR 10,000 LF PIPE	EST	15,700	SF		3	0	47,100	0.15	2,708	PNTR	66.72	180,700	227,800
17.4	HOISTS & TROLLEYS							180,000	210,000					245,300	635,300
	MISC HOISTS & TROLLEYS	IN BUILDINGS FOR EQUIPMENT MAINTENANCE AND FOR ID FANS	EST	12	EA	15000	17500	180,000	210,000	200.00	2,760	MECH	88.89	245,300	635,300
17.5	MISC AUX STEEL FOR PIPE SUPPORTS	FIELD FABRICATED	EST	35	TN		3500	0	122,500	120.00	4,830	STST	105.71	510,600	633,100
17.6	MISC PIPE SUPPORT FOUNDATIONS							0	10,500					21,000	31,500
	EXCAVATION / BACKFILL		EST	65	CY			0	0	0.36	27	EXFD	90.00	2,400	2,400
	REINFORCING		EST	5.0	TN		1,150.00	0	5,800	20.00	115	REIN	78.27	9,000	14,800
	FORMWORK		EST	260	SF		2.50	0	700	0.14	42	FORM	99.43	4,200	4,900
	CONCRETE		EST	25	CY		105.00	0	2,600	1.50	43	CONP	79.64	3,400	6,000
	MUD MAT		EST	10	CY		105.00	0	1,100	1.50	17	CONP	79.64	1,400	2,500
	EMBEDDED STEEL		EST	125	LB		2.50	0	300	0.06	9	CARP	71.88	600	900
17.7	EYE WASH STATIONS							30,000	5,000					30,700	65,700
	EYE WASH STATIONS	WITH 50 KW HEATERS	EST	5	EA	6000	1000	30,000	5,000	60.00	345	MECH	88.89	30,700	65,700
17.8	FIRE PROTECTION FOR MISC BUILDINGS & AREAS							0	360,000					294,400	654,400
	STAND PIPE FOR BUILDINGS		EST	12	EA		30000	0	360,000	240.00	3,312	MECH	88.89	294,400	654,400
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							210,000	1,051,800		23,255			1,971,300	3,233,100
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										346,325
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						2,022		83.48	169,000	169,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						2,528			177,325	177,325
	PER DIEM	NONE		0.00	HR						27,805			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				5,259					9,857	15,116
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				52,590						52,590
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			10,500							10,500
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				52,590					98,565	151,155
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				157,770					295,695	453,465
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							10,500	268,209					750,442	1,029,151
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BOP ITEMS						220,500	1,320,000					2,721,700	4,262,300

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Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
18.0	CAPITAL REPLACEMENTS - REMOVAL AND RELOCATION OF EXISTING EQUIPMENT AND INFRASTRUCTURE														0
18.1	RELOCATE HYDROGEN STORAGE TANK							0	15,600					86,800	102,400
	LABOR ALLOWANCE TO RELOCATED THE TANK	LABOR ALLOWANCE TO RELOCATE THE TANK	EST	1	LT			0	0	500.00	575	MECH	88.89	51,100	51,100
	NEW FOUNDATION ALLOWANCE FOR THE RELOCATED TANK		EST	35	CY		230	0	8,100	6.00	242	MECH	88.89	21,500	29,600
	ELECTRICAL ALLOWANCE FOR THE RELOCATED TANK	INCLUDES LIGHTING	EST	1	LT		7500	0	7,500	125.00	144	WIRE	98.84	14,200	21,700
18.2	NEW HYDROGEN LINE TO PLANT							0	62,100					150,600	212,700
	LARGE BORE PIPE	DOUBLE WALL PIPE	EST	800	LF		75	0	60,000	1.65	1,518	YDPP	90.14	136,800	196,800
	EXCAVATION / BACKFILL	FOR UNDERGROUND PIPING	EST	593	CY			0	0	0.20	136	EXFD	90.00	12,300	12,300
	BEDDING	FOR UNDERGROUND PIPING	EST	59	CY		35	0	2,100	0.25	17	EXFD	90.00	1,500	3,600
18.3	RELOCATE MISC. UNDERGROUND UTILITIES	ALLOWANCE	EST	1	LT		125000	0	125,000	1500.00	1,725	WIRE	98.84	170,500	295,500
18.4	REROUTED 138KV LINE .	TWO NEW TOWERS, NEW FOUNDATIONS, NEW OH LINES, LINE & TOWER ACCESSORIES INCLUDING INSULATORS	EST	1	LT	500000		500,000	0	2250.00	2,588	WIRE	98.84	255,700	755,700
18.5	OUTAGE TIE-IN DUCTWORK	ALLOWANCE FOR 85 TON DUCTWORK	ALLOW	85	TN		3250	0	276,300	50.00	4,888	FLDU	107.96	527,700	804,000
18.6	RELOCATED WAREHOUSE - FOUNDATIONS							0	342,600					534,900	877,500
	EXCAVATION / BACKFILL		EST	1,152	CY			0	0	0.15	199	EXFD	90.00	17,900	17,900
	REINFORCING		EST	134	TN		1,150.00	0	154,100	20.00	3,082	REIN	78.27	241,200	395,300
	FORMWORK		EST	1,356	SF		2.50	0	3,400	0.14	218	FORM	99.43	21,700	25,100
	CONCRETE		EST	1,419	CY		105.00	0	149,000	1.50	2,448	CONP	79.64	194,900	343,900
	MUD MAT		EST	175	CY		105.00	0	18,400	1.50	302	CONP	79.64	24,000	42,400
	EMBEDDED STEEL		EST	7,095	LB		2.50	0	17,700	0.06	490	CARP	71.88	35,200	52,900
18.7	RELOCATE EXISTING WAREHOUSE BUILDING	150' L X 75' W X 25' H						0	95,600					1,121,500	1,217,100
	CAREFULLY REMOVE BUILDING SIDING, STEEL AND ROOF & PIECE MARK FOR RELOCATION		EST	11,250	SF			0	0	0.22	2,846	STST	105.71	300,900	300,900
	ASSEMBLE REMOVED BUILDING STEEL, ROOFING, SIDING, WINDOWS AND DOORS INCLUDING OVERHEAD DOORS	INCLUDES 10-15% NEW MATERIAL ALLOWANCE AS SOME REMOVED PIECES MAY NOT BE SALVAGEABLE	EST	11,250	SF		8.5	0	95,600	0.60	7,763	STST	105.71	820,600	916,200
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							500,000	917,200		29,179			2,847,700	4,264,900
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										434,491
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						2,537		83.48	212,000	212,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						3,172			222,491	222,491
	PER DIEM	NONE		0.00	HR						34,887			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				4,586					14,239	18,825
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				45,860						45,860
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			25,000							25,000
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				45,860					142,385	188,245
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				137,580					427,155	564,735

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	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							25,000	233,900					1,018,300	1,277,200
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	CAPITAL REPLACEMENTS - REMOVAL AND RELOCATION OF EXISTING EQUIPMENT AND INFRASTRUCTURE						525,000	1,151,100					3,866,000	5,542,100
19.0	ARSENIC, ASBESTOS , LEAD ABATEMENT														0
19.1	ARSENIC, ASBESTOS , LEAD ABATEMENT	PROVIDED BY AEP		1	LT										750,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS														750,000
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				0						112,500
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														112,500
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	ARSENIC, ASBESTOS , LEAD ABATEMENT													862,500
99.00	PHASE I - OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS							116,832,300	50,988,900		1,538,031			142,330,900	342,277,100
	PHASE I - OVERALL OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE							810,000	0		14,904			1,523,520	2,333,520
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										22,997,254
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						133,742		92.54	11,165,000	11,165,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						168,668			11,832,254	11,832,254
	PER DIEM	NONE		0.00	HR									0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				252,245					710,105	962,349
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				2,522,445						2,522,445
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			5,778,615							5,778,615
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				2,522,445					7,101,045	9,623,490
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				7,648,335					21,303,135	34,021,470
	PHASE I - OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							6,588,600	12,945,500					53,635,100	78,239,100
	PHASE I - OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST	DRY FGD						123,420,900	63,934,400					195,966,000	420,516,200
	TOTAL PHASE I DIRECT AND CONSTRUCTION INDIRECT COSTS							123,420,900	63,934,400					195,966,000	420,516,200
								0	0					0	0
	INDIRECT COSTS - PHASE I														
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES			1.0	LT										28,000,000
	CONSTRUCTION MANAGEMENT			3.0	%										12,615,500
	S-U / COMMISSIONING			1.0											4,205,200
	CRAFT START-UP SUPPORT	1% OF TOTAL LABOR MANHOURS (INCLUDES OVERTIME INEFFICIENCY & COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - BASED ON ASSUMED 5X10 WORKWEEK)		1.0	%						16,718		92.54	1,677,100	1,677,100
	INITIAL FILLS			0.3	%										1,261,500

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	OPERATOR & TRAINING MANUALS			1.0	LT										300,000
	SUBCONTRACTORS (NOISE & DUCTWORK CONSULTANT, GEOTECHNICAL INVESTIGATION)			1.0	LT										400,000
	SUBTOTAL - INDIRECT COSTS														48,459,300
	TOTAL PHASE I DIRECT AND INDIRECT COSTS														468,975,500
	SPARE PARTS - PHASE I			1.5	%			1,851,300							1,851,300
	SPARE PARTS - CAPITALIZED			0.90	%			1,110,780							1,110,780
	SPARE PARTS - FIRST YEAR OF OPERATION			0.60	%			740,520							740,520
	CONTINGENCY - PHASE I			14.4	%										67,690,500
	ESCALATION - PHASE I														59,601,900
	EQUIPMENT	4.0%/yr		4.0	%			19,653,700							19,653,700
	MATERIAL	2.0%/yr		2.0	%				7,157,800						7,157,800
	LABOR	2.5%/yr		2.5	%									27,092,000	27,092,000
	INDIRECTS	2.5%/yr		2.5	%									5,698,400	5,698,400
	PHASE I - TOTAL PROJECT COST														598,119,200
	PHASE II - WET FGD														
20.0	LIMESTONE HANDLING SYSTEM														0
20.1	MATERIAL HANDLING EQUIPMENT							4,565,100	845,000					3,465,800	8,875,900
	LIMESTONE TRACK HOPPER			154	TN		3,250	0	500,000	30.00	5,308	MECH	88.89	471,800	971,800
	BELT FEEDER TRACK HOPPER BF-1	36" W x 15' L		1	EA	180,000		180,000	0	700.00	805	MECH	88.89	71,600	251,600
	LIMESTONE TRUCK HOPPER			31	TN		3,250	0	100,000	30.00	1,062	MECH	88.89	94,400	194,400
	BELT FEEDER TRUCK DUMP BF-2	36" W x 15' L		1	EA	180,000		180,000	0	700.00	805	MECH	88.89	71,600	251,600
	CONVEYOR LH-1	30" W x 250' L		250	LF	1,100		275,000	0	7.50	2,156	MECH	88.89	191,700	466,700
	MAGNETIC SEPARATORS AND CHUTEWORK	HEAD OF LH-1		1	EA	65,000		65,000	0	350.00	403	MECH	88.89	35,800	100,800
	CONVEYOR LH-2	30" W x 287' L		287	LF	1,100		315,700	0	7.50	2,475	MECH	88.89	220,000	535,700
	EMERGENCY RECLAIM HOPPER	ONE LOCATION		20	TN		3,250	0	65,000	30.00	690	MECH	88.89	61,300	126,300
	CRUSHER FOR EMERGENCY RECLAIM HOPPER			1	EA	50,000		50,000	0	400.00	460	MECH	88.89	40,900	90,900
	BELT FEEDER EMERGENCY RECLAIM BF-3	36" W x 15' L		1	EA	180,000		180,000	0	700.00	805	MECH	88.89	71,600	251,600
	RECLAIM HOPPERS	TOTAL FOR TWO LOCATIONS		55	TN		3,250	0	180,000	30.00	1,911	MECH	88.89	169,800	349,800
	BELT FEEDERS BF-4 and BF-5	36" W x 15' L		2	EA	180,000		360,000	0	700.00	1,610	MECH	88.89	143,100	503,100
	ROD GATES RECLAIM HOPPERS	FOR THREE RECLAIM HOPPERS		3	EA	15,000		45,000	0	60.00	207	MECH	88.89	18,400	63,400
	CONVEYOR LH-3A	30" W x 537' L		537	LF	1,100		590,700	0	7.50	4,632	MECH	88.89	411,700	1,002,400
	CONVEYOR LH-3B	30" W x 537' L		537	LF	1,100		590,700	0	7.50	4,632	MECH	88.89	411,700	1,002,400
	MAGNETIC SEPARATORS AND CHUTEWORK	LH-3A AND LH-3B		2	EA	65,000		130,000	0	350.00	805	MECH	88.89	71,600	201,600
	CONVEYOR LH-4	30"W x 30' L		30	LF	1,100		33,000	0	10.00	345	MECH	88.89	30,700	63,700
	BELT SCALES	CONVEYORS LH-1, LH-3A AND LH-3B		3	EA	30,000		90,000	0	180.00	621	MECH	88.89	55,200	145,200
	BIN VENT FILTER AND DISCHARGE DUCTING	ONE PER SILO		2	EA	75,000		150,000	0	450.00	1,035	MECH	88.89	92,000	242,000
	SILO LEVEL MONITORING RADAR	ONE PER SILO		2	EA	5,000		10,000	0	40.00	92	MECH	88.89	8,200	18,200
	SILO HIGH-HIGH LEVEL SWITCH	ONE PER SILO - INCLUDED WITH LEVEL MONITORING RADAR						0	0		0	MECH	88.89	0	0
	BIN ACTIVATORS	ONE PER SILO 12' DIA		2	EA	65,000		130,000	0	300.00	690	MECH	88.89	61,300	191,300
	CUT OFF GATE	ONE PER SILO 3' OUTLET		2	EA	45,000		90,000	0	220.00	506	MECH	88.89	45,000	135,000
	TUNNEL HEATING & VENTILATION	RECLAIM TUNNEL		1	EA	125,000		125,000	0	800.00	920	HVAC	81.24	74,700	199,700
	HOIST BEAMS	RP, TRACK HOPPER AND RECLAIM PIT		3	EA	10,000		30,000	0	60.00	207	MECH	88.89	18,400	48,400
	SUMP PUMPS	2-EACH TRACK HOPPER PIT AND RECLAIM PIT. INCLUDES CHECK & ISOLATION VALVES		4	EA	35,000		140,000	0	140.00	644	MECH	88.89	57,200	197,200
	AGITATOR FOR SUMP PUMPS	10 HP		2	EA	20,000		40,000	0	60.00	138	MECH	88.89	12,300	52,300
	TELESCOPIC CHUTE	STACKOUT CONVEYOR LH-2		1	EA	75,000		75,000	0	240.00	276	MECH	88.89	24,500	99,500

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	DUST SUPPRESSION SYSTEMS	TRACK HOPPER, STACKOUT CONVEYOR , RECLAIM TUNNEL		3	LT	230,000		690,000	0	1400.00	4,830	MECH	88.89	429,300	1,119,300
20.2	FIRE PROTECTION SYSTEM FOR BELT CONVEYORS	DELUGE SYSTEM, DRY PIPE, SENSORS, ACTIVATION VALVE AND FM APPROVED PANEL - SUBCONTRACT PRICE FOR ALL CONVEYORS INCLUDES LABOR		1	LT	660,000		660,000	0	0.00	0	MECH	88.89	0	660,000
20.3	PIPING - MECHANICAL							0	0		0			0	0
	LARGE BORE PIPING	2.5" CS, SCHEDULE 40, WELDED		0	LF		10.8	0	0	0.64	0	SPNG	94.41	0	0
	VALVE	2.5" GLOBE, 150 #, CS, WELDED	EST	0	EA	955		0	0	4.70	0	SPNG	94.41	0	0
	PIPE SUPPORTS			0	EA		25	0	0	1.50	0	MECH	88.89	0	0
20.4	CONVEYOR STRUCTURE SUPPORT STEEL	THREE-COAT SHOP PAINT	EST	100	TN		2,900.00	0	290,000	24.00	2,760	STST	105.71	291,800	581,800
20.5	CONVEYOR SUPPORT STEEL - FOUNDATIONS							0	16,000		0			48,700	64,700
	EXCAVATION / BACKFILL		EST	148	CY			0	0	0.36	61	EXFD	90.00	5,500	5,500
	REINFORCING		EST	4.4	TN		1,150.00	0	5,100	20.00	102	REIN	78.27	8,000	13,100
	FORMWORK		EST	1,600	SF		2.50	0	4,000	0.14	258	FORM	99.43	25,600	29,600
	CONCRETE		EST	59	CY		105.00	0	6,200	1.50	102	CONP	79.64	8,100	14,300
	EMBEDDED STEEL		EST	296	LB		2.50	0	700	0.06	20	CARP	71.88	1,500	2,200
20.6	LIMESTONE TRANSFER TOWER - FOUNDATIONS							0	15,400		0			30,500	45,900
	EXCAVATION / BACKFILL		EST	106	CY			0	0	0.36	44	EXFD	90.00	3,900	3,900
	REINFORCING		EST	6	TN		1,150.00	0	6,900	20.00	138	REIN	78.27	10,800	17,700
	FORMWORK		EST	320	SF		2.50	0	800	0.14	52	FORM	99.43	5,100	5,900
	CONCRETE		EST	59	CY		105.00	0	6,200	1.50	102	CONP	79.64	8,100	14,300
	MUD MAT		EST	8	CY		105.00	0	800	1.50	14	CONP	79.64	1,100	1,900
	EMBEDDED STEEL		EST	295	LB		2.50	0	700	0.06	20	CARP	71.88	1,500	2,200
20.7	LIMESTONE TRANSFER CONVEYOR - FOUNDATIONS							0	62,000		0			125,800	187,800
	EXCAVATION / BACKFILL		EST	421	CY			0	0	0.36	174	EXFD	90.00	15,700	15,700
	REINFORCING		EST	31	TN		1,150.00	0	35,700	20.00	713	REIN	78.27	55,800	91,500
	FORMWORK		EST	1,440	SF		2.50	0	3,600	0.14	232	FORM	99.43	23,100	26,700
	CONCRETE		EST	178	CY		105.00	0	18,700	1.50	307	CONP	79.64	24,500	43,200
	MUD MAT		EST	17	CY		105.00	0	1,800	1.50	29	CONP	79.64	2,300	4,100
	EMBEDDED STEEL		EST	890	LB		2.50	0	2,200	0.06	61	CARP	71.88	4,400	6,600
20.8	LIMESTONE RECLAIM HOPPER, CONVEYOR TUNNEL AND ESCAPE TUNNEL - FOUNDATIONS							0	542,000		0			1,613,400	2,155,400
	EXCAVATION / BACKFILL		EST	13,000	CY			0	0	0.36	5,382	EXFD	90.00	484,400	484,400
	REINFORCING		EST	200.0	TN		1,150.00	0	230,000	20.00	4,600	REIN	78.27	360,000	590,000
	FORMWORK		EST	27,000	SF		2.50	0	67,500	0.14	4,347	FORM	99.43	432,200	499,700
	CONCRETE		EST	2,000	CY		105.00	0	210,000	1.50	3,450	CONP	79.64	274,800	484,800
	MUD MAT		EST	90	CY		105.00	0	9,500	1.50	155	CONP	79.64	12,400	21,900
	EMBEDDED STEEL		EST	10,000	LB		2.50	0	25,000	0.06	690	CARP	71.88	49,600	74,600
20.9	LIMESTONE UNLOADING PDC - FOUNDATIONS							0	24,100		0			44,800	68,900
	EXCAVATION / BACKFILL		EST	129	CY			0	0	0.36	53	EXFD	90.00	4,800	4,800
	REINFORCING		EST	9	TN		1,150.00	0	10,400	20.00	207	REIN	78.27	16,200	26,600
	FORMWORK		EST	420	SF		2.50	0	1,100	0.14	68	FORM	99.43	6,700	7,800
	CONCRETE		EST	92	CY		105.00	0	9,700	1.50	159	CONP	79.64	12,600	22,300
	MUD MAT		EST	16	CY		105.00	0	1,700	1.50	28	CONP	79.64	2,200	3,900
	EMBEDDED STEEL		EST	460	LB		2.50	0	1,200	0.06	32	CARP	71.88	2,300	3,500
20.10	LIMESTONE UNLOADING PDC - CONCRETE PIERS	10 PIERS	EST	30	CY		230.00	0	6,900	7.50	259	CONP	79.64	20,600	27,500
											0				

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20.11	LIMESTONE RECLAIM PDC - FOUNDATIONS							0	16,800		0			32,300	49,100
	EXCAVATION / BACKFILL		EST	99	CY			0	0	0.36	41	EXFD	90.00	3,700	3,700
	REINFORCING		EST	6	TN		1,150.00	0	6,900	20.00	138	REIN	78.27	10,800	17,700
	FORMWORK		EST	330	SF		2.50	0	800	0.14	53	FORM	99.43	5,300	6,100
	CONCRETE		EST	67	CY		105.00	0	7,000	1.50	116	CONP	79.64	9,200	16,200
	MUD MAT		EST	12	CY		105.00	0	1,300	1.50	21	CONP	79.64	1,600	2,900
	EMBEDDED STEEL		EST	335	LB		2.50	0	800	0.06	23	CARP	71.88	1,700	2,500
20.12	LIMESTONE RECLAIM PDC - CONCRETE PIERS	10 PIERS	EST	30	CY		230.00	0	6,900	7.50	259	CONP	79.64	20,600	27,500
20.13	LIMESTONE UNLOADING PDC	18W X 50' X 10'H	EST	900	SF	500		450,000	0	0.30	311	STST	105.71	32,800	482,800
											0				
20.14	LIMESTONE RECLAIM PDC	15W X 30' X 10'H	EST	450	SF	500		225,000	0	0.30	155	STST	105.71	16,400	241,400
20.15	MCC	LIMESTONE UNLOADING & RECLAIM AREAS						123,600	0		0			7,200	130,800
	480V MOTOR CONTROL CENTERS (LIMESTONE UNLOADING)	PRICE PER LINE UP	EST	2	EA	30900		61,800	0	16.00	37	WIRE	98.84	3,600	65,400
	480V MOTOR CONTROL CENTERS (LIMESTONE RECLAIM)	PRICE PER LINE UP	EST	2	EA	30900		61,800	0	16.00	37	WIRE	98.84	3,600	65,400
20.16	EMERGENCY POWER SYSTEM	LIMESTONE UNLOADING & RECLAIM AREAS						216,300	0		0			49,100	265,400
	DC PANEL BOADRD		EST	2	EA	15450		30,900	0	40.00	92	WIRE	98.84	9,100	40,000
	UPS PANEL BOARDS		EST	2	EA	15450		30,900	0	40.00	92	WIRE	98.84	9,100	40,000
	SATELLITE UPS		EST	2	EA	41200		82,400	0	16.00	37	WIRE	98.84	3,600	86,000
	VRLA BATTERIES		EST	2	LT	36050		72,100	0	120.00	276	WIRE	98.84	27,300	99,400
20.17	LIGHTING/ TRANSFORMERS & PANELS							26,000	67,500		0			52,200	145,700
	LIGHT FIXTURES		EST	90	EA		750	0	67,500	4.00	414	WIRE	98.84	40,900	108,400
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	1	EA	10000		10,000	0	40.00	46	WIRE	98.84	4,500	14,500
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	1	EA	7500		7,500	0	32.00	37	WIRE	98.84	3,600	11,100
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	1	EA	5000		5,000	0	16.00	18	WIRE	98.84	1,800	6,800
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	1	EA	3500		3,500	0	12.00	14	WIRE	98.84	1,400	4,900
20.18	GROUNDING	LIMESTONE UNLOADING & RECLAIM AREAS						13,000	0		0			42,400	55,400
	GROUND ROD	3/4" - 20' LONG	EST	16	EA	150		2,400	0	4.00	74	WIRE	98.84	7,300	9,700
	500 MCM	BARE COPPER WIRE	EST	1,250	FT	7.65		9,600	0	0.12	173	WIRE	98.84	17,000	26,600
	CADWELD		EST	64	EA	15		1,000	0	2.00	147	WIRE	98.84	14,500	15,500
	GROUNDING TEST	TEST & DOCUMENTATION	EST	2	LT			0	0	16.00	37	WIRE	98.84	3,600	3,600
20.19	RACEWAY, CABLE TRAY, & CONDUIT							0	801,100		0			3,597,400	4,398,500
	12" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,500	LF		18.25	0	27,400	1.10	1,898	WIRE	98.84	187500	214,900
	18" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	900	LF		21.50	0	19,400	1.45	1,501	WIRE	98.84	148300	167,700
	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	2,600	LF		27.10	0	70,500	1.75	5,233	WIRE	98.84	517200	587,700
	36" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	750	LF		30.30	0	22,700	1.95	1,682	WIRE	98.84	166200	188,900
	5" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	2,400	LF		61.00	0	146,400	1.13	3,111	WIRE	98.84	307400	453,800
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	4,400	LF		31.00	0	136,400	0.81	4,083	WIRE	98.84	403600	540,000
	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	4,800	LF		21.50	0	103,200	0.65	3,560	WIRE	98.84	351900	455,100
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	7,200	LF		9.25	0	66,600	0.35	2,915	WIRE	98.84	288100	354,700
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	9,000	LF		7.15	0	64,400	0.28	2,939	WIRE	98.84	290500	354,900

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	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	15,000	LF		4.44	0	66,600	0.24	4,123	WIRE	98.84	407500	474,100
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	24,000	LF		3.23	0	77,500	0.19	5,354	WIRE	98.84	529200	606,700
20.20	HIGH VOLTAGE POWER CABLE & TERMINATION	1/C # 500KCMIL-15KV	EST	3,600	LF		9.27	0	33,400	0.23	952	WIRE	98.84	94100	127,500
											0				
20.21	LOW VOLTAGE POWER CABLE & TERMINATION							0	130,600		0			715,400	846,000
	3/C # 500KCMIL- 600V		EST	5,000	LF		26.12	0	130,600	0.69	3,968	WIRE	98.84	392100	522,700
	#4/0 - #12 AWG-600V		EST	36,000	LF		7.22			0.08	3,271	WIRE	98.84	323300	323,300
20.22	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	EST	44,000	LF		3.20	0	140,800	0.08	3,997	WIRE	98.84	395100	535,900
20.23	DUCT BANK	DUCT BANK WITH 6-5" & 6-3" CONDUIT	EST	350	LF		265.88	0	26,600	6.01	2,419	ECND	75.97	183800	210,400
20.24	COMMUNICATIONS		EST	1	LT		34,000.00	0	34,000	229.00	263	WIRE	98.84	26,000	60,000
20.25	LIGHTNING PROTECTION		EST	1	LT		6,500.00	0	6,500	48.00	55	WIRE	98.84	5,500	12,000
20.26	SECURITY SYSTEM		EST	1	LT		16,000.00	0	16,000	123.00	141	WIRE	98.84	14,000	30,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							6,279,000	3,081,600		117,798			10,925,700	20,286,300
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										1,947,963
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						10,243		92.75	950,000	950,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						12,804			997,963	997,963
	PER DIEM	NONE		0.00	HR						140,845			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				15,408					54,629	70,037
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				154,080						154,080
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			313,950							313,950
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				154,080					546,285	700,365
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				462,240					1,638,855	2,101,095
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							314,000	785,800					4,187,700	5,287,500
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIMESTONE HANDLING SYSTEM						6,593,000	3,867,400					15,113,400	25,573,800
21.0	REAGENT (LIMESTONE) PREPARATION ISLAND														0
21.1	MECHANICAL EQUIPMENT	INCLUDES LIMESTONE FEEDERS, FROM THE DAY SILOS THROUGH THE SLURRY STORAGE TANKS AND TRANSFER PUMPS WITH INTEGRAL PIPING	EST	1	LT	13,430,000		13,430,000	0	111600.00	128,340	MECH	88.89	11,408,100	24,838,100
21.2	SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES		2	EA	14,000		28,000	0	60.00	138	MECH	81.24	11,200	39,200

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21.3	AGITATOR FOR SUMP PUMPS	5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
21.4	PIPING - MECHANICAL		EST	1	LT			278,900	205,000					587,300	1,071,200
	LARGE BORE PIPING	4.0" CS, SCH 40 WELDED	EST	500	LF		23.00	0	11,500	1.48	851	SPNG	94.41	80,300	91,800
	LARGE BORE PIPING	6" FRP	EST	2,000	LF		33.90	0	67,800	0.67	1,541	SPNG	94.41	145,500	213,300
	LARGE BORE PIPING	8" FRP	EST	1,000	LF		51.30	0	51,300	0.95	1,093	SPNG	94.41	103,100	154,400
	LARGE BORE PIPING	10" FRP	EST	300	LF		68.00	0	20,400	1.18	407	SPNG	94.41	38,400	58,800
	LARGE BORE PIPING	12" FRP	EST	250	LF		80.90	0	20,200	1.41	405	SPNG	94.41	38,300	58,500
	VALVE	6" BFLY, 150 #, CS, FLANGED	EST	6	EA	850		5,100	0	8.70	60	SPNG	94.41	5,700	10,800
	VALVE	8" BFLY, 150 #, CS, FLANGED	EST	12	EA	1,400		16,800	0	9.10	126	SPNG	94.41	11,900	28,700
	VALVE	10" BFLY, 150 #, CS, FLANGED	EST	10	EA	2,300		23,000	0	13.80	159	SPNG	94.41	15,000	38,000
	VALVE	12" BFLY, 150 #, CS, FLANGED	EST	3	EA	3,000		9,000	0	14.60	50	SPNG	94.41	4,800	13,800
	VALVE	6" AIR OPERATED, 150 #, CS, FLANGED	EST	10	EA	14,000		140,000	0	17.30	199	SPNG	94.41	18,800	158,800
	VALVE	8" AIR OPERATED, 150 #, CS, FLANGED	EST	5	EA	17,000		85,000	0	19.30	111	SPNG	94.41	10,500	95,500
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	450	EA		75.00	0	33,800	2.50	1,294	MECH	88.89	115,000	148,800
21.5	LIMESTONE SLURRY TANKS - FOUNDATIONS							0	166,400					299,400	465,800
	EXCAVATION / BACKFILL		EST	969	CY			0	0	0.36	401	EXFD	90.00	36,100	36,100
	REINFORCING		EST	90	TN		1,150.00	0	103,500	20.00	2,070	REIN	78.27	162,000	265,500
	FORMWORK		EST	1,166	SF		2.50	0	2,900	0.14	188	FORM	99.43	18,700	21,600
	CONCRETE		EST	475	CY		105.00	0	49,900	1.50	819	CONP	79.64	65,300	115,200
	MUD MAT		EST	40	CY		105.00	0	4,200	1.50	69	CONP	79.64	5,500	9,700
	EMBEDDED STEEL		EST	2,375	LB		2.50	0	5,900	0.06	164	CARP	71.88	11,800	17,700
21.6	REAGENT PREPARATION BUILDING - FOUNDATIONS							0	674,900					1,120,500	1,795,400
	EXCAVATION / BACKFILL		EST	2,740	CY			0	0	0.36	1,134	EXFD	90.00	102,100	102,100
	REINFORCING		EST	270	TN		1,150.00	0	310,500	20.00	6,210	REIN	78.27	486,100	796,600
	FORMWORK		EST	2,480	SF		2.50	0	6,200	0.14	399	FORM	99.43	39,700	45,900
	CONCRETE		EST	2,860	CY		105.00	0	300,300	1.50	4,934	CONP	79.64	392,900	693,200
	MUD MAT		EST	210	CY		105.00	0	22,100	1.50	362	CONP	79.64	28,800	50,900
	EMBEDDED STEEL		EST	14,300	LB		2.50	0	35,800	0.06	987	CARP	71.88	70,900	106,700
21.7	REAGENT PREPARATION BUILDING	120' L X 129' W X 130' H						269,400	4,812,500					4,210,100	9,292,000
	STRUCTURAL STEEL		EST	1,200	TN		2650	0	3,180,000	16.00	22,080	STST	105.71	2,334,100	5,514,100
	INSULATED METAL SIDING		EST	64,740	SF		12	0	776,900	0.11	8,190	SDNG	93.41	765,000	1,541,900
	ROLLING OVERHEAD DOOR		EST	640	SF		27	0	17,300	0.25	184	CARP	71.88	13,200	30,500
	METAL ROOF DECKING		EST	15,480	SF		2.7	0	41,800	0.06	1,068	STST	105.71	112,900	154,700
	RIGID ROOF INSULATION		EST	15,480	SF		2.4	0	37,200	0.02	267	ROOF	69.12	18,500	55,700
	ROOFING (4-PLY TAR & GRAVEL)		EST	15,480	SF		1.55	0	24,000	0.04	712	ROOF	69.12	49,200	73,200
	LIGHTWEIGHT CONCRETE FILL 1"		EST	48	CY		100	0	4,800	1.30	71	ROOF	69.12	4,900	9,700
	ROOF FLASHING		EST	498	LF		14.45	0	7,200	0.12	69	ROOF	69.12	4,800	12,000
	ROOF DRAINS		EST	1	LT		45000	0	15,000	500.00	575	PLMB	79.42	45,700	60,700
	FLOOR DRAINS		EST	1	LT		37500	0	20,000	375.00	431	PLMB	79.42	34,200	54,200
	FLOOR SLABS	INCLUDES METAL DECKING AND FORMWORK	EST	47	CY		210	0	9,900	7.50	405	CONP	79.64	32,300	42,200
	FLOOR FINISHES		EST	9,270	SF		2.5	0	23,200	0.05	533	CONP	79.64	42,500	65,700
	LOUVERS/WINDOWS/DOORS		EST	6,474	SF		40	0	259,000	0.35	2,606	CARP	71.88	187,300	446,300
	ROOF VENTILATORS		EST	6	EA		15000	0	90,000	24.00	166	HVAC	81.24	13,500	103,500
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	4,630	SF		45	0	208,400	0.40	2,130	GALL	84.61	180,200	388,600
	H&V		EST	1	LT	194400	77760	194,400	77,800	3629.33	4,174	HVAC	81.24	339,100	611,300
	HVAC	40T PACKAGED UNIT FOR ELECTRICAL EQUIPMENT ROOM. INCLUDES ALLOWANCE FOR CONCRETE PAD AND ELECTRICAL WORK	EST	1	LT	75000	20000	75,000	20,000	350.00	403	HVAC	81.24	32,700	127,700
21.8	PIPE SUPPORT PAD - REAGENT PREP BUILDING							0	13,800					27,200	41,000
	EXCAVATION / BACKFILL		EST	108	CY			0	0	0.36	45	EXFD	90.00	4,000	4,000
	REINFORCING		EST	5.0	TN		1,150.00	0	5,800	20.00	115	REIN	78.27	9,000	14,800

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	FORMWORK		EST	270	SF		2.50	0	700	0.14	43	FORM	99.43	4,300	5,000
	CONCRETE		EST	40	CY		105.00	0	4,200	1.50	69	CONP	79.64	5,500	9,700
	MUD MAT		EST	25	CY		105.00	0	2,600	1.50	43	CONP	79.64	3,400	6,000
	EMBEDDED STEEL		EST	195	LB		2.50	0	500	0.06	13	CARP	71.88	1,000	1,500
21.9	LIGHTING/ TRANSFORMERS & PANELS							52,000	135,000					104,500	291,500
	LIGHT FIXTURES		EST	180	EA		750	0	135,000	4.00	828	WIRE	98.84	81,800	216,800
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	10000		20,000	0	40.00	92	WIRE	98.84	9,100	29,100
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	7500		15,000	0	32.00	74	WIRE	98.84	7,300	22,300
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	2	EA	5000		10,000	0	16.00	37	WIRE	98.84	3,600	13,600
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	2	EA	3500		7,000	0	12.00	28	WIRE	98.84	2,700	9,700
21.10	GROUNDING							5,100	0					13,400	18,500
	GROUND ROD	3/4" - 20' LONG	EST	2	EA	150		300	0	4.00	9	WIRE	98.84	900	1,200
	500 MCM	BARE COPPER WIRE	EST	600	FT	7.65		4,600	0	0.12	83	WIRE	98.84	8,200	12,800
	CADWELD		EST	16	EA	15		200	0	2.00	37	WIRE	98.84	3,600	3,800
	GROUNDING TEST	TEST, CALIBRATION & DOCUMENTATION	EST	2	EA			0	0	3.00	7	WIRE	98.84	700	700
21.11	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE ARE INCLUDED IN SECTION 28.0 - ABSORBER ISLAND													
21.12	COMMUNICATIONS		EST	1	LT		34,000.00	0	34,000	229.00	263	WIRE	98.84	26,000	60,000
21.13	LIGHTNING PROTECTION		EST	1	LT		23,000.00	0	23,000	141.00	162	WIRE	98.84	16,000	39,000
21.14	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							14,075,400	6,072,600		198,645			17,835,300	37,983,300
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										3,180,092
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						17,273		89.78	1,551,000	1,551,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						21,592			1,629,092	1,629,092
	PER DIEM	NONE		0.00	HR						237,510			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				30,363					89,177	119,540
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				303,630						303,630
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			703,770							703,770
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				303,630					891,765	1,195,395
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				910,890					2,675,295	3,586,185
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							703,800	1,548,500					6,836,300	9,088,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	REAGENT (LIMESTONE) PREPARATION ISLAND						14,779,200	7,621,100					24,671,600	47,071,900
22.0	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)														0

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22.1	MECHANICAL EQUIPMENT	PRIMARY & SECONDARY DEWATERING INCLUDING HYDROCLONE FEED TANKS, HYDROCLONES, PUMPS, INTEGRAL PIPING AND BELT VACUUM FILTERS	EST	1	LT	7,250,000		7,250,000	0	58300.00	67,045	MECH	88.89	5,959,600	13,209,600
22.2	PUMPS & AGITATORS							250,000	0					137,000	387,000
	GYPSUM SLURRY TRANSFER PUMPS	1500 GPM, 150 HP	EST	2	EA	40000		80,000	0	220.00	506	MECH	88.89	45,000	125,000
	RECLAIM WATER PUMPS	350 GPM, 25 HP	EST	2	EA	15000		30,000	0	120.00	276	MECH	88.89	24,500	54,500
	RECLAIM WATER TRANSFER PUMPS	500 GPM, 100 HP	EST	2	EA	30000		60,000	0	165.00	380	MECH	88.89	33,700	93,700
	SUMP PUMPS	AUXILIARY PUMPHOUSE BUILDING SUMP PUMPS - DUPLEX. INCLUDES CHECK & ISOLATION VALVES		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
	AGITATOR FOR SUMP PUMPS	AUXILIARY PUMPHOUSE BUILDING SUMP AGITATORS - 5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
	SUMP PUMPS	BYPRODUCT DEWATERING BUILDING SUMP PUMPS - DUPLEX. INCLUDES CHECK & ISOLATION VALVES		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
	AGITATOR FOR SUMP PUMPS	BYPRODUCT DEWATERING BUILDING SUMP AGITATORS - 5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
22.3	PIPING - MECHANICAL		EST	1	LT			282,700	3,555,700					7,786,000	11,624,400
	LARGE BORE PIPING	4" FRP	EST	2,050	LF		28.40	0	58,200	0.38	896	SPNG	94.41	84,600	142,800
	LARGE BORE PIPING	6" FRP	EST	3,300	LF		33.90	0	111,900	0.67	2,543	SPNG	94.41	240,100	352,000
	LARGE BORE PIPING	8" FRP	EST	6,250	LF		51.30	0	320,600	0.95	6,828	SPNG	94.41	644,600	965,200
	LARGE BORE PIPING	10" FRP	EST	6,400	LF		68.00	0	435,200	1.18	8,685	SPNG	94.41	819,900	1,255,100
	LARGE BORE PIPING	12" FRP	EST	1,000	LF		80.90	0	80,900	1.41	1,622	SPNG	94.41	153,100	234,000
	LARGE BORE PIPING	14" FRP	EST	16,500	LF		133.90	0	2,209,400	2.67	50,663	SPNG	94.41	4,783,100	6,992,500
	LARGE BORE PIPING	16" FRP	EST	100	LF		152.20	0	15,200	2.88	331	SPNG	94.41	31,300	46,500
	LARGE BORE PIPING	20" FRP	EST	125	LF		165.00	0	20,600	3.31	476	SPNG	94.41	44,900	65,500
	VALVE	4" BFLY, 150 #, CS, FLANGED	EST	6	EA	625		3,800	0	7.20	50	SPNG	94.41	4,700	8,500
	VALVE	6" BFLY, 150 #, CS, FLANGED	EST	6	EA	850		5,100	0	8.70	60	SPNG	94.41	5,700	10,800
	VALVE	8" BFLY, 150 #, CS, FLANGED	EST	12	EA	1,400		16,800	0	9.10	126	SPNG	94.41	11,900	28,700
	VALVE	10" BFLY, 150 #, CS, FLANGED	EST	10	EA	2,300		23,000	0	13.80	159	SPNG	94.41	15,000	38,000
	VALVE	12" BFLY, 150 #, CS, FLANGED	EST	3	EA	3,000		9,000	0	14.60	50	SPNG	94.41	4,800	13,800
	VALVE	6" AIR OPERATED, 150 #, CS, FLANGED	EST	10	EA	14,000		140,000	0	17.30	199	SPNG	94.41	18,800	158,800
	VALVE	8" AIR OPERATED, 150 #, CS, FLANGED	EST	5	EA	17,000		85,000	0	19.30	111	SPNG	94.41	10,500	95,500
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	3,573	EA		85.00	0	303,700	2.50	10,271	MECH	88.89	913,000	1,216,700
22.4	MATERIAL HANDLING EQUIPMENT							724,000	7,500					614,100	1,345,600
	CONVEYOR GH-1A	36" W x 75' L		75	LF	1,000		75,000	0	7.50	647	MECH	88.89	57,500	132,500
	CONVEYOR GH-1B	36" W x 75' L		75	LF	1,000		75,000	0	30.00	2,588	MECH	88.89	230,000	305,000
	BELT SCALES	CONVEYORS GH-1A AND GH-1B		2	EA	30,000		60,000	0	180.00	414	MECH	88.89	36,800	96,800
	STACKOUT CONVEYOR GH-2A	36" W X 120' L		120	LF	1,100		132,000	0	7.50	1,035	MECH	88.89	92,000	224,000
	STACKOUT CONVEYOR GH-2B	36" W X 120' L		120	LF	1,100		132,000	0	7.50	1,035	MECH	88.89	92,000	224,000
	TELESCOPIC CHUTES	CONVEYORS GH-2A AND GH-2B		2	EA	125,000		250,000	0	375.00	863	MECH	88.89	76,700	326,700
	FRONT END LOADER	NOT INCLUDED						0	0	30.00	0	MECH	88.89	0	0
	DUMP TRUCK	NOT INCLUDED						0	0	700.00	0	MECH	88.89	0	0
	WATER SPRAY AT DISCHARGE OF GH-2A & GH-2B	ALLOWANCE FOR 200 LF SMALL BORE PIPING AND SPRAYS AND VALVVING		300	LF		25.0	0	7,500	0.95	328	MECH	88.89	29,100	36,600
22.5	FIRE PROTECTION SYSTEM FOR BELT CONVEYORS	DELUGE SYSTEM, DRY PIPE, SENSORS, ACTIVATION VALVE AND FM APPROVED PANEL - SUBCONTRACT PRICE FOR ALL CONVEYORS INCLUDES LABOR		1	LT	170,000		170,000	0	0.00	0	MECH	88.89	0	170,000
22.6	CONVEYOR STRUCTURE SUPPORT STEEL	THREE-COAT SHOP PAINT	EST	34	TN		2,900.00	0	99,000	24.00	942	STST	105.71	99,600	198,600

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22.7	PIPE RACK SUPPORT STEEL	THREE-COAT SHOP PAINT	EST	68	TN		2,900.00	0	197,200	24.00	1,877	STST	105.71	198,400	395,600
22.8	TANKS							0	3,825,300					846,700	4,672,000
	LANDFILL SERVICE WATER TANKS	70,000 GAL, CS, 20' DIA X 30' - SUBCONTRACT PRICE INCLUDES LABOR WITH EXTERIOR PRIMED AND FIELD PAINTED	EST	2	EA		157500.0	0	315,000	0.00	0	TANK	89.16	0	315,000
	BLEED TANKS	120,000 GAL, CS, 27' DIA X 27' - SUBCONTRACT PRICE INCLUDES LABOR WITH EXTERIOR PRIMED AND FIELD PAINTED	EST	2	EA		216000.0	0	432,000	0.00	0	TANK	89.16	0	432,000
	RECLAIM WATER TANKS	230,000 GAL, CS, 29' DIA X 33' - SUBCONTRACT PRICE INCLUDES LABOR WITH EXTERIOR PRIMED AND FIELD PAINTED	EST	2	EA		330000.0	0	660,000	0.00	0	TANK	89.16	0	660,000
	RECLAIM WATER TANKS - INTERIOR LINING	FLAKECOAT VINYL ESTER TOTAL FOR TWO TANKS	EST	8,656	SF		15.0	0	129,800	0.35	3,484	PNTR	66.72	232,500	362,300
	LANDFILL RECLAIM WATER TANKS	230,000 GAL, CS, 29' DIA X 33' - SUBCONTRACT PRICE INCLUDES LABOR WITH EXTERIOR PRIMED AND FIELD PAINTED	EST	2	EA		330000.0	0	660,000	0.00	0	TANK	89.16	0	660,000
	LANDFILL RECLAIM WATER TANKS - INTERIOR LINING	FLAKECOAT VINYL ESTER TOTAL FOR TWO TANKS	EST	8,656	SF		15.0	0	129,800	0.35	3,484	PNTR	66.72	232,500	362,300
	MAINTENANCE STORAGE TANK	1,250,000 GAL, CS, 58' DIA X 62' - SUBCONTRACT PRICE INCLUDES LABOR WITH EXTERIOR PRIMED AND FIELD PAINTED	EST	1	EA		1250000.0	0	1,250,000	0.00	0	TANK	89.16	0	1,250,000
	MAINTENANCE STORAGE TANK - INTERIOR LINING	FLAKECOAT VINYL ESTER	EST	16,581	SF		15.0	0	248,700	0.30	5,720	PNTR	66.72	381,700	630,400
22.9	RECLAIM WATER TANKS & PUMPS - FOUNDATIONS							0	26,000					54,000	80,000
	EXCAVATION / BACKFILL		EST	295	CY			0	0	0.36	122	EXFD	90.00	11,000	11,000
	REINFORCING		EST	10.0	TN		1,150.00	0	11,500	20.00	230	REIN	78.27	18,000	29,500
	FORMWORK		EST	384	SF		2.50	0	1,000	0.14	62	FORM	99.43	6,100	7,100
	CONCRETE		EST	103	CY		105.00	0	10,800	1.50	178	CONP	79.64	14,200	25,000
	MUD MAT		EST	9	CY		105.00	0	900	1.50	16	CONP	79.64	1,200	2,100
	EMBEDDED STEEL		EST	705	LB		2.50	0	1,800	0.06	49	CARP	71.88	3,500	5,300
22.10	MAINTENANCE STORAGE TANK & PUMPS - FOUNDATIONS							0	100,000					177,300	277,300
	EXCAVATION / BACKFILL		EST	614	CY			0	0	0.36	254	EXFD	90.00	22,900	22,900
	REINFORCING		EST	42.0	TN		1,150.00	0	48,300	20.00	966	REIN	78.27	75,600	123,900
	FORMWORK		EST	795	SF		2.50	0	2,000	0.14	128	FORM	99.43	12,700	14,700
	CONCRETE		EST	420	CY		105.00	0	44,100	1.50	725	CONP	79.64	57,700	101,800
	MUD MAT		EST	36	CY		105.00	0	3,800	1.50	62	CONP	79.64	4,900	8,700
	EMBEDDED STEEL		EST	705	LB		2.50	0	1,800	0.06	49	CARP	71.88	3,500	5,300
22.11	LANDFILL SERVICE WATER TANKS & PUMP - FOUNDATIONS							0	80,900					155,100	236,000
	EXCAVATION / BACKFILL		EST	614	CY			0	0	0.36	254	EXFD	90.00	22,900	22,900
	REINFORCING		EST	42.0	TN		1,150.00	0	48,300	20.00	966	REIN	78.27	75,600	123,900
	FORMWORK		EST	795	SF		2.50	0	2,000	0.14	128	FORM	99.43	12,700	14,700
	CONCRETE		EST	221	CY		105.00	0	23,200	1.50	381	CONP	79.64	30,400	53,600
	MUD MAT		EST	18	CY		105.00	0	1,900	1.50	31	CONP	79.64	2,500	4,400
	EMBEDDED STEEL		EST	2,210	LB		2.50	0	5,500	0.06	152	CARP	71.88	11,000	16,500
22.12	LANDFILL RECLAIM WATER TANKS & PUMPS - FOUNDATIONS							0	26,000					54,000	80,000
	EXCAVATION / BACKFILL		EST	295	CY			0	0	0.36	122	EXFD	90.00	11,000	11,000
	REINFORCING		EST	10.0	TN		1,150.00	0	11,500	20.00	230	REIN	78.27	18,000	29,500
	FORMWORK		EST	384	SF		2.50	0	1,000	0.14	62	FORM	99.43	6,100	7,100
	CONCRETE		EST	103	CY		105.00	0	10,800	1.50	178	CONP	79.64	14,200	25,000
	MUD MAT		EST	9	CY		105.00	0	900	1.50	16	CONP	79.64	1,200	2,100
	EMBEDDED STEEL		EST	705	LB		2.50	0	1,800	0.06	49	CARP	71.88	3,500	5,300

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22.13	HYDROCLONE FEED TANKS & BLEED TANKS - FOUNDATIONS	TOTAL FOR HYDROCLONE AND BLEED TANKS						0	340,200					618,900	959,100
	EXCAVATION / BACKFILL		EST	1,915	CY			0	0	0.36	793	EXFD	90.00	71,400	71,400
	REINFORCING		EST	212.0	TN		1,150.00	0	243,800	20.00	4,876	REIN	78.27	381,600	625,400
	FORMWORK		EST	2,400	SF		2.50	0	6,000	0.14	386	FORM	99.43	38,400	44,400
	CONCRETE		EST	671	CY		105.00	0	70,500	1.50	1,157	CONP	79.64	92,200	162,700
	MUD MAT		EST	58	CY		105.00	0	6,100	1.50	100	CONP	79.64	8,000	14,100
	EMBEDDED STEEL		EST	5,500	LB		2.50	0	13,800	0.06	380	CARP	71.88	27,300	41,100
22.14	BYPRODUCT STACKOUT CONVEYOR & TRANSFER TOWER - FOUNDATIONS							0	16,100					34,700	50,800
	EXCAVATION / BACKFILL		EST	140	CY			0	0	0.36	58	EXFD	90.00	5,200	5,200
	REINFORCING		EST	6	TN		1,150.00	0	6,900	20.00	138	REIN	78.27	10,800	17,700
	FORMWORK		EST	480	SF		2.50	0	1,200	0.14	77	FORM	99.43	7,700	8,900
	CONCRETE		EST	59	CY		105.00	0	6,200	1.50	102	CONP	79.64	8,100	14,300
	MUD MAT		EST	10	CY		105.00	0	1,100	1.50	17	CONP	79.64	1,400	2,500
	EMBEDDED STEEL		EST	295	LB		2.50	0	700	0.06	20	CARP	71.88	1,500	2,200
22.15	BYPRODUCT STACKOUT PILE - FOUNDATIONS	INCLUDES CONTAINMENT AREA SLAB						0	891,700					1,427,400	2,319,100
	EXCAVATION / BACKFILL		EST	2,900	CY			0	0	0.36	1,201	EXFD	90.00	108,100	108,100
	REINFORCING		EST	360	TN		1,150.00	0	414,000	20.00	8,280	REIN	78.27	648,100	1,062,100
	FORMWORK		EST	2,365	SF		2.50	0	5,900	0.14	381	FORM	99.43	37,900	43,800
	CONCRETE		EST	3,813	CY		105.00	0	400,400	1.50	6,577	CONP	79.64	523,800	924,200
	MUD MAT		EST	453	CY		105.00	0	47,600	1.50	781	CONP	79.64	62,200	109,800
	EMBEDDED STEEL		EST	9,533	LB		2.50	0	23,800	0.06	658	CARP	71.88	47,300	71,100
22.16	PIPE RACK	SUPPORTS AT 15' C/C						0	60,800					149,400	210,200
	EXCAVATION / BACKFILL		EST	1,120	CY			0	0	0.36	464	EXFD	90.00	41,700	41,700
	REINFORCING		EST	24	TN		1,150.00	0	27,600	20.00	552	REIN	78.27	43,200	70,800
	FORMWORK		EST	1,500	SF		2.50	0	3,800	0.14	242	FORM	99.43	24,000	27,800
	CONCRETE		EST	250	CY		105.00	0	26,300	1.50	431	CONP	79.64	34,300	60,600
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	1,250	LB		2.50	0	3,100	0.06	86	CARP	71.88	6,200	9,300
22.17	BYPRODUCT CONTAINMENT WALLS							0	137,300					235,000	372,300
	EXCAVATION / BACKFILL		EST	489	CY			0	0	0.36	202	EXFD	90.00	18,200	18,200
	REINFORCING		EST	46	TN		1,150.00	0	52,900	20.00	1,058	REIN	78.27	82,800	135,700
	FORMWORK		EST	1,520	SF		2.50	0	3,800	0.14	245	FORM	99.43	24,300	28,100
	CONCRETE		EST	489	CY		105.00	0	51,300	1.50	844	CONP	79.64	67,200	118,500
	MUD MAT		EST	221	CY		105.00	0	23,200	1.50	381	CONP	79.64	30,400	53,600
	EMBEDDED STEEL		EST	2,445	LB		2.50	0	6,100	0.06	169	CARP	71.88	12,100	18,200
22.18	INSTALL WIND SCREEN		EST	700	LF		750.00	0	525,000	3.00	2,415	CONP	79.64	192,300	717,300
22.19	BYPRODUCT DEWATERING BUILDING - FOUNDATIONS							0	288,700					478,000	766,700
	EXCAVATION / BACKFILL		EST	1,200	CY			0	0	0.36	497	EXFD	90.00	44,700	44,700
	REINFORCING		EST	120	TN		1,150.00	0	138,000	20.00	2,760	REIN	78.27	216,000	354,000
	FORMWORK		EST	1,500	SF		2.50	0	3,800	0.14	242	FORM	99.43	24,000	27,800
	CONCRETE		EST	1,265	CY		105.00	0	132,800	1.50	2,182	CONP	79.64	173,800	306,600
	MUD MAT		EST	120	CY		105.00	0	12,600	1.50	207	CONP	79.64	16,500	29,100
	EMBEDDED STEEL		EST	600	LB		2.50	0	1,500	0.06	41	CARP	71.88	3,000	4,500
22.20	BYPRODUCT DEWATERING BUILDING	120' L X 74' W X 65' H						145,200	1,586,400					1,488,000	3,219,600
	STRUCTURAL STEEL		EST	320	TN		2650	0	848,000	16.00	5,888	STST	105.71	622,400	1,470,400
	INSULATED METAL SIDING		EST	25,200	SF		12	0	302,400	0.11	3,188	SDNG	93.41	297,800	600,200
	ROLLING OVERHEAD DOOR		EST	640	SF		27	0	17,300	0.25	184	CARP	71.88	13,200	30,500
	METAL ROOF DECKING		EST	8,880	SF		2.7	0	24,000	0.06	613	STST	105.71	64,800	88,800
	RIGID ROOF INSULATION		EST	8,880	SF		2.4	0	21,300	0.02	153	ROOF	69.12	10,600	31,900
	ROOFING (4-PLY TAR & GRAVEL)		EST	8,880	SF		1.55	0	13,800	0.04	408	ROOF	69.12	28,200	42,000
	LIGHTWEIGHT CONCRETE FILL 1"		EST	28	CY		100	0	2,800	1.30	42	ROOF	69.12	2,900	5,700
	ROOF FLASHING		EST	388	LF		14.45	0	5,600	0.12	54	ROOF	69.12	3,700	9,300
	ROOF DRAINS		EST	1	LT		40000	0	15,000	450.00	518	PLMB	79.42	41,100	56,100

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	FLOOR DRAINS		EST	1	LT		32500	0	20,000	350.00	403	PLMB	79.42	32,000	52,000
	FLOOR SLABS		EST	50	CY		210	0	10,500	7.50	431	CONP	79.64	34,300	44,800
	FLOOR FINISHES	MAIN LEVEL	EST	6,680	SF		2.5	0	16,700	0.05	384	CONP	79.64	30,600	47,300
	LOUVERS/WINDOWS/DOORS		EST	2,520	SF		40	0	100,800	0.35	1,014	CARP	71.88	72,900	173,700
	ROOF VENTILATORS		EST	4	EA		15000	0	60,000	24.00	110	HVAC	81.24	9,000	69,000
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	1,780	SF		45	0	80,100	0.40	819	GALL	84.61	69,300	149,400
	H&V		EST	1	LT	70200	28080	70,200	28,100	1310.67	1,507	HVAC	81.24	122,500	220,800
	HVAC	40T PACKAGED UNIT FOR ELECTRICAL EQUIPMENT ROOM. INCLUDES ALLOWANCE FOR CONCRETE PAD AND ELECTRICAL WORK	EST	1	LT	75000	20000	75,000	20,000	350.00	403	HVAC	81.24	32,700	127,700
22.21	PIPE SUPPORT PAD							0	18,300					36,000	54,300
	EXCAVATION / BACKFILL		EST	92	CY			0	0	0.36	38	EXFD	90.00	3,400	3,400
	REINFORCING		EST	6.0	TN		1,150.00	0	6,900	20.00	138	REIN	78.27	10,800	17,700
	FORMWORK		EST	492	SF		2.50	0	1,200	0.14	79	FORM	99.43	7,900	9,100
	CONCRETE		EST	68	CY		105.00	0	7,100	1.50	117	CONP	79.64	9,300	16,400
	MUD MAT		EST	21	CY		105.00	0	2,200	1.50	36	CONP	79.64	2,900	5,100
	EMBEDDED STEEL		EST	340	LB		2.50	0	900	0.06	23	CARP	71.88	1,700	2,600
22.22	AUXILIARY PUMPHOUSE BUILDING WITH ELECTRICAL ROOM - FOUNDATIONS							0	32,300					60,800	93,100
	EXCAVATION / BACKFILL		EST	210	CY			0	0	0.36	87	EXFD	90.00	7,800	7,800
	REINFORCING		EST	11	TN		1,150.00	0	12,900	20.00	258	REIN	78.27	20,200	33,100
	FORMWORK		EST	500	SF		2.50	0	1,300	0.14	81	FORM	99.43	8,000	9,300
	CONCRETE		EST	140	CY		105.00	0	14,700	1.50	242	CONP	79.64	19,200	33,900
	MUD MAT		EST	15	CY		105.00	0	1,600	1.50	26	CONP	79.64	2,100	3,700
	EMBEDDED STEEL		EST	700	LB		2.50	0	1,800	0.06	48	CARP	71.88	3,500	5,300
22.23	AUXILIARY PUMPHOUSE BUILDING	50'L X 35' W X 20'H						101,300	252,500					269,800	623,600
	STRUCTURAL STEEL		EST	20	TN		2650	0	53,000	16.00	368	STST	105.71	38,900	91,900
	INSULATED METAL SIDING		EST	3,400	SF		12	0	40,800	0.11	430	SDNG	93.41	40,200	81,000
	ROLLING OVERHEAD DOOR		EST	320	SF		27	0	8,600	0.25	92	CARP	71.88	6,600	15,200
	METAL ROOF DECKING		EST	1,750	SF		2.7	0	4,700	0.06	121	STST	105.71	12,800	17,500
	RIGID ROOF INSULATION		EST	1,750	SF		2.4	0	4,200	0.02	30	ROOF	69.12	2,100	6,300
	ROOFING (4-PLY TAR & GRAVEL)		EST	1,750	SF		1.55	0	2,700	0.04	81	ROOF	69.12	5,600	8,300
	LIGHTWEIGHT CONCRETE FILL 1"		EST	5	CY		100	0	500	1.30	8	ROOF	69.12	600	1,100
	ROOF FLASHING		EST	170	LF		14.45	0	2,500	0.12	23	ROOF	69.12	1,600	4,100
	ROOF DRAINS		EST	1	LT		20000	0	15,000	250.00	288	PLMB	79.42	22,800	37,800
	FLOOR DRAINS		EST	1	LT		18000	0	20,000	220.00	253	PLMB	79.42	20,100	40,100
	FLOOR SLABS		EST	16	CY		210	0	3,400	7.50	138	CONP	79.64	11,000	14,400
	FLOOR FINISHES	MAIN LEVEL	EST	1,313	SF		2.5	0	3,300	0.05	75	CONP	79.64	6,000	9,300
	LOUVERS/WINDOWS/DOORS		EST	340	SF		40	0	13,600	0.35	137	CARP	71.88	9,800	23,400
	ROOF VENTILATORS		EST	2	EA		15000	0	30,000	24.00	55	HVAC	81.24	4,500	34,500
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	438	SF		45	0	19,700	0.40	201	GALL	84.61	17,000	36,700
	H&V		EST	1	LT	26250	10500	26,300	10,500	490.67	564	HVAC	81.24	45,800	82,600
	ADDITONAL HVAC UNIT FOR ELECTRICAL ROOM & CONTROLS	40T PACKAGED UNIT FOR ELECTRICAL EQUIPMENT ROOM. INCLUDES ALLOWANCE FOR CONCRETE PAD AND ELECTRICAL WORK	EST	1	LT	75000	20000	75,000	20,000	350.00	300	HVAC	81.24	24,400	119,400
22.24	SITE GRADING - GYPSUM HANDLING AREA							0	0					587,800	587,800
	CUT		EST	18,000	CY			0	0	0.08	1,656	ETWK	177.49	293,900	293,900
	FILL		EST	18,000	CY			0	0	0.08	1,656	ETWK	177.49	293,900	293,900
22.25	ROADS & SURFACING - GYPSUM HANDLING AREA							0	188,000					427,900	615,900
	CONCRETE PAD BUILDING ENTRANCES	10" REINFORCED CONCRETE	EST	100	SY		80	0	8,000	1.50	173	CONP	79.64	13,700	21,700
	AGGREGATE AREA SURFACING	INCLUDES: 6" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST	20,000	SY		9	0	180,000	0.17	3,910	BCSE	105.94	414,200	594,200

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22.26	GYPSUM HANDLING & STORAGE							0	1,179,900					1,854,100	3,034,000
	GYPSUM AREA SURFACING	12" REINFORCED CONCRETE	EST	11,500	SY		96	0	1,104,000	1.60	21,160	CONP	79.64	1,685,200	2,789,200
	GYPSUM RUNOFF DRAINAGE DITCH	6" REINFORCED CONCRETE	EST	1,300	SY		48	0	62,400	1.20	1,794	CONP	79.64	142,900	205,300
	DRAINAGE CULVERTS	24" DIA CHDPE	EST	150	LF		84.7	0	12,700	1.41	243	YDPP	90.14	21,900	34,600
	EXCAVATION / BACKFILL	FOR UNDERGROUND PIPING	EST	167	CY			0	0	0.20	38	EXFD	90.00	3,500	3,500
	BEDDING	FOR UNDERGROUND PIPING	EST	22	CY		35.0	0	800	0.25	6	EXFD	90.00	600	1,400
22.27	GYPSUM RUNOFF POND							68,000	110,400					315,700	494,100
	SAND EXCAVATION		EST	4,000	CY			0	0	0.03	120	ETWK	177.49	21,200	21,200
	ROCK EXCAVATION	ASSUME ROCK IS RIPPABLE	EST	500	CY			0	0	0.05	28	ETWK	177.49	4,900	4,900
	POND SURFACING	6" REINFORCED CONCRETE	EST	2,300	SY		48	0	110,400	1.20	3,174	CONP	79.64	252,800	363,200
	PUMPS	500 GPM, 100 PSIG	EST	2	EA	34000		68,000	0	180.00	414	MECH	88.89	36,800	104,800
22.28	GYPSUM RUNOFF POND PUMP STRUCTURE - CONCRETE							0	47,000					105,400	152,400
	EXCAVATION / BACKFILL		EST	0	CY			0	0	0.36	0	EXFD	90.00	0	0
	REINFORCING		EST	7	TN		1,150.00	0	8,100	20.00	161	REIN	78.27	12,600	20,700
	FORMWORK		EST	3,968	SF		2.50	0	9,900	0.14	639	FORM	99.43	63,500	73,400
	CONCRETE		EST	76	CY		105.00	0	8,000	1.50	131	CONP	79.64	10,400	18,400
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	380	LB		2.50	0	1,000	0.06	26	CARP	71.88	1,900	2,900
	BYPRODUCT POND PUMP STRUCTURE - GALLERY		EST	5	TN		4,000.00	0	20,000	35.00	201	GALL	84.61	17,000	37,000
22.29	OILY WATER SEWER - GYPSUM HANDLING AREA							1,500	9,000					14,200	24,700
	PIPING	6" CISP	EST	200	LF		21.5	0	4,300	0.33	76	YDPP	90.14	6,800	11,100
	POST INDICATOR VALVE		EST	2	EA	750		1,500	0	6.00	14	YDPP	90.14	1,200	2,700
	MANHOLES		EST	3	EA		1575.0	0	4,700	20.00	69	YDPP	90.14	6,200	10,900
22.30	OIL SEPARATOR - GYPSUM HANDLING AREA	500 GPM W/ INTEGRAL LIFT STATION	EST	1	EA	50000		50,000	0	560.00	644	YDPP	90.14	58,100	108,100
22.31	EROSION & SEDIMENT CONTROL - GYPSUM HANDLING AREA							0	18,000					28,300	46,300
	SILT FENCE		EST	8,000	LF		1.0	0	8,000	0.02	184	LAND	61.45	11,300	19,300
	ROCK CHECK DAMS		EST	20	EA		500.0	0	10,000	12.00	276	LAND	61.45	17,000	27,000
22.32	SITE GRADING - ACCESS ROAD WIDENING & CONTAINMENT DITCH	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA						0	0					60,400	60,400
	CUT		EST	2,700	CY			0	0	0.08	248	ETWK	177.49	44,100	44,100
	FILL		EST	1,000	CY			0	0	0.08	92	ETWK	177.49	16,300	16,300
22.33	ROADS & SURFACING - GYPSUM DEWATERING AREA	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA						0	66,300					190,800	257,100
	WIDENING OF EXISTING ROAD	INCLUDES: 6" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST	3,700	SY		9	0	33,300	0.17	723	BCSE	105.94	76,600	109,900
	GUARDRAIL	INCLUDES POSTS	EST	2,200	SY		15	0	33,000	0.50	1,265	PBIT	90.25	114,200	147,200
22.34	PIPELINE CONTAINMENT & DRAINAGE	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA						0	271,600					429,200	700,800
	CONTAINMENT / DICTH SURFACING	4" SHOTCRETE W/ WELDED WIRE FABRIC	EST	5,800	SY		46	0	265,800	0.78	5,188	CONP	79.64	413,200	679,000
	CONCRETE ENERGY DISSIPATION STRUCTURE		EST	25	CY		230	0	5,800	7.00	201	CONP	79.64	16,000	21,800
22.35	CONTAINMENT RUNOFF POND	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA						68,000	114,300					344,300	526,600
	SAND EXCAVATION		EST	4,000	CY			0	0	0.03	120	ETWK	177.49	21,200	21,200
	ROCK EXCAVATION	ASSUME ROCK IS RIPPABLE	EST	500	CY			0	0	0.05	28	ETWK	177.49	4,900	4,900
	POND SURFACING	6" REINFORCED CONCRETE	EST	2,300	SY		48	0	110,400	1.20	3,174	CONP	79.64	252,800	363,200
	PUMPS	500 GPM, 100 PSIG	EST	2	EA	34000		68,000	0	180.00	414	MECH	88.89	36,800	104,800
	LARGE BORE PIPING	6" HDPE, SDR 9	EST	400	LF		9.8	0	3,900	0.69	317	YDPP	90.14	28,600	32,500
22.36	CONTAINMENT POND PUMP STRUCTURE - CONCRETE	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA						0	47,000					105,400	152,400
	EXCAVATION / BACKFILL		EST	0	CY			0	0	0.36	0	EXFD	90.00	0	0

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	REINFORCING		EST	7	TN		1,150.00	0	8,100	20.00	161	REIN	78.27	12,600	20,700
	FORMWORK		EST	3,968	SF		2.50	0	9,900	0.14	639	FORM	99.43	63,500	73,400
	CONCRETE		EST	76	CY		105.00	0	8,000	1.50	131	CONP	79.64	10,400	18,400
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	380	LB		2.50	0	1,000	0.06	26	CARP	71.88	1,900	2,900
	BYPRODUCT POND PUMP STRUCTURE - GALLERY		EST	5	TN		4,000.00	0	20,000	35.00	201	GALL	84.61	17,000	37,000
22.37	SITE GRADING - PIPELINE CONTAINMENT & DRAINAGE	SOUTH OF HWY 23						0	0					30,200	30,200
	CUT		EST	1,600	CY			0	0	0.08	147	ETWK	177.49	26,100	26,100
	FILL		EST	250	CY			0	0	0.08	23	ETWK	177.49	4,100	4,100
22.38	PIPELINE CONTAINMENT & DRAINAGE	SOUTH OF HWY 23						0	169,600					263,600	433,200
	CONTAINMENT / DICTH SURFACING	4" SHOTCRETE W/ WELDED WIRE FABRIC	EST	3,700	SY		46	0	169,600	0.78	3,309	CONP	79.64	263,600	433,200
22.39	PIPE BORING PIT	SOUTH OF HWY 23						0	5,300					50,900	56,200
	SAND EXCAVATION		EST	950	CY			0	0	0.08	87	ETWK	177.49	15,500	15,500
	ROCK EXCAVATION	ASSUMED ROCK IS RIPPABLE	EST	400	CY			0	0	0.08	37	ETWK	177.49	6,500	6,500
	BACKFILL		EST	1,350	CY			0	0	0.10	155	ETWK	177.49	27,600	27,600
	4" TOPSOIL		EST	100	SY		45	0	4,500	0.07	7	LAND	61.45	500	5,000
	GRASS SEEDING, FERTILIZER AND MULCH		EST	0.2	AC		4000	0	800	60.00	14	LAND	61.45	800	1,600
22.40	PIPE RECEIVING PIT	NORTH OF HWY 23						0	4,900					43,500	48,400
	SAND EXCAVATION		EST	800	CY			0	0	0.08	74	ETWK	177.49	13,100	13,100
	ROCK EXCAVATION	ASSUMED ROCK IS RIPPABLE	EST	350	CY			0	0	0.08	32	ETWK	177.49	5,700	5,700
	BACKFILL		EST	1,150	CY			0	0	0.10	132	ETWK	177.49	23,500	23,500
	4" TOPSOIL		EST	90	SY		45	0	4,100	0.07	7	LAND	61.45	400	4,500
	GRASS SEEDING, FERTILIZER AND MULCH		EST	0.2	AC		4000	0	800	60.00	14	LAND	61.45	800	1,600
22.41	DIRECTIONAL BORING FOR BURIED PIPE	BENEATH HWY 23						28,000	652,500					277,000	957,500
	MOBILIZATION / DEMOBILIZATION	BORING EQUIPMENT, MUD TRAILER, OPERATORS AND LABORERS	EST	1	LT		12000	0	12,000	80.00	92	EXFD	90.00	8,300	20,300
	EQUIPMENT RENTAL	BORING EQUIPMENT, MUD TRAILER. BASED ON 2 WEEKS RENTAL	EST	1	LT	28000		28,000	0	400.00	460	EXFD	90.00	41,400	69,400
	DIRECTIONAL BORING	7-24" DIA 320FT LONG EACH	EST	2,240	LF			0	0	0.32	824	EXFD	90.00	74,200	74,200
	LARGE BORE PIPING	FOR UNDERGROUND SLEEVE, 24" CS PIPE. 40 FT SPOOL PIECES	EST	2,240	LF		285	0	638,400	0.65	1,674	YDPP	90.14	150,900	789,300
	RUBBER END SEALS	NEOPRENE	EST	14	EA		150	0	2,100	1.50	24	YDPP	90.14	2,200	4,300
22.42	TRANSFORMERS							470,000	0					136,500	606,500
	SST TRANSFORMERS: 23F & 23G	13.8KV-4160V, 2 WINDING XFMR	EST	2	EA	150000		300,000	0	450.00	1,035	EHEA	79.16	81,900	381,900
	SUS TRANSFORMERS: 36F/G	13.8KV-480V,3PHASE, CAST COIL	EST	2	EA	85000		170,000	0	300.00	690	EHEA	79.16	54,600	224,600
22.43	SWITCHGEAR							825,600	0					500,700	1,326,300
	13.8 KV MEDIUM VOLTAGE SWITCHGEAR (13F/G))	PRICE PER SECTION	EST	6	EA	50000		300,000	0	325.00	2,243	EHEA	79.16	177,500	477,500
	4.16KV MEDIUM VOLTAGE SWITCHGEAR& MCCS (21A/B)	PRICE PER SECTION	EST	8	EA	41200		329,600	0	300.00	2,760	EHEA	79.16	218,500	548,100
	480V LOW VOLTAGE SWITCHGEAR (31F/G ; 32F/G)	PRICE PER SECTION	EST	5	EA	39200		196,000	0	230.00	1,323	EHEA	79.16	104,700	300,700
22.44	CABLE BUS & TERMINATIONS							355,500	39,400					730,700	1,125,600
	5KV CABLE BUS		EST	300	FT	567		170,100	0	9.00	3,105	WIRE	98.84	306,900	477,000
	480V CABLE BUS		EST	300	FT	618		185,400	0	10.30	3,554	WIRE	98.84	351,200	536,600
	CABLE BUS TERMINATION	5KV TERMINATIONS	EST	4	EA		4,440.00	0	17,800	51.60	237	WIRE	98.84	23,500	41,300
	CABLE BUS TERMINATION	480V TERMINATIONS	EST	8	EA		2,700.00	0	21,600	54.00	497	WIRE	98.84	49,100	70,700
22.45	MCC							123,600	0					6,300	129,900
	480V MCC	PER MCC LINEUP	EST	4	EA	30900		123,600	0	16.00	64	WIRE	98.84	6,300	129,900

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22.46	MIMIC PANELS		EST	1	EA	17500		17,500	0	16.00	16	WIRE	98.84	1,600	19,100
22.47	EMERGENCY POWER SYSTEM							285,500	0					38,900	324,400
	DC PANEL BOADRD		EST	1	EA	15500		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	UPS PANEL BOARDS		EST	2	EA	15500		31,000	0	40.00	92	WIRE	98.84	9,100	40,100
	UPS		EST	1	EA	60000		60,000	0	32.00	37	WIRE	98.84	3,600	63,600
	SWITCHBOARD		EST	1	EA	40000		40,000	0	40.00	46	WIRE	98.84	4,500	44,500
	BYPASS TRANSFORMERS		EST	1	EA	25000		25,000	0	40.00	46	WIRE	98.84	4,500	29,500
	BATTERY CHARGER		EST	2	EA	32000		64,000	0	16.00	37	WIRE	98.84	3,600	67,600
	BATTERIES		EST	1	LT	50000		50,000	0	80.00	92	WIRE	98.84	9,100	59,100
22.48	GROUNDING							9,400	0					25,400	34,800
	GROUND ROD	3/4" - 20' LONG	EST	8	EA	150		1,200	0	4.00	37	WIRE	98.84	3,600	4,800
	500 MCM	BARE COPPER WIRE	EST	1,000	FT	7.65		7,700	0	0.12	138	WIRE	98.84	13,600	21,300
	CADWELD		EST	32	EA	15		500	0	2.00	74	WIRE	98.84	7,300	7,800
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	8.00	9	WIRE	98.84	900	900
22.49	LIGHTING/ TRANSFORMERS & PANELS							52,000	135,000					104,500	291,500
	LIGHT FIXTURES		EST	180	EA		750	0	135,000	4.00	828	WIRE	98.84	81,800	216,800
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	10000		20,000	0	40.00	92	WIRE	98.84	9,100	29,100
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	7500		15,000	0	32.00	74	WIRE	98.84	7,300	22,300
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	2	EA	5000		10,000	0	16.00	37	WIRE	98.84	3,600	13,600
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	2	EA	3500		7,000	0	12.00	28	WIRE	98.84	2,700	9,700
22.50	RACEWAY, CABLE TRAY, & CONDUIT							0	354,700					1,514,100	1,868,800
	12" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,000	LF		18.25	0	18,300	1.10	1,100	WIRE	98.84	108700	127,000
	18" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,000	LF		21.50	0	21,500	1.45	1,450	WIRE	98.84	143300	164,800
	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,000	LF		27.10	0	27,100	1.75	1,750	WIRE	98.84	173000	200,100
	36" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,000	LF		30.30	0	30,300	1.95	1,950	WIRE	98.84	192700	223,000
	5" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	900	LF		61.00	0	54,900	1.13	1,014	WIRE	98.84	100300	155,200
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,800	LF		31.00	0	55,800	0.81	1,453	WIRE	98.84	143600	199,400
	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,900	LF		21.50	0	40,900	0.65	1,226	WIRE	98.84	121100	162,000
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	2,800	LF		9.25	0	25,900	0.35	986	WIRE	98.84	97400	123,300
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	3,500	LF		7.15	0	25,000	0.28	994	WIRE	98.84	98200	123,200
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	6,000	LF		4.44	0	26,600	0.24	1,434	WIRE	98.84	141700	168,300
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	8,800	LF		3.23	0	28,400	0.19	1,963	WIRE	98.84	194100	222,500
22.51	13.8 KV OH LINE OPGW	INCLUDES POLES, CONDUCTORS, INSULATORS & GROUNDING	EST	5,250	LF		45.75	0	240,200	0.49	2,958	WIRE	98.84	292400	532,600
22.52	HIGH VOLTAGE POWER CABLE & TERMINATION							0	88,400					256,600	345,000
	1/C # 500KCMIL-15KV	1/C # 500KCMIL-15KV	EST	1,800	LF		9.27	0	16,700	0.23	476	WIRE	98.84	47100	63,800
	1/C # 4/0-15KV	1/C # 4/0-15KV	EST	15,750	LF		4.55	0	71,700	0.12	2,119	WIRE	98.84	209500	281,200
22.53	MEDIUM VOLTAGE POWER CABLE & TERMINATION	1/C # 350KCMIL-5KV	EST	3,000	LF		6.13	0	18,400	0.23	794	WIRE	98.84	78400	96,800
22.54	LOW VOLTAGE POWER CABLE & TERMINATION							0	62,700					547,400	610,100
	3/C # 500KCMIL- 600V		EST	2,400	LF		26.12	0	62,700	0.69	1,904	WIRE	98.84	188200	250,900
	#4/0 - #12 AWG-600V		EST	40,000	LF		7.22			0.08	3,634	WIRE	98.84	359200	359,200

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22.55	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	EST	35,000	LF		3.20	0	112,000	0.08	3,180	WIRE	98.84	314300	426,300
22.56	FOUNDATIONS FOR TRANSFORMERS							0	70,200					205,400	275,600
	EXCAVATION / BACKFILL		EST	1,000	CY			0	0	0.36	414	EXFD	90.00	37,300	37,300
	REINFORCING		EST	20	TN		1,150.00	0	23,000	20.00	460	REIN	78.27	36,000	59,000
	FORMWORK		EST	5,000	SF		2.50	0	12,500	0.14	805	FORM	99.43	80,000	92,500
	CONCRETE		EST	190	CY		105.00	0	20,000	1.50	328	CONP	79.64	26,100	46,100
	MUD MAT		EST	45	CY		105.00	0	4,700	1.50	78	CONP	79.64	6,200	10,900
	EMBEDDED STEEL		EST	4,000	LB		2.50	0	10,000	0.06	276	CARP	71.88	19,800	29,800
22.57	FIREWALL FOR TRANSFORMERS							0	3,200					8,300	11,500
	REINFORCING		EST	1.2	TN		1,150.00	0	1,400	20.00	28	REIN	78.27	2,200	3,600
	FORMWORK		EST	80	SF		2.50	0	200	0.14	13	FORM	99.43	1,300	1,500
	CONCRETE		EST	15	CY		105.00	0	1,600	3.50	60	CONP	79.64	4,800	6,400
22.58	COMMUNICATIONS		EST	1	LT		34,000.00	0	34,000	229.00	263	WIRE	98.84	26,000	60,000
22.59	LIGHTNING PROTECTION		EST	1	LT		13,000.00	0	13,000	91.00	105	WIRE	98.84	10,300	23,300
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							11,277,800	16,121,900		346,218			31,056,700	58,456,400
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										5,537,746
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						30,106		89.70	2,701,000	2,701,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						37,632			2,836,746	2,836,746
	PER DIEM	NONE		0.00	HR						413,956			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				80,610					155,284	235,893
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				806,095						806,095
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			563,890							563,890
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				806,095					1,552,835	2,358,930
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				2,418,285					4,658,505	7,076,790
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							563,900	4,111,100					11,904,400	16,579,300
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)						11,841,700	20,233,000					42,961,100	75,035,700
23.0	WET FGD ABSORBER ISLAND														0
23.1	MECHANICAL EQUIPMENT	INCLUDES ABSORBER MODULE (A2205) WITH INTERNALS, INLET DUCT ONLY THROUGH WET/DRY INTERFACE, PIPING INSIDE ABSORBER BUILDING TO TERMINAL POINTS, RECYCLE PUMPS, OXIDATION BLOWERS, MIST ELIMINATOR AND WASH PUMPS AND OTHER MISC. EQUIPMENT AND MATERIAL	EST	1	LT	41029000		41,029,000	0	398100.00	457,815	MECH	88.89	40,695,200	81,724,200

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23.2	ADDITIONAL COST FOR C276 ABSORBER SHELL MATERIAL ABOVE THE PRICE OF A2205 ABSORBER SHELL	INCLUDES MATERIAL AND WELDING ROD COST DIFFERENTIAL - 49,800 TOTAL SF	EST	49,800	SF		308.00	0	15,338,400	0.00	0	MECH	88.89	0	15,338,400
23.3	SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
23.4	AGITATOR FOR SUMP PUMPS	5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
23.5	EMERGENCY DIESEL DRIVEN QUENCH PUMP	INCLUDED WITH SECTION 1, ID FANS.													
23.6	PIPING - MECHANICAL	ALL PIPING INCLUDED IN OEM EQUIPMENT COST. NO BOP PIPING						0	0					0	0
23.7	ABSORBER VESSEL - FOUNDATIONS							0	366,900					672,900	1,039,800
	EXCAVATION / BACKFILL		EST	2,921	CY			0	0	0.36	1,209	EXFD	90.00	108,800	108,800
	REINFORCING		EST	148	TN		1,150.00	0	170,200	20.00	3,404	REIN	78.27	266,400	436,600
	FORMWORK		EST	2,121	SF		2.50	0	5,300	0.14	341	FORM	99.43	34,000	39,300
	CONCRETE		EST	1,571	CY		105.00	0	165,000	1.50	2,710	CONP	79.64	215,800	380,800
	MUD MAT		EST	65	CY		105.00	0	6,800	1.50	112	CONP	79.64	8,900	15,700
	EMBEDDED STEEL		EST	7,855	LB		2.50	0	19,600	0.06	542	CARP	71.88	39,000	58,600
23.8	ABSORBER BUILDING - FOUNDATIONS							0	564,200					936,700	1,500,900
	EXCAVATION / BACKFILL		EST	2,410	CY			0	0	0.36	998	EXFD	90.00	89,800	89,800
	REINFORCING		EST	230	TN		1,150.00	0	264,500	20.00	5,290	REIN	78.27	414,000	678,500
	FORMWORK		EST	2,390	SF		2.50	0	6,000	0.14	385	FORM	99.43	38,300	44,300
	CONCRETE		EST	2,470	CY		105.00	0	259,400	1.50	4,261	CONP	79.64	339,300	598,700
	MUD MAT		EST	180	CY		105.00	0	18,900	1.50	311	CONP	79.64	24,700	43,600
	EMBEDDED STEEL		EST	6,175	LB		2.50	0	15,400	0.06	426	CARP	71.88	30,600	46,000
23.9	ABSORBER BUILDING	150' L X 89' W X 60' H						164,500	2,583,100					2,368,200	5,115,800
	STRUCTURAL STEEL		EST	550	TN		2650	0	1,457,500	16.00	10,120	STST	105.71	1,069,800	2,527,300
	INSULATED METAL SIDING		EST	28,680	SF		12	0	344,200	0.11	3,628	SDNG	93.41	338,900	683,100
	ROLLING OVERHEAD DOOR		EST	960	SF		27	0	25,900	0.25	276	CARP	71.88	19,800	45,700
	METAL ROOF DECKING		EST	13,350	SF		2.7	0	36,000	0.06	921	STST	105.71	97,400	133,400
	RIGID ROOF INSULATION		EST	13,350	SF		2.4	0	32,000	0.02	230	ROOF	69.12	15,900	47,900
	ROOFING (4-PLY TAR & GRAVEL)		EST	13,350	SF		1.55	0	20,700	0.04	614	ROOF	69.12	42,400	63,100
	LIGHTWEIGHT CONCRETE FILL 1"		EST	39	CY		100	0	3,900	1.30	58	ROOF	69.12	4,000	7,900
	ROOF FLASHING		EST	478	LF		14.45	0	6,900	0.12	66	ROOF	69.12	4,600	11,500
	ROOF DRAINS		EST	1	LT		45000	0	15,000	500.00	575	PLMB	79.42	45,700	60,700
	FLOOR DRAINS		EST	1	LT		37500	0	20,000	375.00	431	PLMB	79.42	34,200	54,200
	FLOOR SLABS	INCLUDES METAL DECKING AND FORMWORK	EST	55	CY		210	0	11,600	7.50	474	CONP	79.64	37,800	49,400
	FLOOR FINISHES		EST	8,140	SF		2.5	0	20,400	0.05	468	CONP	79.64	37,300	57,700
	LOUVERS/WINDOWS/DOORS		EST	5,850	SF		40	0	234,000	0.35	2,355	CARP	71.88	169,300	403,300
	ROOF VENTILATORS		EST	6	EA		20000	0	120,000	32.00	221	HVAC	81.24	17,900	137,900
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	3,760	SF		45	0	169,200	0.40	1,730	GALL	84.61	146,300	315,500
	H&V		EST	1	LT	164500	65800	164,500	65,800	3070.67	3,531	HVAC	81.24	286,900	517,200
23.10	PIPE SUPPORT PAD - ABSORBER BUILDING							0	7,700					16,100	23,800
	EXCAVATION / BACKFILL		EST	95	CY			0	0	0.36	39	EXFD	90.00	3,500	3,500
	REINFORCING		EST	5.0	TN		1,150.00	0	5,800	20.00	115	REIN	78.27	9,000	14,800
	FORMWORK		EST	80	SF		2.50	0	200	0.14	13	FORM	99.43	1,300	1,500
	CONCRETE		EST	10	CY		105.00	0	1,100	1.50	17	CONP	79.64	1,400	2,500
	MUD MAT		EST	5	CY		105.00	0	500	1.50	9	CONP	79.64	700	1,200
	EMBEDDED STEEL		EST	50	LB		2.50	0	100	0.06	3	CARP	71.88	200	300
23.11	OXIDATION AIR BLOWER BUILDING - FOUNDATIONS							0	37,000					67,300	104,300

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Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	EXCAVATION / BACKFILL		EST	188	CY			0	0	0.36	78	EXFD	90.00	7,000	7,000
	REINFORCING		EST	16.0	TN		1,150.00	0	18,400	20.00	368	REIN	78.27	28,800	47,200
	FORMWORK		EST	480	SF		2.50	0	1,200	0.14	77	FORM	99.43	7,700	8,900
	CONCRETE		EST	133	CY		105.00	0	14,000	1.50	229	CONP	79.64	18,300	32,300
	MUD MAT		EST	16	CY		105.00	0	1,700	1.50	28	CONP	79.64	2,200	3,900
	EMBEDDED STEEL		EST	665	LB		2.50	0	1,700	0.06	46	CARP	71.88	3,300	5,000
23.12	OXIDATION AIR BLOWER BUILDING	30' L X 30' W X 25' H						33,800	191,000					201,400	426,200
	STRUCTURAL STEEL		EST	14	TN		2650	0	35,800	16.00	248	STST	105.71	26,300	62,100
	INSULATED METAL SIDING		EST	3,000	SF		12	0	36,000	0.11	380	SDNG	93.41	35,400	71,400
	ROLLING OVERHEAD DOOR		EST	320	SF		27	0	8,600	0.25	92	CARP	71.88	6,600	15,200
	METAL ROOF DECKING		EST	900	SF		2.7	0	2,400	0.06	62	STST	105.71	6,600	9,000
	RIGID ROOF INSULATION		EST	900	SF		2.4	0	2,200	0.02	16	ROOF	69.12	1,100	3,300
	ROOFING (4-PLY TAR & GRAVEL)		EST	900	SF		1.55	0	1,400	0.04	41	ROOF	69.12	2,900	4,300
	LIGHTWEIGHT CONCRETE FILL 1"		EST	3	CY		100	0	300	1.30	4	ROOF	69.12	300	600
	ROOF FLASHING		EST	120	LF		14.45	0	1,700	0.12	17	ROOF	69.12	1,100	2,800
	ROOF DRAINS		EST	1	LT		7000	0	15,000	50.00	58	PLMB	79.42	4,600	19,600
	FLOOR DRAINS		EST	1	LT		7500	0	20,000	60.00	69	PLMB	79.42	5,500	25,500
	FLOOR SLABS	NONE	EST	0	CY		210	0	0	7.50	0	CONP	79.64	0	0
	FLOOR FINISHES	MAIN LEVEL	EST	810	SF		2.5	0	2,000	0.05	47	CONP	79.64	3,700	5,700
	BLOCK WALLS	SOUND ATTENUATING INTERIOR BLOCK WALLS	EST	3,000	SF		8	0	24,000	0.18	621	MSRY	73.39	45,600	69,600
	LOUVERS/WINDOWS/DOORS & VENTILATORS	SOUND ATTENUATING	EST	300	SF	75	40	22,500	12,000	1.25	431	CARP	71.88	31,000	65,500
	ROOF VENTILATORS		EST	1	EA		15000	0	15,000	24.00	28	HVAC	81.24	2,200	17,200
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	225	SF		45	0	10,100	0.40	104	GALL	84.61	8,800	18,900
	H&V		EST	1	LT	11250	4500	11,300	4,500	210.67	242	HVAC	81.24	19,700	35,500
23.13	PIPE SUPPORT PAD - OXIDATION BUILDING							0	7,700					13,700	21,400
	EXCAVATION / BACKFILL		EST	30	CY			0	0	0.36	12	EXFD	90.00	1,100	1,100
	REINFORCING		EST	5.0	TN		1,150.00	0	5,800	20.00	115	REIN	78.27	9,000	14,800
	FORMWORK		EST	80	SF		2.50	0	200	0.14	13	FORM	99.43	1,300	1,500
	CONCRETE		EST	10	CY		105.00	0	1,100	1.50	17	CONP	79.64	1,400	2,500
	MUD MAT		EST	5	CY		105.00	0	500	1.50	9	CONP	79.64	700	1,200
	EMBEDDED STEEL		EST	50	LB		2.50	0	100	0.06	3	CARP	71.88	200	300
23.14	DUCTWORK	INCLUDES INTERNAL BRACING AND TURNING VANES	EST	160	TN		3,250.00	0	520,000	50.00	9,200	FLDU	107.96	993,200	1,513,200
23.15	DUCT SUPPORT STEEL	THREE-COAT SHOP PAINT	EST	80	TN		2,900.00	0	232,000	24.00	2,208	STST	105.71	233,400	465,400
23.16	DUCTWORK INSULATION & LAGGING		EST	12,250	SF		12.00	0	147,000	0.25	3,522	DINS	81.75	287,900	434,900
23.17	FOUNDATIONS FOR DUCT SUPPORT STEEL							0	27,800					53,200	81,000
	EXCAVATION / BACKFILL		EST	180	CY			0	0	0.36	75	EXFD	90.00	6,700	6,700
	REINFORCING		EST	12	TN		1,150.00	0	13,800	20.00	276	REIN	78.27	21,600	35,400
	FORMWORK		EST	450	SF		2.50	0	1,100	0.14	72	FORM	99.43	7,200	8,300
	CONCRETE		EST	95	CY		105.00	0	10,000	1.50	164	CONP	79.64	13,100	23,100
	MUD MAT		EST	15	CY		105.00	0	1,600	1.50	26	CONP	79.64	2,100	3,700
	EMBEDDED STEEL		EST	500	LB		2.50	0	1,300	0.06	35	CARP	71.88	2,500	3,800
23.18	TRANSFORMERS							981,000	0					209,300	1,190,300
	SST TRANSFORMERS: 22F & 22G	13.8KV-4160V, 2 WINDING XFMR	EST	2	EA	320500		641,000	0	550.00	1,265	EHEA	79.16	100,100	741,100
	SUS TRANSFORMERS: 34F/G; 35F/G	13.8KV-480V,3PHASE, CAST COIL	EST	4	EA	85000		340,000	0	300.00	1,380	EHEA	79.16	109,200	449,200
23.19	SWITCHGEAR							1,162,800	0					673,700	1,836,500
	13.8 KV MEDIUM VOLTAGE SWITCHGEAR	PRICE PER SECTION	EST	8	EA	50000		400,000	0	300.00	2,760	EHEA	79.16	218,500	618,500
	4.16KV MEDIUM VOLTAGE SWITCHGEAR& MCCS	PRICE PER SECTION	EST	9	EA	41200		370,800	0	300.00	3,105	EHEA	79.16	245,800	616,600
	480V LOW VOLTAGE SWITCHGEAR	PRICE PER SECTION	EST	10	EA	39200		392,000	0	230.00	2,645	EHEA	79.16	209,400	601,400
23.20	CABLE BUS & TERMINATIONS							867,100	46,600					1,634,100	2,547,800

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	15KV CABLE BUS	CABLE BUS	EST	700	FT	466		326,200	0	6.75	5,434	WIRE	98.84	537,100	863,300
	5KV CABLE BUS	CABLE BUS	EST	300	FT	567		170,100	0	9.00	3,105	WIRE	98.84	306,900	477,000
	480V CABLE BUS	CABLE BUS	EST	600	FT	618		370,800	0	10.30	7,107	WIRE	98.84	702,500	1,073,300
	CABLE BUS TERMINATION	500MCM- 15KV TERMINATIONS	EST	4	EA		1,800.00	0	7,200	33.00	152	WIRE	98.84	15,000	22,200
	CABLE BUS TERMINATION	1000MCM- 5KV TERMINATIONS	EST	4	EA		4,440.00	0	17,800	51.60	237	WIRE	98.84	23,500	41,300
	CABLE BUS TERMINATION	750MCM- 480V TERMINATIONS	EST	8	EA		2,700.00	0	21,600	54.00	497	WIRE	98.84	49,100	70,700
23.21	MCC							216,300	0					11,100	227,400
	480V MCC	PER MCC LINE UP	EST	7	EA	30900		216,300	0	16.00	112	WIRE	98.84	11,100	227,400
23.22	MIMIC PANELS		EST	2	EA	17500		35,000	0	40.00	80	WIRE	98.84	7,900	42,900
23.23	GROUNDING							16,000	0					46,100	62,100
	GROUND ROD	3/4" - 20' LONG	EST	16	EA	150		2,400	0	4.00	74	WIRE	98.84	7,300	9,700
	500 MCM	BARE COPPER WIRE	EST	1,650	FT	7.65		12,600	0	0.12	228	WIRE	98.84	22,500	35,100
	CADWELD		EST	64	EA	15		1,000	0	2.00	147	WIRE	98.84	14,500	15,500
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	16.00	18	WIRE	98.84	1,800	1,800
23.24	LIGHTING/ TRANSFORMERS & PANELS							164,500	165,000					171,300	500,800
	LIGHT FIXTURES		EST	220	EA		750	0	165,000	4.00	1,012	WIRE	98.84	100,000	265,000
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	6	EA	10000		60,000	0	40.00	276	WIRE	98.84	27,300	87,300
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	6	EA	7500		45,000	0	32.00	221	WIRE	98.84	21,800	66,800
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	7	EA	5000		35,000	0	16.00	129	WIRE	98.84	12,700	47,700
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	7	EA	3500		24,500	0	12.00	97	WIRE	98.84	9,500	34,000
23.25	EMERGENCY POWER SYSTEM							108,300	0					24,400	132,700
	DC PANEL BOADRD		EST	1	EA	15450		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	UPS PANEL BOARDS		EST	1	EA	15450		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	SATELLITE UPS		EST	1	EA	41200		41,200	0	16.00	18	WIRE	98.84	1,800	43,000
	VRLA BATTERIES		EST	1	LT	36050		36,100	0	120.00	138	WIRE	98.84	13,600	49,700
23.26	RACEWAY, CABLE TRAY, & CONDUIT							0	1,515,700					5,849,000	7,364,700
	12" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	2,450	LF		18.25	0	44,700	1.10	2,695	WIRE	98.84	266400	311,100
	18" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,650	LF		21.50	0	35,500	1.45	2,393	WIRE	98.84	236500	272,000
	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	2,950	LF		27.10	0	79,900	1.75	5,163	WIRE	98.84	510300	590,200
	36" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,650	LF		30.30	0	50,000	1.95	3,218	WIRE	98.84	318000	368,000
	5" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	4,500	LF		61.00	0	274,500	1.13	5,072	WIRE	98.84	501300	775,800
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	8,000	LF		31.00	0	248,000	0.81	6,456	WIRE	98.84	638100	886,100
	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	8,000	LF		21.50	0	172,000	0.65	5,160	WIRE	98.84	510000	682,000
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	13,000	LF		9.25	0	120,300	0.35	4,576	WIRE	98.84	452300	572,600

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	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	16,000	LF		7.15	0	114,400	0.28	4,544	WIRE	98.84	449100	563,500
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	29,000	LF		4.44	0	128,800	0.24	6,931	WIRE	98.84	685100	813,900
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	53,000	LF		3.23	0	171,200	0.19	11,824	WIRE	98.84	1168700	1,339,900
	DUCT BANK WITH 12-5" & 6-3" CONDUITS	3.08' H X 5.2' W	EST	200	LF		381.96	0	76,400	6.48	1,490	ECND	75.97	113200	189,600
23.27	HIGH VOLTAGE POWER CABLE & TERMINATION							0	58,400					164,700	223,100
	1/C # 500KCMIL-15KV		EST	6,300	LF		9.27	0	58,400	0.23	1,666	WIRE	98.84	164700	223,100
23.28	MEDIUM VOLTAGE POWER CABLE & TERMINATION							0	114,600		0			431,700	546,300
	1/C # 500KCMIL-5KV		EST	6,000	LF		8.08	0	48,500	0.17	1,194	WIRE	98.84	118000	166,500
	1/C # 350KCMIL-5KV		EST	6,600	LF		6.13	0	40,500	0.23	1,746	WIRE	98.84	172500	213,000
	1/C # 250KCMIL-5KV		EST	5,400	LF		4.74	0	25,600	0.23	1,428	WIRE	98.84	141200	166,800
23.29	LOW VOLTAGE POWER CABLE & TERMINATION							0	795,900					1,500,700	2,296,600
	3/C # 500KCMIL- 600V		EST	11,120	LF		26.12	0	290,500	0.69	8,824	WIRE	98.84	872100	1,162,600
	#4/0 - #12 AWG-600V		EST	70,000	LF		7.22	0	505,400	0.08	6,360	WIRE	98.84	628600	1,134,000
23.30	CONTROL & INSTRUMENT CABLE							0	512,000					1,436,700	1,948,700
	#14, #16 & PR # 20 FD & SHLD WIRE		EST	160,000	LF		3.20	0	512,000	0.08	14,536	WIRE	98.84	1436700	1,948,700
23.31	FOUNDATION FOR TRANSFORMERS							0	59,000					173,700	232,700
	FOR 21A & 21B	WITH OIL PIT	EST	178	CY		250	0	44,500	8.00	1,638	CONP	79.64	130,400	174,900
	FOR 31F, 31G, 32F, 32G, 33F & 33G		EST	63.0	CY		230	0	14,500	7.50	543	CONP	79.64	43,300	57,800
23.32	TRANSFORMER FIRE WALLS							0	3,500					9,600	13,100
	FOR 21A & 21B		EST	15	CY		230	0	3,500	7.00	121	CONP	79.64	9,600	13,100
23.33	COMMUNICATIONS		EST	1	LT		34,000.00	0	34,000	229.00	263	WIRE	98.84	26,000	60,000
23.34	LIGHTNING PROTECTION		EST	1	LT		19,500.00	0	19,500	128.00	147	WIRE	98.84	14,500	34,000
23.35	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							44,818,300	23,355,000		651,306			58,947,600	127,120,900
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE			9	MN	75000		675,000		720.00	7,452	MECH	88.89	662400	1,337,400
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										10,630,931
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						57,283		90.51	5,185,000	5,185,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						71,604			5,445,931	5,445,931
	PER DIEM	NONE		0.00	HR						787,645			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				116,775					294,738	411,513
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				1,167,750						1,167,750
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			2,240,915							2,240,915
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				1,167,750					2,947,380	4,115,130
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				3,503,250					8,842,140	12,345,390
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							2,915,900	5,955,500					23,377,600	32,249,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	WET FGD ABSORBER ISLAND						47,734,200	29,310,500					82,325,200	159,369,900

				AEP											Estimate No.:	30719C
				BIG SANDY UNIT 2											Project No.:	12721-000
				FGD PROJECT - IAQCS (N/ESP)-3B - 3.0 LB/MM BTU - PHASED											Date:	9/29/2010
				ORDER OF MAGNITUDE COST ESTIMATE											Preparer:	MNO
		Cost Type:													Reviewer:	JMK
		Est=Estimated													Approver:	PEF
		Allow.=Allowance								Wage Rates Based on:		BIG SANDY				
		Q=Vendor Quote								Labor Productivity =		1.15				

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
24.0	COMPRESSED AIR SYSTEM (BYPRODUCT DEWATERING AREA)														0
24.1	AIR COMPRESSOR & AUXILIARIES							205,200	0					53,200	258,400
	AIR COMPRESSOR	250 CFM, OIL FREE	EST	2	EA	48600		97,200	0	180.00	414	MECH	88.89	36,800	134,000
	DRYERS	DESSICANT TYPE	EST	4	EA	25000		100,000	0	30.00	138	MECH	88.89	12,300	112,300
	RECEIVERS	150 GAL WITH SAFETY RELIEF VALVE AND PRESSURE GAUGE	EST	2	EA	4000		8,000	0	20.00	46	MECH	88.89	4,100	12,100
24.2	PIPING - MECHANICAL							241,100	166,200					633,100	1,040,400
	LARGE BORE PIPING	4" CS, SCHEDULE 40, WELDED	EST	150	LF		23.0	0	3,500	1.48	255	SPNG	94.41	24,100	27,600
	LARGE BORE PIPING	4" SS, SCHEDULE 40, WELDED	EST	150	LF		68.3	0	10,200	1.82	314	SPNG	94.41	29,600	39,800
	VALVE	4" GATE, 150 #, CS, WELDED	EST	25	EA	2,500		62,500	0	7.70	221	SPNG	94.41	20,900	83,400
	VALVE	4" GATE, 150 #, SS, WELDED	EST	25	EA	4,250		106,300	0	9.24	266	SPNG	94.41	25,100	131,400
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE SS, SCH 80 WELDED	EST	1,500	LF		33.70	0	50,600	1.32	2,277	SPNG	94.41	215,000	265,600
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE CS, SCH 80 WELDED	EST	1,500	LF		33.70	0	50,600	1.32	2,277	SPNG	94.41	215,000	265,600
	VALVE	<2" GLOBE, 150# CS, WELDED	EST	50	EA	450		22,500	0	3.40	196	SPNG	94.41	18,500	41,000
	VALVE	<2" GLOBE, 150# SS, WELDED	EST	50	EA	750	750.00	37,500	37,500	4.08	235	SPNG	94.41	22,100	97,100
	VALVE	2" GLOBE, 150# CS, WELDED	EST	10	EA	850		8,500	0	4.20	48	SPNG	94.41	4,600	13,100
	VALVE	2.5" GLOBE, 150 #, CS, WELDED	EST	4	EA	955		3,800	0	4.70	22	SPNG	94.41	2,000	5,800
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	275	EA		50.00	0	13,800	2.00	633	MECH	88.89	56,200	70,000
24.3	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE ARE INCLUDED IN SECTION 27.0 - BYPRODUCT DEWATERING ISLAND													
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							446,300	166,200		7,341			686,300	1,298,800
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										122,687
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						638		93.49	60,000	60,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						798			62,687	62,687
	PER DIEM	NONE		0.00	HR						8,777			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				831					3,432	4,263
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				8,310						8,310
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			22,315							22,315
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				8,310					34,315	42,625
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				24,930					102,945	127,875
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							22,300	42,400					263,400	328,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	COMPRESSED AIR SYSTEM (BYPRODUCT DEWATERING AREA)						468,600	208,600					949,700	1,626,900
25.0	POTABLE WATER SYSTEM														
25.1	PIPING - MECHANICAL		EST	1	LT			21,300	3,000					38,700	63,000
	LARGE BORE PIPING	4" HDPE (UNDERGROUND)	EST	500	LF		3.4	0	1,700	0.46	265	SPNG	94.41	25,000	26,700
	VALVE	4" GATE, 150 #, SS, WELDED	EST	5	EA	4,250		21,300	0	9.24	53	SPNG	94.41	5,000	26,300
	EXCAVATION / BACKFILL	FOR UNDERGROUND PIPING	EST	370	CY			0	0	0.20	85	EXFD	90.00	7,700	7,700
	BEDDING	FOR UNDERGROUND PIPING	EST	37	CY		35.0	0	1,300	0.25	11	EXFD	90.00	1,000	2,300
25.2	TANKS							0	8,500					0	8,500

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				ORDER OF MAGNITUDE COST ESTIMATE										Preparer:	MNO
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		Q=Vendor Quote								Labor Productivity =		1.15			

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	POTABLE WATER TANK	1,000 GAL, SS, 5' DIA X 8' - SUBCONTRACT PRICE INCLUDES LABOR	EST	1	EA		8500.0	0	8,500	0.00	0	TANK	89.16	0	8,500
25.3	POTABLE WATER TANK & PUMP - FOUNDATIONS							0	5,200					9,200	14,400
	EXCAVATION / BACKFILL		EST	20	CY			0	0	0.36	8	EXFD	90.00	700	700
	REINFORCING		EST	3.0	TN		1,150.00	0	3,500	20.00	69	REIN	78.27	5,400	8,900
	FORMWORK		EST	75	SF		2.50	0	200	0.14	12	FORM	99.43	1,200	1,400
	CONCRETE		EST	12	CY		105.00	0	1,300	1.50	21	CONP	79.64	1,600	2,900
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	60	LB		2.50	0	200	0.06	4	CARP	71.88	300	500
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							21,300	16,700		528			47,900	85,900
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										8,375
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						46		90.78	4,000	4,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						57			4,375	4,375
	PER DIEM	NONE		0.00	HR						631			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				84					240	323
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				835						835
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			1,065							1,065
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				835					2,395	3,230
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				2,505					7,185	9,690
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							1,100	4,300					18,200	23,500
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	POTABLE WATER SYSTEM						22,400	21,000					66,100	109,400
26.0	SCR SUBSTATION UPGRADE														
26.1	TRANSFORMERS							1,126,000	150,000					414,700	1,690,700
	SCR AUX TRANSFORMERS 2F & 2R	138KV - 13.8 KV, 2 WINDING TRANSFORMER	EST	2	EA	550000		1,100,000	0	1200.00	2,760	EHEA	79.16	218,500	1,318,500
	EXISTING 138KV-13.8KV TRANSFORMER REMOVAL	138KV - 13.8 KV, 2 WINDING TRANSFORMER	EST	2	EA		75000	0	150,000	600.00	1,380	EHEA	79.16	109,200	259,200
	MODIFICATIONS TO FOUNDATIONS FOR EXISTING 138KV-13.8KV TRANSFORMER	ALLOWANCE FOR 100 CY. INCLUDES REMOVAL AND MODS	EST	100	CY	260		26,000	0	9.50	1,093	CONP	79.64	87,000	113,000
26.2	SWITCHGEAR							250,000	0					136,600	386,600
	13.8 KV MEDIUM VOLTAGE SWITCHGEAR (2F/2FR)	PRICE PER SECTION	EST	5	EA	50000		250,000	0	300.00	1,725	EHEA	79.16	136,600	386,600
26.3	138 KV OH LINE UPGRADE	6-200FT QUAIL #200	EST	1,200	EA		8.5	0	10,200	0.50	690	EHEA	79.16	54,600	64,800
26.4	FOUNDATION FOR AUX TRANSFORMER							0	63,500					134,400	197,900
	EXCAVATION / BACKFILL		EST	600	CY			0	0	0.36	248	EXFD	90.00	22,400	22,400
	REINFORCING		EST	21.3	TN		1,150.00	0	24,500	20.00	491	REIN	78.27	38,400	62,900
	FORMWORK		EST	1,600	SF		2.50	0	4,000	0.14	258	FORM	99.43	25,600	29,600
	CONCRETE		EST	267	CY		105.00	0	28,000	1.50	460	CONP	79.64	36,600	64,600
	MUD MAT		EST	35	CY		105.00	0	3,700	1.50	60	CONP	79.64	4,800	8,500
	EMBEDDED STEEL		EST	1,333	LB		2.50	0	3,300	0.06	92	CARP	71.88	6,600	9,900
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							1,376,000	223,700		9,257			740,300	2,340,000

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Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										131,620
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						805		79.98	64,000	64,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						1,006			67,620	67,620
	PER DIEM	NONE		0.00	HR						11,068			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				1,119					3,702	4,820
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				11,185						11,185
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			68,800							68,800
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				11,185					37,015	48,200
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				33,555					111,045	144,600
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							68,800	57,000					283,381	409,200
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SCR SUBSTATION UPGRADE						1,444,800	280,700					1,023,700	2,749,200
27.0	FGD DCS SYSTEM														0
27.1	DCS	4000 I/O POINTS	EST	4,000	EA		750	0	3,000,000	2.50	11,500	INEL	88.43	1,016,900	4,016,900
27.2	DCS - VENDOR FIELD SUPPORT	200 MANDAYS @ $1500/DAY - SHOWN AS SUBCONTRACT COST	EST	200	DAYS	1500		300,000	0		0	INEL	88.43	0	300,000
27.3	LOCALLY MOUNTED INSTRUMENTS							0	827,800					1,085,600	1,913,400
	LOCALLY MOUNTED INSTRUMENTS		EST	350	EA		2200	0	770,000	20.00	8,050	INEL	88.43	711,900	1,481,900
	INSTRUMENT RACKS	INCLUDEDWITH INSTRUMENTS													
	INSTRUMENT TUBING	ALLOWANCE	EST	10,500	LF		5.5	0	57,800	0.35	4,226	INEL	88.43	373,700	431,500
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							300,000	3,827,800		23,776			2,102,500	6,230,300
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										375,044
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						2,068		88.43	183,000	183,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						2,584			192,044	192,044
	PER DIEM	NONE		0.00	HR						28,428			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				19,139					10,513	29,652
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				191,390						191,390
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			15,000							15,000
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				191,390					105,125	296,515
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				574,170					315,375	889,545
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							15,000	976,100					806,100	1,797,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FGD DCS SYSTEM						315,000	4,803,900					2,908,600	8,027,400
28.0	SITE IMPROVEMENTS - CIVIL WORK														
28.1	SITE GRADING							0	0					49,000	49,000
	CUT		EST	1,500	CY			0	0	0.08	138	ETWK	177.49	24,500	24,500

AEP
BIG SANDY UNIT 2
FGD PROJECT - IAQCS (N/ESP)-3B - 3.0 LB/MM BTU - PHASED
ORDER OF MAGNITUDE COST ESTIMATE

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Project No.: 12721-000
Date: 9/29/2010
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Wage Rates Based on: BIG SANDY
Labor Productivity = 1.15

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	FILL		EST	1,500	CY			0	0	0.08	138	ETWK	177.49	24,500	24,500
28.2	ROADS & SURFACING							0	296,800					324,400	621,200
	20' WIDE ACCESS ROAD	INCLUDES: 1.5" ASPHALT SURFACE COURSE 1.5" ASPHALT BINDER COURSE 12" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST	1,800	SY		47	0	84,600	0.40	828	PBIT	90.25	74,700	159,300
	24' WIDE EXISTING ACCESS ROAD RESURFACING	INCLUDES: MILL & DISPOSE OFF 3" ASPHALT 1.5" ASPHALT SURFACE COURSE 1.5" ASPHALT BINDER COURSE	EST	7,100	SY		22	0	156,200	0.18	1,470	PBIT	90.25	132,600	288,800
	CONCRETE PAD BUILDING ENTRANCES	10" REINFORCED CONCRETE	EST	250	SY		80	0	20,000	1.50	431	CONP	79.64	34,300	54,300
	AGGREGATE AREA SURFACING	INCLUDES: 6" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST	4,000	SY		9	0	36,000	0.17	782	BCSE	105.94	82,800	118,800
28.3	LIMESTONE HANDLING & STORAGE							0	340,100					541,700	881,800
	CUT	CUT AND SPREAD IN COAL PILE AREA	EST	5,000	CY			0	0	0.40	2,300	ETWK	177.49	408,200	408,200
	FILL	FROM AN OFF SOURCE FILL	EST	13,100	CY		16	0	209,600	0.04	603	ETWK	177.49	107,000	316,600
	AREA SURFACING	INCLUDES: 18" CRUSHED AGGREGATE 10 OZ/SY GEOTEXTILE	EST	14,500	SY		9	0	130,500	0.02	250	BCSE	105.94	26,500	157,000
28.4	RAILROAD CROSSING	50' WIDE CROSSING THREE TRACKS - CUSTOM BUILT	EST	1	EA		120000	0	120,000	1500.00	1,725	RRTK	88.26	152,200	272,200
28.5	STORMWATER DRAINAGE TRENCH	2' W X 3' DEEP CAST-IN-PLACE CONCRETE TRENCH W/REINFORCING & HS-20 RATED GRATE COVERS	EST	1,200	LF		135	0	162,000	1.50	2,070	CONP	79.64	164,900	326,900
23.6	OILY WATER SEWER							3,000	31,500					51,500	86,000
	PIPING	6" CISP	EST	700	LF		21.5	0	15,100	0.33	266	YDPP	90.14	23,900	39,000
	PIPING	8" CISP	EST	300	LF		33.5	0	10,100	0.54	186	YDPP	90.14	16,800	26,900
	POST INDICATOR VALVE		EST	4	EA	750		3,000	0	6.00	28	YDPP	90.14	2,500	5,500
	MANHOLES		EST	4	EA		1575.0	0	6,300	20.00	92	YDPP	90.14	8,300	14,600
28.7	SANITARY SEWER							0	14,900					22,000	36,900
	PIPING	6" CISP	EST	400	LF		21.5	0	8,600	0.33	152	YDPP	90.14	13,700	22,300
	MANHOLES		EST	4	EA		1575.0	0	6,300	20.00	92	YDPP	90.14	8,300	14,600
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							3,000	965,300		11,550			1,305,700	2,274,000
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										233,264
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						1,004		113.05	114,000	114,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						1,255			119,264	119,264

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Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	PER DIEM	NONE		0.00	HR						13,810			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				4,827					6,529	11,355
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				48,265						48,265
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			150							150
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				48,265					65,285	113,550
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				144,795					195,855	340,650
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							200	246,200					500,900	747,200
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SITE IMPROVEMENTS - CIVIL WORK						3,200	1,211,500					1,806,600	3,021,200
29.0	BOP ITEMS														
29.1	PIPE INSULATION	AVERAGE 6" PIPE SIZE	EST	6,000	LF		10	0	60,000	0.39	2,691	PINS	69.50	187,000	247,000
29.2	HEAT TRACING							0	254,100					361,600	615,700
	CABLE	AVERAGE 6" PIPE SIZE	EST	4,000	LF		10.35	0	41,400	0.05	230	WIRE	98.84	22,700	64,100
	POWER CONNECTOR AND OTHER ACCESSORIES INCLUDING THERMOSTATS FOR HEAT TRACING (BY ZONES)		EST	73	EA		450	0	32,700	8.00	669	WIRE	98.84	66,100	98,800
	HEAT TRACING BALANCE OF PLANT INCL PANELS, POWER WIRING AND CONDUITS		EST	6	LT		30000	0	180,000	400.00	2,760	WIRE	98.84	272,800	452,800
29.3	TOUCH UP PAINT (INCLUDES PAINTING CS PIPE)							0	163,500					627,200	790,700
	TOUCH UP PAINT FOR SHOP PAINTED STEEL		EST	20,500	SF		3	0	61,500	0.15	3,536	PNTR	66.72	235,900	297,400
	TOUCH UP PAINT FOR EQUIPMENT		EST	12,000	SF		3	0	36,000	0.15	2,070	PNTR	66.72	138,100	174,100
	PAINTING CS PIPE ONLY	AVERAGE 6" PIPE SIZE, ALLOWANCE FOR 12,000 LF CS PIPE	EST	22,000	SF		3	0	66,000	0.15	3,795	PNTR	66.72	253,200	319,200
29.4	HOISTS & TROLLEYS							150,000	175,000					204,400	529,400
	MISC HOISTS & TROLLEYS	IN BUILDINGS FOR EQUIPMENT MAINTENANCE AND FOR ID FANS. INCLUDES TROLLEY BEAMS	EST	10	EA	15000	17500	150,000	175,000	200.00	2,300	MECH	88.89	204,400	529,400
29.5	MISC AUX STEEL FOR PIPE SUPPORTS	FIELD FABRICATED	EST	35	TN		3500	0	122,500	120.00	4,830	STST	105.71	510,600	633,100
29.6	MISC PIPE SUPPORT FOUNDATIONS							0	8,600					18,000	26,600
	EXCAVATION / BACKFILL		EST	60	CY			0	0	0.36	25	EXFD	90.00	2,200	2,200
	REINFORCING		EST	4.0	TN		1,150.00	0	4,600	20.00	92	REIN	78.27	7,200	11,800
	FORMWORK		EST	250	SF		2.50	0	600	0.14	40	FORM	99.43	4,000	4,600
	CONCRETE		EST	22	CY		105.00	0	2,300	1.50	38	CONP	79.64	3,000	5,300
	MUD MAT		EST	8	CY		105.00	0	800	1.50	14	CONP	79.64	1,100	1,900
	EMBEDDED STEEL		EST	110	LB		2.50	0	300	0.06	8	CARP	71.88	500	800
29.7	EYE WASH STATIONS							30,000	5,000					30,700	65,700
	EYE WASH STATIONS	WITH 50 KW HEATERS	EST	5	EA	6000	1000	30,000	5,000	60.00	345	MECH	88.89	30,700	65,700
29.8	FIRE PROTECTION FOR MISC BUILDINGS & AREAS							0	360,000					294,400	654,400
	STAND PIPE FOR BUILDINGS & LIMESTONE RECLAIM TUNNELS		EST	12	EA		30000	0	360,000	240.00	3,312	MECH	88.89	294,400	654,400
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							180,000	1,148,700		26,755			2,233,900	3,562,600
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										398,046
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						2,327		83.50	194,000	194,000

				AEP										Estimate No.:	30719C
				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS (N/ESP)-3B - 3.0 LB/MM BTU - PHASED										Date:	9/29/2010
				ORDER OF MAGNITUDE COST ESTIMATE										Preparer:	MNO
		Cost Type:												Reviewer:	JMK
		Est=Estimated												Approver:	PEF
		Allow.=Allowance								Wage Rates Based on:		BIG SANDY			
		Q=Vendor Quote								Labor Productivity =		1.15			

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						2,908			204,046	204,046
	PER DIEM	NONE		0.00	HR						31,989			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				5,744					11,170	16,913
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				57,435						57,435
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			9,000							9,000
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				57,435					111,695	169,130
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				172,305					335,085	507,390
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							9,000	292,919					855,996	1,157,914
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BOP ITEMS						189,000	1,441,600					3,089,900	4,720,500
30.0	SERVICE WATER SYSTEM														
30.1	PUMPS	INCLUDED WITH PHASE I						0	0					0	0
	SERVICE WATER PUMPS	4000 GPM, 200 HP	EST	0	EA	60000		0	0	240.00	0	MECH	88.89	0	0
	RIVER WATER BOOSTER PUMPS	4000 GPM, 100 HP	EST	0	EA	48000		0	0	220.00	0	MECH	88.89	0	0
	SELF-CLEANING STRAIINERS	DUPLEX, 4000 GPM	EST	0	EA	22000		0	0	80.00	0	MECH	88.89	0	0
30.2	PIPING - MECHANICAL		EST					326,900	1,277,900					2,371,100	3,975,900
	LARGE BORE PIPING	4" SS, SCHEDULE 40, WELDED	EST	1,820	LF		68.3	0	124,300	1.82	3,809	SPNG	94.41	359,600	483,900
	LARGE BORE PIPING	6" SS, SCHEDULE 40, WELDED	EST	1,990	LF		111.0	0	220,900	2.02	4,623	SPNG	94.41	436,400	657,300
	LARGE BORE PIPING	8" SS, SCHEDULE 40, WELDED	EST	1,290	LF		179.9	0	232,100	2.49	3,694	SPNG	94.41	348,700	580,800
	LARGE BORE PIPING	12" SS, SCHEDULE 40, WELDED	EST	1,400	LF		353.8	0	495,300	4.12	6,633	SPNG	94.41	626,200	1,121,500
	LARGE BORE PIPING	14" HDPE (UNDERGROUND)	EST	1,050	LF		65.5	0	68,800	1.02	1,232	SPNG	94.41	116,300	185,100
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	1,050	LF		48.80	0	51,200	1.44	1,739	SPNG	94.41	164,200	215,400
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	70	LF		33.70	0	2,400	1.32	106	SPNG	94.41	10,000	12,400
	VALVE	4" GATE, 150 #, SS, WELDED	EST	30	EA	3,400		102,000	0	9.24	319	SPNG	94.41	30,100	132,100
	VALVE	6" GATE, 150 #, SS, WELDED	EST	25	EA	4,700		117,500	0	12.96	373	SPNG	94.41	35,200	152,700
	VALVE	8" GATE, 150 #, SS, WELDED	EST	10	EA	6,240		62,400	0	15.96	184	SPNG	94.41	17,300	79,700
	VALVE	14" BFLY 150# SS, FLANGED	EST	6	EA	7,500		45,000	0	19.76	136	SPNG	94.41	12,900	57,900
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	630	EA		125.00	0	78,800	3.00	2,174	MECH	88.89	193,200	272,000
	EXCAVATION / BACKFILL	FOR UNDERGROUND PIPING	EST	870	CY			0	0	0.20	200	EXFD	90.00	18,000	18,000
	BEDDING	FOR UNDERGROUND PIPING	EST	117	CY		35.0	0	4,100	0.25	34	EXFD	90.00	3,000	7,100
30.3	PIPING - FIRE PROTECTION SYSTEM	INCLUDED WITH PHASE I	EST	0	LT			0	0		0	0		0	0
	LARGE BORE PIPING	4" CS, SCHEDULE 40, WELDED	EST	0	LF		24.4	0	0	0.73	0	SPNG	94.41	0	0
	LARGE BORE PIPING	8" CS, SCHEDULE 40, WELDED	EST	0	LF		64.2	0	0	0.98	0	SPNG	94.41	0	0
	LARGE BORE PIPING	12" CS, SCHEDULE 40, WELDED	EST	0	LF		174.6	0	0	1.43	0	SPNG	94.41	0	0
	LARGE BORE PIPING	20" HDPE (UNDERGROUND)	EST	0	LF		72.8	0	0	1.45	0	SPNG	94.41	0	0
	VALVE	4" GATE, 150 #, CS, WELDED	EST	0	EA	2,500		0	0	7.70	0	SPNG	94.41	0	0
	VALVE	8" GATE, 150 #, CS, WELDED	EST	0	EA	4,800		0	0	13.30	0	SPNG	94.41	0	0
	VALVE	10" GATE, 150 #, CS, WELDED	EST	0	EA	6,500		0	0	16.10	0	SPNG	94.41	0	0
	VALVE	10" GATE WITH PIV, 150 #, CS, WELDED	EST	0	EA	7,000		0	0	17.71	0	SPNG	94.41	0	0
	VALVE	12" GATE, 150 #, CS, WELDED	EST	0	EA	8,200		0	0	19.20	0	SPNG	94.41	0	0
	FIRE HYDRANTS		EST	0	EA	1,500		0	0	8.00	0	MECH	88.89	0	0
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	0	EA		75.00	0	0	2.50	0	MECH	88.89	0	0
	EXCAVATION / BACKFILL	FOR UNDERGROUND PIPING	EST	0	CY			0	0	0.20	0	EXFD	90.00	0	0
	BEDDING	FOR UNDERGROUND PIPING	EST	0	CY		35.0	0	0	0.25	0	EXFD	90.00	0	0
30.4	TANKS	INCLUDED WITH PHASE I						0	0					0	0
	SERVICE WATER TANKS	25,000 GAL, CS, 16' DIA X 20' - SUBCONTRACT PRICE INCLUDES LABOR WITH EXTERIOR PRIMED AND FIELD PAINTED	EST	0	EA		75000.0	0	0	0.00	0	TANK	89.16	0	0
30.5	SERVICE WATER TANK & PUMP - FOUNDATIONS	INCLUDED WITH PHASE I						0	0					0	0
	EXCAVATION / BACKFILL		EST	0	CY			0	0	0.36	0	EXFD	90.00	0	0
	REINFORCING		EST	0	TN		1,150.00	0	0	20.00	0	REIN	78.27	0	0
	FORMWORK		EST	0	SF		2.50	0	0	0.14	0	FORM	99.43	0	0

				AEP										Estimate No.:	30719C
				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS (N/ESP)-3B - 3.0 LB/MM BTU - PHASED										Date:	9/29/2010
				ORDER OF MAGNITUDE COST ESTIMATE										Preparer:	MNO
		Cost Type:												Reviewer:	JMK
		Est=Estimated												Approver:	PEF
		Allow.=Allowance								Wage Rates Based on:		BIG SANDY			
		Q=Vendor Quote								Labor Productivity =		1.15			

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	CONCRETE		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	0	LB		2.50	0	0	0.06	0	CARP	71.88	0	0
30.6	ELECTRICAL	INCLUDED WITH PHASE I													
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							326,900	1,277,900		25,254			2,371,100	3,975,900
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										422,578
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						2,196		93.89	206,000	206,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						2,745			216,578	216,578
	PER DIEM	NONE		0.00	HR						30,195			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				6,390					11,856	18,245
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				63,895						63,895
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			16,345							16,345
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				63,895					118,555	182,450
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				191,685					355,665	547,350
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							16,345	325,865					908,654	1,250,863
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SERVICE WATER SYSTEM						343,200	1,603,800					3,279,800	5,226,800
99.00	PHASE II - OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS							79,104,000	56,257,400		1,418,426			128,253,000	263,614,400
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE							675,000	0		7,452			662,400	1,337,400
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										22,988,348
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						123,989		90.42	11,212,000	11,212,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						154,987			11,776,348	11,776,348
	PER DIEM	NONE		0.00	HR									0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				281,287					641,265	922,552
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				2,812,870						2,812,870
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			3,955,200							3,955,200
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				2,812,870					6,412,650	9,225,520
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				8,438,610					19,237,950	27,676,560
	PHASE II - OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							4,630,200	14,345,600					49,942,600	68,918,400

AEP
BIG SANDY UNIT 2
FGD PROJECT - IAQCS (N/ESP)-3B - 3.0 LB/MM BTU - PHASED
ORDER OF MAGNITUDE COST ESTIMATE

Estimate No.: 30719C
Project No.: 12721-000
Date: 9/29/2010
Preparer: MNO
Reviewer: JMK
Approver: PEF

Cost Type:
Est=Estimated
Allow.=Allowance
Q=Vendor Quote

Wage Rates Based on: BIG SANDY
Labor Productivity = 1.15

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	PHASE II - OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST	WET FGD						83,734,200	70,603,000					178,195,600	332,532,800
	TOTAL PHASE II DIRECT AND CONSTRUCTION INDIRECT COSTS							83,734,200	70,603,000					178,195,600	332,532,800
	INDIRECT COSTS - PHASE II								0					0	0
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES			1.0	LT										23,000,000
	CONSTRUCTION MANAGEMENT			3.0	%										9,976,000
	S-U / COMMISSIONING			1.0											3,325,300
	CRAFT START-UP SUPPORT	1% OF TOTAL LABOR MANHOURS (INCLUDES OVERTIME INEFFICIENCY & COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - BASED ON ASSUMED 5X10 WORKWEEK)		1.0	%						15,424		90.42	1,511,800	1,511,800
	INITIAL FILLS			0.3	%										997,600
	OPERATOR & TRAINING MANUALS			1.0	LT										300,000
	SUBCONTRACTORS (NOISE CONSULTANT)			1.0	LT										100,000
	SUBTOTAL - INDIRECT COSTS														39,210,700
	TOTAL PHASE II DIRECT AND INDIRECT COSTS														371,743,500
	SPARE PARTS - PHASE II			1.5	%			1,256,000							1,256,000
	SPARE PARTS - CAPITALIZED			0.90	%			753,600							753,600
	SPARE PARTS - FIRST YEAR OF OPERATION			0.60	%			502,400							502,400
	CONTINGENCY - PHASE II.			15.6	%										58,094,000
	ESCALATION - PHASE II														107,828,700
	EQUIPMENT	3.0%/yr		3.0	%			34,072,800							34,072,800
	MATERIAL	2.0%/yr		2.0	%				14,598,500						14,598,500
	LABOR	2.5%/yr		2.5	%									48,870,000	48,870,000
	INDIRECTS	2.5%/yr		2.5	%									10,287,400	10,287,400
	PHASE II - TOTAL PROJECT COST														538,922,200
99.00	PHASE I + PHASE II OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS							195,936,300	107,246,300		2,956,458			270,583,900	605,891,500
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE							1,485,000	0					2,185,920	3,670,920
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										45,985,602
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						257,731		91.52	22,377,000	22,377,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						323,654			23,608,602	23,608,602
	PER DIEM	NONE		0.00	HR									0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				533,532					1,351,370	1,884,901
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				5,335,315						5,335,315
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			9,733,815							9,733,815
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				5,335,315					13,513,695	18,849,010

				AEP											Estimate No.:	30719C
				BIG SANDY UNIT 2											Project No.:	12721-000
				FGD PROJECT - IAQCS (N/ESP)-3B - 3.0 LB/MM BTU - PHASED											Date:	9/29/2010
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		Cost Type:													Reviewer:	JMK
		Est=Estimated													Approver:	PEF
		Allow.=Allowance								Wage Rates Based on:		BIG SANDY				
		Q=Vendor Quote								Labor Productivity =		1.15				

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				16,086,945					40,541,085	61,698,030
	PHASE I + PHASE II OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							11,218,800	27,291,100					103,577,700	147,157,600
	PHASE I + PHASE II OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST							207,155,100	134,537,400					374,161,600	753,049,100
	TOTAL PHASE I + PHASE II DIRECT AND CONSTRUCTION INDIRECT COSTS							207,155,100	134,537,400					374,161,600	753,049,000
	TOTAL PHASE I + PHASE II INDIRECT COSTS														
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES			1.0	LT										51,000,000
	CONSTRUCTION MANAGEMENT			3.0	%										22,591,500
	S-U / COMMISSIONING			1.0											7,530,500
	CRAFT START-UP SUPPORT														3,188,900
	INITIAL FILLS														2,259,100
	OPERATOR & TRAINING MANUALS			1.0	LT										600,000
	SUBCONTRACTORS (PHASE I - NOISE & DUCTWORK CONSULTANT, GEOTECHNICAL INVESTIGATION, PHASE II - NOISE CONSULTANT ONLY)			1.0	LT										500,000
	NOISE ABATEMENT FOR 85 DBA REQUIREMENT	FOR ID FAN, SDA ENCLOSURE, TRANSFORMERS, BOP, DUCTWORK, ACOUSTIC BARRIERS FOR BOUNDARY LIMITS		1.0	LT										4,500,000
	SUBTOTAL - INDIRECT COSTS														92,170,000
	TOTAL PROJECT DIRECT AND INDIRECT COSTS														845,219,000
	SPARE PARTS - PHASE I + PHASE II			1.5	%			3,107,300							3,107,300
	SPARE PARTS - CAPITALIZED			0.90	%			1,864,380							1,864,380
	SPARE PARTS - FIRST YEAR OF OPERATION			0.60	%			1,242,920							1,242,920
	CONTINGENCY - PHASE I + PHASE II														125,784,500
	ESCALATION - PHASE I + PHASE II														167,430,600
	EQUIPMENT							53,726,500							53,726,500
	MATERIAL								21,756,300						21,756,300
	LABOR													75,962,000	75,962,000
	INDIRECTS													15,985,800	15,985,800
	TOTAL PROJECT COST - (PHASE I + PHASE II)														1,141,541,400
	REFERENCE COSTS:														
A	ESP DEMOLITION	ALLOWANCE FOR 1000T STRUCTURE	EST	1,000	TN			0	0	6.00	6,900	WRKG	120.63	832,300	832,300
B	REMOVE BOOSTER AIR FANS		EST	2	EA			0	0	400.00	920	WRKG	120.63	111,000	111,000
C	REMOVAL OF FUEL OIL TANK							1,200,000	80,000					469,400	1,749,400

				AEP											Estimate No.:	30719C
				BIG SANDY UNIT 2											Project No.:	12721-000
				FGD PROJECT - IAQCS (N/ESP)-3B - 3.0 LB/MM BTU - PHASED											Date:	9/29/2010
				ORDER OF MAGNITUDE COST ESTIMATE											Preparer:	MNO
		Cost Type:													Reviewer:	JMK
		Est=Estimated													Approver:	PEF
		Allow.=Allowance								Wage Rates Based on:		BIG SANDY				
		Q=Vendor Quote								Labor Productivity =		1.15				

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	REMOVE FUEL OIL TANK & SOIL REMEDIATION	LABOR COST IS FOR REMOVAL OF TANK ONLY. ALLOWANCE FOR SOIL REMEDIATION AND DISPOSAL IN AN EPA APPROVED LANDFILL. SUBCONTRACT COST INCLUDES LABOR. USED LOWER END OF THE RANGE $118-355/CY. COST COULD BE LOWER ($59-118/CY) IF SOLD TO A BITUMINOUS CONCRETE BATCH PLANT	EST	8,000	CY	150		1,200,000	0		0	MECH	88.89	0	1,200,000
	REMOVE DIKE & RECOMPACT FILL IN TANK AREA		EST	3,500	CY			0	0	0.60	2,415	ETWK	177.49	428,600	428,600
	FILL FROM OFF SITE COURSE		EST	5,000	CY		16	0	80,000	0.04	230	ETWK	177.49	40,800	120,800

ATTACHMENT 4-12
IAQCS Detailed Capital Cost Estimate No. 30717 Est-4A ESP in Service*
(7.5 lb SO_2/MMbtu)

* - Due to the significant differences in layout between the phased and non-phased cost estimates the "bases" for comparison purposes were 1B for the non-phased cost estimates and 3B for the phased cost estimates. Therefore cost estimates 2A, 2B, 3A (Phased) and 1A, 4A and 4B (Non-Phased) contain only accounts whose costs are different from the corresponding base estimates 3B and 1B respectively.

				AEP											Estimate No.:	30717C
				BIG SANDY UNIT 2											Project No.:	12721-000
				FGD PROJECT - IAQCS (ESP)-4A - 7.5 LB/MM BTU - NON PHASED											Date:	9/29/2010
				ORDER OF MAGNITUDE COST ESTIMATE											Preparer:	MNO
		Cost Type:													Reviewer:	JMK
		Est=Estimated													Approver:	PEF
		Allow.=Allowance								Wage Rates Based on:		BIG SANDY				
		Q=Vendor Quote								Labor Productivity =		1.15				

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	PHASE I - DRY FGD														
1.0	ID FANS														
1.1	ID FANS - OEM EQUIPMENT	1,800,000 ACFM WITH 19,700 HP MOTORS ($750,000 EACH). INCLUDES HYDRAULIC OIL UNITS, SEAL AIR FAN SKIDS, VIBRATION MONITORING EQUIPMENT, FAN STALL EQUIPMENT, FIELD SERVICE REP FOR 140 DAYS	EST	2	EA	3,460,000.000		6,920,000	0	8190.00	18,837	MECH	88.89	1,674,400	8,594,400
1.2	PIPING & SUPPORTS - MECHANICAL							21,800	28,700					120,500	171,000
	LARGE BORE PIPING	6" CS, SCH 40 WELDED	EST	200	LF		41.7	0	8,300	1.61	370	SPNG	94.41	35,000	43,300
	SMALL BORE PIPING	2" CS, SCH 80 WELDED	EST	50	LF		22.20	0	1,100	1.26	72	SPNG	94.41	6,800	7,900
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	250	LF		48.80	0	12,200	1.44	414	SPNG	94.41	39,100	51,300
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	100	LF		33.70	0	3,400	1.32	152	SPNG	94.41	14,300	17,700
	VALVE	2" GLOBE, 150# SS, WELDED	EST	15	EA	1,450		21,800	0	5.64	97	SPNG	94.41	9,200	31,000
	PIPE SUPPORTS		EST	105	EA		35.00	0	3,700	1.50	181	MECH	88.89	16,100	19,800
1.3	DAMPERS							781,000	0					352,600	1,133,600
	INLET DAMPERS	2X50% DOUBLE LOUVER TYPE WITH SEAL AIR FANS TOTAL FOR TWO FANS	EST	580	SF	450		261,000	0	2.50	1,668	MECH	88.89	148,200	409,200
	OUTLET DAMPERS	2X50% GUILLOTINE DAMPERS, WITH SEAL AIR FANS TOTAL FOR TWO FANS	EST	800	SF	650		520,000	0	2.50	2,300	MECH	88.89	204,400	724,400
1.4	EXPANSION JOINTS		EST	570	LF		230.00	0	131,100	2.00	1,311	MECH	88.89	116,500	247,600
1.5	DUCTWORK	FABRIC FILTER OUTLET TO ID FANS AND FROM ID FANS TO STACK - INCLUDES INTERNAL BRACING AND TURNING VANES	EST	880	TN		3,250.00	0	2,860,000	50.00	50,600	FLDU	107.96	5,462,800	8,322,800
1.6	DUCT SUPPORT STEEL	THREE COAT SHOP PAINT	EST	440	TN		2,900.00	0	1,276,000	24.00	12,144	STST	105.71	1,283,700	2,559,700
1.7	ID FAN INSULATION & LAGGING	TOTAL FOR TWO FANS. PRICING REFLECTS STANDARD ACOUSTICAL INSULATION	EST	4,200	SF		40.00	0	168,000	0.55	2,657	DINS	81.75	217,200	385,200
1.8	DUCTWORK INSULATION & LAGGING	INCLUDES INSULATION FOR SPRAY DRYER OUTLET DUCT TO FABRIC FILTERS SUPPLIED WITH THE OEM EQUIPMENT	EST	90,896	SF		12.00	0	1,090,800	0.25	26,133	DINS	81.75	2,136,300	3,227,100
1.9	DUCT SUPPORT STEEL - FOUNDATIONS							0	352,200					684,000	1,036,200
	EXCAVATION / BACKFILL		EST	2,265	CY			0	0	0.36	938	EXFD	90.00	84,400	84,400
	REINFORCING		EST	131	TN		1,150.00	0	150,800	20.00	3,016	REIN	78.27	236,000	386,800
	FORMWORK		EST	7,390	SF		2.50	0	18,500	0.14	1,190	FORM	99.43	118,300	136,800
	CONCRETE		EST	1,430	CY		105.00	0	150,200	1.50	2,467	CONP	79.64	196,500	346,700
	MUD MAT		EST	226	CY		105.00	0	23,800	1.50	391	CONP	79.64	31,100	54,900
	EMBEDDED STEEL		EST	3,576	LB		2.50	0	8,900	0.06	247	CARP	71.88	17,700	26,600
1.10	ID FAN FOUNDATIONS INCLUDING ID FAN AUX EQUIPMENT							0	106,000					198,700	304,700
	EXCAVATION / BACKFILL		EST	600	CY			0	0	0.36	248	EXFD	90.00	22,400	22,400
	REINFORCING		EST	40	TN		1,150.00	0	46,000	20.00	920	REIN	78.27	72,000	118,000
	FORMWORK		EST	1,500	SF		2.50	0	3,800	0.14	242	FORM	99.43	24,000	27,800
	CONCRETE		EST	400	CY		105.00	0	42,000	1.50	690	CONP	79.64	55,000	97,000
	MUD MAT		EST	40	CY		105.00	0	4,200	1.50	69	CONP	79.64	5,500	9,700
	EMBEDDED STEEL		EST	4,000	LB		2.50	0	10,000	0.06	276	CARP	71.88	19,800	29,800
1.11	ID FAN IAQCS CONTROL ROOM - FOUNDATIONS							0	270,100					508,600	778,700
	EXCAVATION / BACKFILL		EST	800	CY			0	0	0.36	331	EXFD	90.00	29,800	29,800
	REINFORCING		EST	100	TN		1,150.00	0	115,000	20.00	2,300	REIN	78.27	180,000	295,000

				AEP										Estimate No.:	30717C
				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS (ESP)-4A - 7.5 LB/MM BTU - NON PHASED										Date:	9/29/2010
				ORDER OF MAGNITUDE COST ESTIMATE										Preparer:	MNO
		Cost Type:												Reviewer:	JMK
		Est=Estimated												Approver:	PEF
		Allow.=Allowance								Wage Rates Based on:		BIG SANDY			
		Q=Vendor Quote								Labor Productivity =		1.15			

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	FORMWORK		EST	7,000	SF		2.50	0	17,500	0.14	1,127	FORM	99.43	112,100	129,600
	CONCRETE		EST	1,100	CY		105.00	0	115,500	1.50	1,898	CONP	79.64	151,100	266,600
	MUD MAT		EST	115	CY		105.00	0	12,100	1.50	198	CONP	79.64	15,800	27,900
	EMBEDDED STEEL		EST	4,000	LB		2.50	0	10,000	0.06	276	CARP	71.88	19,800	29,800
1.12	ID FAN IAQCS CONTROL ROOM	SUBCONTRACT PRICE INCLUDES LABOR. COMPLETE WITH HVAC, FINISHES AND SANITARY FACILITIES	EST	7,875	SF		500.00	0	3,937,500	0.00	0	STST	105.71	0	3,937,500
1.13	TRANSFORMERS							770,000	0					145,600	915,600
	SST TRANSFORMERS: 21F & 21G	13.8KV-4160V, 3 PHASE, 2 WINDING	EST	2	EA	300000		600,000	0	500.00	1,150	EHEA	79.16	91,000	691,000
	SUS TRANSFORMERS: 31F, 31G	13.8KV-480V, 3 PHASE, CAST COIL	EST	2	EA	85000		170,000	0	300.00	690	EHEA	79.16	54,600	224,600
1.14	SWITCHGEAR							1,132,000	0		0			589,900	1,721,900
	480V LOW VOLTAGE (31F/G)	PRICE PER SECTION	EST	5	EA	38000		190,000	0	230.00	1,323	EHEA	79.16	104,700	294,700
	4.16 KV MEDIUM VOLTAGE (21A/B)	PRICE PER SECTION	EST	10	EA	39200		392,000	0	280.00	3,220	EHEA	79.16	254,900	646,900
	13KV MEDIUM VOLTAGE (13F/G)	PRICE PER SECTION	EST	11	EA	50000		550,000	0	230.00	2,910	EHEA	79.16	230,300	780,300
1.15	CABLE BUS & TERMINATIONS							1,129,100	35,800		0			1,930,000	3,094,900
	15KV CABLE BUS TO 13F/G)	CABLE BUS	EST	2,100	FT	466		978,600	0	6.75	16,301	WIRE	98.84	1,611,200	2,589,800
	5KV CABLE BUS	CABLE BUS	EST	150	FT	385		57,800	0	4.70	811	WIRE	98.84	80,100	137,900
	480V CABLE BUS	CABLE BUS	EST	150	FT	618		92,700	0	10.30	1,777	WIRE	98.84	175,600	268,300
	CABLE BUS TERMINATION	15KV TERMINATIONS	EST	4	EA		1,800.00	0	7,200	33.00	152	WIRE	98.84	15,000	22,200
	CABLE BUS TERMINATION	5KV TERMINATIONS	EST	4	EA		4,440.00	0	17,800	51.60	237	WIRE	98.84	23,500	41,300
	CABLE BUS TERMINATION	480V TERMINATIONS	EST	4	EA		2,700.00	0	10,800	54.00	248	WIRE	98.84	24,600	35,400
1.16	MCC							180,000	0					10,900	190,900
	480V MCC	PER LINE UP	EST	4	EA	30,000		120,000	0	16.00	74	WIRE	98.84	7,300	127,300
	DC MCC	PER LINE UP	EST	2	EA	30,000		60,000	0	16.00	37	WIRE	98.84	3,600	63,600
1.17	MIMIC PANELS		EST	1	EA	17500		17,500	0	40.00	46	WIRE	98.84	4,500	22,000
1.18	RACEWAY, CABLE TRAY, & CONDUIT							0	1,664,200					8,196,600	9,860,800
	12" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	5,000	LF		18.25	0	91,300	1.10	6,325	WIRE	98.84	625,200	716,500
	18" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	3,000	LF		21.50	0	64,500	1.45	5,003	WIRE	98.84	494,400	558,900
	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	9,320	LF		27.10	0	252,600	1.75	18,757	WIRE	98.84	1,853,900	2,106,500
	36" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	2,400	LF		30.30	0	72,700	1.95	5,382	WIRE	98.84	532,000	604,700
	5" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	4,000	LF		61.00	0	244,000	1.13	5,184	WIRE	98.84	512,400	756,400
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	8,600	LF		31.00	0	266,600	0.81	7,981	WIRE	98.84	788,900	1,055,500
	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	8,000	LF		21.50	0	172,000	0.65	5,934	WIRE	98.84	586,500	758,500
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	12,000	LF		9.25	0	111,000	0.35	4,858	WIRE	98.84	480,100	591,100
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	15,000	LF		7.15	0	107,300	0.28	4,899	WIRE	98.84	484,200	591,500
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	28,000	LF		4.44	0	124,300	0.24	7,696	WIRE	98.84	760,700	885,000
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	48,900	LF		3.23	0	157,900	0.19	10,910	WIRE	98.84	1,078,300	1,236,200
1.19	HIGH VOLTAGE POWER CABLE & TERMINATION							0	288,500					666,700	955,200
	1/C # 750KCMIL-15KV - 14400' ID FAN		EST	14,400	LF		12.89	0	185,600	0.23	3,809	WIRE	98.84	376,500	562,100
	1/C # 500KCMIL-15KV		EST	11,100	LF		9.27	0	102,900	0.23	2,936	WIRE	98.84	290,200	393,100
1.20	MEDIUM VOLTAGE POWER CABLE & TERMINATION							0	100,200					427,400	527,600
	1/C # 350KCMIL-5KV		EST	16,350	LF		6.13	0	100,200	0.23	4,325	WIRE	98.84	427,400	527,600
1.21	LOW VOLTAGE POWER CABLE & TERMINATIONS		EST	1,800	LF		26.12	0	229,800	0.69	1,428	WIRE	98.84	732,100	961,900

				AEP										Estimate No.:	30717C
				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS (ESP)-4A - 7.5 LB/MM BTU - NON PHASED										Date:	9/29/2010
				ORDER OF MAGNITUDE COST ESTIMATE										Preparer:	MNO
		Cost Type:												Reviewer:	JMK
		Est=Estimated												Approver:	PEF
		Allow.=Allowance								Wage Rates Based on:		BIG SANDY			
		Q=Vendor Quote								Labor Productivity =		1.15			

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	3/C # 500KCMIL-600V		EST	1,800	LF		26.12	0	148,900	0.69	1,428	WIRE	98.84	141,200	290,100
	#4/0 - #12 AWG-600V		EST	65,800	LF		7.22	0	80,900	0.08	5,978	WIRE	98.84	590,900	671,800
1.22	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	EST	112,800	LF		3.20	0	361,000	0.08	10,248	WIRE	98.84	1,012,900	1,373,900
1.23	EMERGENCY POWER SYSTEM							285,500	0					38,900	324,400
	DC PANEL BOADRD		EST	1	EA	20150		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	UPS PANEL BOARDS		EST	2	EA	20150		31,000	0	40.00	92	WIRE	98.84	9,100	40,100
	UPS		EST	1	EA	78000		60,000	0	32.00	37	WIRE	98.84	3,600	63,600
	SWITCHBOARD		EST	1	EA	52000		40,000	0	40.00	46	WIRE	98.84	4,500	44,500
	BYPASS TRANSFORMERS		EST	1	EA	32500		25,000	0	40.00	46	WIRE	98.84	4,500	29,500
	BATTERY CHARGER		EST	2	EA	41600		64,000	0	16.00	37	WIRE	98.84	3,600	67,600
	BATTERIES		EST	1	LT	65000		50,000	0	80.00	92	WIRE	98.84	9,100	59,100
1.24	GROUNDING							14,100	0					42,700	56,800
	GROUND ROD	3/4" - 20' LONG EACH	EST	16	EA	150		2,400	0	4.00	74	WIRE	98.84	7,300	9,700
	500 MCM	BARE COPPER WIRE	EST	1,400	FT	7.65		10,700	0	0.12	193	WIRE	98.84	19,100	29,800
	CADWELD		EST	64	EA	15		1,000	0	2.00	147	WIRE	98.84	14,500	15,500
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	16.00	18	WIRE	98.84	1,800	1,800
1.25	LIGHTING/ TRANSFORMERS & PANELS							26,000	30,000					29,500	85,500
	LIGHT FIXTURES		EST	40	EA		750	0	30,000	4.00	184	WIRE	98.84	18,200	48,200
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	1	EA	10000		10,000	0	40.00	46	WIRE	98.84	4,500	14,500
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	1	EA	7500		7,500	0	32.00	37	WIRE	98.84	3,600	11,100
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	1	EA	5000		5,000	0	16.00	18	WIRE	98.84	1,800	6,800
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	1	EA	3500		3,500	0	12.00	14	WIRE	98.84	1,400	4,900
1.26	DUCT BANK							0	136,000					192,700	328,700
	DUCT BANK WITH 12-5" & 4-3" CONDUITS		EST	100	LF		361.21	0	38,000	6.24	717	ECND	75.97	54,500	92,500
	DUCT BANK WITH 6-5" & 2-3" CONDUITS		EST	180	LF		230.91	0	71,400	5.45	1,128	ECND	75.97	85,700	157,100
	DUCT BANK WITH 6-5" & 6-3" CONDUITS		EST	100	LF		265.88	0	26,600	6.01	691	ECND	75.97	52,500	79,100
1.27	FOUNDATION FOR TRANSFORMERS							0	61,900		0			162,600	224,500
	EXCAVATION / BACKFILL		EST	1,000	CY			0	0	0.36	414	EXFD	90.00	37,300	37,300
	REINFORCING		EST	20	TN		1,150.00	0	23,000	20.00	460	REIN	78.27	36,000	59,000
	FORMWORK		EST	2,500	SF		2.50	0	6,300	0.14	403	FORM	99.43	40,000	46,300
	CONCRETE		EST	190	CY		105.00	0	20,000	1.50	328	CONP	79.64	26,100	46,100
	MUD MAT		EST	25	CY		105.00	0	2,600	1.50	43	CONP	79.64	3,400	6,000
	EMBEDDED STEEL		EST	4,000	LB		2.50	0	10,000	0.06	276	CARP	71.88	19,800	29,800
1.28	FIREWALL FOR TRANSFORMERS							0	3,200					8,300	11,500
	REINFORCING		EST	1.2	TN		1,150.00	0	1,400	20.00	28	REIN	78.27	2,200	3,600
	FORMWORK		EST	80	SF		2.50	0	200	0.14	13	FORM	99.43	1,300	1,500
	CONCRETE		EST	15	CY		105.00	0	1,600	3.50	60	CONP	79.64	4,800	6,400
1.29	EARLY COMMISSIONING COSTS TEMPORARY HIGH VOLTAGE POWER CABLE & TERMINATION FROM EAST SIDE OF SCR BUILDING TO TRANSFORMER PDC		EST	300	LF		466	0	139,800	6.75	2,329	WIRE	98.84	230,200	370,000
1.30	COMMUNICATIONS		EST	1	LT		17,000.00	0	17,000	114.00	131	WIRE	98.84	13,000	30,000
1.31	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							11,277,000	13,295,800		284,033			27,196,800	51,769,600
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										4,227,788
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						24,698		83.48	2,062,000	2,062,000

				AEP										Estimate No.:	30717C
				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS (ESP)-4A - 7.5 LB/MM BTU - NON PHASED										Date:	9/29/2010
				ORDER OF MAGNITUDE COST ESTIMATE										Preparer:	MNO
		Cost Type:												Reviewer:	JMK
		Est=Estimated												Approver:	PEF
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	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						30,873			2,165,788	2,165,788
	PER DIEM	NONE		0.00	HR						339,604			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				66,479					135,984	202,463
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				664,790						664,790
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			563,850							563,850
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				664,790					1,359,840	2,024,630
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				1,994,370					4,079,520	6,073,890
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							563,900	3,390,400					9,803,100	13,757,400
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	ID FANS						11,840,900	16,686,200					36,999,900	65,527,000
2.0	FABRIC FILTERS														
2.1	MECHANICAL EQUIPMENT	A SINGLE FABRIC FILTER (225' X 130') UNIT INCLUDING ALL INTERNAL FABRIC FILTER ELEMENTS SUCH AS BAGS, CAGES, ASH HOPPERS, 2 BROKEN BAG DETECTORS PER COMPARTMENT	EST	1	LT	19,099,000		19,099,000	0	121000.00	139,150	MECH	88.89	12,369,000	31,468,000
2.2	INSULATION FOR FABRIC FILTER	SUBCONTRACT COST INCLUDES LABOR	EST	81,000	SF	30		2,430,000	0	0.00	0	DINS	81.75	0	2,430,000
2.3	PENTHOUSE FOR FABRIC FILTER	SUPPORT STEEL AND PRLINS INCLUDED WITH OEM EQUIPMENT		29,500	SF			70,200	787,000					1,007,600	1,864,800
	SIDING FOR PENTHOUSE		EST	14,200	SF		12.00	0	170,400	0.11	1,796	SDNG	93.41	167,800	338,200
	CONCRETE FLOOR FOR PENTHOUSE		EST	250	CY		230.00	0	57,500	7.50	2,156	SDNG	93.41	201,400	258,900
	ROOFING FOR PENTHOUSE		EST	29,500	SF		18.00	0	531,000	0.22	7,464	ROOF	69.12	515,900	1,046,900
	H&V		EST	1	LT	70200	28080	70,200	28,100	1310.67	1,507	HVAC	81.24	122,500	220,800
2.4	BOTTOM ENCLOSURE FOR BAGHOUSE							60,000	1,204,000					1,359,800	2,623,800
	SUPPORT STEEL, GIRTS AND SIDING		EST	29,500	SF		40.00	0	1,180,000	0.35	11,874	STST	105.71	1,255,200	2,435,200
	H&V		EST	1	LT	60000	24000	60,000	24,000	1120.00	1,288	HVAC	81.24	104,600	188,600
2.5	PIPING & SUPPORTS - MECHANICAL							30,900	101,400					209,500	341,800
	LARGE BORE PIPING	6" SS, SCH 40 WELDED	EST	100	LF		111.00	0	11,100	2.02	232	SPNG	94.41	21,900	33,000
	LARGE BORE PIPING	12" CS, SCH 40 WELDED	EST	400	LF		188.70	0	75,500	2.80	1,288	SPNG	94.41	121,600	197,100
	SMALL BORE PIPING	2" CS, SCH 80 WELDED	EST	50	LF		22.20	0	1,100	1.26	72	SPNG	94.41	6,800	7,900
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	50	LF		48.80	0	2,400	1.44	83	SPNG	94.41	7,800	10,200
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	100	LF		33.70	0	3,400	1.32	152	SPNG	94.41	14,300	17,700
	VALVE	12" GATE, 150 #, CS, WELDED	EST	2	EA	8,200		16,400	0	19.20	44	SPNG	94.41	4,200	20,600
	VALVE	2" GLOBE, 150# SS, WELDED	EST	10	EA	1,450		14,500	0	5.64	65	SPNG	94.41	6,100	20,600
	PIPE SUPPORTS		EST	105	EA		75.00	0	7,900	2.50	302	MECH	88.89	26,800	34,700
2.6	FABRIC FILTER - FOUNDATIONS							0	550,700					1,081,100	1,631,800
	EXCAVATION / BACKFILL		EST	4,945	CY			0	0	0.36	2,047	EXFD	90.00	184,300	184,300
	REINFORCING		EST	192	TN		1,150.00	0	220,800	20.00	4,416	REIN	78.27	345,600	566,400
	FORMWORK		EST	7,800	SF		2.50	0	19,500	0.14	1,256	FORM	99.43	124,900	144,400
	CONCRETE		EST	2,400	CY		105.00	0	252,000	1.50	4,140	CONP	79.64	329,700	581,700
	MUD MAT		EST	270	CY		105.00	0	28,400	1.50	466	CONP	79.64	37,100	65,500
	EMBEDDED STEEL		EST	12,000	LB		2.50	0	30,000	0.06	828	CARP	71.88	59,500	89,500
2.7	FABRIC FILTER - SUPPORT STEEL AND ACCESS GALLERY							0	360,000					1,186,700	1,546,700
	SUPPORT STEEL	MATERIAL INCLUDED WITH OEM EQUIPMENT	EST	300	TN			0	0	24.00	8,280	STST	105.71	875,300	875,300
	ACCESS GALLERY		EST	8,000	SF		45.00	0	360,000	0.40	3,680	GALL	84.61	311,400	671,400
2.8	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE INCLUDED IN SECTION 1.0 - ID FANS													
2.9	LIGHTING/ TRANSFORMERS & PANELS							30,000	75,000					58,200	163,200

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	LIGHT FIXTURES		EST	100	EA		750	0	75,000	4.00	460	WIRE	98.84	45,500	120,500
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	10000		20,000	0	40.00	92	WIRE	98.84	9,100	29,100
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	2	EA	5000		10,000	0	16.00	37	WIRE	98.84	3,600	13,600
2.10	GROUNDING							7,300	0					17,500	24,800
	GROUND ROD	3/4" - 20' LONG	EST	4	EA	150		600	0	4.00	18	WIRE	98.84	1,800	2,400
	500 MCM	BARE COPPER WIRE	EST	850	FT	7.65		6,500	0	0.12	117	WIRE	98.84	11,600	18,100
	CADWELD		EST	16	EA	15		200	0	2.00	37	WIRE	98.84	3,600	3,800
	GROUNDING TEST	TEST, CALIBRATION & DOCUMENTATION	EST	1	EA			0	0	4.00	5	WIRE	98.84	500	500
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							21,757,400	3,153,100		193,352			17,289,400	42,094,900
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										2,878,335
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						16,813		83.48	1,404,000	1,404,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						21,017			1,474,335	1,474,335
	PER DIEM	NONE		0.00	HR						231,182			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				15,766					86,447	102,213
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				157,655						157,655
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			1,087,870							1,087,870
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				157,655					864,470	1,022,125
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				472,965					2,593,410	3,066,375
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							1,087,900	804,000					6,422,700	8,314,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FABRIC FILTERS						22,845,300	3,957,100					23,712,100	50,409,500
3.0	NEW STACK														
4.0	LIME HANDLING SYSTEM														
4.1	LIME STORAGE SILO							1,390,000	0					0	1,390,000
	SILO	CONCRETE SILO 45' DIA X 68' H - 1800 TONS -SUBCONTRACT COST INCLUDES LABOR	EST	1	EA	1,100,000.00		1,100,000	0	0.00	0	CONP	79.64	0	1,100,000
	ELEVATOR	MAINTENANCE ELEVATOR - SUBCONTRACT COST INCLUDES LABOR	EST	1	EA	290,000.00		290,000	0	0.00	0	MECH	88.89	0	290,000
4.2	LIME UNLOADING SYSTEM	INCLUDES PNEUMATIC HANDLING SYSTEM, THREE VACUUM EXHAUSTER, TWO FILTER SEPARATORS	EST	1	LT	350,000		350,000	0	2750.00	3,163	MECH	88.89	281,100	631,100
4.3	PIPING - MECHANICAL							29,000	15,600					77,900	122,500
	SMALL BORE PIPING	2" CS, SCH 80 WELDED	EST	100	LF		22.20	0	2,200	1.26	145	SPNG	94.41	13,700	15,900
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	100	LF		48.80	0	4,900	1.44	166	SPNG	94.41	15,600	20,500
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	200	LF		33.70	0	6,700	1.32	304	SPNG	94.41	28,700	35,400
	VALVE	2" GLOBE, 150# SS, WELDED	EST	20	EA	1,450		29,000	0	5.64	130	SPNG	94.41	12,200	41,200
	PIPE SUPPORTS		EST	50	EA		35.00	0	1,800	1.50	86	MECH	88.89	7,700	9,500
4.4	LIME STORAGE SILO ACCESS STAIR TOWER	THREE COAT SHOP PAINT	EST	30	TN		2,900.00	0	87,000	24.00	828	STST	105.71	87,500	174,500

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4.5	PIPE RACK FOR LIME HANDLING, WASTE HANDLING AND MISC MECHANICAL PIPING	THREE COAT SHOP PAINT	EST	270	TN		2,900.00	0	783,000	24.00	7,452	STST	105.71	787,800	1,570,800
4.6	RAIL CAR UNLOADING AREA - FOUNDATIONS	20 X 60 - NO SIDING						0	22,600					49,100	71,700
	EXCAVATION / BACKFILL		EST	300	CY			0	0	0.36	124	EXFD	90.00	11,200	11,200
	REINFORCING		EST	9	TN		1,150.00	0	9,800	20.00	196	REIN	78.27	15,300	25,100
	FORMWORK		EST	400	SF		2.50	0	1,000	0.14	64	FORM	99.43	6,400	7,400
	CONCRETE		EST	100	CY		105.00	0	10,500	1.50	173	CONP	79.64	13,700	24,200
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	500	LB		2.50	0	1,300	0.06	35	CARP	71.88	2,500	3,800
4.7	LIME UNLOADING BLOWER / ELECTRICAL BUILDING - FOUNDATIONS							0	80,600					139,600	220,200
	EXCAVATION / BACKFILL		EST	340	CY			0	0	0.36	141	EXFD	90.00	12,700	12,700
	REINFORCING		EST	30	TN		1,150.00	0	34,500	20.00	690	REIN	78.27	54,000	88,500
	FORMWORK		EST	780	SF		2.50	0	2,000	0.14	126	FORM	99.43	12,500	14,500
	CONCRETE		EST	330	CY		105.00	0	34,700	1.50	569	CONP	79.64	45,300	80,000
	MUD MAT		EST	50	CY		105.00	0	5,300	1.50	86	CONP	79.64	6,900	12,200
	EMBEDDED STEEL		EST	1,650	LB		2.50	0	4,100	0.06	114	CARP	71.88	8,200	12,300
4.8	LIME UNLOADING BLOWER / ELECTRICAL BUILDING	100' L X 30' W X 30' H						75,000	335,000					24,400	434,400
	PREENGINEERED BUILDING INCLUDING H&V AND LIGHTING	SUBCONTRACT PRICE, INCLUDES LABOR	EST	3,000	SF		105	0	315,000	0.00	0	STST	105.71	0	315,000
	ADDITONAL HVAC UNIT FOR ELECTRICAL ROOM & CONTROLS	40T PACKAGED UNIT FOR ELECTRICAL EQUIPMENT ROOM. INCLUDES ALLOWANCE FOR CONCRETE PAD AND ELECTRICAL WORK	EST	1	LT	75000	20000	75,000	20,000	350.00	300	HVAC	81.24	24,400	119,400
4.9	CONCRETE PIT FOR THE ELEVATOR		EST	10	CY		230.00	0	2,300	7.50	86	CONP	79.64	6,900	9,200
4.10	LIME STORAGE SILO - FOUNDATIONS							0	87,100					171,100	258,200
	EXCAVATION / BACKFILL		EST	900	CY			0	0	0.36	373	EXFD	90.00	33,500	33,500
	REINFORCING		EST	35.0	TN		1,150.00	0	40,300	20.00	805	REIN	78.27	63,000	103,300
	FORMWORK		EST	900	SF		2.50	0	2,300	0.14	145	FORM	99.43	14,400	16,700
	CONCRETE		EST	370	CY		105.00	0	38,900	1.50	638	CONP	79.64	50,800	89,700
	MUD MAT		EST	25	CY		105.00	0	2,600	1.50	43	CONP	79.64	3,400	6,000
	EMBEDDED STEEL		EST	1,200	LB		2.50	0	3,000	0.06	83	CARP	71.88	6,000	9,000
4.11	LIME STORAGE SILO ACCESS STAIR TOWER - FOUNDATIONS							0	10,700					22,300	33,000
	EXCAVATION / BACKFILL		EST	95	CY			0	0	0.36	39	EXFD	90.00	3,500	3,500
	REINFORCING		EST	3.6	TN		1,150.00	0	4,100	20.00	83	REIN	78.27	6,500	10,600
	FORMWORK		EST	260	SF		2.50	0	700	0.14	42	FORM	99.43	4,200	4,900
	CONCRETE		EST	45	CY		105.00	0	4,700	1.50	78	CONP	79.64	6,200	10,900
	MUD MAT		EST	6	CY		105.00	0	600	1.50	10	CONP	79.64	800	1,400
	EMBEDDED STEEL		EST	225	LB		2.50	0	600	0.06	16	CARP	71.88	1,100	1,700
4.12	PIPE RACK - FOUNDATIONS							0	94,200					237,800	332,000
	EXCAVATION / BACKFILL		EST	1,360	CY			0	0	0.36	563	EXFD	90.00	50,700	50,700
	REINFORCING		EST	32.2	TN		1,150.00	0	37,000	20.00	740	REIN	78.27	57,900	94,900
	FORMWORK		EST	4,000	SF		2.50	0	10,000	0.14	644	FORM	99.43	64,000	74,000
	CONCRETE		EST	402	CY		105.00	0	42,200	1.50	693	CONP	79.64	55,200	97,400
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	2,010	LB		2.50	0	5,000	0.06	139	CARP	71.88	10,000	15,000
4.13	TRANSFORMERS: 33F, 33G,	13.8KV-480V,3PHASE, CAST COIL	EST	2	EA	85000		170,000	0	300.00	690	EHEA	79.16	54,600	224,600
4.14	480V LOW VOLTAGE (33F/G) SWITCHGEAR	PER LINE UP	EST	5	EA	39200		196,000	0	230.00	1,323	EHEA	79.16	104,700	300,700
4.15	CABLE BUS DUCT							134,700	10,800					200,200	345,700

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	480V CABLE BUS	BUST DUCT ONLY	EST	150	FT	898		134,700	0	10.30	1,777	WIRE	98.84	175,600	310,300
	CABLE BUS TERMINATION	480V TERMINATIONS	EST	4	EA		2,700.00	0	10,800	54.00	248	WIRE	98.84	24,600	35,400
4.16	MCC							61,800	0					3,600	65,400
	480V MCC	PER LINE UP	EST	2	EA	30900		61,800	0	16.00	37	WIRE	98.84	3,600	65,400
4.17	MIMIC PANELS		EST	1	EA	17500		17,500	0	12.00	14	WIRE	98.84	1,400	18,900
4.18	EMERGENCY POWER SYSTEM							108,300	0					24,400	132,700
	DC PANEL BOARD		EST	1	EA	15450		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	UPS PANEL BOARDS		EST	1	EA	15450		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	SATELLITE UPS		EST	1	EA	41200		41,200	0	16.00	18	WIRE	98.84	1,800	43,000
	VRLA BATTERIES		EST	1	LT	36050		36,100	0	120.00	138	WIRE	98.84	13,600	49,700
4.19	GROUNDING							13,300	0					41,300	54,600
	GROUND ROD	3/4" - 20' LONG	EST	16	EA	150		2,400	0	4.00	74	WIRE	98.84	7,300	9,700
	500 MCM	BARE COPPER WIRE	EST	1,300	FT	7.65		9,900	0	0.12	179	WIRE	98.84	17,700	27,600
	CADWELD		EST	64	EA	15		1,000	0	2.00	147	WIRE	98.84	14,500	15,500
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	16.00	18	WIRE	98.84	1,800	1,800
4.20	LIGHTING/ TRANSFORMERS & PANELS							52,000	135,000					104,500	291,500
	LIGHT FIXTURES		EST	180	EA		750	0	135,000	4.00	828	WIRE	98.84	81,800	216,800
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	10000		20,000	0	40.00	92	WIRE	98.84	9,100	29,100
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	7500		15,000	0	32.00	74	WIRE	98.84	7,300	22,300
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	2	EA	5000		10,000	0	16.00	37	WIRE	98.84	3,600	13,600
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	2	EA	3500		7,000	0	12.00	28	WIRE	98.84	2,700	9,700
4.21	RACEWAY, CABLE TRAY, & CONDUIT							0	310,900					1,537,100	1,848,000
	12" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,050	LF		18.25	0	19,200	1.10	1,328	WIRE	98.84	131,300	150,500
	18" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	600	LF		21.50	0	12,900	1.45	1,001	WIRE	98.84	98,900	111,800
	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,700	LF		27.10	0	46,100	1.75	3,421	WIRE	98.84	338,200	384,300
	36" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	500	LF		30.30	0	15,200	1.95	1,121	WIRE	98.84	110,800	126,000
	5" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	750	LF		61.00	0	45,800	1.13	972	WIRE	98.84	96,100	141,900
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,450	LF		31.00	0	45,000	0.81	1,346	WIRE	98.84	133,000	178,000
	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,550	LF		21.50	0	33,300	0.65	1,150	WIRE	98.84	113,600	146,900
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	2,400	LF		9.25	0	22,200	0.35	972	WIRE	98.84	96,000	118,200
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	3,050	LF		7.15	0	21,800	0.28	996	WIRE	98.84	98,500	120,300
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	5,150	LF		4.44	0	22,900	0.24	1,415	WIRE	98.84	139,900	162,800
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	8,200	LF		3.23	0	26,500	0.19	1,829	WIRE	98.84	180,800	207,300
4.22	HIGH VOLTAGE POWER CABLE & TERMINATION	1/C # 500KCMIL-15KV	EST	5,400	LF		9.27	0	50,100	0.23	1,428	WIRE	98.84	141,200	191,300
4.23	MEDIUM VOLTAGE POWER CABLE & TERMINATION	1/C # 350KCMIL-5KV	EST	10,800	LF		6.13	0	66,200	0.23	2,857	WIRE	98.84	282,300	348,500
4.24	LOW VOLTAGE POWER CABLE & TERMINATION							0	93,000					143,200	236,200
	3/C # 500KCMIL- 600V		EST	600	LF		26.12	0	15,700	0.69	476	WIRE	98.84	47,100	62,800
	#4/0 - #12 AWG-600V		EST	10,700	LF		7.22	0	77,300	0.08	972	WIRE	98.84	96,100	173,400
4.25	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	EST	8,200	LF		3.20	0	26,200	0.08	745	WIRE	98.84	73,600	99,800

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4.26	DUCT BANK	6-5" & 6-3" CONDUITS	EST	100	LF		265.88	0	26,600	6.01	691	ECND	75.97	52,500	79,100
4.27	FOUNDATIONS FOR TRANSFORMERS							0	5,300					11,900	17,200
	EXCAVATION / BACKFILL		EST	75	CY			0	0	0.36	31	EXFD	90.00	2,800	2,800
	REINFORCING		EST	2	TN		1,150.00	0	2,300	20.00	46	REIN	78.27	3,600	5,900
	FORMWORK		EST	100	SF		2.50	0	300	0.14	16	FORM	99.43	1,600	1,900
	CONCRETE		EST	20	CY		105.00	0	2,100	1.50	35	CONP	79.64	2,700	4,800
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	250	LB		2.50	0	600	0.06	17	CARP	71.88	1,200	1,800
4.28	COMMUNICATIONS		EST	1	LT		17,000.00	0	17,000	114.00	131	WIRE	98.84	13,000	30,000
4.29	LIGHTNING PROTECTION		EST	1	LT		14,000.00	0	14,000	79.00	91	WIRE	98.84	9,000	23,000
4.30	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							2,597,600	2,281,200		49,080			4,691,000	9,569,800
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										730,245
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						4,268		83.48	356,000	356,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						5,335			374,245	374,245
	PER DIEM	NONE		0.00	HR						58,683			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				11,406					23,455	34,861
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				114,060						114,060
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			129,880							129,880
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				114,060					234,550	348,610
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				342,180					703,650	1,045,830
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							129,900	581,700					1,691,900	2,403,500
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME HANDLING SYSTEM						2,727,500	2,862,900					6,382,900	11,973,300
5.0	LIME SLAKER BUILDING														0
5.1	MECHANICAL EQUIPMENT	INCLUDES:CHAIN CONVEYOR, SLAKERS THROUGH THE LIME SLURRY PUMPS, PIPING, AND LIME SLURRY STORAGE TANKS.	EST	1	LT	3,198,000		3,198,000	0	32500.00	37,375	MECH	88.89	3,322,300	6,520,300
5.2	REAGENT AREA SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
5.3	AGITATOR FOR SUMP PUMPS	5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
5.4	PIPING - MECHANICAL		EST	1	LT			117,800	111,400					381,100	610,300
	LARGE BORE PIPING	6" CS, SCH 40 WELDED	EST	200	LF		41.7	0	8,300	1.61	370	SPNG	94.41	35,000	43,300
	LARGE BORE PIPING	8" HDPE (UNDERGROUND)	EST	1,200	LF		14.1	0	16,900	0.83	1,145	SPNG	94.41	108,100	125,000
	LARGE BORE PIPING	10" CS, SCH 40 WELDED	EST	400	LF		110.3	0	44,100	2.40	1,104	SPNG	94.41	104,200	148,300
	LARGE BORE PIPING	14" CS, SCH 40 WELDED	EST	100	LF		205.9	0	20,600	2.87	330	SPNG	94.41	31,200	51,800
	SMALL BORE PIPING	2" CS, SCH 80 WELDED	EST	50	LF		22.20	0	1,100	1.26	72	SPNG	94.41	6,800	7,900
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	50	LF		48.80	0	2,400	1.44	83	SPNG	94.41	7,800	10,200

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	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	100	LF		33.70	0	3,400	1.32	152	SPNG	94.41	14,300	17,700
	VALVE	2" GLOBE, 150# SS, WELDED	EST	15	EA	1,450		21,800	0	5.64	97	SPNG	94.41	9,200	31,000
	VALVE	6" AIR OPERATED, 150 #, CS, FLANGED	EST	2	EA	14,000		28,000	0	17.30	40	SPNG	94.41	3,800	31,800
	VALVE	8" AIR OPERATED, 150 #, CS, FLANGED	EST	4	EA	17,000		68,000	0	19.30	89	SPNG	94.41	8,400	76,400
	EXCAVATION / BACKFILL	FOR UNDERGROUND PIPING	EST	1,000	CY			0	0	0.20	230	EXFD	90.00	20,700	20,700
	BEDDING	FOR UNDERGROUND PIPING	EST	133	CY		35.0	0	4,700	0.25	38	EXFD	90.00	3,500	8,200
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	110	EA		90.00	0	9,900	2.50	316	MECH	88.89	28,100	38,000
5.5	LIME SLURRY TANKS - FOUNDATIONS							0	166,400					299,400	465,800
	EXCAVATION / BACKFILL		EST	969	CY			0	0	0.36	401	EXFD	90.00	36,100	36,100
	REINFORCING		EST	90	TN		1,150.00	0	103,500	20.00	2,070	REIN	78.27	162,000	265,500
	FORMWORK		EST	1,166	SF		2.50	0	2,900	0.14	188	FORM	99.43	18,700	21,600
	CONCRETE		EST	475	CY		105.00	0	49,900	1.50	819	CONP	79.64	65,300	115,200
	MUD MAT		EST	40	CY		105.00	0	4,200	1.50	69	CONP	79.64	5,500	9,700
	EMBEDDED STEEL		EST	2,375	LB		2.50	0	5,900	0.06	164	CARP	71.88	11,800	17,700
5.6	LIME SLAKER BUILDING - FOUNDATIONS							0	119,200					204,000	323,200
	EXCAVATION / BACKFILL		EST	450	CY			0	0	0.36	186	EXFD	90.00	16,800	16,800
	REINFORCING		EST	50	TN		1,150.00	0	57,500	20.00	1,150	REIN	78.27	90,000	147,500
	FORMWORK		EST	1,000	SF		2.50	0	2,500	0.14	161	FORM	99.43	16,000	18,500
	CONCRETE		EST	450	CY		105.00	0	47,300	1.50	776	CONP	79.64	61,800	109,100
	MUD MAT		EST	60	CY		105.00	0	6,300	1.50	104	CONP	79.64	8,200	14,500
	EMBEDDED STEEL		EST	2,250	LB		2.50	0	5,600	0.06	155	CARP	71.88	11,200	16,800
5.7	LIME SLAKER BUILDING	135' L X 30' W X 50' H						40,500	803,300					740,500	1,584,300
	STRUCTURAL STEEL		EST	110	TN		2650	0	291,500	16.00	2,024	STST	105.71	214,000	505,500
	INSULATED METAL SIDING		EST	16,500	SF		12	0	198,000	0.11	2,087	SDNG	93.41	195,000	393,000
	ROLLING OVERHEAD DOOR		EST	320	SF		27	0	8,600	0.25	92	CARP	71.88	6,600	15,200
	METAL ROOF DECKING		EST	4,050	SF		2.7	0	10,900	0.06	279	STST	105.71	29,500	40,400
	RIGID ROOF INSULATION		EST	4,050	SF		2.4	0	9,700	0.02	70	ROOF	69.12	4,800	14,500
	ROOFING (4-PLY TAR & GRAVEL)		EST	4,050	SF		1.55	0	6,300	0.04	186	ROOF	69.12	12,900	19,200
	LIGHTWEIGHT CONCRETE FILL 1"		EST	50	CY		100	0	5,000	1.30	75	ROOF	69.12	5,200	10,200
	ROOF FLASHING		EST	350	LF		14.45	0	5,100	0.12	48	ROOF	69.12	3,300	8,400
	ROOF DRAINS		EST	1	LT		25000	0	25,000	240.00	276	PLMB	79.42	21,900	46,900
	FLOOR DRAINS		EST	1	LT		30000	0	30,000	280.00	322	PLMB	79.42	25,600	55,600
	FLOOR SLABS	INCLUDES METAL DECKING AND FORMWORK	EST	50	CY		210	0	10,500	7.50	431	CONP	79.64	34,300	44,800
	FLOOR FINISHES		EST	3,102	SF		2.5	0	7,800	0.05	178	CONP	79.64	14,200	22,000
	LOUVERS/WINDOWS/DOORS		EST	1,601	SF		40	0	64,000	0.35	644	CARP	71.88	46,300	110,300
	ROOF VENTILATORS		EST	4	EA		15000	0	60,000	24.00	110	HVAC	81.24	9,000	69,000
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	1,215	SF		45	0	54,700	0.40	559	GALL	84.61	47,300	102,000
	H&V		EST	1	LT	40500	16200	40,500	16,200	756.00	869	HVAC	81.24	70,600	127,300
5.8	ELECTRICAL	INCLUDED WITH LIME HANDLING SYSTEM, ACCOUNT 4.0													
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							3,396,300	1,200,300		56,128			4,964,200	9,560,800
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										834,983
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						4,881		83.48	407,000	407,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						6,101			427,983	427,983
	PER DIEM	NONE		0.00	HR						67,109			0	0

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	CONSUMABLES - % of ACCT NO. 90			0.5	%				6,002					24,821	30,823
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				60,015						60,015
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			169,815							169,815
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				60,015					248,210	308,225
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				180,045					744,630	924,675
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							169,800	306,100					1,852,600	2,328,500
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME SLAKER BUILDING						3,566,100	1,506,400					6,816,800	11,889,300
6.0	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS														0
6.1	BYPRODUCT WASTE HANDLING - MECHANICAL EQUIPMENT	INCLUDES PNEUMATIC HANDLING SYSTEM, THREE PRESSURE BLOWERS, ONE BIN VENT FILTER, ASH UNLOADING SYSTEM	EST	1	LT	1,637,600		1,637,600	0	10800.00	12,420	MECH	88.89	1,104,000	2,741,600
6.2	FLY ASH HANDLING - MECHANICAL EQUIPMENT	INCLUDES PNEUMATIC HANDLING SYSTEM, TWO PRESSURE EXHAUSTERS, TRANSFER STATION, ONE BIN VENT FILTER, ASH UNLOADING SYSTEM	EST	1	LT	2,285,000		2,285,000	0	14000.00	16,100	MECH	88.89	1,431,100	3,716,100
6.3	BYPRODUCT WASTE SILO AREA SUMP PUMPS	FOR BUILDINGS - DUPLEX. INCLUDES CHECK & ISOLATION VALVES.		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
6.4	AGITATOR FOR SUMP PUMPS	5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
6.5	PIPING - MECHANICAL		EST	1	LT			142,800	240,900					759,100	1,142,800
	LARGE BORE PIPING	4" CS, SCHEDULE 40, WELDED	EST	300	LF		23.0	0	6,900	1.48	511	SPNG	94.41	48,200	55,100
	LARGE BORE PIPING	4" SS, SCHEDULE 40, WELDED	EST	300	LF		68.3	0	20,500	1.82	628	SPNG	94.41	59,300	79,800
	LARGE BORE PIPING	6" CS, SCH 40 WELDED	EST	400	LF		41.7	0	16,700	1.61	741	SPNG	94.41	69,900	86,600
	LARGE BORE PIPING	8" HDPE (UNDERGROUND)	EST	800	LF		14.1	0	11,300	0.83	764	SPNG	94.41	72,100	83,400
	LARGE BORE PIPING	10" CS, SCH 40 WELDED	EST	300	LF		110.3	0	33,100	2.40	828	SPNG	94.41	78,200	111,300
	LARGE BORE PIPING	20" HDPE (UNDERGROUND)	EST	1,600	LF		72.8	0	116,500	1.45	2,668	SPNG	94.41	251,900	368,400
	SMALL BORE PIPING	2" CS, SCH 80 WELDED	EST	100	LF		22.20	0	2,200	1.26	145	SPNG	94.41	13,700	15,900
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	100	LF		48.80	0	4,900	1.44	166	SPNG	94.41	15,600	20,500
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	200	LF		33.70	0	6,700	1.32	304	SPNG	94.41	28,700	35,400
	VALVE	2" GLOBE, 150# SS, WELDED	EST	15	EA	1,450		21,800	0	5.64	97	SPNG	94.41	9,200	31,000
	VALVE	4" GATE, 150 #, CS, WELDED	EST	10	EA	2,500		25,000	0	7.70	89	SPNG	94.41	8,400	33,400
	VALVE	6" AIR OPERATED, 150 #, CS, FLANGED	EST	2	EA	14,000		28,000	0	17.30	40	SPNG	94.41	3,800	31,800
	VALVE	8" AIR OPERATED, 150 #, CS, FLANGED	EST	4	EA	17,000		68,000	0	19.30	89	SPNG	94.41	8,400	76,400
	EXCAVATION / BACKFILL	FOR UNDERGROUND PIPING	EST	2,000	CY			0	0	0.20	460	EXFD	90.00	41,400	41,400
	BEDDING	FOR UNDERGROUND PIPING	EST	267	CY		35.0	0	9,300	0.25	77	EXFD	90.00	6,900	16,200
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	170	EA		75.00	0	12,800	2.50	489	MECH	88.89	43,400	56,200
6.6	BYPRODUCT WASTE SILO							106,400	52,200					144,800	303,400
	SILO BIN	STEEL SILO 20' DIA X 24' H - 122 TONS	EST	1	EA	106,400		106,400	0	900.00	1,035	TANK	89.16	92,300	198,700
	SUPPORT STEEL FOR SILO	THREE-COAT SHOP PAINT	EST	18	TN		2,900.00	0	52,200	24.00	497	STST	105.71	52,500	104,700
6.7	SDA RECYCLE SILO	INCLUDED WITH OEM EQUIPMENT													

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6.8	FLY ASH SILO	46T STEEL -STORAGE SILO, 15' DIA X 19' H						45,000	23,200					64,300	132,500
	SILO BIN	PIN MIXERS INCLUDED WITH FLY ASH HANDLING MECHANICAL EQUIPMENT	EST	1	EA	45,000		45,000	0	400.00	460	TANK	89.16	41,000	86,000
	SUPPORT STEEL FOR SILO	THREE-COAT SHOP PAINT	EST	8	TN		2,900.00	0	23,200	24.00	221	STST	105.71	23,300	46,500
6.9	BYPRODUCT WASTE SILO - FOUNDATIONS							0	23,200					54,100	77,300
	EXCAVATION / BACKFILL		EST	380	CY			0	0	0.36	157	EXFD	90.00	14,200	14,200
	REINFORCING		EST	10.0	TN		1,150.00	0	11,500	20.00	230	REIN	78.27	18,000	29,500
	FORMWORK		EST	400	SF		2.50	0	1,000	0.14	64	FORM	99.43	6,400	7,400
	CONCRETE		EST	75	CY		105.00	0	7,900	1.50	129	CONP	79.64	10,300	18,200
	MUD MAT		EST	5	CY		105.00	0	500	1.50	9	CONP	79.64	700	1,200
	EMBEDDED STEEL		EST	900	LB		2.50	0	2,300	0.06	62	CARP	71.88	4,500	6,800
6.10	FLY ASH SILO - FOUNDATIONS							0	10,800					24,500	35,300
	EXCAVATION / BACKFILL		EST	160	CY			0	0	0.36	66	EXFD	90.00	6,000	6,000
	REINFORCING		EST	5.0	TN		1,150.00	0	5,800	20.00	115	REIN	78.27	9,000	14,800
	FORMWORK		EST	200	SF		2.50	0	500	0.14	32	FORM	99.43	3,200	3,700
	CONCRETE		EST	30	CY		105.00	0	3,200	1.50	52	CONP	79.64	4,100	7,300
	MUD MAT		EST	5	CY		105.00	0	500	1.50	9	CONP	79.64	700	1,200
	EMBEDDED STEEL		EST	300	LB		2.50	0	800	0.06	21	CARP	71.88	1,500	2,300
6.11	FLY ASH BLOWER AND ELECTRICAL BUILDING - FOUNDATIONS							0	49,600					105,700	155,300
	EXCAVATION / BACKFILL		EST	578	CY			0	0	0.36	239	EXFD	90.00	21,500	21,500
	REINFORCING		EST	17	TN		1,150.00	0	19,600	20.00	391	REIN	78.27	30,600	50,200
	FORMWORK		EST	890	SF		2.50	0	2,200	0.14	143	FORM	99.43	14,200	16,400
	CONCRETE		EST	222	CY		105.00	0	23,300	1.50	383	CONP	79.64	30,500	53,800
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	1,800	LB		2.50	0	4,500	0.06	124	CARP	71.88	8,900	13,400
6.12	FLY ASH BLOWER AND ELECTRICAL BUILDING	90' L X 30' W X 25' H						28,000	244,500					24,400	296,900
	PREENGINEERED BUILDING INCLUDING H&V AND LIGHTING	SUBCONTRACT PRICE, INCLUDES LABOR	EST	2,700	SF		85	0	229,500	0.00	0	STST	105.71	0	229,500
	ADDITONAL HVAC UNIT FOR ELECTRICAL ROOM & CONTROLS	10T PACKAGED UNIT. INCLUDES ALLOANCE FOR CONCRETE PAD AND ELECTRICAL WORK	EST	1	LT	28000	15000	28,000	15,000	0.00	300	HVAC	81.24	24,400	67,400
6.13	RECYCLE ASH BUILDING - FOUNDATIONS							0	234,300					393,800	628,100
	EXCAVATION / BACKFILL		EST	950	CY			0	0	0.36	393	EXFD	90.00	35,400	35,400
	REINFORCING		EST	90	TN		1,150.00	0	103,500	20.00	2,070	REIN	78.27	162,000	265,500
	FORMWORK		EST	1,320	SF		2.50	0	3,300	0.14	213	FORM	99.43	21,100	24,400
	CONCRETE		EST	1,000	CY		105.00	0	105,000	1.50	1,725	CONP	79.64	137,400	242,400
	MUD MAT		EST	95	CY		105.00	0	10,000	1.50	164	CONP	79.64	13,100	23,100
	EMBEDDED STEEL		EST	5,000	LB		2.50	0	12,500	0.06	345	CARP	71.88	24,800	37,300
6.14	RECYCLE ASH BUILDING	100' L X 65' W X 50' H						58,500	1,306,700					1,194,500	2,559,700
	STRUCTURAL STEEL		EST	180	TN		2650	0	477,000	16.00	3,312	STST	105.71	350,100	827,100
	INSULATED METAL SIDING		EST	16,500	SF		12	0	198,000	0.11	2,087	SDNG	93.41	195,000	393,000
	ROLLING OVERHEAD DOOR		EST	640	SF		27	0	17,300	0.25	184	CARP	71.88	13,200	30,500
	METAL ROOF DECKING		EST	6,500	SF		2.7	0	17,600	0.06	449	STST	105.71	47,400	65,000
	RIGID ROOF INSULATION		EST	6,500	SF		2.4	0	15,600	0.02	112	ROOF	69.12	7,800	23,400
	ROOFING (4-PLY TAR & GRAVEL)		EST	6,500	SF		1.55	0	10,100	0.04	299	ROOF	69.12	20,700	30,800
	LIGHTWEIGHT CONCRETE FILL 1"		EST	60	CY		100	0	6,000	1.30	90	ROOF	69.12	6,200	12,200
	ROOF FLASHING		EST	350	LF		14.45	0	5,100	0.12	48	ROOF	69.12	3,300	8,400
	ROOF DRAINS		EST	1	LT		25000	0	25,000	240.00	276	PLMB	79.42	21,900	46,900
	FLOOR DRAINS		EST	1	LT		30000	0	30,000	280.00	322	PLMB	79.42	25,600	55,600
	FLOOR SLABS	INCLUDES METAL DECKING AND FORMWORK	EST	60	CY		210	0	12,600	7.50	518	CONP	79.64	41,200	53,800
	FLOOR FINISHES		EST	5,000	SF		2.5	0	12,500	0.05	288	CONP	79.64	22,900	35,400
	LOUVERS/WINDOWS/DOORS		EST	2,600	SF		40	0	104,000	0.35	1,047	CARP	71.88	75,200	179,200
	ROOF VENTILATORS		EST	4	EA		15000	0	60,000	24.00	110	HVAC	81.24	9,000	69,000

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	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	6,500	SF		45	0	292,500	0.40	2,990	GALL	84.61	253,000	545,500
	H&V		EST	1	LT	58500	23400	58,500	23,400	1092.00	1,256	HVAC	81.24	102,000	183,900
6.15	MCC	480V MCC PER LINE UP	EST	4	EA	30000		120,000	0	16.00	74	WIRE	98.84	7,300	127,300
6.16	EMERGENCY POWER SYSTEM							185,500	0					40,000	225,500
	UPS PANEL BOARDS		EST	2	EA	15500		31,000	0	40.00	92	WIRE	98.84	9,100	40,100
	SATELLITE UPS		EST	2	EA	41200		82,400	0	16.00	37	WIRE	98.84	3,600	86,000
	VRLA BATTERIES		EST	2	LT	36050		72,100	0	120.00	276	WIRE	98.84	27,300	99,400
6.17	LIGHTING/ TRANSFORMERS & PANELS							18,500	75,000					53,200	146,700
	LIGHT FIXTURES		EST	100	EA		750	0	75,000	4.00	460	WIRE	98.84	45,500	120,500
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	1	EA	10000		10,000	0	40.00	46	WIRE	98.84	4,500	14,500
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	1	EA	5000		5,000	0	16.00	18	WIRE	98.84	1,800	6,800
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	1	EA	3500		3,500	0	12.00	14	WIRE	98.84	1,400	4,900
6.18	RACEWAY, CABLE TRAY, & CONDUIT							0	40,700					236,200	276,900
	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	350	LF		27.10	0	9,500	1.75	704	WIRE	98.84	69600	79,100
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	350	LF		31.00	0	10,900	0.81	325	WIRE	98.84	32100	43,000
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,300	LF		4.44	0	5,800	0.24	357	WIRE	98.84	35300	41,100
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	4,500	LF		3.23	0	14,500	0.19	1,004	WIRE	98.84	99200	113,700
6.19	GROUNDING							0	4,500					10,900	15,400
	GROUND ROD	3/4" - 20' LONG EACH	EST	4	EA		150	0	600	4.00	18	WIRE	98.84	1,800	2,400
	500 MCM	BARE COPPER WIRE	EST	500	FT		7.65	0	3,800	0.12	69	WIRE	98.84	6,800	10,600
	CADWELD		EST	8	EA		15	0	100	2.00	18	WIRE	98.84	1,800	1,900
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	4.00	5	WIRE	98.84	500	500
6.20	LOW VOLTAGE POWER CABLE & TERMINATION	#4/0 - #12 AWG-600V	EST	10,200	LF		7.22	0	73,600	0.08	927	WIRE	98.84	91600	165,200
6.21	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	EST	12,000	LF		3.20	0	38,400	0.08	1,090	WIRE	98.84	107800	146,200
6.22	DUCT BANK							0	109,700					205,400	315,100
	DUCT BANK WITH 8-5" & 8-3" CONDUITS		EST	125	LF		398.82	0	49,900	7.51	1,080	ECND	75.97	82,000	131,900
	DUCT BANK WITH 6-5" & 6-3" CONDUITS		EST	125	LF		265.88	0	33,200	6.01	864	ECND	75.97	65,600	98,800
	DUCT BANK WITH 2-5" & 2-3" CONDUITS		EST	200	LF		132.94	0	26,600	3.31	760	ECND	75.97	57,800	84,400
6.23	COMMUNICATIONS		EST	1	LT		70,000.00	0	70,000	440.00	506	WIRE	98.84	50,000	120,000
6.24	LIGHTNING PROTECTION		EST	1	LT		19,000.00	0	19,000	123.00	141	WIRE	98.84	14,000	33,000
6.25	SECURITY SYSTEM		EST	1	LT		16,000.00	0	16,000	123.00	141	WIRE	98.84	14,000	30,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							4,667,300	2,632,300		68,866			6,147,600	13,447,200
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										1,025,110
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						5,988		83.48	500,000	500,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						7,485			525,110	525,110
	PER DIEM	NONE		0.00	HR						82,339			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				13,162					30,738	43,900
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				131,615						131,615
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			233,365							233,365
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				131,615					307,380	438,995

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	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				394,845					922,140	1,316,985
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							233,400	671,200					2,285,400	3,190,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS						4,900,700	3,303,500					8,433,000	16,637,200
7.0	SPRAY DRYER ABSORBER ISLAND														0
7.1	MECHANICAL EQUIPMENT	INCLUDES: ABSORBER MODULES AND ATOMIZERS WITH LUBE OIL, DUCT WORK FROM THE ABSORBERS TO THE FABRIC FILTER, AND COMPLETE RECYCLE SYSTEM WITH PIPING INSIDE FGD BUILDINGS.	EST	1	LT	39438000		39,438,000	0	236600	272,090	MECH	88.89	24,186,100	63,624,100
7.2	ELEVATOR	MAINTENANCE ELEVATOR - SUBCONTRACT COST INCLUDES LABOR	EST	1	EA	325,000.00		325,000	0	0.00	0	MECH	88.89	0	325,000
7.3	ABSORBER AREA SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES.		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
7.4	AGITATOR FOR SUMP PUMPS	5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
7.5	PIPING - MECHANICAL							142,800	36,900					227,900	407,600
	LARGE BORE PIPING	4" CS, SCHEDULE 40, WELDED	EST	300	LF		23.0	0	6,900	1.48	511	SPNG	94.41	48,200	55,100
	LARGE BORE PIPING	6" CS, SCH 40 WELDED	EST	100	LF		41.7	0	4,200	1.61	185	SPNG	94.41	17,500	21,700
	LARGE BORE PIPING	8" HDPE (UNDERGROUND)	EST	800	LF		14.1	0	11,300	0.83	764	SPNG	94.41	72,100	83,400
	SMALL BORE PIPING	2" CS, SCH 80 WELDED	EST	50	LF		22.20	0	1,100	1.26	72	SPNG	94.41	6,800	7,900
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	50	LF		48.80	0	2,400	1.44	83	SPNG	94.41	7,800	10,200
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	100	LF		33.70	0	3,400	1.32	152	SPNG	94.41	14,300	17,700
	VALVE	2" GLOBE, 150# SS, WELDED	EST	15	EA	1,450		21,800	0	5.64	97	SPNG	94.41	9,200	31,000
	VALVE	4" GATE, 150 #, CS, WELDED	EST	10	EA	2,500		25,000	0	7.70	89	SPNG	94.41	8,400	33,400
	VALVE	6" AIR OPERATED, 150 #, CS, FLANGED	EST	2	EA	14,000		28,000	0	17.30	40	SPNG	94.41	3,800	31,800
	VALVE	8" AIR OPERATED, 150 #, CS, FLANGED	EST	4	EA	17,000		68,000	0	19.30	89	SPNG	94.41	8,400	76,400
	EXCAVATION / BACKFILL	FOR UNDERGROUND PIPING	EST	667	CY			0	0	0.20	153	EXFD	90.00	13,800	13,800
	BEDDING	FOR UNDERGROUND PIPING	EST	89	CY		35.0	0	3,100	0.25	26	EXFD	90.00	2,300	5,400
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	60	EA		75.00	0	4,500	2.50	173	MECH	88.89	15,300	19,800
7.6	SDA SUPERSTRUCTURE							75,000	764,900					1,227,300	2,067,200
	PENTHOUSE FOR SDA'S	TOTAL SUPPORT STEEL AND PURLINS	EST	138	TN		2650.0	0	364,400	30.00	4,744	STST	105.71	501,500	865,900
	ROOFING FOR SDA PENTHOUSE	STANDING SEAM TYPE	EST	10,000	SF		18.00	0	180,000	0.22	2,530	ROOF	69.12	174,900	354,900
	SIDING		EST	13,000	SF		12.00	0	156,000	0.11	1,645	SDNG	93.41	153,600	309,600
	CONCRETE FLOOR FOR PENTHOUSE	INCLUDES DECKING AND FORMWORK	EST	150	CY		230.00	0	34,500	7.50	1,294	CONP	79.64	103,000	137,500
	H&V		EST	3	LT	25000	10000	75,000	30,000	1050.00	3,623	HVAC	81.24	294,300	399,300
7.7	SDA BOTTOM ENCLOSURE - SUPPORT STEEL, GIRTS AND SIDING	TOTAL FOR THREE ABSORBERS	EST	9,053	SF		40.00	0	362,100	0.35	3,644	STST	105.71	385,200	747,300
7.8	SDA SHELL / ROOF INSULATION	61,000 SF. SUBCONTRACT COST INCLUDES LABOR	EST	61,000	SF	30		1,830,000	0		0	DINS	81.75	0	1,830,000
7.9	SDA - SUPPORT STEEL & ACCESS GALLERY							0	711,000					1,884,100	2,595,100
	SUPPORT STEEL	MATERIAL INCLUDED WITH OEM EQUIPMENT	EST	435	TN			0	0	24.00	12,006	STST	105.71	1,269,200	1,269,200

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	ACCESS GALLERY		EST	15,800	SF		45.00	0	711,000	0.40	7,268	GALL	84.61	614,900	1,325,900
7.10	EXPANSION JOINTS		EST	850	LF		230.00	0	195,500	2.00	1,955	MECH	88.89	173,800	369,300
7.11	DUCTWORK							0	6,175,000					13,113,700	19,288,700
	SPRAY DRYER INLET	INCLUDES INTERNAL BRACING AND TURNING VANES	EST	1,900	TN		3,250.00	0	6,175,000	50.00	109,250	FLDU	107.96	11,794,600	17,969,600
	SPRAY DRYER OUTLET TO FABRIC FILTER INLET	INSTALLATION ONLY - MATERIAL INCLUDED WITH OEM EQUIPMENT	EST	213	TN			0	0	50.00	12,219	FLDU	107.96	1,319,100	1,319,100
7.12	DUCT SUPPORT STEEL	THREE COAT SHOP PAINT	EST	950	TN		2,900.00	0	2,755,000	24.00	26,220	STST	105.71	2,771,700	5,526,700
7.13	DUCTWORK INSULATION & LAGGING		EST	170,000	SF		12.00	0	2,040,000	0.25	48,875	DINS	81.75	3,995,500	6,035,500
7.14	CONCRETE PIT FOR ELEVATOR		EST	12	CY		230.00	0	2,800	7.50	104	CONP	79.64	8,200	11,000
7.15	SPRAY DRYER ABSORBER - FOUNDATIONS	TOTAL FOR THREE TOWERS						0	1,678,600					3,323,400	5,002,000
	EXCAVATION / BACKFILL		EST	16,000	CY			0	0	0.36	6,624	EXFD	90.00	596,200	596,200
	REINFORCING		EST	600	TN		1,150.00	0	690,000	20.00	13,800	REIN	78.27	1,080,100	1,770,100
	FORMWORK		EST	23,000	SF		2.50	0	57,500	0.14	3,703	FORM	99.43	368,200	425,700
	CONCRETE		EST	7,500	CY		105.00	0	787,500	1.50	12,938	CONP	79.64	1,030,300	1,817,800
	MUD MAT		EST	510	CY		105.00	0	53,600	1.50	880	CONP	79.64	70,100	123,700
	EMBEDDED STEEL		EST	36,000	LB		2.50	0	90,000	0.06	2,484	CARP	71.88	178,500	268,500
7.16	FOUNDATIONS FOR SUPPORT STEEL							0	69,000					143,000	212,000
	EXCAVATION / BACKFILL		EST	784	CY			0	0	0.36	324	EXFD	90.00	29,200	29,200
	REINFORCING		EST	23	TN		1,150.00	0	26,100	20.00	522	REIN	78.27	40,900	67,000
	FORMWORK		EST	1,125	SF		2.50	0	2,800	0.14	181	FORM	99.43	18,000	20,800
	CONCRETE		EST	303	CY		105.00	0	31,800	1.50	522	CONP	79.64	41,600	73,400
	MUD MAT		EST	43	CY		105.00	0	4,500	1.50	73	CONP	79.64	5,800	10,300
	EMBEDDED STEEL		EST	1,513	LB		2.50	0	3,800	0.06	104	CARP	71.88	7,500	11,300
7.17	GROUNDING							0	16,000		0			46,100	62,100
	GROUND ROD	3/4" - 20' LONG	EST	16	EA		150	0	2,400	4.00	74	WIRE	98.84	7,300	9,700
	500 MCM	BARE COPPER WIRE	EST	1,650	FT		7.65	0	12,600	0.12	228	WIRE	98.84	22,500	35,100
	CADWELD		EST	64	EA		15	0	1,000	2.00	147	WIRE	98.84	14,500	15,500
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	16.00	18	WIRE	98.84	1,800	1,800
7.18	LIGHTING/ TRANSFORMERS & PANELS							156,000	150,000		0			159,100	465,100
	LIGHT FIXTURES		EST	200	EA		750	0	150,000	4.00	920	WIRE	98.84	90,900	240,900
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	6	EA	10000		60,000	0	40.00	276	WIRE	98.84	27,300	87,300
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	6	EA	7500		45,000	0	32.00	221	WIRE	98.84	21,800	66,800
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	6	EA	5000		30,000	0	16.00	110	WIRE	98.84	10,900	40,900
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	6	EA	3500		21,000	0	12.00	83	WIRE	98.84	8,200	29,200
7.19	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE INCLUDED IN SECTION 1.0 - ID FANS													
7.20	COMMUNICATIONS		EST	1	LT		17,000.00	0	17,000	114.00	131	WIRE	98.84	13,000	30,000
7.21	LIGHTNING PROTECTION		EST	1	LT		25,500.00	0	25,500	163.00	187	WIRE	98.84	18,500	44,000
7.22	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							42,006,800	15,007,300		554,709			51,700,500	108,714,600
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE	2 CRANES		9	MN	90,000.00		810,000	0	1440.00	14,904	MECH	88.89	1,523,520	2,333,520
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										8,361,283

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		Q=Vendor Quote								Labor Productivity =		1.15			

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						48,236		83.48	4,027,000	4,027,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						61,785			4,334,283	4,334,283
	PER DIEM	NONE		0.00	HR						679,633			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				75,037					258,503	333,539
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				750,365						750,365
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			2,100,340							2,100,340
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				750,365					2,585,025	3,335,390
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				2,251,095					7,755,075	10,006,170
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							2,910,300	3,826,900					20,483,400	27,220,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SPRAY DRYER ABSORBER ISLAND						44,917,100	18,834,200					72,183,900	135,935,200
8.0	ACTIVATED CARBON INJECTION SYSTEM	NOT REQUIRED WITH NON-PHASED CONSTRUCTION													
9.0	COMPRESSED AIR SYSTEM														
10.0	SERVICE WATER SYSTEM														
11.0	POTABLE WATER SYSTEM														
12.0	FGD SUBSTATION														
12.1	TRANSFORMERS							1,560,000	0					273,100	1,833,100
	FGD SUBSTATION-AUX TRANSFORMERS: 11A & 11B	138KV-13.8KV- 2 WINDING XFMR	EST	2	EA	695000		1,390,000	0	1200.00	2,760	EHEA	79.16	218,500	1,608,500
	TRANSFORMERS: 32F, 32G	13.8KV-480V,3PHASE, 2 WINDING CAST COIL	EST	2	EA	85000		170,000	0	300.00	690	EHEA	79.16	54,600	224,600
12.2	TRANSFORMER PDC	15W X 45' X 10'H. SUBCONTRACT PRICE INCLUDES LABOR	EST	675.0	SF	300.0		202500.0	0.0	0.0	0.0	STST	105.71	0.0	202500.0
12.3	TRANSFORMER PDC - FOUNDATION							0	73,200					146,900	220,100
	EXCAVATION / BACKFILL		EST	700	CY			0	0	0.36	290	EXFD	90.00	26,100	26,100
	REINFORCING		EST	26	TN		1,150.00	0	30,200	20.00	604	REIN	78.27	47,300	77,500
	FORMWORK		EST	1,100	SF		2.50	0	2,800	0.14	177	FORM	99.43	17,600	20,400
	CONCRETE		EST	300	CY		105.00	0	31,500	1.50	518	CONP	79.64	41,200	72,700
	MUD MAT		EST	35	CY		105.00	0	3,700	1.50	60	CONP	79.64	4,800	8,500
	EMBEDDED STEEL		EST	2,000	LB		2.50	0	5,000	0.06	138	CARP	71.88	9,900	14,900
12.4	138KV MAIN FEEDER & TERMINATIONS							264,000	0					254,000	518,000
	138KV STRUCTURE AND SWITCH	STRUCTURE STEEL	EST	1	LT	103500		103,500	0	450.00	518	STST	105.71	54,700	158,200
	138KV MAIN FEEDER	1/C 750KCMIL- 138KV	EST	2,100	LF	51.75		108,700	0	0.69	1,671	WIRE	98.84	165,200	273,900
	138KV ACCESSORIES		EST	1	LT	51750		51,800	0	300.00	345	WIRE	98.84	34,100	85,900
12.5	SWITCHGEAR							690,000	0					43,700	733,700
	13.8 KV MEDIUM VOLTAGE (11A/B)	PRICE PER SECTION	EST	10	EA	50000		500,000	0	40.00	460	EHEA	79.16	36,400	536,400
	480V LOW VOLTAGE (32F/G)	PRICE PER SECTION	EST	5	EA	38000		190,000	0	16.00	92	EHEA	79.16	7,300	197,300
12.6	MCC	480V MCC, PER LINE UP	EST	2	EA	30000		60,000	0	16.00	37	WIRE	98.84	3,600	63,600
12.7	CABLE BUS							181,100	18,000					290,200	489,300
	15KV CABLE BUS DUCT	BUS DUCT ONLY	EST	200	FT	442		88,400	0	3.30	759	WIRE	98.84	75,000	163,400
	480V CABLE BUS DUCT	BUS DUCT ONLY	EST	150	FT	618		92,700	0	10.30	1,777	WIRE	98.84	175,600	268,300
	CABLE BUS TERMINATION	500MCM - 15KV TERMINATIONS	EST	4	EA		1,800.00	0	7,200	33.00	152	WIRE	98.84	15,000	22,200
	CABLE BUS TERMINATION	750MCM- 480V TERMINATIONS	EST	4	EA		2,700.00	0	10,800	54.00	248	WIRE	98.84	24,600	35,400
12.8	PANELS - RELAY							100,000	0					9,100	109,100

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	RELAY PANELS & INTERLOCK	ALLOWANCE	EST	1	LT	100000		100,000	0	80.00	92	WIRE	98.84	9,100	109,100
12.9	MIMIC PANELS		EST	1	EA	17500		17,500	0	40.00	46	WIRE	98.84	4,500	22,000
12.10	EMERGENCY POWER SYSTEM							108,300	0					24,400	132,700
	DC PANEL BOADRD		EST	1	EA	15500		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	UPS PANEL BOARDS		EST	1	EA	15500		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	SATELLITE UPS		EST	1	EA	41200		41,200	0	16.00	18	WIRE	98.84	1,800	43,000
	VRLA BATTERIES	8HR-400A, 480V	EST	1	LT	36050		36,100	0	120.00	138	WIRE	98.84	13,600	49,700
12.11	GROUNDING							23,300	0					59,100	82,400
	GROUND ROD	3/4" - 20' LONG EACH	EST	16	EA	150		2,400	0	4.00	74	WIRE	98.84	7,300	9,700
	500 MCM	BARE COPPER WIRE	EST	2,600	FT	7.65		19,900	0	0.12	359	WIRE	98.84	35,500	55,400
	CADWELD		EST	64	EA	15		1,000	0	2.00	147	WIRE	98.84	14,500	15,500
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	16.00	18	WIRE	98.84	1,800	1,800
12.12	LIGHTING/ TRANSFORMERS & PANELS							26,000	30,000					29,500	85,500
	LIGHT FIXTURES		EST	40	EA		750	0	30,000	4.00	184	WIRE	98.84	18,200	48,200
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	1	EA	10000		10,000	0	40.00	46	WIRE	98.84	4,500	14,500
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	1	EA	7500		7,500	0	32.00	37	WIRE	98.84	3,600	11,100
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	1	EA	5000		5,000	0	16.00	18	WIRE	98.84	1,800	6,800
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	1	EA	3500		3,500	0	12.00	14	WIRE	98.84	1,400	4,900
12.13	OUTDOOR LIGHTING	NEW AUX YARD LIGHTING - ALLOWANCE	EST	1	LT	25000		25,000	0	500.00	575	WIRE	98.84	56,800	81,800
12.14	RACEWAY, CABLE TRAY, & CONDUIT							0	390,600					1,918,600	2,309,200
	12" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,250	LF		18.25	0	22,800	1.10	1,581	WIRE	98.84	156,300	179,100
	18" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	750	LF		21.50	0	16,100	1.45	1,251	WIRE	98.84	123,600	139,700
	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	2,200	LF		27.10	0	59,600	1.75	4,428	WIRE	98.84	437,600	497,200
	36" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	600	LF		30.30	0	18,200	1.95	1,346	WIRE	98.84	133,000	151,200
	5" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,000	LF		61.00	0	61,000	1.13	1,296	WIRE	98.84	128,100	189,100
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,800	LF		31.00	0	55,800	0.81	1,670	WIRE	98.84	165,100	220,900
	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	2,000	LF		21.50	0	43,000	0.65	1,484	WIRE	98.84	146,600	189,600
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	3,000	LF		9.25	0	27,800	0.35	1,214	WIRE	98.84	120,000	147,800
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	3,700	LF		7.15	0	26,500	0.28	1,208	WIRE	98.84	119,400	145,900
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	6,200	LF		4.44	0	27,500	0.24	1,704	WIRE	98.84	168,400	195,900
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	10,000	LF		3.23	0	32,300	0.19	2,231	WIRE	98.84	220,500	252,800
12.15	DUCT BANK							0	26,200	0.05	0			54,300	80,500
	UNDERGROUND SURVEY FOR NEW DUCT BANK RUN	MAIN FEEDER BETWEEN EXISTING SCR SUBSTATION TO FGD AUX XFMR	EST	200	LF			0	0	0.80	184	ECND	75.97	14,000	14,000
	4' X 4' DUCT BANK (138KV SCR TO FGD AUX XFMR SUBSTATION)	6 - 6" PVC	EST	40	LF		375	0	15,000	6.25	288	ECND	75.97	21,800	36,800
	DUCT BANK WITH 6-5" & 4-3" CONDUITS	2.38' H X 4' W	EST	50	LF		223.02	0	11,200	4.24	244	ECND	75.97	18,500	29,700
12.16	HIGH VOLTAGE POWER CABLE & TERMINATION	1/C # 500KCMIL-15KV	EST	3,000	LF		9.27	0	27,800	0.23	794	WIRE	98.84	78400	106,200
12.17	LOW VOLTAGE POWER CABLE & TERMINATION							0	263,700		0			649,600	913,300
	3/C # 500KCMIL- 600V		EST	7,000	LF		26.12	0	182,800	0.69	5,555	WIRE	98.84	549000	731,800
	#4/0 - #12 AWG-600V		EST	11,200	LF		7.22	0	80,900	0.08	1,018	WIRE	98.84	100,600	181,500
12.18	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	EST	6,800	LF		3.20	0	21,800	0.08	618	WIRE	98.84	61,100	82,900
12.19	FOUNDATION FOR AUX TRANSFORMER							0	70,200					205,400	275,600
	EXCAVATION / BACKFILL		EST	1,000	CY			0	0	0.36	414	EXFD	90.00	37,300	37,300
	REINFORCING		EST	20.0	TN		1,150.00	0	23,000	20.00	460	REIN	78.27	36,000	59,000
	FORMWORK		EST	5,000	SF		2.50	0	12,500	0.14	805	FORM	99.43	80,000	92,500
	CONCRETE		EST	190	CY		105.00	0	20,000	1.50	328	CONP	79.64	26,100	46,100
	MUD MAT		EST	45	CY		105.00	0	4,700	1.50	78	CONP	79.64	6,200	10,900
	EMBEDDED STEEL		EST	4,000	LB		2.50	0	10,000	0.06	276	CARP	71.88	19,800	29,800
12.20	FIREWALL FOR TRANSFORMERS							0	3,000					5,200	8,200

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	REINFORCING		EST	1.0	TN		1,150.00	0	1,200	20.00	23	REIN	78.27	1,800	3,000
	FORMWORK		EST	80	SF		2.50	0	200	0.14	13	FORM	99.43	1,300	1,500
	CONCRETE		EST	15	CY		105.00	0	1,600	1.50	26	CONP	79.64	2,100	3,700
12.21	COMMUNICATIONS		EST	1	LT		17,000.00	0	17,000	114.00	131	WIRE	98.84	13,000	30,000
12.22	LIGHTNING PROTECTION		EST	1	LT		4,000.00	0	4,000	18.00	21	WIRE	98.84	2,000	6,000
12.23	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							3,257,700	953,500		43,910			4,189,500	8,400,700
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										653,820
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						3,818		83.48	319,000	319,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						4,773			334,820	334,820
	PER DIEM	NONE		0.00	HR						52,501			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				4,768					20,948	25,715
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				47,675						47,675
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			162,885							162,885
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				47,675					209,475	257,150
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				143,025					628,425	771,450
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							162,900	243,100					1,512,667	1,918,700
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FGD SUBSTATION						3,420,600	1,196,600					5,702,200	10,319,400
13.0	FGD DCS SYSTEM	DRY AND WET FGD COMBINED													0
14.0	CEM SYSTEM														0
15.0	TRUCK & RAIL INFRASTRUCTURE														0
16.0	SITE IMPROVEMENTS - CIVIL WORK (DFGD + WFGD AREAS)														
17.0	LIMESTONE HANDLING SYSTEM														
18.0	REAGENT (LIMESTONE) PREPARATION ISLAND														0
18.1	MECHANICAL EQUIPMENT	INCLUDES LIMESTONE FEEDERS, FROM THE DAY SILOS THROUGH THE SLURRY STORAGE TANKS AND TRANSFER PUMPS WITH INTEGRAL PIPING	EST	1	LT	16,936,000		16,936,000	0	128200.00	147,430	MECH	88.89	13,105,100	30,041,100
18.2	SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
18.3	AGITATOR FOR SUMP PUMPS	5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
18.4	PIPING - MECHANICAL		EST	1	LT			278,900	205,000					587,300	1,071,200
	LARGE BORE PIPING	4.0" CS, SCH 40 WELDED	EST	500	LF		23.00	0	11,500	1.48	851	SPNG	94.41	80,300	91,800
	LARGE BORE PIPING	6" FRP	EST	2,000	LF		33.90	0	67,800	0.67	1,541	SPNG	94.41	145,500	213,300
	LARGE BORE PIPING	8" FRP	EST	1,000	LF		51.30	0	51,300	0.95	1,093	SPNG	94.41	103,100	154,400

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	LARGE BORE PIPING	10" FRP	EST	300	LF		68.00	0	20,400	1.18	407	SPNG	94.41	38,400	58,800
	LARGE BORE PIPING	12" FRP	EST	250	LF		80.90	0	20,200	1.41	405	SPNG	94.41	38,300	58,500
	VALVE	6" BFLY, 150 #, CS, FLANGED	EST	6	EA	850		5,100	0	8.70	60	SPNG	94.41	5,700	10,800
	VALVE	8" BFLY, 150 #, CS, FLANGED	EST	12	EA	1,400		16,800	0	9.10	126	SPNG	94.41	11,900	28,700
	VALVE	10" BFLY, 150 #, CS, FLANGED	EST	10	EA	2,300		23,000	0	13.80	159	SPNG	94.41	15,000	38,000
	VALVE	12" BFLY, 150 #, CS, FLANGED	EST	3	EA	3,000		9,000	0	14.60	50	SPNG	94.41	4,800	13,800
	VALVE	6" AIR OPERATED, 150 #, CS, FLANGED	EST	10	EA	14,000		140,000	0	17.30	199	SPNG	94.41	18,800	158,800
	VALVE	8" AIR OPERATED, 150 #, CS, FLANGED	EST	5	EA	17,000		85,000	0	19.30	111	SPNG	94.41	10,500	95,500
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	450	EA		75.00	0	33,800	2.50	1,294	MECH	88.89	115,000	148,800
18.5	LIMESTONE SLURRY TANKS - FOUNDATIONS							0	166,400					299,400	465,800
	EXCAVATION / BACKFILL		EST	969	CY			0	0	0.36	401	EXFD	90.00	36,100	36,100
	REINFORCING		EST	90	TN		1,150.00	0	103,500	20.00	2,070	REIN	78.27	162,000	265,500
	FORMWORK		EST	1,166	SF		2.50	0	2,900	0.14	188	FORM	99.43	18,700	21,600
	CONCRETE		EST	475	CY		105.00	0	49,900	1.50	819	CONP	79.64	65,300	115,200
	MUD MAT		EST	40	CY		105.00	0	4,200	1.50	69	CONP	79.64	5,500	9,700
	EMBEDDED STEEL		EST	2,375	LB		2.50	0	5,900	0.06	164	CARP	71.88	11,800	17,700
18.6	REAGENT PREPARATION BUILDING - FOUNDATIONS							0	701,800					1,165,100	1,866,900
	EXCAVATION / BACKFILL		EST	2,850	CY			0	0	0.36	1,180	EXFD	90.00	106,200	106,200
	REINFORCING		EST	280	TN		1,150.00	0	322,000	20.00	6,440	REIN	78.27	504,100	826,100
	FORMWORK		EST	2,580	SF		2.50	0	6,500	0.14	415	FORM	99.43	41,300	47,800
	CONCRETE		EST	2,980	CY		105.00	0	312,900	1.50	5,141	CONP	79.64	409,400	722,300
	MUD MAT		EST	220	CY		105.00	0	23,100	1.50	380	CONP	79.64	30,200	53,300
	EMBEDDED STEEL		EST	14,900	LB		2.50	0	37,300	0.06	1,028	CARP	71.88	73,900	111,200
18.7	REAGENT PREPARATION BUILDING	120' L X 135' W X 130' H						269,400	4,985,000					4,350,000	9,604,400
	STRUCTURAL STEEL		EST	1,250	TN		2650	0	3,312,500	16.00	23,000	STST	105.71	2,431,300	5,743,800
	INSULATED METAL SIDING		EST	66,300	SF		12	0	795,600	0.11	8,387	SDNG	93.41	783,400	1,579,000
	ROLLING OVERHEAD DOOR		EST	640	SF		27	0	17,300	0.25	184	CARP	71.88	13,200	30,500
	METAL ROOF DECKING		EST	16,200	SF		2.7	0	43,700	0.06	1,118	STST	105.71	118,200	161,900
	RIGID ROOF INSULATION		EST	16,200	SF		2.4	0	38,900	0.02	279	ROOF	69.12	19,300	58,200
	ROOFING (4-PLY TAR & GRAVEL)		EST	16,200	SF		1.55	0	25,100	0.04	745	ROOF	69.12	51,500	76,600
	LIGHTWEIGHT CONCRETE FILL 1"		EST	50	CY		100	0	5,000	1.30	75	ROOF	69.12	5,200	10,200
	ROOF FLASHING		EST	510	LF		14.45	0	7,400	0.12	70	ROOF	69.12	4,900	12,300
	ROOF DRAINS		EST	1	LT		45000	0	15,000	500.00	575	PLMB	79.42	45,700	60,700
	FLOOR DRAINS		EST	1	LT		37500	0	20,000	375.00	431	PLMB	79.42	34,200	54,200
	FLOOR SLABS	INCLUDES METAL DECKING AND FORMWORK	EST	50	CY		210	0	10,500	7.50	431	CONP	79.64	34,300	44,800
	FLOOR FINISHES		EST	9,640	SF		2.5	0	24,100	0.05	554	CONP	79.64	44,100	68,200
	LOUVERS/WINDOWS/DOORS		EST	6,630	SF		40	0	265,200	0.35	2,669	CARP	71.88	191,800	457,000
	ROOF VENTILATORS		EST	6	EA		15000	0	90,000	24.00	166	HVAC	81.24	13,500	103,500
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	4,820	SF		45	0	216,900	0.40	2,217	GALL	84.61	187,600	404,500
	H&V		EST	1	LT	194400	77760	194,400	77,800	3629.33	4,174	HVAC	81.24	339,100	611,300
	HVAC	40T PACKAGED UNIT FOR ELECTRICAL EQUIPMENT ROOM. INCLUDES ALLOWANCE FOR CONCRETE PAD AND ELECTRICAL WORK	EST	1	LT	75000	20000	75,000	20,000	350.00	403	HVAC	81.24	32,700	127,700
18.8	PIPE SUPPORT PAD - REAGENT PREP BUILDING							0	14,400					28,600	43,000
	EXCAVATION / BACKFILL		EST	115	CY			0	0	0.36	48	EXFD	90.00	4,300	4,300
	REINFORCING		EST	5.0	TN		1,150.00	0	5,800	20.00	115	REIN	78.27	9,000	14,800
	FORMWORK		EST	290	SF		2.50	0	700	0.14	47	FORM	99.43	4,600	5,300
	CONCRETE		EST	45	CY		105.00	0	4,700	1.50	78	CONP	79.64	6,200	10,900
	MUD MAT		EST	25	CY		105.00	0	2,600	1.50	43	CONP	79.64	3,400	6,000
	EMBEDDED STEEL		EST	225	LB		2.50	0	600	0.06	16	CARP	71.88	1,100	1,700
18.9	LIGHTING/ TRANSFORMERS & PANELS							52,000	135,000					104,500	291,500
	LIGHT FIXTURES		EST	180	EA		750	0	135,000	4.00	828	WIRE	98.84	81,800	216,800
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	10000		20,000	0	40.00	92	WIRE	98.84	9,100	29,100

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	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	7500		15,000	0	32.00	74	WIRE	98.84	7,300	22,300
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	2	EA	5000		10,000	0	16.00	37	WIRE	98.84	3,600	13,600
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	2	EA	3500		7,000	0	12.00	28	WIRE	98.84	2,700	9,700
18.10	GROUNDING							5,100	0					13,400	18,500
	GROUND ROD	3/4" - 20' LONG	EST	2	EA	150		300	0	4.00	9	WIRE	98.84	900	1,200
	500 MCM	BARE COPPER WIRE	EST	600	FT	7.65		4,600	0	0.12	83	WIRE	98.84	8,200	12,800
	CADWELD		EST	16	EA	15		200	0	2.00	37	WIRE	98.84	3,600	3,800
	GROUNDING TEST	TEST, CALIBRATION & DOCUMENTATION	EST	2	EA			0	0	3.00	7	WIRE	98.84	700	700
18.11	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE ARE INCLUDED IN SECTION 20.0 - ABSORBER ISLAND													
18.12	COMMUNICATIONS		EST	1	LT		34,000.00	0	34,000	229.00	263	WIRE	98.84	26,000	60,000
18.13	LIGHTNING PROTECTION		EST	1	LT		23,000.00	0	23,000	141.00	162	WIRE	98.84	16,000	39,000
18.14	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							17,581,400	6,272,600		219,724			19,719,300	43,573,300
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										3,516,178
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						19,106		89.75	1,715,000	1,715,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						23,883			1,801,178	1,801,178
	PER DIEM	NONE		0.00	HR						262,713			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				31,363					98,597	129,960
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				313,630						313,630
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			879,070							879,070
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				313,630					985,965	1,299,595
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				940,890					2,957,895	3,898,785
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							879,100	1,599,500					7,558,600	10,037,200
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	REAGENT (LIMESTONE) PREPARATION ISLAND						18,460,500	7,872,100					27,277,900	53,610,500
19.0	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)														0
19.1	MECHANICAL EQUIPMENT	PRIMARY & SECONDARY DEWATERING INCLUDING HYDROCLONE FEED TANKS, HYDROCLONES, PUMPS, INTEGRAL PIPING AND BELT VACUUM FILTERS	EST	1	LT	10,267,000		10,267,000	0	71800.00	82,570	MECH	88.89	7,339,600	17,606,600
19.2	PUMPS & AGITATORS							250,000	0					137,000	387,000
	GYPSUM SLURRY TRANSFER PUMPS	1500 GPM, 150 HP	EST	2	EA	40000		80,000	0	220.00	506	MECH	88.89	45,000	125,000
	RECLAIM WATER PUMPS	350 GPM, 25 HP	EST	2	EA	15000		30,000	0	120.00	276	MECH	88.89	24,500	54,500
	RECLAIM WATER TRANSFER PUMPS	500 GPM, 100 HP	EST	2	EA	30000		60,000	0	165.00	380	MECH	88.89	33,700	93,700

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	SUMP PUMPS	AUXILIARY PUMPHOUSE BUILDING SUMP PUMPS - DUPLEX. INCLUDES CHECK & ISOLATION VALVES		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
	AGITATOR FOR SUMP PUMPS	AUXILIARY PUMPHOUSE BUILDING SUMP AGITATORS - 5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
	SUMP PUMPS	BYPRODUCT DEWATERING BUILDING SUMP PUMPS - DUPLEX. INCLUDES CHECK & ISOLATION VALVES		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
	AGITATOR FOR SUMP PUMPS	BYPRODUCT DEWATERING BUILDING SUMP AGITATORS - 5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
19.3	PIPING - MECHANICAL		EST	1	LT			282,700	3,555,700					7,786,000	11,624,400
	LARGE BORE PIPING	4" FRP	EST	2,050	LF		28.40	0	58,200	0.38	896	SPNG	94.41	84,600	142,800
	LARGE BORE PIPING	6" FRP	EST	3,300	LF		33.90	0	111,900	0.67	2,543	SPNG	94.41	240,100	352,000
	LARGE BORE PIPING	8" FRP	EST	6,250	LF		51.30	0	320,600	0.95	6,828	SPNG	94.41	644,600	965,200
	LARGE BORE PIPING	10" FRP	EST	6,400	LF		68.00	0	435,200	1.18	8,685	SPNG	94.41	819,900	1,255,100
	LARGE BORE PIPING	12" FRP	EST	1,000	LF		80.90	0	80,900	1.41	1,622	SPNG	94.41	153,100	234,000
	LARGE BORE PIPING	14" FRP	EST	16,500	LF		133.90	0	2,209,400	2.67	50,663	SPNG	94.41	4,783,100	6,992,500
	LARGE BORE PIPING	16" FRP	EST	100	LF		152.20	0	15,200	2.88	331	SPNG	94.41	31,300	46,500
	LARGE BORE PIPING	20" FRP	EST	125	LF		165.00	0	20,600	3.31	476	SPNG	94.41	44,900	65,500
	VALVE	4" BFLY, 150 #, CS, FLANGED	EST	6	EA	625		3,800	0	7.20	50	SPNG	94.41	4,700	8,500
	VALVE	6" BFLY, 150 #, CS, FLANGED	EST	6	EA	850		5,100	0	8.70	60	SPNG	94.41	5,700	10,800
	VALVE	8" BFLY, 150 #, CS, FLANGED	EST	12	EA	1,400		16,800	0	9.10	126	SPNG	94.41	11,900	28,700
	VALVE	10" BFLY, 150 #, CS, FLANGED	EST	10	EA	2,300		23,000	0	13.80	159	SPNG	94.41	15,000	38,000
	VALVE	12" BFLY, 150 #, CS, FLANGED	EST	3	EA	3,000		9,000	0	14.60	50	SPNG	94.41	4,800	13,800
	VALVE	6" AIR OPERATED, 150 #, CS, FLANGED	EST	10	EA	14,000		140,000	0	17.30	199	SPNG	94.41	18,800	158,800
	VALVE	8" AIR OPERATED, 150 #, CS, FLANGED	EST	5	EA	17,000		85,000	0	19.30	111	SPNG	94.41	10,500	95,500
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	3,573	EA		85.00	0	303,700	2.50	10,271	MECH	88.89	913,000	1,216,700
19.4	MATERIAL HANDLING EQUIPMENT							724,000	7,500					614,100	1,345,600
	CONVEYOR GH-1A	36" W x 75' L		75	LF	1,000		75,000	0	7.50	647	MECH	88.89	57,500	132,500
	CONVEYOR GH-1B	36" W x 75' L		75	LF	1,000		75,000	0	30.00	2,588	MECH	88.89	230,000	305,000
	BELT SCALES	CONVEYORS GH-1A AND GH-1B		2	EA	30,000		60,000	0	180.00	414	MECH	88.89	36,800	96,800
	STACKOUT CONVEYOR GH-2A	36" W X 120' L		120	LF	1,100		132,000	0	7.50	1,035	MECH	88.89	92,000	224,000
	STACKOUT CONVEYOR GH-2B	36" W X 120' L		120	LF	1,100		132,000	0	7.50	1,035	MECH	88.89	92,000	224,000
	TELESCOPIC CHUTES	CONVEYORS GH-2A AND GH-2B		2	EA	125,000		250,000	0	375.00	863	MECH	88.89	76,700	326,700
	FRONT END LOADER	NOT INCLUDED						0	0	30.00	0	MECH	88.89	0	0
	DUMP TRUCK	NOT INCLUDED						0	0	700.00	0	MECH	88.89	0	0
	WATER SPRAY AT DISCHARGE OF GH-2A & GH-2B	ALLOWANCE FOR 200 LF SMALL BORE PIPING AND SPRAYS AND VALVVING		300	LF		25.0	0	7,500	0.95	328	MECH	88.89	29,100	36,600
19.5	FIRE PROTECTION SYSTEM FOR BELT CONVEYORS	DELUGE SYSTEM, DRY PIPE, SENSORS, ACTIVATION VALVE AND FM APPROVED PANEL - SUBCONTRACT PRICE FOR ALL CONVEYORS INCLUDES LABOR		1	LT	170,000		170,000	0	0.00	0	MECH	88.89	0	170,000
19.6	CONVEYOR STRUCTURE SUPPORT STEEL	THREE-COAT SHOP PAINT	EST	34	TN		2,900.00	0	99,000	24.00	942	STST	105.71	99,600	198,600
19.7	PIPE RACK SUPPORT STEEL	THREE-COAT SHOP PAINT	EST	68	TN		2,900.00	0	197,200	24.00	1,877	STST	105.71	198,400	395,600
19.8	TANKS							0	3,825,300					846,700	4,672,000
	LANDFILL SERVICE WATER TANKS	70,000 GAL, CS, 20' DIA X 30' - SUBCONTRACT PRICE INCLUDES LABOR WITH EXTERIOR PRIMED AND FIELD PAINTED	EST	2	EA		157500.0	0	315,000	0.00	0	TANK	89.16	0	315,000

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	BLEED TANKS	120,000 GAL, CS, 27' DIA X 27' - SUBCONTRACT PRICE INCLUDES LABOR WITH EXTERIOR PRIMED AND FIELD PAINTED	EST	2	EA		216000.0	0	432,000	0.00	0	TANK	89.16	0	432,000
	RECLAIM WATER TANKS	230,000 GAL, CS, 29' DIA X 33' - SUBCONTRACT PRICE INCLUDES LABOR WITH EXTERIOR PRIMED AND FIELD PAINTED	EST	2	EA		330000.0	0	660,000	0.00	0	TANK	89.16	0	660,000
	RECLAIM WATER TANKS - INTERIOR LINING	FLAKECOAT VINYL ESTER TOTAL FOR TWO TANKS	EST	8,656	SF		15.0	0	129,800	0.35	3,484	PNTR	66.72	232,500	362,300
	LANDFILL RECLAIM WATER TANKS	230,000 GAL, CS, 29' DIA X 33' - SUBCONTRACT PRICE INCLUDES LABOR WITH EXTERIOR PRIMED AND FIELD PAINTED	EST	2	EA		330000.0	0	660,000	0.00	0	TANK	89.16	0	660,000
	LANDFILL RECLAIM WATER TANKS - INTERIOR LINING	FLAKECOAT VINYL ESTER TOTAL FOR TWO TANKS	EST	8,656	SF		15.0	0	129,800	0.35	3,484	PNTR	66.72	232,500	362,300
	MAINTENANCE STORAGE TANK	1,250,000 GAL, CS, 58' DIA X 62' - SUBCONTRACT PRICE INCLUDES LABOR WITH EXTERIOR PRIMED AND FIELD PAINTED	EST	1	EA		1250000.0	0	1,250,000	0.00	0	TANK	89.16	0	1,250,000
	MAINTENANCE STORAGE TANK - INTERIOR LINING	FLAKECOAT VINYL ESTER	EST	16,581	SF		15.0	0	248,700	0.30	5,720	PNTR	66.72	381,700	630,400
19.9	RECLAIM WATER TANKS & PUMPS - FOUNDATIONS							0	26,000					54,000	80,000
	EXCAVATION / BACKFILL		EST	295	CY			0	0	0.36	122	EXFD	90.00	11,000	11,000
	REINFORCING		EST	10.0	TN		1,150.00	0	11,500	20.00	230	REIN	78.27	18,000	29,500
	FORMWORK		EST	384	SF		2.50	0	1,000	0.14	62	FORM	99.43	6,100	7,100
	CONCRETE		EST	103	CY		105.00	0	10,800	1.50	178	CONP	79.64	14,200	25,000
	MUD MAT		EST	9	CY		105.00	0	900	1.50	16	CONP	79.64	1,200	2,100
	EMBEDDED STEEL		EST	705	LB		2.50	0	1,800	0.06	49	CARP	71.88	3,500	5,300
19.10	MAINTENANCE STORAGE TANK & PUMPS - FOUNDATIONS							0	100,000					177,300	277,300
	EXCAVATION / BACKFILL		EST	614	CY			0	0	0.36	254	EXFD	90.00	22,900	22,900
	REINFORCING		EST	42.0	TN		1,150.00	0	48,300	20.00	966	REIN	78.27	75,600	123,900
	FORMWORK		EST	795	SF		2.50	0	2,000	0.14	128	FORM	99.43	12,700	14,700
	CONCRETE		EST	420	CY		105.00	0	44,100	1.50	725	CONP	79.64	57,700	101,800
	MUD MAT		EST	36	CY		105.00	0	3,800	1.50	62	CONP	79.64	4,900	8,700
	EMBEDDED STEEL		EST	705	LB		2.50	0	1,800	0.06	49	CARP	71.88	3,500	5,300
19.11	LANDFILL SERVICE WATER TANKS & PUMP - FOUNDATIONS							0	80,900					155,100	236,000
	EXCAVATION / BACKFILL		EST	614	CY			0	0	0.36	254	EXFD	90.00	22,900	22,900
	REINFORCING		EST	42.0	TN		1,150.00	0	48,300	20.00	966	REIN	78.27	75,600	123,900
	FORMWORK		EST	795	SF		2.50	0	2,000	0.14	128	FORM	99.43	12,700	14,700
	CONCRETE		EST	221	CY		105.00	0	23,200	1.50	381	CONP	79.64	30,400	53,600
	MUD MAT		EST	18	CY		105.00	0	1,900	1.50	31	CONP	79.64	2,500	4,400
	EMBEDDED STEEL		EST	2,210	LB		2.50	0	5,500	0.06	152	CARP	71.88	11,000	16,500
19.12	LANDFILL RECLAIM WATER TANKS & PUMPS - FOUNDATIONS							0	26,000					54,000	80,000
	EXCAVATION / BACKFILL		EST	295	CY			0	0	0.36	122	EXFD	90.00	11,000	11,000
	REINFORCING		EST	10.0	TN		1,150.00	0	11,500	20.00	230	REIN	78.27	18,000	29,500
	FORMWORK		EST	384	SF		2.50	0	1,000	0.14	62	FORM	99.43	6,100	7,100
	CONCRETE		EST	103	CY		105.00	0	10,800	1.50	178	CONP	79.64	14,200	25,000
	MUD MAT		EST	9	CY		105.00	0	900	1.50	16	CONP	79.64	1,200	2,100
	EMBEDDED STEEL		EST	705	LB		2.50	0	1,800	0.06	49	CARP	71.88	3,500	5,300
19.13	HYDROCLONE FEED TANKS & BLEED TANKS - FOUNDATIONS	TOTAL FOR HYDROCLONE AND BLEED TANKS						0	340,200					618,900	959,100
	EXCAVATION / BACKFILL		EST	1,915	CY			0	0	0.36	793	EXFD	90.00	71,400	71,400
	REINFORCING		EST	212.0	TN		1,150.00	0	243,800	20.00	4,876	REIN	78.27	381,600	625,400
	FORMWORK		EST	2,400	SF		2.50	0	6,000	0.14	386	FORM	99.43	38,400	44,400
	CONCRETE		EST	671	CY		105.00	0	70,500	1.50	1,157	CONP	79.64	92,200	162,700
	MUD MAT		EST	58	CY		105.00	0	6,100	1.50	100	CONP	79.64	8,000	14,100
	EMBEDDED STEEL		EST	5,500	LB		2.50	0	13,800	0.06	380	CARP	71.88	27,300	41,100

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19.14	BYPRODUCT STACKOUT CONVEYOR & TRANSFER TOWER - FOUNDATIONS							0	16,100					34,700	50,800
	EXCAVATION / BACKFILL		EST	140	CY			0	0	0.36	58	EXFD	90.00	5,200	5,200
	REINFORCING		EST	6	TN		1,150.00	0	6,900	20.00	138	REIN	78.27	10,800	17,700
	FORMWORK		EST	480	SF		2.50	0	1,200	0.14	77	FORM	99.43	7,700	8,900
	CONCRETE		EST	59	CY		105.00	0	6,200	1.50	102	CONP	79.64	8,100	14,300
	MUD MAT		EST	10	CY		105.00	0	1,100	1.50	17	CONP	79.64	1,400	2,500
	EMBEDDED STEEL		EST	295	LB		2.50	0	700	0.06	20	CARP	71.88	1,500	2,200
19.15	BYPRODUCT STACKOUT PILE - FOUNDATIONS	INCLUDES CONTAINMENT AREA SLAB						0	891,700					1,427,400	2,319,100
	EXCAVATION / BACKFILL		EST	2,900	CY			0	0	0.36	1,201	EXFD	90.00	108,100	108,100
	REINFORCING		EST	360	TN		1,150.00	0	414,000	20.00	8,280	REIN	78.27	648,100	1,062,100
	FORMWORK		EST	2,365	SF		2.50	0	5,900	0.14	381	FORM	99.43	37,900	43,800
	CONCRETE		EST	3,813	CY		105.00	0	400,400	1.50	6,577	CONP	79.64	523,800	924,200
	MUD MAT		EST	453	CY		105.00	0	47,600	1.50	781	CONP	79.64	62,200	109,800
	EMBEDDED STEEL		EST	9,533	LB		2.50	0	23,800	0.06	658	CARP	71.88	47,300	71,100
19.16	PIPE RACK	SUPPORTS AT 15' C/C						0	60,800					149,400	210,200
	EXCAVATION / BACKFILL		EST	1,120	CY			0	0	0.36	464	EXFD	90.00	41,700	41,700
	REINFORCING		EST	24	TN		1,150.00	0	27,600	20.00	552	REIN	78.27	43,200	70,800
	FORMWORK		EST	1,500	SF		2.50	0	3,800	0.14	242	FORM	99.43	24,000	27,800
	CONCRETE		EST	250	CY		105.00	0	26,300	1.50	431	CONP	79.64	34,300	60,600
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	1,250	LB		2.50	0	3,100	0.06	86	CARP	71.88	6,200	9,300
19.17	BYPRODUCT CONTAINMENT WALLS							0	137,300					235,000	372,300
	EXCAVATION / BACKFILL		EST	489	CY			0	0	0.36	202	EXFD	90.00	18,200	18,200
	REINFORCING		EST	46	TN		1,150.00	0	52,900	20.00	1,058	REIN	78.27	82,800	135,700
	FORMWORK		EST	1,520	SF		2.50	0	3,800	0.14	245	FORM	99.43	24,300	28,100
	CONCRETE		EST	489	CY		105.00	0	51,300	1.50	844	CONP	79.64	67,200	118,500
	MUD MAT		EST	221	CY		105.00	0	23,200	1.50	381	CONP	79.64	30,400	53,600
	EMBEDDED STEEL		EST	2,445	LB		2.50	0	6,100	0.06	169	CARP	71.88	12,100	18,200
19.18	INSTALL WIND SCREEN		EST	700	LF		750.00	0	525,000	3.00	2,415	CONP	79.64	192,300	717,300
19.19	BYPRODUCT DEWATERING BUILDING - FOUNDATIONS							0	301,900					500,500	802,400
	EXCAVATION / BACKFILL		EST	1,260	CY			0	0	0.36	522	EXFD	90.00	46,900	46,900
	REINFORCING		EST	125	TN		1,150.00	0	143,800	20.00	2,875	REIN	78.27	225,000	368,800
	FORMWORK		EST	1,570	SF		2.50	0	3,900	0.14	253	FORM	99.43	25,100	29,000
	CONCRETE		EST	1,320	CY		105.00	0	138,600	1.50	2,277	CONP	79.64	181,300	319,900
	MUD MAT		EST	125	CY		105.00	0	13,100	1.50	216	CONP	79.64	17,200	30,300
	EMBEDDED STEEL		EST	1,000	LB		2.50	0	2,500	0.06	69	CARP	71.88	5,000	7,500
19.20	BYPRODUCT DEWATERING BUILDING	120' L X 80' W X 65' H						145,200	1,651,300					1,546,800	3,343,300
	STRUCTURAL STEEL		EST	335	TN		2650	0	887,800	16.00	6,164	STST	105.71	651,600	1,539,400
	INSULATED METAL SIDING		EST	26,000	SF		12	0	312,000	0.11	3,289	SDNG	93.41	307,200	619,200
	ROLLING OVERHEAD DOOR		EST	640	SF		27	0	17,300	0.25	184	CARP	71.88	13,200	30,500
	METAL ROOF DECKING		EST	9,600	SF		2.7	0	25,900	0.06	662	STST	105.71	70,000	95,900
	RIGID ROOF INSULATION		EST	9,600	SF		2.4	0	23,000	0.02	166	ROOF	69.12	11,400	34,400
	ROOFING (4-PLY TAR & GRAVEL)		EST	9,600	SF		1.55	0	14,900	0.04	442	ROOF	69.12	30,500	45,400
	LIGHTWEIGHT CONCRETE FILL 1"		EST	30	CY		100	0	3,000	1.30	44	ROOF	69.12	3,100	6,100
	ROOF FLASHING		EST	400	LF		14.45	0	5,800	0.12	55	ROOF	69.12	3,800	9,600
	ROOF DRAINS		EST	1	LT		40000	0	15,000	450.00	518	PLMB	79.42	41,100	56,100
	FLOOR DRAINS		EST	1	LT		32500	0	20,000	350.00	403	PLMB	79.42	32,000	52,000
	FLOOR SLABS		EST	55	CY		210	0	11,600	7.50	474	CONP	79.64	37,800	49,400
	FLOOR FINISHES	MAIN LEVEL	EST	6,950	SF		2.5	0	17,400	0.05	400	CONP	79.64	31,800	49,200
	LOUVERS/WINDOWS/DOORS		EST	2,600	SF		40	0	104,000	0.35	1,047	CARP	71.88	75,200	179,200
	ROOF VENTILATORS		EST	4	EA		15000	0	60,000	24.00	110	HVAC	81.24	9,000	69,000
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	1,900	SF		45	0	85,500	0.40	874	GALL	84.61	73,900	159,400
	H&V		EST	1	LT	70200	28080	70,200	28,100	1310.67	1,507	HVAC	81.24	122,500	220,800

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	HVAC	40T PACKAGED UNIT FOR ELECTRICAL EQUIPMENT ROOM. INCLUDES ALLOWANCE FOR CONCRETE PAD AND ELECTRICAL WORK	EST	1	LT	75000	20000	75,000	20,000	350.00	403	HVAC	81.24	32,700	127,700
19.21	PIPE SUPPORT PAD							0	13,800					27,100	40,900
	EXCAVATION / BACKFILL		EST	100	CY			0	0	0.36	41	EXFD	90.00	3,700	3,700
	REINFORCING		EST	5.0	TN		1,150.00	0	5,800	20.00	115	REIN	78.27	9,000	14,800
	FORMWORK		EST	280	SF		2.50	0	700	0.14	45	FORM	99.43	4,500	5,200
	CONCRETE		EST	40	CY		105.00	0	4,200	1.50	69	CONP	79.64	5,500	9,700
	MUD MAT		EST	25	CY		105.00	0	2,600	1.50	43	CONP	79.64	3,400	6,000
	EMBEDDED STEEL		EST	200	LB		2.50	0	500	0.06	14	CARP	71.88	1,000	1,500
19.22	AUXILIARY PUMPHOUSE BUILDING WITH ELECTRICAL ROOM - FOUNDATIONS							0	32,300					60,800	93,100
	EXCAVATION / BACKFILL		EST	210	CY			0	0	0.36	87	EXFD	90.00	7,800	7,800
	REINFORCING		EST	11	TN		1,150.00	0	12,900	20.00	258	REIN	78.27	20,200	33,100
	FORMWORK		EST	500	SF		2.50	0	1,300	0.14	81	FORM	99.43	8,000	9,300
	CONCRETE		EST	140	CY		105.00	0	14,700	1.50	242	CONP	79.64	19,200	33,900
	MUD MAT		EST	15	CY		105.00	0	1,600	1.50	26	CONP	79.64	2,100	3,700
	EMBEDDED STEEL		EST	700	LB		2.50	0	1,800	0.06	48	CARP	71.88	3,500	5,300
19.23	AUXILIARY PUMPHOUSE BUILDING	50'L X 35' W X 20'H						101,300	252,500					269,800	623,600
	STRUCTURAL STEEL		EST	20	TN		2650	0	53,000	16.00	368	STST	105.71	38,900	91,900
	INSULATED METAL SIDING		EST	3,400	SF		12	0	40,800	0.11	430	SDNG	93.41	40,200	81,000
	ROLLING OVERHEAD DOOR		EST	320	SF		27	0	8,600	0.25	92	CARP	71.88	6,600	15,200
	METAL ROOF DECKING		EST	1,750	SF		2.7	0	4,700	0.06	121	STST	105.71	12,800	17,500
	RIGID ROOF INSULATION		EST	1,750	SF		2.4	0	4,200	0.02	30	ROOF	69.12	2,100	6,300
	ROOFING (4-PLY TAR & GRAVEL)		EST	1,750	SF		1.55	0	2,700	0.04	81	ROOF	69.12	5,600	8,300
	LIGHTWEIGHT CONCRETE FILL 1"		EST	5	CY		100	0	500	1.30	8	ROOF	69.12	600	1,100
	ROOF FLASHING		EST	170	LF		14.45	0	2,500	0.12	23	ROOF	69.12	1,600	4,100
	ROOF DRAINS		EST	1	LT		20000	0	15,000	250.00	288	PLMB	79.42	22,800	37,800
	FLOOR DRAINS		EST	1	LT		18000	0	20,000	220.00	253	PLMB	79.42	20,100	40,100
	FLOOR SLABS		EST	16	CY		210	0	3,400	7.50	138	CONP	79.64	11,000	14,400
	FLOOR FINISHES	MAIN LEVEL	EST	1,313	SF		2.5	0	3,300	0.05	75	CONP	79.64	6,000	9,300
	LOUVERS/WINDOWS/DOORS		EST	340	SF		40	0	13,600	0.35	137	CARP	71.88	9,800	23,400
	ROOF VENTILATORS		EST	2	EA		15000	0	30,000	24.00	55	HVAC	81.24	4,500	34,500
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	438	SF		45	0	19,700	0.40	201	GALL	84.61	17,000	36,700
	H&V		EST	1	LT	26250	10500	26,300	10,500	490.67	564	HVAC	81.24	45,800	82,600
	ADDITONAL HVAC UNIT FOR ELECTRICAL ROOM & CONTROLS	40T PACKAGED UNIT FOR ELECTRICAL EQUIPMENT ROOM. INCLUDES ALLOWANCE FOR CONCRETE PAD AND ELECTRICAL WORK	EST	1	LT	75000	20000	75,000	20,000	350.00	300	HVAC	81.24	24,400	119,400
19.24	SITE GRADING - GYPSUM HANDLING AREA							0	0					587,800	587,800
	CUT		EST	18,000	CY			0	0	0.08	1,656	ETWK	177.49	293,900	293,900
	FILL		EST	18,000	CY			0	0	0.08	1,656	ETWK	177.49	293,900	293,900
19.25	ROADS & SURFACING - GYPSUM HANDLING AREA							0	188,000					427,900	615,900
	CONCRETE PAD BUILDING ENTRANCES	10" REINFORCED CONCRETE	EST	100	SY		80	0	8,000	1.50	173	CONP	79.64	13,700	21,700
	AGGREGATE AREA SURFACING	INCLUDES: 6" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST	20,000	SY		9	0	180,000	0.17	3,910	BCSE	105.94	414,200	594,200
19.26	GYPSUM HANDLING & STORAGE							0	1,179,900					1,854,100	3,034,000
	GYPSUM AREA SURFACING	12" REINFORCED CONCRETE	EST	11,500	SY		96	0	1,104,000	1.60	21,160	CONP	79.64	1,685,200	2,789,200
	GYPSUM RUNOFF DRAINAGE DITCH	6" REINFORCED CONCRETE	EST	1,300	SY		48	0	62,400	1.20	1,794	CONP	79.64	142,900	205,300
	DRAINAGE CULVERTS	24" DIA CHDPE	EST	150	LF		84.7	0	12,700	1.41	243	YDPP	90.14	21,900	34,600
	EXCAVATION / BACKFILL	FOR UNDERGROUND PIPING	EST	167	CY			0	0	0.20	38	EXFD	90.00	3,500	3,500
	BEDDING	FOR UNDERGROUND PIPING	EST	22	CY		35.0	0	800	0.25	6	EXFD	90.00	600	1,400

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19.27	GYPSUM RUNOFF POND							68,000	110,400					315,700	494,100
	SAND EXCAVATION		EST	4,000	CY			0	0	0.03	120	ETWK	177.49	21,200	21,200
	ROCK EXCAVATION	ASSUME ROCK IS RIPPABLE	EST	500	CY			0	0	0.05	28	ETWK	177.49	4,900	4,900
	POND SURFACING	6" REINFORCED CONCRETE	EST	2,300	SY		48	0	110,400	1.20	3,174	CONP	79.64	252,800	363,200
	PUMPS	500 GPM, 100 PSIG	EST	2	EA	34000		68,000	0	180.00	414	MECH	88.89	36,800	104,800
19.28	GYPSUM RUNOFF POND PUMP STRUCTURE - CONCRETE							0	47,000					105,400	152,400
	EXCAVATION / BACKFILL		EST	0	CY			0	0	0.36	0	EXFD	90.00	0	0
	REINFORCING		EST	7	TN		1,150.00	0	8,100	20.00	161	REIN	78.27	12,600	20,700
	FORMWORK		EST	3,968	SF		2.50	0	9,900	0.14	639	FORM	99.43	63,500	73,400
	CONCRETE		EST	76	CY		105.00	0	8,000	1.50	131	CONP	79.64	10,400	18,400
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	380	LB		2.50	0	1,000	0.06	26	CARP	71.88	1,900	2,900
	BYPRODUCT POND PUMP STRUCTURE - GALLERY		EST	5	TN		4,000.00	0	20,000	35.00	201	GALL	84.61	17,000	37,000
19.29	OILY WATER SEWER - GYPSUM HANDLING AREA							1,500	9,000					14,200	24,700
	PIPING	6" CISP	EST	200	LF		21.5	0	4,300	0.33	76	YDPP	90.14	6,800	11,100
	POST INDICATOR VALVE		EST	2	EA	750		1,500	0	6.00	14	YDPP	90.14	1,200	2,700
	MANHOLES		EST	3	EA		1575.0	0	4,700	20.00	69	YDPP	90.14	6,200	10,900
19.30	OIL SEPARATOR - GYPSUM HANDLING AREA	500 GPM W/ INTEGRAL LIFT STATION	EST	1	EA	50000		50,000	0	560.00	644	YDPP	90.14	58,100	108,100
19.31	EROSION & SEDIMENT CONTROL - GYPSUM HANDLING AREA							0	18,000					28,300	46,300
	SILT FENCE		EST	8,000	LF		1.0	0	8,000	0.02	184	LAND	61.45	11,300	19,300
	ROCK CHECK DAMS		EST	20	EA		500.0	0	10,000	12.00	276	LAND	61.45	17,000	27,000
19.32	SITE GRADING - ACCESS ROAD WIDENING & CONTAINMENT DITCH	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA						0	0					60,400	60,400
	CUT		EST	2,700	CY			0	0	0.08	248	ETWK	177.49	44,100	44,100
	FILL		EST	1,000	CY			0	0	0.08	92	ETWK	177.49	16,300	16,300
19.33	ROADS & SURFACING - GYPSUM DEWATERING AREA	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA						0	66,300					190,800	257,100
	WIDENING OF EXISTING ROAD	INCLUDES: 6" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST	3,700	SY		9	0	33,300	0.17	723	BCSE	105.94	76,600	109,900
	GUARDRAIL	INCLUDES POSTS	EST	2,200	SY		15	0	33,000	0.50	1,265	PBIT	90.25	114,200	147,200
19.34	PIPELINE CONTAINMENT & DRAINAGE	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA						0	271,600					429,200	700,800
	CONTAINMENT / DICTH SURFACING	4" SHOTCRETE W/ WELDED WIRE FABRIC	EST	5,800	SY		46	0	265,800	0.78	5,188	CONP	79.64	413,200	679,000
	CONCRETE ENERGY DISSIPATION STRUCTURE		EST	25	CY		230	0	5,800	7.00	201	CONP	79.64	16,000	21,800
19.35	CONTAINMENT RUNOFF POND	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA						68,000	114,300					344,300	526,600
	SAND EXCAVATION		EST	4,000	CY			0	0	0.03	120	ETWK	177.49	21,200	21,200
	ROCK EXCAVATION	ASSUME ROCK IS RIPPABLE	EST	500	CY			0	0	0.05	28	ETWK	177.49	4,900	4,900
	POND SURFACING	6" REINFORCED CONCRETE	EST	2,300	SY		48	0	110,400	1.20	3,174	CONP	79.64	252,800	363,200
	PUMPS	500 GPM, 100 PSIG	EST	2	EA	34000		68,000	0	180.00	414	MECH	88.89	36,800	104,800
	LARGE BORE PIPING	6" HDPE, SDR 9	EST	400	LF		9.8	0	3,900	0.69	317	YDPP	90.14	28,600	32,500
19.36	CONTAINMENT POND PUMP STRUCTURE - CONCRETE	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA						0	47,000					105,400	152,400
	EXCAVATION / BACKFILL		EST	0	CY			0	0	0.36	0	EXFD	90.00	0	0
	REINFORCING		EST	7	TN		1,150.00	0	8,100	20.00	161	REIN	78.27	12,600	20,700
	FORMWORK		EST	3,968	SF		2.50	0	9,900	0.14	639	FORM	99.43	63,500	73,400
	CONCRETE		EST	76	CY		105.00	0	8,000	1.50	131	CONP	79.64	10,400	18,400
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	380	LB		2.50	0	1,000	0.06	26	CARP	71.88	1,900	2,900
	BYPRODUCT POND PUMP STRUCTURE - GALLERY		EST	5	TN		4,000.00	0	20,000	35.00	201	GALL	84.61	17,000	37,000

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19.37	SITE GRADING - PIPELINE CONTAINMENT & DRAINAGE	SOUTH OF HWY 23						0	0					30,200	30,200
	CUT		EST	1,600	CY			0	0	0.08	147	ETWK	177.49	26,100	26,100
	FILL		EST	250	CY			0	0	0.08	23	ETWK	177.49	4,100	4,100
19.38	PIPELINE CONTAINMENT & DRAINAGE	SOUTH OF HWY 23						0	169,600					263,600	433,200
	CONTAINMENT / DICTH SURFACING	4" SHOTCRETE W/ WELDED WIRE FABRIC	EST	3,700	SY		46	0	169,600	0.78	3,309	CONP	79.64	263,600	433,200
19.39	PIPE BORING PIT	SOUTH OF HWY 23						0	5,300					50,900	56,200
	SAND EXCAVATION		EST	950	CY			0	0	0.08	87	ETWK	177.49	15,500	15,500
	ROCK EXCAVATION	ASSUMED ROCK IS RIPPABLE	EST	400	CY			0	0	0.08	37	ETWK	177.49	6,500	6,500
	BACKFILL		EST	1,350	CY			0	0	0.10	155	ETWK	177.49	27,600	27,600
	4" TOPSOIL		EST	100	SY		45	0	4,500	0.07	7	LAND	61.45	500	5,000
	GRASS SEEDING, FERTILIZER AND MULCH		EST	0.2	AC		4000	0	800	60.00	14	LAND	61.45	800	1,600
19.40	PIPE RECEIVING PIT	NORTH OF HWY 23						0	4,900					43,500	48,400
	SAND EXCAVATION		EST	800	CY			0	0	0.08	74	ETWK	177.49	13,100	13,100
	ROCK EXCAVATION	ASSUMED ROCK IS RIPPABLE	EST	350	CY			0	0	0.08	32	ETWK	177.49	5,700	5,700
	BACKFILL		EST	1,150	CY			0	0	0.10	132	ETWK	177.49	23,500	23,500
	4" TOPSOIL		EST	90	SY		45	0	4,100	0.07	7	LAND	61.45	400	4,500
	GRASS SEEDING, FERTILIZER AND MULCH		EST	0.2	AC		4000	0	800	60.00	14	LAND	61.45	800	1,600
19.41	DIRECTIONAL BORING FOR BURIED PIPE	BENEATH HWY 23						28,000	652,500					277,000	957,500
	MOBILIZATION / DEMOBILIZATION	BORING EQUIPMENT, MUD TRAILER, OPERATORS AND LABORERS	EST	1	LT		12000	0	12,000	80.00	92	EXFD	90.00	8,300	20,300
	EQUIPMENT RENTAL	BORING EQUIPMENT, MUD TRAILER. BASED ON 2 WEEKS RENTAL	EST	1	LT	28000		28,000	0	400.00	460	EXFD	90.00	41,400	69,400
	DIRECTIONAL BORING	7-24" DIA 320FT LONG EACH	EST	2,240	LF			0	0	0.32	824	EXFD	90.00	74,200	74,200
	LARGE BORE PIPING	FOR UNDERGROUND SLEEVE, 24" CS PIPE. 40 FT SPOOL PIECES	EST	2,240	LF		285	0	638,400	0.65	1,674	YDPP	90.14	150,900	789,300
	RUBBER END SEALS	NEOPRENE	EST	14	EA		150	0	2,100	1.50	24	YDPP	90.14	2,200	4,300
19.42	TRANSFORMERS							470,000	0					136,500	606,500
	SST TRANSFORMERS: 23F & 23G	13.8KV-4160V, 2 WINDING XFMR	EST	2	EA	150000		300,000	0	450.00	1,035	EHEA	79.16	81,900	381,900
	SUS TRANSFORMERS: 36F/G	13.8KV-480V,3PHASE, CAST COIL	EST	2	EA	85000		170,000	0	300.00	690	EHEA	79.16	54,600	224,600
19.43	SWITCHGEAR							825,600	0					500,700	1,326,300
	13.8 KV MEDIUM VOLTAGE SWITCHGEAR (13F/G))	PRICE PER SECTION	EST	6	EA	50000		300,000	0	325.00	2,243	EHEA	79.16	177,500	477,500
	4.16KV MEDIUM VOLTAGE SWITCHGEAR& MCCS (21A/B)	PRICE PER SECTION	EST	8	EA	41200		329,600	0	300.00	2,760	EHEA	79.16	218,500	548,100
	480V LOW VOLTAGE SWITCHGEAR (31F/G ; 32F/G)	PRICE PER SECTION	EST	5	EA	39200		196,000	0	230.00	1,323	EHEA	79.16	104,700	300,700
19.44	CABLE BUS & TERMINATIONS							355,500	39,400					730,700	1,125,600
	5KV CABLE BUS		EST	300	FT	567		170,100	0	9.00	3,105	WIRE	98.84	306,900	477,000
	480V CABLE BUS		EST	300	FT	618		185,400	0	10.30	3,554	WIRE	98.84	351,200	536,600
	CABLE BUS TERMINATION	5KV TERMINATIONS	EST	4	EA		4,440.00	0	17,800	51.60	237	WIRE	98.84	23,500	41,300
	CABLE BUS TERMINATION	480V TERMINATIONS	EST	8	EA		2,700.00	0	21,600	54.00	497	WIRE	98.84	49,100	70,700
19.45	MCC							123,600	0					6,300	129,900
	480V MCC	PER MCC LINEUP	EST	4	EA	30900		123,600	0	16.00	64	WIRE	98.84	6,300	129,900
19.46	MIMIC PANELS		EST	1	EA	17500		17,500	0	16.00	16	WIRE	98.84	1,600	19,100
19.47	EMERGENCY POWER SYSTEM							285,500	0					38,900	324,400
	DC PANEL BOADRD		EST	1	EA	15500		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	UPS PANEL BOARDS		EST	2	EA	15500		31,000	0	40.00	92	WIRE	98.84	9,100	40,100

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	UPS		EST	1	EA	60000		60,000	0	32.00	37	WIRE	98.84	3,600	63,600
	SWITCHBOARD		EST	1	EA	40000		40,000	0	40.00	46	WIRE	98.84	4,500	44,500
	BYPASS TRANSFORMERS		EST	1	EA	25000		25,000	0	40.00	46	WIRE	98.84	4,500	29,500
	BATTERY CHARGER		EST	2	EA	32000		64,000	0	16.00	37	WIRE	98.84	3,600	67,600
	BATTERIES		EST	1	LT	50000		50,000	0	80.00	92	WIRE	98.84	9,100	59,100
19.48	GROUNDING							9,400	0					25,400	34,800
	GROUND ROD	3/4" - 20' LONG	EST	8	EA	150		1,200	0	4.00	37	WIRE	98.84	3,600	4,800
	500 MCM	BARE COPPER WIRE	EST	1,000	FT	7.65		7,700	0	0.12	138	WIRE	98.84	13,600	21,300
	CADWELD		EST	32	EA	15		500	0	2.00	74	WIRE	98.84	7,300	7,800
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	8.00	9	WIRE	98.84	900	900
19.49	LIGHTING/ TRANSFORMERS & PANELS							52,000	135,000					104,500	291,500
	LIGHT FIXTURES		EST	180	EA		750	0	135,000	4.00	828	WIRE	98.84	81,800	216,800
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	10000		20,000	0	40.00	92	WIRE	98.84	9,100	29,100
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	7500		15,000	0	32.00	74	WIRE	98.84	7,300	22,300
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	2	EA	5000		10,000	0	16.00	37	WIRE	98.84	3,600	13,600
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	2	EA	3500		7,000	0	12.00	28	WIRE	98.84	2,700	9,700
19.50	RACEWAY, CABLE TRAY, & CONDUIT							0	354,700					1,514,100	1,868,800
	12" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,000	LF		18.25	0	18,300	1.10	1,100	WIRE	98.84	108700	127,000
	18" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,000	LF		21.50	0	21,500	1.45	1,450	WIRE	98.84	143300	164,800
	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,000	LF		27.10	0	27,100	1.75	1,750	WIRE	98.84	173000	200,100
	36" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,000	LF		30.30	0	30,300	1.95	1,950	WIRE	98.84	192700	223,000
	5" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	900	LF		61.00	0	54,900	1.13	1,014	WIRE	98.84	100300	155,200
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,800	LF		31.00	0	55,800	0.81	1,453	WIRE	98.84	143600	199,400
	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,900	LF		21.50	0	40,900	0.65	1,226	WIRE	98.84	121100	162,000
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	2,800	LF		9.25	0	25,900	0.35	986	WIRE	98.84	97400	123,300
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	3,500	LF		7.15	0	25,000	0.28	994	WIRE	98.84	98200	123,200
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	6,000	LF		4.44	0	26,600	0.24	1,434	WIRE	98.84	141700	168,300
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	8,800	LF		3.23	0	28,400	0.19	1,963	WIRE	98.84	194100	222,500
19.51	13.8 KV OH LINE OPGW	INCLUDES POLES, CONDUCTORS, INSULATORS & GROUNDING	EST	5,250	LF		45.75	0	240,200	0.49	2,958	WIRE	98.84	292400	532,600
19.52	HIGH VOLTAGE POWER CABLE & TERMINATION							0	88,400					256,600	345,000
	1/C # 500KCMIL-15KV	1/C # 500KCMIL-15KV	EST	1,800	LF		9.27	0	16,700	0.23	476	WIRE	98.84	47100	63,800
	1/C # 4/0-15KV	1/C # 4/0-15KV	EST	15,750	LF		4.55	0	71,700	0.12	2,119	WIRE	98.84	209500	281,200
19.53	MEDIUM VOLTAGE POWER CABLE & TERMINATION	1/C # 350KCMIL-5KV	EST	3,000	LF		6.13	0	18,400	0.23	794	WIRE	98.84	78400	96,800
19.54	LOW VOLTAGE POWER CABLE & TERMINATION							0	62,700					547,400	610,100
	3/C # 500KCMIL- 600V		EST	2,400	LF		26.12	0	62,700	0.69	1,904	WIRE	98.84	188200	250,900
	#4/0 - #12 AWG-600V		EST	40,000	LF		7.22			0.08	3,634	WIRE	98.84	359200	359,200
19.55	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	EST	35,000	LF		3.20	0	112,000	0.08	3,180	WIRE	98.84	314300	426,300
19.56	FOUNDATIONS FOR TRANSFORMERS							0	70,200					205,400	275,600
	EXCAVATION / BACKFILL		EST	1,000	CY			0	0	0.36	414	EXFD	90.00	37,300	37,300
	REINFORCING		EST	20	TN		1,150.00	0	23,000	20.00	460	REIN	78.27	36,000	59,000
	FORMWORK		EST	5,000	SF		2.50	0	12,500	0.14	805	FORM	99.43	80,000	92,500

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	CONCRETE		EST	190	CY		105.00	0	20,000	1.50	328	CONP	79.64	26,100	46,100
	MUD MAT		EST	45	CY		105.00	0	4,700	1.50	78	CONP	79.64	6,200	10,900
	EMBEDDED STEEL		EST	4,000	LB		2.50	0	10,000	0.06	276	CARP	71.88	19,800	29,800
19.57	FIREWALL FOR TRANSFORMERS							0	3,200					8,300	11,500
	REINFORCING		EST	1.2	TN		1,150.00	0	1,400	20.00	28	REIN	78.27	2,200	3,600
	FORMWORK		EST	80	SF		2.50	0	200	0.14	13	FORM	99.43	1,300	1,500
	CONCRETE		EST	15	CY		105.00	0	1,600	3.50	60	CONP	79.64	4,800	6,400
19.58	COMMUNICATIONS		EST	1	LT		34,000.00	0	34,000	229.00	263	WIRE	98.84	26,000	60,000
19.59	LIGHTNING PROTECTION		EST	1	LT		13,000.00	0	13,000	91.00	105	WIRE	98.84	10,300	23,300
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							14,294,800	16,195,500		362,543			32,509,100	62,999,400
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										5,796,410
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						31,525		89.67	2,827,000	2,827,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						39,407			2,969,410	2,969,410
	PER DIEM	NONE		0.00	HR						433,475			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				80,978					162,546	243,523
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				809,775						809,775
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			714,740							714,740
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				809,775					1,625,455	2,435,230
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				2,429,325					4,876,365	7,305,690
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							714,700	4,129,900					12,460,800	17,305,400
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)						15,009,500	20,325,400					44,969,900	80,304,800
20.0	WET FGD ABSORBER ISLAND														0
20.1	MECHANICAL EQUIPMENT	INCLUDES ABSORBER MODULE (A2205) WITH INTERNALS, INLET DUCT ONLY THROUGH WET/DRY INTERFACE, PIPING INSIDE ABSORBER BUILDING TO TERMINAL POINTS, RECYCLE PUMPS, OXIDATION BLOWERS, MIST ELIMINATOR AND WASH PUMPS AND OTHER MISC. EQUIPMENT AND MATERIAL	EST	1	LT	41668000		41,668,000	0	401800.00	462,070	MECH	88.89	41,073,400	82,741,400
20.2	ADDITIONAL COST FOR C276 ABSORBER SHELL MATERIAL ABOVE THE PRICE OF A2205 ABSORBER SHELL	INCLUDES MATERIAL AND WELDING ROD COST DIFFERENTIAL - 49,800 TOTAL SF	EST	49,800	SF		308.00	0	15,338,400	0.00	0	MECH	88.89	0	15,338,400
20.3	SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
20.4	AGITATOR FOR SUMP PUMPS	5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600

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20.5	EMERGENCY DIESEL DRIVEN QUENCH PUMP	WITH FUEL DAY TANK. FOUNDATIONS INCLUDED WITH ABSORBER BUILDING FOUNDATIONS		1	EA	150,000		150,000	0	300.00	345	MECH	88.89	30,700	180,700
20.6	PIPING - MECHANICAL	ALL PIPING INCLUDED IN OEM EQUIPMENT COST. NO BOP PIPING						0	0					0	0
20.7	ABSORBER VESSEL - FOUNDATIONS							0	366,900					672,900	1,039,800
	EXCAVATION / BACKFILL		EST	2,921	CY			0	0	0.36	1,209	EXFD	90.00	108,800	108,800
	REINFORCING		EST	148	TN		1,150.00	0	170,200	20.00	3,404	REIN	78.27	266,400	436,600
	FORMWORK		EST	2,121	SF		2.50	0	5,300	0.14	341	FORM	99.43	34,000	39,300
	CONCRETE		EST	1,571	CY		105.00	0	165,000	1.50	2,710	CONP	79.64	215,800	380,800
	MUD MAT		EST	65	CY		105.00	0	6,800	1.50	112	CONP	79.64	8,900	15,700
	EMBEDDED STEEL		EST	7,855	LB		2.50	0	19,600	0.06	542	CARP	71.88	39,000	58,600
20.8	ABSORBER BUILDING - FOUNDATIONS							0	608,300					1,007,600	1,615,900
	EXCAVATION / BACKFILL		EST	2,560	CY			0	0	0.36	1,060	EXFD	90.00	95,400	95,400
	REINFORCING		EST	250	TN		1,150.00	0	287,500	20.00	5,750	REIN	78.27	450,100	737,600
	FORMWORK		EST	2,450	SF		2.50	0	6,100	0.14	394	FORM	99.43	39,200	45,300
	CONCRETE		EST	2,640	CY		105.00	0	277,200	1.50	4,554	CONP	79.64	362,700	639,900
	MUD MAT		EST	200	CY		105.00	0	21,000	1.50	345	CONP	79.64	27,500	48,500
	EMBEDDED STEEL		EST	6,600	LB		2.50	0	16,500	0.06	455	CARP	71.88	32,700	49,200
20.9	ABSORBER BUILDING	150' L X 95' W X 60' H						164,500	2,746,000					2,500,300	5,410,800
	STRUCTURAL STEEL		EST	600	TN		2650	0	1,590,000	16.00	11,040	STST	105.71	1,167,000	2,757,000
	INSULATED METAL SIDING		EST	29,400	SF		12	0	352,800	0.11	3,719	SDNG	93.41	347,400	700,200
	ROLLING OVERHEAD DOOR		EST	960	SF		27	0	25,900	0.25	276	CARP	71.88	19,800	45,700
	METAL ROOF DECKING		EST	14,250	SF		2.7	0	38,500	0.06	983	STST	105.71	103,900	142,400
	RIGID ROOF INSULATION		EST	14,250	SF		2.4	0	34,200	0.02	246	ROOF	69.12	17,000	51,200
	ROOFING (4-PLY TAR & GRAVEL)		EST	14,250	SF		1.55	0	22,100	0.04	656	ROOF	69.12	45,300	67,400
	LIGHTWEIGHT CONCRETE FILL 1"		EST	40	CY		100	0	4,000	1.30	60	ROOF	69.12	4,100	8,100
	ROOF FLASHING		EST	490	LF		14.45	0	7,100	0.12	68	ROOF	69.12	4,700	11,800
	ROOF DRAINS		EST	1	LT		45000	0	15,000	500.00	575	PLMB	79.42	45,700	60,700
	FLOOR DRAINS		EST	1	LT		37500	0	20,000	375.00	431	PLMB	79.42	34,200	54,200
	FLOOR SLABS	INCLUDES METAL DECKING AND FORMWORK	EST	60	CY		210	0	12,600	7.50	518	CONP	79.64	41,200	53,800
	FLOOR FINISHES		EST	8,500	SF		2.5	0	21,300	0.05	489	CONP	79.64	38,900	60,200
	LOUVERS/WINDOWS/DOORS		EST	6,030	SF		40	0	241,200	0.35	2,427	CARP	71.88	174,500	415,700
	ROOF VENTILATORS		EST	6	EA		20000	0	120,000	32.00	221	HVAC	81.24	17,900	137,900
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	3,900	SF		45	0	175,500	0.40	1,794	GALL	84.61	151,800	327,300
	H&V		EST	1	LT	164500	65800	164,500	65,800	3070.67	3,531	HVAC	81.24	286,900	517,200
20.10	PIPE SUPPORT PAD - ABSORBER BUILDING							0	7,700					16,500	24,200
	EXCAVATION / BACKFILL		EST	100	CY			0	0	0.36	41	EXFD	90.00	3,700	3,700
	REINFORCING		EST	5.0	TN		1,150.00	0	5,800	20.00	115	REIN	78.27	9,000	14,800
	FORMWORK		EST	85	SF		2.50	0	200	0.14	14	FORM	99.43	1,400	1,600
	CONCRETE		EST	10	CY		105.00	0	1,100	1.50	17	CONP	79.64	1,400	2,500
	MUD MAT		EST	5	CY		105.00	0	500	1.50	9	CONP	79.64	700	1,200
	EMBEDDED STEEL		EST	55	LB		2.50	0	100	0.06	4	CARP	71.88	300	400
20.11	OXIDATION AIR BLOWER BUILDING - FOUNDATIONS							0	37,000					67,300	104,300
	EXCAVATION / BACKFILL		EST	188	CY			0	0	0.36	78	EXFD	90.00	7,000	7,000
	REINFORCING		EST	16.0	TN		1,150.00	0	18,400	20.00	368	REIN	78.27	28,800	47,200
	FORMWORK		EST	480	SF		2.50	0	1,200	0.14	77	FORM	99.43	7,700	8,900
	CONCRETE		EST	133	CY		105.00	0	14,000	1.50	229	CONP	79.64	18,300	32,300
	MUD MAT		EST	16	CY		105.00	0	1,700	1.50	28	CONP	79.64	2,200	3,900
	EMBEDDED STEEL		EST	665	LB		2.50	0	1,700	0.06	46	CARP	71.88	3,300	5,000
20.12	OXIDATION AIR BLOWER BUILDING	30' L X 30' W X 25' H						33,800	191,000					201,400	426,200
	STRUCTURAL STEEL		EST	14	TN		2650	0	35,800	16.00	248	STST	105.71	26,300	62,100
	INSULATED METAL SIDING		EST	3,000	SF		12	0	36,000	0.11	380	SDNG	93.41	35,400	71,400
	ROLLING OVERHEAD DOOR		EST	320	SF		27	0	8,600	0.25	92	CARP	71.88	6,600	15,200

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	METAL ROOF DECKING		EST	900	SF		2.7	0	2,400	0.06	62	STST	105.71	6,600	9,000
	RIGID ROOF INSULATION		EST	900	SF		2.4	0	2,200	0.02	16	ROOF	69.12	1,100	3,300
	ROOFING (4-PLY TAR & GRAVEL)		EST	900	SF		1.55	0	1,400	0.04	41	ROOF	69.12	2,900	4,300
	LIGHTWEIGHT CONCRETE FILL 1"		EST	3	CY		100	0	300	1.30	4	ROOF	69.12	300	600
	ROOF FLASHING		EST	120	LF		14.45	0	1,700	0.12	17	ROOF	69.12	1,100	2,800
	ROOF DRAINS		EST	1	LT		7000	0	15,000	50.00	58	PLMB	79.42	4,600	19,600
	FLOOR DRAINS		EST	1	LT		7500	0	20,000	60.00	69	PLMB	79.42	5,500	25,500
	FLOOR SLABS	NONE	EST	0	CY		210	0	0	7.50	0	CONP	79.64	0	0
	FLOOR FINISHES	MAIN LEVEL	EST	810	SF		2.5	0	2,000	0.05	47	CONP	79.64	3,700	5,700
	BLOCK WALLS	SOUND ATTENUATING INTERIOR BLOCK WALLS	EST	3,000	SF		8	0	24,000	0.18	621	MSRY	73.39	45,600	69,600
	LOUVERS/WINDOWS/DOORS & VENTILATORS	SOUND ATTENUATING	EST	300	SF	75	40	22,500	12,000	1.25	431	CARP	71.88	31,000	65,500
	ROOF VENTILATORS		EST	1	EA		15000	0	15,000	24.00	28	HVAC	81.24	2,200	17,200
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	225	SF		45	0	10,100	0.40	104	GALL	84.61	8,800	18,900
	H&V		EST	1	LT	11250	4500	11,300	4,500	210.67	242	HVAC	81.24	19,700	35,500
20.13	PIPE SUPPORT PAD - OXIDATION BUILDING							0	7,700					13,700	21,400
	EXCAVATION / BACKFILL		EST	30	CY			0	0	0.36	12	EXFD	90.00	1,100	1,100
	REINFORCING		EST	5.0	TN		1,150.00	0	5,800	20.00	115	REIN	78.27	9,000	14,800
	FORMWORK		EST	80	SF		2.50	0	200	0.14	13	FORM	99.43	1,300	1,500
	CONCRETE		EST	10	CY		105.00	0	1,100	1.50	17	CONP	79.64	1,400	2,500
	MUD MAT		EST	5	CY		105.00	0	500	1.50	9	CONP	79.64	700	1,200
	EMBEDDED STEEL		EST	50	LB		2.50	0	100	0.06	3	CARP	71.88	200	300
20.14	DUCTWORK	INCLUDES INTERNAL BRACING AND TURNING VANES	EST	115	TN		3,250.00	0	373,800	50.00	6,613	FLDU	107.96	713,900	1,087,700
20.15	DUCT SUPPORT STEEL	THREE-COAT SHOP PAINT	EST	58	TN		2,900.00	0	168,200	24.00	1,601	STST	105.71	169,200	337,400
20.16	DUCTWORK INSULATION & LAGGING		EST	11,000	SF		12.00	0	132,000	0.25	3,163	DINS	81.75	258,500	390,500
20.17	FOUNDATIONS FOR DUCT SUPPORT STEEL							0	17,700					35,300	53,000
	EXCAVATION / BACKFILL		EST	144	CY			0	0	0.36	60	EXFD	90.00	5,400	5,400
	REINFORCING		EST	6	TN		1,150.00	0	7,400	20.00	147	REIN	78.27	11,500	18,900
	FORMWORK		EST	360	SF		2.50	0	900	0.14	58	FORM	99.43	5,800	6,700
	CONCRETE		EST	72	CY		105.00	0	7,600	1.50	124	CONP	79.64	9,900	17,500
	MUD MAT		EST	11	CY		105.00	0	1,200	1.50	19	CONP	79.64	1,500	2,700
	EMBEDDED STEEL		EST	240	LB		2.50	0	600	0.06	17	CARP	71.88	1,200	1,800
20.18	TRANSFORMERS							981,000	0					209,300	1,190,300
	SST TRANSFORMERS: 22F & 22G	13.8KV-4160V, 2 WINDING XFMR	EST	2	EA	320500		641,000	0	550.00	1,265	EHEA	79.16	100,100	741,100
	SUS TRANSFORMERS: 34F/G; 35F/G	13.8KV-480V,3PHASE, CAST COIL	EST	4	EA	85000		340,000	0	300.00	1,380	EHEA	79.16	109,200	449,200
20.19	SWITCHGEAR							1,162,800	0					673,700	1,836,500
	13.8 KV MEDIUM VOLTAGE SWITCHGEAR	PRICE PER SECTION	EST	8	EA	50000		400,000	0	300.00	2,760	EHEA	79.16	218,500	618,500
	4.16KV MEDIUM VOLTAGE SWITCHGEAR& MCCS	PRICE PER SECTION	EST	9	EA	41200		370,800	0	300.00	3,105	EHEA	79.16	245,800	616,600
	480V LOW VOLTAGE SWITCHGEAR	PRICE PER SECTION	EST	10	EA	39200		392,000	0	230.00	2,645	EHEA	79.16	209,400	601,400
20.20	CABLE BUS & TERMINATIONS							867,100	46,600					1,634,100	2,547,800
	15KV CABLE BUS	CABLE BUS	EST	700	FT	466		326,200	0	6.75	5,434	WIRE	98.84	537,100	863,300
	5KV CABLE BUS	CABLE BUS	EST	300	FT	567		170,100	0	9.00	3,105	WIRE	98.84	306,900	477,000
	480V CABLE BUS	CABLE BUS	EST	600	FT	618		370,800	0	10.30	7,107	WIRE	98.84	702,500	1,073,300
	CABLE BUS TERMINATION	500MCM- 15KV TERMINATIONS	EST	4	EA		1,800.00	0	7,200	33.00	152	WIRE	98.84	15,000	22,200
	CABLE BUS TERMINATION	1000MCM- 5KV TERMINATIONS	EST	4	EA		4,440.00	0	17,800	51.60	237	WIRE	98.84	23,500	41,300

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	CABLE BUS TERMINATION	750MCM- 480V TERMINATIONS	EST	8	EA		2,700.00	0	21,600	54.00	497	WIRE	98.84	49,100	70,700
20.21	MCC							216,300	0					11,100	227,400
	480V MCC	PER MCC LINE UP	EST	7	EA	30900		216,300	0	16.00	112	WIRE	98.84	11,100	227,400
20.22	MIMIC PANELS		EST	2	EA	17500		35,000	0	40.00	80	WIRE	98.84	7,900	42,900
20.23	GROUNDING							16,000	0					46,100	62,100
	GROUND ROD	3/4" - 20' LONG	EST	16	EA	150		2,400	0	4.00	74	WIRE	98.84	7,300	9,700
	500 MCM	BARE COPPER WIRE	EST	1,650	FT	7.65		12,600	0	0.12	228	WIRE	98.84	22,500	35,100
	CADWELD		EST	64	EA	15		1,000	0	2.00	147	WIRE	98.84	14,500	15,500
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	16.00	18	WIRE	98.84	1,800	1,800
20.24	LIGHTING/ TRANSFORMERS & PANELS							164,500	165,000					171,300	500,800
	LIGHT FIXTURES		EST	220	EA		750	0	165,000	4.00	1,012	WIRE	98.84	100,000	265,000
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	6	EA	10000		60,000	0	40.00	276	WIRE	98.84	27,300	87,300
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	6	EA	7500		45,000	0	32.00	221	WIRE	98.84	21,800	66,800
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	7	EA	5000		35,000	0	16.00	129	WIRE	98.84	12,700	47,700
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	7	EA	3500		24,500	0	12.00	97	WIRE	98.84	9,500	34,000
20.25	EMERGENCY POWER SYSTEM							108,300	0					24,400	132,700
	DC PANEL BOADRD		EST	1	EA	15450		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	UPS PANEL BOARDS		EST	1	EA	15450		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	SATELLITE UPS		EST	1	EA	41200		41,200	0	16.00	18	WIRE	98.84	1,800	43,000
	VRLA BATTERIES		EST	1	LT	36050		36,100	0	120.00	138	WIRE	98.84	13,600	49,700
20.26	RACEWAY, CABLE TRAY, & CONDUIT							0	1,515,700					5,849,000	7,364,700
	12" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	2,450	LF		18.25	0	44,700	1.10	2,695	WIRE	98.84	266400	311,100
	18" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,650	LF		21.50	0	35,500	1.45	2,393	WIRE	98.84	236500	272,000
	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	2,950	LF		27.10	0	79,900	1.75	5,163	WIRE	98.84	510300	590,200
	36" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,650	LF		30.30	0	50,000	1.95	3,218	WIRE	98.84	318000	368,000
	5" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	4,500	LF		61.00	0	274,500	1.13	5,072	WIRE	98.84	501300	775,800
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	8,000	LF		31.00	0	248,000	0.81	6,456	WIRE	98.84	638100	886,100
	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	8,000	LF		21.50	0	172,000	0.65	5,160	WIRE	98.84	510000	682,000
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	13,000	LF		9.25	0	120,300	0.35	4,576	WIRE	98.84	452300	572,600
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	16,000	LF		7.15	0	114,400	0.28	4,544	WIRE	98.84	449100	563,500
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	29,000	LF		4.44	0	128,800	0.24	6,931	WIRE	98.84	685100	813,900
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	53,000	LF		3.23	0	171,200	0.19	11,824	WIRE	98.84	1168700	1,339,900
	DUCT BANK WITH 12-5" & 6-3" CONDUITS	3.08' H X 5.2' W	EST	200	LF		381.96	0	76,400	6.48	1,490	ECND	75.97	113200	189,600
20.27	HIGH VOLTAGE POWER CABLE & TERMINATION							0	58,400					164,700	223,100
	1/C # 500KCMIL-15KV		EST	6,300	LF		9.27	0	58,400	0.23	1,666	WIRE	98.84	164700	223,100

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20.28	MEDIUM VOLTAGE POWER CABLE & TERMINATION							0	114,600		0			431,700	546,300
	1/C # 500KCMIL-5KV		EST	6,000	LF		8.08	0	48,500	0.17	1,194	WIRE	98.84	118000	166,500
	1/C # 350KCMIL-5KV		EST	6,600	LF		6.13	0	40,500	0.23	1,746	WIRE	98.84	172500	213,000
	1/C # 250KCMIL-5KV		EST	5,400	LF		4.74	0	25,600	0.23	1,428	WIRE	98.84	141200	166,800
20.29	LOW VOLTAGE POWER CABLE & TERMINATION							0	795,900					1,500,700	2,296,600
	3/C # 500KCMIL- 600V		EST	11,120	LF		26.12	0	290,500	0.69	8,824	WIRE	98.84	872100	1,162,600
	#4/0 - #12 AWG-600V		EST	70,000	LF		7.22	0	505,400	0.08	6,360	WIRE	98.84	628600	1,134,000
20.30	CONTROL & INSTRUMENT CABLE							0	512,000					1,436,700	1,948,700
	#14, #16 & PR # 20 FD & SHLD WIRE		EST	160,000	LF		3.20	0	512,000	0.08	14,536	WIRE	98.84	1436700	1,948,700
20.31	FOUNDATION FOR TRANSFORMERS							0	59,000					173,700	232,700
	FOR 21A & 21B	WITH OIL PIT	EST	178	CY		250	0	44,500	8.00	1,638	CONP	79.64	130,400	174,900
	FOR 31F, 31G, 32F, 32G, 33F & 33G		EST	63.0	CY		230	0	14,500	7.50	543	CONP	79.64	43,300	57,800
20.32	TRANSFORMER FIRE WALLS							0	3,500					9,600	13,100
	FOR 21A & 21B		EST	15	CY		230	0	3,500	7.00	121	CONP	79.64	9,600	13,100
20.33	COMMUNICATIONS		EST	1	LT		34,000.00	0	34,000	229.00	263	WIRE	98.84	26,000	60,000
20.34	LIGHTNING PROTECTION		EST	1	LT		19,500.00	0	19,500	128.00	147	WIRE	98.84	14,500	34,000
20.35	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							45,607,300	23,326,900		654,355			59,169,100	128,103,300
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE			9	MN	75000		675,000		720.00	7,452	MECH	88.89	662400	1,337,400
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										10,670,107
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						57,548		90.42	5,204,000	5,204,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						71,936			5,466,107	5,466,107
	PER DIEM	NONE		0.00	HR						791,291			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				116,635					295,846	412,480
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				1,166,345						1,166,345
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			2,280,365							2,280,365
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				1,166,345					2,958,455	4,124,800
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				3,499,035					8,875,365	12,374,400
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							2,955,400	5,948,400					23,462,200	32,365,900
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	WET FGD ABSORBER ISLAND						48,562,700	29,275,300					82,631,300	160,469,200
21.0	COMPRESSED AIR SYSTEM (BYPRODUCT DEWATERING AREA)														0
22.0	POTABLE WATER SYSTEM	INCLUDED WITH ACCOUNT 11.0													
23.0	SCR SUBSTATION UPGRADE														

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Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
24.0	FGD DCS SYSTEM	INCLUDED WITH ACCOUNT 13.0													0
25.0	SITE IMPROVEMENTS - CIVIL WORK	INCLUDED WITH ACCOUNT 16.0													
26.0	BOP ITEMS														
27.0	CAPITAL REPLACEMENTS - REMOVAL AND RELOCATION OF EXISTING EQUIPMENT AND INFRASTRUCTURE														0
28.0	ARSENIC, ASBESTOS , LEAD ABATEMENT														0
99.00	OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS							190,852,000	105,249,500		2,970,522			272,163,600	600,390,100
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE							1,485,000	0	2,160	22,356	MECH	88.89	2,185,920	3,670,920
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										46,115,333
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						258,954		91.62	22,441,000	22,441,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						325,183			23,674,333	23,674,333
	PER DIEM	NONE		0.00	HR									0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				523,548					1,359,268	1,882,816
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				5,235,475						5,235,475
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			9,479,600							9,479,600
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				5,235,475					13,592,680	18,828,155
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				15,787,425					40,778,040	61,635,465
	OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							10,964,600	26,781,900					104,031,200	146,847,800
	OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST							201,816,600	132,031,400					376,194,800	747,237,900
	TOTAL DIRECT AND CONSTRUCTION INDIRECT COSTS							201,816,600	132,031,400					376,194,800	747,237,900
	INDIRECT COSTS								0					0	0
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES			1.0	LT										45,000,000
	CONSTRUCTION MANAGEMENT			3.0	%										22,417,100
	S-U / COMMISSIONING			1.0											7,472,400
	CRAFT START-UP SUPPORT	1% OF TOTAL LABOR MANHOURS (INCLUDES OVERTIME INEFFICIENCY & COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - BASED ON ASSUMED 5X10 WORKWEEK)		1.0	%						32,295		91.62	3,207,500	3,207,500
	INITIAL FILLS			0.3	%										2,241,700
	OPERATOR & TRAINING MANUALS			1.0	LT										600,000
	SUBCONTRACTORS (NOISE & DUCTWORK CONSULTANT, GEOTECHNICAL INVESTIGATION)			1.0	LT										500,000
	NOISE ABATEMENT FOR 85 DBA REQUIREMENT	FOR ID FAN, SDA ENCLOSURE, TRANSFORMERS, BOP, DUCTWORK, ACOUSTIC BARRIERS FOR BOUNDARY LIMITS		1.0	LT										4,500,000
	SUBTOTAL - INDIRECT COSTS														85,938,700
	TOTAL DIRECT AND INDIRECT COSTS														833,176,600

				AEP											Estimate No.:	30717C
				BIG SANDY UNIT 2											Project No.:	12721-000
				FGD PROJECT - IAQCS (ESP)-4A - 7.5 LB/MM BTU - NON PHASED											Date:	9/29/2010
				ORDER OF MAGNITUDE COST ESTIMATE											Preparer:	MNO
		Cost Type:													Reviewer:	JMK
		Est=Estimated													Approver:	PEF
		Allow.=Allowance								Wage Rates Based on:		BIG SANDY				
		Q=Vendor Quote								Labor Productivity =		1.15				

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	SPARE PARTS			1.5	%			3,027,200							3,027,200
	SPARE PARTS - CAPITALIZED			0.90	%			1,816,320							1,816,320
	SPARE PARTS - FIRST YEAR OF OPERATION			0.60	%			1,210,880							1,210,880
	CONTINGENCY			13.9	%										116,497,100
	ESCALATION														103,730,600
	EQUIPMENT	4.0%/yr		4.0	%			30,070,300							30,070,300
	MATERIAL	2.0%/yr		2.0	%				13,963,200						13,963,200
	LABOR	2.5%/yr		2.5	%									49,764,200	49,764,200
	INDIRECTS	2.5%/yr		2.5	%									9,932,900	9,932,900
	TOTAL PROJECT COST														1,056,431,500
	REFERENCE COSTS:														
A	REMOVAL OF FUEL OIL TANK							1,200,000	80,000					469,400	1,749,400
	REMOVE FUEL OIL TANK & SOIL REMEDIATION	LABOR COST IS FOR REMOVAL OF TANK ONLY. ALLOWANCE FOR SOIL REMEDIATION AND DISPOSAL IN AN EPA APPROVED LANDFILL. SUBCONTRACT COST INCLUDES LABOR. USED LOWER END OF THE RANGE $118-355/CY. COST COULD BE LOWER ($59-118/CY) IF SOLD TO A BITUMINOUS CONCRETE BATCH PLANT	EST	8,000	CY	150		1,200,000	0		0	MECH	88.89	0	1,200,000
	REMOVE DIKE & RECOMPACT FILL IN TANK AREA		EST	3,500	CY			0	0	0.60	2,415	ETWK	177.49	428,600	428,600
	FILL FROM OFF SITE COURSE		EST	5,000	CY		16	0	80,000	0.04	230	ETWK	177.49	40,800	120,800

ATTACHMENT 4-13
IAQCS Detailed Capital Cost Estimate No. 30721 Est-4B ESP not in Service* (7.5 lb SO_2/MMbtu)

* - Due to the significant differences in layout between the phased and non-phased cost estimates the "bases" for comparison purposes were 1B for the non-phased cost estimates and 3B for the phased cost estimates. Therefore cost estimates 2A, 2B, 3A (Phased) and 1A, 4A and 4B (Non-Phased) contain only accounts whose costs are different from the corresponding base estimates 3B and 1B respectively.

AEP

BIG SANDY UNIT 2

FGD PROJECT - IAQCS (N/ESP)-4B - 7.5 LB/MM BTU - NON PHASED

ORDER OF MAGNITUDE COST ESTIMATE

Estimate No.: 30721C
Project No.: 12721-000
Date: 9/29/2010
Preparer: MNO
Reviewer: JMK
Approver: PEF

Cost Type:
Est=Estimated
Allow.=Allowance
Q=Vendor Quote

Wage Rates Based on: BIG SANDY
Labor Productivity = 1.15

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	PHASE I - DRY FGD														
1.0	ID FANS														
1.1	ID FANS - OEM EQUIPMENT	1,865,000 ACFM WITH 24,500 HP MOTORS ($875,000 EACH). INCLUDES HYDRAULIC OIL UNITS, SEAL AIR FAN SKIDS, VIBRATION MONITORING EQUIPMENT, FAN STALL EQUIPMENT, FIELD SERVICE REP FOR 140 DAYS	EST	2	EA	3,844,000.000		7,688,000	0	8500.00	19,550	MECH	88.89	1,737,800	9,425,800
1.2	PIPING & SUPPORTS - MECHANICAL							21,800	28,700					120,500	171,000
	LARGE BORE PIPING	6" CS, SCH 40 WELDED	EST	200	LF		41.7	0	8,300	1.61	370	SPNG	94.41	35,000	43,300
	SMALL BORE PIPING	2" CS, SCH 80 WELDED	EST	50	LF		22.20	0	1,100	1.26	72	SPNG	94.41	6,800	7,900
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	250	LF		48.80	0	12,200	1.44	414	SPNG	94.41	39,100	51,300
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	100	LF		33.70	0	3,400	1.32	152	SPNG	94.41	14,300	17,700
	VALVE	2" GLOBE, 150# SS, WELDED	EST	15	EA	1,450		21,800	0	5.64	97	SPNG	94.41	9,200	31,000
	PIPE SUPPORTS		EST	105	EA		35.00	0	3,700	1.50	181	MECH	88.89	16,100	19,800
1.3	DAMPERS							781,000	0					352,600	1,133,600
	INLET DAMPERS	2X50% DOUBLE LOUVER TYPE WITH SEAL AIR FANS TOTAL FOR TWO FANS	EST	580	SF	450		261,000	0	2.50	1,668	MECH	88.89	148,200	409,200
	OUTLET DAMPERS	2X50% GUILLOTINE DAMPERS, WITH SEAL AIR FANS TOTAL FOR TWO FANS	EST	800	SF	650		520,000	0	2.50	2,300	MECH	88.89	204,400	724,400
1.4	EXPANSION JOINTS		EST	570	LF		230.00	0	131,100	2.00	1,311	MECH	88.89	116,500	247,600
1.5	DUCTWORK	FABRIC FILTER OUTLET TO ID FANS AND FROM ID FANS TO STACK - INCLUDES INTERNAL BRACING AND TURNING VANES	EST	880	TN		3,250.00	0	2,860,000	50.00	50,600	FLDU	107.96	5,462,800	8,322,800
1.6	DUCT SUPPORT STEEL	THREE COAT SHOP PAINT	EST	440	TN		2,900.00	0	1,276,000	24.00	12,144	STST	105.71	1,283,700	2,559,700
1.7	ID FAN INSULATION & LAGGING	TOTAL FOR TWO FANS. PRICING REFLECTS STANDARD ACOUSTICAL INSULATION	EST	5,000	SF		40.00	0	200,000	0.55	3,163	DINS	81.75	258,500	458,500
1.8	DUCTWORK INSULATION & LAGGING	INCLUDES INSULATION FOR SPRAY DRYER OUTLET DUCT TO FABRIC FILTERS SUPPLIED WITH THE OEM EQUIPMENT	EST	90,896	SF		12.00	0	1,090,800	0.25	26,133	DINS	81.75	2,136,300	3,227,100
1.9	DUCT SUPPORT STEEL - FOUNDATIONS							0	352,200					684,000	1,036,200
	EXCAVATION / BACKFILL		EST	2,265	CY			0	0	0.36	938	EXFD	90.00	84,400	84,400
	REINFORCING		EST	131	TN		1,150.00	0	150,800	20.00	3,016	REIN	78.27	236,000	386,800
	FORMWORK		EST	7,390	SF		2.50	0	18,500	0.14	1,190	FORM	99.43	118,300	136,800
	CONCRETE		EST	1,430	CY		105.00	0	150,200	1.50	2,467	CONP	79.64	196,500	346,700
	MUD MAT		EST	226	CY		105.00	0	23,800	1.50	391	CONP	79.64	31,100	54,900
	EMBEDDED STEEL		EST	3,576	LB		2.50	0	8,900	0.06	247	CARP	71.88	17,700	26,600
1.10	ID FAN FOUNDATIONS INCLUDING ID FAN AUX EQUIPMENT							0	229,300					415,700	645,000
	EXCAVATION / BACKFILL		EST	1,300	CY			0	0	0.36	538	EXFD	90.00	48,400	48,400
	REINFORCING		EST	100	TN		1,150.00	0	115,000	20.00	2,300	REIN	78.27	180,000	295,000
	FORMWORK		EST	2,400	SF		2.50	0	6,000	0.14	386	FORM	99.43	38,400	44,400
	CONCRETE		EST	850	CY		105.00	0	89,300	1.50	1,466	CONP	79.64	116,800	206,100
	MUD MAT		EST	80	CY		105.00	0	8,400	1.50	138	CONP	79.64	11,000	19,400
	EMBEDDED STEEL		EST	4,250	LB		2.50	0	10,600	0.06	293	CARP	71.88	21,100	31,700
1.11	ID FAN IAQCS CONTROL ROOM - FOUNDATIONS							0	270,100					508,600	778,700
	EXCAVATION / BACKFILL		EST	800	CY			0	0	0.36	331	EXFD	90.00	29,800	29,800
	REINFORCING		EST	100	TN		1,150.00	0	115,000	20.00	2,300	REIN	78.27	180,000	295,000

AEP
BIG SANDY UNIT 2
FGD PROJECT - IAQCS (N/ESP)-4B - 7.5 LB/MM BTU - NON PHASED
ORDER OF MAGNITUDE COST ESTIMATE

Estimate No.: 30721C
Project No.: 12721-000
Date: 9/29/2010
Preparer: MNO
Reviewer: JMK
Approver: PEF

Cost Type:
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Allow.=Allowance
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Wage Rates Based on: BIG SANDY
Labor Productivity = 1.15

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	FORMWORK		EST	7,000	SF		2.50	0	17,500	0.14	1,127	FORM	99.43	112,100	129,600
	CONCRETE		EST	1,100	CY		105.00	0	115,500	1.50	1,898	CONP	79.64	151,100	266,600
	MUD MAT		EST	115	CY		105.00	0	12,100	1.50	198	CONP	79.64	15,800	27,900
	EMBEDDED STEEL		EST	4,000	LB		2.50	0	10,000	0.06	276	CARP	71.88	19,800	29,800
1.12	ID FAN IAQCS CONTROL ROOM	SUBCONTRACT PRICE INCLUDES LABOR. COMPLETE WITH HVAC, FINISHES AND SANITARY FACILITIES	EST	7,875	SF		500.00	0	3,937,500	0.00	0	STST	105.71	0	3,937,500
1.13	TRANSFORMERS							770,000	0					145,600	915,600
	SST TRANSFORMERS: 21F & 21G	13.8KV-4160V, 3 PHASE, 2 WINDING	EST	2	EA	300000		600,000	0	500.00	1,150	EHEA	79.16	91,000	691,000
	SUS TRANSFORMERS: 31F, 31G	13.8KV-480V, 3 PHASE, CAST COIL	EST	2	EA	85000		170,000	0	300.00	690	EHEA	79.16	54,600	224,600
1.14	SWITCHGEAR							1,132,000	0		0			589,900	1,721,900
	480V LOW VOLTAGE (31F/G)	PRICE PER SECTION	EST	5	EA	38000		190,000	0	230.00	1,323	EHEA	79.16	104,700	294,700
	4.16 KV MEDIUM VOLTAGE (21F/G)	PRICE PER SECTION	EST	10	EA	39200		392,000	0	280.00	3,220	EHEA	79.16	254,900	646,900
	13KV MEDIUM VOLTAGE (13F/G)	PRICE PER SECTION	EST	11	EA	50000		550,000	0	230.00	2,910	EHEA	79.16	230,300	780,300
1.15	CABLE BUS & TERMINATIONS							1,129,100	35,800		0			1,930,000	3,094,900
	15KV CABLE BUS TO 13F/G)	CABLE BUS	EST	2,100	FT	466		978,600	0	6.75	16,301	WIRE	98.84	1,611,200	2,589,800
	5KV CABLE BUS	CABLE BUS	EST	150	FT	385		57,800	0	4.70	811	WIRE	98.84	80,100	137,900
	480V CABLE BUS	CABLE BUS	EST	150	FT	618		92,700	0	10.30	1,777	WIRE	98.84	175,600	268,300
	CABLE BUS TERMINATION	15KV TERMINATIONS	EST	4	EA		1,800.00	0	7,200	33.00	152	WIRE	98.84	15,000	22,200
	CABLE BUS TERMINATION	5KV TERMINATIONS	EST	4	EA		4,440.00	0	17,800	51.60	237	WIRE	98.84	23,500	41,300
	CABLE BUS TERMINATION	480V TERMINATIONS	EST	4	EA		2,700.00	0	10,800	54.00	248	WIRE	98.84	24,600	35,400
1.16	MCC							180,000	0					10,900	190,900
	480V MCC	PER LINE UP	EST	4	EA	30,000		120,000	0	16.00	74	WIRE	98.84	7,300	127,300
	DC MCC	PER LINE UP	EST	2	EA	30,000		60,000	0	16.00	37	WIRE	98.84	3,600	63,600
1.17	MIMIC PANELS		EST	1	EA	17500		17,500	0	40.00	46	WIRE	98.84	4,500	22,000
1.18	RACEWAY, CABLE TRAY, & CONDUIT							0	1,664,200					8,196,600	9,860,800
	12" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	5,000	LF		18.25	0	91,300	1.10	6,325	WIRE	98.84	625,200	716,500
	18" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	3,000	LF		21.50	0	64,500	1.45	5,003	WIRE	98.84	494,400	558,900
	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	9,320	LF		27.10	0	252,600	1.75	18,757	WIRE	98.84	1,853,900	2,106,500
	36" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	2,400	LF		30.30	0	72,700	1.95	5,382	WIRE	98.84	532,000	604,700
	5" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	4,000	LF		61.00	0	244,000	1.13	5,184	WIRE	98.84	512,400	756,400
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	8,600	LF		31.00	0	266,600	0.81	7,981	WIRE	98.84	788,900	1,055,500
	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	8,000	LF		21.50	0	172,000	0.65	5,934	WIRE	98.84	586,500	758,500
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	12,000	LF		9.25	0	111,000	0.35	4,858	WIRE	98.84	480,100	591,100
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	15,000	LF		7.15	0	107,300	0.28	4,899	WIRE	98.84	484,200	591,500
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	28,000	LF		4.44	0	124,300	0.24	7,696	WIRE	98.84	760,700	885,000
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	48,900	LF		3.23	0	157,900	0.19	10,910	WIRE	98.84	1,078,300	1,236,200
1.19	HIGH VOLTAGE POWER CABLE & TERMINATION							0	288,500	0				666,700	955,200
	1/C # 750KCMIL-15KV - 14400' ID FAN		EST	14,400	LF		12.89	0	185,600	0.23	3,809	WIRE	98.84	376,500	562,100
	1/C # 500KCMIL-15KV		EST	11,100	LF		9.27	0	102,900	0.23	2,936	WIRE	98.84	290,200	393,100
1.20	MEDIUM VOLTAGE POWER CABLE & TERMINATION							0	100,200					427,400	527,600
	1/C # 350KCMIL-5KV		EST	16,350	LF		6.13	0	100,200	0.23	4,325	WIRE	98.84	427,400	527,600
1.21	LOW VOLTAGE POWER CABLE & TERMINATIONS		EST	1,800	LF		26.12	0	229,800	0.69	1,428	WIRE	98.84	732,100	961,900

				AEP											Estimate No.:	30721C
				BIG SANDY UNIT 2											Project No.:	12721-000
				FGD PROJECT - IAQCS (N/ESP)-4B - 7.5 LB/MM BTU - NON PHASED											Date:	9/29/2010
				ORDER OF MAGNITUDE COST ESTIMATE											Preparer:	MNO
		Cost Type:													Reviewer:	JMK
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Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	3/C # 500KCMIL-600V		EST	1,800	LF		26.12	0	148,900	0.69	1,428	WIRE	98.84	141,200	290,100
	#4/0 - #12 AWG-600V		EST	65,800	LF		7.22	0	80,900	0.08	5,978	WIRE	98.84	590,900	671,800
1.22	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	EST	112,800	LF		3.20	0	361,000	0.08	10,248	WIRE	98.84	1,012,900	1,373,900
1.23	EMERGENCY POWER SYSTEM							285,500	0					38,900	324,400
	DC PANEL BOADRD		EST	1	EA	20150		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	UPS PANEL BOARDS		EST	2	EA	20150		31,000	0	40.00	92	WIRE	98.84	9,100	40,100
	UPS		EST	1	EA	78000		60,000	0	32.00	37	WIRE	98.84	3,600	63,600
	SWITCHBOARD		EST	1	EA	52000		40,000	0	40.00	46	WIRE	98.84	4,500	44,500
	BYPASS TRANSFORMERS		EST	1	EA	32500		25,000	0	40.00	46	WIRE	98.84	4,500	29,500
	BATTERY CHARGER		EST	2	EA	41600		64,000	0	16.00	37	WIRE	98.84	3,600	67,600
	BATTERIES		EST	1	LT	65000		50,000	0	80.00	92	WIRE	98.84	9,100	59,100
1.24	GROUNDING							14,100	0					42,700	56,800
	GROUND ROD	3/4" - 20' LONG EACH	EST	16	EA	150		2,400	0	4.00	74	WIRE	98.84	7,300	9,700
	500 MCM	BARE COPPER WIRE	EST	1,400	FT	7.65		10,700	0	0.12	193	WIRE	98.84	19,100	29,800
	CADWELD		EST	64	EA	15		1,000	0	2.00	147	WIRE	98.84	14,500	15,500
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	16.00	18	WIRE	98.84	1,800	1,800
1.25	LIGHTING/ TRANSFORMERS & PANELS							26,000	30,000					29,500	85,500
	LIGHT FIXTURES		EST	40	EA		750	0	30,000	4.00	184	WIRE	98.84	18,200	48,200
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	1	EA	10000		10,000	0	40.00	46	WIRE	98.84	4,500	14,500
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	1	EA	7500		7,500	0	32.00	37	WIRE	98.84	3,600	11,100
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	1	EA	5000		5,000	0	16.00	18	WIRE	98.84	1,800	6,800
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	1	EA	3500		3,500	0	12.00	14	WIRE	98.84	1,400	4,900
1.26	DUCT BANK							0	136,000					192,700	328,700
	DUCT BANK WITH 12-5" & 4-3" CONDUITS		EST	100	LF		361.21	0	38,000	6.24	717	ECND	75.97	54,500	92,500
	DUCT BANK WITH 6-5" & 2-3" CONDUITS		EST	180	LF		230.91	0	71,400	5.45	1,128	ECND	75.97	85,700	157,100
	DUCT BANK WITH 6-5" & 6-3" CONDUITS		EST	100	LF		265.88	0	26,600	6.01	691	ECND	75.97	52,500	79,100
1.27	FOUNDATION FOR TRANSFORMERS							0	61,900		0			162,600	224,500
	EXCAVATION / BACKFILL		EST	1,000	CY			0	0	0.36	414	EXFD	90.00	37,300	37,300
	REINFORCING		EST	20	TN		1,150.00	0	23,000	20.00	460	REIN	78.27	36,000	59,000
	FORMWORK		EST	2,500	SF		2.50	0	6,300	0.14	403	FORM	99.43	40,000	46,300
	CONCRETE		EST	190	CY		105.00	0	20,000	1.50	328	CONP	79.64	26,100	46,100
	MUD MAT		EST	25	CY		105.00	0	2,600	1.50	43	CONP	79.64	3,400	6,000
	EMBEDDED STEEL		EST	4,000	LB		2.50	0	10,000	0.06	276	CARP	71.88	19,800	29,800
1.28	FIREWALL FOR TRANSFORMERS							0	3,200					8,300	11,500
	REINFORCING		EST	1.2	TN		1,150.00	0	1,400	20.00	28	REIN	78.27	2,200	3,600
	FORMWORK		EST	80	SF		2.50	0	200	0.14	13	FORM	99.43	1,300	1,500
	CONCRETE		EST	15	CY		105.00	0	1,600	3.50	60	CONP	79.64	4,800	6,400
1.29	EARLY COMMISSIONING COSTS TEMPORARY HIGH VOLTAGE POWER CABLE & TERMINATION FROM EAST SIDE OF SCR BUILDING TO TRANSFORMER PDC		EST	300	LF		466	0	139,800	6.75	2,329	WIRE	98.84	230,200	370,000
1.30	COMMUNICATIONS		EST	1	LT		17,000.00	0	17,000	114.00	131	WIRE	98.84	13,000	30,000
1.31	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							12,045,000	13,451,100		287,929			27,518,500	53,014,600
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										4,285,497
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						25,037		83.48	2,090,000	2,090,000

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Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						31,297			2,195,497	2,195,497
	PER DIEM	NONE		0.00	HR						344,263			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				67,256					137,593	204,848
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				672,555						672,555
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			602,250							602,250
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				672,555					1,375,925	2,048,480
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				2,017,665					4,127,775	6,145,440
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							602,300	3,430,000					9,926,800	13,959,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	ID FANS						12,647,300	16,881,100					37,445,300	66,973,700
2.0	FABRIC FILTERS														
2.1	MECHANICAL EQUIPMENT	A SINGLE FABRIC FILTER (225' X 130') UNIT INCLUDING ALL INTERNAL FABRIC FILTER ELEMENTS SUCH AS BAGS, CAGES, ASH HOPPERS, 2 BROKEN BAG DETECTORS PER COMPARTMENT	EST	1	LT	19,585,000		19,585,000	0	122800.00	141,220	MECH	88.89	12,553,000	32,138,000
2.2	INSULATION FOR FABRIC FILTER	SUBCONTRACT COST INCLUDES LABOR	EST	81,000	SF	30		2,430,000	0	0.00	0	DINS	81.75	0	2,430,000
2.3	PENTHOUSE FOR FABRIC FILTER	SUPPORT STEEL AND PRLINS INCLUDED WITH OEM EQUIPMENT		29,500	SF			70,200	787,000					1,007,600	1,864,800
	SIDING FOR PENTHOUSE		EST	14,200	SF		12.00	0	170,400	0.11	1,796	SDNG	93.41	167,800	338,200
	CONCRETE FLOOR FOR PENTHOUSE		EST	250	CY		230.00	0	57,500	7.50	2,156	SDNG	93.41	201,400	258,900
	ROOFING FOR PENTHOUSE		EST	29,500	SF		18.00	0	531,000	0.22	7,464	ROOF	69.12	515,900	1,046,900
	H&V		EST	1	LT	70200	28080	70,200	28,100	1310.67	1,507	HVAC	81.24	122,500	220,800
2.4	BOTTOM ENCLOSURE FOR BAGHOUSE							60,000	1,204,000					1,359,800	2,623,800
	SUPPORT STEEL, GIRTS AND SIDING		EST	29,500	SF		40.00	0	1,180,000	0.35	11,874	STST	105.71	1,255,200	2,435,200
	H&V		EST	1	LT	60000	24000	60,000	24,000	1120.00	1,288	HVAC	81.24	104,600	188,600
2.5	PIPING & SUPPORTS - MECHANICAL							30,900	101,400					209,500	341,800
	LARGE BORE PIPING	6" SS, SCH 40 WELDED	EST	100	LF		111.00	0	11,100	2.02	232	SPNG	94.41	21,900	33,000
	LARGE BORE PIPING	12" CS, SCH 40 WELDED	EST	400	LF		188.70	0	75,500	2.80	1,288	SPNG	94.41	121,600	197,100
	SMALL BORE PIPING	2" CS, SCH 80 WELDED	EST	50	LF		22.20	0	1,100	1.26	72	SPNG	94.41	6,800	7,900
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	50	LF		48.80	0	2,400	1.44	83	SPNG	94.41	7,800	10,200
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	100	LF		33.70	0	3,400	1.32	152	SPNG	94.41	14,300	17,700
	VALVE	12" GATE, 150 #, CS, WELDED	EST	2	EA	8,200		16,400	0	19.20	44	SPNG	94.41	4,200	20,600
	VALVE	2" GLOBE, 150# SS, WELDED	EST	10	EA	1,450		14,500	0	5.64	65	SPNG	94.41	6,100	20,600
	PIPE SUPPORTS		EST	105	EA		75.00	0	7,900	2.50	302	MECH	88.89	26,800	34,700
2.6	FABRIC FILTER - FOUNDATIONS							0	550,700					1,081,100	1,631,800
	EXCAVATION / BACKFILL		EST	4,945	CY			0	0	0.36	2,047	EXFD	90.00	184,300	184,300
	REINFORCING		EST	192	TN		1,150.00	0	220,800	20.00	4,416	REIN	78.27	345,600	566,400
	FORMWORK		EST	7,800	SF		2.50	0	19,500	0.14	1,256	FORM	99.43	124,900	144,400
	CONCRETE		EST	2,400	CY		105.00	0	252,000	1.50	4,140	CONP	79.64	329,700	581,700
	MUD MAT		EST	270	CY		105.00	0	28,400	1.50	466	CONP	79.64	37,100	65,500
	EMBEDDED STEEL		EST	12,000	LB		2.50	0	30,000	0.06	828	CARP	71.88	59,500	89,500
2.7	FABRIC FILTER - SUPPORT STEEL AND ACCESS GALLERY							0	360,000					1,186,700	1,546,700
	SUPPORT STEEL	MATERIAL INCLUDED WITH OEM EQUIPMENT	EST	300	TN			0	0	24.00	8,280	STST	105.71	875,300	875,300
	ACCESS GALLERY		EST	8,000	SF		45.00	0	360,000	0.40	3,680	GALL	84.61	311,400	671,400
2.8	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE INCLUDED IN SECTION 1.0 - ID FANS													
2.9	LIGHTING/ TRANSFORMERS & PANELS							30,000	75,000					58,200	163,200

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	LIGHT FIXTURES		EST	100	EA		750	0	75,000	4.00	460	WIRE	98.84	45,500	120,500
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	10000		20,000	0	40.00	92	WIRE	98.84	9,100	29,100
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	2	EA	5000		10,000	0	16.00	37	WIRE	98.84	3,600	13,600
2.10	GROUNDING							7,300	0					17,500	24,800
	GROUND ROD	3/4" - 20' LONG	EST	4	EA	150		600	0	4.00	18	WIRE	98.84	1,800	2,400
	500 MCM	BARE COPPER WIRE	EST	850	FT	7.65		6,500	0	0.12	117	WIRE	98.84	11,600	18,100
	CADWELD		EST	16	EA	15		200	0	2.00	37	WIRE	98.84	3,600	3,800
	GROUNDING TEST	TEST, CALIBRATION & DOCUMENTATION	EST	1	EA			0	0	4.00	5	WIRE	98.84	500	500
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							22,243,400	3,153,100		195,422			17,473,400	42,764,900
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										2,909,119
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						16,993		83.48	1,419,000	1,419,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						21,242			1,490,119	1,490,119
	PER DIEM	NONE		0.00	HR						233,657			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				15,766					87,367	103,133
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				157,655						157,655
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			1,112,170							1,112,170
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				157,655					873,670	1,031,325
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				472,965					2,621,010	3,093,975
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							1,112,200	804,000					6,491,200	8,407,400
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FABRIC FILTERS						23,355,600	3,957,100					23,964,600	51,172,300
3.0	NEW STACK														
4.0	LIME HANDLING SYSTEM														
4.1	LIME STORAGE SILO							1,390,000	0					0	1,390,000
	SILO	CONCRETE SILO 45' DIA X 68' H - 1800 TONS -SUBCONTRACT COST INCLUDES LABOR	EST	1	EA	1,100,000.00		1,100,000	0	0.00	0	CONP	79.64	0	1,100,000
	ELEVATOR	MAINTENANCE ELEVATOR - SUBCONTRACT COST INCLUDES LABOR	EST	1	EA	290,000.00		290,000	0	0.00	0	MECH	88.89	0	290,000
4.2	LIME UNLOADING SYSTEM	INCLUDES PNEUMATIC HANDLING SYSTEM, THREE VACUUM EXHAUSTER, TWO FILTER SEPARATORS	EST	1	LT	350,000		350,000	0	2750.00	3,163	MECH	88.89	281,100	631,100
4.3	PIPING - MECHANICAL							29,000	15,600					77,900	122,500
	SMALL BORE PIPING	2" CS, SCH 80 WELDED	EST	100	LF		22.20	0	2,200	1.26	145	SPNG	94.41	13,700	15,900
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	100	LF		48.80	0	4,900	1.44	166	SPNG	94.41	15,600	20,500
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	200	LF		33.70	0	6,700	1.32	304	SPNG	94.41	28,700	35,400
	VALVE	2" GLOBE, 150# SS, WELDED	EST	20	EA	1,450		29,000	0	5.64	130	SPNG	94.41	12,200	41,200
	PIPE SUPPORTS		EST	50	EA		35.00	0	1,800	1.50	86	MECH	88.89	7,700	9,500
4.4	LIME STORAGE SILO ACCESS STAIR TOWER	THREE COAT SHOP PAINT	EST	30	TN		2,900.00	0	87,000	24.00	828	STST	105.71	87,500	174,500

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4.5	PIPE RACK FOR LIME HANDLING, WASTE HANDLING AND MISC MECHANICAL PIPING	THREE COAT SHOP PAINT	EST	270	TN		2,900.00	0	783,000	24.00	7,452	STST	105.71	787,800	1,570,800
4.6	RAIL CAR UNLOADING AREA - FOUNDATIONS	20 X 60 - NO SIDING						0	22,600					49,100	71,700
	EXCAVATION / BACKFILL		EST	300	CY			0	0	0.36	124	EXFD	90.00	11,200	11,200
	REINFORCING		EST	9	TN		1,150.00	0	9,800	20.00	196	REIN	78.27	15,300	25,100
	FORMWORK		EST	400	SF		2.50	0	1,000	0.14	64	FORM	99.43	6,400	7,400
	CONCRETE		EST	100	CY		105.00	0	10,500	1.50	173	CONP	79.64	13,700	24,200
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	500	LB		2.50	0	1,300	0.06	35	CARP	71.88	2,500	3,800
4.7	LIME UNLOADING BLOWER / ELECTRICAL BUILDING - FOUNDATIONS							0	80,600					139,600	220,200
	EXCAVATION / BACKFILL		EST	340	CY			0	0	0.36	141	EXFD	90.00	12,700	12,700
	REINFORCING		EST	30	TN		1,150.00	0	34,500	20.00	690	REIN	78.27	54,000	88,500
	FORMWORK		EST	780	SF		2.50	0	2,000	0.14	126	FORM	99.43	12,500	14,500
	CONCRETE		EST	330	CY		105.00	0	34,700	1.50	569	CONP	79.64	45,300	80,000
	MUD MAT		EST	50	CY		105.00	0	5,300	1.50	86	CONP	79.64	6,900	12,200
	EMBEDDED STEEL		EST	1,650	LB		2.50	0	4,100	0.06	114	CARP	71.88	8,200	12,300
4.8	LIME UNLOADING BLOWER / ELECTRICAL BUILDING	100' L X 30' W X 30' H						75,000	335,000					24,400	434,400
	PREENGINEERED BUILDING INCLUDING H&V AND LIGHTING	SUBCONTRACT PRICE, INCLUDES LABOR	EST	3,000	SF		105	0	315,000	0.00	0	STST	105.71	0	315,000
	ADDITONAL HVAC UNIT FOR ELECTRICAL ROOM & CONTROLS	40T PACKAGED UNIT FOR ELECTRICAL EQUIPMENT ROOM. INCLUDES ALLOWANCE FOR CONCRETE PAD AND ELECTRICAL WORK	EST	1	LT	75000	20000	75,000	20,000	350.00	300	HVAC	81.24	24,400	119,400
4.9	CONCRETE PIT FOR THE ELEVATOR		EST	10	CY		230.00	0	2,300	7.50	86	CONP	79.64	6,900	9,200
4.10	LIME STORAGE SILO - FOUNDATIONS							0	87,100					171,100	258,200
	EXCAVATION / BACKFILL		EST	900	CY			0	0	0.36	373	EXFD	90.00	33,500	33,500
	REINFORCING		EST	35.0	TN		1,150.00	0	40,300	20.00	805	REIN	78.27	63,000	103,300
	FORMWORK		EST	900	SF		2.50	0	2,300	0.14	145	FORM	99.43	14,400	16,700
	CONCRETE		EST	370	CY		105.00	0	38,900	1.50	638	CONP	79.64	50,800	89,700
	MUD MAT		EST	25	CY		105.00	0	2,600	1.50	43	CONP	79.64	3,400	6,000
	EMBEDDED STEEL		EST	1,200	LB		2.50	0	3,000	0.06	83	CARP	71.88	6,000	9,000
4.11	LIME STORAGE SILO ACCESS STAIR TOWER - FOUNDATIONS							0	10,700					22,300	33,000
	EXCAVATION / BACKFILL		EST	95	CY			0	0	0.36	39	EXFD	90.00	3,500	3,500
	REINFORCING		EST	3.6	TN		1,150.00	0	4,100	20.00	83	REIN	78.27	6,500	10,600
	FORMWORK		EST	260	SF		2.50	0	700	0.14	42	FORM	99.43	4,200	4,900
	CONCRETE		EST	45	CY		105.00	0	4,700	1.50	78	CONP	79.64	6,200	10,900
	MUD MAT		EST	6	CY		105.00	0	600	1.50	10	CONP	79.64	800	1,400
	EMBEDDED STEEL		EST	225	LB		2.50	0	600	0.06	16	CARP	71.88	1,100	1,700
4.12	PIPE RACK - FOUNDATIONS							0	94,200					237,800	332,000
	EXCAVATION / BACKFILL		EST	1,360	CY			0	0	0.36	563	EXFD	90.00	50,700	50,700
	REINFORCING		EST	32.2	TN		1,150.00	0	37,000	20.00	740	REIN	78.27	57,900	94,900
	FORMWORK		EST	4,000	SF		2.50	0	10,000	0.14	644	FORM	99.43	64,000	74,000
	CONCRETE		EST	402	CY		105.00	0	42,200	1.50	693	CONP	79.64	55,200	97,400
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	2,010	LB		2.50	0	5,000	0.06	139	CARP	71.88	10,000	15,000
4.13	TRANSFORMERS: 33F, 33G,	13.8KV-480V,3PHASE, CAST COIL	EST	2	EA	85000		170,000	0	300.00	690	EHEA	79.16	54,600	224,600
4.14	480V LOW VOLTAGE (33F/G) SWITCHGEAR	PER LINE UP	EST	5	EA	39200		196,000	0	230.00	1,323	EHEA	79.16	104,700	300,700
4.15	CABLE BUS DUCT							134,700	10,800					200,200	345,700

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		Q=Vendor Quote								Labor Productivity =		1.15			

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	480V CABLE BUS	BUST DUCT ONLY	EST	150	FT	898		134,700	0	10.30	1,777	WIRE	98.84	175,600	310,300
	CABLE BUS TERMINATION	480V TERMINATIONS	EST	4	EA		2,700.00	0	10,800	54.00	248	WIRE	98.84	24,600	35,400
4.16	MCC							61,800	0					3,600	65,400
	480V MCC	PER LINE UP	EST	2	EA	30900		61,800	0	16.00	37	WIRE	98.84	3,600	65,400
4.17	MIMIC PANELS		EST	1	EA	17500		17,500	0	12.00	14	WIRE	98.84	1,400	18,900
4.18	EMERGENCY POWER SYSTEM							108,300	0					24,400	132,700
	DC PANEL BOARD		EST	1	EA	15450		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	UPS PANEL BOARDS		EST	1	EA	15450		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	SATELLITE UPS		EST	1	EA	41200		41,200	0	16.00	18	WIRE	98.84	1,800	43,000
	VRLA BATTERIES		EST	1	LT	36050		36,100	0	120.00	138	WIRE	98.84	13,600	49,700
4.19	GROUNDING							13,300	0					41,300	54,600
	GROUND ROD	3/4" - 20' LONG	EST	16	EA	150		2,400	0	4.00	74	WIRE	98.84	7,300	9,700
	500 MCM	BARE COPPER WIRE	EST	1,300	FT	7.65		9,900	0	0.12	179	WIRE	98.84	17,700	27,600
	CADWELD		EST	64	EA	15		1,000	0	2.00	147	WIRE	98.84	14,500	15,500
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	16.00	18	WIRE	98.84	1,800	1,800
4.20	LIGHTING/ TRANSFORMERS & PANELS							52,000	135,000					104,500	291,500
	LIGHT FIXTURES		EST	180	EA		750	0	135,000	4.00	828	WIRE	98.84	81,800	216,800
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	10000		20,000	0	40.00	92	WIRE	98.84	9,100	29,100
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	7500		15,000	0	32.00	74	WIRE	98.84	7,300	22,300
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	2	EA	5000		10,000	0	16.00	37	WIRE	98.84	3,600	13,600
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	2	EA	3500		7,000	0	12.00	28	WIRE	98.84	2,700	9,700
4.21	RACEWAY, CABLE TRAY, & CONDUIT							0	310,900					1,537,100	1,848,000
	12" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,050	LF		18.25	0	19,200	1.10	1,328	WIRE	98.84	131,300	150,500
	18" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	600	LF		21.50	0	12,900	1.45	1,001	WIRE	98.84	98,900	111,800
	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,700	LF		27.10	0	46,100	1.75	3,421	WIRE	98.84	338,200	384,300
	36" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	500	LF		30.30	0	15,200	1.95	1,121	WIRE	98.84	110,800	126,000
	5" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	750	LF		61.00	0	45,800	1.13	972	WIRE	98.84	96,100	141,900
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,450	LF		31.00	0	45,000	0.81	1,346	WIRE	98.84	133,000	178,000
	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,550	LF		21.50	0	33,300	0.65	1,150	WIRE	98.84	113,600	146,900
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	2,400	LF		9.25	0	22,200	0.35	972	WIRE	98.84	96,000	118,200
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	3,050	LF		7.15	0	21,800	0.28	996	WIRE	98.84	98,500	120,300
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	5,150	LF		4.44	0	22,900	0.24	1,415	WIRE	98.84	139,900	162,800
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	8,200	LF		3.23	0	26,500	0.19	1,829	WIRE	98.84	180,800	207,300
4.22	HIGH VOLTAGE POWER CABLE & TERMINATION	1/C # 500KCMIL-15KV	EST	5,400	LF		9.27	0	50,100	0.23	1,428	WIRE	98.84	141,200	191,300
4.23	MEDIUM VOLTAGE POWER CABLE & TERMINATION	1/C # 350KCMIL-5KV	EST	10,800	LF		6.13	0	66,200	0.23	2,857	WIRE	98.84	282,300	348,500
4.24	LOW VOLTAGE POWER CABLE & TERMINATION							0	93,000					143,200	236,200
	3/C # 500KCMIL- 600V		EST	600	LF		26.12	0	15,700	0.69	476	WIRE	98.84	47,100	62,800
	#4/0 - #12 AWG-600V		EST	10,700	LF		7.22	0	77,300	0.08	972	WIRE	98.84	96,100	173,400
4.25	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	EST	8,200	LF		3.20	0	26,200	0.08	745	WIRE	98.84	73,600	99,800

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4.26	DUCT BANK	6-5" & 6-3" CONDUITS	EST	100	LF		265.88	0	26,600	6.01	691	ECND	75.97	52,500	79,100
4.27	FOUNDATIONS FOR TRANSFORMERS							0	5,300					11,900	17,200
	EXCAVATION / BACKFILL		EST	75	CY			0	0	0.36	31	EXFD	90.00	2,800	2,800
	REINFORCING		EST	2	TN		1,150.00	0	2,300	20.00	46	REIN	78.27	3,600	5,900
	FORMWORK		EST	100	SF		2.50	0	300	0.14	16	FORM	99.43	1,600	1,900
	CONCRETE		EST	20	CY		105.00	0	2,100	1.50	35	CONP	79.64	2,700	4,800
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	250	LB		2.50	0	600	0.06	17	CARP	71.88	1,200	1,800
4.28	COMMUNICATIONS		EST	1	LT		17,000.00	0	17,000	114.00	131	WIRE	98.84	13,000	30,000
4.29	LIGHTNING PROTECTION		EST	1	LT		14,000.00	0	14,000	79.00	91	WIRE	98.84	9,000	23,000
4.30	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							2,597,600	2,281,200		49,080			4,691,000	9,569,800
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										730,245
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						4,268		83.48	356,000	356,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						5,335			374,245	374,245
	PER DIEM	NONE		0.00	HR						58,683			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				11,406					23,455	34,861
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				114,060						114,060
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			129,880							129,880
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				114,060					234,550	348,610
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				342,180					703,650	1,045,830
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							129,900	581,700					1,691,900	2,403,500
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME HANDLING SYSTEM						2,727,500	2,862,900					6,382,900	11,973,300
5.0	LIME SLAKER BUILDING														0
5.1	MECHANICAL EQUIPMENT	INCLUDES:CHAIN CONVEYOR, SLAKERS THROUGH THE LIME SLURRY PUMPS, PIPING, AND LIME SLURRY STORAGE TANKS.	EST	1	LT	3,198,000		3,198,000	0	32500.00	37,375	MECH	88.89	3,322,300	6,520,300
5.2	REAGENT AREA SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
5.3	AGITATOR FOR SUMP PUMPS	5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
5.4	PIPING - MECHANICAL		EST	1	LT			117,800	111,400					381,100	610,300
	LARGE BORE PIPING	6" CS, SCH 40 WELDED	EST	200	LF		41.7	0	8,300	1.61	370	SPNG	94.41	35,000	43,300
	LARGE BORE PIPING	8" HDPE (UNDERGROUND)	EST	1,200	LF		14.1	0	16,900	0.83	1,145	SPNG	94.41	108,100	125,000
	LARGE BORE PIPING	10" CS, SCH 40 WELDED	EST	400	LF		110.3	0	44,100	2.40	1,104	SPNG	94.41	104,200	148,300
	LARGE BORE PIPING	14" CS, SCH 40 WELDED	EST	100	LF		205.9	0	20,600	2.87	330	SPNG	94.41	31,200	51,800
	SMALL BORE PIPING	2" CS, SCH 80 WELDED	EST	50	LF		22.20	0	1,100	1.26	72	SPNG	94.41	6,800	7,900
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	50	LF		48.80	0	2,400	1.44	83	SPNG	94.41	7,800	10,200

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	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	100	LF		33.70	0	3,400	1.32	152	SPNG	94.41	14,300	17,700
	VALVE	2" GLOBE, 150# SS, WELDED	EST	15	EA	1,450		21,800	0	5.64	97	SPNG	94.41	9,200	31,000
	VALVE	6" AIR OPERATED, 150 #, CS, FLANGED	EST	2	EA	14,000		28,000	0	17.30	40	SPNG	94.41	3,800	31,800
	VALVE	8" AIR OPERATED, 150 #, CS, FLANGED	EST	4	EA	17,000		68,000	0	19.30	89	SPNG	94.41	8,400	76,400
	EXCAVATION / BACKFILL	FOR UNDERGROUND PIPING	EST	1,000	CY			0	0	0.20	230	EXFD	90.00	20,700	20,700
	BEDDING	FOR UNDERGROUND PIPING	EST	133	CY		35.0	0	4,700	0.25	38	EXFD	90.00	3,500	8,200
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	110	EA		90.00	0	9,900	2.50	316	MECH	88.89	28,100	38,000
5.5	LIME SLURRY TANKS - FOUNDATIONS							0	166,400					299,400	465,800
	EXCAVATION / BACKFILL		EST	969	CY			0	0	0.36	401	EXFD	90.00	36,100	36,100
	REINFORCING		EST	90	TN		1,150.00	0	103,500	20.00	2,070	REIN	78.27	162,000	265,500
	FORMWORK		EST	1,166	SF		2.50	0	2,900	0.14	188	FORM	99.43	18,700	21,600
	CONCRETE		EST	475	CY		105.00	0	49,900	1.50	819	CONP	79.64	65,300	115,200
	MUD MAT		EST	40	CY		105.00	0	4,200	1.50	69	CONP	79.64	5,500	9,700
	EMBEDDED STEEL		EST	2,375	LB		2.50	0	5,900	0.06	164	CARP	71.88	11,800	17,700
5.6	LIME SLAKER BUILDING - FOUNDATIONS							0	119,200					204,000	323,200
	EXCAVATION / BACKFILL		EST	450	CY			0	0	0.36	186	EXFD	90.00	16,800	16,800
	REINFORCING		EST	50	TN		1,150.00	0	57,500	20.00	1,150	REIN	78.27	90,000	147,500
	FORMWORK		EST	1,000	SF		2.50	0	2,500	0.14	161	FORM	99.43	16,000	18,500
	CONCRETE		EST	450	CY		105.00	0	47,300	1.50	776	CONP	79.64	61,800	109,100
	MUD MAT		EST	60	CY		105.00	0	6,300	1.50	104	CONP	79.64	8,200	14,500
	EMBEDDED STEEL		EST	2,250	LB		2.50	0	5,600	0.06	155	CARP	71.88	11,200	16,800
5.7	LIME SLAKER BUILDING	135' L X 30' W X 50' H						40,500	803,300					740,500	1,584,300
	STRUCTURAL STEEL		EST	110	TN		2650	0	291,500	16.00	2,024	STST	105.71	214,000	505,500
	INSULATED METAL SIDING		EST	16,500	SF		12	0	198,000	0.11	2,087	SDNG	93.41	195,000	393,000
	ROLLING OVERHEAD DOOR		EST	320	SF		27	0	8,600	0.25	92	CARP	71.88	6,600	15,200
	METAL ROOF DECKING		EST	4,050	SF		2.7	0	10,900	0.06	279	STST	105.71	29,500	40,400
	RIGID ROOF INSULATION		EST	4,050	SF		2.4	0	9,700	0.02	70	ROOF	69.12	4,800	14,500
	ROOFING (4-PLY TAR & GRAVEL)		EST	4,050	SF		1.55	0	6,300	0.04	186	ROOF	69.12	12,900	19,200
	LIGHTWEIGHT CONCRETE FILL 1"		EST	50	CY		100	0	5,000	1.30	75	ROOF	69.12	5,200	10,200
	ROOF FLASHING		EST	350	LF		14.45	0	5,100	0.12	48	ROOF	69.12	3,300	8,400
	ROOF DRAINS		EST	1	LT		25000	0	25,000	240.00	276	PLMB	79.42	21,900	46,900
	FLOOR DRAINS		EST	1	LT		30000	0	30,000	280.00	322	PLMB	79.42	25,600	55,600
	FLOOR SLABS	INCLUDES METAL DECKING AND FORMWORK	EST	50	CY		210	0	10,500	7.50	431	CONP	79.64	34,300	44,800
	FLOOR FINISHES		EST	3,102	SF		2.5	0	7,800	0.05	178	CONP	79.64	14,200	22,000
	LOUVERS/WINDOWS/DOORS		EST	1,601	SF		40	0	64,000	0.35	644	CARP	71.88	46,300	110,300
	ROOF VENTILATORS		EST	4	EA		15000	0	60,000	24.00	110	HVAC	81.24	9,000	69,000
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	1,215	SF		45	0	54,700	0.40	559	GALL	84.61	47,300	102,000
	H&V		EST	1	LT	40500	16200	40,500	16,200	756.00	869	HVAC	81.24	70,600	127,300
5.8	ELECTRICAL	INCLUDED WITH LIME HANDLING SYSTEM, ACCOUNT 4.0													
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							3,396,300	1,200,300		56,128			4,964,200	9,560,800
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										834,983
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						4,881		83.48	407,000	407,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						6,101			427,983	427,983
	PER DIEM	NONE		0.00	HR						67,109			0	0

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	CONSUMABLES - % of ACCT NO. 90			0.5	%				6,002					24,821	30,823
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				60,015						60,015
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			169,815							169,815
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				60,015					248,210	308,225
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				180,045					744,630	924,675
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							169,800	306,100					1,852,600	2,328,500
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME SLAKER BUILDING						3,566,100	1,506,400					6,816,800	11,889,300
6.0	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS														0
6.1	BYPRODUCT WASTE HANDLING - MECHANICAL EQUIPMENT	INCLUDES PNEUMATIC HANDLING SYSTEM, THREE PRESSURE BLOWERS, ONE BIN VENT FILTER, ASH UNLOADING SYSTEM	EST	1	LT	1,637,600		1,637,600	0	10800.00	12,420	MECH	88.89	1,104,000	2,741,600
6.2	ECONOMIZER ASH HANDLING - MECHANICAL EQUIPMENT	INCLUDES JET PUMPS AND PIPING / SUPPORTS TO THE BOTTOM ASH POND	EST	1	LT	400,000		400,000	0	2900.00	3,335	MECH	88.89	296,400	696,400
6.3	BYPRODUCT WASTE SILO AREA SUMP PUMPS	FOR BUILDINGS - DUPLEX. INCLUDES CHECK & ISOLATION VALVES.		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
6.4	AGITATOR FOR SUMP PUMPS	5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
6.5	PIPING - MECHANICAL		EST	1	LT			142,800	240,900					759,100	1,142,800
	LARGE BORE PIPING	4" CS, SCHEDULE 40, WELDED	EST	300	LF		23.0	0	6,900	1.48	511	SPNG	94.41	48,200	55,100
	LARGE BORE PIPING	4" SS, SCHEDULE 40, WELDED	EST	300	LF		68.3	0	20,500	1.82	628	SPNG	94.41	59,300	79,800
	LARGE BORE PIPING	6" CS, SCH 40 WELDED	EST	400	LF		41.7	0	16,700	1.61	741	SPNG	94.41	69,900	86,600
	LARGE BORE PIPING	8" HDPE (UNDERGROUND)	EST	800	LF		14.1	0	11,300	0.83	764	SPNG	94.41	72,100	83,400
	LARGE BORE PIPING	10" CS, SCH 40 WELDED	EST	300	LF		110.3	0	33,100	2.40	828	SPNG	94.41	78,200	111,300
	LARGE BORE PIPING	20" HDPE (UNDERGROUND)	EST	1,600	LF		72.8	0	116,500	1.45	2,668	SPNG	94.41	251,900	368,400
	SMALL BORE PIPING	2" CS, SCH 80 WELDED	EST	100	LF		22.20	0	2,200	1.26	145	SPNG	94.41	13,700	15,900
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	100	LF		48.80	0	4,900	1.44	166	SPNG	94.41	15,600	20,500
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	200	LF		33.70	0	6,700	1.32	304	SPNG	94.41	28,700	35,400
	VALVE	2" GLOBE, 150# SS, WELDED	EST	15	EA	1,450		21,800	0	5.64	97	SPNG	94.41	9,200	31,000
	VALVE	4" GATE, 150 #, CS, WELDED	EST	10	EA	2,500		25,000	0	7.70	89	SPNG	94.41	8,400	33,400
	VALVE	6" AIR OPERATED, 150 #, CS, FLANGED	EST	2	EA	14,000		28,000	0	17.30	40	SPNG	94.41	3,800	31,800
	VALVE	8" AIR OPERATED, 150 #, CS, FLANGED	EST	4	EA	17,000		68,000	0	19.30	89	SPNG	94.41	8,400	76,400
	EXCAVATION / BACKFILL	FOR UNDERGROUND PIPING	EST	2,000	CY			0	0	0.20	460	EXFD	90.00	41,400	41,400
	BEDDING	FOR UNDERGROUND PIPING	EST	267	CY		35.0	0	9,300	0.25	77	EXFD	90.00	6,900	16,200
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	170	EA		75.00	0	12,800	2.50	489	MECH	88.89	43,400	56,200
6.6	BYPRODUCT WASTE SILO	CONCRETE SILO 35' DIA X 49' H - 835 TONS SUBCONTRACT COST INCLUDES LABOR	EST	1	EA	650,000.00		650,000	0					0	650,000
6.7	SDA RECYCLE SILO	INCLUDED WITH OEM EQUIPMENT													
6.8	FLY ASH SILO	NOT REQUIRED - ECONOMIZER FLY ASH SLUICD TO BOTTOM ASH POND						0	0	2.50	0	TANK	89.16	0	0
6.9	BYPRODUCT WASTE SILO - FOUNDATIONS							0	60,200					122,300	182,500

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	EXCAVATION / BACKFILL		EST	670	CY			0	0	0.36	277	EXFD	90.00	25,000	25,000
	REINFORCING		EST	25.0	TN		1,150.00	0	28,800	20.00	575	REIN	78.27	45,000	73,800
	FORMWORK		EST	700	SF		2.50	0	1,800	0.14	113	FORM	99.43	11,200	13,000
	CONCRETE		EST	230	CY		105.00	0	24,200	1.50	397	CONP	79.64	31,600	55,800
	MUD MAT		EST	15	CY		105.00	0	1,600	1.50	26	CONP	79.64	2,100	3,700
	EMBEDDED STEEL		EST	1,500	LB		2.50	0	3,800	0.06	104	CARP	71.88	7,400	11,200
6.10	FLY ASH SILO - FOUNDATIONS	NOT REQUIRED						0	0					0	0
	EXCAVATION / BACKFILL		EST	0	CY			0	0	0.36	0	EXFD	90.00	0	0
	REINFORCING		EST	0.0	TN		1,150.00	0	0	20.00	0	REIN	78.27	0	0
	FORMWORK		EST	0	SF		2.50	0	0	0.14	0	FORM	99.43	0	0
	CONCRETE		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	0	LB		2.50	0	0	0.06	0	CARP	71.88	0	0
6.11	FLY ASH BLOWER AND ELECTRICAL BUILDING - FOUNDATIONS	NOT REQUIRED						0	0					0	0
	EXCAVATION / BACKFILL		EST	0	CY			0	0	0.36	0	EXFD	90.00	0	0
	REINFORCING		EST	0	TN		1,150.00	0	0	20.00	0	REIN	78.27	0	0
	FORMWORK		EST	0	SF		2.50	0	0	0.14	0	FORM	99.43	0	0
	CONCRETE		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	0	LB		2.50	0	0	0.06	0	CARP	71.88	0	0
6.12	FLY ASH BLOWER AND ELECTRICAL BUILDING	NOT REQUIRED						0	0					0	0
	PREENGINEERED BUILDING INCLUDING H&V AND LIGHTING		EST	0	SF		95	0	0	0.00	0	STST	105.71	0	0
	ADDITONAL HVAC UNIT FOR ELECTRICAL ROOM & CONTROLS		EST	0	LT	75000	20000	0	0	350.00	0	HVAC	81.24	0	0
6.13	RECYCLE ASH BUILDING - FOUNDATIONS							0	234,300					393,800	628,100
	EXCAVATION / BACKFILL		EST	950	CY			0	0	0.36	393	EXFD	90.00	35,400	35,400
	REINFORCING		EST	90	TN		1,150.00	0	103,500	20.00	2,070	REIN	78.27	162,000	265,500
	FORMWORK		EST	1,320	SF		2.50	0	3,300	0.14	213	FORM	99.43	21,100	24,400
	CONCRETE		EST	1,000	CY		105.00	0	105,000	1.50	1,725	CONP	79.64	137,400	242,400
	MUD MAT		EST	95	CY		105.00	0	10,000	1.50	164	CONP	79.64	13,100	23,100
	EMBEDDED STEEL		EST	5,000	LB		2.50	0	12,500	0.06	345	CARP	71.88	24,800	37,300
6.14	RECYCLE ASH BUILDING	100' L X 65' W X 50' H						58,500	1,306,700					1,194,500	2,559,700
	STRUCTURAL STEEL		EST	180	TN		2650	0	477,000	16.00	3,312	STST	105.71	350,100	827,100
	INSULATED METAL SIDING		EST	16,500	SF		12	0	198,000	0.11	2,087	SDNG	93.41	195,000	393,000
	ROLLING OVERHEAD DOOR		EST	640	SF		27	0	17,300	0.25	184	CARP	71.88	13,200	30,500
	METAL ROOF DECKING		EST	6,500	SF		2.7	0	17,600	0.06	449	STST	105.71	47,400	65,000
	RIGID ROOF INSULATION		EST	6,500	SF		2.4	0	15,600	0.02	112	ROOF	69.12	7,800	23,400
	ROOFING (4-PLY TAR & GRAVEL)		EST	6,500	SF		1.55	0	10,100	0.04	299	ROOF	69.12	20,700	30,800
	LIGHTWEIGHT CONCRETE FILL 1"		EST	60	CY		100	0	6,000	1.30	90	ROOF	69.12	6,200	12,200
	ROOF FLASHING		EST	350	LF		14.45	0	5,100	0.12	48	ROOF	69.12	3,300	8,400
	ROOF DRAINS		EST	1	LT		25000	0	25,000	240.00	276	PLMB	79.42	21,900	46,900
	FLOOR DRAINS		EST	1	LT		30000	0	30,000	280.00	322	PLMB	79.42	25,600	55,600
	FLOOR SLABS	INCLUDES METAL DECKING AND FORMWORK	EST	60	CY		210	0	12,600	7.50	518	CONP	79.64	41,200	53,800
	FLOOR FINISHES		EST	5,000	SF		2.5	0	12,500	0.05	288	CONP	79.64	22,900	35,400
	LOUVERS/WINDOWS/DOORS		EST	2,600	SF		40	0	104,000	0.35	1,047	CARP	71.88	75,200	179,200
	ROOF VENTILATORS		EST	4	EA		15000	0	60,000	24.00	110	HVAC	81.24	9,000	69,000
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	6,500	SF		45	0	292,500	0.40	2,990	GALL	84.61	253,000	545,500
	H&V		EST	1	LT	58500	23400	58,500	23,400	1092.00	1,256	HVAC	81.24	102,000	183,900
6.15	MCC	480V MCC PER LINE UP	EST	2	EA	30000		60,000	0	16.00	37	WIRE	98.84	3,600	63,600

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6.16	EMERGENCY POWER SYSTEM							92,800	0					19,900	112,700
	UPS PANEL BOARDS		EST	1	EA	15500		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	SATELLITE UPS		EST	1	EA	41200		41,200	0	16.00	18	WIRE	98.84	1,800	43,000
	VRLA BATTERIES		EST	1	LT	36050		36,100	0	120.00	138	WIRE	98.84	13,600	49,700
6.17	LIGHTING/ TRANSFORMERS & PANELS							18,500	60,000					44,100	122,600
	LIGHT FIXTURES		EST	80	EA		750	0	60,000	4.00	368	WIRE	98.84	36,400	96,400
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	1	EA	10000		10,000	0	40.00	46	WIRE	98.84	4,500	14,500
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	1	EA	5000		5,000	0	16.00	18	WIRE	98.84	1,800	6,800
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	1	EA	3500		3,500	0	12.00	14	WIRE	98.84	1,400	4,900
6.18	RACEWAY, CABLE TRAY, & CONDUIT							0	32,500					189,100	221,600
	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	280	LF		27.10	0	7,600	1.75	564	WIRE	98.84	55700	63,300
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	280	LF		31.00	0	8,700	0.81	260	WIRE	98.84	25700	34,400
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,040	LF		4.44	0	4,600	0.24	286	WIRE	98.84	28300	32,900
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	3,600	LF		3.23	0	11,600	0.19	803	WIRE	98.84	79400	91,000
6.19	GROUNDING							0	4,500					10,900	15,400
	GROUND ROD	3/4" - 20' LONG EACH	EST	4	EA		150	0	600	4.00	18	WIRE	98.84	1,800	2,400
	500 MCM	BARE COPPER WIRE	EST	500	FT		7.65	0	3,800	0.12	69	WIRE	98.84	6,800	10,600
	CADWELD		EST	8	EA		15	0	100	2.00	18	WIRE	98.84	1,800	1,900
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	4.00	5	WIRE	98.84	500	500
6.20	LOW VOLTAGE POWER CABLE & TERMINATION	#4/0 - #12 AWG-600V	EST	8,960	LF		7.22	0	64,700	0.08	814	WIRE	98.84	80500	145,200
6.21	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	EST	9,600	LF		3.20	0	30,700	0.08	872	WIRE	98.84	86200	116,900
6.22	DUCT BANK							0	109,700					205,400	315,100
	DUCT BANK WITH 8-5" & 8-3" CONDUITS		EST	125	LF		398.82	0	49,900	7.51	1,080	ECND	75.97	82,000	131,900
	DUCT BANK WITH 6-5" & 6-3" CONDUITS		EST	125	LF		265.88	0	33,200	6.01	864	ECND	75.97	65,600	98,800
	DUCT BANK WITH 2-5" & 2-3" CONDUITS		EST	200	LF		132.94	0	26,600	3.31	760	ECND	75.97	57,800	84,400
6.23	COMMUNICATIONS		EST	1	LT		34,000.00	0	34,000	229.00	263	WIRE	98.84	26,000	60,000
6.24	LIGHTNING PROTECTION		EST	1	LT		16,000.00	0	16,000	123.00	141	WIRE	98.84	14,000	30,000
6.25	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							3,100,200	2,202,200		51,399			4,573,700	9,876,100
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										764,928
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						4,470		83.48	373,000	373,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						5,587			391,928	391,928
	PER DIEM	NONE		0.00	HR						61,456			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				11,011					22,869	33,880
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				110,110						110,110
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			155,010							155,010
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				110,110					228,685	338,795
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				330,330					686,055	1,016,385
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							155,000	561,600					1,702,500	2,419,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS						3,255,200	2,763,800					6,276,200	12,295,200

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7.0	SPRAY DRYER ABSORBER ISLAND														0
7.1	MECHANICAL EQUIPMENT	INCLUDES: ABSORBER MODULES AND ATOMIZERS WITH LUBE OIL, DUCT WORK FROM THE ABSORBERS TO THE FABRIC FILTER, AND COMPLETE RECYCLE SYSTEM WITH PIPING INSIDE FGD BUILDINGS.	EST	1	LT	39438000		39,438,000	0	236600	272,090	MECH	88.89	24,186,100	63,624,100
7.2	ELEVATOR	MAINTENANCE ELEVATOR - SUBCONTRACT COST INCLUDES LABOR	EST	1	EA	325,000.00		325,000	0	0.00	0	MECH	88.89	0	325,000
7.3	ABSORBER AREA SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES.		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
7.4	AGITATOR FOR SUMP PUMPS	5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
7.5	PIPING - MECHANICAL							142,800	36,900					227,900	407,600
	LARGE BORE PIPING	4" CS, SCHEDULE 40, WELDED	EST	300	LF		23.0	0	6,900	1.48	511	SPNG	94.41	48,200	55,100
	LARGE BORE PIPING	6" CS, SCH 40 WELDED	EST	100	LF		41.7	0	4,200	1.61	185	SPNG	94.41	17,500	21,700
	LARGE BORE PIPING	8" HDPE (UNDERGROUND)	EST	800	LF		14.1	0	11,300	0.83	764	SPNG	94.41	72,100	83,400
	SMALL BORE PIPING	2" CS, SCH 80 WELDED	EST	50	LF		22.20	0	1,100	1.26	72	SPNG	94.41	6,800	7,900
	SMALL BORE PIPING	2" SS, SCH 80 WELDED	EST	50	LF		48.80	0	2,400	1.44	83	SPNG	94.41	7,800	10,200
	SMALL BORE PIPING	ALLOWANCE FOR MISC SIZE <2" SS, SCH 80 WELDED	EST	100	LF		33.70	0	3,400	1.32	152	SPNG	94.41	14,300	17,700
	VALVE	2" GLOBE, 150# SS, WELDED	EST	15	EA	1,450		21,800	0	5.64	97	SPNG	94.41	9,200	31,000
	VALVE	4" GATE, 150 #, CS, WELDED	EST	10	EA	2,500		25,000	0	7.70	89	SPNG	94.41	8,400	33,400
	VALVE	6" AIR OPERATED, 150 #, CS, FLANGED	EST	2	EA	14,000		28,000	0	17.30	40	SPNG	94.41	3,800	31,800
	VALVE	8" AIR OPERATED, 150 #, CS, FLANGED	EST	4	EA	17,000		68,000	0	19.30	89	SPNG	94.41	8,400	76,400
	EXCAVATION / BACKFILL	FOR UNDERGROUND PIPING	EST	667	CY			0	0	0.20	153	EXFD	90.00	13,800	13,800
	BEDDING	FOR UNDERGROUND PIPING	EST	89	CY		35.0	0	3,100	0.25	26	EXFD	90.00	2,300	5,400
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	60	EA		75.00	0	4,500	2.50	173	MECH	88.89	15,300	19,800
7.6	SDA SUPERSTRUCTURE							75,000	764,900					1,227,300	2,067,200
	PENTHOUSE FOR SDA'S	TOTAL SUPPORT STEEL AND PURLINS	EST	138	TN		2650.0	0	364,400	30.00	4,744	STST	105.71	501,500	865,900
	ROOFING FOR SDA PENTHOUSE	STANDING SEAM TYPE	EST	10,000	SF		18.00	0	180,000	0.22	2,530	ROOF	69.12	174,900	354,900
	SIDING		EST	13,000	SF		12.00	0	156,000	0.11	1,645	SDNG	93.41	153,600	309,600
	CONCRETE FLOOR FOR PENTHOUSE	INCLUDES DECKING AND FORMWORK	EST	150	CY		230.00	0	34,500	7.50	1,294	CONP	79.64	103,000	137,500
	H&V		EST	3	LT	25000	10000	75,000	30,000	1050.00	3,623	HVAC	81.24	294,300	399,300
7.7	SDA BOTTOM ENCLOSURE - SUPPORT STEEL, GIRTS AND SIDING	TOTAL FOR THREE ABSORBERS	EST	9,053	SF		40.00	0	362,100	0.35	3,644	STST	105.71	385,200	747,300
7.8	SDA SHELL / ROOF INSULATION	61,000 SF. SUBCONTRACT COST INCLUDES LABOR	EST	61,000	SF	30		1,830,000	0		0	DINS	81.75	0	1,830,000
7.9	SDA - SUPPORT STEEL & ACCESS GALLERY							0	711,000					1,884,100	2,595,100
	SUPPORT STEEL	MATERIAL INCLUDED WITH OEM EQUIPMENT	EST	435	TN			0	0	24.00	12,006	STST	105.71	1,269,200	1,269,200
	ACCESS GALLERY		EST	15,800	SF		45.00	0	711,000	0.40	7,268	GALL	84.61	614,900	1,325,900
7.10	EXPANSION JOINTS		EST	850	LF		230.00	0	195,500	2.00	1,955	MECH	88.89	173,800	369,300
7.11	DUCTWORK							0	4,797,000					10,481,700	15,278,700

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	SPRAY DRYER INLET	INCLUDES INTERNAL BRACING AND TURNING VANES	EST	1,476	TN		3,250.00	0	4,797,000	50.00	84,870	FLDU	107.96	9,162,600	13,959,600
	SPRAY DRYER OUTLET TO FABRIC FILTER INLET	INSTALLATION ONLY - MATERIAL INCLUDED WITH OEM EQUIPMENT	EST	213	TN			0	0	50.00	12,219	FLDU	107.96	1,319,100	1,319,100
7.12	DUCT SUPPORT STEEL	THREE COAT SHOP PAINT	EST	738	TN		2,900.00	0	2,140,200	24.00	20,369	STST	105.71	2,153,200	4,293,400
7.13	DUCTWORK INSULATION & LAGGING		EST	136,000	SF		12.00	0	1,632,000	0.25	39,100	DINS	81.75	3,196,400	4,828,400
7.14	CONCRETE PIT FOR ELEVATOR		EST	12	CY		230.00	0	2,800	7.50	104	CONP	79.64	8,200	11,000
7.15	SPRAY DRYER ABSORBER - FOUNDATIONS	TOTAL FOR THREE TOWERS						0	1,678,600					3,323,400	5,002,000
	EXCAVATION / BACKFILL		EST	16,000	CY			0	0	0.36	6,624	EXFD	90.00	596,200	596,200
	REINFORCING		EST	600	TN		1,150.00	0	690,000	20.00	13,800	REIN	78.27	1,080,100	1,770,100
	FORMWORK		EST	23,000	SF		2.50	0	57,500	0.14	3,703	FORM	99.43	368,200	425,700
	CONCRETE		EST	7,500	CY		105.00	0	787,500	1.50	12,938	CONP	79.64	1,030,300	1,817,800
	MUD MAT		EST	510	CY		105.00	0	53,600	1.50	880	CONP	79.64	70,100	123,700
	EMBEDDED STEEL		EST	36,000	LB		2.50	0	90,000	0.06	2,484	CARP	71.88	178,500	268,500
7.16	FOUNDATIONS FOR SUPPORT STEEL							0	69,000					143,000	212,000
	EXCAVATION / BACKFILL		EST	784	CY			0	0	0.36	324	EXFD	90.00	29,200	29,200
	REINFORCING		EST	23	TN		1,150.00	0	26,100	20.00	522	REIN	78.27	40,900	67,000
	FORMWORK		EST	1,125	SF		2.50	0	2,800	0.14	181	FORM	99.43	18,000	20,800
	CONCRETE		EST	303	CY		105.00	0	31,800	1.50	522	CONP	79.64	41,600	73,400
	MUD MAT		EST	43	CY		105.00	0	4,500	1.50	73	CONP	79.64	5,800	10,300
	EMBEDDED STEEL		EST	1,513	LB		2.50	0	3,800	0.06	104	CARP	71.88	7,500	11,300
7.17	GROUNDING							0	16,000		0			46,100	62,100
	GROUND ROD	3/4" - 20' LONG	EST	16	EA		150	0	2,400	4.00	74	WIRE	98.84	7,300	9,700
	500 MCM	BARE COPPER WIRE	EST	1,650	FT		7.65	0	12,600	0.12	228	WIRE	98.84	22,500	35,100
	CADWELD		EST	64	EA		15	0	1,000	2.00	147	WIRE	98.84	14,500	15,500
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	16.00	18	WIRE	98.84	1,800	1,800
7.18	LIGHTING/ TRANSFORMERS & PANELS							156,000	150,000		0			159,100	465,100
	LIGHT FIXTURES		EST	200	EA		750	0	150,000	4.00	920	WIRE	98.84	90,900	240,900
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	6	EA	10000		60,000	0	40.00	276	WIRE	98.84	27,300	87,300
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	6	EA	7500		45,000	0	32.00	221	WIRE	98.84	21,800	66,800
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	6	EA	5000		30,000	0	16.00	110	WIRE	98.84	10,900	40,900
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	6	EA	3500		21,000	0	12.00	83	WIRE	98.84	8,200	29,200
7.19	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE INCLUDED IN SECTION 1.0 - ID FANS													
7.20	COMMUNICATIONS		EST	1	LT		17,000.00	0	17,000	114.00	131	WIRE	98.84	13,000	30,000
7.21	LIGHTNING PROTECTION		EST	1	LT		25,500.00	0	25,500	163.00	187	WIRE	98.84	18,500	44,000
7.22	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							42,006,800	12,606,500		514,702			47,650,900	102,264,200
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE	2 CRANES		9	MN	90,000.00		810,000	0	1440.00	14,904	MECH	88.89	1,523,520	2,333,520
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										7,765,230
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						44,757		83.48	3,736,000	3,736,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						57,436			4,029,230	4,029,230

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Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	PER DIEM	NONE		0.00	HR						631,800			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				63,033					238,255	301,287
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				630,325						630,325
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			2,100,340							2,100,340
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				630,325					2,382,545	3,012,870
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				1,890,975					7,147,635	9,038,610
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							2,910,300	3,214,700					19,057,200	25,182,200
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SPRAY DRYER ABSORBER ISLAND						44,917,100	15,821,200					66,708,100	127,446,400
8.0	ACTIVATED CARBON INJECTION SYSTEM	NOT REQUIRED WITH NON-PHASED CONSTRUCTION													0
9.0	COMPRESSED AIR SYSTEM														0
10.0	SERVICE WATER SYSTEM														
11.0	POTABLE WATER SYSTEM														
12.0	FGD SUBSTATION														
12.1	TRANSFORMERS							1,670,000	0					282,200	1,952,200
	FGD SUBSTATION-AUX TRANSFORMERS: 11A & 11B	138KV-13.8KV- 2 WINDING XFMR	EST	2	EA	750000		1,500,000	0	1250.00	2,875	EHEA	79.16	227,600	1,727,600
	TRANSFORMERS: 32F, 32G	13.8KV-480V,3PHASE, 2 WINDING CAST COIL	EST	2	EA	85000		170,000	0	300.00	690	EHEA	79.16	54,600	224,600
12.2	TRANSFORMER PDC	15W X 45' X 10'H. SUBCONTRACT PRICE INCLUDES LABOR	EST	675.0	SF	300.0		202500.0	0.0	0.0	0.0	STST	105.71	0.0	202500.0
12.3	TRANSFORMER PDC - FOUNDATION							0	73,200					146,900	220,100
	EXCAVATION / BACKFILL		EST	700	CY			0	0	0.36	290	EXFD	90.00	26,100	26,100
	REINFORCING		EST	26	TN		1,150.00	0	30,200	20.00	604	REIN	78.27	47,300	77,500
	FORMWORK		EST	1,100	SF		2.50	0	2,800	0.14	177	FORM	99.43	17,600	20,400
	CONCRETE		EST	300	CY		105.00	0	31,500	1.50	518	CONP	79.64	41,200	72,700
	MUD MAT		EST	35	CY		105.00	0	3,700	1.50	60	CONP	79.64	4,800	8,500
	EMBEDDED STEEL		EST	2,000	LB		2.50	0	5,000	0.06	138	CARP	71.88	9,900	14,900
12.4	138KV MAIN FEEDER & TERMINATIONS							264,000	0					254,000	518,000
	138KV STRUCTURE AND SWITCH	STRUCTURE STEEL	EST	1	LT	103500		103,500	0	450.00	518	STST	105.71	54,700	158,200
	138KV MAIN FEEDER	1/C 750KCMIL- 138KV	EST	2,100	LF	51.75		108,700	0	0.69	1,671	WIRE	98.84	165,200	273,900
	138KV ACCESSORIES		EST	1	LT	51750		51,800	0	300.00	345	WIRE	98.84	34,100	85,900
12.5	SWITCHGEAR							870,000	0					36,400	906,400
	13.8 KV MEDIUM VOLTAGE (11A/B)	PRICE PER SECTION	EST	8	EA	85000		680,000	0	40.00	368	EHEA	79.16	29,100	709,100
	480V LOW VOLTAGE (32F/G)	PRICE PER SECTION	EST	5	EA	38000		190,000	0	16.00	92	EHEA	79.16	7,300	197,300
12.6	MCC	480V MCC, PER LINE UP	EST	2	EA	30000		60,000	0	16.00	37	WIRE	98.84	3,600	63,600
12.7	CABLE BUS							181,100	18,000					290,200	489,300
	15KV CABLE BUS DUCT	BUS DUCT ONLY	EST	200	FT	442		88,400	0	3.30	759	WIRE	98.84	75,000	163,400
	480V CABLE BUS DUCT	BUS DUCT ONLY	EST	150	FT	618		92,700	0	10.30	1,777	WIRE	98.84	175,600	268,300
	CABLE BUS TERMINATION	500MCM - 15KV TERMINATIONS	EST	4	EA		1,800.00	0	7,200	33.00	152	WIRE	98.84	15,000	22,200
	CABLE BUS TERMINATION	750MCM- 480V TERMINATIONS	EST	4	EA		2,700.00	0	10,800	54.00	248	WIRE	98.84	24,600	35,400
12.8	PANELS - RELAY							100,000	0					9,100	109,100
	RELAY PANELS & INTERLOCK	ALLOWANCE	EST	1	LT	100000		100,000	0	80.00	92	WIRE	98.84	9,100	109,100
12.9	MIMIC PANELS		EST	1	EA	17500		17,500	0	40.00	46	WIRE	98.84	4,500	22,000
12.10	EMERGENCY POWER SYSTEM							108,300	0					24,400	132,700

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	DC PANEL BOADRD		EST	1	EA	15500		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	UPS PANEL BOARDS		EST	1	EA	15500		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	SATELLITE UPS		EST	1	EA	41200		41,200	0	16.00	18	WIRE	98.84	1,800	43,000
	VRLA BATTERIES	8HR-400A, 480V	EST	1	LT	36050		36,100	0	120.00	138	WIRE	98.84	13,600	49,700
12.11	GROUNDING							23,300	0					59,100	82,400
	GROUND ROD	3/4" - 20' LONG EACH	EST	16	EA	150		2,400	0	4.00	74	WIRE	98.84	7,300	9,700
	500 MCM	BARE COPPER WIRE	EST	2,600	FT	7.65		19,900	0	0.12	359	WIRE	98.84	35,500	55,400
	CADWELD		EST	64	EA	15		1,000	0	2.00	147	WIRE	98.84	14,500	15,500
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	16.00	18	WIRE	98.84	1,800	1,800
12.12	LIGHTING/ TRANSFORMERS & PANELS							26,000	30,000					29,500	85,500
	LIGHT FIXTURES		EST	40	EA		750	0	30,000	4.00	184	WIRE	98.84	18,200	48,200
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	1	EA	10000		10,000	0	40.00	46	WIRE	98.84	4,500	14,500
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	1	EA	7500		7,500	0	32.00	37	WIRE	98.84	3,600	11,100
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	1	EA	5000		5,000	0	16.00	18	WIRE	98.84	1,800	6,800
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	1	EA	3500		3,500	0	12.00	14	WIRE	98.84	1,400	4,900
12.13	OUTDOOR LIGHTING	NEW AUX YARD LIGHTING - ALLOWANCE	EST	1	LT	25000		25,000	0	500.00	575	WIRE	98.84	56,800	81,800
12.14	RACEWAY, CABLE TRAY, & CONDUIT							0	390,600					1,918,600	2,309,200
	12" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,250	LF		18.25	0	22,800	1.10	1,581	WIRE	98.84	156,300	179,100
	18" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	750	LF		21.50	0	16,100	1.45	1,251	WIRE	98.84	123,600	139,700
	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	2,200	LF		27.10	0	59,600	1.75	4,428	WIRE	98.84	437,600	497,200
	36" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	600	LF		30.30	0	18,200	1.95	1,346	WIRE	98.84	133,000	151,200
	5" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,000	LF		61.00	0	61,000	1.13	1,296	WIRE	98.84	128,100	189,100
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,800	LF		31.00	0	55,800	0.81	1,670	WIRE	98.84	165,100	220,900
	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	2,000	LF		21.50	0	43,000	0.65	1,484	WIRE	98.84	146,600	189,600
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	3,000	LF		9.25	0	27,800	0.35	1,214	WIRE	98.84	120,000	147,800
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	3,700	LF		7.15	0	26,500	0.28	1,208	WIRE	98.84	119,400	145,900
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	6,200	LF		4.44	0	27,500	0.24	1,704	WIRE	98.84	168,400	195,900
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	10,000	LF		3.23	0	32,300	0.19	2,231	WIRE	98.84	220,500	252,800
12.15	DUCT BANK							0	26,200	0.05	0			54,300	80,500
	UNDERGROUND SURVEY FOR NEW DUCT BANK RUN	MAIN FEEDER BETWEEN EXISTING SCR SUBSTATION TO FGD AUX XFMR	EST	200	LF			0	0	0.80	184	ECND	75.97	14,000	14,000
	4' X 4' DUCT BANK (138KV SCR TO FGD AUX XFMR SUBSTATION)	6 - 6" PVC	EST	40	LF		375	0	15,000	6.25	288	ECND	75.97	21,800	36,800
	DUCT BANK WITH 6-5" & 4-3" CONDUITS	2.38' H X 4' W	EST	50	LF		223.02	0	11,200	4.24	244	ECND	75.97	18,500	29,700
12.16	HIGH VOLTAGE POWER CABLE & TERMINATION	1/C # 500KCMIL-15KV	EST	3,000	LF		9.27	0	27,800	0.23	794	WIRE	98.84	78400	106,200
12.17	LOW VOLTAGE POWER CABLE & TERMINATION							0	263,700		0			649,600	913,300
	3/C # 500KCMIL- 600V		EST	7,000	LF		26.12	0	182,800	0.69	5,555	WIRE	98.84	549000	731,800
	#4/0 - #12 AWG-600V		EST	11,200	LF		7.22	0	80,900	0.08	1,018	WIRE	98.84	100,600	181,500
12.18	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	EST	6,800	LF		3.20	0	21,800	0.08	618	WIRE	98.84	61,100	82,900
12.19	FOUNDATION FOR AUX TRANSFORMER							0	70,200					205,400	275,600
	EXCAVATION / BACKFILL		EST	1,000	CY			0	0	0.36	414	EXFD	90.00	37,300	37,300
	REINFORCING		EST	20.0	TN		1,150.00	0	23,000	20.00	460	REIN	78.27	36,000	59,000
	FORMWORK		EST	5,000	SF		2.50	0	12,500	0.14	805	FORM	99.43	80,000	92,500
	CONCRETE		EST	190	CY		105.00	0	20,000	1.50	328	CONP	79.64	26,100	46,100
	MUD MAT		EST	45	CY		105.00	0	4,700	1.50	78	CONP	79.64	6,200	10,900
	EMBEDDED STEEL		EST	4,000	LB		2.50	0	10,000	0.06	276	CARP	71.88	19,800	29,800
12.20	FIREWALL FOR TRANSFORMERS							0	3,000					5,200	8,200
	REINFORCING		EST	1.0	TN		1,150.00	0	1,200	20.00	23	REIN	78.27	1,800	3,000
	FORMWORK		EST	80	SF		2.50	0	200	0.14	13	FORM	99.43	1,300	1,500
	CONCRETE		EST	15	CY		105.00	0	1,600	1.50	26	CONP	79.64	2,100	3,700
12.21	COMMUNICATIONS		EST	1	LT		17,000.00	0	17,000	114.00	131	WIRE	98.84	13,000	30,000

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12.22	LIGHTNING PROTECTION		EST	1	LT		4,000.00	0	4,000	18.00	21	WIRE	98.84	2,000	6,000
12.23	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							3,547,700	953,500		43,933			4,191,300	8,692,500
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										653,995
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						3,820		83.48	319,000	319,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						4,775			334,995	334,995
	PER DIEM	NONE		0.00	HR						52,529			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				4,768					20,957	25,724
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				47,675						47,675
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			177,385							177,385
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				47,675					209,565	257,240
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				143,025					628,695	771,720
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							177,400	243,100					1,513,212	1,933,700
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FGD SUBSTATION						3,725,100	1,196,600					5,704,500	10,626,200
13.0	FGD DCS SYSTEM	DRY AND WET FGD COMBINED													0
14.0	CEM SYSTEM														0
15.0	TRUCK & RAIL INFRASTRUCTURE														0
16.0	SITE IMPROVEMENTS - CIVIL WORK														
17.0	LIMESTONE HANDLING SYSTEM														
18.0	REAGENT (LIMESTONE) PREPARATION ISLAND														0
18.1	MECHANICAL EQUIPMENT	INCLUDES LIMESTONE FEEDERS, FROM THE DAY SILOS THROUGH THE SLURRY STORAGE TANKS AND TRANSFER PUMPS WITH INTEGRAL PIPING	EST	1	LT	16,936,000		16,936,000	0	128200.00	147,430	MECH	88.89	13,105,100	30,041,100
18.2	SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
18.3	AGITATOR FOR SUMP PUMPS	5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
18.4	PIPING - MECHANICAL		EST	1	LT			278,900	205,000					587,300	1,071,200
	LARGE BORE PIPING	4.0" CS, SCH 40 WELDED	EST	500	LF		23.00	0	11,500	1.48	851	SPNG	94.41	80,300	91,800
	LARGE BORE PIPING	6" FRP	EST	2,000	LF		33.90	0	67,800	0.67	1,541	SPNG	94.41	145,500	213,300
	LARGE BORE PIPING	8" FRP	EST	1,000	LF		51.30	0	51,300	0.95	1,093	SPNG	94.41	103,100	154,400
	LARGE BORE PIPING	10" FRP	EST	300	LF		68.00	0	20,400	1.18	407	SPNG	94.41	38,400	58,800
	LARGE BORE PIPING	12" FRP	EST	250	LF		80.90	0	20,200	1.41	405	SPNG	94.41	38,300	58,500
	VALVE	6" BFLY, 150 #, CS, FLANGED	EST	6	EA	850		5,100	0	8.70	60	SPNG	94.41	5,700	10,800
	VALVE	8" BFLY, 150 #, CS, FLANGED	EST	12	EA	1,400		16,800	0	9.10	126	SPNG	94.41	11,900	28,700

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	VALVE	10" BFLY, 150 #, CS, FLANGED	EST	10	EA	2,300		23,000	0	13.80	159	SPNG	94.41	15,000	38,000
	VALVE	12" BFLY, 150 #, CS, FLANGED	EST	3	EA	3,000		9,000	0	14.60	50	SPNG	94.41	4,800	13,800
	VALVE	6" AIR OPERATED, 150 #, CS, FLANGED	EST	10	EA	14,000		140,000	0	17.30	199	SPNG	94.41	18,800	158,800
	VALVE	8" AIR OPERATED, 150 #, CS, FLANGED	EST	5	EA	17,000		85,000	0	19.30	111	SPNG	94.41	10,500	95,500
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	450	EA		75.00	0	33,800	2.50	1,294	MECH	88.89	115,000	148,800
18.5	LIMESTONE SLURRY TANKS - FOUNDATIONS							0	166,400					299,400	465,800
	EXCAVATION / BACKFILL		EST	969	CY			0	0	0.36	401	EXFD	90.00	36,100	36,100
	REINFORCING		EST	90	TN		1,150.00	0	103,500	20.00	2,070	REIN	78.27	162,000	265,500
	FORMWORK		EST	1,166	SF		2.50	0	2,900	0.14	188	FORM	99.43	18,700	21,600
	CONCRETE		EST	475	CY		105.00	0	49,900	1.50	819	CONP	79.64	65,300	115,200
	MUD MAT		EST	40	CY		105.00	0	4,200	1.50	69	CONP	79.64	5,500	9,700
	EMBEDDED STEEL		EST	2,375	LB		2.50	0	5,900	0.06	164	CARP	71.88	11,800	17,700
18.6	REAGENT PREPARATION BUILDING - FOUNDATIONS							0	701,800					1,165,100	1,866,900
	EXCAVATION / BACKFILL		EST	2,850	CY			0	0	0.36	1,180	EXFD	90.00	106,200	106,200
	REINFORCING		EST	280	TN		1,150.00	0	322,000	20.00	6,440	REIN	78.27	504,100	826,100
	FORMWORK		EST	2,580	SF		2.50	0	6,500	0.14	415	FORM	99.43	41,300	47,800
	CONCRETE		EST	2,980	CY		105.00	0	312,900	1.50	5,141	CONP	79.64	409,400	722,300
	MUD MAT		EST	220	CY		105.00	0	23,100	1.50	380	CONP	79.64	30,200	53,300
	EMBEDDED STEEL		EST	14,900	LB		2.50	0	37,300	0.06	1,028	CARP	71.88	73,900	111,200
18.7	REAGENT PREPARATION BUILDING	120' L X 130' W X 130' H						269,400	4,985,000					4,350,000	9,604,400
	STRUCTURAL STEEL		EST	1,250	TN		2650	0	3,312,500	16.00	23,000	STST	105.71	2,431,300	5,743,800
	INSULATED METAL SIDING		EST	66,300	SF		12	0	795,600	0.11	8,387	SDNG	93.41	783,400	1,579,000
	ROLLING OVERHEAD DOOR		EST	640	SF		27	0	17,300	0.25	184	CARP	71.88	13,200	30,500
	METAL ROOF DECKING		EST	16,200	SF		2.7	0	43,700	0.06	1,118	STST	105.71	118,200	161,900
	RIGID ROOF INSULATION		EST	16,200	SF		2.4	0	38,900	0.02	279	ROOF	69.12	19,300	58,200
	ROOFING (4-PLY TAR & GRAVEL)		EST	16,200	SF		1.55	0	25,100	0.04	745	ROOF	69.12	51,500	76,600
	LIGHTWEIGHT CONCRETE FILL 1"		EST	50	CY		100	0	5,000	1.30	75	ROOF	69.12	5,200	10,200
	ROOF FLASHING		EST	510	LF		14.45	0	7,400	0.12	70	ROOF	69.12	4,900	12,300
	ROOF DRAINS		EST	1	LT		45000	0	15,000	500.00	575	PLMB	79.42	45,700	60,700
	FLOOR DRAINS		EST	1	LT		37500	0	20,000	375.00	431	PLMB	79.42	34,200	54,200
	FLOOR SLABS	INCLUDES METAL DECKING AND FORMWORK	EST	50	CY		210	0	10,500	7.50	431	CONP	79.64	34,300	44,800
	FLOOR FINISHES		EST	9,640	SF		2.5	0	24,100	0.05	554	CONP	79.64	44,100	68,200
	LOUVERS/WINDOWS/DOORS		EST	6,630	SF		40	0	265,200	0.35	2,669	CARP	71.88	191,800	457,000
	ROOF VENTILATORS		EST	6	EA		15000	0	90,000	24.00	166	HVAC	81.24	13,500	103,500
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	4,820	SF		45	0	216,900	0.40	2,217	GALL	84.61	187,600	404,500
	H&V		EST	1	LT	194400	77760	194,400	77,800	3629.33	4,174	HVAC	81.24	339,100	611,300
	HVAC	40T PACKAGED UNIT FOR ELECTRICAL EQUIPMENT ROOM. INCLUDES ALLOWANCE FOR CONCRETE PAD AND ELECTRICAL WORK	EST	1	LT	75000	20000	75,000	20,000	350.00	403	HVAC	81.24	32,700	127,700
18.8	PIPE SUPPORT PAD - REAGENT PREP BUILDING							0	14,400					28,600	43,000
	EXCAVATION / BACKFILL		EST	115	CY			0	0	0.36	48	EXFD	90.00	4,300	4,300
	REINFORCING		EST	5.0	TN		1,150.00	0	5,800	20.00	115	REIN	78.27	9,000	14,800
	FORMWORK		EST	290	SF		2.50	0	700	0.14	47	FORM	99.43	4,600	5,300
	CONCRETE		EST	45	CY		105.00	0	4,700	1.50	78	CONP	79.64	6,200	10,900
	MUD MAT		EST	25	CY		105.00	0	2,600	1.50	43	CONP	79.64	3,400	6,000
	EMBEDDED STEEL		EST	225	LB		2.50	0	600	0.06	16	CARP	71.88	1,100	1,700
18.9	LIGHTING/ TRANSFORMERS & PANELS							52,000	135,000					104,500	291,500
	LIGHT FIXTURES		EST	180	EA		750	0	135,000	4.00	828	WIRE	98.84	81,800	216,800
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	10000		20,000	0	40.00	92	WIRE	98.84	9,100	29,100
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	7500		15,000	0	32.00	74	WIRE	98.84	7,300	22,300
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	2	EA	5000		10,000	0	16.00	37	WIRE	98.84	3,600	13,600
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	2	EA	3500		7,000	0	12.00	28	WIRE	98.84	2,700	9,700

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18.10	GROUNDING							5,100	0					13,400	18,500
	GROUND ROD	3/4" - 20' LONG	EST	2	EA	150		300	0	4.00	9	WIRE	98.84	900	1,200
	500 MCM	BARE COPPER WIRE	EST	600	FT	7.65		4,600	0	0.12	83	WIRE	98.84	8,200	12,800
	CADWELD		EST	16	EA	15		200	0	2.00	37	WIRE	98.84	3,600	3,800
	GROUNDING TEST	TEST, CALIBRATION & DOCUMENTATION	EST	2	EA			0	0	3.00	7	WIRE	98.84	700	700
18.11	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE ARE INCLUDED IN SECTION 20.0 - ABSORBER ISLAND													
18.12	COMMUNICATIONS		EST	1	LT		34,000.00	0	34,000	229.00	263	WIRE	98.84	26,000	60,000
18.13	LIGHTNING PROTECTION		EST	1	LT		23,000.00	0	23,000	141.00	162	WIRE	98.84	16,000	39,000
18.14	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							17,581,400	6,272,600		219,724			19,719,300	43,573,300
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										3,516,178
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						19,106		89.75	1,715,000	1,715,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						23,883			1,801,178	1,801,178
	PER DIEM	NONE		0.00	HR						262,713			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				31,363					98,597	129,960
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				313,630						313,630
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			879,070							879,070
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				313,630					985,965	1,299,595
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				940,890					2,957,895	3,898,785
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							879,100	1,599,500					7,558,600	10,037,200
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	REAGENT (LIMESTONE) PREPARATION ISLAND						18,460,500	7,872,100					27,277,900	53,610,500
19.0	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)														0
19.1	MECHANICAL EQUIPMENT	PRIMARY & SECONDARY DEWATERING INCLUDING HYDROCLONE FEED TANKS, HYDROCLONES, PUMPS, INTEGRAL PIPING AND BELT VACUUM FILTERS	EST	1	LT	10,267,000		10,267,000	0	71800.00	82,570	MECH	88.89	7,339,600	17,606,600
19.2	PUMPS & AGITATORS							250,000	0					137,000	387,000
	GYPSUM SLURRY TRANSFER PUMPS	1500 GPM, 150 HP	EST	2	EA	40000		80,000	0	220.00	506	MECH	88.89	45,000	125,000
	RECLAIM WATER PUMPS	350 GPM, 25 HP	EST	2	EA	15000		30,000	0	120.00	276	MECH	88.89	24,500	54,500
	RECLAIM WATER TRANSFER PUMPS	500 GPM, 100 HP	EST	2	EA	30000		60,000	0	165.00	380	MECH	88.89	33,700	93,700
	SUMP PUMPS	AUXILIARY PUMPHOUSE BUILDING SUMP PUMPS - DUPLEX. INCLUDES CHECK & ISOLATION VALVES		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
	AGITATOR FOR SUMP PUMPS	AUXILIARY PUMPHOUSE BUILDING SUMP AGITATORS - 5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600

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	SUMP PUMPS	BYPRODUCT DEWATERING BUILDING SUMP PUMPS - DUPLEX. INCLUDES CHECK & ISOLATION VALVES		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
	AGITATOR FOR SUMP PUMPS	BYPRODUCT DEWATERING BUILDING SUMP AGITATORS - 5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
19.3	PIPING - MECHANICAL		EST	1	LT			282,700	3,555,700					7,786,000	11,624,400
	LARGE BORE PIPING	4" FRP	EST	2,050	LF		28.40	0	58,200	0.38	896	SPNG	94.41	84,600	142,800
	LARGE BORE PIPING	6" FRP	EST	3,300	LF		33.90	0	111,900	0.67	2,543	SPNG	94.41	240,100	352,000
	LARGE BORE PIPING	8" FRP	EST	6,250	LF		51.30	0	320,600	0.95	6,828	SPNG	94.41	644,600	965,200
	LARGE BORE PIPING	10" FRP	EST	6,400	LF		68.00	0	435,200	1.18	8,685	SPNG	94.41	819,900	1,255,100
	LARGE BORE PIPING	12" FRP	EST	1,000	LF		80.90	0	80,900	1.41	1,622	SPNG	94.41	153,100	234,000
	LARGE BORE PIPING	14" FRP	EST	16,500	LF		133.90	0	2,209,400	2.67	50,663	SPNG	94.41	4,783,100	6,992,500
	LARGE BORE PIPING	16" FRP	EST	100	LF		152.20	0	15,200	2.88	331	SPNG	94.41	31,300	46,500
	LARGE BORE PIPING	20" FRP	EST	125	LF		165.00	0	20,600	3.31	476	SPNG	94.41	44,900	65,500
	VALVE	4" BFLY, 150 #, CS, FLANGED	EST	6	EA	625		3,800	0	7.20	50	SPNG	94.41	4,700	8,500
	VALVE	6" BFLY, 150 #, CS, FLANGED	EST	6	EA	850		5,100	0	8.70	60	SPNG	94.41	5,700	10,800
	VALVE	8" BFLY, 150 #, CS, FLANGED	EST	12	EA	1,400		16,800	0	9.10	126	SPNG	94.41	11,900	28,700
	VALVE	10" BFLY, 150 #, CS, FLANGED	EST	10	EA	2,300		23,000	0	13.80	159	SPNG	94.41	15,000	38,000
	VALVE	12" BFLY, 150 #, CS, FLANGED	EST	3	EA	3,000		9,000	0	14.60	50	SPNG	94.41	4,800	13,800
	VALVE	6" AIR OPERATED, 150 #, CS, FLANGED	EST	10	EA	14,000		140,000	0	17.30	199	SPNG	94.41	18,800	158,800
	VALVE	8" AIR OPERATED, 150 #, CS, FLANGED	EST	5	EA	17,000		85,000	0	19.30	111	SPNG	94.41	10,500	95,500
	PIPE SUPPORTS	AVERAGE COST FOR MISC PIPE SIZES	EST	3,573	EA		85.00	0	303,700	2.50	10,271	MECH	88.89	913,000	1,216,700
19.4	MATERIAL HANDLING EQUIPMENT							724,000	7,500					614,100	1,345,600
	CONVEYOR GH-1A	36" W x 75' L		75	LF	1,000		75,000	0	7.50	647	MECH	88.89	57,500	132,500
	CONVEYOR GH-1B	36" W x 75' L		75	LF	1,000		75,000	0	30.00	2,588	MECH	88.89	230,000	305,000
	BELT SCALES	CONVEYORS GH-1A AND GH-1B		2	EA	30,000		60,000	0	180.00	414	MECH	88.89	36,800	96,800
	STACKOUT CONVEYOR GH-2A	36" W X 120' L		120	LF	1,100		132,000	0	7.50	1,035	MECH	88.89	92,000	224,000
	STACKOUT CONVEYOR GH-2B	36" W X 120' L		120	LF	1,100		132,000	0	7.50	1,035	MECH	88.89	92,000	224,000
	TELESCOPIC CHUTES	CONVEYORS GH-2A AND GH-2B		2	EA	125,000		250,000	0	375.00	863	MECH	88.89	76,700	326,700
	FRONT END LOADER	NOT INCLUDED						0	0	30.00	0	MECH	88.89	0	0
	DUMP TRUCK	NOT INCLUDED						0	0	700.00	0	MECH	88.89	0	0
	WATER SPRAY AT DISCHARGE OF GH-2A & GH-2B	ALLOWANCE FOR 200 LF SMALL BORE PIPING AND SPRAYS AND VALVVING		300	LF		25.0	0	7,500	0.95	328	MECH	88.89	29,100	36,600
19.5	FIRE PROTECTION SYSTEM FOR BELT CONVEYORS	DELUGE SYSTEM, DRY PIPE, SENSORS, ACTIVATION VALVE AND FM APPROVED PANEL - SUBCONTRACT PRICE FOR ALL CONVEYORS INCLUDES LABOR		1	LT	170,000		170,000	0	0.00	0	MECH	88.89	0	170,000
19.6	CONVEYOR STRUCTURE SUPPORT STEEL	THREE-COAT SHOP PAINT	EST	34	TN		2,900.00	0	99,000	24.00	942	STST	105.71	99,600	198,600
19.7	PIPE RACK SUPPORT STEEL	THREE-COAT SHOP PAINT	EST	68	TN		2,900.00	0	197,200	24.00	1,877	STST	105.71	198,400	395,600
19.8	TANKS							0	3,825,300					846,700	4,672,000
	LANDFILL SERVICE WATER TANKS	70,000 GAL, CS, 20' DIA X 30' - SUBCONTRACT PRICE INCLUDES LABOR WITH EXTERIOR PRIMED AND FIELD PAINTED	EST	2	EA		157500.0	0	315,000	0.00	0	TANK	89.16	0	315,000
	BLEED TANKS	120,000 GAL, CS, 27' DIA X 27' - SUBCONTRACT PRICE INCLUDES LABOR WITH EXTERIOR PRIMED AND FIELD PAINTED	EST	2	EA		216000.0	0	432,000	0.00	0	TANK	89.16	0	432,000
	RECLAIM WATER TANKS	230,000 GAL, CS, 29' DIA X 33' - SUBCONTRACT PRICE INCLUDES LABOR WITH EXTERIOR PRIMED AND FIELD PAINTED	EST	2	EA		330000.0	0	660,000	0.00	0	TANK	89.16	0	660,000
	RECLAIM WATER TANKS - INTERIOR LINING	FLAKECOAT VINYL ESTER TOTAL FOR TWO TANKS	EST	8,656	SF		15.0	0	129,800	0.35	3,484	PNTR	66.72	232,500	362,300

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	LANDFILL RECLAIM WATER TANKS	230,000 GAL, CS, 29' DIA X 33' - SUBCONTRACT PRICE INCLUDES LABOR WITH EXTERIOR PRIMED AND FIELD PAINTED	EST	2	EA		330000.0	0	660,000	0.00	0	TANK	89.16	0	660,000
	LANDFILL RECLAIM WATER TANKS - INTERIOR LINING	FLAKECOAT VINYL ESTER TOTAL FOR TWO TANKS	EST	8,656	SF		15.0	0	129,800	0.35	3,484	PNTR	66.72	232,500	362,300
	MAINTENANCE STORAGE TANK	1,250,000 GAL, CS, 58' DIA X 62' - SUBCONTRACT PRICE INCLUDES LABOR WITH EXTERIOR PRIMED AND FIELD PAINTED	EST	1	EA		1250000.0	0	1,250,000	0.00	0	TANK	89.16	0	1,250,000
	MAINTENANCE STORAGE TANK - INTERIOR LINING	FLAKECOAT VINYL ESTER	EST	16,581	SF		15.0	0	248,700	0.30	5,720	PNTR	66.72	381,700	630,400
19.9	RECLAIM WATER TANKS & PUMPS - FOUNDATIONS							0	26,000					54,000	80,000
	EXCAVATION / BACKFILL		EST	295	CY			0	0	0.36	122	EXFD	90.00	11,000	11,000
	REINFORCING		EST	10.0	TN		1,150.00	0	11,500	20.00	230	REIN	78.27	18,000	29,500
	FORMWORK		EST	384	SF		2.50	0	1,000	0.14	62	FORM	99.43	6,100	7,100
	CONCRETE		EST	103	CY		105.00	0	10,800	1.50	178	CONP	79.64	14,200	25,000
	MUD MAT		EST	9	CY		105.00	0	900	1.50	16	CONP	79.64	1,200	2,100
	EMBEDDED STEEL		EST	705	LB		2.50	0	1,800	0.06	49	CARP	71.88	3,500	5,300
19.10	MAINTENANCE STORAGE TANK & PUMPS - FOUNDATIONS							0	100,000					177,300	277,300
	EXCAVATION / BACKFILL		EST	614	CY			0	0	0.36	254	EXFD	90.00	22,900	22,900
	REINFORCING		EST	42.0	TN		1,150.00	0	48,300	20.00	966	REIN	78.27	75,600	123,900
	FORMWORK		EST	795	SF		2.50	0	2,000	0.14	128	FORM	99.43	12,700	14,700
	CONCRETE		EST	420	CY		105.00	0	44,100	1.50	725	CONP	79.64	57,700	101,800
	MUD MAT		EST	36	CY		105.00	0	3,800	1.50	62	CONP	79.64	4,900	8,700
	EMBEDDED STEEL		EST	705	LB		2.50	0	1,800	0.06	49	CARP	71.88	3,500	5,300
19.11	LANDFILL SERVICE WATER TANKS & PUMP - FOUNDATIONS							0	80,900					155,100	236,000
	EXCAVATION / BACKFILL		EST	614	CY			0	0	0.36	254	EXFD	90.00	22,900	22,900
	REINFORCING		EST	42.0	TN		1,150.00	0	48,300	20.00	966	REIN	78.27	75,600	123,900
	FORMWORK		EST	795	SF		2.50	0	2,000	0.14	128	FORM	99.43	12,700	14,700
	CONCRETE		EST	221	CY		105.00	0	23,200	1.50	381	CONP	79.64	30,400	53,600
	MUD MAT		EST	18	CY		105.00	0	1,900	1.50	31	CONP	79.64	2,500	4,400
	EMBEDDED STEEL		EST	2,210	LB		2.50	0	5,500	0.06	152	CARP	71.88	11,000	16,500
19.12	LANDFILL RECLAIM WATER TANKS & PUMPS - FOUNDATIONS							0	26,000					54,000	80,000
	EXCAVATION / BACKFILL		EST	295	CY			0	0	0.36	122	EXFD	90.00	11,000	11,000
	REINFORCING		EST	10.0	TN		1,150.00	0	11,500	20.00	230	REIN	78.27	18,000	29,500
	FORMWORK		EST	384	SF		2.50	0	1,000	0.14	62	FORM	99.43	6,100	7,100
	CONCRETE		EST	103	CY		105.00	0	10,800	1.50	178	CONP	79.64	14,200	25,000
	MUD MAT		EST	9	CY		105.00	0	900	1.50	16	CONP	79.64	1,200	2,100
	EMBEDDED STEEL		EST	705	LB		2.50	0	1,800	0.06	49	CARP	71.88	3,500	5,300
19.13	HYDROCLONE FEED TANKS & BLEED TANKS - FOUNDATIONS	TOTAL FOR HYDROCLONE AND BLEED TANKS						0	340,200					618,900	959,100
	EXCAVATION / BACKFILL		EST	1,915	CY			0	0	0.36	793	EXFD	90.00	71,400	71,400
	REINFORCING		EST	212.0	TN		1,150.00	0	243,800	20.00	4,876	REIN	78.27	381,600	625,400
	FORMWORK		EST	2,400	SF		2.50	0	6,000	0.14	386	FORM	99.43	38,400	44,400
	CONCRETE		EST	671	CY		105.00	0	70,500	1.50	1,157	CONP	79.64	92,200	162,700
	MUD MAT		EST	58	CY		105.00	0	6,100	1.50	100	CONP	79.64	8,000	14,100
	EMBEDDED STEEL		EST	5,500	LB		2.50	0	13,800	0.06	380	CARP	71.88	27,300	41,100
19.14	BYPRODUCT STACKOUT CONVEYOR & TRANSFER TOWER - FOUNDATIONS							0	16,100					34,700	50,800
	EXCAVATION / BACKFILL		EST	140	CY			0	0	0.36	58	EXFD	90.00	5,200	5,200
	REINFORCING		EST	6	TN		1,150.00	0	6,900	20.00	138	REIN	78.27	10,800	17,700
	FORMWORK		EST	480	SF		2.50	0	1,200	0.14	77	FORM	99.43	7,700	8,900
	CONCRETE		EST	59	CY		105.00	0	6,200	1.50	102	CONP	79.64	8,100	14,300
	MUD MAT		EST	10	CY		105.00	0	1,100	1.50	17	CONP	79.64	1,400	2,500
	EMBEDDED STEEL		EST	295	LB		2.50	0	700	0.06	20	CARP	71.88	1,500	2,200

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19.15	BYPRODUCT STACKOUT PILE - FOUNDATIONS	INCLUDES CONTAINMENT AREA SLAB						0	891,700					1,427,400	2,319,100
	EXCAVATION / BACKFILL		EST	2,900	CY			0	0	0.36	1,201	EXFD	90.00	108,100	108,100
	REINFORCING		EST	360	TN		1,150.00	0	414,000	20.00	8,280	REIN	78.27	648,100	1,062,100
	FORMWORK		EST	2,365	SF		2.50	0	5,900	0.14	381	FORM	99.43	37,900	43,800
	CONCRETE		EST	3,813	CY		105.00	0	400,400	1.50	6,577	CONP	79.64	523,800	924,200
	MUD MAT		EST	453	CY		105.00	0	47,600	1.50	781	CONP	79.64	62,200	109,800
	EMBEDDED STEEL		EST	9,533	LB		2.50	0	23,800	0.06	658	CARP	71.88	47,300	71,100
19.16	PIPE RACK	SUPPORTS AT 15' C/C						0	60,800					149,400	210,200
	EXCAVATION / BACKFILL		EST	1,120	CY			0	0	0.36	464	EXFD	90.00	41,700	41,700
	REINFORCING		EST	24	TN		1,150.00	0	27,600	20.00	552	REIN	78.27	43,200	70,800
	FORMWORK		EST	1,500	SF		2.50	0	3,800	0.14	242	FORM	99.43	24,000	27,800
	CONCRETE		EST	250	CY		105.00	0	26,300	1.50	431	CONP	79.64	34,300	60,600
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	1,250	LB		2.50	0	3,100	0.06	86	CARP	71.88	6,200	9,300
19.17	BYPRODUCT CONTAINMENT WALLS							0	137,300					235,000	372,300
	EXCAVATION / BACKFILL		EST	489	CY			0	0	0.36	202	EXFD	90.00	18,200	18,200
	REINFORCING		EST	46	TN		1,150.00	0	52,900	20.00	1,058	REIN	78.27	82,800	135,700
	FORMWORK		EST	1,520	SF		2.50	0	3,800	0.14	245	FORM	99.43	24,300	28,100
	CONCRETE		EST	489	CY		105.00	0	51,300	1.50	844	CONP	79.64	67,200	118,500
	MUD MAT		EST	221	CY		105.00	0	23,200	1.50	381	CONP	79.64	30,400	53,600
	EMBEDDED STEEL		EST	2,445	LB		2.50	0	6,100	0.06	169	CARP	71.88	12,100	18,200
19.18	INSTALL WIND SCREEN		EST	700	LF		750.00	0	525,000	3.00	2,415	CONP	79.64	192,300	717,300
19.19	BYPRODUCT DEWATERING BUILDING - FOUNDATIONS							0	301,900					500,500	802,400
	EXCAVATION / BACKFILL		EST	1,260	CY			0	0	0.36	522	EXFD	90.00	46,900	46,900
	REINFORCING		EST	125	TN		1,150.00	0	143,800	20.00	2,875	REIN	78.27	225,000	368,800
	FORMWORK		EST	1,570	SF		2.50	0	3,900	0.14	253	FORM	99.43	25,100	29,000
	CONCRETE		EST	1,320	CY		105.00	0	138,600	1.50	2,277	CONP	79.64	181,300	319,900
	MUD MAT		EST	125	CY		105.00	0	13,100	1.50	216	CONP	79.64	17,200	30,300
	EMBEDDED STEEL		EST	1,000	LB		2.50	0	2,500	0.06	69	CARP	71.88	5,000	7,500
19.20	BYPRODUCT DEWATERING BUILDING	120' L X 80' W X 65' H						145,200	1,651,300					1,546,800	3,343,300
	STRUCTURAL STEEL		EST	335	TN		2650	0	887,800	16.00	6,164	STST	105.71	651,600	1,539,400
	INSULATED METAL SIDING		EST	26,000	SF		12	0	312,000	0.11	3,289	SDNG	93.41	307,200	619,200
	ROLLING OVERHEAD DOOR		EST	640	SF		27	0	17,300	0.25	184	CARP	71.88	13,200	30,500
	METAL ROOF DECKING		EST	9,600	SF		2.7	0	25,900	0.06	662	STST	105.71	70,000	95,900
	RIGID ROOF INSULATION		EST	9,600	SF		2.4	0	23,000	0.02	166	ROOF	69.12	11,400	34,400
	ROOFING (4-PLY TAR & GRAVEL)		EST	9,600	SF		1.55	0	14,900	0.04	442	ROOF	69.12	30,500	45,400
	LIGHTWEIGHT CONCRETE FILL 1"		EST	30	CY		100	0	3,000	1.30	44	ROOF	69.12	3,100	6,100
	ROOF FLASHING		EST	400	LF		14.45	0	5,800	0.12	55	ROOF	69.12	3,800	9,600
	ROOF DRAINS		EST	1	LT		40000	0	15,000	450.00	518	PLMB	79.42	41,100	56,100
	FLOOR DRAINS		EST	1	LT		32500	0	20,000	350.00	403	PLMB	79.42	32,000	52,000
	FLOOR SLABS		EST	55	CY		210	0	11,600	7.50	474	CONP	79.64	37,800	49,400
	FLOOR FINISHES	MAIN LEVEL	EST	6,950	SF		2.5	0	17,400	0.05	400	CONP	79.64	31,800	49,200
	LOUVERS/WINDOWS/DOORS		EST	2,600	SF		40	0	104,000	0.35	1,047	CARP	71.88	75,200	179,200
	ROOF VENTILATORS		EST	4	EA		15000	0	60,000	24.00	110	HVAC	81.24	9,000	69,000
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	1,900	SF		45	0	85,500	0.40	874	GALL	84.61	73,900	159,400
	H&V		EST	1	LT	70200	28080	70,200	28,100	1310.67	1,507	HVAC	81.24	122,500	220,800
	HVAC	40T PACKAGED UNIT FOR ELECTRICAL EQUIPMENT ROOM. INCLUDES ALLOWANCE FOR CONCRETE PAD AND ELECTRICAL WORK	EST	1	LT	75000	20000	75,000	20,000	350.00	403	HVAC	81.24	32,700	127,700
19.21	PIPE SUPPORT PAD							0	13,800					27,100	40,900
	EXCAVATION / BACKFILL		EST	100	CY			0	0	0.36	41	EXFD	90.00	3,700	3,700
	REINFORCING		EST	5.0	TN		1,150.00	0	5,800	20.00	115	REIN	78.27	9,000	14,800
	FORMWORK		EST	280	SF		2.50	0	700	0.14	45	FORM	99.43	4,500	5,200
	CONCRETE		EST	40	CY		105.00	0	4,200	1.50	69	CONP	79.64	5,500	9,700
	MUD MAT		EST	25	CY		105.00	0	2,600	1.50	43	CONP	79.64	3,400	6,000

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	EMBEDDED STEEL		EST	200	LB		2.50	0	500	0.06	14	CARP	71.88	1,000	1,500
19.22	AUXILIARY PUMPHOUSE BUILDING WITH ELECTRICAL ROOM - FOUNDATIONS							0	32,300					60,800	93,100
	EXCAVATION / BACKFILL		EST	210	CY			0	0	0.36	87	EXFD	90.00	7,800	7,800
	REINFORCING		EST	11	TN		1,150.00	0	12,900	20.00	258	REIN	78.27	20,200	33,100
	FORMWORK		EST	500	SF		2.50	0	1,300	0.14	81	FORM	99.43	8,000	9,300
	CONCRETE		EST	140	CY		105.00	0	14,700	1.50	242	CONP	79.64	19,200	33,900
	MUD MAT		EST	15	CY		105.00	0	1,600	1.50	26	CONP	79.64	2,100	3,700
	EMBEDDED STEEL		EST	700	LB		2.50	0	1,800	0.06	48	CARP	71.88	3,500	5,300
19.23	AUXILIARY PUMPHOUSE BUILDING	50'L X 35' W X 20'H						101,300	252,500					269,800	623,600
	STRUCTURAL STEEL		EST	20	TN		2650	0	53,000	16.00	368	STST	105.71	38,900	91,900
	INSULATED METAL SIDING		EST	3,400	SF		12	0	40,800	0.11	430	SDNG	93.41	40,200	81,000
	ROLLING OVERHEAD DOOR		EST	320	SF		27	0	8,600	0.25	92	CARP	71.88	6,600	15,200
	METAL ROOF DECKING		EST	1,750	SF		2.7	0	4,700	0.06	121	STST	105.71	12,800	17,500
	RIGID ROOF INSULATION		EST	1,750	SF		2.4	0	4,200	0.02	30	ROOF	69.12	2,100	6,300
	ROOFING (4-PLY TAR & GRAVEL)		EST	1,750	SF		1.55	0	2,700	0.04	81	ROOF	69.12	5,600	8,300
	LIGHTWEIGHT CONCRETE FILL 1"		EST	5	CY		100	0	500	1.30	8	ROOF	69.12	600	1,100
	ROOF FLASHING		EST	170	LF		14.45	0	2,500	0.12	23	ROOF	69.12	1,600	4,100
	ROOF DRAINS		EST	1	LT		20000	0	15,000	250.00	288	PLMB	79.42	22,800	37,800
	FLOOR DRAINS		EST	1	LT		18000	0	20,000	220.00	253	PLMB	79.42	20,100	40,100
	FLOOR SLABS		EST	16	CY		210	0	3,400	7.50	138	CONP	79.64	11,000	14,400
	FLOOR FINISHES	MAIN LEVEL	EST	1,313	SF		2.5	0	3,300	0.05	75	CONP	79.64	6,000	9,300
	LOUVERS/WINDOWS/DOORS		EST	340	SF		40	0	13,600	0.35	137	CARP	71.88	9,800	23,400
	ROOF VENTILATORS		EST	2	EA		15000	0	30,000	24.00	55	HVAC	81.24	4,500	34,500
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	438	SF		45	0	19,700	0.40	201	GALL	84.61	17,000	36,700
	H&V		EST	1	LT	26250	10500	26,300	10,500	490.67	564	HVAC	81.24	45,800	82,600
	ADDITONAL HVAC UNIT FOR ELECTRICAL ROOM & CONTROLS	40T PACKAGED UNIT FOR ELECTRICAL EQUIPMENT ROOM. INCLUDES ALLOWANCE FOR CONCRETE PAD AND ELECTRICAL WORK	EST	1	LT	75000	20000	75,000	20,000	350.00	300	HVAC	81.24	24,400	119,400
19.24	SITE GRADING - GYPSUM HANDLING AREA							0	0					587,800	587,800
	CUT		EST	18,000	CY			0	0	0.08	1,656	ETWK	177.49	293,900	293,900
	FILL		EST	18,000	CY			0	0	0.08	1,656	ETWK	177.49	293,900	293,900
19.25	ROADS & SURFACING - GYPSUM HANDLING AREA							0	188,000					427,900	615,900
	CONCRETE PAD BUILDING ENTRANCES	10" REINFORCED CONCRETE	EST	100	SY		80	0	8,000	1.50	173	CONP	79.64	13,700	21,700
	AGGREGATE AREA SURFACING	INCLUDES: 6" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST	20,000	SY		9	0	180,000	0.17	3,910	BCSE	105.94	414,200	594,200
19.26	GYPSUM HANDLING & STORAGE							0	1,179,900					1,854,100	3,034,000
	GYPSUM AREA SURFACING	12" REINFORCED CONCRETE	EST	11,500	SY		96	0	1,104,000	1.60	21,160	CONP	79.64	1,685,200	2,789,200
	GYPSUM RUNOFF DRAINAGE DITCH	6" REINFORCED CONCRETE	EST	1,300	SY		48	0	62,400	1.20	1,794	CONP	79.64	142,900	205,300
	DRAINAGE CULVERTS	24" DIA CHDPE	EST	150	LF		84.7	0	12,700	1.41	243	YDPP	90.14	21,900	34,600
	EXCAVATION / BACKFILL	FOR UNDERGROUND PIPING	EST	167	CY			0	0	0.20	38	EXFD	90.00	3,500	3,500
	BEDDING	FOR UNDERGROUND PIPING	EST	22	CY		35.0	0	800	0.25	6	EXFD	90.00	600	1,400
19.27	GYPSUM RUNOFF POND							68,000	110,400					315,700	494,100
	SAND EXCAVATION		EST	4,000	CY			0	0	0.03	120	ETWK	177.49	21,200	21,200
	ROCK EXCAVATION	ASSUME ROCK IS RIPPABLE	EST	500	CY			0	0	0.05	28	ETWK	177.49	4,900	4,900
	POND SURFACING	6" REINFORCED CONCRETE	EST	2,300	SY		48	0	110,400	1.20	3,174	CONP	79.64	252,800	363,200
	PUMPS	500 GPM, 100 PSIG	EST	2	EA	34000		68,000	0	180.00	414	MECH	88.89	36,800	104,800
19.28	GYPSUM RUNOFF POND PUMP STRUCTURE - CONCRETE							0	47,000					105,400	152,400
	EXCAVATION / BACKFILL		EST	0	CY			0	0	0.36	0	EXFD	90.00	0	0
	REINFORCING		EST	7	TN		1,150.00	0	8,100	20.00	161	REIN	78.27	12,600	20,700
	FORMWORK		EST	3,968	SF		2.50	0	9,900	0.14	639	FORM	99.43	63,500	73,400
	CONCRETE		EST	76	CY		105.00	0	8,000	1.50	131	CONP	79.64	10,400	18,400

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	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	380	LB		2.50	0	1,000	0.06	26	CARP	71.88	1,900	2,900
	BYPRODUCT POND PUMP STRUCTURE - GALLERY		EST	5	TN		4,000.00	0	20,000	35.00	201	GALL	84.61	17,000	37,000
19.29	OILY WATER SEWER - GYPSUM HANDLING AREA							1,500	9,000					14,200	24,700
	PIPING	6" CISP	EST	200	LF		21.5	0	4,300	0.33	76	YDPP	90.14	6,800	11,100
	POST INDICATOR VALVE		EST	2	EA	750		1,500	0	6.00	14	YDPP	90.14	1,200	2,700
	MANHOLES		EST	3	EA		1575.0	0	4,700	20.00	69	YDPP	90.14	6,200	10,900
19.30	OIL SEPARATOR - GYPSUM HANDLING AREA	500 GPM W/ INTEGRAL LIFT STATION	EST	1	EA	50000		50,000	0	560.00	644	YDPP	90.14	58,100	108,100
19.31	EROSION & SEDIMENT CONTROL - GYPSUM HANDLING AREA							0	18,000					28,300	46,300
	SILT FENCE		EST	8,000	LF		1.0	0	8,000	0.02	184	LAND	61.45	11,300	19,300
	ROCK CHECK DAMS		EST	20	EA		500.0	0	10,000	12.00	276	LAND	61.45	17,000	27,000
19.32	SITE GRADING - ACCESS ROAD WIDENING & CONTAINMENT DITCH	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA						0	0					60,400	60,400
	CUT		EST	2,700	CY			0	0	0.08	248	ETWK	177.49	44,100	44,100
	FILL		EST	1,000	CY			0	0	0.08	92	ETWK	177.49	16,300	16,300
19.33	ROADS & SURFACING - GYPSUM DEWATERING AREA	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA						0	66,300					190,800	257,100
	WIDENING OF EXISTING ROAD	INCLUDES: 6" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	EST	3,700	SY		9	0	33,300	0.17	723	BCSE	105.94	76,600	109,900
	GUARDRAIL	INCLUDES POSTS	EST	2,200	SY		15	0	33,000	0.50	1,265	PBIT	90.25	114,200	147,200
19.34	PIPELINE CONTAINMENT & DRAINAGE	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA						0	271,600					429,200	700,800
	CONTAINMENT / DICTH SURFACING	4" SHOTCRETE W/ WELDED WIRE FABRIC	EST	5,800	SY		46	0	265,800	0.78	5,188	CONP	79.64	413,200	679,000
	CONCRETE ENERGY DISSIPATION STRUCTURE		EST	25	CY		230	0	5,800	7.00	201	CONP	79.64	16,000	21,800
19.35	CONTAINMENT RUNOFF POND	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA						68,000	114,300					344,300	526,600
	SAND EXCAVATION		EST	4,000	CY			0	0	0.03	120	ETWK	177.49	21,200	21,200
	ROCK EXCAVATION	ASSUME ROCK IS RIPPABLE	EST	500	CY			0	0	0.05	28	ETWK	177.49	4,900	4,900
	POND SURFACING	6" REINFORCED CONCRETE	EST	2,300	SY		48	0	110,400	1.20	3,174	CONP	79.64	252,800	363,200
	PUMPS	500 GPM, 100 PSIG	EST	2	EA	34000		68,000	0	180.00	414	MECH	88.89	36,800	104,800
	LARGE BORE PIPING	6" HDPE, SDR 9	EST	400	LF		9.8	0	3,900	0.69	317	YDPP	90.14	28,600	32,500
19.36	CONTAINMENT POND PUMP STRUCTURE - CONCRETE	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA						0	47,000					105,400	152,400
	EXCAVATION / BACKFILL		EST	0	CY			0	0	0.36	0	EXFD	90.00	0	0
	REINFORCING		EST	7	TN		1,150.00	0	8,100	20.00	161	REIN	78.27	12,600	20,700
	FORMWORK		EST	3,968	SF		2.50	0	9,900	0.14	639	FORM	99.43	63,500	73,400
	CONCRETE		EST	76	CY		105.00	0	8,000	1.50	131	CONP	79.64	10,400	18,400
	MUD MAT		EST	0	CY		105.00	0	0	1.50	0	CONP	79.64	0	0
	EMBEDDED STEEL		EST	380	LB		2.50	0	1,000	0.06	26	CARP	71.88	1,900	2,900
	BYPRODUCT POND PUMP STRUCTURE - GALLERY		EST	5	TN		4,000.00	0	20,000	35.00	201	GALL	84.61	17,000	37,000
19.37	SITE GRADING - PIPELINE CONTAINMENT & DRAINAGE	SOUTH OF HWY 23						0	0					30,200	30,200
	CUT		EST	1,600	CY			0	0	0.08	147	ETWK	177.49	26,100	26,100
	FILL		EST	250	CY			0	0	0.08	23	ETWK	177.49	4,100	4,100
19.38	PIPELINE CONTAINMENT & DRAINAGE	SOUTH OF HWY 23						0	169,600					263,600	433,200
	CONTAINMENT / DICTH SURFACING	4" SHOTCRETE W/ WELDED WIRE FABRIC	EST	3,700	SY		46	0	169,600	0.78	3,309	CONP	79.64	263,600	433,200
19.39	PIPE BORING PIT	SOUTH OF HWY 23						0	5,300					50,900	56,200
	SAND EXCAVATION		EST	950	CY			0	0	0.08	87	ETWK	177.49	15,500	15,500
	ROCK EXCAVATION	ASSUMED ROCK IS RIPPABLE	EST	400	CY			0	0	0.08	37	ETWK	177.49	6,500	6,500

AEP
BIG SANDY UNIT 2
FGD PROJECT - IAQCS (N/ESP)-4B - 7.5 LB/MM BTU - NON PHASED
ORDER OF MAGNITUDE COST ESTIMATE

Estimate No.: 30721C
Project No.: 12721-000
Date: 9/29/2010
Preparer: MNO
Reviewer: JMK
Approver: PEF

Cost Type:
Est=Estimated
Allow.=Allowance
Q=Vendor Quote

Wage Rates Based on: BIG SANDY
Labor Productivity = 1.15

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	BACKFILL		EST	1,350	CY			0	0	0.10	155	ETWK	177.49	27,600	27,600
	4" TOPSOIL		EST	100	SY		45	0	4,500	0.07	7	LAND	61.45	500	5,000
	GRASS SEEDING, FERTILIZER AND MULCH		EST	0.2	AC		4000	0	800	60.00	14	LAND	61.45	800	1,600
19.40	PIPE RECEIVING PIT	NORTH OF HWY 23						0	4,900					43,500	48,400
	SAND EXCAVATION		EST	800	CY			0	0	0.08	74	ETWK	177.49	13,100	13,100
	ROCK EXCAVATION	ASSUMED ROCK IS RIPPABLE	EST	350	CY			0	0	0.08	32	ETWK	177.49	5,700	5,700
	BACKFILL		EST	1,150	CY			0	0	0.10	132	ETWK	177.49	23,500	23,500
	4" TOPSOIL		EST	90	SY		45	0	4,100	0.07	7	LAND	61.45	400	4,500
	GRASS SEEDING, FERTILIZER AND MULCH		EST	0.2	AC		4000	0	800	60.00	14	LAND	61.45	800	1,600
19.41	DIRECTIONAL BORING FOR BURIED PIPE	BENEATH HWY 23						28,000	652,500					277,000	957,500
	MOBILIZATION / DEMOBILIZATION	BORING EQUIPMENT, MUD TRAILER, OPERATORS AND LABORERS	EST	1	LT		12000	0	12,000	80.00	92	EXFD	90.00	8,300	20,300
	EQUIPMENT RENTAL	BORING EQUIPMENT, MUD TRAILER. BASED ON 2 WEEKS RENTAL	EST	1	LT	28000		28,000	0	400.00	460	EXFD	90.00	41,400	69,400
	DIRECTIONAL BORING	7-24" DIA 320FT LONG EACH	EST	2,240	LF			0	0	0.32	824	EXFD	90.00	74,200	74,200
	LARGE BORE PIPING	FOR UNDERGROUND SLEEVE, 24" CS PIPE. 40 FT SPOOL PIECES	EST	2,240	LF		285	0	638,400	0.65	1,674	YDPP	90.14	150,900	789,300
	RUBBER END SEALS	NEOPRENE	EST	14	EA		150	0	2,100	1.50	24	YDPP	90.14	2,200	4,300
19.42	TRANSFORMERS							470,000	0					136,500	606,500
	SST TRANSFORMERS: 23F & 23G	13.8KV-4160V, 2 WINDING XFMR	EST	2	EA	150000		300,000	0	450.00	1,035	EHEA	79.16	81,900	381,900
	SUS TRANSFORMERS: 36F/G	13.8KV-480V,3PHASE, CAST COIL	EST	2	EA	85000		170,000	0	300.00	690	EHEA	79.16	54,600	224,600
19.43	SWITCHGEAR							825,600	0					500,700	1,326,300
	13.8 KV MEDIUM VOLTAGE SWITCHGEAR (13F/G))	PRICE PER SECTION	EST	6	EA	50000		300,000	0	325.00	2,243	EHEA	79.16	177,500	477,500
	4.16KV MEDIUM VOLTAGE SWITCHGEAR& MCCS (21F/G)	PRICE PER SECTION	EST	8	EA	41200		329,600	0	300.00	2,760	EHEA	79.16	218,500	548,100
	480V LOW VOLTAGE SWITCHGEAR (31F/G ; 32F/G)	PRICE PER SECTION	EST	5	EA	39200		196,000	0	230.00	1,323	EHEA	79.16	104,700	300,700
19.44	CABLE BUS & TERMINATIONS							355,500	39,400					730,700	1,125,600
	5KV CABLE BUS		EST	300	FT	567		170,100	0	9.00	3,105	WIRE	98.84	306,900	477,000
	480V CABLE BUS		EST	300	FT	618		185,400	0	10.30	3,554	WIRE	98.84	351,200	536,600
	CABLE BUS TERMINATION	5KV TERMINATIONS	EST	4	EA		4,440.00	0	17,800	51.60	237	WIRE	98.84	23,500	41,300
	CABLE BUS TERMINATION	480V TERMINATIONS	EST	8	EA		2,700.00	0	21,600	54.00	497	WIRE	98.84	49,100	70,700
19.45	MCC							123,600	0					6,300	129,900
	480V MCC	PER MCC LINEUP	EST	4	EA	30900		123,600	0	16.00	64	WIRE	98.84	6,300	129,900
19.46	MIMIC PANELS		EST	1	EA	17500		17,500	0	16.00	16	WIRE	98.84	1,600	19,100
19.47	EMERGENCY POWER SYSTEM							285,500	0					38,900	324,400
	DC PANEL BOADRD		EST	1	EA	15500		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	UPS PANEL BOARDS		EST	2	EA	15500		31,000	0	40.00	92	WIRE	98.84	9,100	40,100
	UPS		EST	1	EA	60000		60,000	0	32.00	37	WIRE	98.84	3,600	63,600
	SWITCHBOARD		EST	1	EA	40000		40,000	0	40.00	46	WIRE	98.84	4,500	44,500
	BYPASS TRANSFORMERS		EST	1	EA	25000		25,000	0	40.00	46	WIRE	98.84	4,500	29,500
	BATTERY CHARGER		EST	2	EA	32000		64,000	0	16.00	37	WIRE	98.84	3,600	67,600
	BATTERIES		EST	1	LT	50000		50,000	0	80.00	92	WIRE	98.84	9,100	59,100
19.48	GROUNDING							9,400	0					25,400	34,800
	GROUND ROD	3/4" - 20' LONG	EST	8	EA	150		1,200	0	4.00	37	WIRE	98.84	3,600	4,800
	500 MCM	BARE COPPER WIRE	EST	1,000	FT	7.65		7,700	0	0.12	138	WIRE	98.84	13,600	21,300
	CADWELD		EST	32	EA	15		500	0	2.00	74	WIRE	98.84	7,300	7,800
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	8.00	9	WIRE	98.84	900	900

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				BIG SANDY UNIT 2										Project No.:	12721-000
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19.49	LIGHTING/ TRANSFORMERS & PANELS							52,000	135,000					104,500	291,500
	LIGHT FIXTURES		EST	180	EA		750	0	135,000	4.00	828	WIRE	98.84	81,800	216,800
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	10000		20,000	0	40.00	92	WIRE	98.84	9,100	29,100
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	2	EA	7500		15,000	0	32.00	74	WIRE	98.84	7,300	22,300
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	2	EA	5000		10,000	0	16.00	37	WIRE	98.84	3,600	13,600
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	2	EA	3500		7,000	0	12.00	28	WIRE	98.84	2,700	9,700
19.50	RACEWAY, CABLE TRAY, & CONDUIT							0	354,700					1,514,100	1,868,800
	12" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,000	LF		18.25	0	18,300	1.10	1,100	WIRE	98.84	108700	127,000
	18" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,000	LF		21.50	0	21,500	1.45	1,450	WIRE	98.84	143300	164,800
	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,000	LF		27.10	0	27,100	1.75	1,750	WIRE	98.84	173000	200,100
	36" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,000	LF		30.30	0	30,300	1.95	1,950	WIRE	98.84	192700	223,000
	5" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	900	LF		61.00	0	54,900	1.13	1,014	WIRE	98.84	100300	155,200
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,800	LF		31.00	0	55,800	0.81	1,453	WIRE	98.84	143600	199,400
	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,900	LF		21.50	0	40,900	0.65	1,226	WIRE	98.84	121100	162,000
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	2,800	LF		9.25	0	25,900	0.35	986	WIRE	98.84	97400	123,300
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	3,500	LF		7.15	0	25,000	0.28	994	WIRE	98.84	98200	123,200
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	6,000	LF		4.44	0	26,600	0.24	1,434	WIRE	98.84	141700	168,300
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	8,800	LF		3.23	0	28,400	0.19	1,963	WIRE	98.84	194100	222,500
19.51	13.8 KV OH LINE OPGW	INCLUDES POLES, CONDUCTORS, INSULATORS & GROUNDING	EST	5,250	LF		45.75	0	240,200	0.49	2,958	WIRE	98.84	292400	532,600
19.52	HIGH VOLTAGE POWER CABLE & TERMINATION							0	88,400					256,600	345,000
	1/C # 500KCMIL-15KV	1/C # 500KCMIL-15KV	EST	1,800	LF		9.27	0	16,700	0.23	476	WIRE	98.84	47100	63,800
	1/C # 4/0-15KV	1/C # 4/0-15KV	EST	15,750	LF		4.55	0	71,700	0.12	2,119	WIRE	98.84	209500	281,200
19.53	MEDIUM VOLTAGE POWER CABLE & TERMINATION	1/C # 350KCMIL-5KV	EST	3,000	LF		6.13	0	18,400	0.23	794	WIRE	98.84	78400	96,800
19.54	LOW VOLTAGE POWER CABLE & TERMINATION							0	62,700					547,400	610,100
	3/C # 500KCMIL- 600V		EST	2,400	LF		26.12	0	62,700	0.69	1,904	WIRE	98.84	188200	250,900
	#4/0 - #12 AWG-600V		EST	40,000	LF		7.22			0.08	3,634	WIRE	98.84	359200	359,200
19.55	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	EST	35,000	LF		3.20	0	112,000	0.08	3,180	WIRE	98.84	314300	426,300
19.56	FOUNDATIONS FOR TRANSFORMERS							0	70,200					205,400	275,600
	EXCAVATION / BACKFILL		EST	1,000	CY			0	0	0.36	414	EXFD	90.00	37,300	37,300
	REINFORCING		EST	20	TN		1,150.00	0	23,000	20.00	460	REIN	78.27	36,000	59,000
	FORMWORK		EST	5,000	SF		2.50	0	12,500	0.14	805	FORM	99.43	80,000	92,500
	CONCRETE		EST	190	CY		105.00	0	20,000	1.50	328	CONP	79.64	26,100	46,100
	MUD MAT		EST	45	CY		105.00	0	4,700	1.50	78	CONP	79.64	6,200	10,900
	EMBEDDED STEEL		EST	4,000	LB		2.50	0	10,000	0.06	276	CARP	71.88	19,800	29,800
19.57	FIREWALL FOR TRANSFORMERS							0	3,200					8,300	11,500
	REINFORCING		EST	1.2	TN		1,150.00	0	1,400	20.00	28	REIN	78.27	2,200	3,600
	FORMWORK		EST	80	SF		2.50	0	200	0.14	13	FORM	99.43	1,300	1,500
	CONCRETE		EST	15	CY		105.00	0	1,600	3.50	60	CONP	79.64	4,800	6,400
19.58	COMMUNICATIONS		EST	1	LT		34,000.00	0	34,000	229.00	263	WIRE	98.84	26,000	60,000
19.59	LIGHTNING PROTECTION		EST	1	LT		13,000.00	0	13,000	91.00	105	WIRE	98.84	10,300	23,300

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90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							14,294,800	16,195,500		362,543			32,509,100	62,999,400
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										5,796,410
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						31,525		89.67	2,827,000	2,827,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						39,407			2,969,410	2,969,410
	PER DIEM	NONE		0.00	HR						433,475			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				80,978					162,546	243,523
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				809,775						809,775
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			714,740							714,740
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				809,775					1,625,455	2,435,230
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				2,429,325					4,876,365	7,305,690
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							714,700	4,129,900					12,460,800	17,305,400
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BY-PRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)						15,009,500	20,325,400					44,969,900	80,304,800
20.0	WET FGD ABSORBER ISLAND														0
20.1	MECHANICAL EQUIPMENT	INCLUDES ABSORBER MODULE (A2205) WITH INTERNALS, INLET DUCT ONLY THROUGH WET/DRY INTERFACE, PIPING INSIDE ABSORBER BUILDING TO TERMINAL POINTS, RECYCLE PUMPS, OXIDATION BLOWERS, MIST ELIMINATOR AND WASH PUMPS AND OTHER MISC. EQUIPMENT AND MATERIAL	EST	1	LT	41668000		41,668,000	0	401800.00	462,070	MECH	88.89	41,073,400	82,741,400
20.2	ADDITIONAL COST FOR C276 ABSORBER SHELL MATERIAL ABOVE THE PRICE OF A2205 ABSORBER SHELL	INCLUDES MATERIAL AND WELDING ROD COST DIFFERENTIAL - 49,800 TOTAL SF	EST	49,800	SF		308.00	0	15,338,400	0.00	0	MECH	88.89	0	15,338,400
20.3	SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES		2	EA	14,000		28,000	0	60.00	138	MECH	88.89	12,300	40,300
20.4	AGITATOR FOR SUMP PUMPS	5 HP		1	EA	12,000		12,000	0	45.00	52	MECH	88.89	4,600	16,600
20.5	EMERGENCY DIESEL DRIVEN QUENCH PUMP	WITH FUEL DAY TANK. FOUNDATIONS INCLUDED WITH ABSORBER BUILDING FOUNDATIONS		1	EA	150,000		150,000	0	300.00	345	MECH	88.89	30,700	180,700
20.6	PIPING - MECHANICAL	ALL PIPING INCLUDED IN OEM EQUIPMENT COST. NO BOP PIPING						0	0					0	0
20.7	ABSORBER VESSEL - FOUNDATIONS							0	366,900					672,900	1,039,800
	EXCAVATION / BACKFILL		EST	2,921	CY			0	0	0.36	1,209	EXFD	90.00	108,800	108,800
	REINFORCING		EST	148	TN		1,150.00	0	170,200	20.00	3,404	REIN	78.27	266,400	436,600

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	FORMWORK		EST	2,121	SF		2.50	0	5,300	0.14	341	FORM	99.43	34,000	39,300
	CONCRETE		EST	1,571	CY		105.00	0	165,000	1.50	2,710	CONP	79.64	215,800	380,800
	MUD MAT		EST	65	CY		105.00	0	6,800	1.50	112	CONP	79.64	8,900	15,700
	EMBEDDED STEEL		EST	7,855	LB		2.50	0	19,600	0.06	542	CARP	71.88	39,000	58,600
20.8	ABSORBER BUILDING - FOUNDATIONS							0	608,300					1,007,600	1,615,900
	EXCAVATION / BACKFILL		EST	2,560	CY			0	0	0.36	1,060	EXFD	90.00	95,400	95,400
	REINFORCING		EST	250	TN		1,150.00	0	287,500	20.00	5,750	REIN	78.27	450,100	737,600
	FORMWORK		EST	2,450	SF		2.50	0	6,100	0.14	394	FORM	99.43	39,200	45,300
	CONCRETE		EST	2,640	CY		105.00	0	277,200	1.50	4,554	CONP	79.64	362,700	639,900
	MUD MAT		EST	200	CY		105.00	0	21,000	1.50	345	CONP	79.64	27,500	48,500
	EMBEDDED STEEL		EST	6,600	LB		2.50	0	16,500	0.06	455	CARP	71.88	32,700	49,200
20.9	ABSORBER BUILDING	150' L X 95' W X 60' H						164,500	2,746,000					2,500,300	5,410,800
	STRUCTURAL STEEL		EST	600	TN		2650	0	1,590,000	16.00	11,040	STST	105.71	1,167,000	2,757,000
	INSULATED METAL SIDING		EST	29,400	SF		12	0	352,800	0.11	3,719	SDNG	93.41	347,400	700,200
	ROLLING OVERHEAD DOOR		EST	960	SF		27	0	25,900	0.25	276	CARP	71.88	19,800	45,700
	METAL ROOF DECKING		EST	14,250	SF		2.7	0	38,500	0.06	983	STST	105.71	103,900	142,400
	RIGID ROOF INSULATION		EST	14,250	SF		2.4	0	34,200	0.02	246	ROOF	69.12	17,000	51,200
	ROOFING (4-PLY TAR & GRAVEL)		EST	14,250	SF		1.55	0	22,100	0.04	656	ROOF	69.12	45,300	67,400
	LIGHTWEIGHT CONCRETE FILL 1"		EST	40	CY		100	0	4,000	1.30	60	ROOF	69.12	4,100	8,100
	ROOF FLASHING		EST	490	LF		14.45	0	7,100	0.12	68	ROOF	69.12	4,700	11,800
	ROOF DRAINS		EST	1	LT		45000	0	15,000	500.00	575	PLMB	79.42	45,700	60,700
	FLOOR DRAINS		EST	1	LT		37500	0	20,000	375.00	431	PLMB	79.42	34,200	54,200
	FLOOR SLABS	INCLUDES METAL DECKING AND FORMWORK	EST	60	CY		210	0	12,600	7.50	518	CONP	79.64	41,200	53,800
	FLOOR FINISHES		EST	8,500	SF		2.5	0	21,300	0.05	489	CONP	79.64	38,900	60,200
	LOUVERS/WINDOWS/DOORS		EST	6,030	SF		40	0	241,200	0.35	2,427	CARP	71.88	174,500	415,700
	ROOF VENTILATORS		EST	6	EA		20000	0	120,000	32.00	221	HVAC	81.24	17,900	137,900
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	3,900	SF		45	0	175,500	0.40	1,794	GALL	84.61	151,800	327,300
	H&V		EST	1	LT	164500	65800	164,500	65,800	3070.67	3,531	HVAC	81.24	286,900	517,200
20.10	PIPE SUPPORT PAD - ABSORBER BUILDING							0	7,700					16,500	24,200
	EXCAVATION / BACKFILL		EST	100	CY			0	0	0.36	41	EXFD	90.00	3,700	3,700
	REINFORCING		EST	5.0	TN		1,150.00	0	5,800	20.00	115	REIN	78.27	9,000	14,800
	FORMWORK		EST	85	SF		2.50	0	200	0.14	14	FORM	99.43	1,400	1,600
	CONCRETE		EST	10	CY		105.00	0	1,100	1.50	17	CONP	79.64	1,400	2,500
	MUD MAT		EST	5	CY		105.00	0	500	1.50	9	CONP	79.64	700	1,200
	EMBEDDED STEEL		EST	55	LB		2.50	0	100	0.06	4	CARP	71.88	300	400
20.11	OXIDATION AIR BLOWER BUILDING - FOUNDATIONS							0	37,000					67,300	104,300
	EXCAVATION / BACKFILL		EST	188	CY			0	0	0.36	78	EXFD	90.00	7,000	7,000
	REINFORCING		EST	16.0	TN		1,150.00	0	18,400	20.00	368	REIN	78.27	28,800	47,200
	FORMWORK		EST	480	SF		2.50	0	1,200	0.14	77	FORM	99.43	7,700	8,900
	CONCRETE		EST	133	CY		105.00	0	14,000	1.50	229	CONP	79.64	18,300	32,300
	MUD MAT		EST	16	CY		105.00	0	1,700	1.50	28	CONP	79.64	2,200	3,900
	EMBEDDED STEEL		EST	665	LB		2.50	0	1,700	0.06	46	CARP	71.88	3,300	5,000
20.12	OXIDATION AIR BLOWER BUILDING	30' L X 30' W X 25' H						33,800	191,000					201,400	426,200
	STRUCTURAL STEEL		EST	14	TN		2650	0	35,800	16.00	248	STST	105.71	26,300	62,100
	INSULATED METAL SIDING		EST	3,000	SF		12	0	36,000	0.11	380	SDNG	93.41	35,400	71,400
	ROLLING OVERHEAD DOOR		EST	320	SF		27	0	8,600	0.25	92	CARP	71.88	6,600	15,200
	METAL ROOF DECKING		EST	900	SF		2.7	0	2,400	0.06	62	STST	105.71	6,600	9,000
	RIGID ROOF INSULATION		EST	900	SF		2.4	0	2,200	0.02	16	ROOF	69.12	1,100	3,300
	ROOFING (4-PLY TAR & GRAVEL)		EST	900	SF		1.55	0	1,400	0.04	41	ROOF	69.12	2,900	4,300
	LIGHTWEIGHT CONCRETE FILL 1"		EST	3	CY		100	0	300	1.30	4	ROOF	69.12	300	600
	ROOF FLASHING		EST	120	LF		14.45	0	1,700	0.12	17	ROOF	69.12	1,100	2,800
	ROOF DRAINS		EST	1	LT		7000	0	15,000	50.00	58	PLMB	79.42	4,600	19,600
	FLOOR DRAINS		EST	1	LT		7500	0	20,000	60.00	69	PLMB	79.42	5,500	25,500
	FLOOR SLABS	NONE	EST	0	CY		210	0	0	7.50	0	CONP	79.64	0	0
	FLOOR FINISHES	MAIN LEVEL	EST	810	SF		2.5	0	2,000	0.05	47	CONP	79.64	3,700	5,700
	BLOCK WALLS	SOUND ATTENUATING INTERIOR BLOCK WALLS	EST	3,000	SF		8	0	24,000	0.18	621	MSRY	73.39	45,600	69,600

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	LOUVERS/WINDOWS/DOORS & VENTILATORS	SOUND ATTENUATING	EST	300	SF	75	40	22,500	12,000	1.25	431	CARP	71.88	31,000	65,500
	ROOF VENTILATORS		EST	1	EA		15000	0	15,000	24.00	28	HVAC	81.24	2,200	17,200
	GALLERIES & LANDINGS	SUPPORT STEEL WITH BUILDING STEEL	EST	225	SF		45	0	10,100	0.40	104	GALL	84.61	8,800	18,900
	H&V		EST	1	LT	11250	4500	11,300	4,500	210.67	242	HVAC	81.24	19,700	35,500
20.13	PIPE SUPPORT PAD - OXIDATION BUILDING							0	7,700					13,700	21,400
	EXCAVATION / BACKFILL		EST	30	CY			0	0	0.36	12	EXFD	90.00	1,100	1,100
	REINFORCING		EST	5.0	TN		1,150.00	0	5,800	20.00	115	REIN	78.27	9,000	14,800
	FORMWORK		EST	80	SF		2.50	0	200	0.14	13	FORM	99.43	1,300	1,500
	CONCRETE		EST	10	CY		105.00	0	1,100	1.50	17	CONP	79.64	1,400	2,500
	MUD MAT		EST	5	CY		105.00	0	500	1.50	9	CONP	79.64	700	1,200
	EMBEDDED STEEL		EST	50	LB		2.50	0	100	0.06	3	CARP	71.88	200	300
20.14	DUCTWORK	INCLUDES INTERNAL BRACING AND TURNING VANES	EST	115	TN		3,250.00	0	373,800	50.00	6,613	FLDU	107.96	713,900	1,087,700
20.15	DUCT SUPPORT STEEL	THREE-COAT SHOP PAINT	EST	58	TN		2,900.00	0	168,200	24.00	1,601	STST	105.71	169,200	337,400
20.16	DUCTWORK INSULATION & LAGGING		EST	11,000	SF		12.00	0	132,000	0.25	3,163	DINS	81.75	258,500	390,500
20.17	FOUNDATIONS FOR DUCT SUPPORT STEEL							0	17,700					35,300	53,000
	EXCAVATION / BACKFILL		EST	144	CY			0	0	0.36	60	EXFD	90.00	5,400	5,400
	REINFORCING		EST	6	TN		1,150.00	0	7,400	20.00	147	REIN	78.27	11,500	18,900
	FORMWORK		EST	360	SF		2.50	0	900	0.14	58	FORM	99.43	5,800	6,700
	CONCRETE		EST	72	CY		105.00	0	7,600	1.50	124	CONP	79.64	9,900	17,500
	MUD MAT		EST	11	CY		105.00	0	1,200	1.50	19	CONP	79.64	1,500	2,700
	EMBEDDED STEEL		EST	240	LB		2.50	0	600	0.06	17	CARP	71.88	1,200	1,800
20.18	TRANSFORMERS							981,000	0					209,300	1,190,300
	SST TRANSFORMERS: 22F & 22G	13.8KV-4160V, 2 WINDING XFMR	EST	2	EA	320500		641,000	0	550.00	1,265	EHEA	79.16	100,100	741,100
	SUS TRANSFORMERS: 34F/G; 35F/G	13.8KV-480V,3PHASE, CAST COIL	EST	4	EA	85000		340,000	0	300.00	1,380	EHEA	79.16	109,200	449,200
20.19	SWITCHGEAR							1,162,800	0					673,700	1,836,500
	13.8 KV MEDIUM VOLTAGE SWITCHGEAR	PRICE PER SECTION	EST	8	EA	50000		400,000	0	300.00	2,760	EHEA	79.16	218,500	618,500
	4.16KV MEDIUM VOLTAGE SWITCHGEAR& MCCS	PRICE PER SECTION	EST	9	EA	41200		370,800	0	300.00	3,105	EHEA	79.16	245,800	616,600
	480V LOW VOLTAGE SWITCHGEAR	PRICE PER SECTION	EST	10	EA	39200		392,000	0	230.00	2,645	EHEA	79.16	209,400	601,400
20.20	CABLE BUS & TERMINATIONS							867,100	46,600					1,634,100	2,547,800
	15KV CABLE BUS	CABLE BUS	EST	700	FT	466		326,200	0	6.75	5,434	WIRE	98.84	537,100	863,300
	5KV CABLE BUS	CABLE BUS	EST	300	FT	567		170,100	0	9.00	3,105	WIRE	98.84	306,900	477,000
	480V CABLE BUS	CABLE BUS	EST	600	FT	618		370,800	0	10.30	7,107	WIRE	98.84	702,500	1,073,300
	CABLE BUS TERMINATION	500MCM- 15KV TERMINATIONS	EST	4	EA		1,800.00	0	7,200	33.00	152	WIRE	98.84	15,000	22,200
	CABLE BUS TERMINATION	1000MCM- 5KV TERMINATIONS	EST	4	EA		4,440.00	0	17,800	51.60	237	WIRE	98.84	23,500	41,300
	CABLE BUS TERMINATION	750MCM- 480V TERMINATIONS	EST	8	EA		2,700.00	0	21,600	54.00	497	WIRE	98.84	49,100	70,700
20.21	MCC							216,300	0					11,100	227,400
	480V MCC	PER MCC LINE UP	EST	7	EA	30900		216,300	0	16.00	112	WIRE	98.84	11,100	227,400
20.22	MIMIC PANELS		EST	2	EA	17500		35,000	0	40.00	80	WIRE	98.84	7,900	42,900
20.23	GROUNDING							16,000	0					46,100	62,100
	GROUND ROD	3/4" - 20' LONG	EST	16	EA	150		2,400	0	4.00	74	WIRE	98.84	7,300	9,700

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	500 MCM	BARE COPPER WIRE	EST	1,650	FT	7.65		12,600	0	0.12	228	WIRE	98.84	22,500	35,100
	CADWELD		EST	64	EA	15		1,000	0	2.00	147	WIRE	98.84	14,500	15,500
	GROUNDING TEST	TEST & DOCUMENTATION	EST	1	LT			0	0	16.00	18	WIRE	98.84	1,800	1,800
20.24	LIGHTING/ TRANSFORMERS & PANELS							164,500	165,000					171,300	500,800
	LIGHT FIXTURES		EST	220	EA		750	0	165,000	4.00	1,012	WIRE	98.84	100,000	265,000
	45KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	6	EA	10000		60,000	0	40.00	276	WIRE	98.84	27,300	87,300
	37.7KVA, 480V, 3 PHASE	LOW VOLTAGE XFMR	EST	6	EA	7500		45,000	0	32.00	221	WIRE	98.84	21,800	66,800
	200A, 480-277V, 3 PHASE- RECEPTACLE PANEL	INCLUDING BREAKERS	EST	7	EA	5000		35,000	0	16.00	129	WIRE	98.84	12,700	47,700
	200A, 277V-120V, 3 PHASE- LIGHTING PANELS	INCLUDING BREAKERS	EST	7	EA	3500		24,500	0	12.00	97	WIRE	98.84	9,500	34,000
20.25	EMERGENCY POWER SYSTEM							108,300	0					24,400	132,700
	DC PANEL BOADRD		EST	1	EA	15450		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	UPS PANEL BOARDS		EST	1	EA	15450		15,500	0	40.00	46	WIRE	98.84	4,500	20,000
	SATELLITE UPS		EST	1	EA	41200		41,200	0	16.00	18	WIRE	98.84	1,800	43,000
	VRLA BATTERIES		EST	1	LT	36050		36,100	0	120.00	138	WIRE	98.84	13,600	49,700
20.26	RACEWAY, CABLE TRAY, & CONDUIT							0	1,515,700					5,849,000	7,364,700
	12" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	2,450	LF		18.25	0	44,700	1.10	2,695	WIRE	98.84	266400	311,100
	18" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,650	LF		21.50	0	35,500	1.45	2,393	WIRE	98.84	236500	272,000
	24" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	2,950	LF		27.10	0	79,900	1.75	5,163	WIRE	98.84	510300	590,200
	36" X 6" AL CABLE TRAY	INCLUDING SUPPORT & FITTINGS	EST	1,650	LF		30.30	0	50,000	1.95	3,218	WIRE	98.84	318000	368,000
	5" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	4,500	LF		61.00	0	274,500	1.13	5,072	WIRE	98.84	501300	775,800
	4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	8,000	LF		31.00	0	248,000	0.81	6,456	WIRE	98.84	638100	886,100
	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	8,000	LF		21.50	0	172,000	0.65	5,160	WIRE	98.84	510000	682,000
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	13,000	LF		9.25	0	120,300	0.35	4,576	WIRE	98.84	452300	572,600
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	16,000	LF		7.15	0	114,400	0.28	4,544	WIRE	98.84	449100	563,500
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	29,000	LF		4.44	0	128,800	0.24	6,931	WIRE	98.84	685100	813,900
	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	53,000	LF		3.23	0	171,200	0.19	11,824	WIRE	98.84	1168700	1,339,900
	DUCT BANK WITH 12-5" & 6-3" CONDUITS	3.08' H X 5.2' W	EST	200	LF		381.96	0	76,400	6.48	1,490	ECND	75.97	113200	189,600
20.27	HIGH VOLTAGE POWER CABLE & TERMINATION							0	58,400					164,700	223,100
	1/C # 500KCMIL-15KV		EST	6,300	LF		9.27	0	58,400	0.23	1,666	WIRE	98.84	164700	223,100
20.28	MEDIUM VOLTAGE POWER CABLE & TERMINATION							0	114,600		0			431,700	546,300
	1/C # 500KCMIL-5KV		EST	6,000	LF		8.08	0	48,500	0.17	1,194	WIRE	98.84	118000	166,500
	1/C # 350KCMIL-5KV		EST	6,600	LF		6.13	0	40,500	0.23	1,746	WIRE	98.84	172500	213,000
	1/C # 250KCMIL-5KV		EST	5,400	LF		4.74	0	25,600	0.23	1,428	WIRE	98.84	141200	166,800
20.29	LOW VOLTAGE POWER CABLE & TERMINATION							0	795,900					1,500,700	2,296,600
	3/C # 500KCMIL- 600V		EST	11,120	LF		26.12	0	290,500	0.69	8,824	WIRE	98.84	872100	1,162,600
	#4/0 - #12 AWG-600V		EST	70,000	LF		7.22	0	505,400	0.08	6,360	WIRE	98.84	628600	1,134,000
20.30	CONTROL & INSTRUMENT CABLE							0	512,000					1,436,700	1,948,700

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	#14, #16 & PR # 20 FD & SHLD WIRE		EST	160,000	LF		3.20	0	512,000	0.08	14,536	WIRE	98.84	1436700	1,948,700
20.31	FOUNDATION FOR TRANSFORMERS							0	59,000					173,700	232,700
	FOR 21F & 21G	WITH OIL PIT	EST	178	CY		250	0	44,500	8.00	1,638	CONP	79.64	130,400	174,900
	FOR 31F, 31G, 32F, 32G, 33F & 33G		EST	63.0	CY		230	0	14,500	7.50	543	CONP	79.64	43,300	57,800
20.32	TRANSFORMER FIRE WALLS							0	3,500					9,600	13,100
	FOR 21F & 21G		EST	15	CY		230	0	3,500	7.00	121	CONP	79.64	9,600	13,100
20.33	COMMUNICATIONS		EST	1	LT		34,000.00	0	34,000	229.00	263	WIRE	98.84	26,000	60,000
20.34	LIGHTNING PROTECTION		EST	1	LT		19,500.00	0	19,500	128.00	147	WIRE	98.84	14,500	34,000
20.35	SECURITY SYSTEM		EST	1	LT		8,000.00	0	8,000	62.00	71	WIRE	98.84	7,000	15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							45,607,300	23,326,900		654,355			59,169,100	128,103,300
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE			9	MN	75000		675,000		720.00	7,452	MECH	88.89	662400	1,337,400
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										10,670,107
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						57,548		90.42	5,204,000	5,204,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						71,936			5,466,107	5,466,107
	PER DIEM	NONE		0.00	HR						791,291			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				116,635					295,846	412,480
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				1,166,345						1,166,345
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			2,280,365							2,280,365
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				1,166,345					2,958,455	4,124,800
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				3,499,035					8,875,365	12,374,400
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							2,955,400	5,948,400					23,462,200	32,365,900
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	WET FGD ABSORBER ISLAND						48,562,700	29,275,300					82,631,300	160,469,200
21.0	COMPRESSED AIR SYSTEM (BYPRODUCT DEWATERING AREA)														0
22.0	POTABLE WATER SYSTEM	INCLUDED WITH ACCOUNT 11.0													
23.0	SCR SUBSTATION UPGRADE														
24.0	FGD DCS SYSTEM	INCLUDED WITH ACCOUNT 13.0													0
25.0	SITE IMPROVEMENTS - CIVIL WORK	INCLUDED WITH ACCOUNT 16.0													
26.0	BOP ITEMS														
27.0	CAPITAL REPLACEMENTS - REMOVAL AND RELOCATION OF EXISTING EQUIPMENT AND INFRASTRUCTURE														0
28.0	ARSENIC, ASBESTOS , LEAD ABATEMENT														0

AEP
BIG SANDY UNIT 2
FGD PROJECT - IAQCS (N/ESP)-4B - 7.5 LB/MM BTU - NON PHASED
ORDER OF MAGNITUDE COST ESTIMATE

Estimate No.: 30721C
Project No.: 12721-000
Date: 9/29/2010
Preparer: MNO
Reviewer: JMK
Approver: PEF

Cost Type:
Est=Estimated
Allow.=Allowance
Q=Vendor Quote

Wage Rates Based on: BIG SANDY
Labor Productivity = 1.15

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
99.00	OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS							190,828,900	102,573,900		2,919,039			267,047,600	592,575,400
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE							1,485,000	0	2,160	22,356	MECH	88.89	2,185,920	3,670,920
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0
	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS										45,347,766
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						254,477		91.48	22,066,000	22,066,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						319,587			23,281,766	23,281,766
	PER DIEM	NONE		0.00	HR									0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				510,170					1,333,688	1,843,858
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				5,101,695						5,101,695
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			9,478,445							9,478,445
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				5,101,695					13,336,880	18,438,575
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				15,386,085					40,010,640	60,466,725
	OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							10,963,400	26,099,600					102,214,900	144,348,000
	OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST							201,792,300	128,673,500					369,262,500	736,923,400
	TOTAL DIRECT AND CONSTRUCTION INDIRECT COSTS							201,792,300	128,673,500					369,262,500	736,923,400
								0	0					0	0
	INDIRECT COSTS														
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES			1.0	LT										45,000,000
	CONSTRUCTION MANAGEMENT			3.0	%										22,107,700
	S-U / COMMISSIONING			1.0											7,369,200
	CRAFT START-UP SUPPORT	1% OF TOTAL LABOR MANHOURS (INCLUDES OVERTIME INEFFICIENCY & COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - BASED ON ASSUMED 5X10 WORKWEEK)		1.0	%						31,735		91.48	3,147,300	3,147,300
	INITIAL FILLS			0.3	%										2,210,800
	OPERATOR & TRAINING MANUALS			1.0	LT										600,000
	SUBCONTRACTORS (NOISE & DUCTWORK CONSULTANT, GEOTECHNICAL INVESTIGATION)			1.0	LT										750,000
	NOISE ABATEMENT FOR 85 DBA REQUIREMENT	FOR ID FAN, SDA ENCLOSURE, TRANSFORMERS, BOP, DUCTWORK, ACOUSTIC BARRIERS FOR BOUNDARY LIMITS		1.0	LT										4,500,000
	SUBTOTAL - INDIRECT COSTS														85,685,000
	TOTAL DIRECT AND INDIRECT COSTS														822,608,400
	SPARE PARTS			1.5	%			3,026,900							3,026,900
	SPARE PARTS - CAPITALIZED			0.90	%			1,816,140							1,816,140
	SPARE PARTS - FIRST YEAR OF OPERATION			0.60	%			1,210,760							1,210,760
	CONTINGENCY			14.0	%										115,259,100
	ESCALATION														102,512,500
	EQUIPMENT	4.0%/yr		4.0	%			30,066,600							30,066,600
	MATERIAL	2.0%/yr		2.0	%				13,651,900						13,651,900
	LABOR	2.5%/yr		2.5	%									48,890,400	48,890,400
	INDIRECTS	2.5%/yr		2.5	%									9,903,600	9,903,600

				AEP											Estimate No.:	30721C
				BIG SANDY UNIT 2											Project No.:	12721-000
				FGD PROJECT - IAQCS (N/ESP)-4B - 7.5 LB/MM BTU - NON PHASED											Date:	9/29/2010
				ORDER OF MAGNITUDE COST ESTIMATE											Preparer:	MNO
		Cost Type:													Reviewer:	JMK
		Est=Estimated													Approver:	PEF
		Allow.=Allowance								Wage Rates Based on:		BIG SANDY				
		Q=Vendor Quote								Labor Productivity =		1.15				

Account No.	Item Description	Scope Definition	Cost Type	Quantity	Unit of Measure	Unit Equip.Cost	Unit Material Cost	Total Equipment Cost	Total Material Cost	Unit Man-hours (Base)	Total Man-hours (w/ productivity)	Crew Code	Crew Wage Rate	Total Construction & Erection Cost	Total Projected Cost
	TOTAL PROJECT COST														1,043,406,900
	REFERENCE COSTS:														
A	ESP DEMOLITION	ALLOWANCE FOR 1000T STRUCTURE	ALLOW	1,000	TN			0	0	6.00	6,900	WRKG	120.63	832,300	832,300
B	REMOVE BOOSTER AIR FANS		ALLOW	2	EA			0	0	400.00	920	WRKG	120.63	111,000	111,000
C	REMOVAL OF FUEL OIL TANK							1,200,000	80,000					469,400	1,749,400
	REMOVE FUEL OIL TANK & SOIL REMEDIATION	LABOR COST IS FOR REMOVAL OF TANK ONLY. ALLOWANCE FOR SOIL REMEDIATION AND DISPOSAL IN AN EPA APPROVED LANDFILL. SUBCONTRACT COST INCLUDES LABOR. USED LOWER END OF THE RANGE $118-355/CY. COST COULD BE LOWER ($59-118/CY) IF SOLD TO A BITUMINOUS CONCRETE BATCH PLANT	EST	8,000	CY	150		1,200,000	0		0	MECH	88.89	0	1,200,000
	REMOVE DIKE & RECOMPACT FILL IN TANK AREA		EST	3,500	CY			0	0	0.60	2,415	ETWK	177.49	428,600	428,600
	FILL FROM OFF SITE COURSE		EST	5,000	CY		16	0	80,000	0.04	230	ETWK	177.49	40,800	120,800

ATTACHMENT 4-14
IAQCS Summary Capital Cost Estimate No. 30716 Base Est-1A ESP in Service (4.5 lb SO_2/MMbtu)

* - Due to the significant differences in layout between the phased and non-phased cost estimates the "bases" for comparison purposes were 1B for the non-phased cost estimates and 3B for the phased cost estimates. Therefore cost estimates 2A, 2B, 3A (Phased) and 1A, 4A and 4B (Non-Phased) contain only accounts whose costs are different from the corresponding base estimates 3B and 1B respectively.

Sargent & Lundy, LLC	AEP	Estimate No.:	30716C
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS BASE (ESP)-1A - 4.5 LB/MM BTU - NON PHASED	Date:	9/29/2010
	COST ESTIMATE SUMMARY	Preparer:	MNO
		Reviewer:	JMK
		Approver:	PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
1.0	ID FANS					
1.1	ID FANS - OEM EQUIPMENT	1,800,000 ACFM WITH 19,700 HP MOTORS ($750,000 EACH). INCLUDES HYDRAULIC OIL UNITS, SEAL AIR FAN SKIDS, VIBRATION MONITORING EQUIPMENT, FAN STALL EQUIPMENT, FIELD SERVICE REP FOR 140 DAYS	$ 6,920,000	$ -	$ 1,674,400	$ 8,594,400
1.2	PIPING & SUPPORTS - MECHANICAL		$ 21,800	$ 28,700	$ 120,500	$ 171,000
1.3	DAMPERS		$ 781,000	$ -	$ 352,600	$ 1,133,600
1.4	EXPANSION JOINTS		$ -	$ 131,100	$ 116,500	$ 247,600
1.5	DUCTWORK	FABRIC FILTER OUTLET TO ID FANS AND FROM ID FANS TO STACK - INCLUDES INTERNAL BRACING AND TURNING VANES	$ -	$ 2,860,000	$ 5,462,800	$ 8,322,800
1.6	DUCT SUPPORT STEEL	THREE COAT SHOP PAINT	$ -	$ 1,276,000	$ 1,283,700	$ 2,559,700
1.7	ID FAN INSULATION & LAGGING	TOTAL FOR TWO FANS. PRICING REFLECTS STANDARD ACOUSTICAL INSULATION	$ -	$ 168,000	$ 217,200	$ 385,200
1.8	DUCTWORK INSULATION & LAGGING	INCLUDES INSULATION FOR SPRAY DRYER OUTLET DUCT TO FABRIC FILTERS SUPPLIED WITH THE OEM EQUIPMENT	$ -	$ 1,090,800	$ 2,136,300	$ 3,227,100
1.9	DUCT SUPPORT STEEL - FOUNDATIONS		$ -	$ 352,200	$ 684,000	$ 1,036,200
1.10	ID FAN FOUNDATIONS INCLUDING ID FAN AUX EQUIPMENT		$ -	$ 106,000	$ 198,700	$ 304,700
1.11	ID FAN IAQCS CONTROL ROOM - FOUNDATIONS		$ -	$ 270,100	$ 508,600	$ 778,700
1.12	ID FAN IAQCS CONTROL ROOM	SUBCONTRACT PRICE INCLUDES LABOR. COMPLETE WITH HVAC, FINISHES AND SANITARY FACILITIES	$ -	$ 3,937,500	$ -	$ 3,937,500

Sargent & Lundy, LLC	AEP	Estimate No.:	30716C
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS BASE (ESP)-1A - 4.5 LB/MM BTU - NON PHASED	Date:	9/29/2010
	COST ESTIMATE SUMMARY	Preparer:	MNO
		Reviewer:	JMK
		Approver:	PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
1.13	TRANSFORMERS		$ 770,000	$ -	$ 145,600	$ 915,600
1.14	SWITCHGEAR		$ 1,132,000	$ -	$ 589,900	$ 1,721,900
1.15	CABLE BUS & TERMINATIONS		$ 1,129,100	$ 35,800	$ 1,930,000	$ 3,094,900
1.16	MCC		$ 180,000	$ -	$ 10,900	$ 190,900
1.17	MIMIC PANELS		$ 17,500	$ -	$ 4,500	$ 22,000
1.18	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 1,664,200	$ 8,196,600	$ 9,860,800
1.19	HIGH VOLTAGE POWER CABLE & TERMINATION		$ -	$ 288,500	$ 666,700	$ 955,200
1.20	MEDIUM VOLTAGE POWER CABLE & TERMINATION		$ -	$ 100,200	$ 427,400	$ 527,600
1.21	LOW VOLTAGE POWER CABLE & TERMINATIONS		$ -	$ 229,800	$ 732,100	$ 961,900
1.22	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	$ -	$ 361,000	$ 1,012,900	$ 1,373,900
1.23	EMERGENCY POWER SYSTEM		$ 285,500	$ -	$ 38,900	$ 324,400
1.24	GROUNDING		$ 14,100	$ -	$ 42,700	$ 56,800
1.25	LIGHTING/ TRANSFORMERS & PANELS		$ 26,000	$ 30,000	$ 29,500	$ 85,500
1.26	DUCT BANK		$ -	$ 136,000	$ 192,700	$ 328,700
1.27	FOUNDATION FOR TRANSFORMERS		$ -	$ 61,900	$ 162,600	$ 224,500
1.28	FIREWALL FOR TRANSFORMERS		$ -	$ 3,200	$ 8,300	$ 11,500
1.29	EARLY COMMISSIONING COSTS TEMPORARY HIGH VOLTAGE POWER CABLE & TERMINATION FROM EAST SIDE OF SCR BUILDING TO TRANSFORMER PDC		$ -	$ 139,800	$ 230,200	$ 370,000
1.30	COMMUNICATIONS		$ -	$ 17,000	$ 13,000	$ 30,000
1.31	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 11,277,000	$ 13,295,800	$ 27,196,800	$ 51,769,600
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 563,900	$ 3,390,400	$ 9,803,100	$ 13,757,400
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	ID FANS	$ 11,840,900	$ 16,686,200	$ 36,999,900	$ 65,527,000

Sargent & Lundy, LLC	AEP	Estimate No.:	30716C
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS BASE (ESP)-1A - 4.5 LB/MM BTU - NON PHASED	Date:	9/29/2010
	COST ESTIMATE SUMMARY	Preparer:	MNO
		Reviewer:	JMK
		Approver:	PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
2.0	FABRIC FILTERS					
2.1	MECHANICAL EQUIPMENT	A SINGLE FABRIC FILTER (225' X 130') UNIT INCLUDING ALL INTERNAL FABRIC FILTER ELEMENTS SUCH AS BAGS, CAGES, ASH HOPPERS, 2 BROKEN BAG DETECTORS PER COMPARTMENT	$ 19,232,000	$ -	$ 12,420,200	$ 31,652,200
2.2	INSULATION FOR FABRIC FILTER	SUBCONTRACT COST INCLUDES LABOR	$ 2,430,000	$ -	$ -	$ 2,430,000
2.3	PENTHOUSE FOR FABRIC FILTER	SUPPORT STEEL AND PRLINS INCLUDED WITH OEM EQUIPMENT	$ 70,200	$ 787,000	$ 1,007,600	$ 1,864,800
2.4	BOTTOM ENCLOSURE FOR BAGHOUSE		$ 60,000	$ 1,204,000	$ 1,359,800	$ 2,623,800
2.5	PIPING & SUPPORTS - MECHANICAL		$ 30,900	$ 101,400	$ 209,500	$ 341,800
2.6	FABRIC FILTER - FOUNDATIONS		$ -	$ 550,700	$ 1,081,100	$ 1,631,800
2.7	FABRIC FILTER - SUPPORT STEEL AND ACCESS GALLERY		$ -	$ 360,000	$ 1,186,700	$ 1,546,700
2.8	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE INCLUDED IN SECTION 1.0 - ID FANS	$ -	$ -	$ -	$ -
2.9	LIGHTING/ TRANSFORMERS & PANELS		$ 30,000	$ 75,000	$ 58,200	$ 163,200
2.10	GROUNDING		$ 7,300	$ -	$ 17,500	$ 24,800
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 21,890,400	$ 3,153,100	$ 17,340,600	$ 42,279,100
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 1,094,500	$ 804,000	$ 6,441,500	$ 8,340,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FABRIC FILTERS	$ 22,984,900	$ 3,957,100	$ 23,782,100	$ 50,619,200
3.0	NEW STACK					

Sargent & Lundy, LLC	AEP	Estimate No.:	30716C
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS BASE (ESP)-1A - 4.5 LB/MM BTU - NON PHASED	Date:	9/29/2010
	COST ESTIMATE SUMMARY	Preparer:	MNO
		Reviewer:	JMK
		Approver:	PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
4.0	LIME HANDLING SYSTEM					
4.1	LIME STORAGE SILO		$ 1,020,000	$ -	$ -	$ 1,020,000
4.2	LIME UNLOADING SYSTEM	INCLUDES PNEUMATIC HANDLING SYSTEM, THREE VACUUM EXHAUSTER, TWO FILTER SEPARATORS	$ 350,000	$ -	$ 281,100	$ 631,100
4.3	PIPING - MECHANICAL		$ 29,000	$ 15,600	$ 77,900	$ 122,500
4.4	LIME STORAGE SILO ACCESS STAIR TOWER	THREE COAT SHOP PAINT	$ -	$ 87,000	$ 87,500	$ 174,500
4.5	PIPE RACK FOR LIME HANDLING, WASTE HANDLING AND MISC MECHANICAL PIPING	THREE COAT SHOP PAINT	$ -	$ 783,000	$ 787,800	$ 1,570,800
4.6	RAIL CAR UNLOADING AREA - FOUNDATIONS	20 X 60 - NO SIDING	$ -	$ 22,600	$ 49,100	$ 71,700
4.7	LIME UNLOADING BLOWER / ELECTRICAL BUILDING - FOUNDATIONS		$ -	$ 80,600	$ 139,600	$ 220,200
4.8	LIME UNLOADING BLOWER / ELECTRICAL BUILDING	100' L X 30' W X 30' H	$ 75,000	$ 335,000	$ 24,400	$ 434,400
4.9	CONCRETE PIT FOR THE ELEVATOR		$ -	$ 2,300	$ 6,900	$ 9,200
4.10	LIME STORAGE SILO - FOUNDATIONS		$ -	$ 75,100	$ 150,000	$ 225,100
4.11	LIME STORAGE SILO ACCESS STAIR TOWER - FOUNDATIONS		$ -	$ 10,700	$ 22,300	$ 33,000
4.12	PIPE RACK - FOUNDATIONS		$ -	$ 94,200	$ 237,800	$ 332,000
4.13	TRANSFORMERS: 33F, 33G,	13.8KV-480V,3PHASE, CAST COIL	$ 170,000	$ -	$ 54,600	$ 224,600
4.14	480V LOW VOLTAGE (33F/G) SWITCHGEAR	PER LINE UP	$ 196,000	$ -	$ 104,700	$ 300,700
4.15	CABLE BUS DUCT		$ 134,700	$ 10,800	$ 200,200	$ 345,700
4.16	MCC		$ 61,800	$ -	$ 3,600	$ 65,400
4.17	MIMIC PANELS		$ 17,500	$ -	$ 1,400	$ 18,900
4.18	EMERGENCY POWER SYSTEM		$ 108,300	$ -	$ 24,400	$ 132,700
4.19	GROUNDING		$ 13,300	$ -	$ 41,300	$ 54,600
4.20	LIGHTING/ TRANSFORMERS & PANELS		$ 52,000	$ 135,000	$ 104,500	$ 291,500
4.21	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 310,900	$ 1,537,100	$ 1,848,000
4.22	HIGH VOLTAGE POWER CABLE & TERMINATION	1/C # 500KCMIL-15KV	$ -	$ 50,100	$ 141,200	$ 191,300
4.23	MEDIUM VOLTAGE POWER CABLE & TERMINATION	1/C # 350KCMIL-5KV	$ -	$ 66,200	$ 282,300	$ 348,500
4.24	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 93,000	$ 143,200	$ 236,200
4.25	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	$ -	$ 26,200	$ 73,600	$ 99,800
4.26	DUCT BANK	6-5" & 6-3" CONDUITS	$ -	$ 26,600	$ 52,500	$ 79,100

Sargent & Lundy, LLC	AEP	Estimate No.:	30716C
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS BASE (ESP)-1A - 4.5 LB/MM BTU - NON PHASED	Date:	9/29/2010
	COST ESTIMATE SUMMARY	Preparer:	MNO
		Reviewer:	JMK
		Approver:	PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
4.27	FOUNDATIONS FOR TRANSFORMERS		$ -	$ 5,300	$ 11,900	$ 17,200
4.28	COMMUNICATIONS		$ -	$ 17,000	$ 13,000	$ 30,000
4.29	LIGHTNING PROTECTION		$ -	$ 14,000	$ 9,000	$ 23,000
4.30	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 2,227,600	$ 2,269,200	$ 4,669,900	$ 9,166,700
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 111,400	$ 578,600	$ 1,683,700	$ 2,373,700
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME HANDLING SYSTEM	$ 2,339,000	$ 2,847,800	$ 6,353,600	$ 11,540,400
5.0	LIME SLAKER BUILDING					
5.1	MECHANICAL EQUIPMENT	INCLUDES:CHAIN CONVEYOR, SLAKERS THROUGH THE LIME SLURRY PUMPS, PIPING, AND LIME SLURRY STORAGE TANKS.	$ 2,663,000	$ -	$ 2,811,100	$ 5,474,100
5.2	REAGENT AREA SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES	$ 28,000	$ -	$ 12,300	$ 40,300
5.3	AGITATOR FOR SUMP PUMPS	5 HP	$ 12,000	$ -	$ 4,600	$ 16,600
5.4	PIPING - MECHANICAL		$ 117,800	$ 111,400	$ 381,100	$ 610,300
5.5	LIME SLURRY TANKS - FOUNDATIONS		$ -	$ 166,400	$ 299,400	$ 465,800
5.6	LIME SLAKER BUILDING - FOUNDATIONS		$ -	$ 119,200	$ 204,000	$ 323,200
5.7	LIME SLAKER BUILDING	135' L X 30' W X 50' H	$ 40,500	$ 803,300	$ 740,500	$ 1,584,300
5.8	ELECTRICAL	INCLUDED WITH LIME HANDLING SYSTEM, ACCOUNT 4.0	$ -	$ -	$ -	$ -
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 2,861,300	$ 1,200,300	$ 4,453,000	$ 8,514,600
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 143,100	$ 306,100	$ 1,663,000	$ 2,112,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME SLAKER BUILDING	$ 3,004,400	$ 1,506,400	$ 6,116,000	$ 10,626,700

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6.0	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS					
6.1	BYPRODUCT WASTE HANDLING - MECHANICAL EQUIPMENT		$ 1,637,600	$ -	$ 1,104,000	$ 2,741,600
6.2	FLY ASH HANDLING - MECHANICAL EQUIPMENT	INCLUDES PNEUMATIC HANDLING SYSTEM, TWO PRESSURE EXHAUSTERS, TRANSFER STATION, ONE BIN VENT FILTER, ASH UNLOADING SYSTEM	$ 2,285,000	$ -	$ 1,431,100	$ 3,716,100
6.3	BYPRODUCT WASTE SILO AREA SUMP PUMPS	FOR BUILDINGS - DUPLEX. INCLUDES CHECK & ISOLATION VALVES.	$ 28,000	$ -	$ 12,300	$ 40,300
6.4	AGITATOR FOR SUMP PUMPS	5 HP	$ 12,000	$ -	$ 4,600	$ 16,600
6.5	PIPING - MECHANICAL		$ 142,800	$ 240,900	$ 759,100	$ 1,142,800
6.6	BYPRODUCT WASTE SILO		$ 87,500	$ 40,600	$ 117,700	$ 245,800
6.7	SDA RECYCLE SILO	INCLUDED WITH OEM EQUIPMENT	$ -	$ -	$ -	$ -
6.8	FLY ASH SILO	46T STEEL -STORAGE SILO, 15' DIA X 19' H	$ 45,000	$ 23,200	$ 64,300	$ 132,500
6.9	BYPRODUCT WASTE SILO - FOUNDATIONS		$ -	$ 23,200	$ 54,100	$ 77,300
6.10	FLY ASH SILO - FOUNDATIONS		$ -	$ 10,800	$ 24,500	$ 35,300
6.11	FLY ASH BLOWER AND ELECTRICAL BUILDING - FOUNDATIONS		$ -	$ 49,600	$ 105,700	$ 155,300
6.12	FLY ASH BLOWER AND ELECTRICAL BUILDING	90' L X 30' W X 25' H	$ 28,000	$ 244,500	$ 24,400	$ 296,900
6.13	RECYCLE ASH BUILDING - FOUNDATIONS		$ -	$ 234,300	$ 393,800	$ 628,100
6.14	RECYCLE ASH BUILDING	100' L X 65' W X 50' H	$ 58,500	$ 1,306,700	$ 1,194,500	$ 2,559,700
6.15	MCC	480V MCC PER LINE UP	$ 120,000	$ -	$ 7,300	$ 127,300
6.16	EMERGENCY POWER SYSTEM		$ 185,500	$ -	$ 40,000	$ 225,500
6.17	LIGHTING/ TRANSFORMERS & PANELS		$ 18,500	$ 75,000	$ 53,200	$ 146,700
6.18	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 40,700	$ 236,200	$ 276,900
6.19	GROUNDING		$ -	$ 4,500	$ 10,900	$ 15,400
6.20	LOW VOLTAGE POWER CABLE & TERMINATION	#4/0 - #12 AWG-600V	$ -	$ 73,600	$ 91,600	$ 165,200

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6.21	CONTROL & INSTRUMENT CABLE		$ -	$ 38,400	$ 107,800	$ 146,200
6.22	DUCT BANK		$ -	$ 109,700	$ 205,400	$ 315,100
6.23	COMMUNICATIONS		$ -	$ 70,000	$ 50,000	$ 120,000
6.24	LIGHTNING PROTECTION		$ -	$ 19,000	$ 14,000	$ 33,000
6.25	SECURITY SYSTEM		$ -	$ 16,000	$ 14,000	$ 30,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 4,648,400	$ 2,620,700	$ 6,120,500	$ 13,389,600
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 232,400	$ 668,300	$ 2,275,700	$ 3,176,400
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS	$ 4,880,800	$ 3,289,000	$ 8,396,200	$ 16,566,000
7.0	SPRAY DRYER ABSORBER ISLAND					
7.1	MECHANICAL EQUIPMENT	INCLUDES: ABSORBER MODULES AND ATOMIZERS WITH LUBE OIL, DUCT WORK FROM THE ABSORBERS TO THE FABRIC FILTER, AND COMPLETE RECYCLE SYSTEM WITH PIPING INSIDE FGD BUILDINGS.	$ 39,438,000	$ -	$ 24,186,100	$ 63,624,100
7.2	ELEVATOR	MAINTENANCE ELEVATOR - SUBCONTRACT COST INCLUDES LABOR	$ 325,000	$ -	$ -	$ 325,000
7.3	ABSORBER AREA SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES.	$ 28,000	$ -	$ 12,300	$ 40,300
7.4	AGITATOR FOR SUMP PUMPS	5 HP	$ 12,000	$ -	$ 4,600	$ 16,600
7.5	PIPING - MECHANICAL		$ 142,800	$ 36,900	$ 227,900	$ 407,600
7.6	SDA SUPERSTRUCTURE		$ 75,000	$ 764,900	$ 1,227,300	$ 2,067,200
7.7	SDA BOTTOM ENCLOSURE - SUPPORT STEEL, GIRTS AND SIDING	TOTAL FOR THREE ABSORBERS	$ -	$ 362,100	$ 385,200	$ 747,300
7.8	SDA SHELL / ROOF INSULATION	61,000 SF. SUBCONTRACT COST INCLUDES LABOR	$ 1,830,000	$ -	$ -	$ 1,830,000

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7.9	SDA - SUPPORT STEEL & ACCESS GALLERY		$ -	$ 711,000	$ 1,884,100	$ 2,595,100
7.10	EXPANSION JOINTS		$ -	$ 195,500	$ 173,800	$ 369,300
7.11	DUCTWORK		$ -	$ 6,175,000	$ 13,113,700	$ 19,288,700
7.12	DUCT SUPPORT STEEL	THREE COAT SHOP PAINT	$ -	$ 2,755,000	$ 2,771,700	$ 5,526,700
7.13	DUCTWORK INSULATION & LAGGING		$ -	$ 2,040,000	$ 3,995,500	$ 6,035,500
7.14	CONCRETE PIT FOR ELEVATOR		$ -	$ 2,800	$ 8,200	$ 11,000
7.15	SPRAY DRYER ABSORBER - FOUNDATIONS	TOTAL FOR THREE TOWERS	$ -	$ 1,678,600	$ 3,323,400	$ 5,002,000
7.16	FOUNDATIONS FOR SUPPORT STEEL		$ -	$ 69,000	$ 143,000	$ 212,000
7.17	GROUNDING		$ -	$ 16,000	$ 46,100	$ 62,100
7.18	LIGHTING/ TRANSFORMERS & PANELS		$ 156,000	$ 150,000	$ 159,100	$ 465,100
7.19	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE INCLUDED IN SECTION 1.0 - ID FANS	$ -	$ -	$ -	$ -
7.20	COMMUNICATIONS		$ -	$ 17,000	$ 13,000	$ 30,000
7.21	LIGHTNING PROTECTION		$ -	$ 25,500	$ 18,500	$ 44,000
7.22	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 42,006,800	$ 15,007,300	$ 51,700,500	$ 108,714,600
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 2,910,300	$ 3,826,900	$ 20,483,400	$ 27,220,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SPRAY DRYER ABSORBER ISLAND	$ 44,917,100	$ 18,834,200	$ 72,183,900	$ 135,935,200
8.0	ACTIVATED CARBON INJECTION SYSTEM	NOT REQUIRED WITH NON-PHASED CONSTRUCTION				
9.0	COMPRESSED AIR SYSTEM					
10.0	SERVICE WATER SYSTEM					
11.0	POTABLE WATER SYSTEM					

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12.0	FGD SUBSTATION					
12.1	TRANSFORMERS		$ 1,560,000	$ -	$ 273,100	$ 1,833,100
12.2	TRANSFORMER PDC	15W X 45' X 10'H. SUBCONTRACT PRICE INCLUDES LABOR	$ 202,500	$ -	$ -	$ 202,500
12.3	TRANSFORMER PDC - FOUNDATION		$ -	$ 73,200	$ 146,900	$ 220,100
12.4	138KV MAIN FEEDER & TERMINATIONS		$ 264,000	$ -	$ 254,000	$ 518,000
12.5	SWITCHGEAR		$ 690,000	$ -	$ 43,700	$ 733,700
12.6	MCC	480V MCC, PER LINE UP	$ 60,000	$ -	$ 3,600	$ 63,600
12.7	CABLE BUS		$ 181,100	$ 18,000	$ 290,200	$ 489,300
12.8	PANELS - RELAY		$ 100,000	$ -	$ 9,100	$ 109,100
12.9	MIMIC PANELS		$ 17,500	$ -	$ 4,500	$ 22,000
12.10	EMERGENCY POWER SYSTEM		$ 108,300	$ -	$ 24,400	$ 132,700
12.11	GROUNDING		$ 23,300	$ -	$ 59,100	$ 82,400
12.12	LIGHTING/ TRANSFORMERS & PANELS		$ 26,000	$ 30,000	$ 29,500	$ 85,500
12.13	OUTDOOR LIGHTING	NEW AUX YARD LIGHTING - ALLOWANCE	$ 25,000	$ -	$ 56,800	$ 81,800
12.14	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 390,600	$ 1,918,600	$ 2,309,200
12.15	DUCT BANK		$ -	$ 26,200	$ 54,300	$ 80,500
12.16	HIGH VOLTAGE POWER CABLE & TERMINATION	1/C # 500KCMIL-15KV	$ -	$ 27,800	$ 78,400	$ 106,200
12.17	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 263,700	$ 649,600	$ 913,300
12.18	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	$ -	$ 21,800	$ 61,100	$ 82,900
12.19	FOUNDATION FOR AUX TRANSFORMER		$ -	$ 70,200	$ 205,400	$ 275,600
12.20	FIREWALL FOR TRANSFORMERS		$ -	$ 3,000	$ 5,200	$ 8,200
12.21	COMMUNICATIONS		$ -	$ 17,000	$ 13,000	$ 30,000
12.22	LIGHTNING PROTECTION		$ -	$ 4,000	$ 2,000	$ 6,000
12.23	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 3,257,700	$ 953,500	$ 4,189,500	$ 8,400,700
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 162,900	$ 243,100	$ 1,512,667	$ 1,918,700
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FGD SUBSTATION	$ 3,420,600	$ 1,196,600	$ 5,702,200	$ 10,319,400

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13.0	FGD DCS SYSTEM	DRY AND WET FGD COMBINED				
14.0	CEM SYSTEM					
15.0	TRUCK & RAIL INFRASTRUCTURE					
16.0	SITE IMPROVEMENTS - CIVIL WORK (DFGD + WFGD AREAS)					
17.0	LIMESTONE HANDLING SYSTEM					
18.0	REAGENT (LIMESTONE) PREPARATION ISLAND					
18.1	MECHANICAL EQUIPMENT	INCLUDES LIMESTONE FEEDERS, FROM THE DAY SILOS THROUGH THE SLURRY STORAGE TANKS AND TRANSFER PUMPS WITH INTEGRAL PIPING	$ 15,167,000	$ -	$ 12,266,800	$ 27,433,800
18.2	SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES	$ 28,000	$ -	$ 12,300	$ 40,300
18.3	AGITATOR FOR SUMP PUMPS	5 HP	$ 12,000	$ -	$ 4,600	$ 16,600
18.4	PIPING - MECHANICAL		$ 278,900	$ 205,000	$ 587,300	$ 1,071,200
18.5	LIMESTONE SLURRY TANKS - FOUNDATIONS		$ -	$ 166,400	$ 299,400	$ 465,800
18.6	REAGENT PREPARATION BUILDING - FOUNDATIONS		$ -	$ 682,000	$ 1,132,200	$ 1,814,200
18.7	REAGENT PREPARATION BUILDING	120' L X 130' W X 130' H	$ 269,400	$ 4,865,000	$ 4,251,600	$ 9,386,000
18.8	PIPE SUPPORT PAD - REAGENT PREP BUILDING		$ -	$ 13,800	$ 27,500	$ 41,300
18.9	LIGHTING/ TRANSFORMERS & PANELS		$ 52,000	$ 135,000	$ 104,500	$ 291,500
18.1	GROUNDING		$ 5,100	$ -	$ 13,400	$ 18,500
18.1	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE ARE INCLUDED IN SECTION 20.0 - ABSORBER ISLAND	$ -	$ -	$ -	$ -
18.12	COMMUNICATIONS		$ -	$ 34,000	$ 26,000	$ 60,000

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18.13	LIGHTNING PROTECTION		$ -	$ 23,000	$ 16,000	$ 39,000
18.14	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 15,812,400	$ 6,132,200	$ 18,748,600	$ 40,693,200
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 790,600	$ 1,563,700	$ 7,186,000	$ 9,540,300
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	REAGENT (LIMESTONE) PREPARATION ISLAND	$ 16,603,000	$ 7,695,900	$ 25,934,600	$ 50,233,500
19.0	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)					
19.1	MECHANICAL EQUIPMENT	PRIMARY & SECONDARY DEWATERING INCLUDING HYDROCLONE FEED TANKS, HYDROCLONES, PUMPS, INTEGRAL PIPING AND BELT VACUUM FILTERS	$ 8,701,000	$ -	$ 6,644,500	$ 15,345,500
19.2	PUMPS & AGITATORS		$ 250,000	$ -	$ 137,000	$ 387,000
19.3	PIPING - MECHANICAL		$ 282,700	$ 3,555,700	$ 7,786,000	$ 11,624,400
19.4	MATERIAL HANDLING EQUIPMENT		$ 724,000	$ 7,500	$ 614,100	$ 1,345,600
19.5	FIRE PROTECTION SYSTEM FOR BELT CONVEYORS	DELUGE SYSTEM, DRY PIPE, SENSORS, ACTIVATION VALVE AND FM APPROVED PANEL - SUBCONTRACT PRICE FOR ALL CONVEYORS INCLUDES LABOR	$ 170,000	$ -	$ -	$ 170,000
19.6	CONVEYOR STRUCTURE SUPPORT STEEL	THREE-COAT SHOP PAINT	$ -	$ 99,000	$ 99,600	$ 198,600
19.7	PIPE RACK SUPPORT STEEL	THREE-COAT SHOP PAINT	$ -	$ 197,200	$ 198,400	$ 395,600
19.8	TANKS		$ -	$ 3,825,300	$ 846,700	$ 4,672,000
19.9	RECLAIM WATER TANKS & PUMPS - FOUNDATIONS		$ -	$ 26,000	$ 54,000	$ 80,000
19.10	MAINTENANCE STORAGE TANK & PUMPS - FOUNDATIONS		$ -	$ 100,000	$ 177,300	$ 277,300

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19.11	LANDFILL SERVICE WATER TANKS & PUMP - FOUNDATIONS		$ -	$ 80,900	$ 155,100	$ 236,000
19.12	LANDFILL RECLAIM WATER TANKS & PUMPS - FOUNDATIONS		$ -	$ 26,000	$ 54,000	$ 80,000
19.13	HYDROCLONE FEED TANKS & BLEED TANKS - FOUNDATIONS	TOTAL FOR HYDROCLONE AND BLEED TANKS	$ -	$ 340,200	$ 618,900	$ 959,100
19.14	BYPRODUCT STACKOUT CONVEYOR & TRANSFER TOWER - FOUNDATIONS		$ -	$ 16,100	$ 34,700	$ 50,800
19.15	BYPRODUCT STACKOUT PILE - FOUNDATIONS	INCLUDES CONTAINMENT AREA SLAB	$ -	$ 891,700	$ 1,427,400	$ 2,319,100
19.16	PIPE RACK	SUPPORTS AT 15' C/C	$ -	$ 60,800	$ 149,400	$ 210,200
19.17	BYPRODUCT CONTAINMENT WALLS		$ -	$ 137,300	$ 235,000	$ 372,300
19.18	INSTALL WIND SCREEN		$ -	$ 525,000	$ 192,300	$ 717,300
19.19	BYPRODUCT DEWATERING BUILDING - FOUNDATIONS		$ -	$ 291,400	$ 482,800	$ 774,200
19.20	BYPRODUCT DEWATERING BUILDING	120' L X 75' W X 65' H	$ 145,200	$ 1,595,300	$ 1,495,900	$ 3,236,400
19.21	PIPE SUPPORT PAD		$ -	$ 18,300	$ 36,000	$ 54,300
19.22	AUXILIARY PUMPHOUSE BUILDING WITH ELECTRICAL ROOM - FOUNDATIONS		$ -	$ 32,300	$ 60,800	$ 93,100
19.23	AUXILIARY PUMPHOUSE BUILDING	50'L X 35' W X 20'H	$ 101,300	$ 252,500	$ 269,800	$ 623,600
19.24	SITE GRADING - GYPSUM HANDLING AREA		$ -	$ -	$ 587,800	$ 587,800
19.25	ROADS & SURFACING - GYPSUM HANDLING AREA		$ -	$ 188,000	$ 427,900	$ 615,900
19.26	GYPSUM HANDLING & STORAGE		$ -	$ 1,179,900	$ 1,854,100	$ 3,034,000
19.27	GYPSUM RUNOFF POND		$ 68,000	$ 110,400	$ 315,700	$ 494,100
19.28	GYPSUM RUNOFF POND PUMP STRUCTURE - CONCRETE		$ -	$ 47,000	$ 105,400	$ 152,400
19.29	OILY WATER SEWER - GYPSUM HANDLING AREA		$ 1,500	$ 9,000	$ 14,200	$ 24,700
19.30	OIL SEPARATOR - GYPSUM HANDLING AREA	500 GPM W/ INTEGRAL LIFT STATION	$ 50,000	$ -	$ 58,100	$ 108,100
19.31	EROSION & SEDIMENT CONTROL - GYPSUM HANDLING AREA		$ -	$ 18,000	$ 28,300	$ 46,300
19.32	SITE GRADING - ACCESS ROAD WIDENING & CONTAINMENT DITCH	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA	$ -	$ -	$ 60,400	$ 60,400

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19.33	ROADS & SURFACING - GYPSUM DEWATERING AREA	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA	$ -	$ 66,300	$ 190,800	$ 257,100
19.34	PIPELINE CONTAINMENT & DRAINAGE	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA	$ -	$ 271,600	$ 429,200	$ 700,800
19.35	CONTAINMENT RUNOFF POND	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA	$ 68,000	$ 114,300	$ 344,300	$ 526,600
19.36	CONTAINMENT POND PUMP STRUCTURE - CONCRETE	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA	$ -	$ 47,000	$ 105,400	$ 152,400
19.37	SITE GRADING - PIPELINE CONTAINMENT & DRAINAGE	SOUTH OF HWY 23	$ -	$ -	$ 30,200	$ 30,200
19.38	PIPELINE CONTAINMENT & DRAINAGE	SOUTH OF HWY 23	$ -	$ 169,600	$ 263,600	$ 433,200
19.39	PIPE BORING PIT	SOUTH OF HWY 23	$ -	$ 5,300	$ 50,900	$ 56,200
19.40	PIPE RECEIVING PIT	NORTH OF HWY 23	$ -	$ 4,900	$ 43,500	$ 48,400
19.41	DIRECTIONAL BORING FOR BURIED PIPE	BENEATH HWY 23	$ 28,000	$ 652,500	$ 277,000	$ 957,500
19.42	TRANSFORMERS		$ 470,000	$ -	$ 136,500	$ 606,500
19.43	SWITCHGEAR		$ 825,600	$ -	$ 500,700	$ 1,326,300
19.44	CABLE BUS & TERMINATIONS		$ 355,500	$ 39,400	$ 730,700	$ 1,125,600
19.45	MCC		$ 123,600	$ -	$ 6,300	$ 129,900
19.46	MIMIC PANELS		$ 17,500	$ -	$ 1,600	$ 19,100
19.47	EMERGENCY POWER SYSTEM		$ 285,500	$ -	$ 38,900	$ 324,400
19.48	GROUNDING		$ 9,400	$ -	$ 25,400	$ 34,800
19.49	LIGHTING/ TRANSFORMERS & PANELS		$ 52,000	$ 135,000	$ 104,500	$ 291,500
19.50	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 354,700	$ 1,514,100	$ 1,868,800
19.51	13.8 KV OH LINE OPGW	INCLUDES POLES, CONDUCTORS, INSULATORS & GROUNDING	$ -	$ 240,200	$ 292,400	$ 532,600
19.52	HIGH VOLTAGE POWER CABLE & TERMINATION		$ -	$ 88,400	$ 256,600	$ 345,000
19.53	MEDIUM VOLTAGE POWER CABLE & TERMINATION	1/C # 350KCMIL-5KV	$ -	$ 18,400	$ 78,400	$ 96,800
19.54	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 62,700	$ 547,400	$ 610,100
19.55	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	$ -	$ 112,000	$ 314,300	$ 426,300
19.56	FOUNDATIONS FOR TRANSFORMERS		$ -	$ 70,200	$ 205,400	$ 275,600
19.57	FIREWALL FOR TRANSFORMERS		$ -	$ 3,200	$ 8,300	$ 11,500
19.58	COMMUNICATIONS		$ -	$ 34,000	$ 26,000	$ 60,000
19.59	LIGHTNING PROTECTION		$ -	$ 13,000	$ 10,300	$ 23,300

Sargent & Lundy, LLC	AEP	Estimate No.:	30716C
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS BASE (ESP)-1A - 4.5 LB/MM BTU - NON PHASED	Date:	9/29/2010
	COST ESTIMATE SUMMARY	Preparer:	MNO
		Reviewer:	JMK
		Approver:	PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 12,728,800	$ 16,133,500	$ 31,754,300	$ 60,616,600
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 636,400	$ 4,114,000	$ 12,171,100	$ 16,921,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)	$ 13,365,200	$ 20,247,500	$ 43,925,400	$ 77,538,200
20.0	WET FGD ABSORBER ISLAND					
20.1	MECHANICAL EQUIPMENT	INCLUDES ABSORBER MODULE (A2205) WITH INTERNALS, INLET DUCT ONLY THROUGH WET/DRY INTERFACE, PIPING INSIDE ABSORBER BUILDING TO TERMINAL POINTS, RECYCLE PUMPS, OXIDATION BLOWERS, MIST ELIMINATOR AND WASH PUMPS AND OTHER MISC. EQUIPMENT AND MATERIAL	$ 41,363,000	$ -	$ 40,889,400	$ 82,252,400
20.2	ADDITIONAL COST FOR C276 ABSORBER SHELL MATERIAL ABOVE THE PRICE OF A2205 ABSORBER SHELL	INCLUDES MATERIAL AND WELDING ROD COST DIFFERENTIAL. 49,800 TOTAL SF	$ -	$ 15,338,400	$ -	$ 15,338,400
20.3	SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES	$ 28,000	$ -	$ 12,300	$ 40,300
20.4	AGITATOR FOR SUMP PUMPS	5 HP	$ 12,000	$ -	$ 4,600	$ 16,600
20.5	EMERGENCY DIESEL DRIVEN QUENCH PUMP	WITH FUEL DAY TANK. FOUNDATIONS INCLUDED WITH ABSORBER BUILDING FOUNDATIONS	$ 150,000	$ -	$ 30,700	$ 180,700

Sargent & Lundy, LLC	AEP	Estimate No.:	30716C
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS BASE (ESP)-1A - 4.5 LB/MM BTU - NON PHASED	Date:	9/29/2010
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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
20.6	PIPING - MECHANICAL	ALL PIPING INCLUDED IN OEM EQUIPMENT COST. NO BOP PIPING	$ -	$ -	$ -	$ -
20.7	ABSORBER VESSEL - FOUNDATIONS		$ -	$ 366,900	$ 672,900	$ 1,039,800
20.8	ABSORBER BUILDING - FOUNDATIONS		$ -	$ 579,500	$ 961,200	$ 1,540,700
20.9	ABSORBER BUILDING	150' L X 90' W X 60' H	$ 164,500	$ 2,622,800	$ 2,402,700	$ 5,190,000
20.1	PIPE SUPPORT PAD - ABSORBER BUILDING		$ -	$ 7,700	$ 16,100	$ 23,800
20.1	OXIDATION AIR BLOWER BUILDING - FOUNDATIONS		$ -	$ 37,000	$ 67,300	$ 104,300
20.12	OXIDATION AIR BLOWER BUILDING	30' L X 30' W X 25' H	$ 33,800	$ 191,000	$ 201,400	$ 426,200
20.13	PIPE SUPPORT PAD - OXIDATION BUILDING		$ -	$ 7,700	$ 13,700	$ 21,400
20.14	DUCTWORK	INCLUDES INTERNAL BRACING AND TURNING VANES	$ -	$ 373,800	$ 713,900	$ 1,087,700
20.15	DUCT SUPPORT STEEL	THREE-COAT SHOP PAINT	$ -	$ 168,200	$ 169,200	$ 337,400
20.16	DUCTWORK INSULATION & LAGGING		$ -	$ 132,000	$ 258,500	$ 390,500
20.17	FOUNDATIONS FOR DUCT SUPPORT STEEL		$ -	$ 17,700	$ 35,300	$ 53,000
20.18	TRANSFORMERS		$ 981,000	$ -	$ 209,300	$ 1,190,300
20.19	SWITCHGEAR		$ 1,162,800	$ -	$ 673,700	$ 1,836,500
20.20	CABLE BUS & TERMINATIONS		$ 867,100	$ 46,600	$ 1,634,100	$ 2,547,800
20.21	MCC		$ 216,300	$ -	$ 11,100	$ 227,400
20.22	MIMIC PANELS		$ 35,000	$ -	$ 7,900	$ 42,900
20.23	GROUNDING		$ 16,000	$ -	$ 46,100	$ 62,100
20.24	LIGHTING/ TRANSFORMERS & PANELS		$ 164,500	$ 165,000	$ 171,300	$ 500,800
20.25	EMERGENCY POWER SYSTEM		$ 108,300	$ -	$ 24,400	$ 132,700
20.26	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 1,515,700	$ 5,849,000	$ 7,364,700
20.27	HIGH VOLTAGE POWER CABLE & TERMINATION		$ -	$ 58,400	$ 164,700	$ 223,100
20.28	MEDIUM VOLTAGE POWER CABLE & TERMINATION		$ -	$ 114,600	$ 431,700	$ 546,300
20.29	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 795,900	$ 1,500,700	$ 2,296,600
20.30	CONTROL & INSTRUMENT CABLE		$ -	$ 512,000	$ 1,436,700	$ 1,948,700
20.31	FOUNDATION FOR TRANSFORMERS		$ -	$ 59,000	$ 173,700	$ 232,700
20.32	TRANSFORMER FIRE WALLS		$ -	$ 3,500	$ 9,600	$ 13,100
20.33	COMMUNICATIONS		$ -	$ 34,000	$ 26,000	$ 60,000
20.34	LIGHTNING PROTECTION		$ -	$ 19,500	$ 14,500	$ 34,000
20.35	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000

Sargent & Lundy, LLC	AEP	Estimate No.:	30716C
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS BASE (ESP)-1A - 4.5 LB/MM BTU - NON PHASED	Date:	9/29/2010
	COST ESTIMATE SUMMARY	Preparer:	MNO
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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 45,302,300	$ 23,174,900	$ 58,840,700	$ 127,317,900
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 2,940,100	$ 5,909,600	$ 23,335,900	$ 32,185,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	WET FGD ABSORBER ISLAND	$ 48,242,400	$ 29,084,500	$ 82,176,600	$ 159,503,500
21.0	COMPRESSED AIR SYSTEM (BYPRODUCT DEWATERING					
22.0	POTABLE WATER SYSTEM	INCLUDED WITH ACCOUNT 11.0				
23.0	SCR SUBSTATION UPGRADE					
24.0	FGD DCS SYSTEM	INCLUDED WITH ACCOUNT 13.0				
25.0	SITE IMPROVEMENTS - CIVIL WORK	INCLUDED WITH ACCOUNT 16.0				
26.0	BOP ITEMS					
27.0	CAPITAL REPLACEMENTS - REMOVAL AND RELOCATION OF EXISTING EQUIPMENT AND INFRASTRUCTURE					
28.0	ARSENIC, ASBESTOS , LEAD ABATEMENT					
99.0	OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 186,421,100	$ 104,871,500	$ 269,601,500	$ 593,019,100
	OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 10,743,100	$ 26,685,500	$ 103,053,900	$ 145,552,500
	OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 197,164,200	$ 131,557,000	$ 372,655,400	$ 738,571,600

Sargent & Lundy, LLC	AEP	Estimate No.:	30716C
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS BASE (ESP)-1A - 4.5 LB/MM BTU - NON PHASED	Date:	9/29/2010
	COST ESTIMATE SUMMARY	Preparer:	MNO
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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
	INDIRECT COSTS					
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES					$ 45,000,000
	CONSTRUCTION MANAGEMENT					$ 22,157,100
	S-U / COMMISSIONING					$ 7,385,700
	CRAFT START-UP SUPPORT					$ 3,177,400
	INITIAL FILLS					$ 2,215,700
	OPERATOR & TRAINING MANUALS					$ 600,000
	SUBCONTRACTORS (NOISE & DUCTWORK CONSULTANT,					$ 500,000
	NOISE ABATEMENT FOR 85 DBA REQUIREMENT	FOR ID FAN, SDA ENCLOSURE, TRANSFORMERS, BOP, DUCTWORK, ACOUSTIC BARRIERS FOR BOUNDARY LIMITS				$ 4,500,000
	SUBTOTAL - INDIRECT COSTS					$ 85,535,900
	TOTAL DIRECT AND INDIRECT COSTS					$ 824,107,500
	SPARE PARTS					$ 2,957,500
	SPARE PARTS - CAPITALIZED	0.90				$ 1,774,500
	SPARE PARTS - FIRST YEAR OF OPERATION	0.60				$ 1,183,000
	CONTINGENCY	14.0				$ 115,966,200
	ESCALATION					$ 102,500,800
	EQUIPMENT					$ 29,377,100
	MATERIAL					$ 13,919,200
	LABOR					$ 49,318,100
	INDIRECTS					$ 9,886,400

Sargent & Lundy, LLC	AEP	Estimate No.:	30716C
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS BASE (ESP)-1A - 4.5 LB/MM BTU - NON PHASED	Date:	9/29/2010
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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
	TOTAL PROJECT COST					$ 1,045,532,000
	REFERENCE COSTS:					
A	REMOVAL OF FUEL OIL TANK	LABOR COST IS FOR REMOVAL OF TANK ONLY. ALLOWANCE FOR SOIL REMEDIATION AND DISPOSAL IN AN EPA APPROVED LANDFILL. SUBCONTRACT COST INCLUDES LABOR. USED LOWER END OF THE RANGE $118-355/CY. COST COULD BE LOWER ($59-118/CY) IF SOLD TO A BITUMINOUS CONCRETE BATCH PLANT	$ 1,200,000	$ 80,000	$ 469,400	$ 1,749,400

ATTACHMENT 4-15
IAQCS Summary Capital Cost Estimate No. 30720 Base Est-1B ESP not in Service (4.5 lb SO_2/MMbtu)

Sargent & Lundy, LLC	AEP	Estimate No.:	30720C
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED	Date:	9/29/2010
	COST ESTIMATE SUMMARY	Preparer:	MNO
		Reviewer:	JMK
		Approver:	PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
1.0	ID FANS					
1.1	ID FANS - OEM EQUIPMENT	1,865,000 ACFM WITH 24,500 HP MOTORS ($875,000 EACH). INCLUDES HYDRAULIC OIL UNITS, SEAL AIR FAN SKIDS, VIBRATION MONITORING EQUIPMENT, FAN STALL EQUIPMENT, FIELD SERVICE REP FOR 140 DAYS	$ 7,688,000	$ -	$ 1,737,800	$ 9,425,800
1.2	PIPING & SUPPORTS - MECHANICAL		$ 21,800	$ 28,700	$ 120,500	$ 171,000
1.3	DAMPERS		$ 781,000	$ -	$ 352,600	$ 1,133,600
1.4	EXPANSION JOINTS		$ -	$ 131,100	$ 116,500	$ 247,600
1.5	DUCTWORK	FABRIC FILTER OUTLET TO ID FANS AND FROM ID FANS TO STACK - INCLUDES INTERNAL BRACING AND TURNING VANES	$ -	$ 2,860,000	$ 5,462,800	$ 8,322,800
1.6	DUCT SUPPORT STEEL	THREE COAT SHOP PAINT	$ -	$ 1,276,000	$ 1,283,700	$ 2,559,700
1.7	ID FAN INSULATION & LAGGING	TOTAL FOR TWO FANS. PRICING REFLECTS STANDARD ACOUSTICAL INSULATION	$ -	$ 200,000	$ 258,500	$ 458,500
1.8	DUCTWORK INSULATION & LAGGING	INCLUDES INSULATION FOR SPRAY DRYER OUTLET DUCT TO FABRIC FILTERS SUPPLIED WITH THE OEM EQUIPMENT	$ -	$ 1,090,800	$ 2,136,300	$ 3,227,100
1.9	DUCT SUPPORT STEEL - FOUNDATIONS		$ -	$ 352,200	$ 684,000	$ 1,036,200
1.10	ID FAN FOUNDATIONS INCLUDING ID FAN AUX EQUIPMENT		$ -	$ 229,300	$ 415,700	$ 645,000
1.11	ID FAN IAQCS CONTROL ROOM - FOUNDATIONS		$ -	$ 270,100	$ 508,600	$ 778,700
1.12	ID FAN IAQCS CONTROL ROOM	SUBCONTRACT PRICE INCLUDES LABOR. COMPLETE WITH HVAC, FINISHES AND SANITARY FACILITIES	$ -	$ 3,937,500	$ -	$ 3,937,500
1.13	TRANSFORMERS		$ 770,000	$ -	$ 145,600	$ 915,600
1.14	SWITCHGEAR		$ 1,132,000	$ -	$ 589,900	$ 1,721,900
1.15	CABLE BUS & TERMINATIONS		$ 1,129,100	$ 35,800	$ 1,930,000	$ 3,094,900
1.16	MCC		$ 180,000	$ -	$ 10,900	$ 190,900
1.17	MIMIC PANELS		$ 17,500	$ -	$ 4,500	$ 22,000
1.18	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 1,664,200	$ 8,196,600	$ 9,860,800
1.19	HIGH VOLTAGE POWER CABLE & TERMINATION		$ -	$ 288,500	$ 666,700	$ 955,200
1.20	MEDIUM VOLTAGE POWER CABLE & TERMINATION		$ -	$ 100,200	$ 427,400	$ 527,600

Sargent & Lundy, LLC	AEP	Estimate No.:	30720C
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED	Date:	9/29/2010
	COST ESTIMATE SUMMARY	Preparer:	MNO
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		Approver:	PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
1.21	LOW VOLTAGE POWER CABLE & TERMINATIONS		$ -	$ 229,800	$ 732,100	$ 961,900
1.22	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	$ -	$ 361,000	$ 1,012,900	$ 1,373,900
1.23	EMERGENCY POWER SYSTEM		$ 285,500	$ -	$ 38,900	$ 324,400
1.24	GROUNDING		$ 14,100	$ -	$ 42,700	$ 56,800
1.25	LIGHTING/ TRANSFORMERS & PANELS		$ 26,000	$ 30,000	$ 29,500	$ 85,500
1.26	DUCT BANK		$ -	$ 136,000	$ 192,700	$ 328,700
1.27	FOUNDATION FOR TRANSFORMERS		$ -	$ 61,900	$ 162,600	$ 224,500
1.28	FIREWALL FOR TRANSFORMERS		$ -	$ 3,200	$ 8,300	$ 11,500
1.29	EARLY COMMISSIONING COSTS TEMPORARY HIGH VOLTAGE		$ -	$ 139,800	$ 230,200	$ 370,000
1.30	COMMUNICATIONS		$ -	$ 17,000	$ 13,000	$ 30,000
1.31	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 12,045,000	$ 13,451,100	$ 27,518,500	$ 53,014,600
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 602,300	$ 3,430,000	$ 9,926,800	$ 13,959,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	ID FANS	$ 12,647,300	$ 16,881,100	$ 37,445,300	$ 66,973,700
2.0	FABRIC FILTERS					
2.1	MECHANICAL EQUIPMENT	A SINGLE FABRIC FILTER (225' X 130') UNIT INCLUDING ALL INTERNAL FABRIC FILTER ELEMENTS SUCH AS BAGS, CAGES, ASH HOPPERS, 2 BROKEN BAG DETECTORS PER COMPARTMENT	$ 19,761,000	$ -	$ 12,604,200	$ 32,365,200
2.2	INSULATION FOR FABRIC FILTER	SUBCONTRACT COST INCLUDES LABOR	$ 2,430,000	$ -	$ -	$ 2,430,000
2.3	PENTHOUSE FOR FABRIC FILTER	SUPPORT STEEL AND PRLINS INCLUDED WITH OEM EQUIPMENT	$ 70,200	$ 787,000	$ 1,007,600	$ 1,864,800
2.4	BOTTOM ENCLOSURE FOR BAGHOUSE		$ 60,000	$ 1,204,000	$ 1,359,800	$ 2,623,800
2.5	PIPING & SUPPORTS - MECHANICAL		$ 30,900	$ 101,400	$ 209,500	$ 341,800
2.6	FABRIC FILTER - FOUNDATIONS		$ -	$ 550,700	$ 1,081,100	$ 1,631,800
2.7	FABRIC FILTER - SUPPORT STEEL AND ACCESS GALLERY		$ -	$ 360,000	$ 1,186,700	$ 1,546,700

Sargent & Lundy, LLC	AEP	Estimate No.:	30720C
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED	Date:	9/29/2010
	COST ESTIMATE SUMMARY	Preparer:	MNO
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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
2.8	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE INCLUDED IN SECTION 1.0 - ID FANS	$ -	$ -	$ -	$ -
2.9	LIGHTING/ TRANSFORMERS & PANELS		$ 30,000	$ 75,000	$ 58,200	$ 163,200
2.10	GROUNDING		$ 7,300	$ -	$ 17,500	$ 24,800
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 22,419,400	$ 3,153,100	$ 17,524,600	$ 42,992,100
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 1,121,000	$ 804,000	$ 6,510,000	$ 8,435,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FABRIC FILTERS	$ 23,540,400	$ 3,957,100	$ 24,034,600	$ 51,427,200
3.0	NEW STACK					
3.1	CONCRETE STACK (WET)	PROVIDED BY AEP	$ -	$ -	$ -	$ 31,480,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ -	$ -	$ -	$ 31,480,000
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT		$ -	$ -	$ -	$ 4,722,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	NEW STACK	$ -	$ -	$ -	$ 36,202,000
4.0	LIME HANDLING SYSTEM					
4.1	LIME STORAGE SILO		$ 1,020,000	$ -	$ -	$ 1,020,000
4.2	LIME UNLOADING SYSTEM	INCLUDES PNEUMATIC HANDLING SYSTEM, THREE VACUUM EXHAUSTER, TWO FILTER SEPARATORS	$ 350,000	$ -	$ 281,100	$ 631,100
4.3	PIPING - MECHANICAL		$ 29,000	$ 15,600	$ 77,900	$ 122,500
4.4	LIME STORAGE SILO ACCESS STAIR TOWER	THREE COAT SHOP PAINT	$ -	$ 87,000	$ 87,500	$ 174,500
4.5	PIPE RACK FOR LIME HANDLING, WASTE HANDLING AND MISC MECHANICAL PIPING	THREE COAT SHOP PAINT	$ -	$ 783,000	$ 787,800	$ 1,570,800
4.6	RAIL CAR UNLOADING AREA - FOUNDATIONS	20 X 60 - NO SIDING	$ -	$ 22,600	$ 49,100	$ 71,700
4.7	LIME UNLOADING BLOWER / ELECTRICAL BUILDING - FOUNDATIONS		$ -	$ 80,600	$ 139,600	$ 220,200
4.8	LIME UNLOADING BLOWER / ELECTRICAL BUILDING	100' L X 30' W X 30' H	$ 75,000	$ 335,000	$ 24,400	$ 434,400
4.9	CONCRETE PIT FOR THE ELEVATOR		$ -	$ 2,300	$ 6,900	$ 9,200
4.10	LIME STORAGE SILO - FOUNDATIONS		$ -	$ 75,100	$ 150,000	$ 225,100
4.11	LIME STORAGE SILO ACCESS STAIR TOWER - FOUNDATIONS		$ -	$ 10,700	$ 22,300	$ 33,000
4.12	PIPE RACK - FOUNDATIONS		$ -	$ 94,200	$ 237,800	$ 332,000
4.13	TRANSFORMERS: 33F, 33G,	13.8KV-480V,3PHASE, CAST COIL	$ 170,000	$ -	$ 54,600	$ 224,600

Sargent & Lundy, LLC	AEP	Estimate No.:	30720C
	BIG SANDY UNIT 2	Project No.:	12721-000
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	COST ESTIMATE SUMMARY	Preparer:	MNO
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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
4.14	480V LOW VOLTAGE (33F/G) SWITCHGEAR	PER LINE UP	$ 196,000	$ -	$ 104,700	$ 300,700
4.15	CABLE BUS DUCT		$ 134,700	$ 10,800	$ 200,200	$ 345,700
4.16	MCC		$ 61,800	$ -	$ 3,600	$ 65,400
4.17	MIMIC PANELS		$ 17,500	$ -	$ 1,400	$ 18,900
4.18	EMERGENCY POWER SYSTEM		$ 108,300	$ -	$ 24,400	$ 132,700
4.19	GROUNDING		$ 13,300	$ -	$ 41,300	$ 54,600
4.20	LIGHTING/ TRANSFORMERS & PANELS		$ 52,000	$ 135,000	$ 104,500	$ 291,500
4.21	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 310,900	$ 1,537,100	$ 1,848,000
4.22	HIGH VOLTAGE POWER CABLE & TERMINATION	1/C # 500KCMIL-15KV	$ -	$ 50,100	$ 141,200	$ 191,300
4.23	MEDIUM VOLTAGE POWER CABLE & TERMINATION	1/C # 350KCMIL-5KV	$ -	$ 66,200	$ 282,300	$ 348,500
4.24	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 93,000	$ 143,200	$ 236,200
4.25	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	$ -	$ 26,200	$ 73,600	$ 99,800
4.26	DUCT BANK	6-5" & 6-3" CONDUITS	$ -	$ 26,600	$ 52,500	$ 79,100
4.27	FOUNDATIONS FOR TRANSFORMERS		$ -	$ 5,300	$ 11,900	$ 17,200
4.28	COMMUNICATIONS		$ -	$ 17,000	$ 13,000	$ 30,000
4.29	LIGHTNING PROTECTION		$ -	$ 14,000	$ 9,000	$ 23,000
4.30	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 2,227,600	$ 2,269,200	$ 4,669,900	$ 9,166,700
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 111,400	$ 578,600	$ 1,683,700	$ 2,373,700
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME HANDLING SYSTEM	$ 2,339,000	$ 2,847,800	$ 6,353,600	$ 11,540,400
5.0	LIME SLAKER BUILDING					
5.1	MECHANICAL EQUIPMENT	INCLUDES:CHAIN CONVEYOR, SLAKERS THROUGH THE LIME SLURRY PUMPS, PIPING, AND LIME SLURRY STORAGE TANKS.	$ 2,663,000	$ -	$ 2,811,100	$ 5,474,100
5.2	REAGENT AREA SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES	$ 28,000	$ -	$ 12,300	$ 40,300
5.3	AGITATOR FOR SUMP PUMPS	5 HP	$ 12,000	$ -	$ 4,600	$ 16,600
5.4	PIPING - MECHANICAL		$ 117,800	$ 111,400	$ 381,100	$ 610,300
5.5	LIME SLURRY TANKS - FOUNDATIONS		$ -	$ 166,400	$ 299,400	$ 465,800
5.6	LIME SLAKER BUILDING - FOUNDATIONS		$ -	$ 119,200	$ 204,000	$ 323,200
5.7	LIME SLAKER BUILDING	135' L X 30' W X 50' H	$ 40,500	$ 803,300	$ 740,500	$ 1,584,300
5.8	ELECTRICAL	INCLUDED WITH LIME HANDLING SYSTEM, ACCOUNT 4.0	$ -	$ -	$ -	$ -

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90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 2,861,300	$ 1,200,300	$ 4,453,000	$ 8,514,600
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 143,100	$ 306,100	$ 1,663,000	$ 2,112,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME SLAKER BUILDING	$ 3,004,400	$ 1,506,400	$ 6,116,000	$ 10,626,700
6.0	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS					
6.1	BYPRODUCT WASTE HANDLING - MECHANICAL EQUIPMENT	INCLUDES PNEUMATIC HANDLING SYSTEM, THREE PRESSURE BLOWERS, ONE BIN VENT FILTER, ASH UNLOADING SYSTEM	$ 1,637,600	$ -	$ 1,104,000	$ 2,741,600
6.2	ECONOMIZER ASH HANDLING - MECHANICAL EQUIPMENT	INCLUDES JET PUMPS AND PIPING / SUPPORTS TO THE BOTTOM ASH POND	$ 400,000	$ -	$ 296,400	$ 696,400
6.3	BYPRODUCT WASTE SILO AREA SUMP PUMPS	FOR BUILDINGS - DUPLEX. INCLUDES CHECK & ISOLATION VALVES.	$ 28,000	$ -	$ 12,300	$ 40,300
6.4	AGITATOR FOR SUMP PUMPS	5 HP	$ 12,000	$ -	$ 4,600	$ 16,600
6.5	PIPING - MECHANICAL		$ 142,800	$ 240,900	$ 759,100	$ 1,142,800
6.6	BYPRODUCT WASTE SILO	CONCRETE SILO 35' DIA X 46' H - 782 TONS -SUBCONTRACT COST INCLUDES LABOR	$ 625,500	$ -	$ -	$ 625,500
6.7	SDA RECYCLE SILO	INCLUDED WITH OEM EQUIPMENT	$ -	$ -	$ -	$ -
6.8	FLY ASH SILO	NOT REQUIRED - ECONOMIZER FLY ASH SLUICD TO BOTTOM ASH POND	$ -	$ -	$ -	$ -
6.9	BYPRODUCT WASTE SILO - FOUNDATIONS		$ -	$ 60,200	$ 122,300	$ 182,500
6.10	FLY ASH SILO - FOUNDATIONS	NOT REQUIRED	$ -	$ -	$ -	$ -
6.11	FLY ASH BLOWER AND ELECTRICAL BUILDING - FOUNDATIONS	NOT REQUIRED	$ -	$ -	$ -	$ -
6.12	FLY ASH BLOWER AND ELECTRICAL BUILDING	NOT REQUIRED	$ -	$ -	$ -	$ -
6.13	RECYCLE ASH BUILDING - FOUNDATIONS		$ -	$ 234,300	$ 393,800	$ 628,100
6.14	RECYCLE ASH BUILDING	100' L X 65' W X 50' H	$ 58,500	$ 1,306,700	$ 1,194,500	$ 2,559,700

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6.15	MCC	480V MCC PER LINE UP	$ 60,000	$ -	$ 3,600	$ 63,600
6.16	EMERGENCY POWER SYSTEM		$ 92,800	$ -	$ 19,900	$ 112,700
6.17	LIGHTING/ TRANSFORMERS & PANELS		$ 18,500	$ 60,000	$ 44,100	$ 122,600
6.18	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 32,500	$ 189,100	$ 221,600
6.19	GROUNDING		$ -	$ 4,500	$ 10,900	$ 15,400
6.20	LOW VOLTAGE POWER CABLE & TERMINATION	#4/0 - #12 AWG-600V	$ -	$ 64,700	$ 80,500	$ 145,200
6.21	CONTROL & INSTRUMENT CABLE		$ -	$ 30,700	$ 86,200	$ 116,900
6.22	DUCT BANK		$ -	$ 109,700	$ 205,400	$ 315,100
6.23	COMMUNICATIONS		$ -	$ 34,000	$ 26,000	$ 60,000
6.24	LIGHTNING PROTECTION		$ -	$ 16,000	$ 14,000	$ 30,000
6.25	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 3,075,700	$ 2,202,200	$ 4,573,700	$ 9,851,600
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 153,800	$ 561,600	$ 1,702,500	$ 2,417,900
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS	$ 3,229,500	$ 2,763,800	$ 6,276,200	$ 12,269,500
7.0	SPRAY DRYER ABSORBER ISLAND					
7.1	MECHANICAL EQUIPMENT	INCLUDES: ABSORBER MODULES AND ATOMIZERS WITH LUBE OIL, DUCT WORK FROM THE ABSORBERS TO THE FABRIC FILTER, AND COMPLETE RECYCLE SYSTEM WITH PIPING INSIDE FGD BUILDINGS.	$ 39,438,000	$ -	$ 24,186,100	$ 63,624,100
7.2	ELEVATOR	MAINTENANCE ELEVATOR - SUBCONTRACT COST INCLUDES LABOR	$ 325,000	$ -	$ -	$ 325,000
7.3	ABSORBER AREA SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES.	$ 28,000	$ -	$ 12,300	$ 40,300
7.4	AGITATOR FOR SUMP PUMPS	5 HP	$ 12,000	$ -	$ 4,600	$ 16,600
7.5	PIPING - MECHANICAL		$ 142,800	$ 36,900	$ 227,900	$ 407,600
7.6	SDA SUPERSTRUCTURE		$ 75,000	$ 764,900	$ 1,227,300	$ 2,067,200
7.7	SDA BOTTOM ENCLOSURE - SUPPORT STEEL, GIRTS AND SIDING	TOTAL FOR THREE ABSORBERS	$ -	$ 362,100	$ 385,200	$ 747,300

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7.8	SDA SHELL / ROOF INSULATION	61,000 SF. SUBCONTRACT COST INCLUDES LABOR	$ 1,830,000	$ -	$ -	$ 1,830,000
7.9	SDA - SUPPORT STEEL & ACCESS GALLERY		$ -	$ 711,000	$ 1,884,100	$ 2,595,100
7.10	EXPANSION JOINTS		$ -	$ 195,500	$ 173,800	$ 369,300
7.11	DUCTWORK		$ -	$ 4,797,000	$ 10,481,700	$ 15,278,700
7.12	DUCT SUPPORT STEEL	THREE COAT SHOP PAINT	$ -	$ 2,140,200	$ 2,153,200	$ 4,293,400
7.13	DUCTWORK INSULATION & LAGGING		$ -	$ 1,632,000	$ 3,196,400	$ 4,828,400
7.14	CONCRETE PIT FOR ELEVATOR		$ -	$ 2,800	$ 8,200	$ 11,000
7.15	SPRAY DRYER ABSORBER - FOUNDATIONS	TOTAL FOR THREE TOWERS	$ -	$ 1,678,600	$ 3,323,400	$ 5,002,000
7.16	FOUNDATIONS FOR SUPPORT STEEL		$ -	$ 69,000	$ 143,000	$ 212,000
7.17	GROUNDING		$ -	$ 16,000	$ 46,100	$ 62,100
7.18	LIGHTING/ TRANSFORMERS & PANELS		$ 156,000	$ 150,000	$ 159,100	$ 465,100
7.19	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE INCLUDED IN SECTION 1.0 - ID FANS	$ -	$ -	$ -	$ -
7.20	COMMUNICATIONS		$ -	$ 17,000	$ 13,000	$ 30,000
7.21	LIGHTNING PROTECTION		$ -	$ 25,500	$ 18,500	$ 44,000
7.22	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 42,006,800	$ 12,606,500	$ 47,650,900	$ 102,264,200
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 2,910,300	$ 3,214,700	$ 19,057,200	$ 25,182,200
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SPRAY DRYER ABSORBER ISLAND	$ 44,917,100	$ 15,821,200	$ 66,708,100	$ 127,446,400
8.0	ACTIVATED CARBON INJECTION SYSTEM	NOT REQUIRED WITH NON-PHASED CONSTRUCTION				
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ -	$ -	$ -	$ -
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ -	$ -	$ -	$ -
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	ACTIVATED CARBON INJECTION SYSTEM	$ -	$ -	$ -	$ -
9.0	COMPRESSED AIR SYSTEM					
9.1	AIR COMPRESSOR & AUXILIARIES		$ 832,000	$ -	$ 184,600	$ 1,016,600
9.2	PIPING - MECHANICAL		$ 543,100	$ 722,600	$ 2,151,100	$ 3,416,800
9.3	AIR COMPRESSOR BUILDING - FOUNDATIONS		$ -	$ 96,100	$ 194,700	$ 290,800
9.4	AIR COMPRESSOR BUILDING	100' L X 600' W X 20' H	$ -	$ 510,000	$ -	$ 510,000
9.5	LIGHTING/ TRANSFORMERS & PANELS		$ 11,000	$ 10,500	$ 11,400	$ 32,900

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9.6	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE ARE INCLUDED IN SECTION 1.0 - ID FANS	$ -	$ -	$ -	$ -
9.7	GROUNDING		$ 4,500	$ -	$ 10,900	$ 15,400
9.8	DUCT BANK		$ -	$ 19,900	$ 43,300	$ 63,200
9.9	COMMUNICATIONS		$ -	$ 34,000	$ 26,000	$ 60,000
9.10	LIGHTNING PROTECTION		$ -	$ 10,500	$ 7,500	$ 18,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 1,390,600	$ 1,403,600	$ 2,629,500	$ 5,423,700
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 69,500	$ 357,900	$ 963,100	$ 1,390,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	COMPRESSED AIR SYSTEM	$ 1,460,100	$ 1,761,500	$ 3,592,600	$ 6,814,300
10.0	SERVICE WATER SYSTEM					
10.1	PUMPS	INCLUDES SELF-CLEANING STRAIINERS	$ 260,000	$ -	$ 110,500	$ 370,500
10.2	PIPING - MECHANICAL		$ 504,300	$ 1,813,000	$ 3,377,200	$ 5,694,500
10.3	PIPING - FIRE PROTECTION SYSTEM		$ 434,900	$ 415,600	$ 1,014,300	$ 1,864,800
10.4	TANKS		$ -	$ 150,000	$ -	$ 150,000
10.5	SERVICE WATER TANK & PUMP - FOUNDATIONS		$ -	$ 69,800	$ 117,200	$ 187,000
10.6	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE ARE INCLUDED IN SECTION 1.0 - ID FANS	$ -	$ -	$ -	$ -
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 1,199,200	$ 2,448,400	$ 4,619,200	$ 8,266,800
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 60,000	$ 624,300	$ 1,683,200	$ 2,367,500
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SERVICE WATER SYSTEM	$ 1,259,200	$ 3,072,700	$ 6,302,400	$ 10,634,300
11.0	POTABLE WATER SYSTEM					
11.1	PUMPS		$ 30,000	$ -	$ 18,400	$ 48,400
11.2	PIPING - MECHANICAL		$ 99,500	$ 258,000	$ 737,700	$ 1,095,200
11.3	TANKS		$ -	$ 17,000	$ -	$ 17,000
11.4	POTABLE WATER TANK & PUMP - FOUNDATIONS		$ -	$ 10,100	$ 18,600	$ 28,700

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11.5	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE ARE INCLUDED IN SECTION 1.0 - ID FANS	$ -	$ -	$ -	$ -
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 129,500	$ 258,000	$ 756,100	$ 1,143,600
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 6,500	$ 65,800	$ 275,700	$ 348,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	POTABLE WATER SYSTEM	$ 136,000	$ 323,800	$ 1,031,800	$ 1,491,600
12.0	FGD SUBSTATION					
12.1	TRANSFORMERS		$ 1,670,000	$ -	$ 282,200	$ 1,952,200
12.2	TRANSFORMER PDC	15W X 45' X 10'H. SUBCONTRACT PRICE INCLUDES LABOR	$ 202,500	$ -	$ -	$ 202,500
12.3	TRANSFORMER PDC - FOUNDATION		$ -	$ 73,200	$ 146,900	$ 220,100
12.4	138KV MAIN FEEDER & TERMINATIONS		$ 264,000	$ -	$ 254,000	$ 518,000
12.5	SWITCHGEAR		$ 870,000	$ -	$ 36,400	$ 906,400
12.6	MCC	480V MCC, PER LINE UP	$ 60,000	$ -	$ 3,600	$ 63,600
12.7	CABLE BUS		$ 181,100	$ 18,000	$ 290,200	$ 489,300
12.8	PANELS - RELAY		$ 100,000	$ -	$ 9,100	$ 109,100
12.9	MIMIC PANELS		$ 17,500	$ -	$ 4,500	$ 22,000
12.10	EMERGENCY POWER SYSTEM		$ 108,300	$ -	$ 24,400	$ 132,700
12.11	GROUNDING		$ 23,300	$ -	$ 59,100	$ 82,400
12.12	LIGHTING/ TRANSFORMERS & PANELS		$ 26,000	$ 30,000	$ 29,500	$ 85,500
12.13	OUTDOOR LIGHTING	NEW AUX YARD LIGHTING - ALLOWANCE	$ 25,000	$ -	$ 56,800	$ 81,800
12.14	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 390,600	$ 1,918,600	$ 2,309,200
12.15	DUCT BANK		$ -	$ 26,200	$ 54,300	$ 80,500
12.16	HIGH VOLTAGE POWER CABLE & TERMINATION	1/C # 500KCMIL-15KV	$ -	$ 27,800	$ 78,400	$ 106,200
12.17	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 263,700	$ 649,600	$ 913,300
12.18	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	$ -	$ 21,800	$ 61,100	$ 82,900
12.19	FOUNDATION FOR AUX TRANSFORMER		$ -	$ 70,200	$ 205,400	$ 275,600
12.20	FIREWALL FOR TRANSFORMERS		$ -	$ 3,000	$ 5,200	$ 8,200
12.21	COMMUNICATIONS		$ -	$ 17,000	$ 13,000	$ 30,000
12.22	LIGHTNING PROTECTION		$ -	$ 4,000	$ 2,000	$ 6,000
12.23	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 3,547,700	$ 953,500	$ 4,191,300	$ 8,692,500

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	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 177,400	$ 243,100	$ 1,513,212	$ 1,933,700
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FGD SUBSTATION	$ 3,725,100	$ 1,196,600	$ 5,704,500	$ 10,626,200
13.0	FGD DCS SYSTEM	DRY AND WET FGD COMBINED				
13.1	DCS	7000 I/O POINTS	$ 5,250,000	$ -	$ 1,779,700	$ 7,029,700
13.2	DCS - VENDOR FIELD SUPPORT	300 MANDAYS @ $1500/DAY - SHOWN AS SUBCONTRACT COST	$ 450,000	$ -	$ -	$ 450,000
13.3	LOCALLY MOUNTED INSTRUMENTS	0.0	$ -	$ 1,537,300	$ 2,016,100	$ 3,553,400
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 5,700,000	$ 1,537,300	$ 3,795,800	$ 11,033,100
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 285,000	$ 392,000	$ 1,417,400	$ 2,094,400
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FGD DCS SYSTEM	$ 5,985,000	$ 1,929,300	$ 5,213,200	$ 13,127,500
14.0	CEM SYSTEM					
14.1	CEM	PROVIDED BY AEP	$ 1,260,000	$ 540,000	$ 310,000	$ 2,110,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 1,260,000	$ 540,000	$ 310,000	$ 2,110,000
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT		$ -	$ -	$ -	$ 316,500
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	CEM SYSTEM	$ -	$ -	$ -	$ 2,426,500
15.0	TRUCK & RAIL INFRASTRUCTURE					
15.1	EXISTING RAILROAD IMPROVEMENTS	FOR FULL RAILCAR STORAGE TRACK IMPROVEMENTS - 3250 LF	$ -	$ 660,200	$ 689,200	$ 1,349,400
15.2	EXISTING RAILROAD IMPROVEMENTS	FOR LOOP TRACK UPGRADE - 5000 LF	$ -	$ 1,008,800	$ 1,055,600	$ 2,064,400
15.3	NEW RAILROAD TRACK	1400 LF. INCLUDES, 132LB RAIL, 7" TIMBERS, TIE PLATES, SPIKES, BOLTS, 12: SUBBALLAST, 12" BALLAST, 12 OZ/SY GEOTEXTILE MEMBRANE, 12" SUBGRADE PREP	$ -	$ 252,000	$ 213,100	$ 465,100
15.4	FIELD FABRICATED TURNOUTS	#8 TURNOUT	$ -	$ 90,000	$ 54,800	$ 144,800
15.5	RAIL SCALE	SUBCONTRACT COST, INCLUDES FOUNDATIONS	$ 212,500	$ -	$ -	$ 212,500

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15.6	NEW CONCRETE ENCASEMENT	OVER AND AROUND DUCT BANK CONNECTING THE PLANT TO SWITCHYARD. THIS IS UNDER THE NEW TRACKWORK EXTENSION	$ -	$ 33,200	$ 71,400	$ 104,600
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 212,500	$ 2,044,200	$ 2,084,100	$ 4,340,800
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 10,600	$ 521,300	$ 779,600	$ 1,311,500
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	TRUCK & RAIL INFRASTRUCTURE	$ 223,100	$ 2,565,500	$ 2,863,700	$ 5,652,300
16.0	SITE IMPROVEMENTS - CIVIL WORK					
16.1	SITE GRADING		$ -	$ -	$ 676,000	$ 676,000
16.2	ROADS & SURFACING		$ -	$ 1,811,000	$ 2,387,200	$ 4,198,200
16.3	RAILROAD CROSSING	50' WIDE CROSSING THREE TRACKS - CUSTOM BUILT	$ -	$ 120,000	$ 152,200	$ 272,200
16.4	NEW CONCRETE ENCASEMENT	16' X 4' X 40' - FOR EXISTING ASH PIPE HAUL ROAD CROSSING	$ -	$ 144,300	$ 286,600	$ 430,900
16.5	TRUCK WASH AREA - CONCRETE PAD		$ -	$ 47,300	$ 83,100	$ 130,400
16.6	TRUCK SCALE & CONCRETE APPROACH		$ 170,000	$ 27,300	$ 92,000	$ 289,300
16.7	PROCESS WATER STORAGE BASIN		$ 60,000	$ 110,400	$ 312,600	$ 483,000
16.8	PROCESS WATER STORAGE BASIN PUMP STRUCTURE - CONCRETE		$ -	$ 47,000	$ 105,400	$ 152,400
16.9	STORMWATER DRAINAGE TRENCH	2' W X 3' DEEP CAST-IN-PLACE CONCRETE TRENCH W/REINFORCING & HS-20 RATED GRATE COVERS	$ -	$ 594,000	$ 604,500	$ 1,198,500
16.10	STORMWATER RUNOFF POND		$ -	$ 15,000	$ 122,600	$ 137,600
16.11	STORM WATER POND PUMP STRUCTURE - CONCRETE		$ 90,000	$ 42,300	$ 182,200	$ 314,500
16.12	OILY WATER SEWER		$ 7,500	$ 128,100	$ 261,600	$ 397,200
16.13	OIL SEPARATOR	500 GPM W/ INTEGRAL LIFT STATION	$ 100,000	$ -	$ 116,100	$ 216,100
16.14	SANITARY SEWER		$ -	$ 37,100	$ 118,900	$ 156,000
16.15	SANITARY LIFT STATION	PACKAGED TYPE COMPLETE WITH PUMPS, 100,000 GPD	$ 150,000	$ -	$ 49,200	$ 199,200

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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
16.16	CONSTRUCTION LAYDOWN AREA	ALLOWANCE FOR 15 ACRES, DOES NOT INCLUDE LAND ACQUISITION, IF REQUIRED	$ -	$ 1,050,000	$ 1,242,000	$ 2,292,000
16.17	CRAFT PARKING	DOES NOT INCLUDE LAND ACQUISITION, IF REQUIRED. ALLOWANCE FOR 30,000 SY INCLUDES: 6" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	$ -	$ 270,000	$ 621,300	$ 891,300
16.18	CONTRACTOR OFFICES (AREA)	DOES NOT INCLUDE LAND ACQUISITION, IF REQUIRED. ALLOWANCE FOR 7,500 SY AREA (TRAILERS BY CONTRACTORS) INCLUDES: 6" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	$ -	$ 67,500	$ 155,300	$ 222,800
16.19	NEW PERMANENT STORAGE WAREHOUSE	INCLUDES LIGHTING AND H&V. SUBCONTRACT PRICE INCLUDES ELECTRICAL AND H&V	$ 2,550,000	$ -	$ -	$ 2,550,000
16.20	FOUNDATIONS FOR THE NEW PERMANENT STORAGE		$ -	$ 803,800	$ 1,301,600	$ 2,105,400
16.21	NEW TEMPORARY STORAGE	WEATHER TIGHT CANVAS ENCLOSURE. INCLUDES LIGHTING AND H&V. SUBCONTRACT PRICE INCLUDES ELECTRICAL AND H&V	$ 900,000	$ -	$ -	$ 900,000
16.22	FOUNDATIONS FOR TEMPORARY STORAGE		$ -	$ 197,400	$ 309,200	$ 506,600
16.23	LABOR BUS SERVICE FROM PARKING LOT TO CONSTRUCTION AREA AND ACCESS CONTROL	ALLOWANCE FOR 36 MONTHS BASED ON 2 BUSES OPERATING CONTINUOUSLY FOR 5X10 WORKWEEK. SUBCONTRACT COST INCLUDES EQUIPMENT, MATERIAL AND LABOR	$ 1,368,000	$ -	$ -	$ 1,368,000
16.24	EROSION & SEDIMENT CONTROL		$ -	$ 12,600	$ 20,700	$ 33,300

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	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED	Date:	9/29/2010
	COST ESTIMATE SUMMARY	Preparer:	MNO
		Reviewer:	JMK
		Approver:	PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 5,395,500	$ 5,525,100	$ 9,200,300	$ 20,120,900
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 269,800	$ 1,408,900	$ 3,329,300	$ 5,008,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SITE IMPROVEMENTS - CIVIL WORK	$ 5,665,300	$ 6,934,000	$ 12,529,600	$ 25,128,900
17.0	LIMESTONE HANDLING SYSTEM					
17.1	MATERIAL HANDLING EQUIPMENT		$ 4,690,100	$ 845,000	$ 3,540,600	$ 9,075,700
17.2	FIRE PROTECTION SYSTEM FOR BELT CONVEYORS	DELUGE SYSTEM, DRY PIPE, SENSORS, ACTIVATION VALVE AND FM APPROVED PANEL - SUBCONTRACT PRICE FOR ALL CONVEYORS INCLUDES LABOR	$ 660,000	$ -	$ -	$ 660,000
17.3	PIPING - MECHANICAL		$ 4,800	$ 1,700	$ 13,200	$ 19,700
17.4	CONVEYOR STRUCTURE SUPPORT STEEL	THREE-COAT SHOP PAINT	$ -	$ 290,000	$ 291,800	$ 581,800
17.5	RAILCAR LIMESTONE UNLOADING HOPPER, CONVEYOR TUNNEL AND ESCAPE TUNNEL - FOUNDATIONS		$ -	$ 542,000	$ 1,613,400	$ 2,155,400
17.6	CONVEYOR SUPPORT STEEL - FOUNDATIONS		$ -	$ 16,000	$ 48,700	$ 64,700
17.7	LIMESTONE TRANSFER TOWER - FOUNDATIONS		$ -	$ 15,400	$ 30,500	$ 45,900
17.8	LIMESTONE TRANSFER CONVEYOR - FOUNDATIONS		$ -	$ 62,000	$ 125,800	$ 187,800
17.9	LIMESTONE RECLAIM HOPPER, CONVEYOR TUNNEL AND ESCAPE TUNNEL - FOUNDATIONS		$ -	$ 542,000	$ 1,613,400	$ 2,155,400
17.10	LIMESTONE UNLOADING PDC - FOUNDATIONS		$ -	$ 24,100	$ 44,800	$ 68,900
17.11	LIMESTONE UNLOADING PDC - CONCRETE PIERS	10 PIERS	$ -	$ 6,900	$ 20,600	$ 27,500
17.12	LIMESTONE RECLAIM PDC - FOUNDATIONS		$ -	$ 16,800	$ 32,300	$ 49,100
17.13	LIMESTONE RECLAIM PDC - CONCRETE PIERS	10 PIERS	$ -	$ 6,900	$ 20,600	$ 27,500
17.14	LIMESTONE UNLOADING PDC	18W X 50' X 10'H	$ 450,000	$ -	$ 32,800	$ 482,800
17.15	LIMESTONE RECLAIM PDC	15W X 30' X 10'H	$ 225,000	$ -	$ 16,400	$ 241,400
17.16	MCC	LIMESTONE UNLOADING & RECLAIM AREAS	$ 123,600	$ -	$ 7,200	$ 130,800
17.17	EMERGENCY POWER SYSTEM	LIMESTONE UNLOADING & RECLAIM AREAS	$ 216,300	$ -	$ 49,100	$ 265,400
17.18	LIGHTING/ TRANSFORMERS & PANELS		$ 26,000	$ 67,500	$ 52,200	$ 145,700
17.19	GROUNDING	LIMESTONE UNLOADING & RECLAIM AREAS	$ 13,000	$ -	$ 42,400	$ 55,400
17.20	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 801,100	$ 3,597,400	$ 4,398,500
17.21	HIGH VOLTAGE POWER CABLE & TERMINATION	1/C # 500KCMIL-15KV	$ -	$ 33,400	$ 94,100	$ 127,500

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	COST ESTIMATE SUMMARY	Preparer:	MNO
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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
17.22	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 130,600	$ 715,400	$ 846,000
17.23	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	$ -	$ 140,800	$ 395,100	$ 535,900
17.24	DUCT BANK	DUCT BANK WITH 6-5" & 6-3"	$ -	$ 26,600	$ 183,800	$ 210,400
17.25	COMMUNICATIONS		$ -	$ 34,000	$ 26,000	$ 60,000
17.26	LIGHTNING PROTECTION		$ -	$ 6,500	$ 5,500	$ 12,000
17.27	SECURITY SYSTEM		$ -	$ 16,000	$ 14,000	$ 30,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 6,408,800	$ 3,625,300	$ 12,627,100	$ 22,661,200
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 320,400	$ 924,500	$ 4,839,900	$ 6,084,800
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIMESTONE HANDLING SYSTEM	$ 6,729,200	$ 4,549,800	$ 17,467,000	$ 28,746,000
18.0	REAGENT (LIMESTONE) PREPARATION ISLAND					
18.1	MECHANICAL EQUIPMENT	INCLUDES LIMESTONE FEEDERS, FROM THE DAY SILOS THROUGH THE SLURRY STORAGE TANKS AND TRANSFER PUMPS WITH INTEGRAL PIPING	$ 15,167,000	$ -	$ 12,266,800	$ 27,433,800
18.2	SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES	$ 28,000	$ -	$ 12,300	$ 40,300
18.3	AGITATOR FOR SUMP PUMPS	5 HP	$ 12,000	$ -	$ 4,600	$ 16,600
18.4	PIPING - MECHANICAL		$ 278,900	$ 205,000	$ 587,300	$ 1,071,200
18.5	LIMESTONE SLURRY TANKS - FOUNDATIONS		$ -	$ 166,400	$ 299,400	$ 465,800
18.6	REAGENT PREPARATION BUILDING - FOUNDATIONS		$ -	$ 682,000	$ 1,132,200	$ 1,814,200
18.7	REAGENT PREPARATION BUILDING	120' L X 130' W X 130' H	$ 269,400	$ 4,865,000	$ 4,251,600	$ 9,386,000
18.8	PIPE SUPPORT PAD - REAGENT PREP BUILDING		$ -	$ 13,800	$ 27,500	$ 41,300
18.9	LIGHTING/ TRANSFORMERS & PANELS		$ 52,000	$ 135,000	$ 104,500	$ 291,500
18.10	GROUNDING		$ 5,100	$ -	$ 13,400	$ 18,500
18.11	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE ARE INCLUDED IN SECTION 20.0 - ABSORBER ISLAND	$ -	$ -	$ -	$ -
18.12	COMMUNICATIONS		$ -	$ 34,000	$ 26,000	$ 60,000
18.13	LIGHTNING PROTECTION		$ -	$ 23,000	$ 16,000	$ 39,000
18.14	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 15,812,400	$ 6,132,200	$ 18,748,600	$ 40,693,200

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	FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED	Date:	9/29/2010
	COST ESTIMATE SUMMARY	Preparer:	MNO
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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 790,600	$ 1,563,700	$ 7,186,000	$ 9,540,300
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	REAGENT (LIMESTONE) PREPARATION ISLAND	$ 16,603,000	$ 7,695,900	$ 25,934,600	$ 50,233,500
19.0	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)					
19.1	MECHANICAL EQUIPMENT	PRIMARY & SECONDARY DEWATERING INCLUDING HYDROCLONE FEED TANKS, HYDROCLONES, PUMPS, INTEGRAL PIPING AND BELT VACUUM FILTERS	$ 8,701,000	$ -	$ 6,644,500	$ 15,345,500
19.2	PUMPS & AGITATORS		$ 250,000	$ -	$ 137,000	$ 387,000
19.3	PIPING - MECHANICAL		$ 282,700	$ 3,555,700	$ 7,786,000	$ 11,624,400
19.4	MATERIAL HANDLING EQUIPMENT		$ 724,000	$ 7,500	$ 614,100	$ 1,345,600
19.5	FIRE PROTECTION SYSTEM FOR BELT CONVEYORS	DELUGE SYSTEM, DRY PIPE, SENSORS, ACTIVATION VALVE AND FM APPROVED PANEL - SUBCONTRACT PRICE FOR ALL CONVEYORS INCLUDES LABOR	$ 170,000	$ -	$ -	$ 170,000
19.6	CONVEYOR STRUCTURE SUPPORT STEEL	THREE-COAT SHOP PAINT	$ -	$ 99,000	$ 99,600	$ 198,600
19.7	PIPE RACK SUPPORT STEEL	THREE-COAT SHOP PAINT	$ -	$ 197,200	$ 198,400	$ 395,600
19.8	TANKS		$ -	$ 3,825,300	$ 846,700	$ 4,672,000
19.9	RECLAIM WATER TANKS & PUMPS - FOUNDATIONS		$ -	$ 26,000	$ 54,000	$ 80,000
19.10	MAINTENANCE STORAGE TANK & PUMPS - FOUNDATIONS		$ -	$ 100,000	$ 177,300	$ 277,300
19.11	LANDFILL SERVICE WATER TANKS & PUMP - FOUNDATIONS		$ -	$ 80,900	$ 155,100	$ 236,000
19.12	LANDFILL RECLAIM WATER TANKS & PUMPS - FOUNDATIONS		$ -	$ 26,000	$ 54,000	$ 80,000
19.13	HYDROCLONE FEED TANKS & BLEED TANKS - FOUNDATIONS	TOTAL FOR HYDROCLONE AND BLEED TANKS	$ -	$ 340,200	$ 618,900	$ 959,100
19.14	BYPRODUCT STACKOUT CONVEYOR & TRANSFER TOWER - FOUNDATIONS		$ -	$ 16,100	$ 34,700	$ 50,800
19.15	BYPRODUCT STACKOUT PILE - FOUNDATIONS	INCLUDES CONTAINMENT AREA SLAB	$ -	$ 891,700	$ 1,427,400	$ 2,319,100
19.16	PIPE RACK	SUPPORTS AT 15' C/C	$ -	$ 60,800	$ 149,400	$ 210,200
19.17	BYPRODUCT CONTAINMENT WALLS		$ -	$ 137,300	$ 235,000	$ 372,300

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19.18	INSTALL WIND SCREEN		$ -	$ 525,000	$ 192,300	$ 717,300
19.19	BYPRODUCT DEWATERING BUILDING - FOUNDATIONS		$ -	$ 291,400	$ 482,800	$ 774,200
19.20	BYPRODUCT DEWATERING BUILDING	120' L X 75' W X 65' H	$ 145,200	$ 1,595,300	$ 1,495,900	$ 3,236,400
19.21	PIPE SUPPORT PAD		$ -	$ 18,300	$ 36,000	$ 54,300
19.22	AUXILIARY PUMPHOUSE BUILDING WITH ELECTRICAL ROOM - FOUNDATIONS		$ -	$ 32,300	$ 60,800	$ 93,100
19.23	AUXILIARY PUMPHOUSE BUILDING	50'L X 35' W X 20'H	$ 101,300	$ 252,500	$ 269,800	$ 623,600
19.24	SITE GRADING - GYPSUM HANDLING AREA		$ -	$ -	$ 587,800	$ 587,800
19.25	ROADS & SURFACING - GYPSUM HANDLING AREA		$ -	$ 188,000	$ 427,900	$ 615,900
19.26	GYPSUM HANDLING & STORAGE		$ -	$ 1,179,900	$ 1,854,100	$ 3,034,000
19.27	GYPSUM RUNOFF POND		$ 68,000	$ 110,400	$ 315,700	$ 494,100
19.28	GYPSUM RUNOFF POND PUMP STRUCTURE - CONCRETE		$ -	$ 47,000	$ 105,400	$ 152,400
19.29	OILY WATER SEWER - GYPSUM HANDLING AREA		$ 1,500	$ 9,000	$ 14,200	$ 24,700
19.30	OIL SEPARATOR - GYPSUM HANDLING AREA	500 GPM W/ INTEGRAL LIFT STATION	$ 50,000	$ -	$ 58,100	$ 108,100
19.31	EROSION & SEDIMENT CONTROL - GYPSUM HANDLING AREA		$ -	$ 18,000	$ 28,300	$ 46,300
19.32	SITE GRADING - ACCESS ROAD WIDENING & CONTAINMENT DITCH	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA	$ -	$ -	$ 60,400	$ 60,400
19.33	ROADS & SURFACING - GYPSUM DEWATERING AREA	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA	$ -	$ 66,300	$ 190,800	$ 257,100
19.34	PIPELINE CONTAINMENT & DRAINAGE	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA	$ -	$ 271,600	$ 429,200	$ 700,800
19.35	CONTAINMENT RUNOFF POND	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA	$ 68,000	$ 114,300	$ 344,300	$ 526,600
19.36	CONTAINMENT POND PUMP STRUCTURE - CONCRETE	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA	$ -	$ 47,000	$ 105,400	$ 152,400
19.37	SITE GRADING - PIPELINE CONTAINMENT & DRAINAGE	SOUTH OF HWY 23	$ -	$ -	$ 30,200	$ 30,200
19.38	PIPELINE CONTAINMENT & DRAINAGE	SOUTH OF HWY 23	$ -	$ 169,600	$ 263,600	$ 433,200
19.39	PIPE BORING PIT	SOUTH OF HWY 23	$ -	$ 5,300	$ 50,900	$ 56,200
19.40	PIPE RECEIVING PIT	NORTH OF HWY 23	$ -	$ 4,900	$ 43,500	$ 48,400
19.41	DIRECTIONAL BORING FOR BURIED PIPE	BENEATH HWY 23	$ 28,000	$ 652,500	$ 277,000	$ 957,500
19.42	TRANSFORMERS		$ 470,000	$ -	$ 136,500	$ 606,500
19.43	SWITCHGEAR		$ 825,600	$ -	$ 500,700	$ 1,326,300
19.44	CABLE BUS & TERMINATIONS		$ 355,500	$ 39,400	$ 730,700	$ 1,125,600
19.45	MCC		$ 123,600	$ -	$ 6,300	$ 129,900
19.46	MIMIC PANELS		$ 17,500	$ -	$ 1,600	$ 19,100
19.47	EMERGENCY POWER SYSTEM		$ 285,500	$ -	$ 38,900	$ 324,400

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19.48	GROUNDING		$ 9,400	$ -	$ 25,400	$ 34,800
19.49	LIGHTING/ TRANSFORMERS & PANELS		$ 52,000	$ 135,000	$ 104,500	$ 291,500
19.50	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 354,700	$ 1,514,100	$ 1,868,800
19.51	13.8 KV OH LINE OPGW	INCLUDES POLES, CONDUCTORS, INSULATORS & GROUNDING	$ -	$ 240,200	$ 292,400	$ 532,600
19.52	HIGH VOLTAGE POWER CABLE & TERMINATION		$ -	$ 88,400	$ 256,600	$ 345,000
19.53	MEDIUM VOLTAGE POWER CABLE & TERMINATION	1/C # 350KCMIL-5KV	$ -	$ 18,400	$ 78,400	$ 96,800
19.54	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 62,700	$ 547,400	$ 610,100
19.55	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	$ -	$ 112,000	$ 314,300	$ 426,300
19.56	FOUNDATIONS FOR TRANSFORMERS		$ -	$ 70,200	$ 205,400	$ 275,600
19.57	FIREWALL FOR TRANSFORMERS		$ -	$ 3,200	$ 8,300	$ 11,500
19.58	COMMUNICATIONS		$ -	$ 34,000	$ 26,000	$ 60,000
19.59	LIGHTNING PROTECTION		$ -	$ 13,000	$ 10,300	$ 23,300
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 12,728,800	$ 16,133,500	$ 31,754,300	$ 60,616,600
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 636,400	$ 4,114,000	$ 12,171,100	$ 16,921,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 13,365,200	$ 20,247,500	$ 43,925,400	$ 77,538,200
20.0	WET FGD ABSORBER ISLAND					
20.1	MECHANICAL EQUIPMENT		$ 41,363,000	$ -	$ 40,889,400	$ 82,252,400
20.2	ADDITIONAL COST FOR C276 ABSORBER SHELL MATERIAL ABOVE THE PRICE OF A2205 ABSORBER SHELL	INCLUDES MATERIAL AND WELDING ROD COST DIFFERENTIAL - 49,800 TOTAL SF	$ -	$ 15,338,400	$ -	$ 15,338,400
20.3	SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES	$ 28,000	$ -	$ 12,300	$ 40,300
20.4	AGITATOR FOR SUMP PUMPS	5 HP	$ 12,000	$ -	$ 4,600	$ 16,600
20.5	EMERGENCY DIESEL DRIVEN QUENCH PUMP		$ 150,000	$ -	$ 30,700	$ 180,700
20.6	PIPING - MECHANICAL		$ -	$ -	$ -	$ -
20.7	ABSORBER VESSEL - FOUNDATIONS		$ -	$ 366,900	$ 672,900	$ 1,039,800
20.8	ABSORBER BUILDING - FOUNDATIONS		$ -	$ 579,500	$ 961,200	$ 1,540,700
20.9	ABSORBER BUILDING		$ 164,500	$ 2,622,800	$ 2,402,700	$ 5,190,000
20.10	PIPE SUPPORT PAD - ABSORBER BUILDING		$ -	$ 7,700	$ 16,100	$ 23,800
20.11	OXIDATION AIR BLOWER BUILDING - FOUNDATIONS		$ -	$ 37,000	$ 67,300	$ 104,300
20.12	OXIDATION AIR BLOWER BUILDING		$ 33,800	$ 191,000	$ 201,400	$ 426,200
20.13	PIPE SUPPORT PAD - OXIDATION BUILDING		$ -	$ 7,700	$ 13,700	$ 21,400
20.14	DUCTWORK		$ -	$ 373,800	$ 713,900	$ 1,087,700
20.15	DUCT SUPPORT STEEL		$ -	$ 168,200	$ 169,200	$ 337,400

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20.16	DUCTWORK INSULATION & LAGGING		$ -	$ 132,000	$ 258,500	$ 390,500
20.17	FOUNDATIONS FOR DUCT SUPPORT STEEL		$ -	$ 17,700	$ 35,300	$ 53,000
20.18	TRANSFORMERS		$ 981,000	$ -	$ 209,300	$ 1,190,300
20.19	SWITCHGEAR	13.8KV-4160V, 2 WINDING XFMR	$ 1,162,800	$ -	$ 673,700	$ 1,836,500
20.20	CABLE BUS & TERMINATIONS	PRICE PER SECTION	$ 867,100	$ 46,600	$ 1,634,100	$ 2,547,800
20.21	MCC	CABLE BUS	$ 216,300	$ -	$ 11,100	$ 227,400
20.22	MIMIC PANELS	PER MCC LINE UP	$ 35,000	$ -	$ 7,900	$ 42,900
20.23	GROUNDING	0.00	$ 16,000	$ -	$ 46,100	$ 62,100
20.24	LIGHTING/ TRANSFORMERS & PANELS	3/4" - 20' LONG	$ 164,500	$ 165,000	$ 171,300	$ 500,800
20.25	EMERGENCY POWER SYSTEM		$ 108,300	$ -	$ 24,400	$ 132,700
20.26	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 1,515,700	$ 5,849,000	$ 7,364,700
20.27	HIGH VOLTAGE POWER CABLE & TERMINATION	INCLUDING SUPPORT & FITTINGS	$ -	$ 58,400	$ 164,700	$ 223,100
20.28	MEDIUM VOLTAGE POWER CABLE & TERMINATION		$ -	$ 114,600	$ 431,700	$ 546,300
20.29	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 795,900	$ 1,500,700	$ 2,296,600
20.30	CONTROL & INSTRUMENT CABLE		$ -	$ 512,000	$ 1,436,700	$ 1,948,700
20.31	FOUNDATION FOR TRANSFORMERS		$ -	$ 59,000	$ 173,700	$ 232,700
20.32	TRANSFORMER FIRE WALLS	WITH OIL PIT	$ -	$ 3,500	$ 9,600	$ 13,100
20.33	COMMUNICATIONS		$ -	$ 34,000	$ 26,000	$ 60,000
20.34	LIGHTNING PROTECTION		$ -	$ 19,500	$ 14,500	$ 34,000
20.35	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 45,302,300	$ 23,174,900	$ 58,840,700	$ 127,317,900
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 2,940,100	$ 5,909,600	$ 23,335,900	$ 32,185,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 48,242,400	$ 29,084,500	$ 82,176,600	$ 159,503,500
21.0	COMPRESSED AIR SYSTEM (BYPRODUCT DEWATERING					
21.1	AIR COMPRESSOR & AUXILIARIES		$ 205,200	$ -	$ 53,200	$ 258,400
21.2	PIPING - MECHANICAL		$ 241,100	$ 166,200	$ 633,100	$ 1,040,400
21.3	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE ARE INCLUDED IN SECTION 19.0 - BYPRODUCT DEWATERING ISLAND	$ -	$ -	$ -	$ -
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 446,300	$ 166,200	$ 686,300	$ 1,298,800
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT		$ 22,300	$ 42,400	$ 263,400	$ 328,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	COMPRESSED AIR SYSTEM (BYPRODUCT DEWATERING AREA)	$ 468,600	$ 208,600	$ 949,700	$ 1,626,900
22.0	POTABLE WATER SYSTEM	INCLUDED WITH ACCOUNT 11.0				

Sargent & Lundy, LLC	AEP	Estimate No.:	30720C
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED	Date:	9/29/2010
	COST ESTIMATE SUMMARY	Preparer:	MNO
		Reviewer:	JMK
		Approver:	PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
23.0	SCR SUBSTATION UPGRADE					
23.1	TRANSFORMERS		$ 1,126,000	$ 150,000	$ 414,700	$ 1,690,700
23.2	SWITCHGEAR		$ 250,000	$ -	$ 136,600	$ 386,600
23.3	138 KV OH LINE UPGRADE	6-200FT QUAIL #200	$ -	$ 10,200	$ 54,600	$ 64,800
23.4	FOUNDATION FOR AUX TRANSFORMER		$ -	$ 63,500	$ 134,400	$ 197,900
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 1,376,000	$ 223,700	$ 740,300	$ 2,340,000
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 68,800	$ 57,000	$ 283,381	$ 409,200
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 1,444,800	$ 280,700	$ 1,023,700	$ 2,749,200
24.0	FGD DCS SYSTEM	INCLUDED WITH ACCOUNT 13.0				
25.0	SITE IMPROVEMENTS - CIVIL WORK	INCLUDED WITH ACCOUNT 16.0				
26.0	BOP ITEMS					
26.1	PIPE INSULATION	AVERAGE 6" PIPE SIZE	$ -	$ 94,000	$ 293,000	$ 387,000
26.2	HEAT TRACING		$ -	$ 454,500	$ 660,200	$ 1,114,700
26.3	TOUCH UP PAINT (INCLUDES PAINTING CS PIPE)		$ -	$ 301,500	$ 1,156,700	$ 1,458,200
26.4	HOISTS & TROLLEYS		$ 330,000	$ 385,000	$ 449,800	$ 1,164,800
26.5	MISC AUX STEEL FOR PIPE SUPPORTS	FIELD FABRICATED	$ -	$ 245,000	$ 1,021,200	$ 1,266,200
26.6	MISC PIPE SUPPORT FOUNDATIONS		$ -	$ 32,000	$ 59,700	$ 91,700
26.7	EYE WASH STATIONS		$ 60,000	$ 10,000	$ 61,300	$ 131,300
26.8	FIRE PROTECTION FOR MISC BUILDINGS & AREAS		$ -	$ 720,000	$ 588,800	$ 1,308,800
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 390,000	$ 2,242,000	$ 4,290,700	$ 6,922,700
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 19,500	$ 571,710	$ 1,644,510	$ 2,235,720
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BOP ITEMS	$ 409,500	$ 2,813,700	$ 5,935,200	$ 9,158,400
27.0	CAPITAL REPLACEMENTS - REMOVAL AND RELOCATION OF EXISTING EQUIPMENT AND INFRASTRUCTURE					
27.1	RELOCATE HYDROGEN STORAGE TANK		$ -	$ 15,600	$ 86,800	$ 102,400
27.2	NEW HYDROGEN LINE TO PLANT		$ -	$ 62,100	$ 150,600	$ 212,700
27.3	RELOCATE MISC. UNDERGROUND UTILITIES	ALLOWANCE	$ -	$ 125,000	$ 170,500	$ 295,500
27.4	REROUTED 138KV LINE .	TWO NEW TOWERS, NEW	$ 500,000	$ -	$ 255,700	$ 755,700
27.5	OUTAGE TIE-IN DUCTWORK	ALLOWANCE FOR 85 TON	$ -	$ 276,300	$ 527,700	$ 804,000
27.6	RELOCATED WAREHOUSE - FOUNDATIONS		$ -	$ 342,600	$ 534,900	$ 877,500
27.7	RELOCATE EXISTING WAREHOUSE BUILDING	150' L X 75' W X 25' H	$ -	$ 95,600	$ 1,121,500	$ 1,217,100

Sargent & Lundy, LLC	AEP	Estimate No.:	30720C
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED	Date:	9/29/2010
	COST ESTIMATE SUMMARY	Preparer:	MNO
		Reviewer:	JMK
		Approver:	PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 500,000	$ 917,200	$ 2,847,700	$ 4,264,900
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 25,000	$ 233,900	$ 1,018,300	$ 1,277,200
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 525,000	$ 1,151,100	$ 3,866,000	$ 5,542,100
28.0	ARSENIC, ASBESTOS , LEAD ABATEMENT					
28.1	ARSENIC, ASBESTOS , LEAD ABATEMENT	PROVIDED BY AEP	$ -	$ -	$ -	$ 750,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ -	$ -	$ -	$ 750,000
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT		$ -	$ -	$ -	$ 112,500
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	ARSENIC, ASBESTOS , LEAD	$ -	$ -	$ -	$ 862,500
99.0	OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 186,435,400	$ 102,207,500	$ 264,512,600	$ 585,280,500
	OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 10,743,800	$ 26,006,200	$ 101,247,200	$ 143,067,200
	OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 197,179,200	$ 128,213,700	$ 365,759,800	$ 728,347,700
	INDIRECT COSTS					
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES					$ 45,000,000
	CONSTRUCTION MANAGEMENT					$ 21,850,400
	S-U / COMMISSIONING					$ 7,283,500
	CRAFT START-UP SUPPORT					$ 3,117,400
	INITIAL FILLS					$ 2,185,000
	OPERATOR & TRAINING MANUALS					$ 600,000
	SUBCONTRACTORS (NOISE & DUCTWORK CONSULTANT,					$ 750,000
	NOISE ABATEMENT FOR 85 DBA REQUIREMENT	FOR ID FAN, SDA ENCLOSURE, TRANSFORMERS, BOP, DUCTWORK, ACOUSTIC BARRIERS FOR BOUNDARY LIMITS				$ 4,500,000
	SUBTOTAL - INDIRECT COSTS					$ 85,286,300
	TOTAL DIRECT AND INDIRECT COSTS					$ 813,634,000
	SPARE PARTS					$ 2,957,700
	SPARE PARTS - CAPITALIZED	0.90				$ 1,774,620
	SPARE PARTS - FIRST YEAR OF OPERATION	0.60				$ 1,183,080
	CONTINGENCY	13.9				$ 113,200,600

Sargent & Lundy, LLC	AEP	Estimate No.:	30720C
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED	Date:	9/29/2010
	COST ESTIMATE SUMMARY	Preparer:	MNO
		Reviewer:	JMK
		Approver:	PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
	ESCALATION					$ 101,295,000
	EQUIPMENT					$ 29,379,300
	MATERIAL					$ 13,609,300
	LABOR					$ 48,448,900
	INDIRECTS					$ 9,857,500
	TOTAL PROJECT COST					$ 1,031,087,300
	REFERENCE COSTS:					
A	ESP DEMOLITION	ALLOWANCE FOR 1000T STRUCTURE	$ -	$ -	$ 832,300	$ 832,300
B	REMOVE BOOSTER AIR FANS		$ -	$ -	$ 111,000	$ 111,000
C	REMOVAL OF FUEL OIL TANK	LABOR COST IS FOR REMOVAL OF TANK ONLY. ALLOWANCE FOR SOIL REMEDIATION AND DISPOSAL IN AN EPA APPROVED LANDFILL. SUBCONTRACT COST INCLUDES LABOR. USED LOWER END OF THE RANGE $118-355/CY. COST COULD BE LOWER ($59-118/CY) IF SOLD TO A BITUMINOUS CONCRETE BATCH PLANT	$ 1,200,000	$ 80,000	$ 469,400	$ 1,749,400

ATTACHMENT 4-16
IAQCS Summary Capital Cost Estimate No. 30714 Est-2A ESP in Service*
(1.7 lb SO_2/MMbtu)

* - Due to the significant differences in layout between the phased and non-phased cost estimates the "bases" for comparison purposes were 1B for the non-phased cost estimates and 3B for the phased cost estimates. Therefore cost estimates 2A, 2B, 3A (Phased) and 1A, 4A and 4B (Non-Phased) contain only accounts whose costs are different from the corresponding base estimates 3B and 1B respectively.

Sargent & Lundy, LLC	AEP	Estimate No.:	30714C
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS (ESP)-2A - 1.7 LB/MM BTU - PHASED	Date:	9/29/2010
	COST ESTIMATE SUMMARY	Preparer:	MNO
		Reviewer:	JMK
		Approver:	PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
1.0	ID FANS					
1.1	ID FANS - OEM EQUIPMENT	1,800,000 ACFM WITH 19,700 HP MOTORS ($750,000 EACH). INCLUDES HYDRAULIC OIL UNITS, SEAL AIR FAN SKIDS, VIBRATION MONITORING EQUIPMENT, FAN STALL EQUIPMENT, FIELD SERVICE REP FOR 140 DAYS	$ 6,920,000	$ -	$ 1,674,400	$ 8,594,400
1.2	PIPING & SUPPORTS - MECHANICAL		$ 21,800	$ 28,700	$ 120,500	$ 171,000
1.3	DAMPERS		$ 781,000	$ -	$ 352,600	$ 1,133,600
1.4	EXPANSION JOINTS		$ -	$ 131,100	$ 116,500	$ 247,600
1.5	DUCTWORK	FABRIC FILTER OUTLET TO ID FANS AND FROM ID FANS TO STACK - INCLUDES INTERNAL BRACING AND TURNING VANES	$ -	$ 3,558,800	$ 6,797,400	$ 10,356,200
1.6	DUCT SUPPORT STEEL	THREE COAT SHOP PAINT	$ -	$ 1,595,000	$ 1,604,700	$ 3,199,700
1.7	ID FAN INSULATION & LAGGING	TOTAL FOR TWO FANS. PRICING REFLECTS STANDARD ACOUSTICAL INSULATION	$ -	$ 168,000	$ 217,200	$ 385,200
1.8	DUCTWORK INSULATION & LAGGING	INCLUDES INSULATION FOR SPRAY DRYER OUTLET DUCT TO FABRIC FILTERS SUPPLIED WITH THE OEM EQUIPMENT	$ -	$ 1,363,400	$ 2,670,400	$ 4,033,800
1.9	DUCT SUPPORT STEEL - FOUNDATIONS		$ -	$ 440,200	$ 855,200	$ 1,295,400
1.10	ID FAN FOUNDATIONS INCLUDING ID FAN AUX EQUIPMENT		$ -	$ 106,000	$ 198,700	$ 304,700
1.11	ID FAN IAQCS CONTROL ROOM - FOUNDATIONS		$ -	$ 270,100	$ 508,600	$ 778,700
1.12	ID FAN IAQCS CONTROL ROOM	SUBCONTRACT PRICE INCLUDES LABOR. COMPLETE WITH HVAC, FINISHES AND SANITARY FACILITIES	$ -	$ 3,937,500	$ -	$ 3,937,500

Sargent & Lundy, LLC	AEP	Estimate No.:	30714C
	BIG SANDY UNIT 2	Project No.:	12721-000
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	COST ESTIMATE SUMMARY	Preparer:	MNO
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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
1.13	TRANSFORMERS		$ 770,000	$ -	$ 145,600	$ 915,600
1.14	SWITCHGEAR		$ 1,132,000	$ -	$ 589,900	$ 1,721,900
1.15	CABLE BUS & TERMINATIONS		$ 1,129,100	$ 35,800	$ 1,930,000	$ 3,094,900
1.16	MCC		$ 180,000	$ -	$ 10,900	$ 190,900
1.17	MIMIC PANELS		$ 17,500	$ -	$ 4,500	$ 22,000
1.18	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 1,664,200	$ 8,196,600	$ 9,860,800
1.19	HIGH VOLTAGE POWER CABLE & TERMINATION		$ -	$ 288,500	$ 666,700	$ 955,200
1.20	MEDIUM VOLTAGE POWER CABLE & TERMINATION		$ -	$ 100,200	$ 427,400	$ 527,600
1.21	LOW VOLTAGE POWER CABLE & TERMINATIONS		$ -	$ 229,800	$ 732,100	$ 961,900
1.22	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	$ -	$ 361,000	$ 1,012,900	$ 1,373,900
1.23	EMERGENCY POWER SYSTEM		$ 285,500	$ -	$ 38,900	$ 324,400
1.24	GROUNDING		$ 14,100	$ -	$ 42,700	$ 56,800
1.25	LIGHTING/ TRANSFORMERS & PANELS		$ 26,000	$ 30,000	$ 29,500	$ 85,500
1.26	DUCT BANK		$ -	$ 136,000	$ 192,700	$ 328,700
1.27	FOUNDATION FOR TRANSFORMERS		$ -	$ 61,900	$ 162,600	$ 224,500
1.28	FIREWALL FOR TRANSFORMERS		$ -	$ 3,200	$ 8,300	$ 11,500
1.29	EARLY COMMISSIONING COSTS TEMPORARY HIGH VOLTAGE POWER CABLE & TERMINATION FROM EAST SIDE OF SCR BUILDING TO TRANSFORMER PDC		$ -	$ 139,800	$ 230,200	$ 370,000
1.30	COMMUNICATIONS		$ -	$ 17,000	$ 13,000	$ 30,000
1.31	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
1.32	EMERGENCY DIESEL DRIVEN QUENCH PUMP	WITH FUEL DAY TANK. FOUNDATIONS INCLUDED WITH ABSORBER BUILDING FOUNDATIONS. INCLUDES PIPING AND DRAINS	$ 150,000	$ 200,000	$ 332,200	$ 682,200
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 11,427,000	$ 14,874,200	$ 29,889,900	$ 56,191,100

Sargent & Lundy, LLC	AEP	Estimate No.:	30714C
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS (ESP)-2A - 1.7 LB/MM BTU - PHASED	Date:	9/29/2010
	COST ESTIMATE SUMMARY	Preparer:	MNO
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		Approver:	PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 571,400	$ 3,792,900	$ 10,767,700	$ 15,131,900
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	ID FANS	$ 11,998,400	$ 18,667,100	$ 40,657,600	$ 71,323,000
2.0	FABRIC FILTERS					
2.1	MECHANICAL EQUIPMENT	A SINGLE FABRIC FILTER (225' X 130') UNIT INCLUDING ALL INTERNAL FABRIC FILTER ELEMENTS SUCH AS BAGS, CAGES, ASH HOPPERS, 2 BROKEN BAG DETECTORS PER COMPARTMENT	$ 19,409,000	$ -	$ 12,471,300	$ 31,880,300
2.2	INSULATION FOR FABRIC FILTER	SUBCONTRACT COST INCLUDES LABOR	$ 2,430,000	$ -	$ -	$ 2,430,000
2.3	PENTHOUSE FOR FABRIC FILTER	SUPPORT STEEL AND PURLINS INCLUDED WITH OEM EQUIPMENT	$ 70,200	$ 787,000	$ 1,007,600	$ 1,864,800
2.4	BOTTOM ENCLOSURE FOR BAGHOUSE		$ 60,000	$ 1,204,000	$ 1,359,800	$ 2,623,800
2.5	PIPING & SUPPORTS - MECHANICAL		$ 30,900	$ 101,400	$ 209,500	$ 341,800
2.6	FABRIC FILTER - FOUNDATIONS		$ -	$ 550,700	$ 1,081,100	$ 1,631,800
2.7	FABRIC FILTER - SUPPORT STEEL AND ACCESS GALLERY		$ -	$ 360,000	$ 1,186,700	$ 1,546,700
2.8	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE INCLUDED IN SECTION 1.0 - ID FANS	$ -	$ -	$ -	$ -
2.9	LIGHTING/ TRANSFORMERS & PANELS		$ 30,000	$ 75,000	$ 58,200	$ 163,200
2.10	GROUNDING		$ 7,300	$ -	$ 17,500	$ 24,800
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 22,067,400	$ 3,153,100	$ 17,391,700	$ 42,507,200

Sargent & Lundy, LLC	AEP	Estimate No.:	30714C
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS (ESP)-2A - 1.7 LB/MM BTU - PHASED	Date:	9/29/2010
	COST ESTIMATE SUMMARY	Preparer:	MNO
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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 1,103,400	$ 804,000	$ 6,460,400	$ 8,367,800
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FABRIC FILTERS	$ 23,170,800	$ 3,957,100	$ 23,852,100	$ 50,875,000
3.0	NEW STACK					
4.0	LIME HANDLING SYSTEM					
4.1	LIME STORAGE SILO		$ 3,054,000	$ -	$ -	$ 3,054,000
4.2	LIME UNLOADING SYSTEM	INCLUDES PNEUMATIC HANDLING SYSTEM, THREE VACUUM EXHAUSTER, TWO FILTER SEPARATORS	$ 350,000	$ -	$ 281,100	$ 631,100
4.3	PIPING - MECHANICAL		$ 29,000	$ 15,600	$ 77,900	$ 122,500
4.4	LIME STORAGE SILO ACCESS STAIR TOWER	THREE COAT SHOP PAINT	$ -	$ 145,000	$ 145,900	$ 290,900
4.5	PIPE RACK FOR LIME HANDLING, WASTE HANDLING AND MISC MECHANICAL PIPING	THREE COAT SHOP PAINT	$ -	$ 783,000	$ 787,800	$ 1,570,800
4.6	RAIL CAR UNLOADING AREA - FOUNDATIONS	20 X 250 - NO SIDING	$ -	$ 85,300	$ 180,200	$ 265,500
4.7	LIME UNLOADING BLOWER / ELECTRICAL BUILDING - FOUNDATIONS		$ -	$ 74,500	$ 187,800	$ 262,300
4.8	LIME UNLOADING BLOWER / ELECTRICAL BUILDING	130' L X 30' W X 30' H	$ 75,000	$ 351,500	$ 24,400	$ 450,900
4.9	CONCRETE PIT FOR THE ELEVATOR		$ -	$ 2,300	$ 6,900	$ 9,200
4.10	LIME STORAGE SILO - FOUNDATIONS		$ -	$ 182,500	$ 338,600	$ 521,100
4.11	LIME STORAGE SILO ACCESS STAIR TOWER - FOUNDATIONS		$ -	$ 14,200	$ 28,600	$ 42,800
4.12	PIPE RACK - FOUNDATIONS		$ -	$ 94,200	$ 237,800	$ 332,000
4.13	TRANSFORMERS: 33F, 33G,	SUS TRANSFORMERS: 33F, 33G, 13.8KV-480V,3PHASE, 3 WINDING XFMR 2/2.24/3- 2MVA (DELTA TO DELTA)	$ 170,000	$ -	$ 54,600	$ 224,600
4.14	480V LOW VOLTAGE (33F/G) SWITCHGEAR	PER LINE UP	$ 196,000	$ -	$ 104,700	$ 300,700
4.15	CABLE BUS DUCT		$ 134,700	$ 10,800	$ 200,200	$ 345,700
4.16	MCC		$ 61,800	$ -	$ 3,600	$ 65,400
4.17	MIMIC PANELS		$ 17,500	$ -	$ 1,400	$ 18,900
4.18	EMERGENCY POWER SYSTEM		$ 108,300	$ -	$ 24,400	$ 132,700

Sargent & Lundy, LLC	AEP	Estimate No.:	30714C
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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
4.19	GROUNDING		$ 13,300	$ -	$ 41,300	$ 54,600
4.20	LIGHTING/ TRANSFORMERS & PANELS		$ 52,000	$ 135,000	$ 104,500	$ 291,500
4.21	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 310,900	$ 1,537,100	$ 1,848,000
4.22	HIGH VOLTAGE POWER CABLE & TERMINATION	1/C # 500KCMIL-15KV	$ -	$ 50,100	$ 141,200	$ 191,300
4.23	MEDIUM VOLTAGE POWER CABLE & TERMINATION	1/C # 350KCMIL-5KV	$ -	$ 66,200	$ 282,300	$ 348,500
4.24	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 93,000	$ 143,200	$ 236,200
4.25	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	$ -	$ 26,200	$ 73,600	$ 99,800
4.26	DUCT BANK	DUCT BANK WITH 4-5" & 4-3" CONDUITS, 2.38' H X 3.79' W	$ -	$ 61,100	$ 116,200	$ 177,300
4.27	FOUNDATIONS FOR TRANSFORMERS		$ -	$ 3,500	$ 10,300	$ 13,800
4.28	COMMUNICATIONS		$ -	$ 17,000	$ 13,000	$ 30,000
4.29	LIGHTNING PROTECTION		$ -	$ 14,000	$ 9,000	$ 23,000
4.30	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 4,261,600	$ 2,543,900	$ 5,164,600	$ 11,970,100
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 213,100	$ 648,700	$ 1,873,100	$ 2,734,900
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME HANDLING SYSTEM	$ 4,474,700	$ 3,192,600	$ 7,037,700	$ 14,705,000
5.0	LIME SLAKER BUILDING					
5.1	MECHANICAL EQUIPMENT	INCLUDES:CHAIN CONVEYOR, SLAKERS THROUGH THE LIME SLURRY PUMPS, PIPING, AND LIME SLURRY STORAGE TANKS.	$ 5,914,000	$ -	$ 4,129,800	$ 10,043,800
5.2	REAGENT AREA SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES	$ 28,000	$ -	$ 12,300	$ 40,300
5.3	AGITATOR FOR SUMP PUMPS	5 HP	$ 12,000	$ -	$ 4,600	$ 16,600
5.4	PIPING - MECHANICAL		$ 117,800	$ 111,400	$ 381,100	$ 610,300
5.5	LIME SLURRY TANKS - FOUNDATIONS		$ -	$ 166,400	$ 299,400	$ 465,800
5.6	LIME SLAKER BUILDING - FOUNDATIONS		$ -	$ 119,200	$ 204,000	$ 323,200

Sargent & Lundy, LLC	AEP	Estimate No.:	30714C
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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
5.7	LIME SLAKER BUILDING	135' L X 30' W X 50' H	$ 40,500	$ 803,300	$ 740,500	$ 1,584,300
5.8	ELECTRICAL	INCLUDED WITH LIME HANDLING SYSTEM, ACCOUNT 4.0	$ -	$ -	$ -	$ -
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 6,112,300	$ 1,200,300	$ 5,771,700	$ 13,084,300
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 305,600	$ 306,100	$ 2,153,500	$ 2,765,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME SLAKER BUILDING	$ 6,417,900	$ 1,506,400	$ 7,925,200	$ 15,849,400
6.0	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS					
6.1	BYPRODUCT WASTE ASH HANDLING - MECHANICAL EQUIPMENT	INCLUDES PNEUMATIC HANDLING SYSTEM, THREE PRESSURE BLOWERS, ONE BIN VENT FILTER, ASH UNLOADING SYSTEM	$ 2,047,000	$ -	$ 1,380,000	$ 3,427,000
6.2	FLY ASH HANDLING - MECHANICAL EQUIPMENT	INCLUDES PNEUMATIC HANDLING SYSTEM, TWO PRESSURE EXHAUSTERS, TRANSFER STATION, ONE BIN VENT FILTER, ASH UNLOADING SYSTEM	$ 2,285,000	$ -	$ 1,431,100	$ 3,716,100
6.3	BUILDING SUMP PUMPS	FOR BUILDINGS - DUPLEX. INCLUDES CHECK & ISOLATION VALVES.	$ 28,000	$ -	$ 12,300	$ 40,300
6.4	AGITATOR FOR SUMP PUMPS	5 HP	$ 12,000	$ -	$ 4,600	$ 16,600
6.5	PIPING - MECHANICAL		$ 142,800	$ 240,900	$ 759,100	$ 1,142,800

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6.6	BYPRODUCT WASTE SILO	CONCRETE SILO 45' DIA X 80' H - 1625 TONS -SUBCONTRACT COST INCLUDES LABOR	$ 1,375,000	$ -	$ -	$ 1,375,000
6.7	SDA RECYCLE SILO	INCLUDED WITH OEM EQUIPMENT	$ -	$ -	$ -	$ -
6.8	FLY ASH SILO	46T STEEL -STORAGE SILO, 15' DIA X 19' H	$ 45,000	$ 23,200	$ 64,300	$ 132,500
6.9	BYPRODUCT WASTE SILO SILO - FOUNDATIONS		$ -	$ 92,200	$ 179,200	$ 271,400
6.10	FLY ASH SILO - FOUNDATIONS		$ -	$ 10,800	$ 24,500	$ 35,300
6.11	FLY ASH BLOWER AND ELECTRICAL BUILDING - FOUNDATIONS		$ -	$ 49,600	$ 105,700	$ 155,300
6.12	FLY ASH BLOWER AND ELECTRICAL BUILDING	90' L X 30' W X 25' H	$ 28,000	$ 244,500	$ 24,400	$ 296,900
6.13	RECYCLE ASH BUILDING - FOUNDATIONS		$ -	$ 234,300	$ 393,800	$ 628,100
6.14	RECYCLE ASH BUILDING	100' L X 65' W X 50' H	$ 58,500	$ 1,306,700	$ 1,194,500	$ 2,559,700
6.15	MCC	480V MCC PER LINE UP	$ 120,000	$ -	$ 7,300	$ 127,300
6.16	EMERGENCY POWER SYSTEM		$ 185,500	$ -	$ 40,000	$ 225,500
6.17	LIGHTING/ TRANSFORMERS & PANELS		$ 18,500	$ 75,000	$ 53,200	$ 146,700
6.18	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 40,700	$ 236,200	$ 276,900
6.19	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 80,900	$ 100,600	$ 181,500
6.20	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	$ -	$ 38,400	$ 107,800	$ 146,200
6.21	GROUNDING		$ -	$ 4,500	$ 10,900	$ 15,400
6.22	DUCT BANK	DUCT BANK WITH 12-5" & 6-3"	$ -	$ 111,500	$ 184,000	$ 295,500
6.23	COMMUNICATIONS		$ -	$ 70,000	$ 50,000	$ 120,000
6.24	LIGHTNING PROTECTION		$ -	$ 19,000	$ 14,000	$ 33,000
6.25	SECURITY SYSTEM		$ -	$ 16,000	$ 14,000	$ 30,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 6,345,300	$ 2,658,200	$ 6,391,500	$ 15,395,000

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	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 317,300	$ 677,800	$ 2,378,700	$ 3,373,800
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS	$ 6,662,600	$ 3,336,000	$ 8,770,200	$ 18,768,800
7.0	SPRAY DRYER ABSORBER ISLAND					
7.1	MECHANICAL EQUIPMENT	INCLUDES: ABSORBER MODULES AND ATOMIZERS WITH LUBE OIL, DUCT WORK FROM THE ABSORBERS TO THE FABRIC FILTER, AND COMPLETE RECYCLE SYSTEM WITH PIPING INSIDE FGD BUILDINGS.	$ 39,438,000	$ -	$ 24,186,100	$ 63,624,100
7.2	ELEVATOR	MAINTENANCE ELEVATOR - SUBCONTRACT COST INCLUDES LABOR	$ 325,000	$ -	$ -	$ 325,000
7.3	ABSORBER AREA SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES.	$ 28,000	$ -	$ 12,300	$ 40,300
7.4	AGITATOR FOR SUMP PUMPS	5 HP	$ 12,000	$ -	$ 4,600	$ 16,600
7.5	PIPING - MECHANICAL		$ 142,800	$ 36,900	$ 227,900	$ 407,600
7.6	SDA SUPERSTRUCTURE		$ 75,000	$ 764,900	$ 1,227,300	$ 2,067,200
7.7	SDA BOTTOM ENCLOSURE - SUPPORT STEEL, GIRTS AND SIDING	TOTAL FOR THREE ABSORBERS	$ -	$ 362,100	$ 385,200	$ 747,300
7.8	SDA SHELL / ROOF INSULATION	61,000 SF. SUBCONTRACT COST INCLUDES LABOR	$ 1,830,000	$ -	$ -	$ 1,830,000
7.9	SDA - SUPPORT STEEL & ACCESS GALLERY		$ -	$ 711,000	$ 1,884,100	$ 2,595,100
7.10	EXPANSION JOINTS		$ -	$ 195,500	$ 173,800	$ 369,300
7.11	DUCTWORK		$ -	$ 6,175,000	$ 13,113,700	$ 19,288,700
7.12	DUCT SUPPORT STEEL	THREE COAT SHOP PAINT	$ -	$ 2,755,000	$ 2,771,700	$ 5,526,700

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7.13	DUCTWORK INSULATION & LAGGING		$ -	$ 2,040,000	$ 3,995,500	$ 6,035,500
7.14	CONCRETE PIT FOR ELEVATOR		$ -	$ 2,800	$ 8,200	$ 11,000
7.15	SPRAY DRYER ABSORBER - FOUNDATIONS	TOTAL FOR THREE TOWERS	$ -	$ 1,678,600	$ 3,323,400	$ 5,002,000
7.16	FOUNDATIONS FOR SUPPORT STEEL		$ -	$ 69,000	$ 143,000	$ 212,000
7.17	GROUNDING		$ -	$ 16,000	$ 46,100	$ 62,100
7.18	LIGHTING/ TRANSFORMERS & PANELS		$ 156,000	$ 150,000	$ 159,100	$ 465,100
7.19	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE INCLUDED IN SECTION 1.0 - ID FANS	$ -	$ -	$ -	$ -
7.20	COMMUNICATIONS		$ -	$ 17,000	$ 13,000	$ 30,000
7.21	LIGHTNING PROTECTION		$ -	$ 25,500	$ 18,500	$ 44,000
7.22	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 42,006,800	$ 15,007,300	$ 51,700,500	$ 108,714,600
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 2,910,300	$ 3,826,900	$ 20,483,400	$ 27,220,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SPRAY DRYER ABSORBER ISLAND	$ 44,917,100	$ 18,834,200	$ 72,183,900	$ 135,935,200
8.0	ACTIVATED CARBON INJECTION SYSTEM					
9.0	COMPRESSED AIR SYSTEM					
10.0	SERVICE WATER SYSTEM					
11.0	POTABLE WATER SYSTEM					
12.0	FGD SUBSTATION					
12.1	TRANSFORMERS		$ 1,560,000	$ -	$ 273,100	$ 1,833,100
12.2	TRANSFORMER PDC	15W X 45' X 10'H. SUBCONTRACT PRICE INCLUDES LABOR	$ 202,500	$ -	$ -	$ 202,500
12.3	TRANSFORMER PDC - FOUNDATION		$ -	$ 73,200	$ 146,900	$ 220,100
12.4	138KV MAIN FEEDER & TERMINATIONS		$ 264,000	$ -	$ 254,000	$ 518,000
12.5	SWITCHGEAR		$ 814,200	$ -	$ 128,900	$ 943,100

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12.6	MCC	480V MCC, PER LINE UP	$ 60,000	$ -	$ 3,600	$ 63,600
12.7	CABLE BUS		$ 181,100	$ 18,000	$ 290,200	$ 489,300
12.8	PANELS - RELAY		$ 100,000	$ -	$ 9,100	$ 109,100
12.9	MIMIC PANELS		$ 17,500	$ -	$ 4,500	$ 22,000
12.10	EMERGENCY POWER SYSTEM		$ 108,300	$ -	$ 24,400	$ 132,700
12.11	GROUNDING		$ 23,300	$ -	$ 59,100	$ 82,400
12.12	LIGHTING/ TRANSFORMERS & PANELS		$ 26,000	$ 30,000	$ 29,500	$ 85,500
12.13	OUTDOOR LIGHTING	NEW AUX YARD LIGHTING - ALLOWANCE	$ 25,000	$ -	$ 56,800	$ 81,800
12.14	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 390,600	$ 1,918,600	$ 2,309,200
12.15	DUCT BANK		$ -	$ 26,200	$ 54,300	$ 80,500
12.16	HIGH VOLTAGE POWER CABLE & TERMINATION	1/C # 500KCMIL-15KV	$ -	$ 27,800	$ 78,400	$ 106,200
12.17	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 263,700	$ 649,600	$ 913,300
12.18	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	$ -	$ 21,800	$ 61,100	$ 82,900
12.19	FOUNDATION FOR AUX TRANSFORMER		$ -	$ 70,200	$ 205,400	$ 275,600
12.20	FIREWALL FOR TRANSFORMERS		$ -	$ 3,000	$ 5,200	$ 8,200
12.21	COMMUNICATIONS		$ -	$ 17,000	$ 13,000	$ 30,000
12.22	LIGHTNING PROTECTION		$ -	$ 4,000	$ 2,000	$ 6,000
12.23	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 3,381,900	$ 953,500	$ 4,274,700	$ 8,610,100
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 169,100	$ 243,100	$ 1,542,710	$ 1,954,900
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FGD SUBSTATION	$ 3,551,000	$ 1,196,600	$ 5,817,400	$ 10,565,000
13.0	FGD DCS SYSTEM					
14.0	CEM SYSTEM					
15.0	TRUCK & RAIL INFRASTRUCTURE					

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16.0	SITE IMPROVEMENTS - CIVIL WORK					
16.1	SITE GRADING		$ -	$ -	$ 627,000	$ 627,000
16.2	ROADS & SURFACING		$ -	$ 996,600	$ 1,358,800	$ 2,355,400
16.3	RAILROAD CROSSING	50' WIDE CROSSING THREE TRACKS - CUSTOM BUILT	$ -	$ 120,000	$ 152,200	$ 272,200
16.4	NEW CONCRETE ENCASEMENT	16' X 4' X 40' - FOR EXISTING ASH PIPE HAUL ROAD CROSSING	$ -	$ 144,300	$ 286,600	$ 430,900
16.5	TRUCK WASH AREA - CONCRETE PAD		$ -	$ 47,300	$ 83,100	$ 130,400
16.6	TRUCK SCALE & CONCRETE APPROACH		$ 170,000	$ 27,300	$ 92,000	$ 289,300
16.7	PROCESS WATER STORAGE BASIN		$ 60,000	$ 110,400	$ 312,600	$ 483,000
16.8	PROCESS WATER STORAGE BASIN PUMP STRUCTURE - CONCRETE		$ -	$ 47,000	$ 105,400	$ 152,400
16.9	STORMWATER DRAINAGE TRENCH	2' W X 3' DEEP CAST-IN-PLACE CONCRETE TRENCH W/REINFORCING & HS-20 RATED GRATE COVERS	$ -	$ 432,000	$ 439,600	$ 871,600
16.10	STORMWATER RUNOFF POND		$ -	$ 15,000	$ 122,600	$ 137,600
16.11	STORM WATER POND PUMP STRUCTURE - CONCRETE		$ 90,000	$ 42,300	$ 182,200	$ 314,500
16.12	OILY WATER SEWER		$ 104,500	$ 96,600	$ 326,100	$ 311,100
16.13	OIL SEPARATOR	500 GPM W/ INTEGRAL LIFT STATION	$ 100,000	$ -	$ 116,100	$ 216,100
16.14	SANITARY SEWER		$ -	$ 22,200	$ 96,900	$ 119,100
16.15	SANITARY LIFT STATION	PACKAGED TYPE COMPLETE WITH PUMPS, 100,000 GPD	$ 150,000	$ -	$ 49,200	$ 199,200

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16.16	CONSTRUCTION LAYDOWN AREA - (TO BE USED FOR PHASE I AND PHASE II)	ALLOWANCE FOR 10 ACRES, DOES NOT INCLUDE LAND ACQUISITION, IF REQUIRED	$ -	$ 700,000	$ 828,000	$ 1,528,000
16.17	CRAFT PARKING (TO BE USED FOR PHASE I AND PHASE II)	DOES NOT INCLUDE LAND ACQUISITION, IF REQUIRED. ALLOWANCE FOR 20,000 SY INCLUDES: 6" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	$ -	$ 180,000	$ 414,200	$ 594,200
16.18	CONTRACTOR OFFICES (AREA) - (TO BE USED FOR PHASE I AND PHASE II)	DOES NOT INCLUDE LAND ACQUISITION, IF REQUIRED. ALLOWANCE FOR 5,000 SY AREA (TRAILERS BY CONTRACTORS) INCLUDES: 6" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	$ -	$ 45,000	$ 103,600	$ 148,600
16.19	NEW PERMANENT STORAGE	INCLUDES LIGHTING AND H&V. SUBCONTRACT PRICE INCLUDES ELECTRICAL AND H&V	$ 2,550,000	$ -	$ -	$ 2,550,000
16.20	FOUNDATIONS FOR THE NEW WAREHOUSE		$ -	$ 803,800	$ 1,301,600	$ 2,105,400
16.21	NEW TEMPORARY STORAGE	WEATHER TIGHT CANVAS ENCLOSURE. INCLUDES LIGHTING AND H&V. SUBCONTRACT PRICE INCLUDES ELECTRICAL AND H&V	$ 450,000	$ -	$ -	$ 450,000
16.22	FOUNDATIONS FOR TEMPORARY STORAGE		$ -	$ 99,500	$ 157,200	$ 256,700

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16.23	LABOR BUS SERVICE FROM PARKING LOT TO CONSTRUCTION AREA AND ACCESS CONTROL	ALLOWANCE FOR 36 MONTHS BASED ON 2 BUSES OPERATING CONTINUOUSLY FOR 5X10 WORKWEEK. SUBCONTRACT COST INCLUDES EQUIPMENT, MATERIAL AND LABOR	$ 1,368,000	$ -	$ -	$ 1,368,000
16.24	EROSION & SEDIMENT CONTROL		$ -	$ 12,600	$ 20,700	$ 33,300
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 4,942,500	$ 3,941,900	$ 7,059,600	$ 15,944,000
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 247,100	$ 1,005,200	$ 2,583,600	$ 3,835,900
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SITE IMPROVEMENTS - CIVIL WORK	$ 5,189,600	$ 4,947,100	$ 9,643,200	$ 19,779,900
17.0	BOP ITEMS					
18.0	CAPITAL REPLACEMENTS - REMOVAL AND RELOCATION OF EXISTING EQUIPMENT AND INFRASTRUCTURE					
19.0	ARSENIC, ASBESTOS , LEAD ABATEMENT					
99.0	PHASE I - OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 111,209,000	$ 53,275,500	$ 145,792,800	$ 342,402,300
	PHASE I - OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 6,307,500	$ 13,528,600	$ 54,827,700	$ 79,733,700
	PHASE I - OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 117,516,500	$ 66,804,100	$ 200,620,500	$ 422,136,000

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	INDIRECT COSTS - PHASE I					
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES					$ 28,000,000
	CONSTRUCTION MANAGEMENT					$ 12,664,100
	S-U / COMMISSIONING					$ 4,221,400
	CRAFT START-UP SUPPORT					$ 1,717,900
	INITIAL FILLS					$ 1,266,400
	OPERATOR & TRAINING MANUALS					$ 300,000
	SUBCONTRACTORS (NOISE & DUCTWORK CONSULTANT,					$ 400,000
	SUBTOTAL - INDIRECT COSTS					$ 48,569,800
	TOTAL PHASE I DIRECT AND INDIRECT COSTS					$ 470,705,800
	SPARE PARTS - PHASE I					$ 1,762,700
	SPARE PARTS - CAPITALIZED	0.80				$ 1,057,620
	SPARE PARTS - FIRST YEAR OF OPERATION	0.50				$ 705,080
	CONTINGENCY - PHASE I	14.5				$ 68,724,200
	ESCALATION - PHASE I					$ 59,514,200
	EQUIPMENT					$ 18,713,400
	MATERIAL					$ 7,406,700
	LABOR					$ 27,682,500
	INDIRECTS					$ 5,711,600
	PHASE I - TOTAL PROJECT COST					$ 600,706,900
	PHASE II - WET FGD					
20.0	LIMESTONE HANDLING SYSTEM					
21.0	REAGENT (LIMESTONE) PREPARATION ISLAND					
21.1	MECHANICAL EQUIPMENT	INCLUDES LIMESTONE FEEDERS,	$ 11,425,000	$ -	$ 10,349,100	$ 21,774,100
21.2	SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES	$ 28,000	$ -	$ 12,300	$ 40,300

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21.3	AGITATOR FOR SUMP PUMPS	5 HP	$ 12,000	$ -	$ 4,600	$ 16,600
21.4	PIPING - MECHANICAL		$ 278,900	$ 205,000	$ 587,300	$ 1,071,200
21.5	LIMESTONE SLURRY TANKS - FOUNDATIONS		$ -	$ 166,400	$ 299,400	$ 465,800
21.6	REAGENT PREPARATION BUILDING - FOUNDATIONS		$ -	$ 649,100	$ 1,077,400	$ 1,726,500
21.7	REAGENT PREPARATION BUILDING	120' L X 125' W X 130' H	$ 269,400	$ 4,684,200	$ 4,106,700	$ 9,060,300
21.8	PIPE SUPPORT PAD - REAGENT PREP BUILDING		$ -	$ 13,800	$ 27,100	$ 40,900
21.9	LIGHTING/ TRANSFORMERS & PANELS		$ 52,000	$ 135,000	$ 104,500	$ 291,500
21.10	GROUNDING		$ 5,100	$ -	$ 13,400	$ 18,500
21.11	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE ARE INCLUDED IN SECTION 23.0 - ABSORBER ISLAND	$ -	$ -	$ -	$ -
21.12	COMMUNICATIONS		$ -	$ 34,000	$ 26,000	$ 60,000
21.13	LIGHTNING PROTECTION		$ -	$ 23,000	$ 16,000	$ 39,000
21.14	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 12,070,400	$ 5,918,500	$ 16,630,800	$ 34,619,700
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 603,500	$ 1,509,200	$ 6,374,400	$ 8,487,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	REAGENT (LIMESTONE) PREPARATION ISLAND	$ 12,673,900	$ 7,427,700	$ 23,005,200	$ 43,106,800
22.0	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)					
22.1	MECHANICAL EQUIPMENT	PRIMARY & SECONDARY DEWATERING INCLUDING HYDROCLONE FEED TANKS, HYDROCLONES, PUMPS, INTEGRAL PIPING AND BELT VACUUM FILTERS	$ 5,688,000	$ -	$ 5,148,700	$ 10,836,700
22.2	PUMPS & AGITATORS		$ 250,000	$ -	$ 137,000	$ 387,000

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22.3	PIPING - MECHANICAL		$ 282,700	$ 3,555,700	$ 7,786,000	$ 11,624,400
22.4	MATERIAL HANDLING EQUIPMENT		$ 724,000	$ 7,500	$ 614,100	$ 1,345,600
22.5	FIRE PROTECTION SYSTEM FOR BELT CONVEYORS	DELUGE SYSTEM, DRY PIPE, SENSORS, ACTIVATION VALVE AND FM APPROVED PANEL - SUBCONTRACT PRICE FOR ALL CONVEYORS INCLUDES LABOR	$ 170,000	$ -	$ -	$ 170,000
22.6	CONVEYOR STRUCTURE SUPPORT STEEL	THREE-COAT SHOP PAINT	$ -	$ 99,000	$ 99,600	$ 198,600
22.7	PIPE RACK SUPPORT STEEL	THREE-COAT SHOP PAINT	$ -	$ 197,200	$ 198,400	$ 395,600
22.8	TANKS		$ -	$ 3,825,300	$ 846,700	$ 4,672,000
22.9	RECLAIM WATER TANKS & PUMPS - FOUNDATIONS		$ -	$ 26,000	$ 54,000	$ 80,000
22.10	MAINTENANCE STORAGE TANK & PUMPS - FOUNDATIONS		$ -	$ 100,000	$ 177,300	$ 277,300
22.11	LANDFILL SERVICE WATER TANKS & PUMP - FOUNDATIONS		$ -	$ 80,900	$ 155,100	$ 236,000
22.12	LANDFILL RECLAIM WATER TANKS & PUMPS - FOUNDATIONS		$ -	$ 26,000	$ 54,000	$ 80,000
22.13	HYDROCLONE FEED TANKS & BLEED TANKS - FOUNDATIONS	TOTAL FOR HYDROCLONE AND BLEED TANKS	$ -	$ 340,200	$ 618,900	$ 959,100
22.14	BYPRODUCT STACKOUT CONVEYOR & TRANSFER TOWER -		$ -	$ 16,100	$ 34,700	$ 50,800
22.15	BYPRODUCT STACKOUT PILE - FOUNDATIONS	INCLUDES CONTAINMENT AREA SLAB	$ -	$ 891,700	$ 1,427,400	$ 2,319,100
22.16	PIPE RACK	SUPPORTS AT 15' C/C	$ -	$ 60,800	$ 149,400	$ 210,200
22.17	BYPRODUCT CONTAINMENT WALLS		$ -	$ 137,300	$ 235,000	$ 372,300
22.18	INSTALL WIND SCREEN		$ -	$ 525,000	$ 192,300	$ 717,300
22.19	BYPRODUCT DEWATERING BUILDING - FOUNDATIONS		$ -	$ 275,500	$ 458,500	$ 734,000
22.20	BYPRODUCT DEWATERING BUILDING	120' L X 71' W X 65' H	$ 145,200	$ 1,536,000	$ 1,446,100	$ 3,127,300
22.21	PIPE SUPPORT PAD		$ -	$ 13,800	$ 26,700	$ 40,500
22.22	AUXILIARY PUMPHOUSE BUILDING WITH ELECTRICAL ROOM -		$ -	$ 32,300	$ 60,800	$ 93,100
22.23	AUXILIARY PUMPHOUSE BUILDING	50'L X 35' W X 20'H	$ 101,300	$ 252,500	$ 269,800	$ 623,600
22.24	SITE GRADING - GYPSUM HANDLING AREA		$ -	$ -	$ 587,800	$ 587,800
22.25	ROADS & SURFACING - GYPSUM HANDLING AREA		$ -	$ 188,000	$ 427,900	$ 615,900
22.26	GYPSUM HANDLING & STORAGE		$ -	$ 1,179,900	$ 1,854,100	$ 3,034,000
22.27	GYPSUM RUNOFF POND		$ 68,000	$ 110,400	$ 315,700	$ 494,100

Sargent & Lundy, LLC	AEP	Estimate No.:	30714C
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS (ESP)-2A - 1.7 LB/MM BTU - PHASED	Date:	9/29/2010
	COST ESTIMATE SUMMARY	Preparer:	MNO
		Reviewer:	JMK
		Approver:	PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
22.28	GYPSUM RUNOFF POND PUMP STRUCTURE - CONCRETE		$ -	$ 47,000	$ 105,400	$ 152,400
22.29	OILY WATER SEWER - GYPSUM HANDLING AREA		$ 1,500	$ 9,000	$ 14,200	$ 24,700
22.30	OIL SEPARATOR - GYPSUM HANDLING AREA	500 GPM W/ INTEGRAL LIFT STATION	$ 50,000	$ -	$ 58,100	$ 108,100
22.31	EROSION & SEDIMENT CONTROL - GYPSUM HANDLING AREA		$ -	$ 18,000	$ 28,300	$ 46,300
22.32	SITE GRADING - ACCESS ROAD WIDENING & CONTAINMENT DITCH	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA	$ -	$ -	$ 60,400	$ 60,400
22.33	ROADS & SURFACING - GYPSUM DEWATERING AREA	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA	$ -	$ 66,300	$ 190,800	$ 257,100
22.34	PIPELINE CONTAINMENT & DRAINAGE	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA	$ -	$ 271,600	$ 429,200	$ 700,800
22.35	CONTAINMENT RUNOFF POND	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA	$ 68,000	$ 114,300	$ 344,300	$ 526,600
22.36	CONTAINMENT POND PUMP STRUCTURE - CONCRETE	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA	$ -	$ 47,000	$ 105,400	$ 152,400
22.37	SITE GRADING - PIPELINE CONTAINMENT & DRAINAGE	SOUTH OF HWY 23	$ -	$ -	$ 30,200	$ 30,200
22.38	PIPELINE CONTAINMENT & DRAINAGE	SOUTH OF HWY 23	$ -	$ 169,600	$ 263,600	$ 433,200
22.39	PIPE BORING PIT	SOUTH OF HWY 23	$ -	$ 5,300	$ 50,900	$ 56,200
22.40	PIPE RECEIVING PIT	NORTH OF HWY 23	$ -	$ 4,900	$ 43,500	$ 48,400
22.41	DIRECTIONAL BORING FOR BURIED PIPE	BENEATH HWY 23	$ 28,000	$ 652,500	$ 277,000	$ 957,500
22.42	TRANSFORMERS		$ 470,000	$ -	$ 136,500	$ 606,500
22.43	SWITCHGEAR		$ 825,600	$ -	$ 500,700	$ 1,326,300
22.44	CABLE BUS & TERMINATIONS		$ 355,500	$ 39,400	$ 730,700	$ 1,125,600
22.45	MCC		$ 123,600	$ -	$ 6,300	$ 129,900
22.46	MIMIC PANELS		$ 17,500	$ -	$ 1,600	$ 19,100
22.47	EMERGENCY POWER SYSTEM		$ 285,500	$ -	$ 38,900	$ 324,400
22.48	GROUNDING		$ 9,400	$ -	$ 25,400	$ 34,800
22.49	LIGHTING/ TRANSFORMERS & PANELS		$ 52,000	$ 135,000	$ 104,500	$ 291,500
22.50	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 354,700	$ 1,514,100	$ 1,868,800
22.51	13.8 KV OH LINE OPGW	INCLUDES POLES,	$ -	$ 240,200	$ 292,400	$ 532,600
22.52	HIGH VOLTAGE POWER CABLE & TERMINATION		$ -	$ 88,400	$ 256,600	$ 345,000

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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
22.53	MEDIUM VOLTAGE POWER CABLE & TERMINATION	1/C # 350KCMIL-5KV	$ -	$ 18,400	$ 78,400	$ 96,800
22.54	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 62,700	$ 547,400	$ 610,100
22.55	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	$ -	$ 112,000	$ 314,300	$ 426,300
22.56	FOUNDATIONS FOR TRANSFORMERS		$ -	$ 70,200	$ 205,400	$ 275,600
22.57	FIREWALL FOR TRANSFORMERS		$ -	$ 3,200	$ 8,300	$ 11,500
22.58	COMMUNICATIONS		$ -	$ 34,000	$ 26,000	$ 60,000
22.59	LIGHTNING PROTECTION		$ -	$ 13,000	$ 10,300	$ 23,300
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 9,715,800	$ 16,053,800	$ 30,175,100	$ 55,944,700
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 485,800	$ 4,093,700	$ 11,566,100	$ 16,145,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)	$ 10,201,600	$ 20,147,500	$ 41,741,200	$ 72,090,300
23.0	WET FGD ABSORBER ISLAND					
23.1	MECHANICAL EQUIPMENT	INCLUDES ABSORBER MODULE (A2205) WITH INTERNALS, INLET DUCT ONLY THROUGH WET/DRY INTERFACE, PIPING INSIDE ABSORBER BUILDING TO TERMINAL POINTS, RECYCLE PUMPS, OXIDATION BLOWERS, MIST ELIMINATOR AND WASH PUMPS AND OTHER MISC. EQUIPMENT AND MATERIAL	$ 40,589,000	$ -	$ 40,429,400	$ 81,018,400
23.2	ADDITIONAL COST FOR C276 ABSORBER SHELL MATERIAL ABOVE THE PRICE OF A2205 ABSORBER SHELL	INCLUDES MATERIAL AND WELDING ROD COST DIFFERENTIAL - 49,800 TOTAL SF	$ -	$ 15,338,400	$ -	$ 15,338,400

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23.3	SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES	$ 28,000	$ -	$ 12,300	$ 40,300
23.4	AGITATOR FOR SUMP PUMPS	5 HP	$ 12,000	$ -	$ 4,600	$ 16,600
23.5	EMERGENCY DIESEL DRIVEN QUENCH PUMP	INCLUDED WITH SECTION 1, ID FANS.	$ -	$ -	$ -	$ -
23.6	PIPING - MECHANICAL	ALL PIPING INCLUDED IN OEM EQUIPMENT COST. NO BOP PIPING	$ -	$ -	$ -	$ -
23.7	ABSORBER VESSEL - FOUNDATIONS		$ -	$ 366,900	$ 672,900	$ 1,039,800
23.8	ABSORBER BUILDING - FOUNDATIONS		$ -	$ 544,300	$ 902,800	$ 1,447,100
23.9	ABSORBER BUILDING	150' L X 85' W X 60' H	$ 164,500	$ 2,501,100	$ 2,297,900	$ 4,963,500
23.1	PIPE SUPPORT PAD - ABSORBER BUILDING		$ -	$ 7,700	$ 16,100	$ 23,800
23.1	OXIDATION AIR BLOWER BUILDING - FOUNDATIONS		$ -	$ 37,000	$ 67,300	$ 104,300
23.12	OXIDATION AIR BLOWER BUILDING	30' L X 30' W X 25' H	$ 33,800	$ 191,000	$ 201,400	$ 426,200
23.13	PIPE SUPPORT PAD - OXIDATION BUILDING		$ -	$ 7,700	$ 13,700	$ 21,400
23.14	DUCTWORK	INCLUDES INTERNAL BRACING	$ -	$ 520,000	$ 993,200	$ 1,513,200
23.15	DUCT SUPPORT STEEL	THREE-COAT SHOP PAINT	$ -	$ 232,000	$ 233,400	$ 465,400
23.16	DUCTWORK INSULATION & LAGGING		$ -	$ 147,000	$ 287,900	$ 434,900
23.17	FOUNDATIONS FOR DUCT SUPPORT STEEL		$ -	$ 27,800	$ 53,200	$ 81,000
23.18	TRANSFORMERS		$ 981,000	$ -	$ 209,300	$ 1,190,300
23.19	SWITCHGEAR		$ 1,162,800	$ -	$ 673,700	$ 1,836,500
23.20	CABLE BUS & TERMINATIONS		$ 867,100	$ 46,600	$ 1,634,100	$ 2,547,800
23.21	MCC		$ 216,300	$ -	$ 11,100	$ 227,400
23.22	MIMIC PANELS		$ 35,000	$ -	$ 7,900	$ 42,900
23.23	GROUNDING		$ 16,000	$ -	$ 46,100	$ 62,100
23.24	LIGHTING/ TRANSFORMERS & PANELS		$ 164,500	$ 165,000	$ 171,300	$ 500,800
23.25	EMERGENCY POWER SYSTEM		$ 108,300	$ -	$ 24,400	$ 132,700
23.26	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 1,515,700	$ 5,849,000	$ 7,364,700
23.27	HIGH VOLTAGE POWER CABLE & TERMINATION		$ -	$ 58,400	$ 164,700	$ 223,100
23.28	MEDIUM VOLTAGE POWER CABLE & TERMINATION		$ -	$ 114,600	$ 431,700	$ 546,300
23.29	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 795,900	$ 1,500,700	$ 2,296,600
23.30	CONTROL & INSTRUMENT CABLE		$ -	$ 512,000	$ 1,436,700	$ 1,948,700
23.31	FOUNDATION FOR TRANSFORMERS		$ -	$ 59,000	$ 173,700	$ 232,700

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	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS (ESP)-2A - 1.7 LB/MM BTU - PHASED	Date:	9/29/2010
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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
23.32	TRANSFORMER FIRE WALLS		$ -	$ 3,500	$ 9,600	$ 13,100
23.33	COMMUNICATIONS		$ -	$ 34,000	$ 26,000	$ 60,000
23.34	LIGHTNING PROTECTION		$ -	$ 19,500	$ 14,500	$ 34,000
23.35	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 44,378,300	$ 23,253,100	$ 58,577,600	$ 126,209,000
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 2,893,900	$ 5,929,500	$ 23,235,000	$ 32,058,400
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	WET FGD ABSORBER ISLAND	$ 47,272,200	$ 29,182,600	$ 81,812,600	$ 158,267,400
24.0	COMPRESSED AIR SYSTEM (BYPRODUCT DEWATERING AREA)					
25.0	POTABLE WATER SYSTEM					
26.0	SCR SUBSTATION UPGRADE					
27.0	FGD DCS SYSTEM					
28.0	SITE IMPROVEMENTS - CIVIL WORK					
29.0	BOP ITEMS					
30.0	SERVICE WATER SYSTEM					
99.0	PHASE II - OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 75,097,000	$ 55,933,300	$ 125,796,900	$ 256,827,200
	PHASE II - OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 4,429,900	$ 14,263,000	$ 48,999,800	$ 67,692,600
	PHASE II - OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 79,526,900	$ 70,196,300	$ 174,796,700	$ 324,519,800

Sargent & Lundy, LLC	AEP	Estimate No.:	30714C
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS (ESP)-2A - 1.7 LB/MM BTU - PHASED	Date:	9/29/2010
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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
	INDIRECT COSTS - PHASE II					
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES					$ 23,000,000
	CONSTRUCTION MANAGEMENT					$ 9,735,600
	S-U / COMMISSIONING					$ 3,245,200
	CRAFT START-UP SUPPORT					$ 1,482,900
	INITIAL FILLS					$ 973,600
	OPERATOR & TRAINING MANUALS					$ 300,000
	SUBCONTRACTORS (NOISE CONSULTANT)					$ 100,000
	SUBTOTAL - INDIRECT COSTS					$ 38,837,300
	TOTAL PHASE II DIRECT AND INDIRECT COSTS					$ 363,357,100
	SPARE PARTS - PHASE II					$ 1,192,900
	SPARE PARTS - CAPITALIZED	0.90				$ 715,740
	SPARE PARTS - FIRST YEAR OF OPERATION	0.60				$ 477,160
	CONTINGENCY - PHASE II.	15.6				$ 56,854,100
	ESCALATION - PHASE II					$ 105,002,400
	EQUIPMENT					$ 32,360,800
	MATERIAL					$ 14,514,400
	LABOR					$ 47,937,800
	INDIRECTS					$ 10,189,400
	PHASE II - TOTAL PROJECT COST					$ 526,406,500
	TOTAL PHASE I + PHASE II INDIRECT COSTS					
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES					$ 51,000,000
	CONSTRUCTION MANAGEMENT					$ 22,399,700
	S-U / COMMISSIONING					$ 7,466,600
	CRAFT START-UP SUPPORT					$ 3,200,800

Sargent & Lundy, LLC	AEP	Estimate No.:	30714C
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS (ESP)-2A - 1.7 LB/MM BTU - PHASED	Date:	9/29/2010
	COST ESTIMATE SUMMARY	Preparer:	MNO
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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
	INITIAL FILLS					$ 2,240,000
	OPERATOR & TRAINING MANUALS					$ 600,000
	SUBCONTRACTORS (PHASE I - NOISE & DUCTWORK CONSULTANT, GEOTECHNICAL INVESTIGATION, PHASE II - NOISE CONSULTANT ONLY)					$ 500,000
	NOISE ABATEMENT FOR 85 DBA REQUIREMENT	FOR ID FAN, SDA ENCLOSURE, TRANSFORMERS, BOP, DUCTWORK, ACOUSTIC BARRIERS FOR BOUNDARY LIMITS				$ 4,500,000
	SUBTOTAL - INDIRECT COSTS					$ 91,907,100
	TOTAL PROJECT DIRECT AND INDIRECT COSTS					$ 838,562,900
	SPARE PARTS - PHASE I + PHASE II					$ 2,955,700
	SPARE PARTS - CAPITALIZED	0.90				$ 1,773,360
	SPARE PARTS - FIRST YEAR OF OPERATION	0.60				$ 1,182,240
	CONTINGENCY (PHASE I + PHASE II)					$ 125,578,300
	ESCALATION (PHASE I + PHASE II)					$ 164,516,600
	EQUIPMENT					$ 51,074,200
	MATERIAL					$ 21,921,100
	LABOR					$ 75,620,300
	INDIRECTS					$ 15,901,000
	TOTAL PROJECT COST - (PHASE I + PHASE II)					$ 1,131,613,500

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	FGD PROJECT - IAQCS (ESP)-2A - 1.7 LB/MM BTU - PHASED	Date:	9/29/2010
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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
	REFERENCE COSTS:					
A	REMOVAL OF FUEL OIL TANK	LABOR COST IS FOR REMOVAL OF TANK ONLY. ALLOWANCE FOR SOIL REMEDIATION AND DISPOSAL IN AN EPA APPROVED LANDFILL. SUBCONTRACT COST INCLUDES LABOR. USED LOWER END OF THE RANGE $118-355/CY. COST COULD BE LOWER ($59-118/CY) IF SOLD TO A BITUMINOUS CONCRETE BATCH PLANT	$ 1,200,000	$ 80,000	$ 469,400	$ 1,749,400

ATTACHMENT 4-17
IAQCS Summary Capital Cost Estimate No. 30718 Est-2B ESP not in Service*
(1.7 lb SO_2/MMbtu)

* - Due to the significant differences in layout between the phased and non-phased cost estimates the "bases" for comparison purposes were 1B for the non-phased cost estimates and 3B for the phased cost estimates. Therefore cost estimates 2A, 2B, 3A (Phased) and 1A, 4A and 4B (Non-Phased) contain only accounts whose costs are different from the corresponding base estimates 3B and 1B respectively.

Sargent & Lundy, LLC	AEP	Estimate No.:	30718C
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS (N/ESP)-2B - 1.7 LB/MM BTU - PHASED	Date:	9/29/2010
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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
1.0	ID FANS					
1.1	ID FANS - OEM EQUIPMENT	1,865,000 ACFM WITH 24,500 HP MOTORS ($875,000 EACH). INCLUDES HYDRAULIC OIL UNITS, SEAL AIR FAN SKIDS, VIBRATION MONITORING EQUIPMENT, FAN STALL EQUIPMENT, FIELD SERVICE REP FOR 140 DAYS	$ 7,688,000	$ -	$ 1,737,800	$ 9,425,800
1.2	PIPING & SUPPORTS - MECHANICAL		$ 21,800	$ 28,700	$ 120,500	$ 171,000
1.3	DAMPERS		$ 781,000	$ -	$ 352,600	$ 1,133,600
1.4	EXPANSION JOINTS		$ -	$ 131,100	$ 116,500	$ 247,600
1.5	DUCTWORK	FABRIC FILTER OUTLET TO ID FANS AND FROM ID FANS TO STACK - INCLUDES INTERNAL BRACING AND TURNING VANES	$ -	$ 3,558,800	$ 6,797,400	$ 10,356,200
1.6	DUCT SUPPORT STEEL	THREE COAT SHOP PAINT	$ -	$ 1,595,000	$ 1,604,700	$ 3,199,700
1.7	ID FAN INSULATION & LAGGING	TOTAL FOR TWO FANS. PRICING REFLECTS STANDARD ACOUSTICAL INSULATION	$ -	$ 200,000	$ 258,500	$ 458,500
1.8	DUCTWORK INSULATION & LAGGING	INCLUDES INSULATION FOR SPRAY DRYER OUTLET DUCT TO FABRIC FILTERS SUPPLIED WITH THE OEM EQUIPMENT	$ -	$ 1,363,400	$ 2,670,400	$ 4,033,800
1.9	DUCT SUPPORT STEEL - FOUNDATIONS		$ -	$ 440,200	$ 855,200	$ 1,295,400
1.10	ID FAN FOUNDATIONS INCLUDING ID FAN AUX EQUIPMENT		$ -	$ 229,300	$ 415,700	$ 645,000
1.11	ID FAN IAQCS CONTROL ROOM - FOUNDATIONS		$ -	$ 270,100	$ 508,600	$ 778,700
1.12	ID FAN IAQCS CONTROL ROOM	SUBCONTRACT PRICE INCLUDES LABOR. COMPLETE WITH HVAC, FINISHES AND SANITARY FACILITIES	$ -	$ 3,937,500	$ -	$ 3,937,500
1.13	TRANSFORMERS		$ 770,000	$ -	$ 145,600	$ 915,600
1.14	SWITCHGEAR		$ 1,132,000	$ -	$ 589,900	$ 1,721,900

Sargent & Lundy, LLC	AEP	Estimate No.:	30718C
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	FGD PROJECT - IAQCS (N/ESP)-2B - 1.7 LB/MM BTU - PHASED	Date:	9/29/2010
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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
1.15	CABLE BUS & TERMINATIONS		$ 1,129,100	$ 35,800	$ 1,930,000	$ 3,094,900
1.16	MCC		$ 180,000	$ -	$ 10,900	$ 190,900
1.17	MIMIC PANELS		$ 17,500	$ -	$ 4,500	$ 22,000
1.18	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 1,664,200	$ 8,196,600	$ 9,860,800
1.19	HIGH VOLTAGE POWER CABLE & TERMINATION		$ -	$ 288,500	$ 666,700	$ 955,200
1.20	MEDIUM VOLTAGE POWER CABLE & TERMINATION		$ -	$ 100,200	$ 427,400	$ 527,600
1.21	LOW VOLTAGE POWER CABLE & TERMINATIONS		$ -	$ 229,800	$ 732,100	$ 961,900
1.22	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	$ -	$ 361,000	$ 1,012,900	$ 1,373,900
1.23	EMERGENCY POWER SYSTEM		$ 285,500	$ -	$ 38,900	$ 324,400
1.24	GROUNDING		$ 14,100	$ -	$ 42,700	$ 56,800
1.25	LIGHTING/ TRANSFORMERS & PANELS		$ 26,000	$ 30,000	$ 29,500	$ 85,500
1.26	DUCT BANK		$ -	$ 136,000	$ 192,700	$ 328,700
1.27	FOUNDATION FOR TRANSFORMERS		$ -	$ 61,900	$ 162,600	$ 224,500
1.28	FIREWALL FOR TRANSFORMERS		$ -	$ 3,200	$ 8,300	$ 11,500
1.29	EARLY COMMISSIONING COSTS TEMPORARY HIGH VOLTAGE		$ -	$ 139,800	$ 230,200	$ 370,000
1.30	COMMUNICATIONS		$ -	$ 17,000	$ 13,000	$ 30,000
1.31	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
1.32	EMERGENCY DIESEL DRIVEN QUENCH PUMP	WITH FUEL DAY TANK. FOUNDATIONS INCLUDED WITH ABSORBER BUILDING FOUNDATIONS. INCLUDES PIPING AND DRAINS	$ 150,000	$ 200,000	$ 332,200	$ 682,200
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 12,195,000	$ 15,029,500	$ 30,211,600	$ 57,436,100
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 609,800	$ 3,832,500	$ 10,891,300	$ 15,333,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	ID FANS	$ 12,804,800	$ 18,862,000	$ 41,102,900	$ 72,769,700
2.0	FABRIC FILTERS					

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		Reviewer:	JMK
		Approver:	PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
2.1	MECHANICAL EQUIPMENT	A SINGLE FABRIC FILTER (225' X 130') UNIT INCLUDING ALL INTERNAL FABRIC FILTER ELEMENTS SUCH AS BAGS, CAGES, ASH HOPPERS, 2 BROKEN BAG DETECTORS PER COMPARTMENT	$ 19,980,000	$ -	$ 12,685,900	$ 32,665,900
2.2	INSULATION FOR FABRIC FILTER	SUBCONTRACT COST INCLUDES LABOR	$ 2,430,000	$ -	$ -	$ 2,430,000
2.3	PENTHOUSE FOR FABRIC FILTER	SUPPORT STEEL AND PRLINS INCLUDED WITH OEM EQUIPMENT	$ 70,200	$ 787,000	$ 1,007,600	$ 1,864,800
2.4	BOTTOM ENCLOSURE FOR BAGHOUSE		$ 60,000	$ 1,204,000	$ 1,359,800	$ 2,623,800
2.5	PIPING & SUPPORTS - MECHANICAL		$ 30,900	$ 101,400	$ 209,500	$ 341,800
2.6	FABRIC FILTER - FOUNDATIONS		$ -	$ 550,700	$ 1,081,100	$ 1,631,800
2.7	FABRIC FILTER - SUPPORT STEEL AND ACCESS GALLERY		$ -	$ 360,000	$ 1,186,700	$ 1,546,700
2.8	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE INCLUDED IN SECTION 1.0 - ID FANS	$ -	$ -	$ -	$ -
2.9	LIGHTING/ TRANSFORMERS & PANELS		$ 30,000	$ 75,000	$ 58,200	$ 163,200
2.10	GROUNDING		$ 7,300	$ -	$ 17,500	$ 24,800
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 22,638,400	$ 3,153,100	$ 17,606,300	$ 43,292,800
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 1,131,900	$ 804,000	$ 6,539,800	$ 8,475,800
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FABRIC FILTERS	$ 23,770,300	$ 3,957,100	$ 24,146,100	$ 51,768,600
3.0	NEW STACK					
4.0	LIME HANDLING SYSTEM					
4.1	LIME STORAGE SILO	0	$ 2,680,000	$ -	$ -	$ 2,680,000

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4.2	LIME UNLOADING SYSTEM	INCLUDES PNEUMATIC HANDLING SYSTEM, THREE VACUUM EXHAUSTER, TWO FILTER SEPARATORS	$ 350,000	$ -	$ 281,100	$ 631,100
4.3	PIPING - MECHANICAL		$ 29,000	$ 15,600	$ 77,900	$ 122,500
4.4	LIME STORAGE SILO ACCESS STAIR TOWER	THREE COAT SHOP PAINT	$ -	$ 145,000	$ 145,900	$ 290,900
4.5	PIPE RACK FOR LIME HANDLING, WASTE HANDLING AND MISC MECHANICAL PIPING	THREE COAT SHOP PAINT	$ -	$ 783,000	$ 787,800	$ 1,570,800
4.6	RAIL CAR UNLOADING AREA - FOUNDATIONS	20 X 250 - NO SIDING	$ -	$ 85,300	$ 180,200	$ 265,500
4.7	LIME UNLOADING BLOWER / ELECTRICAL BUILDING - FOUNDATIONS		$ -	$ 74,500	$ 187,800	$ 262,300
4.8	LIME UNLOADING BLOWER / ELECTRICAL BUILDING	130' L X 30' W X 30' H	$ 75,000	$ 351,500	$ 24,400	$ 450,900
4.9	CONCRETE PIT FOR THE ELEVATOR		$ -	$ 2,300	$ 6,900	$ 9,200
4.10	LIME STORAGE SILO - FOUNDATIONS		$ -	$ 172,300	$ 317,800	$ 490,100
4.11	LIME STORAGE SILO ACCESS STAIR TOWER - FOUNDATIONS		$ -	$ 14,200	$ 28,600	$ 42,800
4.12	PIPE RACK - FOUNDATIONS		$ -	$ 94,200	$ 237,800	$ 332,000
4.13	TRANSFORMERS: 33F, 33G,	SUS TRANSFORMERS: 33F, 33G, 13.8KV-480V	$ 170,000	$ -	$ 54,600	$ 224,600
4.14	480V LOW VOLTAGE (33F/G) SWITCHGEAR	PER LINE UP	$ 196,000	$ -	$ 104,700	$ 300,700
4.15	CABLE BUS DUCT		$ 134,700	$ 10,800	$ 200,200	$ 345,700
4.16	MCC		$ 61,800	$ -	$ 3,600	$ 65,400
4.17	MIMIC PANELS		$ 17,500	$ -	$ 1,400	$ 18,900
4.18	EMERGENCY POWER SYSTEM		$ 108,300	$ -	$ 24,400	$ 132,700
4.19	GROUNDING		$ 13,300	$ -	$ 41,300	$ 54,600
4.20	LIGHTING/ TRANSFORMERS & PANELS		$ 52,000	$ 135,000	$ 104,500	$ 291,500
4.21	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 310,900	$ 1,537,100	$ 1,848,000
4.22	HIGH VOLTAGE POWER CABLE & TERMINATION	1/C # 500KCMIL-15KV	$ -	$ 50,100	$ 141,200	$ 191,300
4.23	MEDIUM VOLTAGE POWER CABLE & TERMINATION	1/C # 350KCMIL-5KV	$ -	$ 66,200	$ 282,300	$ 348,500
4.24	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 93,000	$ 143,200	$ 236,200
4.25	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	$ -	$ 26,200	$ 73,600	$ 99,800

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4.26	DUCT BANK	DUCT BANK WITH 4-5" & 4-3" CONDUITS, 2.38' H X 3.79' W	$ -	$ 61,100	$ 116,200	$ 177,300
4.27	FOUNDATIONS FOR TRANSFORMERS		$ -	$ 3,500	$ 10,300	$ 13,800
4.28	COMMUNICATIONS		$ -	$ 17,000	$ 13,000	$ 30,000
4.29	LIGHTNING PROTECTION		$ -	$ 14,000	$ 9,000	$ 23,000
4.30	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 3,887,600	$ 2,533,700	$ 5,143,800	$ 11,565,100
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 194,400	$ 646,100	$ 1,864,900	$ 2,705,400
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME HANDLING SYSTEM	$ 4,082,000	$ 3,179,800	$ 7,008,700	$ 14,270,500
5.0	LIME SLAKER BUILDING					
5.1	MECHANICAL EQUIPMENT	INCLUDES:CHAIN CONVEYOR, SLAKERS THROUGH THE LIME SLURRY PUMPS, PIPING, AND LIME SLURRY STORAGE TANKS.	$ 5,560,000	$ -	$ 3,976,500	$ 9,536,500
5.2	REAGENT AREA SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES	$ 28,000	$ -	$ 12,300	$ 40,300
5.3	AGITATOR FOR SUMP PUMPS	5 HP	$ 12,000	$ -	$ 4,600	$ 16,600
5.4	PIPING - MECHANICAL		$ 117,800	$ 111,400	$ 381,100	$ 610,300
5.5	LIME SLURRY TANKS - FOUNDATIONS		$ -	$ 166,400	$ 299,400	$ 465,800
5.6	LIME SLAKER BUILDING - FOUNDATIONS		$ -	$ 119,200	$ 204,000	$ 323,200
5.7	LIME SLAKER BUILDING	135' L X 30' W X 50' H	$ 40,500	$ 803,300	$ 740,500	$ 1,584,300
5.8	ELECTRICAL	INCLUDED WITH LIME HANDLING SYSTEM, ACCOUNT 4.0	$ -	$ -	$ -	$ -
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 5,758,300	$ 1,200,300	$ 5,618,400	$ 12,577,000
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 287,900	$ 306,100	$ 2,096,900	$ 2,690,900
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME SLAKER BUILDING	$ 6,046,200	$ 1,506,400	$ 7,715,300	$ 15,267,900

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6.0	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS					
6.1	BYPRODUCT WASTE ASH HANDLING - MECHANICAL EQUIPMENT	INCLUDES PNEUMATIC HANDLING SYSTEM, THREE PRESSURE BLOWERS, ONE BIN VENT FILTER, ASH UNLOADING SYSTEM	$ 2,047,000	$ -	$ 1,380,000	$ 3,427,000
6.2	ECONOMIZER ASH HANDLING - MECHANICAL EQUIPMENT	INCLUDES JET PUMPS AND PIPING / SUPPORTS TO THE BOTTOM ASH POND	$ 400,000	$ -	$ 296,400	$ 696,400
6.3	BUILDING SUMP PUMPS	FOR BUILDINGS - DUPLEX. INCLUDES CHECK & ISOLATION VALVES.	$ 28,000	$ -	$ 12,300	$ 40,300
6.4	AGITATOR FOR SUMP PUMPS	5 HP	$ 12,000	$ -	$ 4,600	$ 16,600
6.5	PIPING - MECHANICAL		$ 142,800	$ 240,900	$ 759,100	$ 1,142,800
6.6	BYPRODUCT WASTE SILO	CONCRETE SILO 55' DIA X 111' H - 4700 TONS -SUBCONTRACT COST INCLUDES LABOR	$ 1,800,000	$ -	$ -	$ 1,800,000
6.7	SDA RECYCLE SILO	INCLUDED WITH OEM EQUIPMENT	$ -	$ -	$ -	$ -
6.8	FLY ASH SILO	NOT REQUIRED - ECONOMIZER FLY ASH SLUICED TO BOTTOM ASH POND	$ -	$ -	$ -	$ -
6.9	BYPRODUCT WASTE SILO - FOUNDATIONS		$ -	$ 132,100	$ 247,800	$ 379,900
6.10	FLY ASH SILO - FOUNDATIONS	NOT REQUIRED	$ -	$ -	$ -	$ -
6.11	FLY ASH BLOWER AND ELECTRICAL BUILDING - FOUNDATIONS	NOT REQUIRED	$ -	$ -	$ -	$ -
6.12	FLY ASH BLOWER AND ELECTRICAL BUILDING	NOT REQUIRED	$ -	$ -	$ -	$ -
6.13	RECYCLE ASH BUILDING - FOUNDATIONS		$ -	$ 234,300	$ 393,800	$ 628,100
6.14	RECYCLE ASH BUILDING	100' L X 65' W X 50' H	$ 58,500	$ 1,306,700	$ 1,194,500	$ 2,559,700
6.15	MCC	480V MCC PER LINE UP	$ 60,000	$ -	$ 3,600	$ 63,600
6.16	EMERGENCY POWER SYSTEM		$ 92,800	$ -	$ 19,900	$ 112,700
6.17	LIGHTING/ TRANSFORMERS & PANELS		$ 18,500	$ 60,000	$ 44,100	$ 122,600

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6.18	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 32,500	$ 189,100	$ 221,600
6.19	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 64,700	$ 80,500	$ 145,200
6.20	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	$ -	$ 30,700	$ 86,200	$ 116,900
6.21	GROUNDING	0.00	$ -	$ 4,500	$ 10,900	$ 15,400
6.22	DUCT BANK	DUCT BANK WITH 12-5" & 6-3"	$ -	$ 111,500	$ 184,000	$ 295,500
6.23	COMMUNICATIONS		$ -	$ 34,000	$ 26,000	$ 60,000
6.24	LIGHTNING PROTECTION		$ -	$ 16,000	$ 14,000	$ 30,000
6.25	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 4,659,600	$ 2,275,900	$ 4,953,800	$ 11,889,300
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 233,000	$ 580,400	$ 1,845,900	$ 2,659,200
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS	$ 4,892,600	$ 2,856,300	$ 6,799,700	$ 14,548,500
7.0	SPRAY DRYER ABSORBER ISLAND					
7.1	MECHANICAL EQUIPMENT	INCLUDES: ABSORBER MODULES AND ATOMIZERS WITH LUBE OIL, DUCT WORK FROM THE ABSORBERS TO THE FABRIC FILTER, AND COMPLETE RECYCLE SYSTEM WITH PIPING INSIDE FGD BUILDINGS.	$ 39,438,000	$ -	$ 24,186,100	$ 63,624,100
7.2	ELEVATOR	MAINTENANCE ELEVATOR - SUBCONTRACT COST INCLUDES LABOR	$ 325,000	$ -	$ -	$ 325,000
7.3	ABSORBER AREA SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES.	$ 28,000	$ -	$ 12,300	$ 40,300
7.4	AGITATOR FOR SUMP PUMPS	5 HP	$ 12,000	$ -	$ 4,600	$ 16,600
7.5	PIPING - MECHANICAL		$ 142,800	$ 36,900	$ 227,900	$ 407,600
7.6	SDA SUPERSTRUCTURE		$ 75,000	$ 764,900	$ 1,227,300	$ 2,067,200
7.7	SDA BOTTOM ENCLOSURE - SUPPORT STEEL, GIRTS AND SIDING	TOTAL FOR THREE ABSORBERS	$ -	$ 362,100	$ 385,200	$ 747,300

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7.8	SDA SHELL / ROOF INSULATION	61,000 SF. SUBCONTRACT COST INCLUDES LABOR	$ 1,830,000	$ -	$ -	$ 1,830,000
7.9	SDA - SUPPORT STEEL & ACCESS GALLERY		$ -	$ 711,000	$ 1,884,100	$ 2,595,100
7.10	EXPANSION JOINTS		$ -	$ 195,500	$ 173,800	$ 369,300
7.11	DUCTWORK		$ -	$ 4,797,000	$ 10,481,700	$ 15,278,700
7.12	DUCT SUPPORT STEEL	THREE COAT SHOP PAINT	$ -	$ 2,140,200	$ 2,153,200	$ 4,293,400
7.13	DUCTWORK INSULATION & LAGGING		$ -	$ 1,632,000	$ 3,196,400	$ 4,828,400
7.14	CONCRETE PIT FOR ELEVATOR		$ -	$ 2,800	$ 8,200	$ 11,000
7.15	SPRAY DRYER ABSORBER - FOUNDATIONS	TOTAL FOR THREE TOWERS	$ -	$ 1,678,600	$ 3,323,400	$ 5,002,000
7.16	FOUNDATIONS FOR SUPPORT STEEL		$ -	$ 69,000	$ 143,000	$ 212,000
7.17	GROUNDING		$ -	$ 16,000	$ 46,100	$ 62,100
7.18	LIGHTING/ TRANSFORMERS & PANELS		$ 156,000	$ 150,000	$ 159,100	$ 465,100
7.19	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE INCLUDED IN SECTION 1.0 - ID FANS	$ -	$ -	$ -	$ -
7.20	COMMUNICATIONS		$ -	$ 17,000	$ 13,000	$ 30,000
7.21	LIGHTNING PROTECTION		$ -	$ 25,500	$ 18,500	$ 44,000
7.22	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 42,006,800	$ 12,606,500	$ 47,650,900	$ 102,264,200
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 2,910,300	$ 3,214,700	$ 19,057,200	$ 25,182,200
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SPRAY DRYER ABSORBER ISLAND	$ 44,917,100	$ 15,821,200	$ 66,708,100	$ 127,446,400
8.0	ACTIVATED CARBON INJECTION SYSTEM					
9.0	COMPRESSED AIR SYSTEM					
10.0	SERVICE WATER SYSTEM					
11.0	POTABLE WATER SYSTEM					
12.0	FGD SUBSTATION					
12.1	TRANSFORMERS		$ 1,670,000	$ -	$ 282,200	$ 1,952,200

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12.2	TRANSFORMER PDC	15W X 45' X 10'H. SUBCONTRACT PRICE INCLUDES LABOR	$ 202,500	$ -	$ -	$ 202,500
12.3	TRANSFORMER PDC - FOUNDATION		$ -	$ 73,200	$ 146,900	$ 220,100
12.4	138KV MAIN FEEDER & TERMINATIONS		$ 264,000	$ -	$ 254,000	$ 518,000
12.5	SWITCHGEAR		$ 994,200	$ -	$ 121,600	$ 1,115,800
12.6	MCC	480V MCC, PER LINE UP	$ 60,000	$ -	$ 3,600	$ 63,600
12.7	CABLE BUS		$ 181,100	$ 18,000	$ 290,200	$ 489,300
12.8	PANELS - RELAY		$ 100,000	$ -	$ 9,100	$ 109,100
12.9	MIMIC PANELS		$ 17,500	$ -	$ 4,500	$ 22,000
12.10	EMERGENCY POWER SYSTEM		$ 108,300	$ -	$ 24,400	$ 132,700
12.11	GROUNDING		$ 23,300	$ -	$ 59,100	$ 82,400
12.12	LIGHTING/ TRANSFORMERS & PANELS		$ 26,000	$ 30,000	$ 29,500	$ 85,500
12.13	OUTDOOR LIGHTING	NEW AUX YARD LIGHTING - ALLOWANCE	$ 25,000	$ -	$ 56,800	$ 81,800
12.14	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 390,600	$ 1,918,600	$ 2,309,200
12.15	DUCT BANK		$ -	$ 26,200	$ 54,300	$ 80,500
12.16	HIGH VOLTAGE POWER CABLE & TERMINATION	1/C # 500KCMIL-15KV	$ -	$ 27,800	$ 78,400	$ 106,200
12.17	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 263,700	$ 649,600	$ 913,300
12.18	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	$ -	$ 21,800	$ 61,100	$ 82,900
12.19	FOUNDATION FOR AUX TRANSFORMER		$ -	$ 70,200	$ 205,400	$ 275,600
12.20	FIREWALL FOR TRANSFORMERS		$ -	$ 3,000	$ 5,200	$ 8,200
12.21	COMMUNICATIONS		$ -	$ 17,000	$ 13,000	$ 30,000
12.22	LIGHTNING PROTECTION		$ -	$ 4,000	$ 2,000	$ 6,000
12.23	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 3,671,900	$ 953,500	$ 4,276,500	$ 8,901,900
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 183,600	$ 243,100	$ 1,543,254	$ 1,970,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FGD SUBSTATION	$ 3,855,500	$ 1,196,600	$ 5,819,800	$ 10,871,900
13.0	FGD DCS SYSTEM					
14.0	CEM SYSTEM					

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15.0	TRUCK & RAIL INFRASTRUCTURE					
16.0	SITE IMPROVEMENTS - CIVIL WORK					
16.1	SITE GRADING	0.0	$ -	$ -	$ 627,000	$ 627,000
16.2	ROADS & SURFACING		$ -	$ 996,600	$ 1,358,800	$ 2,355,400
16.3	RAILROAD CROSSING	50' WIDE CROSSING THREE TRACKS - CUSTOM BUILT	$ -	$ 120,000	$ 135,000	$ 255,000
16.4	NEW CONCRETE ENCASEMENT	16' X 4' X 40' - FOR EXISTING ASH	$ -	$ 144,300	$ 286,600	$ 430,900
16.5	TRUCK WASH AREA - CONCRETE PAD		$ -	$ 47,300	$ 83,100	$ 130,400
16.6	TRUCK SCALE & CONCRETE APPROACH		$ 170,000	$ 27,300	$ 92,000	$ 289,300
16.7	PROCESS WATER STORAGE BASIN		$ 60,000	$ 110,400	$ 312,600	$ 483,000
16.8	PROCESS WATER STORAGE BASIN PUMP STRUCTURE - CONCRETE		$ -	$ 47,000	$ 105,400	$ 152,400
16.9	STORMWATER DRAINAGE TRENCH	2' W X 3' DEEP CAST-IN-PLACE	$ -	$ 432,000	$ 439,600	$ 871,600
16.1	STORMWATER RUNOFF POND		$ -	$ 15,000	$ 122,600	$ 137,600
16.11	STORM WATER POND PUMP STRUCTURE - CONCRETE		$ 90,000	$ 42,300	$ 182,200	$ 314,500
16.12	OILY WATER SEWER		$ 4,500	$ 96,600	$ 210,000	$ 311,100
16.13	OIL SEPARATOR	500 GPM W/ INTEGRAL LIFT	$ 100,000	$ -	$ 116,100	$ 216,100
16.14	SANITARY SEWER		$ -	$ 22,200	$ 96,900	$ 119,100
16.15	SANITARY LIFT STATION	PACKAGED TYPE COMPLETE	$ 150,000	$ -	$ 49,200	$ 199,200
16.16	CONSTRUCTION LAYDOWN AREA - (TO BE USED FOR PHASE I AND PHASE II)	ALLOWANCE FOR 10 ACRES, DOES NOT INCLUDE LAND ACQUISITION, IF REQUIRED	$ -	$ 700,000	$ 828,000	$ 1,528,000
16.17	CRAFT PARKING (TO BE USED FOR PHASE I AND PHASE II)	DOES NOT INCLUDE LAND ACQUISITION, IF REQUIRED. ALLOWANCE FOR 20,000 SY INCLUDES: 6" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	$ -	$ 180,000	$ 414,200	$ 594,200

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16.18	CONTRACTOR OFFICES (AREA) - (TO BE USED FOR PHASE I AND PHASE II)	DOES NOT INCLUDE LAND ACQUISITION, IF REQUIRED. ALLOWANCE FOR 5,000 SY AREA (TRAILERS BY CONTRACTORS) INCLUDES: 6" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	$ -	$ 45,000	$ 103,600	$ 148,600
16.19	NEW PERMANENT STORAGE	INCLUDES LIGHTING AND H&V. SUBCONTRACT PRICE INCLUDES ELECTRICAL AND H&V	$ 2,550,000	$ -	$ -	$ 2,550,000
16.20	FOUNDATIONS FOR THE NEW WAREHOUSE		$ -	$ 803,800	$ 1,301,600	$ 2,105,400
16.21	NEW TEMPORARY STORAGE	WEATHER TIGHT CANVAS ENCLOSURE. INCLUDES LIGHTING AND H&V. SUBCONTRACT PRICE INCLUDES ELECTRICAL AND H&V	$ 450,000	$ -	$ -	$ 450,000
16.22	FOUNDATIONS FOR TEMPORARY STORAGE		$ -	$ 99,500	$ 157,200	$ 256,700
16.23	LABOR BUS SERVICE FROM PARKING LOT TO CONSTRUCTION AREA AND ACCESS CONTROL	ALLOWANCE FOR 36 MONTHS BASED ON 2 BUSES OPERATING CONTINUOUSLY FOR 5X10 WORKWEEK. SUBCONTRACT COST INCLUDES EQUIPMENT, MATERIAL AND LABOR	$ 1,368,000	$ -	$ -	$ 1,368,000
16.24	EROSION & SEDIMENT CONTROL		$ -	$ 12,600	$ 20,700	$ 33,300
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 4,942,500	$ 3,941,900	$ 7,042,400	$ 15,926,800
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 247,100	$ 1,005,200	$ 2,580,000	$ 3,832,400

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	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SITE IMPROVEMENTS - CIVIL WORK	$ 5,189,600	$ 4,947,100	$ 9,622,400	$ 19,759,200
17.0	BOP ITEMS					
18.0	CAPITAL REPLACEMENTS - REMOVAL AND RELOCATION OF EXISTING EQUIPMENT AND INFRASTRUCTURE					
19.0	ARSENIC, ASBESTOS , LEAD ABATEMENT					
99.0	PHASE I - OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 110,424,300	$ 50,637,300	$ 140,651,500	$ 333,838,100
	PHASE I - OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 6,268,200	$ 12,855,800	$ 53,003,800	$ 77,197,800
	PHASE I - OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 116,692,500	$ 63,493,100	$ 193,655,300	$ 411,035,900
	INDIRECT COSTS - PHASE I					
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES					$ 28,000,000
	CONSTRUCTION MANAGEMENT					$ 12,331,100
	S-U / COMMISSIONING					$ 4,110,400
	CRAFT START-UP SUPPORT					$ 1,657,300
	INITIAL FILLS					$ 1,233,100
	OPERATOR & TRAINING MANUALS					$ 300,000
	SUBCONTRACTORS (NOISE & DUCTWORK CONSULTANT,					$ 400,000
	SUBTOTAL - INDIRECT COSTS					$ 48,031,900
	TOTAL PHASE I DIRECT AND INDIRECT COSTS					$ 459,067,800
	SPARE PARTS - PHASE I					$ 1,750,400
	SPARE PARTS - CAPITALIZED	0.90				$ 1,050,240
	SPARE PARTS - FIRST YEAR OF OPERATION	0.60				$ 700,160

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	CONTINGENCY - PHASE I	14.4				$ 66,458,800
	ESCALATION - PHASE I					$ 58,150,200
	EQUIPMENT					$ 18,582,200
	MATERIAL					$ 7,119,600
	LABOR					$ 26,800,200
	INDIRECTS					$ 5,648,200
	PHASE I - TOTAL PROJECT COST					$ 585,427,200
	PHASE II - WET FGD					
20.0	LIMESTONE HANDLING SYSTEM					
21.0	REAGENT (LIMESTONE) PREPARATION ISLAND					
21.1	MECHANICAL EQUIPMENT	INCLUDES LIMESTONE FEEDERS,	$ 11,425,000	$ -	$ 10,349,100	$ 21,774,100
21.2	SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES	$ 28,000	$ -	$ 12,300	$ 40,300
21.3	AGITATOR FOR SUMP PUMPS	5 HP	$ 12,000	$ -	$ 4,600	$ 16,600
21.4	PIPING - MECHANICAL		$ 278,900	$ 205,000	$ 587,300	$ 1,071,200
21.5	LIMESTONE SLURRY TANKS - FOUNDATIONS		$ -	$ 166,400	$ 299,400	$ 465,800
21.6	REAGENT PREPARATION BUILDING - FOUNDATIONS		$ -	$ 649,100	$ 1,077,400	$ 1,726,500
21.7	REAGENT PREPARATION BUILDING	120' L X 125' W X 130' H	$ 269,400	$ 4,684,200	$ 4,106,700	$ 9,060,300
21.8	PIPE SUPPORT PAD - REAGENT PREP BUILDING		$ -	$ 13,800	$ 27,100	$ 40,900
21.9	LIGHTING/ TRANSFORMERS & PANELS		$ 52,000	$ 135,000	$ 104,500	$ 291,500
21.10	GROUNDING		$ 5,100	$ -	$ 13,400	$ 18,500
21.11	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE ARE INCLUDED IN SECTION 28.0 - ABSORBER ISLAND	$ -	$ -	$ -	$ -
21.12	COMMUNICATIONS		$ -	$ 34,000	$ 26,000	$ 60,000
21.13	LIGHTNING PROTECTION		$ -	$ 23,000	$ 16,000	$ 39,000
21.14	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 12,070,400	$ 5,918,500	$ 16,630,800	$ 34,619,700

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	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 603,500	$ 1,509,200	$ 6,374,400	$ 8,487,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	REAGENT (LIMESTONE) PREPARATION ISLAND	$ 12,673,900	$ 7,427,700	$ 23,005,200	$ 43,106,800
22.0	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE					
22.1	MECHANICAL EQUIPMENT	PRIMARY & SECONDARY DEWATERING INCLUDING HYDROCLONE FEED TANKS, HYDROCLONES, PUMPS, INTEGRAL PIPING AND BELT VACUUM FILTERS	$ 5,688,000	$ -	$ 5,148,700	$ 10,836,700
22.2	PUMPS & AGITATORS		$ 250,000	$ -	$ 137,000	$ 387,000
22.3	PIPING - MECHANICAL		$ 282,700	$ 3,555,700	$ 7,786,000	$ 11,624,400
22.4	MATERIAL HANDLING EQUIPMENT		$ 724,000	$ 7,500	$ 614,100	$ 1,345,600
22.5	FIRE PROTECTION SYSTEM FOR BELT CONVEYORS	DELUGE SYSTEM, DRY PIPE, SENSORS, ACTIVATION VALVE AND FM APPROVED PANEL - SUBCONTRACT PRICE FOR ALL CONVEYORS INCLUDES LABOR	$ 170,000	$ -	$ -	$ 170,000
22.6	CONVEYOR STRUCTURE SUPPORT STEEL	THREE-COAT SHOP PAINT	$ -	$ 99,000	$ 99,600	$ 198,600
22.7	PIPE RACK SUPPORT STEEL	THREE-COAT SHOP PAINT	$ -	$ 197,200	$ 198,400	$ 395,600
22.8	TANKS		$ -	$ 3,825,300	$ 846,700	$ 4,672,000
22.9	RECLAIM WATER TANKS & PUMPS - FOUNDATIONS		$ -	$ 26,000	$ 54,000	$ 80,000
22.10	MAINTENANCE STORAGE TANK & PUMPS - FOUNDATIONS		$ -	$ 100,000	$ 177,300	$ 277,300
22.11	LANDFILL SERVICE WATER TANKS & PUMP - FOUNDATIONS		$ -	$ 80,900	$ 155,100	$ 236,000
22.12	LANDFILL RECLAIM WATER TANKS & PUMPS - FOUNDATIONS		$ -	$ 26,000	$ 54,000	$ 80,000
22.13	HYDROCLONE FEED TANKS & BLEED TANKS - FOUNDATIONS	TOTAL FOR HYDROCLONE AND BLEED TANKS	$ -	$ 340,200	$ 618,900	$ 959,100
22.14	BYPRODUCT STACKOUT CONVEYOR & TRANSFER TOWER -		$ -	$ 16,100	$ 34,700	$ 50,800
22.15	BYPRODUCT STACKOUT PILE - FOUNDATIONS	INCLUDES CONTAINMENT AREA SLAB	$ -	$ 891,700	$ 1,427,400	$ 2,319,100
22.16	PIPE RACK	SUPPORTS AT 15' C/C	$ -	$ 60,800	$ 149,400	$ 210,200
22.17	BYPRODUCT CONTAINMENT WALLS		$ -	$ 137,300	$ 235,000	$ 372,300

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22.18	INSTALL WIND SCREEN		$ -	$ 525,000	$ 192,300	$ 717,300
22.19	BYPRODUCT DEWATERING BUILDING - FOUNDATIONS		$ -	$ 275,500	$ 458,500	$ 734,000
22.20	BYPRODUCT DEWATERING BUILDING	120' L X 71' W X 65' H	$ 145,200	$ 1,536,000	$ 1,446,100	$ 3,127,300
22.21	PIPE SUPPORT PAD		$ -	$ 13,800	$ 26,700	$ 40,500
22.22	AUXILIARY PUMPHOUSE BUILDING WITH ELECTRICAL ROOM -		$ -	$ 32,300	$ 60,800	$ 93,100
22.23	AUXILIARY PUMPHOUSE BUILDING	50'L X 35' W X 20'H	$ 101,300	$ 252,500	$ 269,800	$ 623,600
22.24	SITE GRADING - GYPSUM HANDLING AREA		$ -	$ -	$ 587,800	$ 587,800
22.25	ROADS & SURFACING - GYPSUM HANDLING AREA		$ -	$ 188,000	$ 427,900	$ 615,900
22.26	GYPSUM HANDLING & STORAGE		$ -	$ 1,179,900	$ 1,854,100	$ 3,034,000
22.27	GYPSUM RUNOFF POND		$ 68,000	$ 110,400	$ 315,700	$ 494,100
22.28	GYPSUM RUNOFF POND PUMP STRUCTURE - CONCRETE		$ -	$ 47,000	$ 105,400	$ 152,400
22.29	OILY WATER SEWER - GYPSUM HANDLING AREA		$ 1,500	$ 9,000	$ 14,200	$ 24,700
22.30	OIL SEPARATOR - GYPSUM HANDLING AREA	500 GPM W/ INTEGRAL LIFT	$ 50,000	$ -	$ 58,100	$ 108,100
22.31	EROSION & SEDIMENT CONTROL - GYPSUM HANDLING AREA		$ -	$ 18,000	$ 28,300	$ 46,300
22.32	SITE GRADING - ACCESS ROAD WIDENING & CONTAINMENT DITCH	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA	$ -	$ -	$ 60,400	$ 60,400
22.33	ROADS & SURFACING - GYPSUM DEWATERING AREA	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA	$ -	$ 66,300	$ 190,800	$ 257,100
22.34	PIPELINE CONTAINMENT & DRAINAGE	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA	$ -	$ 271,600	$ 429,200	$ 700,800
22.35	CONTAINMENT RUNOFF POND	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA	$ 68,000	$ 114,300	$ 344,300	$ 526,600
22.36	CONTAINMENT POND PUMP STRUCTURE - CONCRETE	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA	$ -	$ 47,000	$ 105,400	$ 152,400
22.37	SITE GRADING - PIPELINE CONTAINMENT & DRAINAGE	SOUTH OF HWY 23	$ -	$ -	$ 30,200	$ 30,200
22.38	PIPELINE CONTAINMENT & DRAINAGE	SOUTH OF HWY 23	$ -	$ 169,600	$ 263,600	$ 433,200
22.39	PIPE BORING PIT	SOUTH OF HWY 23	$ -	$ 5,300	$ 50,900	$ 56,200
22.40	PIPE RECEIVING PIT	NORTH OF HWY 23	$ -	$ 4,900	$ 43,500	$ 48,400
22.41	DIRECTIONAL BORING FOR BURIED PIPE	BENEATH HWY 23	$ 28,000	$ 652,500	$ 277,000	$ 957,500
22.42	TRANSFORMERS		$ 470,000	$ -	$ 136,500	$ 606,500
22.43	SWITCHGEAR		$ 825,600	$ -	$ 500,700	$ 1,326,300
22.44	CABLE BUS & TERMINATIONS		$ 355,500	$ 39,400	$ 730,700	$ 1,125,600
22.45	MCC		$ 123,600	$ -	$ 6,300	$ 129,900
22.46	MIMIC PANELS		$ 17,500	$ -	$ 1,600	$ 19,100

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22.47	EMERGENCY POWER SYSTEM		$ 285,500	$ -	$ 38,900	$ 324,400
22.48	GROUNDING		$ 9,400	$ -	$ 25,400	$ 34,800
22.49	LIGHTING/ TRANSFORMERS & PANELS		$ 52,000	$ 135,000	$ 104,500	$ 291,500
22.50	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 354,700	$ 1,514,100	$ 1,868,800
22.51	13.8 KV OH LINE OPGW	INCLUDES POLES, CONDUCTORS, INSULATORS & GROUNDING	$ -	$ 240,200	$ 292,400	$ 532,600
22.52	HIGH VOLTAGE POWER CABLE & TERMINATION		$ -	$ 88,400	$ 256,600	$ 345,000
22.53	MEDIUM VOLTAGE POWER CABLE & TERMINATION	1/C # 350KCMIL-5KV	$ -	$ 18,400	$ 78,400	$ 96,800
22.54	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 62,700	$ 547,400	$ 610,100
22.55	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	$ -	$ 112,000	$ 314,300	$ 426,300
22.56	FOUNDATIONS FOR TRANSFORMERS		$ -	$ 70,200	$ 205,400	$ 275,600
22.57	FIREWALL FOR TRANSFORMERS		$ -	$ 3,200	$ 8,300	$ 11,500
22.58	COMMUNICATIONS		$ -	$ 34,000	$ 26,000	$ 60,000
22.59	LIGHTNING PROTECTION		$ -	$ 13,000	$ 10,300	$ 23,300
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 9,715,800	$ 16,053,800	$ 30,175,100	$ 55,944,700
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 485,800	$ 4,093,700	$ 11,566,100	$ 16,145,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)	$ 10,201,600	$ 20,147,500	$ 41,741,200	$ 72,090,300

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23.0	WET FGD ABSORBER ISLAND					
23.1	MECHANICAL EQUIPMENT	INCLUDES ABSORBER MODULE (A2205) WITH INTERNALS, INLET DUCT ONLY THROUGH WET/DRY INTERFACE, PIPING INSIDE ABSORBER BUILDING TO TERMINAL POINTS, RECYCLE PUMPS, OXIDATION BLOWERS, MIST ELIMINATOR AND WASH PUMPS AND OTHER MISC. EQUIPMENT AND MATERIAL	$ 40,589,000	$ -	$ 40,429,400	$ 81,018,400
23.2	ADDITIONAL COST FOR C276 ABSORBER SHELL MATERIAL ABOVE THE PRICE OF A2205 ABSORBER SHELL	INCLUDES MATERIAL AND WELDING ROD COST DIFFERENTIAL - 49,800 TOTAL SF	$ -	$ 15,338,400	$ -	$ 15,338,400
23.3	SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES	$ 28,000	$ -	$ 12,300	$ 40,300
23.4	AGITATOR FOR SUMP PUMPS	5 HP	$ 12,000	$ -	$ 4,600	$ 16,600
23.5	EMERGENCY DIESEL DRIVEN QUENCH PUMP	INCLUDED WITH SECTION 1, ID FANS.	$ -	$ -	$ -	$ -
23.6	PIPING - MECHANICAL	ALL PIPING INCLUDED IN OEM EQUIPMENT COST. NO BOP PIPING	$ -	$ -	$ -	$ -
23.7	ABSORBER VESSEL - FOUNDATIONS		$ -	$ 366,900	$ 672,900	$ 1,039,800
23.8	ABSORBER BUILDING - FOUNDATIONS		$ -	$ 544,300	$ 902,800	$ 1,447,100
23.9	ABSORBER BUILDING	150' L X 85' W X 60' H	$ 164,500	$ 2,501,100	$ 2,297,900	$ 4,963,500
23.1	PIPE SUPPORT PAD - ABSORBER BUILDING		$ -	$ 7,700	$ 16,100	$ 23,800
23.1	OXIDATION AIR BLOWER BUILDING - FOUNDATIONS		$ -	$ 37,000	$ 67,300	$ 104,300
23.12	OXIDATION AIR BLOWER BUILDING	30' L X 30' W X 25' H	$ 33,800	$ 191,000	$ 201,400	$ 426,200
23.13	PIPE SUPPORT PAD - OXIDATION BUILDING		$ -	$ 7,700	$ 13,700	$ 21,400
23.14	DUCTWORK	INCLUDES INTERNAL BRACING AND TURNING VANES	$ -	$ 520,000	$ 993,200	$ 1,513,200

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23.15	DUCT SUPPORT STEEL	THREE-COAT SHOP PAINT	$ -	$ 232,000	$ 233,400	$ 465,400
23.16	DUCTWORK INSULATION & LAGGING		$ -	$ 147,000	$ 287,900	$ 434,900
23.17	FOUNDATIONS FOR DUCT SUPPORT STEEL		$ -	$ 27,800	$ 53,200	$ 81,000
23.18	TRANSFORMERS		$ 981,000	$ -	$ 209,300	$ 1,190,300
23.19	SWITCHGEAR		$ 1,162,800	$ -	$ 673,700	$ 1,836,500
23.20	CABLE BUS & TERMINATIONS		$ 867,100	$ 46,600	$ 1,634,100	$ 2,547,800
23.21	MCC		$ 216,300	$ -	$ 11,100	$ 227,400
23.22	MIMIC PANELS		$ 35,000	$ -	$ 7,900	$ 42,900
23.23	GROUNDING		$ 16,000	$ -	$ 46,100	$ 62,100
23.24	LIGHTING/ TRANSFORMERS & PANELS		$ 164,500	$ 165,000	$ 171,300	$ 500,800
23.25	EMERGENCY POWER SYSTEM		$ 108,300	$ -	$ 24,400	$ 132,700
23.26	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 1,515,700	$ 5,849,000	$ 7,364,700
23.27	HIGH VOLTAGE POWER CABLE & TERMINATION		$ -	$ 58,400	$ 164,700	$ 223,100
23.28	MEDIUM VOLTAGE POWER CABLE & TERMINATION		$ -	$ 114,600	$ 431,700	$ 546,300
23.29	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 795,900	$ 1,500,700	$ 2,296,600
23.30	CONTROL & INSTRUMENT CABLE		$ -	$ 512,000	$ 1,436,700	$ 1,948,700
23.31	FOUNDATION FOR TRANSFORMERS		$ -	$ 59,000	$ 173,700	$ 232,700
23.32	TRANSFORMER FIRE WALLS		$ -	$ 3,500	$ 9,600	$ 13,100
23.33	COMMUNICATIONS		$ -	$ 34,000	$ 26,000	$ 60,000
23.34	LIGHTNING PROTECTION		$ -	$ 19,500	$ 14,500	$ 34,000
23.35	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 44,378,300	$ 23,253,100	$ 58,577,600	$ 126,209,000
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 2,893,900	$ 5,929,500	$ 23,235,000	$ 32,058,400
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	WET FGD ABSORBER ISLAND	$ 47,272,200	$ 29,182,600	$ 81,812,600	$ 158,267,400
24.0	COMPRESSED AIR SYSTEM (BYPRODUCT DEWATERING AREA)					
25.0	POTABLE WATER SYSTEM					
26.0	SCR SUBSTATION UPGRADE					
27.0	FGD DCS SYSTEM					

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28.0	SITE IMPROVEMENTS - CIVIL WORK					
29.0	BOP ITEMS					
30.0	SERVICE WATER SYSTEM					
99.0	PHASE II - OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 75,097,000	$ 55,933,300	$ 125,796,900	$ 256,827,200
	PHASE II - OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 4,429,900	$ 14,263,000	$ 48,999,800	$ 67,692,600
	PHASE II - OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 79,526,900	$ 70,196,300	$ 174,796,700	$ 324,519,800
	INDIRECT COSTS - PHASE II					
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES					$ 23,000,000
	CONSTRUCTION MANAGEMENT					$ 9,735,600
	S-U / COMMISSIONING					$ 3,245,200
	CRAFT START-UP SUPPORT					$ 1,482,900
	INITIAL FILLS					$ 973,600
	OPERATOR & TRAINING MANUALS					$ 300,000
	SUBCONTRACTORS (NOISE CONSULTANT)					$ 100,000
	SUBTOTAL - INDIRECT COSTS					$ 38,837,300
	TOTAL PHASE II DIRECT AND INDIRECT COSTS					$ 363,357,100
	SPARE PARTS - PHASE II					$ 1,192,900
	SPARE PARTS - CAPITALIZED	0.90				$ 715,740
	SPARE PARTS - FIRST YEAR OF OPERATION	0.60				$ 477,160
	CONTINGENCY - PHASE II.	15.5				$ 56,411,200
	ESCALATION - PHASE II					$ 104,993,300
	EQUIPMENT					$ 32,360,800
	MATERIAL					$ 14,511,000

Sargent & Lundy, LLC	AEP	Estimate No.:	30718C
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS (N/ESP)-2B - 1.7 LB/MM BTU - PHASED	Date:	9/29/2010
	COST ESTIMATE SUMMARY	Preparer:	MNO
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		Approver:	PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
	LABOR					$ 47,932,700
	INDIRECTS					$ 10,188,800
	PHASE II - TOTAL PROJECT COST					$ 525,954,500
	TOTAL PHASE I + PHASE II INDIRECT COSTS					
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES					$ 51,000,000
	CONSTRUCTION MANAGEMENT					$ 22,066,700
	S-U / COMMISSIONING					$ 7,355,600
	CRAFT START-UP SUPPORT					$ 3,140,200
	INITIAL FILLS					$ 2,206,700
	OPERATOR & TRAINING MANUALS					$ 600,000
	SUBCONTRACTORS (PHASE I - NOISE & DUCTWORK CONSULTANT, GEOTECHNICAL INVESTIGATION, PHASE II - NOISE CONSULTANT ONLY)					$ 500,000
	NOISE ABATEMENT FOR 85 DBA REQUIREMENT	FOR ID FAN, SDA ENCLOSURE, TRANSFORMERS, BOP, DUCTWORK, ACOUSTIC BARRIERS FOR BOUNDARY LIMITS				$ 4,500,000
	SUBTOTAL - INDIRECT COSTS					$ 91,369,200
	TOTAL PROJECT DIRECT AND INDIRECT COSTS					$ 826,924,900
	SPARE PARTS - PHASE I + PHASE II					$ 2,943,300
	SPARE PARTS - CAPITALIZED	0.90				$ 1,765,980
	SPARE PARTS - FIRST YEAR OF OPERATION	0.60				$ 1,177,320
	CONTINGENCY (PHASE I + PHASE II)					$ 122,870,000
	ESCALATION (PHASE I + PHASE II)					$ 163,143,500
	EQUIPMENT					$ 50,943,000

Sargent & Lundy, LLC	AEP	Estimate No.:	30718C
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	FGD PROJECT - IAQCS (N/ESP)-2B - 1.7 LB/MM BTU - PHASED	Date:	9/29/2010
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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
	MATERIAL					$ 21,630,600
	LABOR					$ 74,732,900
	INDIRECTS					$ 15,837,000
	TOTAL PROJECT COST (PHASE I + PHASE II)					$ 1,115,881,700
	REFERENCE COSTS:					
A	ESP DEMOLITION	ALLOWANCE FOR 1000T STRUCTURE	$ -	$ -	$ 832,300	$ 832,300
B	REMOVE BOOSTER AIR FANS		$ -	$ -	$ 111,000	$ 111,000
C	REMOVAL OF FUEL OIL TANK	LABOR COST IS FOR REMOVAL OF TANK ONLY. ALLOWANCE FOR SOIL REMEDIATION AND DISPOSAL IN AN EPA APPROVED LANDFILL. SUBCONTRACT COST INCLUDES LABOR. USED LOWER END OF THE RANGE $118-355/CY. COST COULD BE LOWER ($59-118/CY) IF SOLD TO A BITUMINOUS CONCRETE BATCH PLANT	$ 1,200,000	$ 80,000	$ 469,400	$ 1,749,400

ATTACHMENT 4-18
IAQCS Summary Capital Cost Estimate No. 30715 Est-3A ESP in Service*
(3.0 lb SO_2/MMbtu)

* - Due to the significant differences in layout between the phased and non-phased cost estimates the "bases" for comparison purposes were 1B for the non-phased cost estimates and 3B for the phased cost estimates. Therefore cost estimates 2A, 2B, 3A (Phased) and 1A, 4A and 4B (Non-Phased) contain only accounts whose costs are different from the corresponding base estimates 3B and 1B respectively.

Sargent & Lundy, LLC	AEP	Estimate No.:	30715C
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT -IAQCS (ESP)-3A - 3.0 LB/MM BTU - PHASED	Date:	9/29/2010
	COST ESTIMATE SUMMARY	Preparer:	MNO
		Reviewer:	JMK
		Approver:	PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
1.0	ID FANS					
1.1	ID FANS - OEM EQUIPMENT	1,800,000 ACFM WITH 19,700 HP MOTORS ($750,000 EACH). INCLUDES HYDRAULIC OIL UNITS, SEAL AIR FAN SKIDS, VIBRATION MONITORING EQUIPMENT, FAN STALL EQUIPMENT, FIELD SERVICE REP FOR 140 DAYS	$ 6,920,000	$ -	$ 1,674,400	$ 8,594,400
1.2	PIPING & SUPPORTS - MECHANICAL		$ 21,800	$ 28,700	$ 120,500	$ 171,000
1.3	DAMPERS		$ 781,000	$ -	$ 352,600	$ 1,133,600
1.4	EXPANSION JOINTS		$ -	$ 131,100	$ 116,500	$ 247,600
1.5	DUCTWORK	FABRIC FILTER OUTLET TO ID FANS AND FROM ID FANS TO STACK - INCLUDES INTERNAL BRACING AND TURNING VANES	$ -	$ 3,558,800	$ 6,797,400	$ 10,356,200
1.6	DUCT SUPPORT STEEL	THREE COAT SHOP PAINT	$ -	$ 1,595,000	$ 1,604,700	$ 3,199,700
1.7	ID FAN INSULATION & LAGGING	TOTAL FOR TWO FANS. PRICING REFLECTS STANDARD ACOUSTICAL	$ -	$ 168,000	$ 217,200	$ 385,200
1.8	DUCTWORK INSULATION & LAGGING	INCLUDES INSULATION FOR SPRAY DRYER OUTLET DUCT TO FABRIC FILTERS SUPPLIED WITH THE OEM EQUIPMENT	$ -	$ 1,363,400	$ 2,670,400	$ 4,033,800
1.9	DUCT SUPPORT STEEL - FOUNDATIONS		$ -	$ 440,200	$ 855,200	$ 1,295,400
1.10	ID FAN FOUNDATIONS INCLUDING ID FAN AUX EQUIPMENT		$ -	$ 106,000	$ 198,700	$ 304,700
1.11	ID FAN IAQCS CONTROL ROOM - FOUNDATIONS		$ -	$ 270,100	$ 508,600	$ 778,700
1.12	ID FAN IAQCS CONTROL ROOM	SUBCONTRACT PRICE INCLUDES LABOR. COMPLETE WITH HVAC, FINISHES AND SANITARY FACILITIES	$ -	$ 3,937,500	$ -	$ 3,937,500
1.13	TRANSFORMERS		$ 770,000	$ -	$ 145,600	$ 915,600

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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
1.14	SWITCHGEAR		$ 1,132,000	$ -	$ 589,900	$ 1,721,900
1.15	CABLE BUS & TERMINATIONS		$ 1,129,100	$ 35,800	$ 1,930,000	$ 3,094,900
1.16	MCC		$ 180,000	$ -	$ 10,900	$ 190,900
1.17	MIMIC PANELS		$ 17,500	$ -	$ 4,500	$ 22,000
1.18	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 1,664,200	$ 8,196,600	$ 9,860,800
1.19	HIGH VOLTAGE POWER CABLE & TERMINATION		$ -	$ 288,500	$ 666,700	$ 955,200
1.20	MEDIUM VOLTAGE POWER CABLE & TERMINATION		$ -	$ 100,200	$ 427,400	$ 527,600
1.21	LOW VOLTAGE POWER CABLE & TERMINATIONS		$ -	$ 229,800	$ 732,100	$ 961,900
1.22	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	$ -	$ 361,000	$ 1,012,900	$ 1,373,900
1.23	EMERGENCY POWER SYSTEM		$ 285,500	$ -	$ 38,900	$ 324,400
1.24	GROUNDING		$ 14,100	$ -	$ 42,700	$ 56,800
1.25	LIGHTING/ TRANSFORMERS & PANELS		$ 26,000	$ 30,000	$ 29,500	$ 85,500
1.26	DUCT BANK		$ -	$ 136,000	$ 192,700	$ 328,700
1.27	FOUNDATION FOR TRANSFORMERS		$ -	$ 61,900	$ 162,600	$ 224,500
1.28	FIREWALL FOR TRANSFORMERS		$ -	$ 3,200	$ 8,300	$ 11,500
1.29	EARLY COMMISSIONING COSTS TEMPORARY HIGH VOLTAGE POWER CABLE & TERMINATION FROM EAST SIDE OF SCR BUILDING TO TRANSFORMER PDC		$ -	$ 139,800	$ 230,200	$ 370,000
1.30	COMMUNICATIONS		$ -	$ 17,000	$ 13,000	$ 30,000
1.31	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000

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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
1.32	EMERGENCY DIESEL DRIVEN QUENCH PUMP	WITH FUEL DAY TANK. FOUNDATIONS INCLUDED WITH ABSORBER BUILDING FOUNDATIONS. INCLUDES PIPING AND DRAINS	$ 150,000	$ 200,000	$ 332,200	$ 682,200
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 11,427,000	$ 14,874,200	$ 29,889,900	$ 56,191,100
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 571,400	$ 3,792,900	$ 10,767,700	$ 15,131,900
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	ID FANS	$ 11,998,400	$ 18,667,100	$ 40,657,600	$ 71,323,000
2.0	FABRIC FILTERS					
2.1	MECHANICAL EQUIPMENT	A SINGLE FABRIC FILTER (225' X 130') UNIT INCLUDING ALL INTERNAL FABRIC FILTER ELEMENTS SUCH AS BAGS, CAGES, ASH HOPPERS, 2 BROKEN BAG DETECTORS PER COMPARTMENT	$ 19,276,000	$ -	$ 12,420,200	$ 31,696,200
2.2	INSULATION FOR FABRIC FILTER	SUBCONTRACT COST INCLUDES LABOR	$ 2,430,000	$ -	$ -	$ 2,430,000
2.3	PENTHOUSE FOR FABRIC FILTER	SUPPORT STEEL AND PRLINS INCLUDED WITH OEM EQUIPMENT	$ 70,200	$ 787,000	$ 1,007,600	$ 1,864,800
2.4	BOTTOM ENCLOSURE FOR BAGHOUSE		$ 60,000	$ 1,204,000	$ 1,359,800	$ 2,623,800
2.5	PIPING & SUPPORTS - MECHANICAL		$ 30,900	$ 101,400	$ 209,500	$ 341,800
2.6	FABRIC FILTER - FOUNDATIONS		$ -	$ 550,700	$ 1,081,100	$ 1,631,800
2.7	FABRIC FILTER - SUPPORT STEEL AND ACCESS GALLERY		$ -	$ 360,000	$ 1,186,700	$ 1,546,700
2.8	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE INCLUDED IN SECTION 1.0 - ID FANS	$ -	$ -	$ -	$ -
2.9	LIGHTING/ TRANSFORMERS & PANELS		$ 30,000	$ 75,000	$ 58,200	$ 163,200
2.10	GROUNDING		$ 7,300	$ -	$ 17,500	$ 24,800

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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 21,934,400	$ 3,153,100	$ 17,340,600	$ 42,323,100
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 1,096,700	$ 804,000	$ 6,441,500	$ 8,342,300
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FABRIC FILTERS	$ 23,031,100	$ 3,957,100	$ 23,782,100	$ 50,665,400
3.0	NEW STACK					
4.0	LIME HANDLING SYSTEM					
4.1	LIME STORAGE SILO		$ 6,770,000	$ -	$ -	$ 6,770,000
4.2	LIME UNLOADING SYSTEM	INCLUDES PNEUMATIC HANDLING SYSTEM, THREE VACUUM EXHAUSTER, TWO FILTER SEPARATORS	$ 640,000	$ -	$ 408,900	$ 1,048,900
4.3	PIPING - MECHANICAL		$ 29,000	$ 15,600	$ 77,900	$ 122,500
4.4	LIME STORAGE SILO ACCESS STAIR TOWER	THREE COAT SHOP PAINT	$ -	$ 145,000	$ 145,900	$ 290,900
4.5	PIPE RACK FOR LIME HANDLING, WASTE HANDLING AND MISC MECHANICAL PIPING	THREE COAT SHOP PAINT	$ -	$ 783,000	$ 787,800	$ 1,570,800
4.6	RAIL CAR UNLOADING AREA - FOUNDATIONS	20 X 250 - NO SIDING	$ -	$ 85,300	$ 180,200	$ 265,500
4.7	LIME UNLOADING BLOWER / ELECTRICAL BUILDING - FOUNDATIONS		$ -	$ 74,500	$ 187,800	$ 262,300
4.8	LIME UNLOADING BLOWER / ELECTRICAL BUILDING	130' L X 30' W X 30' H	$ 75,000	$ 351,500	$ 24,400	$ 450,900
4.9	CONCRETE PIT FOR THE ELEVATOR		$ -	$ 2,300	$ 6,900	$ 9,200
4.10	LIME STORAGE SILO - FOUNDATIONS		$ -	$ 563,700	$ 1,023,400	$ 1,587,100
4.11	LIME STORAGE SILO ACCESS STAIR TOWER - FOUNDATIONS		$ -	$ 14,200	$ 28,600	$ 42,800
4.12	PIPE RACK - FOUNDATIONS		$ -	$ 94,200	$ 237,800	$ 332,000
4.13	TRANSFORMERS: 33F, 33G,	SUS TRANSFORMERS: 33F, 33G, 13.8KV-480V,3PHASE, 3 WINDING XFMR 2/2.24/3-2MVA (DELTA TO DELTA)	$ 170,000	$ -	$ 54,600	$ 224,600
4.14	480V LOW VOLTAGE (33F/G) SWITCHGEAR	480V LOW VOLTAGE (33F/G), SWITCHGEAR WITH 1-4000A BRKR & 3-600A BRKRs & 1-4000A TIE BRKR-2-5 VER SEC	$ 196,000	$ -	$ 104,700	$ 300,700

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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
4.15	CABLE BUS DUCT		$ 134,700	$ 10,800	$ 200,200	$ 345,700
4.16	MCC		$ 61,800	$ -	$ 3,600	$ 65,400
4.17	MIMIC PANELS		$ 17,500	$ -	$ 1,400	$ 18,900
4.18	EMERGENCY POWER SYSTEM		$ 108,300	$ -	$ 24,400	$ 132,700
4.19	GROUNDING		$ 13,300	$ -	$ 41,300	$ 54,600
4.20	LIGHTING/ TRANSFORMERS & PANELS		$ 52,000	$ 135,000	$ 104,500	$ 291,500
4.21	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 310,900	$ 1,537,100	$ 1,848,000
4.22	HIGH VOLTAGE POWER CABLE & TERMINATION	1/C # 500KCMIL-15KV, 12000' UNIT 2 + 3600' LIME UNLOAD	$ -	$ 50,100	$ 141,200	$ 191,300
4.23	MEDIUM VOLTAGE POWER CABLE & TERMINATION	1/C # 350KCMIL-5KV	$ -	$ 66,200	$ 282,300	$ 348,500
4.24	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 93,000	$ 143,200	$ 236,200
4.25	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	$ -	$ 26,200	$ 73,600	$ 99,800
4.26	DUCT BANK	DUCT BANK WITH 4-5" & 4-3" CONDUITS, 2.38' H X 3.79' W	$ -	$ 61,100	$ 116,200	$ 177,300
4.27	FOUNDATIONS FOR TRANSFORMERS		$ -	$ 3,500	$ 10,300	$ 13,800
4.28	COMMUNICATIONS		$ -	$ 17,000	$ 13,000	$ 30,000
4.29	LIGHTNING PROTECTION		$ -	$ 14,000	$ 9,000	$ 23,000
4.30	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 8,267,600	$ 2,925,100	$ 5,977,200	$ 17,169,900
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 413,400	$ 745,900	$ 2,186,900	$ 3,346,200
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME HANDLING SYSTEM	$ 8,681,000	$ 3,671,000	$ 8,164,100	$ 20,516,100
5.0	LIME SLAKER BUILDING					

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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
5.1	MECHANICAL EQUIPMENT	INCLUDES:CHAIN CONVEYOR, SLAKERS THROUGH THE LIME SLURRY PUMPS, PIPING, AND LIME SLURRY STORAGE TANKS.	$ 8,616,000	$ -	$ 5,170,900	$ 13,786,900
5.2	REAGENT AREA SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES	$ 28,000	$ -	$ 12,300	$ 40,300
5.3	AGITATOR FOR SUMP PUMPS	5 HP	$ 12,000	$ -	$ 4,600	$ 16,600
5.4	PIPING - MECHANICAL		$ 117,800	$ 111,400	$ 381,100	$ 610,300
5.5	LIME SLURRY TANKS - FOUNDATIONS		$ -	$ 166,400	$ 299,400	$ 465,800
5.6	LIME SLAKER BUILDING - FOUNDATIONS		$ -	$ 119,200	$ 204,000	$ 323,200
5.7	LIME SLAKER BUILDING	135' L X 30' W X 50' H	$ 40,500	$ 803,300	$ 740,500	$ 1,584,300
5.8	ELECTRICAL	INCLUDED WITH LIME HANDLING SYSTEM, ACCOUNT 4.0	$ -	$ -	$ -	$ -
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 8,814,300	$ 1,200,300	$ 6,812,800	$ 16,827,400
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 440,700	$ 306,100	$ 2,541,200	$ 3,288,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME SLAKER BUILDING	$ 9,255,000	$ 1,506,400	$ 9,354,000	$ 20,115,400
6.0	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS					
6.1	BYPRODUCT WASTE ASH HANDLING - MECHANICAL EQUIPMENT		$ 2,047,000	$ -	$ 1,380,000	$ 3,427,000
6.2	FLY ASH HANDLING - MECHANICAL EQUIPMENT	INCLUDES PNEUMATIC HANDLING SYSTEM, TWO PRESSURE EXHAUSTERS, TRANSFER STATION, ONE BIN VENT FILTER, ASH UNLOADING SYSTEM	$ 2,285,000	$ -	$ 1,431,100	$ 3,716,100
6.3	BUILDING SUMP PUMPS		$ 28,000	$ -	$ 12,300	$ 40,300

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6.4	AGITATOR FOR SUMP PUMPS		$ 12,000	$ -	$ 4,600	$ 16,600
6.5	PIPING - MECHANICAL		$ 142,800	$ 240,900	$ 759,100	$ 1,142,800
6.6	BYPRODUCT WASTE SILO	4" CS, SCHEDULE 40, WELDED	$ 1,885,000	$ -	$ -	$ 1,885,000
6.7	SDA RECYCLE SILO		$ -	$ -	$ -	$ -
6.8	FLY ASH SILO		$ 45,000	$ 23,200	$ 64,300	$ 132,500
6.9	BYPRODUCT WASTE SILO - FOUNDATIONS	PIN MIXERS INCLUDED WITH FLY ASH HANDLING MECHANICAL EQUIPMENT	$ -	$ 144,100	$ 259,100	$ 403,200
6.10	FLY ASH SILO - FOUNDATIONS		$ -	$ 10,800	$ 24,500	$ 35,300
6.11	FLY ASH BLOWER AND ELECTRICAL BUILDING - FOUNDATIONS		$ -	$ 49,600	$ 105,700	$ 155,300
6.12	FLY ASH BLOWER AND ELECTRICAL BUILDING		$ 28,000	$ 244,500	$ 24,400	$ 296,900
6.13	RECYCLE ASH BUILDING - FOUNDATIONS	SUBCONTRACT PRICE, INCLUDES LABOR	$ -	$ 234,300	$ 393,800	$ 628,100
6.14	RECYCLE ASH BUILDING		$ 58,500	$ 1,306,700	$ 1,194,500	$ 2,559,700
6.15	MCC		$ 120,000	$ -	$ 7,300	$ 127,300
6.16	EMERGENCY POWER SYSTEM		$ 185,500	$ -	$ 40,000	$ 225,500
6.17	LIGHTING/ TRANSFORMERS & PANELS		$ 18,500	$ 75,000	$ 53,200	$ 146,700
6.18	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 40,700	$ 236,200	$ 276,900
6.19	LOW VOLTAGE POWER CABLE & TERMINATION	INCLUDING SUPPORT & FITTINGS	$ -	$ 80,900	$ 100,600	$ 181,500
6.20	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	$ -	$ 38,400	$ 107,800	$ 146,200
6.21	GROUNDING		$ -	$ 4,500	$ 10,900	$ 15,400
6.22	DUCT BANK	DUCT BANK WITH 12-5" & 6-3"	$ -	$ 111,500	$ 184,000	$ 295,500
6.23	COMMUNICATIONS		$ -	$ 70,000	$ 50,000	$ 120,000
6.24	LIGHTNING PROTECTION		$ -	$ 19,000	$ 14,000	$ 33,000
6.25	SECURITY SYSTEM		$ -	$ 16,000	$ 14,000	$ 30,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 6,855,300	$ 2,710,100	$ 6,471,400	$ 16,036,800
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 342,800	$ 691,100	$ 2,409,700	$ 3,443,600

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	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS	$ 7,198,100	$ 3,401,200	$ 8,881,100	$ 19,480,400
7.0	SPRAY DRYER ABSORBER ISLAND					
7.1	MECHANICAL EQUIPMENT	INCLUDES: ABSORBER MODULES AND ATOMIZERS WITH LUBE OIL, DUCT WORK FROM THE ABSORBERS TO THE FABRIC FILTER, AND COMPLETE RECYCLE SYSTEM WITH PIPING INSIDE FGD BUILDINGS.	$ 39,438,000	$ -	$ 24,186,100	$ 63,624,100
7.2	ELEVATOR	MAINTENANCE ELEVATOR - SUBCONTRACT COST INCLUDES LABOR	$ 325,000	$ -	$ -	$ 325,000
7.3	ABSORBER AREA SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES.	$ 28,000	$ -	$ 12,300	$ 40,300
7.4	AGITATOR FOR SUMP PUMPS	5 HP	$ 12,000	$ -	$ 4,600	$ 16,600
7.5	PIPING - MECHANICAL		$ 142,800	$ 36,900	$ 227,900	$ 407,600
7.6	SDA SUPERSTRUCTURE		$ 75,000	$ 764,900	$ 1,227,300	$ 2,067,200
7.7	SDA BOTTOM ENCLOSURE - SUPPORT STEEL, GIRTS AND SIDING	TOTAL FOR THREE ABSORBERS	$ -	$ 362,100	$ 385,200	$ 747,300
7.8	SDA SHELL / ROOF INSULATION	61,000 SF. SUBCONTRACT COST INCLUDES LABOR	$ 1,830,000	$ -	$ -	$ 1,830,000
7.9	SDA - SUPPORT STEEL & ACCESS GALLERY		$ -	$ 711,000	$ 1,884,100	$ 2,595,100
7.10	EXPANSION JOINTS		$ -	$ 195,500	$ 173,800	$ 369,300
7.11	DUCTWORK		$ -	$ 6,175,000	$ 13,113,700	$ 19,288,700
7.12	DUCT SUPPORT STEEL	THREE COAT SHOP PAINT	$ -	$ 2,755,000	$ 2,771,700	$ 5,526,700
7.13	DUCTWORK INSULATION & LAGGING		$ -	$ 2,040,000	$ 3,995,500	$ 6,035,500
7.14	CONCRETE PIT FOR ELEVATOR		$ -	$ 2,800	$ 8,200	$ 11,000
7.15	SPRAY DRYER ABSORBER - FOUNDATIONS	TOTAL FOR THREE TOWERS	$ -	$ 1,678,600	$ 3,323,400	$ 5,002,000
7.16	FOUNDATIONS FOR SUPPORT STEEL		$ -	$ 69,000	$ 143,000	$ 212,000
7.17	GROUNDING		$ -	$ 16,000	$ 46,100	$ 62,100
7.18	LIGHTING/ TRANSFORMERS & PANELS		$ 156,000	$ 150,000	$ 159,100	$ 465,100

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7.19	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE INCLUDED IN SECTION 1.0 - ID FANS	$ -	$ -	$ -	$ -
7.20	COMMUNICATIONS		$ -	$ 17,000	$ 13,000	$ 30,000
7.21	LIGHTNING PROTECTION		$ -	$ 25,500	$ 18,500	$ 44,000
7.22	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 42,006,800	$ 15,007,300	$ 51,700,500	$ 108,714,600
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 2,910,300	$ 3,826,900	$ 20,483,400	$ 27,220,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SPRAY DRYER ABSORBER ISLAND	$ 44,917,100	$ 18,834,200	$ 72,183,900	$ 135,935,200
8.0	ACTIVATED CARBON INJECTION SYSTEM					
9.0	COMPRESSED AIR SYSTEM					
10.0	SERVICE WATER SYSTEM					
11.0	POTABLE WATER SYSTEM					
12.0	FGD SUBSTATION					
12.1	TRANSFORMERS		$ 1,560,000	$ -	$ 273,100	$ 1,833,100
12.2	TRANSFORMER PDC	15W X 45' X 10'H. SUBCONTRACT PRICE INCLUDES LABOR	$ 202,500	$ -	$ -	$ 202,500
12.3	TRANSFORMER PDC - FOUNDATION		$ -	$ 73,200	$ 146,900	$ 220,100
12.4	138KV MAIN FEEDER & TERMINATIONS		$ 264,000	$ -	$ 254,000	$ 518,000
12.5	SWITCHGEAR		$ 814,200	$ -	$ 128,900	$ 943,100
12.6	MCC	480V MCC, PER LINE UP	$ 60,000	$ -	$ 3,600	$ 63,600
12.7	CABLE BUS		$ 181,100	$ 18,000	$ 290,200	$ 489,300
12.8	PANELS - RELAY		$ 100,000	$ -	$ 9,100	$ 109,100
12.9	MIMIC PANELS		$ 17,500	$ -	$ 4,500	$ 22,000
12.10	EMERGENCY POWER SYSTEM		$ 108,300	$ -	$ 24,400	$ 132,700
12.11	GROUNDING		$ 23,300	$ -	$ 59,100	$ 82,400

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12.12	LIGHTING/ TRANSFORMERS & PANELS		$ 26,000	$ 30,000	$ 29,500	$ 85,500
12.13	OUTDOOR LIGHTING	NEW AUX YARD LIGHTING - ALLOWANCE	$ 25,000	$ -	$ 56,800	$ 81,800
12.14	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 390,600	$ 1,918,600	$ 2,309,200
12.15	DUCT BANK		$ -	$ 26,200	$ 54,300	$ 80,500
12.16	HIGH VOLTAGE POWER CABLE & TERMINATION	1/C # 500KCMIL-15KV	$ -	$ 27,800	$ 78,400	$ 106,200
12.17	LOW VOLTAGE POWER CABLE & TERMINATION	0.00	$ -	$ 263,700	$ 649,600	$ 913,300
12.18	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	$ -	$ 21,800	$ 61,100	$ 82,900
12.19	FOUNDATION FOR AUX TRANSFORMER		$ -	$ 70,200	$ 205,400	$ 275,600
12.20	FIREWALL FOR TRANSFORMERS		$ -	$ 3,000	$ 5,200	$ 8,200
12.21	COMMUNICATIONS		$ -	$ 17,000	$ 13,000	$ 30,000
12.22	LIGHTNING PROTECTION		$ -	$ 4,000	$ 2,000	$ 6,000
12.23	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 3,381,900	$ 953,500	$ 4,274,700	$ 8,610,100
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 169,100	$ 243,100	$ 1,542,710	$ 1,954,900
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FGD SUBSTATION	$ 3,551,000	$ 1,196,600	$ 5,817,400	$ 10,565,000
13.0	FGD DCS SYSTEM					
14.0	CEM SYSTEM					
15.0	TRUCK & RAIL INFRASTRUCTURE					
16.0	SITE IMPROVEMENTS - CIVIL WORK					
16.1	SITE GRADING		$ -	$ -	$ 627,000	$ 627,000
16.2	ROADS & SURFACING		$ -	$ 996,600	$ 1,358,800	$ 2,355,400
16.3	RAILROAD CROSSING	50' WIDE CROSSING THREE TRACKS - CUSTOM BUILT	$ -	$ 120,000	$ 152,200	$ 272,200

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16.4	NEW CONCRETE ENCASEMENT	16' X 4' X 40' - FOR EXISTING ASH PIPE HAUL ROAD CROSSING	$ -	$ 144,300	$ 286,600	$ 430,900
16.5	TRUCK WASH AREA - CONCRETE PAD		$ -	$ 47,300	$ 83,100	$ 130,400
16.6	TRUCK SCALE & CONCRETE APPROACH		$ 170,000	$ 27,300	$ 92,000	$ 289,300
16.7	PROCESS WATER STORAGE BASIN		$ 60,000	$ 110,400	$ 312,600	$ 483,000
16.8	PROCESS WATER STORAGE BASIN PUMP STRUCTURE - CONCRETE		$ -	$ 47,000	$ 105,400	$ 152,400
16.9	STORMWATER DRAINAGE TRENCH	2' W X 3' DEEP CAST-IN-PLACE CONCRETE TRENCH W/REINFORCING & HS-20 RATED GRATE COVERS	$ -	$ 432,000	$ 439,600	$ 871,600
16.10	STORMWATER RUNOFF POND		$ -	$ 15,000	$ 122,600	$ 137,600
16.11	STORM WATER POND PUMP STRUCTURE - CONCRETE		$ 90,000	$ 42,300	$ 182,200	$ 314,500
16.12	OILY WATER SEWER		$ 4,500	$ 96,600	$ 210,000	$ 311,100
16.13	OIL SEPARATOR	500 GPM W/ INTEGRAL LIFT STATION	$ 100,000	$ -	$ 116,100	$ 216,100
16.14	SANITARY SEWER		$ -	$ 22,200	$ 96,900	$ 119,100
16.15	SANITARY LIFT STATION	PACKAGED TYPE COMPLETE WITH PUMPS, 100,000 GPD	$ 150,000	$ -	$ 49,200	$ 199,200
16.16	CONSTRUCTION LAYDOWN AREA - (TO BE USED FOR PHASE I AND PHASE II)	ALLOWANCE FOR 10 ACRES, DOES NOT INCLUDE LAND ACQUISITION, IF REQUIRED	$ -	$ 700,000	$ 828,000	$ 1,528,000
16.17	CRAFT PARKING (TO BE USED FOR PHASE I AND PHASE II)	DOES NOT INCLUDE LAND ACQUISITION, IF REQUIRED. ALLOWANCE FOR 20,000 SY INCLUDES: 6" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	$ -	$ 180,000	$ 414,200	$ 594,200

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16.18	CONTRACTOR OFFICES (AREA) - (TO BE USED FOR PHASE I AND PHASE II)	DOES NOT INCLUDE LAND ACQUISITION, IF REQUIRED. ALLOWANCE FOR 5,000 SY AREA (TRAILERS BY CONTRACTORS) INCLUDES: 6" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	$ -	$ 45,000	$ 103,600	$ 148,600
16.19	NEW PERMANENT STORAGE	INCLUDES LIGHTING AND H&V. SUBCONTRACT PRICE INCLUDES ELECTRICAL AND H&V	$ 2,550,000	$ -	$ -	$ 2,550,000
16.20	FOUNDATIONS FOR THE NEW WAREHOUSE		$ -	$ 803,800	$ 1,301,600	$ 2,105,400
16.21	NEW TEMPORARY STORAGE	WEATHER TIGHT CANVAS ENCLOSURE. INCLUDES LIGHTING AND H&V. SUBCONTRACT PRICE INCLUDES ELECTRICAL AND H&V	$ 450,000	$ -	$ -	$ 450,000
16.22	FOUNDATIONS FOR TEMPORARY STORAGE		$ -	$ 99,500	$ 157,200	$ 256,700
16.23	LABOR BUS SERVICE FROM PARKING LOT TO CONSTRUCTION AREA AND ACCESS CONTROL	ALLOWANCE FOR 36 MONTHS BASED ON 2 BUSES OPERATING CONTINUOUSLY FOR 5X10 WORKWEEK. SUBCONTRACT COST INCLUDES EQUIPMENT, MATERIAL AND LABOR	$ 1,368,000	$ -	$ -	$ 1,368,000
16.24	EROSION & SEDIMENT CONTROL		$ -	$ 12,600	$ 20,700	$ 33,300
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 4,942,500	$ 3,941,900	$ 7,059,600	$ 15,944,000
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 247,100	$ 1,005,200	$ 2,583,600	$ 3,835,900

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	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SITE IMPROVEMENTS - CIVIL WORK	$ 5,189,600	$ 4,947,100	$ 9,643,200	$ 19,779,900
17.0	BOP ITEMS					
18.0	CAPITAL REPLACEMENTS - REMOVAL AND RELOCATION OF EXISTING EQUIPMENT AND INFRASTRUCTURE					
19.0	ARSENIC, ASBESTOS , LEAD ABATEMENT					
99.0	PHASE I - OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 118,294,000	$ 53,708,600	$ 147,675,300	$ 351,802,900
	PHASE I - OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 6,661,700	$ 13,639,000	$ 55,541,500	$ 80,912,200
	PHASE I - OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 124,955,700	$ 67,347,600	$ 203,216,800	$ 432,715,100
	INDIRECT COSTS - PHASE I					$ -
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES					$ 28,000,000
	CONSTRUCTION MANAGEMENT					$ 12,981,500
	S-U / COMMISSIONING					$ 4,327,200
	CRAFT START-UP SUPPORT					$ 1,740,100
	INITIAL FILLS					$ 1,298,100
	OPERATOR & TRAINING MANUALS					$ 300,000
	SUBCONTRACTORS (NOISE & DUCTWORK CONSULTANT,					$ 400,000
	SUBTOTAL - INDIRECT COSTS					$ 49,046,900
	TOTAL PHASE I DIRECT AND INDIRECT COSTS					$ 481,762,000
	SPARE PARTS - PHASE I					$ 1,874,300
	SPARE PARTS - CAPITALIZED	0.9				$ 1,124,580
	SPARE PARTS - FIRST YEAR OF OPERATION	0.6				$ 749,720

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	CONTINGENCY - PHASE I	14.3				$ 69,375,300
	ESCALATION - PHASE I					$ 107,858,500
	EQUIPMENT					$ 34,072,800
	MATERIAL					$ 14,583,300
	LABOR					$ 48,849,700
	INDIRECTS					$ 10,352,700
	PHASE I - TOTAL PROJECT COST					$ 660,870,100
	PHASE II - WET FGD					
20.0	LIMESTONE HANDLING SYSTEM					
21.0	REAGENT (LIMESTONE) PREPARATION ISLAND					
21.1	MECHANICAL EQUIPMENT	INCLUDES LIMESTONE FEEDERS, FROM THE DAY SILOS THROUGH THE SLURRY STORAGE TANKS AND TRANSFER PUMPS WITH INTEGRAL PIPING	$ 13,430,000	$ -	$ 11,408,100	$ 24,838,100
21.2	SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES	$ 28,000	$ -	$ 12,300	$ 40,300
21.3	AGITATOR FOR SUMP PUMPS	5 HP	$ 12,000	$ -	$ 4,600	$ 16,600
21.4	PIPING - MECHANICAL		$ 278,900	$ 205,000	$ 587,300	$ 1,071,200
21.5	LIMESTONE SLURRY TANKS - FOUNDATIONS		$ -	$ 166,400	$ 299,400	$ 465,800
21.6	REAGENT PREPARATION BUILDING - FOUNDATIONS		$ -	$ 674,900	$ 1,120,500	$ 1,795,400
21.7	REAGENT PREPARATION BUILDING	120' L X 129' W X 130' H	$ 269,400	$ 4,812,500	$ 4,210,100	$ 9,292,000
21.8	PIPE SUPPORT PAD - REAGENT PREP BUILDING		$ -	$ 13,800	$ 27,200	$ 41,000
21.9	LIGHTING/ TRANSFORMERS & PANELS		$ 52,000	$ 135,000	$ 104,500	$ 291,500
21.10	GROUNDING		$ 5,100	$ -	$ 13,400	$ 18,500
21.11	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE ARE INCLUDED IN SECTION 28.0 - ABSORBER ISLAND	$ -	$ -	$ -	$ -

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21.12	COMMUNICATIONS		$ -	$ 34,000	$ 26,000	$ 60,000
21.13	LIGHTNING PROTECTION		$ -	$ 23,000	$ 16,000	$ 39,000
21.14	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 14,075,400	$ 6,007,600	$ 17,787,400	$ 37,870,400
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 703,800	$ 1,531,900	$ 6,818,100	$ 9,053,800
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	REAGENT (LIMESTONE) PREPARATION ISLAND	$ 14,779,200	$ 7,604,500	$ 24,654,500	$ 47,038,200
22.0	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE					
22.1	MECHANICAL EQUIPMENT	PRIMARY & SECONDARY DEWATERING INCLUDING HYDROCLONE FEED TANKS, HYDROCLONES, PUMPS, INTEGRAL PIPING AND BELT VACUUM FILTERS	$ 7,250,000	$ -	$ 5,959,600	$ 13,209,600
22.2	PUMPS & AGITATORS		$ 250,000	$ -	$ 137,000	$ 387,000
22.3	PIPING - MECHANICAL		$ 282,700	$ 3,555,700	$ 7,786,000	$ 11,624,400
22.4	MATERIAL HANDLING EQUIPMENT		$ 724,000	$ 7,500	$ 614,100	$ 1,345,600
22.5	FIRE PROTECTION SYSTEM FOR BELT CONVEYORS	DELUGE SYSTEM, DRY PIPE, SENSORS, ACTIVATION VALVE AND FM APPROVED PANEL - SUBCONTRACT PRICE FOR ALL CONVEYORS INCLUDES LABOR	$ 170,000	$ -	$ -	$ 170,000
22.6	CONVEYOR STRUCTURE SUPPORT STEEL	THREE-COAT SHOP PAINT	$ -	$ 99,000	$ 99,600	$ 198,600
22.7	PIPE RACK SUPPORT STEEL	THREE-COAT SHOP PAINT	$ -	$ 197,200	$ 198,400	$ 395,600
22.8	TANKS		$ -	$ 3,825,300	$ 846,700	$ 4,672,000
22.9	RECLAIM WATER TANKS & PUMPS - FOUNDATIONS		$ -	$ 26,000	$ 54,000	$ 80,000
22.10	MAINTENANCE STORAGE TANK & PUMPS - FOUNDATIONS		$ -	$ 100,000	$ 177,300	$ 277,300
22.11	LANDFILL SERVICE WATER TANKS & PUMP - FOUNDATIONS		$ -	$ 80,900	$ 155,100	$ 236,000
22.12	LANDFILL RECLAIM WATER TANKS & PUMPS - FOUNDATIONS		$ -	$ 26,000	$ 54,000	$ 80,000

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22.13	HYDROCLONE FEED TANKS & BLEED TANKS - FOUNDATIONS	TOTAL FOR HYDROCLONE AND BLEED TANKS	$ -	$ 340,200	$ 618,900	$ 959,100
22.14	BYPRODUCT STACKOUT CONVEYOR & TRANSFER TOWER - FOUNDATIONS		$ -	$ 16,100	$ 34,700	$ 50,800
22.15	BYPRODUCT STACKOUT PILE - FOUNDATIONS	INCLUDES CONTAINMENT AREA SLAB	$ -	$ 891,700	$ 1,427,400	$ 2,319,100
22.16	PIPE RACK	SUPPORTS AT 15' C/C	$ -	$ 60,800	$ 149,400	$ 210,200
22.17	BYPRODUCT CONTAINMENT WALLS		$ -	$ 137,300	$ 235,000	$ 372,300
22.18	INSTALL WIND SCREEN		$ -	$ 525,000	$ 192,300	$ 717,300
22.19	BYPRODUCT DEWATERING BUILDING - FOUNDATIONS		$ -	$ 288,700	$ 478,000	$ 766,700
22.20	BYPRODUCT DEWATERING BUILDING	120' L X 74' W X 65' H	$ 145,200	$ 1,586,400	$ 1,488,000	$ 3,219,600
22.21	PIPE SUPPORT PAD		$ -	$ 18,300	$ 36,000	$ 54,300
22.22	AUXILIARY PUMPHOUSE BUILDING WITH ELECTRICAL ROOM - FOUNDATIONS		$ -	$ 32,300	$ 60,800	$ 93,100
22.23	AUXILIARY PUMPHOUSE BUILDING	50'L X 35' W X 20'H	$ 101,300	$ 252,500	$ 269,800	$ 623,600
22.24	SITE GRADING - GYPSUM HANDLING AREA		$ -	$ -	$ 587,800	$ 587,800
22.25	ROADS & SURFACING - GYPSUM HANDLING AREA		$ -	$ 188,000	$ 427,900	$ 615,900
22.26	GYPSUM HANDLING & STORAGE		$ -	$ 1,179,900	$ 1,854,100	$ 3,034,000
22.27	GYPSUM RUNOFF POND		$ 68,000	$ 110,400	$ 315,700	$ 494,100
22.28	GYPSUM RUNOFF POND PUMP STRUCTURE - CONCRETE		$ -	$ 47,000	$ 105,400	$ 152,400
22.29	OILY WATER SEWER - GYPSUM HANDLING AREA		$ 1,500	$ 9,000	$ 14,200	$ 24,700
22.30	OIL SEPARATOR - GYPSUM HANDLING AREA	500 GPM W/ INTEGRAL LIFT STATION	$ 50,000	$ -	$ 58,100	$ 108,100
22.31	EROSION & SEDIMENT CONTROL - GYPSUM HANDLING AREA		$ -	$ 18,000	$ 28,300	$ 46,300
22.32	SITE GRADING - ACCESS ROAD WIDENING & CONTAINMENT DITCH	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA	$ -	$ -	$ 60,400	$ 60,400
22.33	ROADS & SURFACING - GYPSUM DEWATERING AREA	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA	$ -	$ 66,300	$ 190,800	$ 257,100

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22.34	PIPELINE CONTAINMENT & DRAINAGE	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA	$ -	$ 271,600	$ 429,200	$ 700,800
22.35	CONTAINMENT RUNOFF POND	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA	$ 68,000	$ 114,300	$ 344,300	$ 526,600
22.36	CONTAINMENT POND PUMP STRUCTURE - CONCRETE	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA	$ -	$ 47,000	$ 105,400	$ 152,400
22.37	SITE GRADING - PIPELINE CONTAINMENT & DRAINAGE	SOUTH OF HWY 23	$ -	$ -	$ 30,200	$ 30,200
22.38	PIPELINE CONTAINMENT & DRAINAGE	SOUTH OF HWY 23	$ -	$ 169,600	$ 263,600	$ 433,200
22.39	PIPE BORING PIT	SOUTH OF HWY 23	$ -	$ 5,300	$ 50,900	$ 56,200
22.40	PIPE RECEIVING PIT	NORTH OF HWY 23	$ -	$ 4,900	$ 43,500	$ 48,400
22.41	DIRECTIONAL BORING FOR BURIED PIPE	BENEATH HWY 23	$ 28,000	$ 652,500	$ 277,000	$ 957,500
22.42	TRANSFORMERS		$ 470,000	$ -	$ 136,500	$ 606,500
22.43	SWITCHGEAR		$ 825,600	$ -	$ 500,700	$ 1,326,300
22.44	CABLE BUS & TERMINATIONS		$ 355,500	$ 39,400	$ 730,700	$ 1,125,600
22.45	MCC		$ 123,600	$ -	$ 6,300	$ 129,900
22.46	MIMIC PANELS		$ 17,500	$ -	$ 1,600	$ 19,100
22.47	EMERGENCY POWER SYSTEM		$ 285,500	$ -	$ 38,900	$ 324,400
22.48	GROUNDING		$ 9,400	$ -	$ 25,400	$ 34,800
22.49	LIGHTING/ TRANSFORMERS & PANELS		$ 52,000	$ 135,000	$ 104,500	$ 291,500
22.50	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 354,700	$ 1,514,100	$ 1,868,800
22.51	13.8 KV OH LINE OPGW	INCLUDES POLES, CONDUCTORS, INSULATORS & GROUNDING	$ -	$ 240,200	$ 292,400	$ 532,600
22.52	HIGH VOLTAGE POWER CABLE & TERMINATION		$ -	$ 88,400	$ 256,600	$ 345,000
22.53	MEDIUM VOLTAGE POWER CABLE & TERMINATION	1/C # 350KCMIL-5KV	$ -	$ 18,400	$ 78,400	$ 96,800
22.54	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 62,700	$ 547,400	$ 610,100
22.55	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	$ -	$ 112,000	$ 314,300	$ 426,300

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	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT -IAQCS (ESP)-3A - 3.0 LB/MM BTU - PHASED	Date:	9/29/2010
	COST ESTIMATE SUMMARY	Preparer:	MNO
		Reviewer:	JMK
		Approver:	PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
22.56	FOUNDATIONS FOR TRANSFORMERS		$ -	$ 70,200	$ 205,400	$ 275,600
22.57	FIREWALL FOR TRANSFORMERS		$ -	$ 3,200	$ 8,300	$ 11,500
22.58	COMMUNICATIONS		$ -	$ 34,000	$ 26,000	$ 60,000
22.59	LIGHTNING PROTECTION		$ -	$ 13,000	$ 10,300	$ 23,300
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 11,277,800	$ 16,121,900	$ 31,056,700	$ 58,456,400
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 563,900	$ 4,111,100	$ 11,904,400	$ 16,579,300
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)	$ 11,841,700	$ 20,233,000	$ 42,961,100	$ 75,035,700
23.0	WET FGD ABSORBER ISLAND					
23.1	MECHANICAL EQUIPMENT	INCLUDES ABSORBER MODULE (A2205) WITH INTERNALS, INLET DUCT ONLY THROUGH WET/DRY INTERFACE, PIPING INSIDE ABSORBER BUILDING TO TERMINAL POINTS, RECYCLE PUMPS, OXIDATION BLOWERS, MIST ELIMINATOR AND WASH PUMPS AND OTHER MISC. EQUIPMENT AND MATERIAL	$ 41,029,000	$ -	$ 40,695,200	$ 81,724,200
23.2	ADDITIONAL COST FOR C276 ABSORBER SHELL MATERIAL ABOVE THE PRICE OF A2205 ABSORBER SHELL	INCLUDES MATERIAL AND WELDING ROD COST DIFFERENTIAL - 49,800 TOTAL SF	$ -	$ 15,338,400	$ -	$ 15,338,400
23.3	SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES	$ 28,000	$ -	$ 12,300	$ 40,300
23.4	AGITATOR FOR SUMP PUMPS	5 HP	$ 12,000	$ -	$ 4,600	$ 16,600
23.5	EMERGENCY DIESEL DRIVEN QUENCH PUMP	INCLUDED WITH SECTION 1, ID FANS.	$ -	$ -	$ -	$ -

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23.6	PIPING - MECHANICAL	ALL PIPING INCLUDED IN OEM EQUIPMENT COST. NO BOP PIPING	$ -	$ -	$ -	$ -
23.7	ABSORBER VESSEL - FOUNDATIONS		$ -	$ 366,900	$ 672,900	$ 1,039,800
23.8	ABSORBER BUILDING - FOUNDATIONS		$ -	$ 564,200	$ 936,700	$ 1,500,900
23.9	ABSORBER BUILDING	150' L X 89' W X 60' H	$ 164,500	$ 2,583,100	$ 2,368,200	$ 5,115,800
23.1	PIPE SUPPORT PAD - ABSORBER BUILDING		$ -	$ 7,700	$ 16,100	$ 23,800
23.1	OXIDATION AIR BLOWER BUILDING - FOUNDATIONS		$ -	$ 37,000	$ 67,300	$ 104,300
23.12	OXIDATION AIR BLOWER BUILDING	30' L X 30' W X 25' H	$ 33,800	$ 191,000	$ 201,400	$ 426,200
23.13	PIPE SUPPORT PAD - OXIDATION BUILDING		$ -	$ 7,700	$ 13,700	$ 21,400
23.14	DUCTWORK	INCLUDES INTERNAL BRACING AND TURNING VANES	$ -	$ 520,000	$ 993,200	$ 1,513,200
23.15	DUCT SUPPORT STEEL	THREE-COAT SHOP PAINT	$ -	$ 232,000	$ 233,400	$ 465,400
23.16	DUCTWORK INSULATION & LAGGING		$ -	$ 147,000	$ 287,900	$ 434,900
23.17	FOUNDATIONS FOR DUCT SUPPORT STEEL		$ -	$ 27,800	$ 53,200	$ 81,000
23.18	TRANSFORMERS		$ 981,000	$ -	$ 209,300	$ 1,190,300
23.19	SWITCHGEAR		$ 1,162,800	$ -	$ 673,700	$ 1,836,500
23.20	CABLE BUS & TERMINATIONS		$ 867,100	$ 46,600	$ 1,634,100	$ 2,547,800
23.21	MCC		$ 216,300	$ -	$ 11,100	$ 227,400
23.22	MIMIC PANELS		$ 35,000	$ -	$ 7,900	$ 42,900
23.23	GROUNDING		$ 16,000	$ -	$ 46,100	$ 62,100

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23.24	LIGHTING/ TRANSFORMERS & PANELS		$ 164,500	$ 165,000	$ 171,300	$ 500,800
23.25	EMERGENCY POWER SYSTEM		$ 108,300	$ -	$ 24,400	$ 132,700
23.26	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 1,515,700	$ 5,849,000	$ 7,364,700
23.27	HIGH VOLTAGE POWER CABLE & TERMINATION		$ -	$ 58,400	$ 164,700	$ 223,100
23.28	MEDIUM VOLTAGE POWER CABLE & TERMINATION		$ -	$ 114,600	$ 431,700	$ 546,300
23.29	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 795,900	$ 1,500,700	$ 2,296,600
23.30	CONTROL & INSTRUMENT CABLE		$ -	$ 512,000	$ 1,436,700	$ 1,948,700
23.31	FOUNDATION FOR TRANSFORMERS		$ -	$ 59,000	$ 173,700	$ 232,700
23.32	TRANSFORMER FIRE WALLS		$ -	$ 3,500	$ 9,600	$ 13,100
23.33	COMMUNICATIONS		$ -	$ 34,000	$ 26,000	$ 60,000
23.34	LIGHTNING PROTECTION		$ -	$ 19,500	$ 14,500	$ 34,000
23.35	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 44,818,300	$ 23,355,000	$ 58,947,600	$ 127,120,900
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 2,915,900	$ 5,955,500	$ 23,377,600	$ 32,249,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 47,734,200	$ 29,310,500	$ 82,325,200	$ 159,369,900
24.0	COMPRESSED AIR SYSTEM (BYPRODUCT DEWATERING AREA)					
25.0	POTABLE WATER SYSTEM					
26.0	SCR SUBSTATION UPGRADE					
27.0	FGD DCS SYSTEM					
28.0	SITE IMPROVEMENTS - CIVIL WORK					
29.0	BOP ITEMS					
30.0	SERVICE WATER SYSTEM					

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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
99.0	PHASE II - OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 79,104,000	$ 56,192,400	$ 128,205,100	$ 263,501,500
	PHASE II - OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 4,630,200	$ 14,329,100	$ 49,924,400	$ 68,883,700
	PHASE II - OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 83,734,200	$ 70,521,500	$ 178,129,500	$ 332,385,200
	INDIRECT COSTS - PHASE II					
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES					$ 23,000,000
	CONSTRUCTION MANAGEMENT					$ 9,971,600
	S-U / COMMISSIONING					$ 3,323,900
	CRAFT START-UP SUPPORT					$ 1,766,900
	INITIAL FILLS					$ 997,200
	OPERATOR & TRAINING MANUALS					$ 300,000
	SUBCONTRACTORS (NOISE CONSULTANT)					$ 100,000
	SUBTOTAL - INDIRECT COSTS					$ 39,459,600
	TOTAL PHASE II DIRECT AND INDIRECT COSTS					$ 371,844,800
	SPARE PARTS - PHASE II					$ 1,256,000
	SPARE PARTS - CAPITALIZED	0.90				$ 628,000
	SPARE PARTS - FIRST YEAR OF OPERATION	0.60				$ 628,000
	CONTINGENCY - PHASE II.	15.4				$ 57,575,200
	ESCALATION - PHASE II					$ 107,858,500
	EQUIPMENT					$ 34,072,800
	MATERIAL					$ 14,583,300
	LABOR					$ 48,849,700
	INDIRECTS					$ 10,352,700
	PHASE II - TOTAL PROJECT COST					$ 538,534,500

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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
	OVERALL PROJECT INDIRECT COSTS (PHASE I + PHASE II)					
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES					$ 51,000,000
	CONSTRUCTION MANAGEMENT					$ 22,953,000
	S-U / COMMISSIONING					$ 7,651,000
	CRAFT START-UP SUPPORT					$ 3,507,000
	INITIAL FILLS					$ 2,295,300
	OPERATOR & TRAINING MANUALS					$ 600,000
	SUBCONTRACTORS (PHASE I - NOISE & DUCTWORK CONSULTANT, GEOTECHNICAL INVESTIGATION, PHASE II - NOISE CONSULTANT ONLY)					$ 500,000
	NOISE ABATEMENT FOR 85 DBA REQUIREMENT	FOR ID FAN, SDA ENCLOSURE, TRANSFORMERS, BOP, DUCTWORK, ACOUSTIC BARRIERS FOR BOUNDARY LIMITS				$ 4,500,000
	SUBTOTAL - INDIRECT COSTS					$ 93,006,300
	OVERALL PROJECT DIRECT AND INDIRECT COSTS (PHASE I + PHASE II)					$ 858,106,600
	SPARE PARTS FOR THE OEM & THE BOP EQUIPMENT (PHASE I + PHASE II)					$ 3,130,300
	SPARE PARTS FOR THE OEM EQUIPMENT					$ 1,752,580
	SPARE PARTS FOR THE BOP EQUIPMENT					$ 1,377,720
	CONTINGENCY (PHASE I + PHASE II)					$ 126,950,500
	ESCALATION (PHASE I + PHASE II)					$ 215,717,000
	EQUIPMENT					$ 68,145,600
	MATERIAL					$ 29,166,600
	LABOR					$ 97,699,400
	INDIRECTS					$ 20,705,400
	TOTAL PROJECT COST (PHASE I + PHASE II)					$ 1,203,904,400

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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
	REFERENCE COSTS:					
A	REMOVAL OF FUEL OIL TANK	LABOR COST IS FOR REMOVAL OF TANK ONLY. ALLOWANCE FOR SOIL REMEDIATION AND DISPOSAL IN AN EPA APPROVED LANDFILL. SUBCONTRACT COST INCLUDES LABOR. USED LOWER END OF THE RANGE $118-355/CY. COST COULD BE LOWER ($59-118/CY) IF SOLD TO A BITUMINOUS CONCRETE BATCH PLANT	$ 1,200,000	$ 80,000	$ 469,400	$ 1,749,400

ATTACHMENT 4-19
IAQCS Summary Capital Cost Estimate No. 30719 Est-3B ESP not in Service*
(3.0 lb SO_2/MMbtu)

Sargent & Lundy, LLC	AEP	Estimate No.:	30719C
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS (N/ESP)-3B - 3.0 LB/MM BTU - PHASED	Date:	9/29/2010
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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
1.0	ID FANS					
1.1	ID FANS - OEM EQUIPMENT	1,865,000 ACFM WITH 24,500 HP MOTORS ($875,000 EACH). INCLUDES HYDRAULIC OIL UNITS, SEAL AIR FAN SKIDS, VIBRATION MONITORING EQUIPMENT, FAN STALL EQUIPMENT, FIELD SERVICE REP FOR 140 DAYS	$ 7,688,000	$ -	$ 1,737,800	$ 9,425,800
1.2	PIPING & SUPPORTS - MECHANICAL		$ 21,800	$ 28,700	$ 120,500	$ 171,000
1.3	DAMPERS		$ 781,000	$ -	$ 352,600	$ 1,133,600
1.4	EXPANSION JOINTS		$ -	$ 131,100	$ 116,500	$ 247,600
1.5	DUCTWORK	FABRIC FILTER OUTLET TO ID FANS AND FROM ID FANS TO STACK - INCLUDES INTERNAL BRACING AND TURNING VANES	$ -	$ 3,558,800	$ 6,797,400	$ 10,356,200
1.6	DUCT SUPPORT STEEL	THREE COAT SHOP PAINT	$ -	$ 1,595,000	$ 1,604,700	$ 3,199,700
1.7	ID FAN INSULATION & LAGGING	TOTAL FOR TWO FANS. PRICING REFLECTS STANDARD ACOUSTICAL INSULATION	$ -	$ 200,000	$ 258,500	$ 458,500
1.8	DUCTWORK INSULATION & LAGGING	INCLUDES INSULATION FOR SPRAY DRYER OUTLET DUCT TO FABRIC FILTERS SUPPLIED WITH THE OEM EQUIPMENT	$ -	$ 1,363,400	$ 2,670,400	$ 4,033,800
1.9	DUCT SUPPORT STEEL - FOUNDATIONS		$ -	$ 440,200	$ 855,200	$ 1,295,400
1.10	ID FAN FOUNDATIONS INCLUDING ID FAN AUX EQUIPMENT		$ -	$ 229,300	$ 415,700	$ 645,000
1.11	ID FAN IAQCS CONTROL ROOM - FOUNDATIONS		$ -	$ 270,100	$ 508,600	$ 778,700
1.12	ID FAN IAQCS CONTROL ROOM	SUBCONTRACT PRICE INCLUDES LABOR. COMPLETE WITH HVAC, FINISHES AND SANITARY FACILITIES	$ -	$ 3,937,500	$ -	$ 3,937,500
1.13	TRANSFORMERS		$ 770,000	$ -	$ 145,600	$ 915,600

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1.14	SWITCHGEAR		$ 1,132,000	$ -	$ 589,900	$ 1,721,900
1.15	CABLE BUS & TERMINATIONS		$ 1,129,100	$ 35,800	$ 1,930,000	$ 3,094,900
1.16	MCC		$ 180,000	$ -	$ 10,900	$ 190,900
1.17	MIMIC PANELS		$ 17,500	$ -	$ 4,500	$ 22,000
1.18	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 1,664,200	$ 8,196,600	$ 9,860,800
1.19	HIGH VOLTAGE POWER CABLE & TERMINATION		$ -	$ 288,500	$ 666,700	$ 955,200
1.20	MEDIUM VOLTAGE POWER CABLE & TERMINATION		$ -	$ 100,200	$ 427,400	$ 527,600
1.21	LOW VOLTAGE POWER CABLE & TERMINATIONS		$ -	$ 229,800	$ 732,100	$ 961,900
1.22	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	$ -	$ 361,000	$ 1,012,900	$ 1,373,900
1.23	EMERGENCY POWER SYSTEM		$ 285,500	$ -	$ 38,900	$ 324,400
1.24	GROUNDING		$ 14,100	$ -	$ 42,700	$ 56,800
1.25	LIGHTING/ TRANSFORMERS & PANELS		$ 26,000	$ 30,000	$ 29,500	$ 85,500
1.26	DUCT BANK		$ -	$ 136,000	$ 192,700	$ 328,700
1.27	FOUNDATION FOR TRANSFORMERS		$ -	$ 61,900	$ 162,600	$ 224,500
1.28	FIREWALL FOR TRANSFORMERS		$ -	$ 3,200	$ 8,300	$ 11,500
1.29	EARLY COMMISSIONING COSTS TEMPORARY HIGH		$ -	$ 139,800	$ 230,200	$ 370,000
1.30	COMMUNICATIONS		$ -	$ 17,000	$ 13,000	$ 30,000
1.31	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
1.32	EMERGENCY DIESEL DRIVEN QUENCH PUMP	WITH FUEL DAY TANK. FOUNDATIONS INCLUDED WITH ABSORBER BUILDING FOUNDATIONS. INCLUDES PIPING AND DRAINS	$ 150,000	$ 200,000	$ 332,200	$ 682,200
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 12,195,000	$ 15,029,500	$ 30,211,600	$ 57,436,100
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 609,800	$ 3,832,500	$ 10,891,300	$ 15,333,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	ID FANS	$ 12,804,800	$ 18,862,000	$ 41,102,900	$ 72,769,700

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2.0	FABRIC FILTERS					
2.1	MECHANICAL EQUIPMENT	A SINGLE FABRIC FILTER (225' X 130') UNIT INCLUDING ALL INTERNAL FABRIC FILTER ELEMENTS SUCH AS BAGS, CAGES, ASH HOPPERS, 2 BROKEN BAG DETECTORS PER COMPARTMENT	$ 19,761,000	$ -	$ 12,604,200	$ 32,365,200
2.2	INSULATION FOR FABRIC FILTER	SUBCONTRACT COST INCLUDES LABOR	$ 2,430,000	$ -	$ -	$ 2,430,000
2.3	PENTHOUSE FOR FABRIC FILTER	SUPPORT STEEL AND PRLINS INCLUDED WITH OEM EQUIPMENT	$ 70,200	$ 787,000	$ 1,007,600	$ 1,864,800
2.4	BOTTOM ENCLOSURE FOR BAGHOUSE		$ 60,000	$ 1,204,000	$ 1,359,800	$ 2,623,800
2.5	PIPING & SUPPORTS - MECHANICAL		$ 30,900	$ 101,400	$ 209,500	$ 341,800
2.6	FABRIC FILTER - FOUNDATIONS		$ -	$ 550,700	$ 1,081,100	$ 1,631,800
2.7	FABRIC FILTER - SUPPORT STEEL AND ACCESS GALLERY		$ -	$ 360,000	$ 1,186,700	$ 1,546,700
2.8	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE INCLUDED IN SECTION 1.0 - ID FANS	$ -	$ -	$ -	$ -
2.9	LIGHTING/ TRANSFORMERS & PANELS		$ 30,000	$ 75,000	$ 58,200	$ 163,200
2.10	GROUNDING		$ 7,300	$ -	$ 17,500	$ 24,800
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 22,419,400	$ 3,153,100	$ 17,524,600	$ 42,992,100
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 1,121,000	$ 804,000	$ 6,510,000	$ 8,435,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FABRIC FILTERS	$ 23,540,400	$ 3,957,100	$ 24,034,600	$ 51,427,200
3.0	NEW STACK					
3.1	CONCRETE STACK (WET)	PROVIDED BY AEP	$ -	$ -	$ -	$ 31,480,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS	$ -	$ -	$ -	$ -	$ 31,480,000

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	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT	$ -	$ -	$ -	$ -	$ 4,722,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	NEW STACK	$ -	$ -	$ -	$ 36,202,000
4.0	LIME HANDLING SYSTEM					
4.1	LIME STORAGE SILO	0	$ 5,762,000	$ -	$ -	$ 5,762,000
4.2	LIME UNLOADING SYSTEM	INCLUDES PNEUMATIC HANDLING SYSTEM, THREE VACUUM EXHAUSTER, TWO FILTER SEPARATORS	$ 640,000	$ -	$ 408,900	$ 1,048,900
4.3	PIPING - MECHANICAL	0	$ 29,000	$ 15,600	$ 77,900	$ 122,500
4.4	LIME STORAGE SILO ACCESS STAIR TOWER	THREE COAT SHOP PAINT	$ -	$ 145,000	$ 145,900	$ 290,900
4.5	PIPE RACK FOR LIME HANDLING, WASTE HANDLING AND MISC MECHANICAL PIPING	THREE COAT SHOP PAINT	$ -	$ 783,000	$ 787,800	$ 1,570,800
4.6	RAIL CAR UNLOADING AREA - FOUNDATIONS	20 X 250 - NO SIDING	$ -	$ 85,300	$ 180,200	$ 265,500
4.7	LIME UNLOADING BLOWER / ELECTRICAL BUILDING - FOUNDATIONS		$ -	$ 74,500	$ 187,800	$ 262,300
4.8	LIME UNLOADING BLOWER / ELECTRICAL BUILDING	130' L X 30' W X 30' H	$ 75,000	$ 351,500	$ 24,400	$ 450,900
4.9	CONCRETE PIT FOR THE ELEVATOR		$ -	$ 2,300	$ 6,900	$ 9,200
4.10	LIME STORAGE SILO - FOUNDATIONS	0	$ -	$ 469,600	$ 852,500	$ 1,322,100
4.11	LIME STORAGE SILO ACCESS STAIR TOWER - FOUNDATIONS	0	$ -	$ 14,200	$ 28,600	$ 42,800
4.12	PIPE RACK - FOUNDATIONS		$ -	$ 94,200	$ 237,800	$ 332,000
4.13	TRANSFORMERS: 33F, 33G,	SUS TRANSFORMERS: 33F, 33G, 13.8KV-480V	$ 170,000	$ -	$ 54,600	$ 224,600
4.14	480V LOW VOLTAGE (33F/G) SWITCHGEAR	PER LINE UP	$ 196,000	$ -	$ 104,700	$ 300,700
4.15	CABLE BUS DUCT		$ 134,700	$ 10,800	$ 200,200	$ 345,700
4.16	MCC		$ 61,800	$ -	$ 3,600	$ 65,400
4.17	MIMIC PANELS		$ 17,500	$ -	$ 1,400	$ 18,900
4.18	EMERGENCY POWER SYSTEM		$ 108,300	$ -	$ 24,400	$ 132,700
4.19	GROUNDING		$ 13,300	$ -	$ 41,300	$ 54,600
4.20	LIGHTING/ TRANSFORMERS & PANELS		$ 52,000	$ 135,000	$ 104,500	$ 291,500
4.21	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 310,900	$ 1,537,100	$ 1,848,000
4.22	HIGH VOLTAGE POWER CABLE & TERMINATION	1/C # 500KCMIL-15KV	$ -	$ 50,100	$ 141,200	$ 191,300

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4.23	MEDIUM VOLTAGE POWER CABLE & TERMINATION	1/C # 350KCMIL-5KV	$ -	$ 66,200	$ 282,300	$ 348,500
4.24	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 93,000	$ 143,200	$ 236,200
4.25	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	$ -	$ 26,200	$ 73,600	$ 99,800
4.26	DUCT BANK	DUCT BANK WITH 4-5" & 4-3" CONDUITS, 2.38' H X 3.79' W	$ -	$ 61,100	$ 116,200	$ 177,300
4.27	FOUNDATIONS FOR TRANSFORMERS		$ -	$ 3,500	$ 10,300	$ 13,800
4.28	COMMUNICATIONS		$ -	$ 17,000	$ 13,000	$ 30,000
4.29	LIGHTNING PROTECTION		$ -	$ 14,000	$ 9,000	$ 23,000
4.30	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 7,259,600	$ 2,831,000	$ 5,806,300	$ 15,896,900
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 363,000	$ 721,900	$ 2,120,800	$ 3,205,700
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME HANDLING SYSTEM	$ 7,622,600	$ 3,552,900	$ 7,927,100	$ 19,102,600
5.0	LIME SLAKER BUILDING					
5.1	MECHANICAL EQUIPMENT	INCLUDES:CHAIN CONVEYOR, SLAKERS THROUGH THE LIME SLURRY PUMPS, PIPING, AND LIME SLURRY STORAGE TANKS.	$ 7,985,000	$ -	$ 4,942,500	$ 12,927,500
5.2	REAGENT AREA SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES	$ 28,000	$ -	$ 12,300	$ 40,300
5.3	AGITATOR FOR SUMP PUMPS	5 HP	$ 12,000	$ -	$ 4,600	$ 16,600
5.4	PIPING - MECHANICAL		$ 117,800	$ 111,400	$ 381,100	$ 610,300
5.5	LIME SLURRY TANKS - FOUNDATIONS		$ -	$ 166,400	$ 299,400	$ 465,800
5.6	LIME SLAKER BUILDING - FOUNDATIONS		$ -	$ 119,200	$ 204,000	$ 323,200
5.7	LIME SLAKER BUILDING	135' L X 30' W X 50' H	$ 40,500	$ 803,300	$ 740,500	$ 1,584,300

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5.8	ELECTRICAL	INCLUDED WITH LIME HANDLING SYSTEM, ACCOUNT 4.0	$ -	$ -	$ -	$ -
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 8,183,300	$ 1,200,300	$ 6,584,400	$ 15,968,000
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 409,200	$ 306,100	$ 2,456,800	$ 3,172,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME SLAKER BUILDING	$ 8,592,500	$ 1,506,400	$ 9,041,200	$ 19,140,000
6.0	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS					
6.1	BYPRODUCT WASTE ASH HANDLING - MECHANICAL EQUIPMENT	INCLUDES PNEUMATIC HANDLING SYSTEM, THREE PRESSURE BLOWERS, ONE BIN VENT FILTER, ASH UNLOADING SYSTEM	$ 2,047,000	$ -	$ 1,380,000	$ 3,427,000
6.2	ECONOMIZER ASH HANDLING - MECHANICAL EQUIPMENT	INCLUDES JET PUMPS AND PIPING / SUPPORTS TO THE BOTTOM ASH POND	$ 400,000	$ -	$ 296,400	$ 696,400
6.3	BUILDING SUMP PUMPS	FOR BUILDINGS - DUPLEX. INCLUDES CHECK & ISOLATION VALVES.	$ 28,000	$ -	$ 12,300	$ 40,300
6.4	AGITATOR FOR SUMP PUMPS	5 HP	$ 12,000	$ -	$ 4,600	$ 16,600
6.5	PIPING - MECHANICAL		$ 142,800	$ 240,900	$ 759,100	$ 1,142,800
6.6	BYPRODUCT WASTE SILO	CONCRETE SILO 65' DIA X 111' H - 4700 TONS -SUBCONTRACT COST INCLUDES LABOR	$ 2,630,000	$ -	$ -	$ 2,630,000

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6.7	SDA RECYCLE SILO	INCLUDED WITH OEM EQUIPMENT	$ -	$ -	$ -	$ -
6.8	FLY ASH SILO	NOT REQUIRED - ECONOMIZER FLY ASH SLUICED TO BOTTOM ASH POND	$ -	$ -	$ -	$ -
6.9	BYPRODUCT WASTE SILO - FOUNDATIONS		$ -	$ 186,400	$ 343,900	$ 530,300
6.10	FLY ASH SILO - FOUNDATIONS	NOT REQUIRED	$ -	$ -	$ -	$ -
6.11	FLY ASH BLOWER AND ELECTRICAL BUILDING - FOUNDATIONS	NOT REQUIRED	$ -	$ -	$ -	$ -
6.12	FLY ASH BLOWER AND ELECTRICAL BUILDING	NOT REQUIRED	$ -	$ -	$ -	$ -
6.13	RECYCLE ASH BUILDING - FOUNDATIONS		$ -	$ 234,300	$ 393,800	$ 628,100
6.14	RECYCLE ASH BUILDING	100' L X 65' W X 50' H	$ 58,500	$ 1,306,700	$ 1,194,500	$ 2,559,700
6.15	MCC	480V MCC PER LINE UP	$ 60,000	$ -	$ 3,600	$ 63,600
6.16	EMERGENCY POWER SYSTEM		$ 92,800	$ -	$ 19,900	$ 112,700
6.17	LIGHTING/ TRANSFORMERS & PANELS		$ 18,500	$ 60,000	$ 44,100	$ 122,600
6.18	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 32,500	$ 189,100	$ 221,600
6.19	LOW VOLTAGE POWER CABLE & TERMINATION	#4/0 - #12 AWG-600V	$ -	$ 64,700	$ 80,500	$ 145,200
6.20	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	$ -	$ 30,700	$ 86,200	$ 116,900
6.21	GROUNDING	0.00	$ -	$ 4,500	$ 10,900	$ 15,400
6.22	DUCT BANK	DUCT BANK WITH 12-5" & 6-3" CONDUITS, 5.2' H X 2.08" W	$ -	$ 111,500	$ 184,000	$ 295,500
6.23	COMMUNICATIONS		$ -	$ 34,000	$ 26,000	$ 60,000
6.24	LIGHTNING PROTECTION		$ -	$ 16,000	$ 14,000	$ 30,000
6.25	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 5,489,600	$ 2,330,200	$ 5,049,900	$ 12,869,700

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	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 274,500	$ 594,200	$ 1,883,600	$ 2,752,300
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS	$ 5,764,100	$ 2,924,400	$ 6,933,500	$ 15,622,000
7.0	SPRAY DRYER ABSORBER ISLAND					
7.1	MECHANICAL EQUIPMENT	INCLUDES: ABSORBER MODULES AND ATOMIZERS WITH LUBE OIL, DUCT WORK FROM THE ABSORBERS TO THE FABRIC FILTER, AND COMPLETE RECYCLE SYSTEM WITH PIPING INSIDE FGD BUILDINGS.	$ 39,438,000	$ -	$ 24,186,100	$ 63,624,100
7.2	ELEVATOR	MAINTENANCE ELEVATOR - SUBCONTRACT COST INCLUDES LABOR	$ 325,000	$ -	$ -	$ 325,000
7.3	ABSORBER AREA SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES.	$ 28,000	$ -	$ 12,300	$ 40,300
7.4	AGITATOR FOR SUMP PUMPS	5 HP	$ 12,000	$ -	$ 4,600	$ 16,600
7.5	PIPING - MECHANICAL		$ 142,800	$ 36,900	$ 227,900	$ 407,600
7.6	SDA SUPERSTRUCTURE		$ 75,000	$ 764,900	$ 1,227,300	$ 2,067,200
7.7	SDA BOTTOM ENCLOSURE - SUPPORT STEEL, GIRTS AND SIDING	TOTAL FOR THREE ABSORBERS	$ -	$ 362,100	$ 385,200	$ 747,300
7.8	SDA SHELL / ROOF INSULATION	61,000 SF. SUBCONTRACT COST INCLUDES LABOR	$ 1,830,000	$ -	$ -	$ 1,830,000
7.9	SDA - SUPPORT STEEL & ACCESS GALLERY		$ -	$ 711,000	$ 1,884,100	$ 2,595,100
7.10	EXPANSION JOINTS		$ -	$ 195,500	$ 173,800	$ 369,300
7.11	DUCTWORK		$ -	$ 4,797,000	$ 10,481,700	$ 15,278,700
7.12	DUCT SUPPORT STEEL	THREE COAT SHOP PAINT	$ -	$ 2,140,200	$ 2,153,200	$ 4,293,400
7.13	DUCTWORK INSULATION & LAGGING		$ -	$ 1,632,000	$ 3,196,400	$ 4,828,400

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7.14	CONCRETE PIT FOR ELEVATOR		$ -	$ 2,800	$ 8,200	$ 11,000
7.15	SPRAY DRYER ABSORBER - FOUNDATIONS	TOTAL FOR THREE TOWERS	$ -	$ 1,678,600	$ 3,323,400	$ 5,002,000
7.16	FOUNDATIONS FOR SUPPORT STEEL		$ -	$ 69,000	$ 143,000	$ 212,000
7.17	GROUNDING		$ -	$ 16,000	$ 46,100	$ 62,100
7.18	LIGHTING/ TRANSFORMERS & PANELS		$ 156,000	$ 150,000	$ 159,100	$ 465,100
7.19	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE INCLUDED IN SECTION 1.0 - ID FANS	$ -	$ -	$ -	$ -
7.20	COMMUNICATIONS		$ -	$ 17,000	$ 13,000	$ 30,000
7.21	LIGHTNING PROTECTION		$ -	$ 25,500	$ 18,500	$ 44,000
7.22	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 42,006,800	$ 12,606,500	$ 47,650,900	$ 102,264,200
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 2,910,300	$ 3,214,700	$ 19,057,200	$ 25,182,200
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SPRAY DRYER ABSORBER ISLAND	$ 44,917,100	$ 15,821,200	$ 66,708,100	$ 127,446,400
8.0	ACTIVATED CARBON INJECTION SYSTEM					
8.1	ACI MECHANICAL EQUIPMENT:		$ 3,046,400	$ -	$ 1,012,000	$ 4,058,400
8.2	PIPING - MECHANICAL		$ 29,800	$ 149,800	$ 377,100	$ 556,700
8.3	ACI SYSTEM - FOUNDATIONS		$ -	$ 41,500	$ 88,000	$ 129,500
8.4	MCC		$ 61,800	$ -	$ 3,600	$ 65,400
8.5	GROUNDING		$ 5,500	$ -	$ 18,600	$ 24,100
8.6	LIGHTING / TRANSFORMERS & PANELS		$ 26,000	$ 15,000	$ 20,400	$ 61,400
8.7	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 89,900	$ 302,900	$ 392,800
8.8	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 14,400	$ 18,000	$ 32,400
8.9	CONTROL & INSTRUMENT CABLE		$ -	$ 16,000	$ 44,900	$ 60,900
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 3,169,500	$ 326,600	$ 1,885,500	$ 5,381,600

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	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 158,500	$ 83,300	$ 694,500	$ 936,300
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	ACTIVATED CARBON INJECTION SYSTEM	$ 3,328,000	$ 409,900	$ 2,580,000	$ 6,317,900
9.0	COMPRESSED AIR SYSTEM					
9.1	AIR COMPRESSOR & AUXILIARIES		$ 832,000	$ -	$ 184,600	$ 1,016,600
9.2	PIPING - MECHANICAL		$ 543,100	$ 722,600	$ 2,151,100	$ 3,416,800
9.3	AIR COMPRESSOR BUILDING - FOUNDATIONS		$ -	$ 96,100	$ 194,700	$ 290,800
9.4	AIR COMPRESSOR BUILDING	100' L X 600' W X 20' H	$ -	$ 510,000	$ -	$ 510,000
9.5	LIGHTING/ TRANSFORMERS & PANELS		$ 11,000	$ 10,500	$ 11,400	$ 32,900
9.6	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE ARE INCLUDED IN SECTION 1.0 - ID FANS	$ -	$ -	$ -	$ -
9.7	GROUNDING		$ 4,500	$ -	$ 10,900	$ 15,400
9.8	DUCT BANK	3-5" & 3-3" CONDUITS	$ -	$ 19,900	$ 43,300	$ 63,200
9.9	COMMUNICATIONS		$ -	$ 34,000	$ 26,000	$ 60,000
9.10	LIGHTNING PROTECTION		$ -	$ 10,500	$ 7,500	$ 18,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 1,390,600	$ 1,403,600	$ 2,629,500	$ 5,423,700
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 69,500	$ 357,900	$ 963,100	$ 1,390,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	COMPRESSED AIR SYSTEM	$ 1,460,100	$ 1,761,500	$ 3,592,600	$ 6,814,300
10.0	SERVICE WATER SYSTEM					
10.1	PUMPS	INCLUDES SELF-CLEANING STRAIINERS	$ 260,000	$ -	$ 110,500	$ 370,500
10.2	PIPING - MECHANICAL		$ 177,400	$ 535,300	$ 1,006,000	$ 1,718,700
10.3	PIPING - FIRE PROTECTION SYSTEM		$ 434,900	$ 415,600	$ 1,014,300	$ 1,864,800
10.4	TANKS		$ -	$ 150,000	$ -	$ 150,000

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10.5	SERVICE WATER TANK & PUMP - FOUNDATIONS		$ -	$ 69,800	$ 117,200	$ 187,000
10.6	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE ARE INCLUDED IN SECTION 1.0 - ID FANS	$ -	$ -	$ -	$ -
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 872,300	$ 1,170,700	$ 2,248,000	$ 4,291,000
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 43,600	$ 298,500	$ 821,600	$ 1,163,700
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SERVICE WATER SYSTEM	$ 915,900	$ 1,469,200	$ 3,069,600	$ 5,454,700
11.0	POTABLE WATER SYSTEM					
11.1	PUMPS		$ 30,000	$ -	$ 18,400	$ 48,400
11.2	PIPING - MECHANICAL		$ 99,500	$ 235,600	$ 673,200	$ 1,008,300
11.3	TANKS		$ -	$ 8,500	$ -	$ 8,500
11.4	POTABLE WATER TANK & PUMP - FOUNDATIONS		$ -	$ 5,200	$ 9,200	$ 14,400
11.5	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE ARE INCLUDED IN SECTION 1.0 - ID FANS	$ -	$ -	$ -	$ -
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 129,500	$ 235,600	$ 691,600	$ 1,056,700
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 6,500	$ 60,100	$ 252,200	$ 318,700
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	POTABLE WATER SYSTEM	$ 135,975	$ 295,678	$ 943,757	$ 1,375,410
12.0	FGD SUBSTATION					
12.1	TRANSFORMERS		$ 1,670,000	$ -	$ 282,200	$ 1,952,200
12.2	TRANSFORMER PDC	15W X 45' X 10'H. SUBCONTRACT	$ 202,500	$ -	$ -	$ 202,500
12.3	TRANSFORMER PDC - FOUNDATION		$ -	$ 73,200	$ 146,900	$ 220,100
12.4	138KV MAIN FEEDER & TERMINATIONS		$ 264,000	$ -	$ 254,000	$ 518,000
12.5	SWITCHGEAR		$ 994,200	$ -	$ 121,600	$ 1,115,800

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12.6	MCC	480V MCC, PER LINE UP	$ 60,000	$ -	$ 3,600	$ 63,600
12.7	CABLE BUS		$ 181,100	$ 18,000	$ 290,200	$ 489,300
12.8	PANELS - RELAY		$ 100,000	$ -	$ 9,100	$ 109,100
12.9	MIMIC PANELS		$ 17,500	$ -	$ 4,500	$ 22,000
12.10	EMERGENCY POWER SYSTEM		$ 108,300	$ -	$ 24,400	$ 132,700
12.11	GROUNDING		$ 23,300	$ -	$ 59,100	$ 82,400
12.12	LIGHTING/ TRANSFORMERS & PANELS		$ 26,000	$ 30,000	$ 29,500	$ 85,500
12.13	OUTDOOR LIGHTING	NEW AUX YARD LIGHTING - ALLOWANCE	$ 25,000	$ -	$ 56,800	$ 81,800
12.14	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 390,600	$ 1,918,600	$ 2,309,200
12.15	DUCT BANK		$ -	$ 26,200	$ 54,300	$ 80,500
12.16	HIGH VOLTAGE POWER CABLE & TERMINATION	1/C # 500KCMIL-15KV	$ -	$ 27,800	$ 78,400	$ 106,200
12.17	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 263,700	$ 649,600	$ 913,300
12.18	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	$ -	$ 21,800	$ 61,100	$ 82,900
12.19	FOUNDATION FOR AUX TRANSFORMER		$ -	$ 70,200	$ 205,400	$ 275,600
12.20	FIREWALL FOR TRANSFORMERS		$ -	$ 3,000	$ 5,200	$ 8,200
12.21	COMMUNICATIONS		$ -	$ 17,000	$ 13,000	$ 30,000
12.22	LIGHTNING PROTECTION		$ -	$ 4,000	$ 2,000	$ 6,000
12.23	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 3,671,900	$ 953,500	$ 4,276,500	$ 8,901,900
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 183,600	$ 243,100	$ 1,543,254	$ 1,970,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FGD SUBSTATION	$ 3,855,500	$ 1,196,600	$ 5,819,800	$ 10,871,900
13.0	FGD DCS SYSTEM					
13.1	DCS	3200 I/O POINTS	$ 2,400,000	$ -	$ 813,600	$ 3,213,600
13.2	DCS - VENDOR FIELD SUPPORT	200 MANDAYS @ $1500/DAY - SHOWN AS SUBCONTRACT COST	$ 300,000	$ -	$ -	$ 300,000

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13.3	LOCALLY MOUNTED INSTRUMENTS	0.0	$ -	$ 709,500	$ 930,500	$ 1,640,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 2,700,000	$ 709,500	$ 1,744,100	$ 5,153,600
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 135,000	$ 180,900	$ 650,900	$ 966,800
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FGD DCS SYSTEM	$ 2,835,000	$ 890,400	$ 2,395,000	$ 6,120,400
14.0	CEM SYSTEM					
14.1	CEM	PROVIDED BY AEP	$ 1,260,000	$ 540,000	$ 310,000	$ 2,110,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 1,260,000	$ 540,000	$ 310,000	$ 2,110,000
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT		$ -	$ -	$ -	$ 316,500
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	CEM SYSTEM	$ -	$ -	$ -	$ 2,426,500
15.0	TRUCK & RAIL INFRASTRUCTURE					
15.1	EXISTING RAILROAD IMPROVEMENTS	FOR FULL RAILCAR STORAGE TRACK IMPROVEMENTS - 3250 LF	$ -	$ 660,200	$ 689,200	$ 1,349,400
15.2	EXISTING RAILROAD IMPROVEMENTS	FOR LOOP TRACK UPGRADE - 5000 LF	$ -	$ 1,008,800	$ 1,055,600	$ 2,064,400
15.3	NEW RAILROAD TRACK	1400 LF. INCLUDES, 132LB RAIL, 7" TIMBERS, TIE PLATES, SPIKES, BOLTS, 12: SUBBALLAST, 12" BALLAST, 12 OZ/SY GEOTEXTILE MEMBRANE, 12" SUBGRADE PREP	$ -	$ 252,000	$ 213,100	$ 465,100
15.4	FIELD FABRICATED TURNOUTS	#8 TURNOUT	$ -	$ 90,000	$ 54,800	$ 144,800

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15.5	RAIL SCALE	SUBCONTRACT COST, INCLUDES FOUNDATIONS	$ 212,500	$ -	$ -	$ 212,500
15.6	NEW CONCRETE ENCASEMENT	OVER AND AROUND DUCT BANK CONNECTING THE PLANT TO SWITCHYARD. THIS IS UNDER THE NEW TRACKWORK EXTENSION	$ -	$ 33,200	$ 71,400	$ 104,600
15.7	RAILCAR LIMESTONE UNLOADING HOPPER, CONVEYOR TUNNEL AND ESCAPE TUNNEL - FOUNDATIONS	FOR PHASE II INSTALLED IN PHASE I (FOR CONSTRUCTIBILITY)	$ -	$ 542,000	$ 1,613,400	$ 2,155,400
15.8	MECHANICAL EQUIPMENT FOR LIMESTONE UNLOADING HOPPER	FOR PHASE II INSTALLED IN PHASE I	$ 90,000	$ -	$ 34,700	$ 124,700
15.9	PIPING - MECHANICAL	FOR PHASE II INSTALLED IN PHASE I	$ 4,800	$ 1,700	$ 13,200	$ 19,700
15.10	TUNNEL HEATING & VENTILATION	TRACK HOPPER AND RECLAIM TUNNEL	$ 125,000	$ -	$ 74,700	$ 199,700
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 432,300	$ 2,587,900	$ 3,820,100	$ 6,840,300
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 21,600	$ 659,900	$ 1,433,500	$ 2,115,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	TRUCK & RAIL INFRASTRUCTURE	$ 453,900	$ 3,247,800	$ 5,253,600	$ 8,955,400
16.0	SITE IMPROVEMENTS - CIVIL WORK					
16.1	SITE GRADING		$ -	$ -	$ 627,000	$ 627,000
16.2	ROADS & SURFACING		$ -	$ 996,600	$ 1,358,800	$ 2,355,400
16.3	RAILROAD CROSSING	50' WIDE CROSSING THREE TRACKS - CUSTOM BUILT	$ -	$ 120,000	$ 171,500	$ 291,500
16.4	NEW CONCRETE ENCASEMENT	16' X 4' X 40' - FOR EXISTING ASH	$ -	$ 144,300	$ 286,600	$ 430,900
16.5	TRUCK WASH AREA - CONCRETE PAD		$ -	$ 47,300	$ 83,100	$ 130,400
16.6	TRUCK SCALE & CONCRETE APPROACH		$ 170,000	$ 27,300	$ 92,000	$ 289,300
16.7	PROCESS WATER STORAGE BASIN		$ 60,000	$ 110,400	$ 312,600	$ 483,000

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16.8	PROCESS WATER STORAGE BASIN PUMP STRUCTURE - CONCRETE		$ -	$ 47,000	$ 105,400	$ 152,400
16.9	STORMWATER DRAINAGE TRENCH	2' W X 3' DEEP CAST-IN-PLACE	$ -	$ 432,000	$ 439,600	$ 871,600
16.10	STORMWATER RUNOFF POND		$ -	$ 15,000	$ 122,600	$ 137,600
16.11	STORM WATER POND PUMP STRUCTURE - CONCRETE		$ 90,000	$ 42,300	$ 182,200	$ 314,500
16.12	OILY WATER SEWER		$ 4,500	$ 96,600	$ 210,000	$ 311,100
16.13	OIL SEPARATOR	500 GPM W/ INTEGRAL LIFT	$ 100,000	$ -	$ 116,100	$ 216,100
16.14	SANITARY SEWER		$ -	$ 22,200	$ 96,900	$ 119,100
16.15	SANITARY LIFT STATION	PACKAGED TYPE COMPLETE WITH PUMPS, 100,000 GPD	$ 150,000	$ -	$ 49,200	$ 199,200
16.16	CONSTRUCTION LAYDOWN AREA - (TO BE USED FOR PHASE I AND PHASE II)	ALLOWANCE FOR 10 ACRES, DOES NOT INCLUDE LAND ACQUISITION, IF REQUIRED	$ -	$ 700,000	$ 828,000	$ 1,528,000
16.17	CRAFT PARKING (TO BE USED FOR PHASE I AND PHASE II)	DOES NOT INCLUDE LAND ACQUISITION, IF REQUIRED. ALLOWANCE FOR 20,000 SY INCLUDES: 6" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	$ -	$ 180,000	$ 414,200	$ 594,200
16.18	CONTRACTOR OFFICES (AREA) - (TO BE USED FOR PHASE I AND PHASE II)	DOES NOT INCLUDE LAND ACQUISITION, IF REQUIRED. ALLOWANCE FOR 5,000 SY AREA (TRAILERS BY CONTRACTORS) INCLUDES: 6" BASE COURSE 10 OZ/SY GEOTEXTILE 12" SUBGRADE PREP	$ -	$ 45,000	$ 103,600	$ 148,600

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16.19	NEW PERMANENT STORAGE	INCLUDES LIGHTING AND H&V. SUBCONTRACT PRICE INCLUDES ELECTRICAL AND H&V	$ 2,550,000	$ -	$ -	$ 2,550,000
16.20	FOUNDATIONS FOR THE NEW WAREHOUSE		$ -	$ 803,800	$ 1,301,600	$ 2,105,400
16.21	NEW TEMPORARY STORAGE	WEATHER TIGHT CANVAS ENCLOSURE. INCLUDES LIGHTING AND H&V. SUBCONTRACT PRICE INCLUDES ELECTRICAL AND H&V	$ 450,000	$ -	$ -	$ 450,000
16.22	FOUNDATIONS FOR TEMPORARY STORAGE		$ -	$ 99,500	$ 157,200	$ 256,700
16.23	LABOR BUS SERVICE FROM PARKING LOT TO CONSTRUCTION AREA AND ACCESS CONTROL	ALLOWANCE FOR 36 MONTHS BASED ON 2 BUSES OPERATING CONTINUOUSLY FOR 5X10 WORKWEEK. SUBCONTRACT COST INCLUDES EQUIPMENT, MATERIAL AND LABOR	$ 1,368,000	$ -	$ -	$ 1,368,000
16.24	EROSION & SEDIMENT CONTROL		$ -	$ 12,600	$ 20,700	$ 33,300
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 4,942,500	$ 3,941,900	$ 7,078,900	$ 15,963,300
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 247,100	$ 1,005,200	$ 2,587,500	$ 3,839,800
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SITE IMPROVEMENTS - CIVIL WORK	$ 5,189,600	$ 4,947,100	$ 9,666,400	$ 19,803,100

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17.0	BOP ITEMS					
17.1	PIPE INSULATION	AVERAGE 6" PIPE SIZE	$ -	$ 34,000	$ 106,000	$ 140,000
17.2	HEAT TRACING		$ -	$ 175,600	$ 248,500	$ 424,100
17.3	TOUCH UP PAINT (INCLUDESPAINTING CS PIPE)		$ -	$ 134,200	$ 514,800	$ 649,000
17.4	HOISTS & TROLLEYS		$ 180,000	$ 210,000	$ 245,300	$ 635,300
17.5	MISC AUX STEEL FOR PIPE SUPPORTS	FIELD FABRICATED	$ -	$ 122,500	$ 510,600	$ 633,100
17.6	MISC PIPE SUPPORT FOUNDATIONS		$ -	$ 10,500	$ 21,000	$ 31,500
17.7	EYE WASH STATIONS		$ 30,000	$ 5,000	$ 30,700	$ 65,700
17.8	FIRE PROTECTION FOR MISC BUILDINGS & AREAS		$ -	$ 360,000	$ 294,400	$ 654,400
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 210,000	$ 1,051,800	$ 1,971,300	$ 3,233,100
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 10,500	$ 268,209	$ 750,442	$ 1,029,151
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BOP ITEMS	$ 220,500	$ 1,320,000	$ 2,721,700	$ 4,262,300
18.0	CAPITAL REPLACEMENTS - REMOVAL AND RELOCATION OF EXISTING EQUIPMENT AND INFRASTRUCTURE					
18.1	RELOCATE HYDROGEN STORAGE TANK		$ -	$ 15,600	$ 86,800	$ 102,400
18.2	NEW HYDROGEN LINE TO PLANT		$ -	$ 62,100	$ 150,600	$ 212,700
18.3	RELOCATE MISC. UNDERGROUND UTILITIES	ALLOWANCE	$ -	$ 125,000	$ 170,500	$ 295,500
18.4	REROUTED 138KV LINE .	TWO NEW TOWERS, NEW FOUNDATIONS, NEW OH LINES, LINE & TOWER ACCESSORIES INCLUDING INSULATORS	$ 500,000	$ -	$ 255,700	$ 755,700
18.5	OUTAGE TIE-IN DUCTWORK	ALLOWANCE FOR 85 TON DUCTWORK	$ -	$ 276,300	$ 527,700	$ 804,000
18.6	RELOCATED WAREHOUSE - FOUNDATIONS		$ -	$ 342,600	$ 534,900	$ 877,500

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18.7	RELOCATE EXISTING WAREHOUSE BUILDING	150' L X 75' W X 25' H	$ -	$ 95,600	$ 1,121,500	$ 1,217,100
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 500,000	$ 917,200	$ 2,847,700	$ 4,264,900
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 25,000	$ 233,900	$ 1,018,300	$ 1,277,200
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	CAPITAL REPLACEMENTS - REMOVAL AND RELOCATION OF EXISTING EQUIPMENT AND INFRASTRUCTURE	$ 525,000	$ 1,151,100	$ 3,866,000	$ 5,542,100
19.0	ARSENIC, ASBESTOS , LEAD ABATEMENT					
19.1	ARSENIC, ASBESTOS , LEAD ABATEMENT	PROVIDED BY AEP	$ -	$ -	$ -	$ 750,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ -	$ -	$ -	$ 750,000
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT		$ -	$ -	$ -	$ 112,500
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	ARSENIC, ASBESTOS , LEAD	$ -	$ -	$ -	$ 862,500
99.0	PHASE I - OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 116,832,300	$ 50,988,900	$ 142,330,900	$ 342,277,100
	PHASE I - OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 6,588,600	$ 12,945,500	$ 53,635,100	$ 78,239,100
	PHASE I - OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 123,420,900	$ 63,934,400	$ 195,966,000	$ 420,516,200
	INDIRECT COSTS - PHASE I					
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES					$ 28,000,000
	CONSTRUCTION MANAGEMENT					$ 12,615,500

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	S-U / COMMISSIONING					$ 4,205,200
	CRAFT START-UP SUPPORT					$ 1,677,100
	INITIAL FILLS					$ 1,261,500
	OPERATOR & TRAINING MANUALS					$ 300,000
	SUBCONTRACTORS (NOISE & DUCTWORK CONSULTANT, GEOTECHNICAL INVESTIGATION)					$ 400,000
	SUBTOTAL - INDIRECT COSTS					$ 48,459,300
	TOTAL PHASE I DIRECT AND INDIRECT COSTS					$ 468,975,500
	SPARE PARTS - PHASE I					$ 1,851,300
	SPARE PARTS - CAPITALIZED	0.90				$ 1,110,780
	SPARE PARTS - FIRST YEAR OF OPERATION	0.60				$ 740,520
	CONTINGENCY - PHASE I	14.4				$ 67,690,500
	ESCALATION - PHASE I					$ 59,601,900
	EQUIPMENT					$ 19,653,700
	MATERIAL					$ 7,157,800
	LABOR					$ 27,092,000
	INDIRECTS					$ 5,698,400
	PHASE I - TOTAL PROJECT COST					$ 598,119,200
	PHASE II - WET FGD					
20.0	LIMESTONE HANDLING SYSTEM					
20.1	MATERIAL HANDLING EQUIPMENT		$ 4,565,100	$ 845,000	$ 3,465,800	$ 8,875,900
20.2	FIRE PROTECTION SYSTEM FOR BELT CONVEYORS	DELUGE SYSTEM, DRY PIPE, SENSORS, ACTIVATION VALVE AND FM APPROVED PANEL - SUBCONTRACT PRICE FOR ALL CONVEYORS INCLUDES LABOR	$ 660,000	$ -	$ -	$ 660,000
20.3	PIPING - MECHANICAL		$ -	$ -	$ -	$ -

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20.4	CONVEYOR STRUCTURE SUPPORT STEEL	THREE-COAT SHOP PAINT	$ -	$ 290,000	$ 291,800	$ 581,800
20.5	CONVEYOR SUPPORT STEEL - FOUNDATIONS		$ -	$ 16,000	$ 48,700	$ 64,700
20.6	LIMESTONE TRANSFER TOWER - FOUNDATIONS		$ -	$ 15,400	$ 30,500	$ 45,900
20.7	LIMESTONE TRANSFER CONVEYOR - FOUNDATIONS		$ -	$ 62,000	$ 125,800	$ 187,800
20.8	LIMESTONE RECLAIM HOPPER, CONVEYOR TUNNEL AND ESCAPE TUNNEL - FOUNDATIONS		$ -	$ 542,000	$ 1,613,400	$ 2,155,400
20.9	LIMESTONE UNLOADING PDC - FOUNDATIONS		$ -	$ 24,100	$ 44,800	$ 68,900
20.10	LIMESTONE UNLOADING PDC - CONCRETE PIERS	10 PIERS	$ -	$ 6,900	$ 20,600	$ 27,500
20.11	LIMESTONE RECLAIM PDC - FOUNDATIONS		$ -	$ 16,800	$ 32,300	$ 49,100
20.12	LIMESTONE RECLAIM PDC - CONCRETE PIERS	10 PIERS	$ -	$ 6,900	$ 20,600	$ 27,500
20.13	LIMESTONE UNLOADING PDC	18W X 50' X 10'H	$ 450,000	$ -	$ 32,800	$ 482,800
20.14	LIMESTONE RECLAIM PDC	15W X 30' X 10'H	$ 225,000	$ -	$ 16,400	$ 241,400
20.15	MCC	LIMESTONE UNLOADING & RECLAIM AREAS	$ 123,600	$ -	$ 7,200	$ 130,800
20.16	EMERGENCY POWER SYSTEM	LIMESTONE UNLOADING & RECLAIM AREAS	$ 216,300	$ -	$ 49,100	$ 265,400
20.17	LIGHTING/ TRANSFORMERS & PANELS		$ 26,000	$ 67,500	$ 52,200	$ 145,700
20.18	GROUNDING	LIMESTONE UNLOADING & RECLAIM AREAS	$ 13,000	$ -	$ 42,400	$ 55,400
20.19	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 801,100	$ 3,597,400	$ 4,398,500
20.20	HIGH VOLTAGE POWER CABLE & TERMINATION	1/C # 500KCMIL-15KV	$ -	$ 33,400	$ 94,100	$ 127,500
20.21	LOW VOLTAGE POWER CABLE & TERMINATION	0.00	$ -	$ 130,600	$ 715,400	$ 846,000
20.22	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	$ -	$ 140,800	$ 395,100	$ 535,900
20.23	DUCT BANK	DUCT BANK WITH 6-5" & 6-3"	$ -	$ 26,600	$ 183,800	$ 210,400
20.24	COMMUNICATIONS		$ -	$ 34,000	$ 26,000	$ 60,000
20.25	LIGHTNING PROTECTION		$ -	$ 6,500	$ 5,500	$ 12,000
20.26	SECURITY SYSTEM		$ -	$ 16,000	$ 14,000	$ 30,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 6,279,000	$ 3,081,600	$ 10,925,700	$ 20,286,300
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 314,000	$ 785,800	$ 4,187,700	$ 5,287,500
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIMESTONE HANDLING SYSTEM	$ 6,593,000	$ 3,867,400	$ 15,113,400	$ 25,573,800

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21.0	REAGENT (LIMESTONE) PREPARATION ISLAND					
21.1	MECHANICAL EQUIPMENT	INCLUDES LIMESTONE FEEDERS, FROM THE DAY SILOS THROUGH THE SLURRY STORAGE TANKS AND TRANSFER PUMPS WITH INTEGRAL PIPING	$ 13,430,000	$ -	$ 11,408,100	$ 24,838,100
21.2	SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES	$ 28,000	$ -	$ 11,200	$ 39,200
21.3	AGITATOR FOR SUMP PUMPS	5 HP	$ 12,000	$ -	$ 4,600	$ 16,600
21.4	PIPING - MECHANICAL		$ 278,900	$ 205,000	$ 587,300	$ 1,071,200
21.5	LIMESTONE SLURRY TANKS - FOUNDATIONS		$ -	$ 166,400	$ 299,400	$ 465,800
21.6	REAGENT PREPARATION BUILDING - FOUNDATIONS		$ -	$ 674,900	$ 1,120,500	$ 1,795,400
21.7	REAGENT PREPARATION BUILDING	120' L X 129' W X 130' H	$ 269,400	$ 4,812,500	$ 4,210,100	$ 9,292,000
21.8	PIPE SUPPORT PAD - REAGENT PREP BUILDING		$ -	$ 13,800	$ 27,200	$ 41,000
21.9	LIGHTING/ TRANSFORMERS & PANELS		$ 52,000	$ 135,000	$ 104,500	$ 291,500
21.10	GROUNDING		$ 5,100	$ -	$ 13,400	$ 18,500
21.11	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE ARE INCLUDED IN SECTION 28.0 - ABSORBER ISLAND	$ -	$ -	$ -	$ -
21.12	COMMUNICATIONS		$ -	$ 34,000	$ 26,000	$ 60,000
21.13	LIGHTNING PROTECTION		$ -	$ 23,000	$ 16,000	$ 39,000
21.14	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 14,075,400	$ 6,072,600	$ 17,835,300	$ 37,983,300
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 703,800	$ 1,548,500	$ 6,836,300	$ 9,088,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	REAGENT (LIMESTONE) PREPARATION ISLAND	$ 14,779,200	$ 7,621,100	$ 24,671,600	$ 47,071,900

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22.0	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE					
22.1	MECHANICAL EQUIPMENT	PRIMARY & SECONDARY DEWATERING INCLUDING HYDROCLONE FEED TANKS, HYDROCLONES, PUMPS, INTEGRAL PIPING AND BELT VACUUM FILTERS	$ 7,250,000	$ -	$ 5,959,600	$ 13,209,600
22.2	PUMPS & AGITATORS		$ 250,000	$ -	$ 137,000	$ 387,000
22.3	PIPING - MECHANICAL		$ 282,700	$ 3,555,700	$ 7,786,000	$ 11,624,400
22.4	MATERIAL HANDLING EQUIPMENT		$ 724,000	$ 7,500	$ 614,100	$ 1,345,600
22.5	FIRE PROTECTION SYSTEM FOR BELT CONVEYORS	DELUGE SYSTEM, DRY PIPE, SENSORS, ACTIVATION VALVE AND FM APPROVED PANEL - SUBCONTRACT PRICE FOR ALL CONVEYORS INCLUDES LABOR	$ 170,000	$ -	$ -	$ 170,000
22.6	CONVEYOR STRUCTURE SUPPORT STEEL	THREE-COAT SHOP PAINT	$ -	$ 99,000	$ 99,600	$ 198,600
22.7	PIPE RACK SUPPORT STEEL	THREE-COAT SHOP PAINT	$ -	$ 197,200	$ 198,400	$ 395,600
22.8	TANKS		$ -	$ 3,825,300	$ 846,700	$ 4,672,000
22.9	RECLAIM WATER TANKS & PUMPS - FOUNDATIONS		$ -	$ 26,000	$ 54,000	$ 80,000
22.10	MAINTENANCE STORAGE TANK & PUMPS - FOUNDATIONS		$ -	$ 100,000	$ 177,300	$ 277,300
22.11	LANDFILL SERVICE WATER TANKS & PUMP - FOUNDATIONS		$ -	$ 80,900	$ 155,100	$ 236,000
22.12	LANDFILL RECLAIM WATER TANKS & PUMPS -		$ -	$ 26,000	$ 54,000	$ 80,000
22.13	HYDROCLONE FEED TANKS & BLEED TANKS - FOUNDATIONS	TOTAL FOR HYDROCLONE AND BLEED TANKS	$ -	$ 340,200	$ 618,900	$ 959,100
22.14	BYPRODUCT STACKOUT CONVEYOR & TRANSFER TOWER -		$ -	$ 16,100	$ 34,700	$ 50,800
22.15	BYPRODUCT STACKOUT PILE - FOUNDATIONS	INCLUDES CONTAINMENT AREA SLAB	$ -	$ 891,700	$ 1,427,400	$ 2,319,100
22.16	PIPE RACK	SUPPORTS AT 15' C/C	$ -	$ 60,800	$ 149,400	$ 210,200
22.17	BYPRODUCT CONTAINMENT WALLS		$ -	$ 137,300	$ 235,000	$ 372,300
22.18	INSTALL WIND SCREEN		$ -	$ 525,000	$ 192,300	$ 717,300
22.19	BYPRODUCT DEWATERING BUILDING - FOUNDATIONS		$ -	$ 288,700	$ 478,000	$ 766,700

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22.20	BYPRODUCT DEWATERING BUILDING	120' L X 74' W X 65' H	$ 145,200	$ 1,586,400	$ 1,488,000	$ 3,219,600
22.21	PIPE SUPPORT PAD		$ -	$ 18,300	$ 36,000	$ 54,300
22.22	AUXILIARY PUMPHOUSE BUILDING WITH ELECTRICAL		$ -	$ 32,300	$ 60,800	$ 93,100
22.23	AUXILIARY PUMPHOUSE BUILDING	50'L X 35' W X 20'H	$ 101,300	$ 252,500	$ 269,800	$ 623,600
22.24	SITE GRADING - GYPSUM HANDLING AREA		$ -	$ -	$ 587,800	$ 587,800
22.25	ROADS & SURFACING - GYPSUM HANDLING AREA		$ -	$ 188,000	$ 427,900	$ 615,900
22.26	GYPSUM HANDLING & STORAGE		$ -	$ 1,179,900	$ 1,854,100	$ 3,034,000
22.27	GYPSUM RUNOFF POND		$ 68,000	$ 110,400	$ 315,700	$ 494,100
22.28	GYPSUM RUNOFF POND PUMP STRUCTURE - CONCRETE		$ -	$ 47,000	$ 105,400	$ 152,400
22.29	OILY WATER SEWER - GYPSUM HANDLING AREA		$ 1,500	$ 9,000	$ 14,200	$ 24,700
22.30	OIL SEPARATOR - GYPSUM HANDLING AREA	500 GPM W/ INTEGRAL LIFT	$ 50,000	$ -	$ 58,100	$ 108,100
22.31	EROSION & SEDIMENT CONTROL - GYPSUM HANDLING		$ -	$ 18,000	$ 28,300	$ 46,300
22.32	SITE GRADING - ACCESS ROAD WIDENING & CONTAINMENT DITCH	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA	$ -	$ -	$ 60,400	$ 60,400
22.33	ROADS & SURFACING - GYPSUM DEWATERING AREA	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA	$ -	$ 66,300	$ 190,800	$ 257,100
22.34	PIPELINE CONTAINMENT & DRAINAGE	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA	$ -	$ 271,600	$ 429,200	$ 700,800
22.35	CONTAINMENT RUNOFF POND	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA	$ 68,000	$ 114,300	$ 344,300	$ 526,600
22.36	CONTAINMENT POND PUMP STRUCTURE - CONCRETE	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA	$ -	$ 47,000	$ 105,400	$ 152,400
22.37	SITE GRADING - PIPELINE CONTAINMENT & DRAINAGE	SOUTH OF HWY 23	$ -	$ -	$ 30,200	$ 30,200
22.38	PIPELINE CONTAINMENT & DRAINAGE	SOUTH OF HWY 23	$ -	$ 169,600	$ 263,600	$ 433,200
22.39	PIPE BORING PIT	SOUTH OF HWY 23	$ -	$ 5,300	$ 50,900	$ 56,200
22.40	PIPE RECEIVING PIT	NORTH OF HWY 23	$ -	$ 4,900	$ 43,500	$ 48,400
22.41	DIRECTIONAL BORING FOR BURIED PIPE	BENEATH HWY 23	$ 28,000	$ 652,500	$ 277,000	$ 957,500
22.42	TRANSFORMERS		$ 470,000	$ -	$ 136,500	$ 606,500
22.43	SWITCHGEAR		$ 825,600	$ -	$ 500,700	$ 1,326,300
22.44	CABLE BUS & TERMINATIONS		$ 355,500	$ 39,400	$ 730,700	$ 1,125,600
22.45	MCC		$ 123,600	$ -	$ 6,300	$ 129,900
22.46	MIMIC PANELS		$ 17,500	$ -	$ 1,600	$ 19,100
22.47	EMERGENCY POWER SYSTEM		$ 285,500	$ -	$ 38,900	$ 324,400

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22.48	GROUNDING		$ 9,400	$ -	$ 25,400	$ 34,800
22.49	LIGHTING/ TRANSFORMERS & PANELS		$ 52,000	$ 135,000	$ 104,500	$ 291,500
22.50	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 354,700	$ 1,514,100	$ 1,868,800
22.51	13.8 KV OH LINE OPGW	INCLUDES POLES, CONDUCTORS, INSULATORS & GROUNDING	$ -	$ 240,200	$ 292,400	$ 532,600
22.52	HIGH VOLTAGE POWER CABLE & TERMINATION		$ -	$ 88,400	$ 256,600	$ 345,000
22.53	MEDIUM VOLTAGE POWER CABLE & TERMINATION	1/C # 350KCMIL-5KV	$ -	$ 18,400	$ 78,400	$ 96,800
22.54	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 62,700	$ 547,400	$ 610,100
22.55	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	$ -	$ 112,000	$ 314,300	$ 426,300
22.56	FOUNDATIONS FOR TRANSFORMERS		$ -	$ 70,200	$ 205,400	$ 275,600
22.57	FIREWALL FOR TRANSFORMERS		$ -	$ 3,200	$ 8,300	$ 11,500
22.58	COMMUNICATIONS		$ -	$ 34,000	$ 26,000	$ 60,000
22.59	LIGHTNING PROTECTION		$ -	$ 13,000	$ 10,300	$ 23,300
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 11,277,800	$ 16,121,900	$ 31,056,700	$ 58,456,400
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 563,900	$ 4,111,100	$ 11,904,400	$ 16,579,300
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)	$ 11,841,700	$ 20,233,000	$ 42,961,100	$ 75,035,700

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23.0	WET FGD ABSORBER ISLAND					
23.1	MECHANICAL EQUIPMENT	INCLUDES ABSORBER MODULE (A2205) WITH INTERNALS, INLET DUCT ONLY THROUGH WET/DRY INTERFACE, PIPING INSIDE ABSORBER BUILDING TO TERMINAL POINTS, RECYCLE PUMPS, OXIDATION BLOWERS, MIST ELIMINATOR AND WASH PUMPS AND OTHER MISC. EQUIPMENT AND MATERIAL	$ 41,029,000	$ -	$ 40,695,200	$ 81,724,200
23.2	ADDITIONAL COST FOR C276 ABSORBER SHELL MATERIAL ABOVE THE PRICE OF A2205 ABSORBER SHELL	INCLUDES MATERIAL AND WELDING ROD COST DIFFERENTIAL - 49,800 TOTAL SF	$ -	$ 15,338,400	$ -	$ 15,338,400
23.3	SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES	$ 28,000	$ -	$ 12,300	$ 40,300
23.4	AGITATOR FOR SUMP PUMPS	5 HP	$ 12,000	$ -	$ 4,600	$ 16,600
23.5	EMERGENCY DIESEL DRIVEN QUENCH PUMP	INCLUDED WITH SECTION 1, ID FANS.	$ -	$ -	$ -	$ -
23.6	PIPING - MECHANICAL	ALL PIPING INCLUDED IN OEM EQUIPMENT COST. NO BOP PIPING	$ -	$ -	$ -	$ -
23.7	ABSORBER VESSEL - FOUNDATIONS		$ -	$ 366,900	$ 672,900	$ 1,039,800
23.8	ABSORBER BUILDING - FOUNDATIONS		$ -	$ 564,200	$ 936,700	$ 1,500,900
23.9	ABSORBER BUILDING	150' L X 89' W X 60' H	$ 164,500	$ 2,583,100	$ 2,368,200	$ 5,115,800
23.1	PIPE SUPPORT PAD - ABSORBER BUILDING		$ -	$ 7,700	$ 16,100	$ 23,800
23.1	OXIDATION AIR BLOWER BUILDING - FOUNDATIONS		$ -	$ 37,000	$ 67,300	$ 104,300
23.12	OXIDATION AIR BLOWER BUILDING	30' L X 30' W X 25' H	$ 33,800	$ 191,000	$ 201,400	$ 426,200

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23.13	PIPE SUPPORT PAD - OXIDATION BUILDING		$ -	$ 7,700	$ 13,700	$ 21,400
23.14	DUCTWORK	INCLUDES INTERNAL BRACING AND TURNING VANES	$ -	$ 520,000	$ 993,200	$ 1,513,200
23.15	DUCT SUPPORT STEEL	THREE-COAT SHOP PAINT	$ -	$ 232,000	$ 233,400	$ 465,400
23.16	DUCTWORK INSULATION & LAGGING		$ -	$ 147,000	$ 287,900	$ 434,900
23.17	FOUNDATIONS FOR DUCT SUPPORT STEEL		$ -	$ 27,800	$ 53,200	$ 81,000
23.18	TRANSFORMERS		$ 981,000	$ -	$ 209,300	$ 1,190,300
23.19	SWITCHGEAR		$ 1,162,800	$ -	$ 673,700	$ 1,836,500
23.20	CABLE BUS & TERMINATIONS		$ 867,100	$ 46,600	$ 1,634,100	$ 2,547,800
23.21	MCC		$ 216,300	$ -	$ 11,100	$ 227,400
23.22	MIMIC PANELS		$ 35,000	$ -	$ 7,900	$ 42,900
23.23	GROUNDING		$ 16,000	$ -	$ 46,100	$ 62,100
23.24	LIGHTING/ TRANSFORMERS & PANELS		$ 164,500	$ 165,000	$ 171,300	$ 500,800
23.25	EMERGENCY POWER SYSTEM		$ 108,300	$ -	$ 24,400	$ 132,700
23.26	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 1,515,700	$ 5,849,000	$ 7,364,700
23.27	HIGH VOLTAGE POWER CABLE & TERMINATION		$ -	$ 58,400	$ 164,700	$ 223,100
23.28	MEDIUM VOLTAGE POWER CABLE & TERMINATION		$ -	$ 114,600	$ 431,700	$ 546,300
23.29	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 795,900	$ 1,500,700	$ 2,296,600
23.30	CONTROL & INSTRUMENT CABLE		$ -	$ 512,000	$ 1,436,700	$ 1,948,700
23.31	FOUNDATION FOR TRANSFORMERS		$ -	$ 59,000	$ 173,700	$ 232,700
23.32	TRANSFORMER FIRE WALLS		$ -	$ 3,500	$ 9,600	$ 13,100
23.33	COMMUNICATIONS		$ -	$ 34,000	$ 26,000	$ 60,000
23.34	LIGHTNING PROTECTION		$ -	$ 19,500	$ 14,500	$ 34,000
23.35	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 44,818,300	$ 23,355,000	$ 58,947,600	$ 127,120,900
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 2,915,900	$ 5,955,500	$ 23,377,600	$ 32,249,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 47,734,200	$ 29,310,500	$ 82,325,200	$ 159,369,900
24.0	COMPRESSED AIR SYSTEM (BYPRODUCT DEWATERING					
24.1	AIR COMPRESSOR & AUXILIARIES		$ 205,200	$ -	$ 53,200	$ 258,400

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24.2	PIPING - MECHANICAL		$ 241,100	$ 166,200	$ 633,100	$ 1,040,400
24.3	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE ARE INCLUDED IN SECTION 27.0 - BYPRODUCT DEWATERING ISLAND	$ -	$ -	$ -	$ -
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 446,300	$ 166,200	$ 686,300	$ 1,298,800
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT		$ 22,300	$ 42,400	$ 263,400	$ 328,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	COMPRESSED AIR SYSTEM (BYPRODUCT DEWATERING AREA)	$ 468,600	$ 208,600	$ 949,700	$ 1,626,900
25.0	POTABLE WATER SYSTEM					
25.1	PIPING - MECHANICAL		$ 21,300	$ 3,000	$ 38,700	$ 63,000
25.2	TANKS		$ -	$ 8,500	$ -	$ 8,500
25.3	POTABLE WATER TANK & PUMP - FOUNDATIONS		$ -	$ 5,200	$ 9,200	$ 14,400
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 21,300	$ 16,700	$ 47,900	$ 85,900
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT		$ 1,100	$ 4,300	$ 18,200	$ 23,500
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	POTABLE WATER SYSTEM	$ 22,400	$ 21,000	$ 66,100	$ 109,400
26.0	SCR SUBSTATION UPGRADE					
26.1	TRANSFORMERS		$ 1,126,000	$ 150,000	$ 414,700	$ 1,690,700
26.2	SWITCHGEAR		$ 250,000	$ -	$ 136,600	$ 386,600
26.3	138 KV OH LINE UPGRADE	6-200FT QUAIL #200	$ -	$ 10,200	$ 54,600	$ 64,800
26.4	FOUNDATION FOR AUX TRANSFORMER		$ -	$ 63,500	$ 134,400	$ 197,900
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 1,376,000	$ 223,700	$ 740,300	$ 2,340,000
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 68,800	$ 57,000	$ 283,381	$ 409,200
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 1,444,800	$ 280,700	$ 1,023,700	$ 2,749,200
27.0	FGD DCS SYSTEM					
27.1	DCS	4000 I/O POINTS	$ -	$ 3,000,000	$ 1,016,900	$ 4,016,900

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27.2	DCS - VENDOR FIELD SUPPORT	200 MANDAYS @ $1500/DAY - SHOWN AS SUBCONTRACT COST	$ 300,000	$ -	$ -	$ 300,000
27.3	LOCALLY MOUNTED INSTRUMENTS		$ -	$ 827,800	$ 1,085,600	$ 1,913,400
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 300,000	$ 3,827,800	$ 2,102,500	$ 6,230,300
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 15,000	$ 976,100	$ 806,100	$ 1,797,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 315,000	$ 4,803,900	$ 2,908,600	$ 8,027,400
28.0	SITE IMPROVEMENTS - CIVIL WORK					
28.1	SITE GRADING		$ -	$ -	$ 49,000	$ 49,000
28.2	ROADS & SURFACING		$ -	$ 296,800	$ 324,400	$ 621,200
28.3	LIMESTONE HANDLING & STORAGE		$ -	$ 340,100	$ 541,700	$ 881,800
28.4	RAILROAD CROSSING	50' WIDE CROSSING THREE	$ -	$ 120,000	$ 152,200	$ 272,200
28.5	STORMWATER DRAINAGE TRENCH	2' W X 3' DEEP CAST-IN-PLACE	$ -	$ 162,000	$ 164,900	$ 326,900
23.6	OILY WATER SEWER		$ 3,000	$ 31,500	$ 51,500	$ 86,000
28.7	SANITARY SEWER		$ -	$ 14,900	$ 22,000	$ 36,900
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 3,000	$ 965,300	$ 1,305,700	$ 2,274,000
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 200	$ 246,200	$ 500,900	$ 747,200
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SITE IMPROVEMENTS - CIVIL WORK	$ 3,200	$ 1,211,500	$ 1,806,600	$ 3,021,200
29.0	BOP ITEMS					
29.1	PIPE INSULATION	AVERAGE 6" PIPE SIZE	$ -	$ 60,000	$ 187,000	$ 247,000
29.2	HEAT TRACING		$ -	$ 254,100	$ 361,600	$ 615,700
29.3	TOUCH UP PAINT (INCLUDES PAINTING CS PIPE)		$ -	$ 163,500	$ 627,200	$ 790,700
29.4	HOISTS & TROLLEYS		$ 150,000	$ 175,000	$ 204,400	$ 529,400
29.5	MISC AUX STEEL FOR PIPE SUPPORTS	FIELD FABRICATED	$ -	$ 122,500	$ 510,600	$ 633,100
29.6	MISC PIPE SUPPORT FOUNDATIONS		$ -	$ 8,600	$ 18,000	$ 26,600
29.7	EYE WASH STATIONS		$ 30,000	$ 5,000	$ 30,700	$ 65,700
29.8	FIRE PROTECTION FOR MISC BUILDINGS & AREAS		$ -	$ 360,000	$ 294,400	$ 654,400

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90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 180,000	$ 1,148,700	$ 2,233,900	$ 3,562,600
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 9,000	$ 292,919	$ 855,996	$ 1,157,914
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BOP ITEMS	$ 189,000	$ 1,441,600	$ 3,089,900	$ 4,720,500
30.0	SERVICE WATER SYSTEM					
30.1	PUMPS	INCLUDED WITH PHASE I	$ -	$ -	$ -	$ -
30.2	PIPING - MECHANICAL		$ 326,900	$ 1,277,900	$ 2,371,100	$ 3,975,900
30.3	PIPING - FIRE PROTECTION SYSTEM	INCLUDED WITH PHASE I	$ -	$ -	$ -	$ -
30.4	TANKS	INCLUDED WITH PHASE I	$ -	$ -	$ -	$ -
30.5	SERVICE WATER TANK & PUMP - FOUNDATIONS	INCLUDED WITH PHASE I	$ -	$ -	$ -	$ -
30.6	ELECTRICAL	INCLUDED WITH PHASE I	$ -	$ -	$ -	$ -
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 326,900	$ 1,277,900	$ 2,371,100	$ 3,975,900
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 16,345	$ 325,865	$ 908,654	$ 1,250,863
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SERVICE WATER SYSTEM	$ 343,200	$ 1,603,800	$ 3,279,800	$ 5,226,800
99.0	PHASE II - OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 79,104,000	$ 56,257,400	$ 128,253,000	$ 263,614,400
	PHASE II - OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 4,630,200	$ 14,345,600	$ 49,942,600	$ 68,918,400
	PHASE II - OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 83,734,200	$ 70,603,000	$ 178,195,600	$ 332,532,800
	INDIRECT COSTS - PHASE II					
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES					$ 23,000,000
	CONSTRUCTION MANAGEMENT					$ 9,976,000
	S-U / COMMISSIONING					$ 3,325,300
	CRAFT START-UP SUPPORT					$ 1,511,800
	INITIAL FILLS					$ 997,600
	OPERATOR & TRAINING MANUALS					$ 300,000
	SUBCONTRACTORS (NOISE CONSULTANT)					$ 100,000

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	SUBTOTAL - INDIRECT COSTS					$ 39,210,700
	TOTAL PHASE II DIRECT AND INDIRECT COSTS					$ 371,743,500
	SPARE PARTS - PHASE II					$ 1,256,000
	SPARE PARTS - CAPITALIZED	0.90				$ 753,600
	SPARE PARTS - FIRST YEAR OF OPERATION	0.60				$ 502,400
	CONTINGENCY - PHASE II.	15.6				$ 58,094,000
	ESCALATION - PHASE II					$ 107,828,700
	EQUIPMENT					$ 34,072,800
	MATERIAL					$ 14,598,500
	LABOR					$ 48,870,000
	INDIRECTS					$ 10,287,400
	PHASE II - TOTAL PROJECT COST					$ 538,922,200
	TOTAL PHASE I + PHASE II INDIRECT COSTS					
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES					$ 51,000,000
	CONSTRUCTION MANAGEMENT					$ 22,591,500
	S-U / COMMISSIONING					$ 7,530,500
	CRAFT START-UP SUPPORT					$ 3,188,900
	INITIAL FILLS					$ 2,259,100
	OPERATOR & TRAINING MANUALS					$ 600,000

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	SUBCONTRACTORS (PHASE I - NOISE & DUCTWORK CONSULTANT, GEOTECHNICAL INVESTIGATION, PHASE II - NOISE CONSULTANT ONLY)					$ 500,000
	NOISE ABATEMENT FOR 85 DBA REQUIREMENT	FOR ID FAN, SDA ENCLOSURE, TRANSFORMERS, BOP, DUCTWORK, ACOUSTIC BARRIERS FOR BOUNDARY LIMITS				$ 4,500,000
	SUBTOTAL - INDIRECT COSTS					$ 92,170,000
	TOTAL PROJECT DIRECT AND INDIRECT COSTS					$ 845,219,000
	SPARE PARTS - PHASE I + PHASE II					$ 3,107,300
	SPARE PARTS - CAPITALIZED	0.90				$ 1,864,380
	SPARE PARTS - FIRST YEAR OF OPERATION	0.60				$ 1,242,920
	CONTINGENCY (PHASE I + PHASE II)					$ 125,784,500
	ESCALATION (PHASE I + PHASE II)					$ 167,430,600
	EQUIPMENT					$ 53,726,500
	MATERIAL					$ 21,756,300
	LABOR					$ 75,962,000
	INDIRECTS					$ 15,985,800
	TOTAL PROJECT COST (PHASE I + PHASE II)					$ 1,141,541,400
	REFERENCE COSTS:					
A	ESP DEMOLITION	ALLOWANCE FOR 1000T STRUCTURE	$ -	$ -	$ 832,300	$ 832,300

Sargent & Lundy, LLC	AEP	Estimate No.:	30719C
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS (N/ESP)-3B - 3.0 LB/MM BTU - PHASED	Date:	9/29/2010
	COST ESTIMATE SUMMARY	Preparer:	MNO
		Reviewer:	JMK
		Approver:	PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
B	REMOVE BOOSTER AIR FANS		$ -	$ -	$ 111,000	$ 111,000
C	REMOVAL OF FUEL OIL TANK	LABOR COST IS FOR REMOVAL OF TANK ONLY. ALLOWANCE FOR SOIL REMEDIATION AND DISPOSAL IN AN EPA APPROVED LANDFILL. SUBCONTRACT COST INCLUDES LABOR. USED LOWER END OF THE RANGE $118-355/CY. COST COULD BE LOWER ($59-118/CY) IF SOLD TO A BITUMINOUS CONCRETE BATCH PLANT	$ 1,200,000	$ 80,000	$ 469,400	$ 1,749,400

ATTACHMENT 4-20
IAQCS Summary Capital Cost Estimate No. 30717 Est-4A ESP in Service*
(7.5 lb SO_2/MMbtu)

* - Due to the significant differences in layout between the phased and non-phased cost estimates the "bases" for comparison purposes were 1B for the non-phased cost estimates and 3B for the phased cost estimates. Therefore cost estimates 2A, 2B, 3A (Phased) and 1A, 4A and 4B (Non-Phased) contain only accounts whose costs are different from the corresponding base estimates 3B and 1B respectively.

Sargent & Lundy, LLC	AEP	Estimate No.:	30717C
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS (ESP)-4A - 7.5 LB/MM BTU - NON PHASED	Date:	9/29/2010
	COST ESTIMATE SUMMARY	Preparer:	MNO
		Reviewer:	JMK
		Approver:	PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
1.0	ID FANS					
1.1	ID FANS - OEM EQUIPMENT	1,800,000 ACFM WITH 19,700 HP MOTORS ($750,000 EACH). INCLUDES HYDRAULIC OIL UNITS, SEAL AIR FAN SKIDS, VIBRATION MONITORING EQUIPMENT, FAN STALL EQUIPMENT, FIELD SERVICE REP FOR 140 DAYS	$ 6,920,000	$ -	$ 1,674,400	$ 8,594,400
1.2	PIPING & SUPPORTS - MECHANICAL		$ 21,800	$ 28,700	$ 120,500	$ 171,000
1.3	DAMPERS		$ 781,000	$ -	$ 352,600	$ 1,133,600
1.4	EXPANSION JOINTS		$ -	$ 131,100	$ 116,500	$ 247,600
1.5	DUCTWORK	FABRIC FILTER OUTLET TO ID FANS AND FROM ID FANS TO STACK - INCLUDES INTERNAL BRACING AND TURNING VANES	$ -	$ 2,860,000	$ 5,462,800	$ 8,322,800
1.6	DUCT SUPPORT STEEL	THREE COAT SHOP PAINT	$ -	$ 1,276,000	$ 1,283,700	$ 2,559,700
1.7	ID FAN INSULATION & LAGGING	TOTAL FOR TWO FANS. PRICING REFLECTS STANDARD ACOUSTICAL INSULATION	$ -	$ 168,000	$ 217,200	$ 385,200
1.8	DUCTWORK INSULATION & LAGGING	INCLUDES INSULATION FOR SPRAY DRYER OUTLET DUCT TO FABRIC FILTERS SUPPLIED WITH THE OEM EQUIPMENT	$ -	$ 1,090,800	$ 2,136,300	$ 3,227,100
1.9	DUCT SUPPORT STEEL - FOUNDATIONS		$ -	$ 352,200	$ 684,000	$ 1,036,200
1.10	ID FAN FOUNDATIONS INCLUDING ID FAN AUX EQUIPMENT		$ -	$ 106,000	$ 198,700	$ 304,700
1.11	ID FAN IAQCS CONTROL ROOM - FOUNDATIONS		$ -	$ 270,100	$ 508,600	$ 778,700

Sargent & Lundy, LLC	AEP	Estimate No.:	30717C
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS (ESP)-4A - 7.5 LB/MM BTU - NON PHASED	Date:	9/29/2010
	COST ESTIMATE SUMMARY	Preparer:	MNO
		Reviewer:	JMK
		Approver:	PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
1.12	ID FAN IAQCS CONTROL ROOM	SUBCONTRACT PRICE INCLUDES LABOR. COMPLETE WITH HVAC, FINISHES AND SANITARY FACILITIES	$ -	$ 3,937,500	$ -	$ 3,937,500
1.13	TRANSFORMERS		$ 770,000	$ -	$ 145,600	$ 915,600
1.14	SWITCHGEAR		$ 1,132,000	$ -	$ 589,900	$ 1,721,900
1.15	CABLE BUS & TERMINATIONS		$ 1,129,100	$ 35,800	$ 1,930,000	$ 3,094,900
1.16	MCC		$ 180,000	$ -	$ 10,900	$ 190,900
1.17	MIMIC PANELS		$ 17,500	$ -	$ 4,500	$ 22,000
1.18	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 1,664,200	$ 8,196,600	$ 9,860,800
1.19	HIGH VOLTAGE POWER CABLE & TERMINATION		$ -	$ 288,500	$ 666,700	$ 955,200
1.20	MEDIUM VOLTAGE POWER CABLE & TERMINATION		$ -	$ 100,200	$ 427,400	$ 527,600
1.21	LOW VOLTAGE POWER CABLE & TERMINATIONS		$ -	$ 229,800	$ 732,100	$ 961,900
1.22	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	$ -	$ 361,000	$ 1,012,900	$ 1,373,900
1.23	EMERGENCY POWER SYSTEM		$ 285,500	$ -	$ 38,900	$ 324,400
1.24	GROUNDING		$ 14,100	$ -	$ 42,700	$ 56,800
1.25	LIGHTING/ TRANSFORMERS & PANELS		$ 26,000	$ 30,000	$ 29,500	$ 85,500
1.26	DUCT BANK		$ -	$ 136,000	$ 192,700	$ 328,700
1.27	FOUNDATION FOR TRANSFORMERS		$ -	$ 61,900	$ 162,600	$ 224,500
1.28	FIREWALL FOR TRANSFORMERS		$ -	$ 3,200	$ 8,300	$ 11,500
1.29	EARLY COMMISSIONING COSTS TEMPORARY HIGH VOLTAGE POWER CABLE & TERMINATION FROM EAST SIDE OF SCR BUILDING TO TRANSFORMER PDC		$ -	$ 139,800	$ 230,200	$ 370,000
1.30	COMMUNICATIONS		$ -	$ 17,000	$ 13,000	$ 30,000
1.31	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 11,277,000	$ 13,295,800	$ 27,196,800	$ 51,769,600
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 563,900	$ 3,390,400	$ 9,803,100	$ 13,757,400
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	ID FANS	$ 11,840,900	$ 16,686,200	$ 36,999,900	$ 65,527,000

Sargent & Lundy, LLC	AEP	Estimate No.:	30717C
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS (ESP)-4A - 7.5 LB/MM BTU - NON PHASED	Date:	9/29/2010
	COST ESTIMATE SUMMARY	Preparer:	MNO
		Reviewer:	JMK
		Approver:	PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
2.0	FABRIC FILTERS					
2.1	MECHANICAL EQUIPMENT	A SINGLE FABRIC FILTER (225' X 130') UNIT INCLUDING ALL INTERNAL FABRIC FILTER ELEMENTS SUCH AS BAGS, CAGES, ASH HOPPERS, 2 BROKEN BAG DETECTORS PER COMPARTMENT	$ 19,099,000	$ -	$ 12,369,000	$ 31,468,000
2.2	INSULATION FOR FABRIC FILTER	SUBCONTRACT COST INCLUDES LABOR	$ 2,430,000	$ -	$ -	$ 2,430,000
2.3	PENTHOUSE FOR FABRIC FILTER	SUPPORT STEEL AND PRLINS INCLUDED WITH OEM EQUIPMENT	$ 70,200	$ 787,000	$ 1,007,600	$ 1,864,800
2.4	BOTTOM ENCLOSURE FOR BAGHOUSE		$ 60,000	$ 1,204,000	$ 1,359,800	$ 2,623,800
2.5	PIPING & SUPPORTS - MECHANICAL		$ 30,900	$ 101,400	$ 209,500	$ 341,800
2.6	FABRIC FILTER - FOUNDATIONS		$ -	$ 550,700	$ 1,081,100	$ 1,631,800
2.7	FABRIC FILTER - SUPPORT STEEL AND ACCESS GALLERY		$ -	$ 360,000	$ 1,186,700	$ 1,546,700
2.8	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE INCLUDED IN SECTION 1.0 - ID FANS	$ -	$ -	$ -	$ -
2.9	LIGHTING/ TRANSFORMERS & PANELS		$ 30,000	$ 75,000	$ 58,200	$ 163,200
2.10	GROUNDING		$ 7,300	$ -	$ 17,500	$ 24,800
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 21,757,400	$ 3,153,100	$ 17,289,400	$ 42,094,900
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 1,087,900	$ 804,000	$ 6,422,700	$ 8,314,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FABRIC FILTERS	$ 22,845,300	$ 3,957,100	$ 23,712,100	$ 50,409,500
3.0	NEW STACK					

Sargent & Lundy, LLC	AEP	Estimate No.:	30717C
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS (ESP)-4A - 7.5 LB/MM BTU - NON PHASED	Date:	9/29/2010
	COST ESTIMATE SUMMARY	Preparer:	MNO
		Reviewer:	JMK
		Approver:	PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
4.0	LIME HANDLING SYSTEM					
4.1	LIME STORAGE SILO	0	$ 1,390,000	$ -	$ -	$ 1,390,000
4.2	LIME UNLOADING SYSTEM	INCLUDES PNEUMATIC HANDLING SYSTEM, THREE VACUUM EXHAUSTER, TWO FILTER SEPARATORS	$ 350,000	$ -	$ 281,100	$ 631,100
4.3	PIPING - MECHANICAL	0	$ 29,000	$ 15,600	$ 77,900	$ 122,500
4.4	LIME STORAGE SILO ACCESS STAIR TOWER	THREE COAT SHOP PAINT	$ -	$ 87,000	$ 87,500	$ 174,500
4.5	PIPE RACK FOR LIME HANDLING, WASTE HANDLING AND MISC MECHANICAL PIPING	THREE COAT SHOP PAINT	$ -	$ 783,000	$ 787,800	$ 1,570,800
4.6	RAIL CAR UNLOADING AREA - FOUNDATIONS	20 X 60 - NO SIDING	$ -	$ 22,600	$ 49,100	$ 71,700
4.7	LIME UNLOADING BLOWER / ELECTRICAL BUILDING - FOUNDATIONS		$ -	$ 80,600	$ 139,600	$ 220,200
4.8	LIME UNLOADING BLOWER / ELECTRICAL BUILDING	100' L X 30' W X 30' H	$ 75,000	$ 335,000	$ 24,400	$ 434,400
4.9	CONCRETE PIT FOR THE ELEVATOR		$ -	$ 2,300	$ 6,900	$ 9,200
4.10	LIME STORAGE SILO - FOUNDATIONS		$ -	$ 87,100	$ 171,100	$ 258,200
4.11	LIME STORAGE SILO ACCESS STAIR TOWER - FOUNDATIONS		$ -	$ 10,700	$ 22,300	$ 33,000
4.12	PIPE RACK - FOUNDATIONS		$ -	$ 94,200	$ 237,800	$ 332,000
4.13	TRANSFORMERS: 33F, 33G,	13.8KV-480V,3PHASE, CAST COIL	$ 170,000	$ -	$ 54,600	$ 224,600
4.14	480V LOW VOLTAGE (33F/G) SWITCHGEAR	PER LINE UP	$ 196,000	$ -	$ 104,700	$ 300,700
4.15	CABLE BUS DUCT		$ 134,700	$ 10,800	$ 200,200	$ 345,700
4.16	MCC		$ 61,800	$ -	$ 3,600	$ 65,400
4.17	MIMIC PANELS		$ 17,500	$ -	$ 1,400	$ 18,900
4.18	EMERGENCY POWER SYSTEM		$ 108,300	$ -	$ 24,400	$ 132,700
4.19	GROUNDING		$ 13,300	$ -	$ 41,300	$ 54,600
4.20	LIGHTING/ TRANSFORMERS & PANELS		$ 52,000	$ 135,000	$ 104,500	$ 291,500
4.21	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 310,900	$ 1,537,100	$ 1,848,000
4.22	HIGH VOLTAGE POWER CABLE & TERMINATION	1/C # 500KCMIL-15KV	$ -	$ 50,100	$ 141,200	$ 191,300
4.23	MEDIUM VOLTAGE POWER CABLE & TERMINATION	1/C # 350KCMIL-5KV	$ -	$ 66,200	$ 282,300	$ 348,500
4.24	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 93,000	$ 143,200	$ 236,200

Sargent & Lundy, LLC	AEP	Estimate No.:	30717C
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS (ESP)-4A - 7.5 LB/MM BTU - NON PHASED	Date:	9/29/2010
	COST ESTIMATE SUMMARY	Preparer:	MNO
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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
4.25	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	$ -	$ 26,200	$ 73,600	$ 99,800
4.26	DUCT BANK	6-5" & 6-3" CONDUITS	$ -	$ 26,600	$ 52,500	$ 79,100
4.27	FOUNDATIONS FOR TRANSFORMERS		$ -	$ 5,300	$ 11,900	$ 17,200
4.28	COMMUNICATIONS		$ -	$ 17,000	$ 13,000	$ 30,000
4.29	LIGHTNING PROTECTION		$ -	$ 14,000	$ 9,000	$ 23,000
4.30	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 2,597,600	$ 2,281,200	$ 4,691,000	$ 9,569,800
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 129,900	$ 581,700	$ 1,691,900	$ 2,403,500
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME HANDLING SYSTEM	$ 2,727,500	$ 2,862,900	$ 6,382,900	$ 11,973,300
5.0	LIME SLAKER BUILDING					
5.1	MECHANICAL EQUIPMENT	INCLUDES:CHAIN CONVEYOR, SLAKERS THROUGH THE LIME SLURRY PUMPS, PIPING, AND LIME SLURRY STORAGE TANKS.	$ 3,198,000	$ -	$ 3,322,300	$ 6,520,300
5.2	REAGENT AREA SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES	$ 28,000	$ -	$ 12,300	$ 40,300
5.3	AGITATOR FOR SUMP PUMPS	5 HP	$ 12,000	$ -	$ 4,600	$ 16,600
5.4	PIPING - MECHANICAL		$ 117,800	$ 111,400	$ 381,100	$ 610,300
5.5	LIME SLURRY TANKS - FOUNDATIONS		$ -	$ 166,400	$ 299,400	$ 465,800
5.6	LIME SLAKER BUILDING - FOUNDATIONS		$ -	$ 119,200	$ 204,000	$ 323,200
5.7	LIME SLAKER BUILDING	135' L X 30' W X 50' H	$ 40,500	$ 803,300	$ 740,500	$ 1,584,300
5.8	ELECTRICAL	INCLUDED WITH LIME HANDLING SYSTEM, ACCOUNT 4.0	$ -	$ -	$ -	$ -

Sargent & Lundy, LLC	AEP	Estimate No.:	30717C
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS (ESP)-4A - 7.5 LB/MM BTU - NON PHASED	Date:	9/29/2010
	COST ESTIMATE SUMMARY	Preparer:	MNO
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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 3,396,300	$ 1,200,300	$ 4,964,200	$ 9,560,800
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 169,800	$ 306,100	$ 1,852,600	$ 2,328,500
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME SLAKER BUILDING	$ 3,566,100	$ 1,506,400	$ 6,816,800	$ 11,889,300
6.0	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS					
6.1	BYPRODUCT WASTE HANDLING - MECHANICAL EQUIPMENT	INCLUDES PNEUMATIC HANDLING SYSTEM, THREE PRESSURE BLOWERS, ONE BIN VENT FILTER, ASH UNLOADING SYSTEM	$ 1,637,600	$ -	$ 1,104,000	$ 2,741,600
6.2	FLY ASH HANDLING - MECHANICAL EQUIPMENT	INCLUDES PNEUMATIC HANDLING SYSTEM, TWO PRESSURE EXHAUSTERS, TRANSFER STATION, ONE BIN VENT FILTER, ASH UNLOADING SYSTEM	$ 2,285,000	$ -	$ 1,431,100	$ 3,716,100
6.3	BYPRODUCT WASTE SILO AREA SUMP PUMPS	FOR BUILDINGS - DUPLEX. INCLUDES CHECK & ISOLATION VALVES.	$ 28,000	$ -	$ 12,300	$ 40,300
6.4	AGITATOR FOR SUMP PUMPS	5 HP	$ 12,000	$ -	$ 4,600	$ 16,600
6.5	PIPING - MECHANICAL		$ 142,800	$ 240,900	$ 759,100	$ 1,142,800
6.6	BYPRODUCT WASTE SILO		$ 106,400	$ 52,200	$ 144,800	$ 303,400
6.7	SDA RECYCLE SILO	INCLUDED WITH OEM EQUIPMENT	$ -	$ -	$ -	$ -
6.8	FLY ASH SILO	46T STEEL -STORAGE SILO, 15' DIA X 19' H	$ 45,000	$ 23,200	$ 64,300	$ 132,500
6.9	BYPRODUCT WASTE SILO - FOUNDATIONS		$ -	$ 23,200	$ 54,100	$ 77,300
6.10	FLY ASH SILO - FOUNDATIONS		$ -	$ 10,800	$ 24,500	$ 35,300

Sargent & Lundy, LLC	AEP	Estimate No.:	30717C
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS (ESP)-4A - 7.5 LB/MM BTU - NON PHASED	Date:	9/29/2010
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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
6.11	FLY ASH BLOWER AND ELECTRICAL BUILDING - FOUNDATIONS		$ -	$ 49,600	$ 105,700	$ 155,300
6.12	FLY ASH BLOWER AND ELECTRICAL BUILDING	90' L X 30' W X 25' H	$ 28,000	$ 244,500	$ 24,400	$ 296,900
6.13	RECYCLE ASH BUILDING - FOUNDATIONS		$ -	$ 234,300	$ 393,800	$ 628,100
6.14	RECYCLE ASH BUILDING	100' L X 65' W X 50' H	$ 58,500	$ 1,306,700	$ 1,194,500	$ 2,559,700
6.15	MCC	480V MCC PER LINE UP	$ 120,000	$ -	$ 7,300	$ 127,300
6.16	EMERGENCY POWER SYSTEM		$ 185,500	$ -	$ 40,000	$ 225,500
6.17	LIGHTING/ TRANSFORMERS & PANELS		$ 18,500	$ 75,000	$ 53,200	$ 146,700
6.18	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 40,700	$ 236,200	$ 276,900
6.19	GROUNDING		$ -	$ 4,500	$ 10,900	$ 15,400
6.20	LOW VOLTAGE POWER CABLE & TERMINATION	#4/0 - #12 AWG-600V	$ -	$ 73,600	$ 91,600	$ 165,200
6.21	CONTROL & INSTRUMENT CABLE		$ -	$ 38,400	$ 107,800	$ 146,200
6.22	DUCT BANK		$ -	$ 109,700	$ 205,400	$ 315,100
6.23	COMMUNICATIONS		$ -	$ 70,000	$ 50,000	$ 120,000
6.24	LIGHTNING PROTECTION		$ -	$ 19,000	$ 14,000	$ 33,000
6.25	SECURITY SYSTEM		$ -	$ 16,000	$ 14,000	$ 30,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 4,667,300	$ 2,632,300	$ 6,147,600	$ 13,447,200
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 233,400	$ 671,200	$ 2,285,400	$ 3,190,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS	$ 4,900,700	$ 3,303,500	$ 8,433,000	$ 16,637,200
7.0	SPRAY DRYER ABSORBER ISLAND					
7.1	MECHANICAL EQUIPMENT	INCLUDES: ABSORBER MODULES AND ATOMIZERS WITH LUBE OIL, DUCT WORK FROM THE ABSORBERS TO THE FABRIC FILTER, AND COMPLETE RECYCLE SYSTEM WITH PIPING INSIDE FGD BUILDINGS.	$ 39,438,000	$ -	$ 24,186,100	$ 63,624,100

Sargent & Lundy, LLC	AEP	Estimate No.:	30717C
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS (ESP)-4A - 7.5 LB/MM BTU - NON PHASED	Date:	9/29/2010
	COST ESTIMATE SUMMARY	Preparer:	MNO
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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
7.2	ELEVATOR	MAINTENANCE ELEVATOR - SUBCONTRACT COST INCLUDES LABOR	$ 325,000	$ -	$ -	$ 325,000
7.3	ABSORBER AREA SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES.	$ 28,000	$ -	$ 12,300	$ 40,300
7.4	AGITATOR FOR SUMP PUMPS	5 HP	$ 12,000	$ -	$ 4,600	$ 16,600
7.5	PIPING - MECHANICAL		$ 142,800	$ 36,900	$ 227,900	$ 407,600
7.6	SDA SUPERSTRUCTURE		$ 75,000	$ 764,900	$ 1,227,300	$ 2,067,200
7.7	SDA BOTTOM ENCLOSURE - SUPPORT STEEL, GIRTS AND SIDING	TOTAL FOR THREE ABSORBERS	$ -	$ 362,100	$ 385,200	$ 747,300
7.8	SDA SHELL / ROOF INSULATION	61,000 SF. SUBCONTRACT COST INCLUDES LABOR	$ 1,830,000	$ -	$ -	$ 1,830,000
7.9	SDA - SUPPORT STEEL & ACCESS GALLERY		$ -	$ 711,000	$ 1,884,100	$ 2,595,100
7.10	EXPANSION JOINTS		$ -	$ 195,500	$ 173,800	$ 369,300
7.11	DUCTWORK		$ -	$ 6,175,000	$ 13,113,700	$ 19,288,700
7.12	DUCT SUPPORT STEEL	THREE COAT SHOP PAINT	$ -	$ 2,755,000	$ 2,771,700	$ 5,526,700
7.13	DUCTWORK INSULATION & LAGGING		$ -	$ 2,040,000	$ 3,995,500	$ 6,035,500
7.14	CONCRETE PIT FOR ELEVATOR		$ -	$ 2,800	$ 8,200	$ 11,000
7.15	SPRAY DRYER ABSORBER - FOUNDATIONS	TOTAL FOR THREE TOWERS	$ -	$ 1,678,600	$ 3,323,400	$ 5,002,000
7.16	FOUNDATIONS FOR SUPPORT STEEL		$ -	$ 69,000	$ 143,000	$ 212,000
7.17	GROUNDING		$ -	$ 16,000	$ 46,100	$ 62,100
7.18	LIGHTING/ TRANSFORMERS & PANELS		$ 156,000	$ 150,000	$ 159,100	$ 465,100
7.19	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE INCLUDED IN SECTION 1.0 - ID FANS	$ -	$ -	$ -	$ -
7.20	COMMUNICATIONS		$ -	$ 17,000	$ 13,000	$ 30,000
7.21	LIGHTNING PROTECTION		$ -	$ 25,500	$ 18,500	$ 44,000
7.22	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 42,006,800	$ 15,007,300	$ 51,700,500	$ 108,714,600
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 2,910,300	$ 3,826,900	$ 20,483,400	$ 27,220,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SPRAY DRYER ABSORBER ISLAND	$ 44,917,100	$ 18,834,200	$ 72,183,900	$ 135,935,200

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	COST ESTIMATE SUMMARY	Preparer:	MNO
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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
8.0	ACTIVATED CARBON INJECTION SYSTEM					
9.0	COMPRESSED AIR SYSTEM					
10.0	SERVICE WATER SYSTEM					
11.0	POTABLE WATER SYSTEM					
12.0	FGD SUBSTATION					
12.1	TRANSFORMERS	0.0	$ 1,560,000	$ -	$ 273,100	$ 1,833,100
12.2	TRANSFORMER PDC	15W X 45' X 10'H. SUBCONTRACT PRICE INCLUDES LABOR	$ 202,500	$ -	$ -	$ 202,500
12.3	TRANSFORMER PDC - FOUNDATION		$ -	$ 73,200	$ 146,900	$ 220,100
12.4	138KV MAIN FEEDER & TERMINATIONS		$ 264,000	$ -	$ 254,000	$ 518,000
12.5	SWITCHGEAR		$ 690,000	$ -	$ 43,700	$ 733,700
12.6	MCC	480V MCC, PER LINE UP	$ 60,000	$ -	$ 3,600	$ 63,600
12.7	CABLE BUS		$ 181,100	$ 18,000	$ 290,200	$ 489,300
12.8	PANELS - RELAY		$ 100,000	$ -	$ 9,100	$ 109,100
12.9	MIMIC PANELS		$ 17,500	$ -	$ 4,500	$ 22,000
12.10	EMERGENCY POWER SYSTEM		$ 108,300	$ -	$ 24,400	$ 132,700
12.11	GROUNDING		$ 23,300	$ -	$ 59,100	$ 82,400
12.12	LIGHTING/ TRANSFORMERS & PANELS		$ 26,000	$ 30,000	$ 29,500	$ 85,500
12.13	OUTDOOR LIGHTING	NEW AUX YARD LIGHTING - ALLOWANCE	$ 25,000	$ -	$ 56,800	$ 81,800
12.14	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 390,600	$ 1,918,600	$ 2,309,200
12.15	DUCT BANK		$ -	$ 26,200	$ 54,300	$ 80,500
12.16	HIGH VOLTAGE POWER CABLE & TERMINATION	1/C # 500KCMIL-15KV	$ -	$ 27,800	$ 78,400	$ 106,200
12.17	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 263,700	$ 649,600	$ 913,300
12.18	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	$ -	$ 21,800	$ 61,100	$ 82,900

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12.19	FOUNDATION FOR AUX TRANSFORMER		$ -	$ 70,200	$ 205,400	$ 275,600
12.20	FIREWALL FOR TRANSFORMERS		$ -	$ 3,000	$ 5,200	$ 8,200
12.21	COMMUNICATIONS		$ -	$ 17,000	$ 13,000	$ 30,000
12.22	LIGHTNING PROTECTION		$ -	$ 4,000	$ 2,000	$ 6,000
12.23	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 3,257,700	$ 953,500	$ 4,189,500	$ 8,400,700
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 162,900	$ 243,100	$ 1,512,667	$ 1,918,700
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FGD SUBSTATION	$ 3,420,600	$ 1,196,600	$ 5,702,200	$ 10,319,400
13.0	FGD DCS SYSTEM	DRY AND WET FGD COMBINED				
14.0	CEM SYSTEM					
15.0	TRUCK & RAIL INFRASTRUCTURE					
16.0	SITE IMPROVEMENTS - CIVIL WORK (DFGD + WFGD AREAS)					
17.0	LIMESTONE HANDLING SYSTEM					
18.0	REAGENT (LIMESTONE) PREPARATION ISLAND					
18.1	MECHANICAL EQUIPMENT	INCLUDES LIMESTONE FEEDERS, FROM THE DAY SILOS THROUGH THE SLURRY STORAGE TANKS AND TRANSFER PUMPS WITH INTEGRAL PIPING	$ 16,936,000	$ -	$ 13,105,100	$ 30,041,100
18.2	SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES	$ 28,000	$ -	$ 12,300	$ 40,300
18.3	AGITATOR FOR SUMP PUMPS	5 HP	$ 12,000	$ -	$ 4,600	$ 16,600

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18.4	PIPING - MECHANICAL		$ 278,900	$ 205,000	$ 587,300	$ 1,071,200
18.5	LIMESTONE SLURRY TANKS - FOUNDATIONS		$ -	$ 166,400	$ 299,400	$ 465,800
18.6	REAGENT PREPARATION BUILDING - FOUNDATIONS		$ -	$ 701,800	$ 1,165,100	$ 1,866,900
18.7	REAGENT PREPARATION BUILDING	120' L X 135' W X 130' H	$ 269,400	$ 4,985,000	$ 4,350,000	$ 9,604,400
18.8	PIPE SUPPORT PAD - REAGENT PREP BUILDING		$ -	$ 14,400	$ 28,600	$ 43,000
18.9	LIGHTING/ TRANSFORMERS & PANELS		$ 52,000	$ 135,000	$ 104,500	$ 291,500
18.10	GROUNDING		$ 5,100	$ -	$ 13,400	$ 18,500
18.11	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE ARE INCLUDED IN SECTION 20.0 - ABSORBER ISLAND	$ -	$ -	$ -	$ -
18.12	COMMUNICATIONS		$ -	$ 34,000	$ 26,000	$ 60,000
18.13	LIGHTNING PROTECTION		$ -	$ 23,000	$ 16,000	$ 39,000
18.14	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 17,581,400	$ 6,272,600	$ 19,719,300	$ 43,573,300
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 879,100	$ 1,599,500	$ 7,558,600	$ 10,037,200
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	REAGENT (LIMESTONE) PREPARATION ISLAND	$ 18,460,500	$ 7,872,100	$ 27,277,900	$ 53,610,500
19.0	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)					
19.1	MECHANICAL EQUIPMENT	PRIMARY & SECONDARY DEWATERING INCLUDING HYDROCLONE FEED TANKS, HYDROCLONES, PUMPS, INTEGRAL PIPING AND BELT VACUUM FILTERS	$ 10,267,000	$ -	$ 7,339,600	$ 17,606,600
19.2	PUMPS & AGITATORS		$ 250,000	$ -	$ 137,000	$ 387,000
19.3	PIPING - MECHANICAL		$ 282,700	$ 3,555,700	$ 7,786,000	$ 11,624,400

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19.4	MATERIAL HANDLING EQUIPMENT		$ 724,000	$ 7,500	$ 614,100	$ 1,345,600
19.5	FIRE PROTECTION SYSTEM FOR BELT CONVEYORS	DELUGE SYSTEM, DRY PIPE, SENSORS, ACTIVATION VALVE AND FM APPROVED PANEL - SUBCONTRACT PRICE FOR ALL CONVEYORS INCLUDES LABOR	$ 170,000	$ -	$ -	$ 170,000
19.6	CONVEYOR STRUCTURE SUPPORT STEEL	THREE-COAT SHOP PAINT	$ -	$ 99,000	$ 99,600	$ 198,600
19.7	PIPE RACK SUPPORT STEEL	THREE-COAT SHOP PAINT	$ -	$ 197,200	$ 198,400	$ 395,600
19.8	TANKS		$ -	$ 3,825,300	$ 846,700	$ 4,672,000
19.9	RECLAIM WATER TANKS & PUMPS - FOUNDATIONS		$ -	$ 26,000	$ 54,000	$ 80,000
19.10	MAINTENANCE STORAGE TANK & PUMPS - FOUNDATIONS		$ -	$ 100,000	$ 177,300	$ 277,300
19.11	LANDFILL SERVICE WATER TANKS & PUMP - FOUNDATIONS		$ -	$ 80,900	$ 155,100	$ 236,000
19.12	LANDFILL RECLAIM WATER TANKS & PUMPS - FOUNDATIONS		$ -	$ 26,000	$ 54,000	$ 80,000
19.13	HYDROCLONE FEED TANKS & BLEED TANKS - FOUNDATIONS	TOTAL FOR HYDROCLONE AND BLEED TANKS	$ -	$ 340,200	$ 618,900	$ 959,100
19.14	BYPRODUCT STACKOUT CONVEYOR & TRANSFER TOWER - FOUNDATIONS		$ -	$ 16,100	$ 34,700	$ 50,800
19.15	BYPRODUCT STACKOUT PILE - FOUNDATIONS	INCLUDES CONTAINMENT AREA SLAB	$ -	$ 891,700	$ 1,427,400	$ 2,319,100
19.16	PIPE RACK	SUPPORTS AT 15' C/C	$ -	$ 60,800	$ 149,400	$ 210,200
19.17	BYPRODUCT CONTAINMENT WALLS		$ -	$ 137,300	$ 235,000	$ 372,300
19.18	INSTALL WIND SCREEN		$ -	$ 525,000	$ 192,300	$ 717,300
19.19	BYPRODUCT DEWATERING BUILDING - FOUNDATIONS		$ -	$ 301,900	$ 500,500	$ 802,400
19.20	BYPRODUCT DEWATERING BUILDING	120' L X 80' W X 65' H	$ 145,200	$ 1,651,300	$ 1,546,800	$ 3,343,300
19.21	PIPE SUPPORT PAD		$ -	$ 13,800	$ 27,100	$ 40,900
19.22	AUXILIARY PUMPHOUSE BUILDING WITH ELECTRICAL ROOM - FOUNDATIONS		$ -	$ 32,300	$ 60,800	$ 93,100
19.23	AUXILIARY PUMPHOUSE BUILDING	50'L X 35' W X 20'H	$ 101,300	$ 252,500	$ 269,800	$ 623,600
19.24	SITE GRADING - GYPSUM HANDLING AREA		$ -	$ -	$ 587,800	$ 587,800
19.25	ROADS & SURFACING - GYPSUM HANDLING AREA		$ -	$ 188,000	$ 427,900	$ 615,900
19.26	GYPSUM HANDLING & STORAGE		$ -	$ 1,179,900	$ 1,854,100	$ 3,034,000
19.27	GYPSUM RUNOFF POND		$ 68,000	$ 110,400	$ 315,700	$ 494,100

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19.28	GYPSUM RUNOFF POND PUMP STRUCTURE - CONCRETE		$ -	$ 47,000	$ 105,400	$ 152,400
19.29	OILY WATER SEWER - GYPSUM HANDLING AREA		$ 1,500	$ 9,000	$ 14,200	$ 24,700
19.30	OIL SEPARATOR - GYPSUM HANDLING AREA	500 GPM W/ INTEGRAL LIFT STATION	$ 50,000	$ -	$ 58,100	$ 108,100
19.31	EROSION & SEDIMENT CONTROL - GYPSUM HANDLING AREA		$ -	$ 18,000	$ 28,300	$ 46,300
19.32	SITE GRADING - ACCESS ROAD WIDENING & CONTAINMENT DITCH	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA	$ -	$ -	$ 60,400	$ 60,400
19.33	ROADS & SURFACING - GYPSUM DEWATERING AREA	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA	$ -	$ 66,300	$ 190,800	$ 257,100
19.34	PIPELINE CONTAINMENT & DRAINAGE	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA	$ -	$ 271,600	$ 429,200	$ 700,800
19.35	CONTAINMENT RUNOFF POND	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA	$ 68,000	$ 114,300	$ 344,300	$ 526,600
19.36	CONTAINMENT POND PUMP STRUCTURE - CONCRETE	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA	$ -	$ 47,000	$ 105,400	$ 152,400
19.37	SITE GRADING - PIPELINE CONTAINMENT & DRAINAGE	SOUTH OF HWY 23	$ -	$ -	$ 30,200	$ 30,200
19.38	PIPELINE CONTAINMENT & DRAINAGE	SOUTH OF HWY 23	$ -	$ 169,600	$ 263,600	$ 433,200
19.39	PIPE BORING PIT	SOUTH OF HWY 23	$ -	$ 5,300	$ 50,900	$ 56,200
19.40	PIPE RECEIVING PIT	NORTH OF HWY 23	$ -	$ 4,900	$ 43,500	$ 48,400
19.41	DIRECTIONAL BORING FOR BURIED PIPE	BENEATH HWY 23	$ 28,000	$ 652,500	$ 277,000	$ 957,500
19.42	TRANSFORMERS		$ 470,000	$ -	$ 136,500	$ 606,500
19.43	SWITCHGEAR		$ 825,600	$ -	$ 500,700	$ 1,326,300
19.44	CABLE BUS & TERMINATIONS		$ 355,500	$ 39,400	$ 730,700	$ 1,125,600
19.45	MCC		$ 123,600	$ -	$ 6,300	$ 129,900
19.46	MIMIC PANELS		$ 17,500	$ -	$ 1,600	$ 19,100
19.47	EMERGENCY POWER SYSTEM		$ 285,500	$ -	$ 38,900	$ 324,400
19.48	GROUNDING		$ 9,400	$ -	$ 25,400	$ 34,800
19.49	LIGHTING/ TRANSFORMERS & PANELS		$ 52,000	$ 135,000	$ 104,500	$ 291,500
19.50	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 354,700	$ 1,514,100	$ 1,868,800
19.51	13.8 KV OH LINE OPGW	INCLUDES POLES, CONDUCTORS, INSULATORS & GROUNDING	$ -	$ 240,200	$ 292,400	$ 532,600

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19.52	HIGH VOLTAGE POWER CABLE & TERMINATION		$ -	$ 88,400	$ 256,600	$ 345,000
19.53	MEDIUM VOLTAGE POWER CABLE & TERMINATION	1/C # 350KCMIL-5KV	$ -	$ 18,400	$ 78,400	$ 96,800
19.54	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 62,700	$ 547,400	$ 610,100
19.55	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	$ -	$ 112,000	$ 314,300	$ 426,300
19.56	FOUNDATIONS FOR TRANSFORMERS		$ -	$ 70,200	$ 205,400	$ 275,600
19.57	FIREWALL FOR TRANSFORMERS		$ -	$ 3,200	$ 8,300	$ 11,500
19.58	COMMUNICATIONS		$ -	$ 34,000	$ 26,000	$ 60,000
19.59	LIGHTNING PROTECTION		$ -	$ 13,000	$ 10,300	$ 23,300
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 14,294,800	$ 16,195,500	$ 32,509,100	$ 62,999,400
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 714,700	$ 4,129,900	$ 12,460,800	$ 17,305,400
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 15,009,500	$ 20,325,400	$ 44,969,900	$ 80,304,800
20.0	WET FGD ABSORBER ISLAND					
20.1	MECHANICAL EQUIPMENT	INCLUDES ABSORBER MODULE (A2205) WITH INTERNALS, INLET DUCT ONLY THROUGH WET/DRY INTERFACE, PIPING INSIDE ABSORBER BUILDING TO TERMINAL POINTS, RECYCLE PUMPS, OXIDATION BLOWERS, MIST ELIMINATOR AND WASH PUMPS AND OTHER MISC. EQUIPMENT AND MATERIAL	$ 41,668,000	$ -	$ 41,073,400	$ 82,741,400

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20.2	ADDITIONAL COST FOR C276 ABSORBER SHELL MATERIAL ABOVE THE PRICE OF A2205 ABSORBER SHELL	INCLUDES MATERIAL AND WELDING ROD COST DIFFERENTIAL - 49,800 TOTAL SF	$ -	$ 15,338,400	$ -	$ 15,338,400
20.3	SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES	$ 28,000	$ -	$ 12,300	$ 40,300
20.4	AGITATOR FOR SUMP PUMPS	5 HP	$ 12,000	$ -	$ 4,600	$ 16,600
20.5	EMERGENCY DIESEL DRIVEN QUENCH PUMP	WITH FUEL DAY TANK. FOUNDATIONS INCLUDED WITH ABSORBER BUILDING FOUNDATIONS	$ 150,000	$ -	$ 30,700	$ 180,700
20.6	PIPING - MECHANICAL	ALL PIPING INCLUDED IN OEM EQUIPMENT COST. NO BOP PIPING	$ -	$ -	$ -	$ -
20.7	ABSORBER VESSEL - FOUNDATIONS		$ -	$ 366,900	$ 672,900	$ 1,039,800
20.8	ABSORBER BUILDING - FOUNDATIONS		$ -	$ 608,300	$ 1,007,600	$ 1,615,900
20.9	ABSORBER BUILDING	150' L X 95' W X 60' H	$ 164,500	$ 2,746,000	$ 2,500,300	$ 5,410,800
20.10	PIPE SUPPORT PAD - ABSORBER BUILDING		$ -	$ 7,700	$ 16,500	$ 24,200
20.11	OXIDATION AIR BLOWER BUILDING - FOUNDATIONS		$ -	$ 37,000	$ 67,300	$ 104,300
20.12	OXIDATION AIR BLOWER BUILDING	30' L X 30' W X 25' H	$ 33,800	$ 191,000	$ 201,400	$ 426,200
20.13	PIPE SUPPORT PAD - OXIDATION BUILDING		$ -	$ 7,700	$ 13,700	$ 21,400
20.14	DUCTWORK	INCLUDES INTERNAL BRACING AND TURNING VANES	$ -	$ 373,800	$ 713,900	$ 1,087,700
20.15	DUCT SUPPORT STEEL	THREE-COAT SHOP PAINT	$ -	$ 168,200	$ 169,200	$ 337,400
20.16	DUCTWORK INSULATION & LAGGING		$ -	$ 132,000	$ 258,500	$ 390,500
20.17	FOUNDATIONS FOR DUCT SUPPORT STEEL		$ -	$ 17,700	$ 35,300	$ 53,000
20.18	TRANSFORMERS		$ 981,000	$ -	$ 209,300	$ 1,190,300
20.19	SWITCHGEAR		$ 1,162,800	$ -	$ 673,700	$ 1,836,500
20.20	CABLE BUS & TERMINATIONS		$ 867,100	$ 46,600	$ 1,634,100	$ 2,547,800
20.21	MCC		$ 216,300	$ -	$ 11,100	$ 227,400

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20.22	MIMIC PANELS		$ 35,000	$ -	$ 7,900	$ 42,900
20.23	GROUNDING		$ 16,000	$ -	$ 46,100	$ 62,100
20.24	LIGHTING/ TRANSFORMERS & PANELS		$ 164,500	$ 165,000	$ 171,300	$ 500,800
20.25	EMERGENCY POWER SYSTEM		$ 108,300	$ -	$ 24,400	$ 132,700
20.26	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 1,515,700	$ 5,849,000	$ 7,364,700
20.27	HIGH VOLTAGE POWER CABLE & TERMINATION		$ -	$ 58,400	$ 164,700	$ 223,100
20.28	MEDIUM VOLTAGE POWER CABLE & TERMINATION		$ -	$ 114,600	$ 431,700	$ 546,300
20.29	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 795,900	$ 1,500,700	$ 2,296,600
20.30	CONTROL & INSTRUMENT CABLE		$ -	$ 512,000	$ 1,436,700	$ 1,948,700
20.31	FOUNDATION FOR TRANSFORMERS		$ -	$ 59,000	$ 173,700	$ 232,700
20.32	TRANSFORMER FIRE WALLS		$ -	$ 3,500	$ 9,600	$ 13,100
20.33	COMMUNICATIONS		$ -	$ 34,000	$ 26,000	$ 60,000
20.34	LIGHTNING PROTECTION		$ -	$ 19,500	$ 14,500	$ 34,000
20.35	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 45,607,300	$ 23,326,900	$ 59,169,100	$ 128,103,300
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 2,955,400	$ 5,948,400	$ 23,462,200	$ 32,365,900
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 48,562,700	$ 29,275,300	$ 82,631,300	$ 160,469,200
21.0	COMPRESSED AIR SYSTEM (BYPRODUCT DEWATERING AREA)					
22.0	POTABLE WATER SYSTEM	INCLUDED WITH ACCOUNT 11.0				
23.0	SCR SUBSTATION UPGRADE					
24.0	FGD DCS SYSTEM	INCLUDED WITH ACCOUNT 13.0				
25.0	SITE IMPROVEMENTS - CIVIL WORK	INCLUDED WITH ACCOUNT 16.0				

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26.0	BOP ITEMS					
27.0	CAPITAL REPLACEMENTS - REMOVAL AND RELOCATION OF EXISTING EQUIPMENT AND INFRASTRUCTURE					
28.0	ARSENIC, ASBESTOS , LEAD ABATEMENT					
99.0	OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 190,852,000	$ 105,249,500	$ 272,163,600	$ 600,390,100
	OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 10,964,600	$ 26,781,900	$ 104,031,200	$ 146,847,800
	OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 201,816,600	$ 132,031,400	$ 376,194,800	$ 747,237,900
	INDIRECT COSTS					
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES					$ 45,000,000
	CONSTRUCTION MANAGEMENT					$ 22,417,100
	S-U / COMMISSIONING					$ 7,472,400
	CRAFT START-UP SUPPORT					$ 3,207,500
	INITIAL FILLS					$ 2,241,700
	OPERATOR & TRAINING MANUALS					$ 600,000
	SUBCONTRACTORS (NOISE & DUCTWORK CONSULTANT,					$ 500,000
	NOISE ABATEMENT FOR 85 DBA REQUIREMENT	FOR ID FAN, SDA ENCLOSURE, TRANSFORMERS, BOP, DUCTWORK, ACOUSTIC BARRIERS FOR BOUNDARY LIMITS				$ 4,500,000
	SUBTOTAL - INDIRECT COSTS					$ 85,938,700
	TOTAL DIRECT AND INDIRECT COSTS					$ 833,176,600

Sargent & Lundy, LLC	AEP	Estimate No.:	30717C
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS (ESP)-4A - 7.5 LB/MM BTU - NON PHASED	Date:	9/29/2010
	COST ESTIMATE SUMMARY	Preparer:	MNO
		Reviewer:	JMK
		Approver:	PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
	SPARE PARTS					$ 3,027,200
	SPARE PARTS - CAPITALIZED	0.90				$ 1,816,320
	SPARE PARTS - FIRST YEAR OF OPERATION	0.60				$ 1,210,880
	CONTINGENCY	13.9				$ 116,497,100
	ESCALATION					$ 103,730,600
	EQUIPMENT					$ 30,070,300
	MATERIAL					$ 13,963,200
	LABOR					$ 49,764,200
	INDIRECTS					$ 9,932,900
	TOTAL PROJECT COST					$ 1,056,431,500
	REFERENCE COSTS:					
A	REMOVAL OF FUEL OIL TANK	LABOR COST IS FOR REMOVAL OF TANK ONLY. ALLOWANCE FOR SOIL REMEDIATION AND DISPOSAL IN AN EPA APPROVED LANDFILL. SUBCONTRACT COST INCLUDES LABOR. USED LOWER END OF THE RANGE $118-355/CY. COST COULD BE LOWER ($59-118/CY) IF SOLD TO A BITUMINOUS CONCRETE BATCH PLANT	$ 1,200,000	$ 80,000	$ 469,400	$ 1,749,400

ATTACHMENT 4-21
IAQCS Summary Capital Cost Estimate No. 30721 Est-4B ESP not in Service*
(7.5 lb SO_2/MMbtu)

* - Due to the significant differences in layout between the phased and non-phased cost estimates the "bases" for comparison purposes were 1B for the non-phased cost estimates and 3B for the phased cost estimates. Therefore cost estimates 2A, 2B, 3A (Phased) and 1A, 4A and 4B (Non-Phased) contain only accounts whose costs are different from the corresponding base estimates 3B and 1B respectively.

Sargent & Lundy, LLC	AEP	Estimate No.:	30721C
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS (N/ESP)-4B - 7.5 LB/MM BTU - NON PHASED	Date:	9/29/2010
	COST ESTIMATE SUMMARY	Preparer:	MNO
		Reviewer:	JMK
		Approver:	PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
1.0	ID FANS					
1.1	ID FANS - OEM EQUIPMENT	1,865,000 ACFM WITH 24,500 HP MOTORS ($875,000 EACH). INCLUDES HYDRAULIC OIL UNITS, SEAL AIR FAN SKIDS, VIBRATION MONITORING EQUIPMENT, FAN STALL EQUIPMENT, FIELD SERVICE REP FOR 140 DAYS	$ 7,688,000	$ -	$ 1,737,800	$ 9,425,800
1.2	PIPING & SUPPORTS - MECHANICAL		$ 21,800	$ 28,700	$ 120,500	$ 171,000
1.3	DAMPERS		$ 781,000	$ -	$ 352,600	$ 1,133,600
1.4	EXPANSION JOINTS		$ -	$ 131,100	$ 116,500	$ 247,600
1.5	DUCTWORK	FABRIC FILTER OUTLET TO ID FANS AND FROM ID FANS TO STACK - INCLUDES INTERNAL BRACING AND TURNING VANES	$ -	$ 2,860,000	$ 5,462,800	$ 8,322,800
1.6	DUCT SUPPORT STEEL	THREE COAT SHOP PAINT	$ -	$ 1,276,000	$ 1,283,700	$ 2,559,700
1.7	ID FAN INSULATION & LAGGING	TOTAL FOR TWO FANS. PRICING REFLECTS STANDARD ACOUSTICAL INSULATION	$ -	$ 200,000	$ 258,500	$ 458,500
1.8	DUCTWORK INSULATION & LAGGING	INCLUDES INSULATION FOR SPRAY DRYER OUTLET DUCT TO FABRIC FILTERS SUPPLIED WITH THE OEM EQUIPMENT	$ -	$ 1,090,800	$ 2,136,300	$ 3,227,100
1.9	DUCT SUPPORT STEEL - FOUNDATIONS		$ -	$ 352,200	$ 684,000	$ 1,036,200
1.10	ID FAN FOUNDATIONS INCLUDING ID FAN AUX EQUIPMENT		$ -	$ 229,300	$ 415,700	$ 645,000
1.11	ID FAN IAQCS CONTROL ROOM - FOUNDATIONS		$ -	$ 270,100	$ 508,600	$ 778,700
1.12	ID FAN IAQCS CONTROL ROOM	SUBCONTRACT PRICE INCLUDES LABOR. COMPLETE WITH HVAC, FINISHES AND SANITARY FACILITIES	$ -	$ 3,937,500	$ -	$ 3,937,500

Sargent & Lundy, LLC	AEP	Estimate No.:	30721C
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS (N/ESP)-4B - 7.5 LB/MM BTU - NON PHASED	Date:	9/29/2010
	COST ESTIMATE SUMMARY	Preparer:	MNO
		Reviewer:	JMK
		Approver:	PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
1.13	TRANSFORMERS		$ 770,000	$ -	$ 145,600	$ 915,600
1.14	SWITCHGEAR		$ 1,132,000	$ -	$ 589,900	$ 1,721,900
1.15	CABLE BUS & TERMINATIONS		$ 1,129,100	$ 35,800	$ 1,930,000	$ 3,094,900
1.16	MCC		$ 180,000	$ -	$ 10,900	$ 190,900
1.17	MIMIC PANELS		$ 17,500	$ -	$ 4,500	$ 22,000
1.18	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 1,664,200	$ 8,196,600	$ 9,860,800
1.19	HIGH VOLTAGE POWER CABLE & TERMINATION		$ -	$ 288,500	$ 666,700	$ 955,200
1.20	MEDIUM VOLTAGE POWER CABLE & TERMINATION		$ -	$ 100,200	$ 427,400	$ 527,600
1.21	LOW VOLTAGE POWER CABLE & TERMINATIONS		$ -	$ 229,800	$ 732,100	$ 961,900
1.22	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	$ -	$ 361,000	$ 1,012,900	$ 1,373,900
1.23	EMERGENCY POWER SYSTEM		$ 285,500	$ -	$ 38,900	$ 324,400
1.24	GROUNDING		$ 14,100	$ -	$ 42,700	$ 56,800
1.25	LIGHTING/ TRANSFORMERS & PANELS		$ 26,000	$ 30,000	$ 29,500	$ 85,500
1.26	DUCT BANK		$ -	$ 136,000	$ 192,700	$ 328,700
1.27	FOUNDATION FOR TRANSFORMERS		$ -	$ 61,900	$ 162,600	$ 224,500
1.28	FIREWALL FOR TRANSFORMERS		$ -	$ 3,200	$ 8,300	$ 11,500
1.29	EARLY COMMISSIONING COSTS TEMPORARY HIGH VOLTAGE		$ -	$ 139,800	$ 230,200	$ 370,000
1.30	COMMUNICATIONS		$ -	$ 17,000	$ 13,000	$ 30,000
1.31	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 12,045,000	$ 13,451,100	$ 27,518,500	$ 53,014,600
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 602,300	$ 3,430,000	$ 9,926,800	$ 13,959,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	ID FANS	$ 12,647,300	$ 16,881,100	$ 37,445,300	$ 66,973,700
2.0	FABRIC FILTERS					

Sargent & Lundy, LLC	AEP	Estimate No.:	30721C
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS (N/ESP)-4B - 7.5 LB/MM BTU - NON PHASED	Date:	9/29/2010
	COST ESTIMATE SUMMARY	Preparer:	MNO
		Reviewer:	JMK
		Approver:	PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
2.1	MECHANICAL EQUIPMENT	A SINGLE FABRIC FILTER (225' X 130') UNIT INCLUDING ALL INTERNAL FABRIC FILTER ELEMENTS SUCH AS BAGS, CAGES, ASH HOPPERS, 2 BROKEN BAG DETECTORS PER COMPARTMENT	$ 19,585,000	$ -	$ 12,553,000	$ 32,138,000
2.2	INSULATION FOR FABRIC FILTER	SUBCONTRACT COST INCLUDES LABOR	$ 2,430,000	$ -	$ -	$ 2,430,000
2.3	PENTHOUSE FOR FABRIC FILTER	SUPPORT STEEL AND PRLINS INCLUDED WITH OEM EQUIPMENT	$ 70,200	$ 787,000	$ 1,007,600	$ 1,864,800
2.4	BOTTOM ENCLOSURE FOR BAGHOUSE		$ 60,000	$ 1,204,000	$ 1,359,800	$ 2,623,800
2.5	PIPING & SUPPORTS - MECHANICAL		$ 30,900	$ 101,400	$ 209,500	$ 341,800
2.6	FABRIC FILTER - FOUNDATIONS		$ -	$ 550,700	$ 1,081,100	$ 1,631,800
2.7	FABRIC FILTER - SUPPORT STEEL AND ACCESS GALLERY		$ -	$ 360,000	$ 1,186,700	$ 1,546,700
2.8	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE INCLUDED IN SECTION 1.0 - ID FANS	$ -	$ -	$ -	$ -
2.9	LIGHTING/ TRANSFORMERS & PANELS		$ 30,000	$ 75,000	$ 58,200	$ 163,200
2.10	GROUNDING		$ 7,300	$ -	$ 17,500	$ 24,800
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 22,243,400	$ 3,153,100	$ 17,473,400	$ 42,764,900
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 1,112,200	$ 804,000	$ 6,491,200	$ 8,407,400
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FABRIC FILTERS	$ 23,355,600	$ 3,957,100	$ 23,964,600	$ 51,172,300
3.0	NEW STACK					
4.0	LIME HANDLING SYSTEM					
4.1	LIME STORAGE SILO		$ 1,390,000	$ -	$ -	$ 1,390,000

Sargent & Lundy, LLC	AEP	Estimate No.:	30721C
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS (N/ESP)-4B - 7.5 LB/MM BTU - NON PHASED	Date:	9/29/2010
	COST ESTIMATE SUMMARY	Preparer:	MNO
		Reviewer:	JMK
		Approver:	PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
4.2	LIME UNLOADING SYSTEM	INCLUDES PNEUMATIC HANDLING SYSTEM, THREE VACUUM EXHAUSTER, TWO FILTER SEPARATORS	$ 350,000	$ -	$ 281,100	$ 631,100
4.3	PIPING - MECHANICAL		$ 29,000	$ 15,600	$ 77,900	$ 122,500
4.4	LIME STORAGE SILO ACCESS STAIR TOWER	THREE COAT SHOP PAINT	$ -	$ 87,000	$ 87,500	$ 174,500
4.5	PIPE RACK FOR LIME HANDLING, WASTE HANDLING AND MISC MECHANICAL PIPING	THREE COAT SHOP PAINT	$ -	$ 783,000	$ 787,800	$ 1,570,800
4.6	RAIL CAR UNLOADING AREA - FOUNDATIONS	20 X 60 - NO SIDING	$ -	$ 22,600	$ 49,100	$ 71,700
4.7	LIME UNLOADING BLOWER / ELECTRICAL BUILDING - FOUNDATIONS		$ -	$ 80,600	$ 139,600	$ 220,200
4.8	LIME UNLOADING BLOWER / ELECTRICAL BUILDING	100' L X 30' W X 30' H	$ 75,000	$ 335,000	$ 24,400	$ 434,400
4.9	CONCRETE PIT FOR THE ELEVATOR		$ -	$ 2,300	$ 6,900	$ 9,200
4.10	LIME STORAGE SILO - FOUNDATIONS	0	$ -	$ 87,100	$ 171,100	$ 258,200
4.11	LIME STORAGE SILO ACCESS STAIR TOWER - FOUNDATIONS	0	$ -	$ 10,700	$ 22,300	$ 33,000
4.12	PIPE RACK - FOUNDATIONS		$ -	$ 94,200	$ 237,800	$ 332,000
4.13	TRANSFORMERS: 33F, 33G,	13.8KV-480V,3PHASE, CAST COIL	$ 170,000	$ -	$ 54,600	$ 224,600
4.14	480V LOW VOLTAGE (33F/G) SWITCHGEAR	PER LINE UP	$ 196,000	$ -	$ 104,700	$ 300,700
4.15	CABLE BUS DUCT		$ 134,700	$ 10,800	$ 200,200	$ 345,700
4.16	MCC		$ 61,800	$ -	$ 3,600	$ 65,400
4.17	MIMIC PANELS		$ 17,500	$ -	$ 1,400	$ 18,900
4.18	EMERGENCY POWER SYSTEM		$ 108,300	$ -	$ 24,400	$ 132,700
4.19	GROUNDING		$ 13,300	$ -	$ 41,300	$ 54,600
4.20	LIGHTING/ TRANSFORMERS & PANELS		$ 52,000	$ 135,000	$ 104,500	$ 291,500
4.21	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 310,900	$ 1,537,100	$ 1,848,000
4.22	HIGH VOLTAGE POWER CABLE & TERMINATION	1/C # 500KCMIL-15KV	$ -	$ 50,100	$ 141,200	$ 191,300
4.23	MEDIUM VOLTAGE POWER CABLE & TERMINATION	1/C # 350KCMIL-5KV	$ -	$ 66,200	$ 282,300	$ 348,500
4.24	LOW VOLTAGE POWER CABLE & TERMINATION	0.00	$ -	$ 93,000	$ 143,200	$ 236,200
4.25	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	$ -	$ 26,200	$ 73,600	$ 99,800

Sargent & Lundy, LLC	AEP	Estimate No.:	30721C
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS (N/ESP)-4B - 7.5 LB/MM BTU - NON PHASED	Date:	9/29/2010
	COST ESTIMATE SUMMARY	Preparer:	MNO
		Reviewer:	JMK
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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
4.26	DUCT BANK	6-5" & 6-3" CONDUITS	$ -	$ 26,600	$ 52,500	$ 79,100
4.27	FOUNDATIONS FOR TRANSFORMERS		$ -	$ 5,300	$ 11,900	$ 17,200
4.28	COMMUNICATIONS		$ -	$ 17,000	$ 13,000	$ 30,000
4.29	LIGHTNING PROTECTION		$ -	$ 14,000	$ 9,000	$ 23,000
4.30	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 2,597,600	$ 2,281,200	$ 4,691,000	$ 9,569,800
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 129,900	$ 581,700	$ 1,691,900	$ 2,403,500
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME HANDLING SYSTEM	$ 2,727,500	$ 2,862,900	$ 6,382,900	$ 11,973,300
5.0	LIME SLAKER BUILDING					
5.1	MECHANICAL EQUIPMENT	INCLUDES:CHAIN CONVEYOR, SLAKERS THROUGH THE LIME SLURRY PUMPS, PIPING, AND LIME SLURRY STORAGE TANKS.	$ 3,198,000	$ -	$ 3,322,300	$ 6,520,300
5.2	REAGENT AREA SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES	$ 28,000	$ -	$ 12,300	$ 40,300
5.3	AGITATOR FOR SUMP PUMPS	5 HP	$ 12,000	$ -	$ 4,600	$ 16,600
5.4	PIPING - MECHANICAL		$ 117,800	$ 111,400	$ 381,100	$ 610,300
5.5	LIME SLURRY TANKS - FOUNDATIONS		$ -	$ 166,400	$ 299,400	$ 465,800
5.6	LIME SLAKER BUILDING - FOUNDATIONS		$ -	$ 119,200	$ 204,000	$ 323,200
5.7	LIME SLAKER BUILDING	135' L X 30' W X 50' H	$ 40,500	$ 803,300	$ 740,500	$ 1,584,300
5.8	ELECTRICAL	INCLUDED WITH LIME HANDLING SYSTEM, ACCOUNT 4.0	$ -	$ -	$ -	$ -
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 3,396,300	$ 1,200,300	$ 4,964,200	$ 9,560,800
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 169,800	$ 306,100	$ 1,852,600	$ 2,328,500

Sargent & Lundy, LLC	AEP	Estimate No.:	30721C
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS (N/ESP)-4B - 7.5 LB/MM BTU - NON PHASED	Date:	9/29/2010
	COST ESTIMATE SUMMARY	Preparer:	MNO
		Reviewer:	JMK
		Approver:	PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME SLAKER BUILDING	$ 3,566,100	$ 1,506,400	$ 6,816,800	$ 11,889,300
6.0	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS					
6.1	BYPRODUCT WASTE HANDLING - MECHANICAL EQUIPMENT		$ 1,637,600	$ -	$ 1,104,000	$ 2,741,600
6.2	ECONOMIZER ASH HANDLING - MECHANICAL EQUIPMENT	INCLUDES JET PUMPS AND PIPING / SUPPORTS TO THE BOTTOM ASH POND	$ 400,000	$ -	$ 296,400	$ 696,400
6.3	BYPRODUCT WASTE SILO AREA SUMP PUMPS		$ 28,000	$ -	$ 12,300	$ 40,300
6.4	AGITATOR FOR SUMP PUMPS		$ 12,000	$ -	$ 4,600	$ 16,600
6.5	PIPING - MECHANICAL		$ 142,800	$ 240,900	$ 759,100	$ 1,142,800
6.6	BYPRODUCT WASTE SILO	4" CS, SCHEDULE 40, WELDED	$ 650,000	$ -	$ -	$ 650,000
6.7	SDA RECYCLE SILO		$ -	$ -	$ -	$ -
6.8	FLY ASH SILO		$ -	$ -	$ -	$ -
6.9	BYPRODUCT WASTE SILO - FOUNDATIONS		$ -	$ 60,200	$ 122,300	$ 182,500
6.10	FLY ASH SILO - FOUNDATIONS		$ -	$ -	$ -	$ -
6.11	FLY ASH BLOWER AND ELECTRICAL BUILDING - FOUNDATIONS		$ -	$ -	$ -	$ -
6.12	FLY ASH BLOWER AND ELECTRICAL BUILDING		$ -	$ -	$ -	$ -
6.13	RECYCLE ASH BUILDING - FOUNDATIONS		$ -	$ 234,300	$ 393,800	$ 628,100
6.14	RECYCLE ASH BUILDING		$ 58,500	$ 1,306,700	$ 1,194,500	$ 2,559,700
6.15	MCC		$ 60,000	$ -	$ 3,600	$ 63,600
6.16	EMERGENCY POWER SYSTEM		$ 92,800	$ -	$ 19,900	$ 112,700
6.17	LIGHTING/ TRANSFORMERS & PANELS		$ 18,500	$ 60,000	$ 44,100	$ 122,600
6.18	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 32,500	$ 189,100	$ 221,600
6.19	GROUNDING	INCLUDING SUPPORT & FITTINGS	$ -	$ 4,500	$ 10,900	$ 15,400
6.20	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 64,700	$ 80,500	$ 145,200
6.21	CONTROL & INSTRUMENT CABLE		$ -	$ 30,700	$ 86,200	$ 116,900
6.22	DUCT BANK		$ -	$ 109,700	$ 205,400	$ 315,100
6.23	COMMUNICATIONS		$ -	$ 34,000	$ 26,000	$ 60,000
6.24	LIGHTNING PROTECTION		$ -	$ 16,000	$ 14,000	$ 30,000

Sargent & Lundy, LLC	AEP	Estimate No.:	30721C
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS (N/ESP)-4B - 7.5 LB/MM BTU - NON PHASED	Date:	9/29/2010
	COST ESTIMATE SUMMARY	Preparer:	MNO
		Reviewer:	JMK
		Approver:	PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
6.25	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 3,100,200	$ 2,202,200	$ 4,573,700	$ 9,876,100
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 155,000	$ 561,600	$ 1,702,500	$ 2,419,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS	$ 3,255,200	$ 2,763,800	$ 6,276,200	$ 12,295,200
7.0	SPRAY DRYER ABSORBER ISLAND					
7.1	MECHANICAL EQUIPMENT	INCLUDES: ABSORBER MODULES AND ATOMIZERS WITH LUBE OIL, DUCT WORK FROM THE ABSORBERS TO THE FABRIC FILTER, AND COMPLETE RECYCLE SYSTEM WITH PIPING INSIDE FGD BUILDINGS.	$ 39,438,000	$ -	$ 24,186,100	$ 63,624,100
7.2	ELEVATOR	MAINTENANCE ELEVATOR - SUBCONTRACT COST INCLUDES LABOR	$ 325,000	$ -	$ -	$ 325,000
7.3	ABSORBER AREA SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES.	$ 28,000	$ -	$ 12,300	$ 40,300
7.4	AGITATOR FOR SUMP PUMPS	5 HP	$ 12,000	$ -	$ 4,600	$ 16,600
7.5	PIPING - MECHANICAL		$ 142,800	$ 36,900	$ 227,900	$ 407,600
7.6	SDA SUPERSTRUCTURE		$ 75,000	$ 764,900	$ 1,227,300	$ 2,067,200
7.7	SDA BOTTOM ENCLOSURE - SUPPORT STEEL, GIRTS AND SIDING	TOTAL FOR THREE ABSORBERS	$ -	$ 362,100	$ 385,200	$ 747,300
7.8	SDA SHELL / ROOF INSULATION	61,000 SF. SUBCONTRACT COST	$ 1,830,000	$ -	$ -	$ 1,830,000
7.9	SDA - SUPPORT STEEL & ACCESS GALLERY		$ -	$ 711,000	$ 1,884,100	$ 2,595,100
7.10	EXPANSION JOINTS		$ -	$ 195,500	$ 173,800	$ 369,300
7.11	DUCTWORK		$ -	$ 4,797,000	$ 10,481,700	$ 15,278,700

Sargent & Lundy, LLC	AEP	Estimate No.:	30721C
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS (N/ESP)-4B - 7.5 LB/MM BTU - NON PHASED	Date:	9/29/2010
	COST ESTIMATE SUMMARY	Preparer:	MNO
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		Approver:	PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
7.12	DUCT SUPPORT STEEL	THREE COAT SHOP PAINT	$ -	$ 2,140,200	$ 2,153,200	$ 4,293,400
7.13	DUCTWORK INSULATION & LAGGING		$ -	$ 1,632,000	$ 3,196,400	$ 4,828,400
7.14	CONCRETE PIT FOR ELEVATOR		$ -	$ 2,800	$ 8,200	$ 11,000
7.15	SPRAY DRYER ABSORBER - FOUNDATIONS	TOTAL FOR THREE TOWERS	$ -	$ 1,678,600	$ 3,323,400	$ 5,002,000
7.16	FOUNDATIONS FOR SUPPORT STEEL		$ -	$ 69,000	$ 143,000	$ 212,000
7.17	GROUNDING		$ -	$ 16,000	$ 46,100	$ 62,100
7.18	LIGHTING/ TRANSFORMERS & PANELS		$ 156,000	$ 150,000	$ 159,100	$ 465,100
7.19	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE INCLUDED IN SECTION 1.0 - ID FANS	$ -	$ -	$ -	$ -
7.20	COMMUNICATIONS		$ -	$ 17,000	$ 13,000	$ 30,000
7.21	LIGHTNING PROTECTION		$ -	$ 25,500	$ 18,500	$ 44,000
7.22	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 42,006,800	$ 12,606,500	$ 47,650,900	$ 102,264,200
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 2,910,300	$ 3,214,700	$ 19,057,200	$ 25,182,200
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SPRAY DRYER ABSORBER ISLAND	$ 44,917,100	$ 15,821,200	$ 66,708,100	$ 127,446,400
8.0	ACTIVATED CARBON INJECTION SYSTEM					
9.0	COMPRESSED AIR SYSTEM					
10.0	SERVICE WATER SYSTEM					
11.0	POTABLE WATER SYSTEM					
12.0	FGD SUBSTATION					
12.1	TRANSFORMERS		$ 1,670,000	$ -	$ 282,200	$ 1,952,200
12.2	TRANSFORMER PDC	15W X 45' X 10'H. SUBCONTRACT	$ 202,500	$ -	$ -	$ 202,500
12.3	TRANSFORMER PDC - FOUNDATION		$ -	$ 73,200	$ 146,900	$ 220,100
12.4	138KV MAIN FEEDER & TERMINATIONS		$ 264,000	$ -	$ 254,000	$ 518,000

Sargent & Lundy, LLC

AEP
BIG SANDY UNIT 2
FGD PROJECT - IAQCS (N/ESP)-4B - 7.5 LB/MM BTU - NON PHASED
COST ESTIMATE SUMMARY

Estimate No.: 30721C
Project No.: 12721-000
Date: 9/29/2010
Preparer: MNO
Reviewer: JMK
Approver: PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
12.5	SWITCHGEAR		$ 870,000	$ -	$ 36,400	$ 906,400
12.6	MCC	480V MCC, PER LINE UP	$ 60,000	$ -	$ 3,600	$ 63,600
12.7	CABLE BUS		$ 181,100	$ 18,000	$ 290,200	$ 489,300
12.8	PANELS - RELAY		$ 100,000	$ -	$ 9,100	$ 109,100
12.9	MIMIC PANELS		$ 17,500	$ -	$ 4,500	$ 22,000
12.10	EMERGENCY POWER SYSTEM		$ 108,300	$ -	$ 24,400	$ 132,700
12.11	GROUNDING		$ 23,300	$ -	$ 59,100	$ 82,400
12.12	LIGHTING/ TRANSFORMERS & PANELS		$ 26,000	$ 30,000	$ 29,500	$ 85,500
12.13	OUTDOOR LIGHTING	NEW AUX YARD LIGHTING - ALLOWANCE	$ 25,000	$ -	$ 56,800	$ 81,800
12.14	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 390,600	$ 1,918,600	$ 2,309,200
12.15	DUCT BANK		$ -	$ 26,200	$ 54,300	$ 80,500
12.16	HIGH VOLTAGE POWER CABLE & TERMINATION	1/C # 500KCMIL-15KV	$ -	$ 27,800	$ 78,400	$ 106,200
12.17	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 263,700	$ 649,600	$ 913,300
12.18	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	$ -	$ 21,800	$ 61,100	$ 82,900
12.19	FOUNDATION FOR AUX TRANSFORMER		$ -	$ 70,200	$ 205,400	$ 275,600
12.20	FIREWALL FOR TRANSFORMERS		$ -	$ 3,000	$ 5,200	$ 8,200
12.21	COMMUNICATIONS		$ -	$ 17,000	$ 13,000	$ 30,000
12.22	LIGHTNING PROTECTION		$ -	$ 4,000	$ 2,000	$ 6,000
12.23	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 3,547,700	$ 953,500	$ 4,191,300	$ 8,692,500
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 177,400	$ 243,100	$ 1,513,212	$ 1,933,700
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FGD SUBSTATION	$ 3,725,100	$ 1,196,600	$ 5,704,500	$ 10,626,200
13.0	FGD DCS SYSTEM	DRY AND WET FGD COMBINED				
14.0	CEM SYSTEM					
15.0	TRUCK & RAIL INFRASTRUCTURE					

Sargent & Lundy, LLC	AEP	Estimate No.:	30721C
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16.0	SITE IMPROVEMENTS - CIVIL WORK					
17.0	LIMESTONE HANDLING SYSTEM					
18.0	REAGENT (LIMESTONE) PREPARATION ISLAND					
18.1	MECHANICAL EQUIPMENT	INCLUDES LIMESTONE FEEDERS, FROM THE DAY SILOS THROUGH THE SLURRY STORAGE TANKS AND TRANSFER PUMPS WITH INTEGRAL PIPING	$ 16,936,000	$ -	$ 13,105,100	$ 30,041,100
18.2	SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES	$ 28,000	$ -	$ 12,300	$ 40,300
18.3	AGITATOR FOR SUMP PUMPS	5 HP	$ 12,000	$ -	$ 4,600	$ 16,600
18.4	PIPING - MECHANICAL		$ 278,900	$ 205,000	$ 587,300	$ 1,071,200
18.5	LIMESTONE SLURRY TANKS - FOUNDATIONS		$ -	$ 166,400	$ 299,400	$ 465,800
18.6	REAGENT PREPARATION BUILDING - FOUNDATIONS		$ -	$ 701,800	$ 1,165,100	$ 1,866,900
18.7	REAGENT PREPARATION BUILDING	120' L X 130' W X 130' H	$ 269,400	$ 4,985,000	$ 4,350,000	$ 9,604,400
18.8	PIPE SUPPORT PAD - REAGENT PREP BUILDING		$ -	$ 14,400	$ 28,600	$ 43,000
18.9	LIGHTING/ TRANSFORMERS & PANELS		$ 52,000	$ 135,000	$ 104,500	$ 291,500
18.10	GROUNDING		$ 5,100	$ -	$ 13,400	$ 18,500
18.11	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE ARE INCLUDED IN SECTION 20.0 - ABSORBER ISLAND	$ -	$ -	$ -	$ -
18.12	COMMUNICATIONS		$ -	$ 34,000	$ 26,000	$ 60,000
18.13	LIGHTNING PROTECTION		$ -	$ 23,000	$ 16,000	$ 39,000
18.14	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 17,581,400	$ 6,272,600	$ 19,719,300	$ 43,573,300

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	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 879,100	$ 1,599,500	$ 7,558,600	$ 10,037,200
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	REAGENT (LIMESTONE) PREPARATION ISLAND	$ 18,460,500	$ 7,872,100	$ 27,277,900	$ 53,610,500
19.0	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)					
19.1	MECHANICAL EQUIPMENT	PRIMARY & SECONDARY DEWATERING INCLUDING HYDROCLONE FEED TANKS, HYDROCLONES, PUMPS, INTEGRAL PIPING AND BELT VACUUM FILTERS	$ 10,267,000	$ -	$ 7,339,600	$ 17,606,600
19.2	PUMPS & AGITATORS		$ 250,000	$ -	$ 137,000	$ 387,000
19.3	PIPING - MECHANICAL		$ 282,700	$ 3,555,700	$ 7,786,000	$ 11,624,400
19.4	MATERIAL HANDLING EQUIPMENT		$ 724,000	$ 7,500	$ 614,100	$ 1,345,600
19.5	FIRE PROTECTION SYSTEM FOR BELT CONVEYORS	DELUGE SYSTEM, DRY PIPE, SENSORS, ACTIVATION VALVE AND FM APPROVED PANEL - SUBCONTRACT PRICE FOR ALL CONVEYORS INCLUDES LABOR	$ 170,000	$ -	$ -	$ 170,000
19.6	CONVEYOR STRUCTURE SUPPORT STEEL	THREE-COAT SHOP PAINT	$ -	$ 99,000	$ 99,600	$ 198,600
19.7	PIPE RACK SUPPORT STEEL	THREE-COAT SHOP PAINT	$ -	$ 197,200	$ 198,400	$ 395,600
19.8	TANKS		$ -	$ 3,825,300	$ 846,700	$ 4,672,000
19.9	RECLAIM WATER TANKS & PUMPS - FOUNDATIONS		$ -	$ 26,000	$ 54,000	$ 80,000
19.10	MAINTENANCE STORAGE TANK & PUMPS - FOUNDATIONS		$ -	$ 100,000	$ 177,300	$ 277,300
19.11	LANDFILL SERVICE WATER TANKS & PUMP - FOUNDATIONS		$ -	$ 80,900	$ 155,100	$ 236,000
19.12	LANDFILL RECLAIM WATER TANKS & PUMPS - FOUNDATIONS		$ -	$ 26,000	$ 54,000	$ 80,000

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19.13	HYDROCLONE FEED TANKS & BLEED TANKS - FOUNDATIONS	TOTAL FOR HYDROCLONE AND BLEED TANKS	$ -	$ 340,200	$ 618,900	$ 959,100
19.14	BYPRODUCT STACKOUT CONVEYOR & TRANSFER TOWER - FOUNDATIONS		$ -	$ 16,100	$ 34,700	$ 50,800
19.15	BYPRODUCT STACKOUT PILE - FOUNDATIONS	INCLUDES CONTAINMENT AREA SLAB	$ -	$ 891,700	$ 1,427,400	$ 2,319,100
19.16	PIPE RACK	SUPPORTS AT 15' C/C	$ -	$ 60,800	$ 149,400	$ 210,200
19.17	BYPRODUCT CONTAINMENT WALLS		$ -	$ 137,300	$ 235,000	$ 372,300
19.18	INSTALL WIND SCREEN		$ -	$ 525,000	$ 192,300	$ 717,300
19.19	BYPRODUCT DEWATERING BUILDING - FOUNDATIONS		$ -	$ 301,900	$ 500,500	$ 802,400
19.20	BYPRODUCT DEWATERING BUILDING	120' L X 80' W X 65' H	$ 145,200	$ 1,651,300	$ 1,546,800	$ 3,343,300
19.21	PIPE SUPPORT PAD		$ -	$ 13,800	$ 27,100	$ 40,900
19.22	AUXILIARY PUMPHOUSE BUILDING WITH ELECTRICAL ROOM - FOUNDATIONS		$ -	$ 32,300	$ 60,800	$ 93,100
19.23	AUXILIARY PUMPHOUSE BUILDING	50'L X 35' W X 20'H	$ 101,300	$ 252,500	$ 269,800	$ 623,600
19.24	SITE GRADING - GYPSUM HANDLING AREA		$ -	$ -	$ 587,800	$ 587,800
19.25	ROADS & SURFACING - GYPSUM HANDLING AREA		$ -	$ 188,000	$ 427,900	$ 615,900
19.26	GYPSUM HANDLING & STORAGE		$ -	$ 1,179,900	$ 1,854,100	$ 3,034,000
19.27	GYPSUM RUNOFF POND		$ 68,000	$ 110,400	$ 315,700	$ 494,100
19.28	GYPSUM RUNOFF POND PUMP STRUCTURE - CONCRETE		$ -	$ 47,000	$ 105,400	$ 152,400
19.29	OILY WATER SEWER - GYPSUM HANDLING AREA		$ 1,500	$ 9,000	$ 14,200	$ 24,700
19.30	OIL SEPARATOR - GYPSUM HANDLING AREA	500 GPM W/ INTEGRAL LIFT	$ 50,000	$ -	$ 58,100	$ 108,100
19.31	EROSION & SEDIMENT CONTROL - GYPSUM HANDLING AREA		$ -	$ 18,000	$ 28,300	$ 46,300
19.32	SITE GRADING - ACCESS ROAD WIDENING & CONTAINMENT DITCH	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA	$ -	$ -	$ 60,400	$ 60,400
19.33	ROADS & SURFACING - GYPSUM DEWATERING AREA	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA	$ -	$ 66,300	$ 190,800	$ 257,100
19.34	PIPELINE CONTAINMENT & DRAINAGE	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA	$ -	$ 271,600	$ 429,200	$ 700,800

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19.35	CONTAINMENT RUNOFF POND	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA	$ 68,000	$ 114,300	$ 344,300	$ 526,600
19.36	CONTAINMENT POND PUMP STRUCTURE - CONCRETE	NORTH OF HWY 23 TO GYPSUM DEWATERING AREA	$ -	$ 47,000	$ 105,400	$ 152,400
19.37	SITE GRADING - PIPELINE CONTAINMENT & DRAINAGE	SOUTH OF HWY 23	$ -	$ -	$ 30,200	$ 30,200
19.38	PIPELINE CONTAINMENT & DRAINAGE	SOUTH OF HWY 23	$ -	$ 169,600	$ 263,600	$ 433,200
19.39	PIPE BORING PIT	SOUTH OF HWY 23	$ -	$ 5,300	$ 50,900	$ 56,200
19.40	PIPE RECEIVING PIT	NORTH OF HWY 23	$ -	$ 4,900	$ 43,500	$ 48,400
19.41	DIRECTIONAL BORING FOR BURIED PIPE	BENEATH HWY 23	$ 28,000	$ 652,500	$ 277,000	$ 957,500
19.42	TRANSFORMERS		$ 470,000	$ -	$ 136,500	$ 606,500
19.43	SWITCHGEAR		$ 825,600	$ -	$ 500,700	$ 1,326,300
19.44	CABLE BUS & TERMINATIONS		$ 355,500	$ 39,400	$ 730,700	$ 1,125,600
19.45	MCC		$ 123,600	$ -	$ 6,300	$ 129,900
19.46	MIMIC PANELS		$ 17,500	$ -	$ 1,600	$ 19,100
19.47	EMERGENCY POWER SYSTEM		$ 285,500	$ -	$ 38,900	$ 324,400
19.48	GROUNDING		$ 9,400	$ -	$ 25,400	$ 34,800
19.49	LIGHTING/ TRANSFORMERS & PANELS		$ 52,000	$ 135,000	$ 104,500	$ 291,500
19.50	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 354,700	$ 1,514,100	$ 1,868,800
19.51	13.8 KV OH LINE OPGW	INCLUDES POLES, CONDUCTORS, INSULATORS & GROUNDING	$ -	$ 240,200	$ 292,400	$ 532,600
19.52	HIGH VOLTAGE POWER CABLE & TERMINATION		$ -	$ 88,400	$ 256,600	$ 345,000
19.53	MEDIUM VOLTAGE POWER CABLE & TERMINATION	1/C # 350KCMIL-5KV	$ -	$ 18,400	$ 78,400	$ 96,800
19.54	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 62,700	$ 547,400	$ 610,100
19.55	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	$ -	$ 112,000	$ 314,300	$ 426,300
19.56	FOUNDATIONS FOR TRANSFORMERS		$ -	$ 70,200	$ 205,400	$ 275,600
19.57	FIREWALL FOR TRANSFORMERS		$ -	$ 3,200	$ 8,300	$ 11,500
19.58	COMMUNICATIONS		$ -	$ 34,000	$ 26,000	$ 60,000
19.59	LIGHTNING PROTECTION		$ -	$ 13,000	$ 10,300	$ 23,300
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 14,294,800	$ 16,195,500	$ 32,509,100	$ 62,999,400

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	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 714,700	$ 4,129,900	$ 12,460,800	$ 17,305,400
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)	$ 15,009,500	$ 20,325,400	$ 44,969,900	$ 80,304,800
20.0	WET FGD ABSORBER ISLAND					
20.1	MECHANICAL EQUIPMENT	INCLUDES ABSORBER MODULE (A2205) WITH INTERNALS, INLET DUCT ONLY THROUGH WET/DRY INTERFACE, PIPING INSIDE ABSORBER BUILDING TO TERMINAL POINTS, RECYCLE PUMPS, OXIDATION BLOWERS, MIST ELIMINATOR AND WASH PUMPS AND OTHER MISC. EQUIPMENT AND MATERIAL	$ 41,668,000	$ -	$ 41,073,400	$ 82,741,400
20.2	ADDITIONAL COST FOR C276 ABSORBER SHELL MATERIAL ABOVE THE PRICE OF A2205 ABSORBER SHELL	INCLUDES MATERIAL AND WELDING ROD COST DIFFERENTIAL - 49,800 TOTAL SF	$ -	$ 15,338,400	$ -	$ 15,338,400
20.3	SUMP PUMPS	DUPLEX. INCLUDES CHECK & ISOLATION VALVES	$ 28,000	$ -	$ 12,300	$ 40,300
20.4	AGITATOR FOR SUMP PUMPS	5 HP	$ 12,000	$ -	$ 4,600	$ 16,600
20.5	EMERGENCY DIESEL DRIVEN QUENCH PUMP	WITH FUEL DAY TANK. FOUNDATIONS INCLUDED WITH ABSORBER BUILDING FOUNDATIONS	$ 150,000	$ -	$ 30,700	$ 180,700
20.6	PIPING - MECHANICAL	ALL PIPING INCLUDED IN OEM EQUIPMENT COST. NO BOP PIPING	$ -	$ -	$ -	$ -
20.7	ABSORBER VESSEL - FOUNDATIONS		$ -	$ 366,900	$ 672,900	$ 1,039,800
20.8	ABSORBER BUILDING - FOUNDATIONS		$ -	$ 608,300	$ 1,007,600	$ 1,615,900

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20.9	ABSORBER BUILDING	150' L X 95' W X 60' H	$ 164,500	$ 2,746,000	$ 2,500,300	$ 5,410,800
20.10	PIPE SUPPORT PAD - ABSORBER BUILDING		$ -	$ 7,700	$ 16,500	$ 24,200
20.11	OXIDATION AIR BLOWER BUILDING - FOUNDATIONS		$ -	$ 37,000	$ 67,300	$ 104,300
20.12	OXIDATION AIR BLOWER BUILDING	30' L X 30' W X 25' H	$ 33,800	$ 191,000	$ 201,400	$ 426,200
20.13	PIPE SUPPORT PAD - OXIDATION BUILDING		$ -	$ 7,700	$ 13,700	$ 21,400
20.14	DUCTWORK	INCLUDES INTERNAL BRACING AND TURNING VANES	$ -	$ 373,800	$ 713,900	$ 1,087,700
20.15	DUCT SUPPORT STEEL	THREE-COAT SHOP PAINT	$ -	$ 168,200	$ 169,200	$ 337,400
20.16	DUCTWORK INSULATION & LAGGING		$ -	$ 132,000	$ 258,500	$ 390,500
20.17	FOUNDATIONS FOR DUCT SUPPORT STEEL		$ -	$ 17,700	$ 35,300	$ 53,000
20.18	TRANSFORMERS		$ 981,000	$ -	$ 209,300	$ 1,190,300
20.19	SWITCHGEAR		$ 1,162,800	$ -	$ 673,700	$ 1,836,500
20.20	CABLE BUS & TERMINATIONS		$ 867,100	$ 46,600	$ 1,634,100	$ 2,547,800
20.21	MCC		$ 216,300	$ -	$ 11,100	$ 227,400
20.22	MIMIC PANELS		$ 35,000	$ -	$ 7,900	$ 42,900
20.23	GROUNDING		$ 16,000	$ -	$ 46,100	$ 62,100
20.24	LIGHTING/ TRANSFORMERS & PANELS		$ 164,500	$ 165,000	$ 171,300	$ 500,800
20.25	EMERGENCY POWER SYSTEM		$ 108,300	$ -	$ 24,400	$ 132,700
20.26	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 1,515,700	$ 5,849,000	$ 7,364,700
20.27	HIGH VOLTAGE POWER CABLE & TERMINATION		$ -	$ 58,400	$ 164,700	$ 223,100
20.28	MEDIUM VOLTAGE POWER CABLE & TERMINATION		$ -	$ 114,600	$ 431,700	$ 546,300
20.29	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 795,900	$ 1,500,700	$ 2,296,600
20.30	CONTROL & INSTRUMENT CABLE		$ -	$ 512,000	$ 1,436,700	$ 1,948,700
20.31	FOUNDATION FOR TRANSFORMERS		$ -	$ 59,000	$ 173,700	$ 232,700
20.32	TRANSFORMER FIRE WALLS		$ -	$ 3,500	$ 9,600	$ 13,100
20.33	COMMUNICATIONS		$ -	$ 34,000	$ 26,000	$ 60,000
20.34	LIGHTNING PROTECTION		$ -	$ 19,500	$ 14,500	$ 34,000
20.35	SECURITY SYSTEM		$ -	$ 8,000	$ 7,000	$ 15,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 45,607,300	$ 23,326,900	$ 59,169,100	$ 128,103,300
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 2,955,400	$ 5,948,400	$ 23,462,200	$ 32,365,900
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	WET FGD ABSORBER ISLAND	$ 48,562,700	$ 29,275,300	$ 82,631,300	$ 160,469,200

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21.0	COMPRESSED AIR SYSTEM (BYPRODUCT DEWATERING AREA)					
22.0	POTABLE WATER SYSTEM	INCLUDED WITH ACCOUNT 11.0				
23.0	SCR SUBSTATION UPGRADE					
24.0	FGD DCS SYSTEM	INCLUDED WITH ACCOUNT 13.0				
25.0	SITE IMPROVEMENTS - CIVIL WORK	INCLUDED WITH ACCOUNT 16.0				
26.0	BOP ITEMS					
27.0	CAPITAL REPLACEMENTS - REMOVAL AND RELOCATION OF EXISTING EQUIPMENT AND INFRASTRUCTURE					
28.0	ARSENIC, ASBESTOS , LEAD ABATEMENT					
99.0	OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 190,828,900	$ 102,573,900	$ 267,047,600	$ 592,575,400
	OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 10,963,400	$ 26,099,600	$ 102,214,900	$ 144,348,000
	OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 201,792,300	$ 128,673,500	$ 369,262,500	$ 736,923,400
	INDIRECT COSTS					
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES					$ 45,000,000
	CONSTRUCTION MANAGEMENT					$ 22,107,700
	S-U / COMMISSIONING					$ 7,369,200
	CRAFT START-UP SUPPORT					$ 3,147,300

Sargent & Lundy, LLC	AEP	Estimate No.:	30721C
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS (N/ESP)-4B - 7.5 LB/MM BTU - NON PHASED	Date:	9/29/2010
	COST ESTIMATE SUMMARY	Preparer:	MNO
		Reviewer:	JMK
		Approver:	PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
	INITIAL FILLS					$ 2,210,800
	OPERATOR & TRAINING MANUALS					$ 600,000
	SUBCONTRACTORS (NOISE & DUCTWORK CONSULTANT,					$ 750,000
	NOISE ABATEMENT FOR 85 DBA REQUIREMENT	FOR ID FAN, SDA ENCLOSURE, TRANSFORMERS, BOP, DUCTWORK, ACOUSTIC BARRIERS FOR BOUNDARY LIMITS				$ 4,500,000
	SUBTOTAL - INDIRECT COSTS					$ 85,685,000
	TOTAL DIRECT AND INDIRECT COSTS					$ 822,608,400
	SPARE PARTS					$ 3,026,900
	SPARE PARTS - CAPITALIZED	0.90				$ 1,816,140
	SPARE PARTS - FIRST YEAR OF OPERATION	0.60				$ 1,210,760
	CONTINGENCY	14.0				$ 115,259,100
	ESCALATION					$ 102,512,500
	EQUIPMENT					$ 30,066,600
	MATERIAL					$ 13,651,900
	LABOR					$ 48,890,400
	INDIRECTS					$ 9,903,600
	TOTAL PROJECT COST					$ 1,043,406,900

Sargent & Lundy, LLC	AEP	Estimate No.:	30721C
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS (N/ESP)-4B - 7.5 LB/MM BTU - NON PHASED	Date:	9/29/2010
	COST ESTIMATE SUMMARY	Preparer:	MNO
		Reviewer:	JMK
		Approver:	PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
	REFERENCE COSTS:					
A	ESP DEMOLITION	ALLOWANCE FOR 1000T STRUCTURE	$ -	$ -	$ 832,300	$ 832,300
B	REMOVE BOOSTER AIR FANS		$ -	$ -	$ 111,000	$ 111,000
C	REMOVAL OF FUEL OIL TANK	LABOR COST IS FOR REMOVAL OF TANK ONLY. ALLOWANCE FOR SOIL REMEDIATION AND DISPOSAL IN AN EPA APPROVED LANDFILL. SUBCONTRACT COST INCLUDES LABOR. USED LOWER END OF THE RANGE $118-355/CY. COST COULD BE LOWER ($59-118/CY) IF SOLD TO A BITUMINOUS CONCRETE BATCH PLANT	$ 1,200,000	$ 80,000	$ 469,400	$ 1,749,400

ATTACHMENT 4-22
O&M Costs – Fixed and Variable (IAQCS)

IAQCS O&M Costs – Revision 0

GENERAL

The O&M costs are based on defined inputs from AEP and results of mass balance calculations. Unlike the capital costs that require estimation from previous project and scaling parameters, the O&M cost basis is well defined. Therefore, the O&M costs presented are expected to reflect the actual cost that will be incurred with little variance. The costs are affected by changes in labor rates, commodity pricing, and agreed to minimum staffing requirements. Although these inputs were confirmed by AEP, an uncertainty associated with this pricing is generally in the range of ±10%. Based on the typical pricing uncertainty, it is expected that the O&M costs are accurate to ±10%.

In the phased IAQCS approach the DFGD will be installed first and will only treat up to the 3.0 lb/MMBtu coal. The DFGD system alone cannot be utilized for the fuels greater than 3.0 lb SO_2/MMBtu. The O&M costs for the phased approach, only considered for operation until 2020, are shown in Tables 2 and 4.

All O&M costs are presented in constant 2010 dollars.

VARIABLE O&M COSTS

The variable O&M costs include:

- Reagent and Disposal
- WFGD byproduct will be disposed of with 85% solids directly from the belt filter.
- DFGD byproduct and dry fly ash removed from the ESP includes 30 wt% dust control water for weight of solids transported to the landfill
- The fly ash from the ESP includes 30 wt% dust control water for weight of solids transported to the landfill
- Makeup water is for the process only. The water consumption includes: limestone slurry water, mist eliminator wash water, oxidation air water, lime slaking water, recycle slurry water, and dust control water only.
- Activated carbon injection rate is based on 2 lb/MMacfm into the DFGD system. The 2 lb/MMacfm injection rate should achieve a 90% mercury removal, based on current industry experience.
- For the non-phased construction, the activated carbon injection (ACI) system for mercury (Hg) removal was not included. With the inclusion of the wet scrubber in the initial non-phased installation, removal of mercury is expected to be at least equivalent to the WFGD operation alone. Therefore, ACI is not required in the non-phased approach.

IAQCS O&M Costs – Revision 0

- Bag replacement every 3 years
- Cage replacement every 9 years
- Auxiliary Power (displayed as MW consumed)
- The draft power accounts for the DFGD and the WFGD system loss, new ductwork, and all other losses associated with the balance draft conversion (furnace to stack). In the cases where the ESP is left in service, the additional ESP pressure loss is included in the draft power estimate. This will provide a consistent basis for comparison of the various technologies. The operating power is 20% less than the test block power used for cost estimating purposes.
- A second value for the draft power is provided that shows the estimated requirement for the FGD system only (SDA absorber through the WFGD absorber). The FGD draft power is part of the overall draft power.
- No forced outages are anticipated due to equipment redundancy designed into the system.
- Auxiliary Power (displayed as MW consumed)

FIXED O&M COSTS

The fixed O&M costs include:

- Operating Labor

  The FGD system will require additional staff to operate the equipment. An absolute minimum number of additional staff was used for comparison purposes between the various technologies. Actual staffing requirements would be based on site specific operating experience. The IAQCS estimate was based on:

Operation	**Phase One Staff**	**Phase Two Staff**
Absorber Island Operation	1 person per shift for 5 shifts (5 operators total)	3 people per shift for 5 shifts (15 operators total)
SDA Recycle System	3 operators total	3 operators total
WFGD Chemists	None	2 operators total
System Supervision	None	1 operator total
Total	8 operations staff	21 operations staff

IAQCS O&M Costs – Revision 0

Depending on the workload of the balance of the plant operations staff, additional FGD operating labor may be required. Other areas to consider are:

Operation	**Staff**
Reagent Unloading	2 additional people if the coal handling staff cannot handle the additional duties.
Reagent Preparation and/or Dewatering	5 additional operations staff
Byproduct Loadout	2 additional operators
System Engineer	1 additional position
Total	10 additional operations staff

For FGD technology comparison purposes, the minimum operations staff required was used in the evaluation. Additional staff could be included; however, the difference in staff between the various technologies would be the same.

- Maintenance Labor
  Including: maintenance mechanics, I&C technicians, maintenance planner, supervision, and overhead.
- Maintenance Materials
  Including: all preventative and corrective maintenance materials for the conveyors, ball mills, slakers, pumps, blowers/compressors, fans, filters, spray headers, atomizers, agitators, etc…

IAQCS O&M Costs – Revision 0

ECONOMIC BASIS

Table 1 shows the data used to generate the costs associated with the retrofit options.

Table 1. Economic Parameters

Unit Capacity Factor (%) Note 1	85
Operating Labor Rate ($/hr) Note 2	50.00
Limestone ($/ton) Note 5	28 (Delivered by Rail Costs)
Lime ($/ton) Not e 5	139 (Delivered by Rail Costs)
Activated Carbon ($/ton) Note 4	1440 (Delivered by Truck Costs)
By-Product Disposal ($/ton) Note 3	8
Makeup Water ($/1000 gallons)	1.00
Fabric Filter Bag Costs ($/bag) Note 4	80
Fabric Filter Cage Costs ($/cage) Note 4	30

Notes:

1) Per Order of Magnitude/Relative Capital Installed Cost Estimate Specification (BS2-FGDSCE-052010) Revision 2 dated September 24, 2010 provided by AEP.
2) The labor rate is a total pay and benefits rate.
3) Disposal cost for by-product (FGD and/or fly ash), trucking to landfill on private haul road.
4) Cost was provided by AEP in comments to Revision A.
5) Provided by AEP on the teleconference on 27-July-2010.

IAQCS O&M Costs – Revision 0

Table 2. O&M Costs for Phased IAQCS Installation without the ESP (2010 dollars) (DFGD Only Operation from 2015 to 2020)

Fuel	1.7 w/o ESP	3.0 w/o ESP	4.5 w/o ESP	7.5 w/o ESP
Fixed O&M ($/year)				
Operating Labor	832,000	832,000	NA	NA
Maintenance Material	2,076,000	2,136,000	NA	NA
Maintenance Labor	1,384,000	1,424,000	NA	NA
Total Fixed O&M ($/year)	**4,292,000**	**4,392,000**	**NA**	**NA**
Variable O&M ($/year)				
Limestone Reagent Cost	NA	NA	NA	NA
Lime Reagent Cost	8,601,000	19,605,000	NA	NA
Activated Carbon	2,344,000	2,319,000	NA	NA
WFGD Byproduct Disposal Cost	NA	NA	NA	NA
DFGD Byproduct Disposal Cost	4,148,000	5,612,000	NA	NA
Total Makeup Water Cost	509,000	521,000	NA	NA
Wastewater Treatment Chemicals	NA	NA	NA	NA
Bags and Cages Replacement	651,000	651,000	NA	NA
Total Variable O&M excluding Auxiliary Power ($/year)	**16,253,000**	**28,708,000**	**NA**	**NA**
Auxiliary Power at Full Load (MW)				
Overall Draft [in WC]	23 [49]	23 [49]	NA	NA
FGD Draft Only [in WC]	8 [16]	8 [16]	NA	NA
FGD Equipment Load	4	5	NA	NA
Existing Booster Fans	-10	-10	NA	NA
Existing ESP	-4	-4	NA	NA
WESP	NA	NA		
Total Auxiliary Power at Full Load (MW)	**13**	**14**	**NA**	**NA**

Note: NA = Not Applicable for the technology

IAQCS O&M Costs – Revision 0

Table 3. O&M Costs for Non-Phased IAQCS Installation without the ESP (2010 dollars) (DFGD and WFGD Combined Operation 2020 and Beyond)

Fuel	1.7 w/o ESP	3.0 w/o ESP	4.5 w/o ESP	7.5 w/o ESP
Fixed O&M ($/year)				
Operating Labor	2,184,000	2,184,000	2,184,000	2,184,000
Maintenance Material	4,039,000	4,117,000	4,191,000	4,272,000
Maintenance Labor	2,693,000	2,744,000	2,795,000	2,849,000
Total Fixed O&M ($/year)	**8,916,000**	**9,045,000**	**9,170,000**	**9,305,000**
Variable O&M ($/year)				
Limestone Reagent Cost	2,376,000	4,558,000	6,442,000	9,685,000
Lime Reagent Cost	661,000	1,225,000	1,713,000	2,574,000
Activated Carbon	NA	NA	NA	NA
WFGD Byproduct Disposal Cost	1,215,000	2,425,000	3,472,000	5,227,000
DFGD Byproduct Disposal Cost	2,732,000	2,553,000	2,426,000	2,670,000
Total Makeup Water Cost	746,000	752,000	763,000	780,000
Wastewater Treatment Chemicals	NA	NA	NA	NA
Bags and Cages Replacement	651,000	651,000	651,000	651,000
Total Variable O&M excluding Auxiliary Power ($/year)	**8,381,000**	**12,164,000**	**15,467,000**	**21,587,000**
Auxiliary Power at Full Load (MW)				
Overall Draft [in WC]	29 [66]	29 [66]	29 [66]	29 [66]
FGD Draft Only [in WC]	14 [28]	14 [29]	15 [30]	16 [31]
FGD Equipment Load	11	15	17	24
Existing Booster Fans	-10	-10	-10	-10
Existing ESP	-4	-4	-4	-4
WESP	NA	NA	NA	NA
Total Auxiliary Power at Full Load (MW)	**26**	**30**	**32**	**39**

Note: NA = Not Applicable for the technology

IAQCS O&M Costs – Revision 0

Table 4. O&M Costs for Phased IAQCS Installation with the ESP (2010 dollars) (DFGD Only Operation from 2015 to 2020)

Fuel	1.7 w/ ESP	3.0 w/ ESP	4.5 w/ ESP	7.5 w/ ESP
Fixed O&M ($/year)				
Operating Labor	832,000	832,000	NA	NA
Maintenance Material	2,076,000	2,136,000	NA	NA
Maintenance Labor	1,384,000	1,424,000	NA	NA
Total Fixed O&M ($/year)	**4,292,000**	**4,392,000**	**NA**	**NA**
Variable O&M ($/year)				
Limestone Reagent Cost	NA	NA	NA	NA
Lime Reagent Cost	9,924,000	23,281,000	NA	NA
Activated Carbon	2,267,000	2,243,000	NA	NA
WFGD Byproduct Disposal Cost	NA	NA	NA	NA
DFGD Byproduct Disposal Cost	1,793,000	3,817,000	NA	NA
Total Makeup Water Cost	464,000	482,000	NA	NA
Wastewater Treatment Chemicals	NA	NA	NA	NA
Bags and Cages Replacement	651,000	651,000	NA	NA
Total Variable O&M excluding Auxiliary Power ($/year)	**15,099,000**	**30,474,000**	**NA**	**NA**
Auxiliary Power at Full Load (MW)				
Overall Draft [in WC]	17 [39]	17 [39]	NA	NA
FGD Draft Only [in WC]	8 [16]	8 [16]	NA	NA
FGD Equipment Load	4	5	NA	NA
Existing Booster Fans	0	0	NA	NA
Existing ESP	0	0	NA	NA
WESP	NA	NA		
Total Auxiliary Power at Full Load (MW)	**21**	**22**	**NA**	**NA**

Note: NA = Not Applicable for the technology

IAQCS O&M Costs – Revision 0

Table 5. O&M Costs for Non-Phased IAQCS Installation with the ESP (2010 dollars) (DFGD and WFGD Combined Operation 2020 and Beyond)

Fuel	1.7 w/ ESP	3.0 w/ ESP	4.5 w/ ESP	7.5 w/ ESP
Fixed O&M ($/year)				
Operating Labor	2,184,000	2,184,000	2,184,000	2,184,000
Maintenance Material	4,039,000	4,117,000	4,191,000	4,272,000
Maintenance Labor	2,693,000	2,744,000	2,795,000	2,849,000
Total Fixed O&M ($/year)	**8,916,000**	**9,045,000**	**9,170,000**	**9,305,000**
Variable O&M ($/year)				
Limestone Reagent Cost	2,376,000	4,558,000	6,442,000	9,685,000
Lime Reagent Cost	661,000	1,225,000	1,713,000	2,574,000
Activated Carbon	NA	NA	NA	NA
WFGD Byproduct Disposal Cost	1,216,000	2,426,000	3,472,000	5,228,000
DFGD Byproduct Disposal Cost	182,000	245,000	300,000	420,000
Total Makeup Water Cost	701,000	709,000	721,000	737,000
Wastewater Treatment Chemicals	NA	NA	NA	NA
Bags and Cages Replacement	651,000	651,000	651,000	651,000
Total Variable O&M excluding Auxiliary Power ($/year)	**5,787,000**	**9,814,000**	**13,299,000**	**19,295,000**
Auxiliary Power at Full Load (MW)				
Overall Draft [in WC]	24 [54]	24 [54]	24 [54]	24 [54]
FGD Draft Only [in WC]	14 [28]	14 [29]	15 [30]	16 [31]
FGD Equipment Load	11	15	17	24
Existing Booster Fans	0	0	0	0
Existing ESP	0	0	0	0
WESP	NA	NA	NA	NA
Total Auxiliary Power at Full Load (MW)	**35**	**39**	**41**	**48**

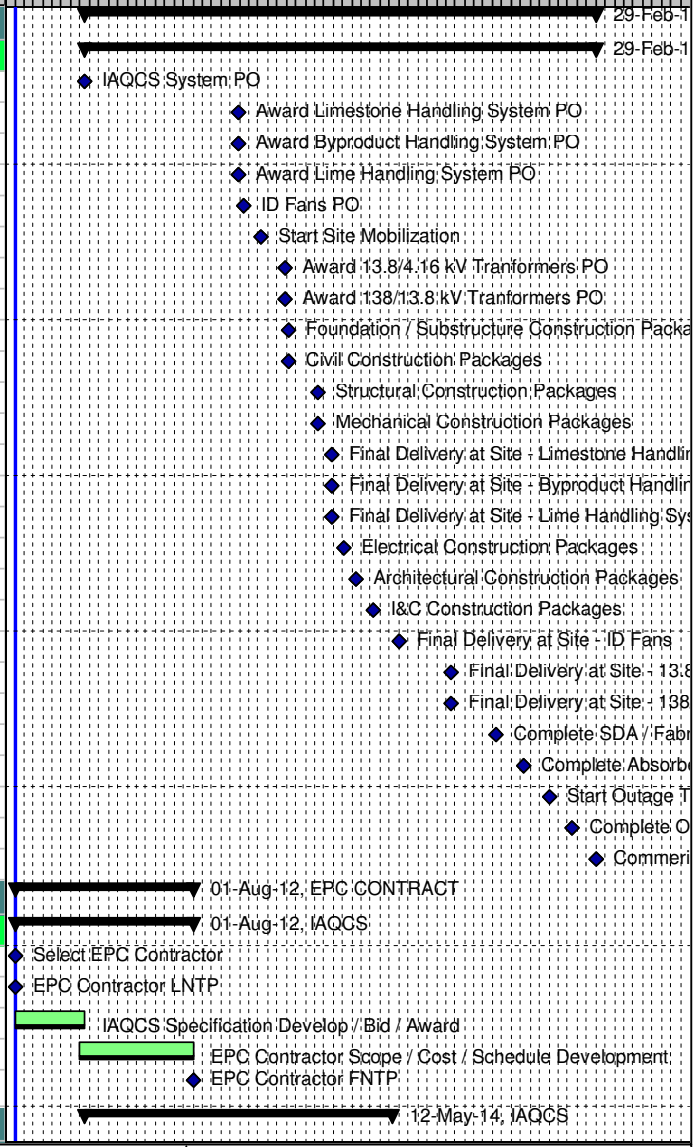
Note: NA = Not Applicable for the technology

ATTACHMENT 4-23
Project Schedule (IAQCS – Non-Phased)

Attachment 4-23

Big Sandy - Level 2 Schedule Layout | **Big Sandy IAQCS (Non-Phased)** | **Data Date: 03-Jan-11 12:00 AM**

.	Activity ID	Activity Name	Dur	Start	Finish
	KEY PROJECT MILESTONES		1168	18-Aug-11	29-Feb-16
	Key Project Milestones		1168	18-Aug-11	29-Feb-16
	MS.SL.200	IAQCS System PO	0		18-Aug-11
	MS.SL.070	Award Limestone Handling System PO	0		28-Dec-12
	MS.SL.080	Award Byproduct Handling System PO	0		28-Dec-12
	MS.SL.120	Award Lime Handling System PO	0		28-Dec-12
	MS.SL.210	ID Fans PO	0		11-Jan-13
	MS.SL.190	Start Site Mobilization	0		11-Mar-13
	MS.SL.090	Award 13.8/4.16 kV Tranformers PO	0		27-May-13
	MS.SL.230	Award 138/13.8 kV Tranformers PO	0		27-May-13
	MS.SL.240	Foundation / Substructure Construction Packages	0		10-Jun-13
	MS.SL.140	Civil Construction Packages	0		10-Jun-13
	MS.SL.150	Structural Construction Packages	0		09-Sep-13
	MS.SL.160	Mechanical Construction Packages	0		09-Sep-13
	MS.SL.110	Final Delivery at Site - Limestone Handling System	0		24-Oct-13
	MS.SL.270	Final Delivery at Site - Byproduct Handling System	0		24-Oct-13
	MS.SL.260	Final Delivery at Site - Lime Handling System	0		24-Oct-13
	MS.SL.170	Electrical Construction Packages	0		05-Dec-13
	MS.SL.250	Architectural Construction Packages	0		13-Jan-14
	MS.SL.180	I&C Construction Packages	0		07-Mar-14
	MS.SL.100	Final Delivery at Site - ID Fans	0		04-Jun-14
	MS.SL.130	Final Delivery at Site - 13.8/4.16 kV Tranformers	0		17-Nov-14
	MS.SL.220	Final Delivery at Site - 138/13.8 kV Tranformers	0		17-Nov-14
	MS.TC.230	Complete SDA / Fabric Filter Erection	0		13-Apr-15
	MS.TC.200	Complete Absorber Erection	0		13-Jul-15
	MS.TC.210	Start Outage Tie-in	0		01-Oct-15
	MS.TC.220	Complete Outage Tie-in	0		15-Dec-15
	MS.TC.240	Commerical Operation	0		29-Feb-16
	EPC CONTRACT		409	03-Jan-11	01-Aug-12
	IAQCS		409	03-Jan-11	01-Aug-12
	EPC1000	Select EPC Contractor	0		03-Jan-11
	EPC1010	EPC Contractor LNTP	0		03-Jan-11
	EPC1020	IAQCS Specification Develop / Bid / Award	163	03-Jan-11	18-Aug-11
	EPC1030	EPC Contractor Scope / Cost / Schedule Development	260	01-Aug-11	01-Aug-12
	EPC1040	EPC Contractor FNTP	0		01-Aug-12
	IAQCS		704	18-Aug-11	12-May-14

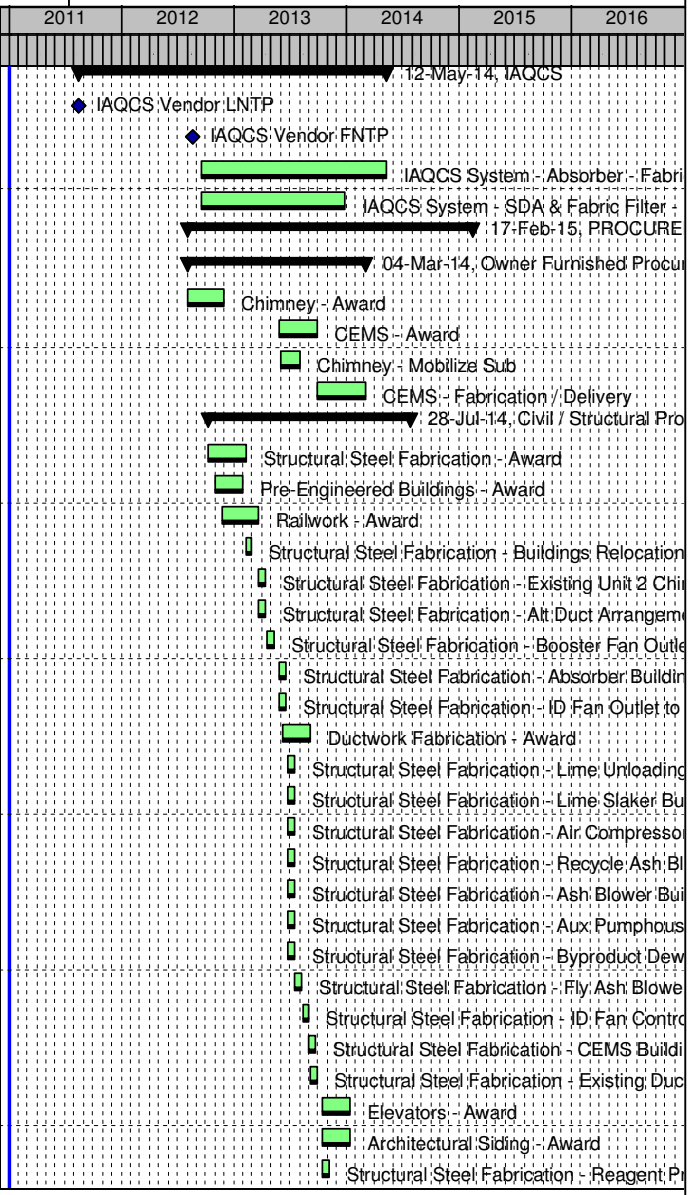


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

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Activity ID	Activity Name	Dur	Start	Finish
IAQCS		704	18-Aug-11	12-May-14
SL.P-6815.10	IAQCS Vendor LNTP	0		18-Aug-11
SL.P-6815.50	IAQCS Vendor FNTP	0		20-Aug-12
SL.P-6815.90	IAQCS System - Absorber - Fabrication / Delivery	426	17-Sep-12	12-May-14
SL.P-6815.100	IAQCS System - SDA & Fabric Filter - Fabrication / Delivery	329	17-Sep-12	24-Dec-13
PROCUREMENT		657	01-Aug-12	17-Feb-15
Owner Furnished Procurement		409	01-Aug-12	04-Mar-14
SL.P-6800.00	Chimney - Award	85	01-Aug-12*	27-Nov-12
SL.P-6892.00	CEMS - Award	85	30-May-13	27-Sep-13
SL.P-6800.90	Chimney - Mobilize Sub	45	31-May-13	02-Aug-13
SL.P-6892.90	CEMS - Fabrication / Delivery	110	27-Sep-13	04-Mar-14
Civil / Structural Procurement - Award		461	11-Oct-12	28-Jul-14
SL.P-6804.00	Structural Steel Fabrication - Award	85	11-Oct-12	08-Feb-13
SL.P-6811.00	Pre-Engineered Buildings - Award	65	30-Oct-12	30-Jan-13
SL.P-6809.00	Railwork - Award	85	22-Nov-12	22-Mar-13
SL.P-6804.5P	Structural Steel Fabrication - Buildings Relocation Package	15	11-Feb-13	01-Mar-13
SL.P-6804.5N	Structural Steel Fabrication - Existing Unit 2 Chimney Demo Package	15	21-Mar-13	11-Apr-13
SL.P-6804.5R	Structural Steel Fabrication - Alt Duct Arrangement w/o ESP Package	15	21-Mar-13	11-Apr-13
SL.P-6804.5B	Structural Steel Fabrication - Booster Fan Outlet to ID Fan Inlet Pack...	15	18-Apr-13	09-May-13
SL.P-6804.5J	Structural Steel Fabrication - Absorber Building w/ EE Room Package	15	30-May-13	19-Jun-13
SL.P-6804.5M	Structural Steel Fabrication - ID Fan Outlet to Absorber Inlet Package	15	30-May-13	20-Jun-13
SL.P-6805.00	Ductwork Fabrication - Award	63	06-Jun-13	04-Sep-13
SL.P-6804.5E	Structural Steel Fabrication - Lime Unloading Blower / Elec Bldg Pack...	15	27-Jun-13	18-Jul-13
SL.P-6804.5K	Structural Steel Fabrication - Lime Slaker Building Package	15	27-Jun-13	18-Jul-13
SL.P-6804.5C	Structural Steel Fabrication - Air Compressor Building Package	15	27-Jun-13	18-Jul-13
SL.P-6804.5D	Structural Steel Fabrication - Recycle Ash Blower Bldg w/ Rec Silo P...	15	27-Jun-13	18-Jul-13
SL.P-6804.5T	Structural Steel Fabrication - Ash Blower Building w/ EE Room Package	15	27-Jun-13	18-Jul-13
SL.P-6804.5Y	Structural Steel Fabrication - Aux Pumphouse Bldg w/ EE Room Pack...	15	27-Jun-13	18-Jul-13
SL.P-6804.5Z	Structural Steel Fabrication - Byproduct Dewatering w/ EE Room Pac...	15	27-Jun-13	18-Jul-13
SL.P-6804.5U	Structural Steel Fabrication - Fly Ash Blower Bldg w/ EE Room Package	15	19-Jul-13	09-Aug-13
SL.P-6804.5L	Structural Steel Fabrication - ID Fan Control Room Package	15	12-Aug-13	02-Sep-13
SL.P-6804.5A	Structural Steel Fabrication - CEMS Building Package	15	30-Aug-13	20-Sep-13
SL.P-6804.5Q	Structural Steel Fabrication - Existing Ductwork Reinforcements Pack...	15	06-Sep-13	27-Sep-13
SL.P-6807.00	Elevators - Award	63	14-Oct-13	14-Jan-14
SL.P-6808.00	Architectural Siding - Award	63	14-Oct-13	14-Jan-14
SL.P-6804.5G	Structural Steel Fabrication - Reagent Prep Building Package	15	14-Oct-13	04-Nov-13

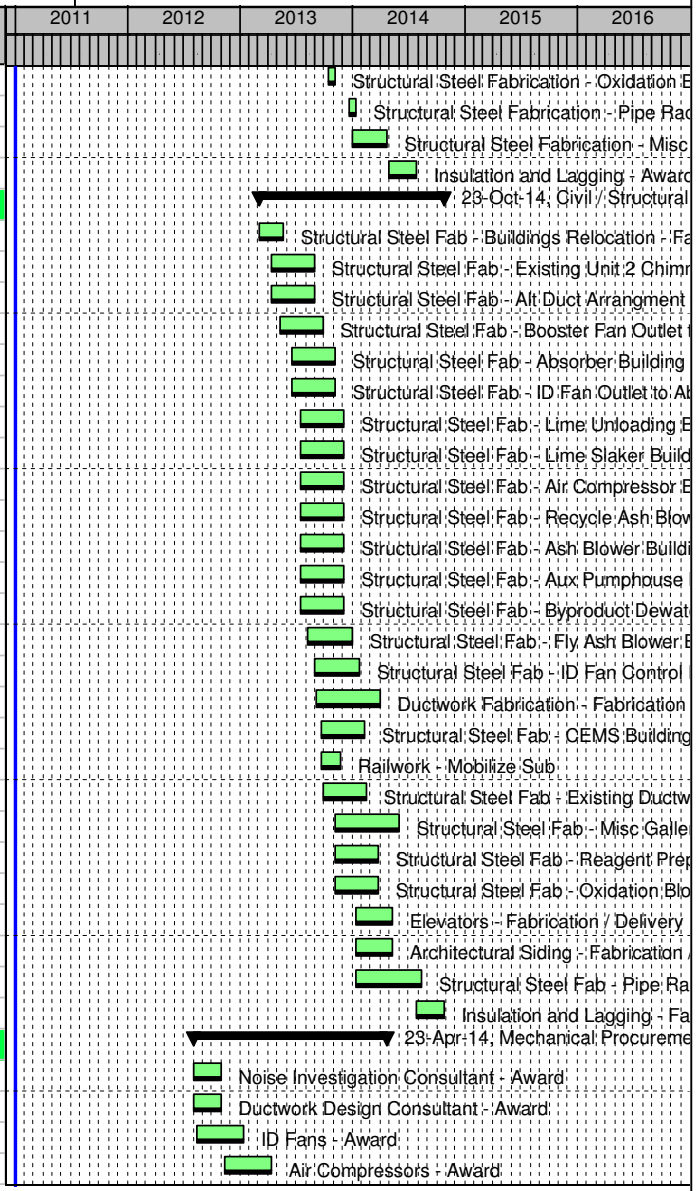


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

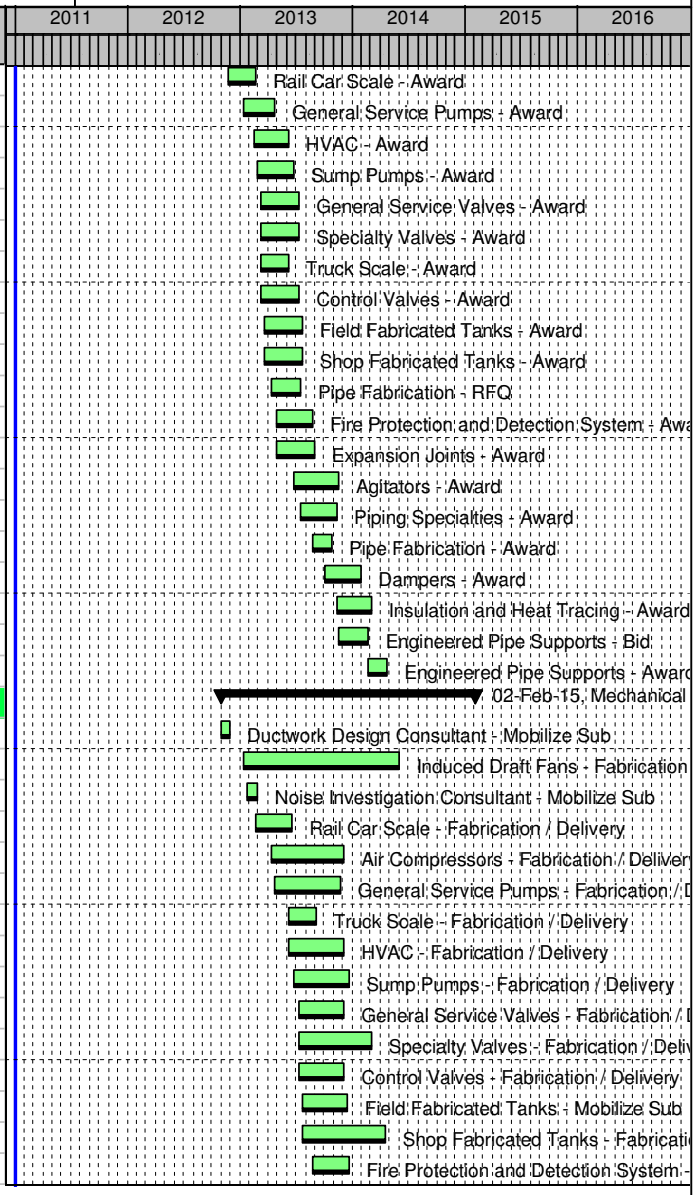
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Activity ID	Activity Name	Dur	Start	Finish
SL.P-6804.5H	Structural Steel Fabrication - Oxidation Blower Building Package	15	14-Oct-13	04-Nov-13
SL.P-6804.5F	Structural Steel Fabrication - Pipe Rack Package	15	23-Dec-13	15-Jan-14
SL.P-6804.5X	Structural Steel Fabrication - Misc Gallieries, Platforms & Walkways ...	80	31-Dec-13	23-Apr-14
SL.P-6806.00	Insulation and Lagging - Award	63	28-Apr-14	28-Jul-14
Civil / Structural Procurement - Delivery / Mobilization		425	04-Mar-13	23-Oct-14
SL.P-6804.9P	Structural Steel Fab - Buildings Relocation - Fab / Delivery	60	04-Mar-13	24-May-13
SL.P-6804.9N	Structural Steel Fab - Existing Unit 2 Chimney Demo - Fab / Delivery	100	11-Apr-13	30-Aug-13
SL.P-6804.9R	Structural Steel Fab - Alt Duct Arrangment w/o ESP - Fab / Delivery	100	11-Apr-13	30-Aug-13
SL.P-6804.9B	Structural Steel Fab - Booster Fan Outlet to ID Fan Inlet - Fab / Delivery	100	09-May-13	27-Sep-13
SL.P-6804.9J	Structural Steel Fab - Absorber Building w/ EE Room - Fab / Delivery	100	20-Jun-13	07-Nov-13
SL.P-6804.9M	Structural Steel Fab - ID Fan Outlet to Absorber Inlet - Fab / Delivery	100	20-Jun-13	08-Nov-13
SL.P-6804.9E	Structural Steel Fab - Lime Unloading Blower / Elec Bldg - Fab / Deliv...	100	19-Jul-13	05-Dec-13
SL.P-6804.9K	Structural Steel Fab - Lime Slaker Building - Fab / Delivery	100	19-Jul-13	05-Dec-13
SL.P-6804.9C	Structural Steel Fab - Air Compressor Building - Fab / Delivery	100	19-Jul-13	05-Dec-13
SL.P-6804.9D	Structural Steel Fab - Recycle Ash Blower Bldg w/ Rec Silo - Fab / De...	100	19-Jul-13	05-Dec-13
SL.P-6804.9T	Structural Steel Fab - Ash Blower Building w/ EE Room - Fab / Delivery	100	19-Jul-13	05-Dec-13
SL.P-6804.9Y	Structural Steel Fab - Aux Pumphouse Bldg w/ EE Room - Fab / Deliv...	100	19-Jul-13	05-Dec-13
SL.P-6804.9Z	Structural Steel Fab - Byproduct Dewatering w/ EE Room - Fab / Deli...	100	19-Jul-13	05-Dec-13
SL.P-6804.9U	Structural Steel Fab - Fly Ash Blower Bldg w/ EE Room - Fab / Delivery	100	09-Aug-13	30-Dec-13
SL.P-6804.9L	Structural Steel Fab - ID Fan Control Room - Fab / Delivery	100	02-Sep-13	22-Jan-14
SL.P-6805.90	Ductwork Fabrication - Fabrication / Delivery	148	04-Sep-13	03-Apr-14
SL.P-6804.9A	Structural Steel Fab - CEMS Building - Fab / Delivery	100	20-Sep-13	11-Feb-14
SL.P-6809.90	Railwork - Mobilize Sub	45	24-Sep-13	25-Nov-13
SL.P-6804.9Q	Structural Steel Fab - Existing Ductwork Reinforcements - Fab / Deliv...	100	27-Sep-13	18-Feb-14
SL.P-6804.9X	Structural Steel Fab - Misc Galleries, Platforms & Walkways - Fab / D...	150	04-Nov-13	04-Jun-14
SL.P-6804.9G	Structural Steel Fab - Reagent Prep Building - Fab / Delivery	100	04-Nov-13	26-Mar-14
SL.P-6804.9H	Structural Steel Fab - Oxidation Blower Building - Fab / Delivery	100	04-Nov-13	26-Mar-14
SL.P-6807.90	Elevators - Fabrication / Delivery	85	14-Jan-14	12-May-14
SL.P-6808.90	Architectural Siding - Fabrication / Delivery	85	14-Jan-14	12-May-14
SL.P-6804.9F	Structural Steel Fab - Pipe Rack - Fab / Delivery	150	15-Jan-14	14-Aug-14
SL.P-6806.90	Insulation and Lagging - Fabrication / Delivery	63	28-Jul-14	23-Oct-14
Mechanical Procurement - Award		444	02-Aug-12	23-Apr-14
SL.P-6820.00	Noise Investigation Consultant - Award	63	02-Aug-12	30-Oct-12
SL.P-6821.00	Ductwork Design Consultant - Award	63	02-Aug-12	30-Oct-12
SL.P-6822.00	ID Fans - Award	106	14-Aug-12	11-Jan-13
SL.P-6823.00	Air Compressors - Award	106	13-Nov-12	12-Apr-13



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Activity ID	Activity Name	Dur	Start	Finish
SL.P-6853.00	Rail Car Scale - Award	63	22-Nov-12	21-Feb-13
SL.P-6826.00	General Service Pumps - Award	75	11-Jan-13	26-Apr-13
SL.P-6834.00	HVAC - Award	80	18-Feb-13	07-Jun-13
SL.P-6827.00	Sump Pumps - Award	85	26-Feb-13	24-Jun-13
SL.P-6830.00	General Service Valves - Award	85	12-Mar-13	09-Jul-13
SL.P-6831.00	Specialty Valves - Award	85	12-Mar-13	09-Jul-13
SL.P-6852.00	Truck Scale - Award	63	12-Mar-13	07-Jun-13
SL.P-6878.00	Control Valves - Award	85	12-Mar-13	09-Jul-13
SL.P-6828.00	Field Fabricated Tanks - Award	85	22-Mar-13	22-Jul-13
SL.P-6829.00	Shop Fabricated Tanks - Award	85	22-Mar-13	22-Jul-13
SL.P-6835.00	Pipe Fabrication - RFQ	65	12-Apr-13	15-Jul-13
SL.P-6838.00	Fire Protection and Detection System - Award	85	29-Apr-13	26-Aug-13
SL.P-6824.00	Expansion Joints - Award	85	02-May-13	30-Aug-13
SL.P-6836.00	Agitators - Award	106	24-Jun-13	20-Nov-13
SL.P-6833.00	Piping Specialties - Award	85	15-Jul-13	11-Nov-13
SL.P-6835.10	Pipe Fabrication - Award	45	26-Aug-13	28-Oct-13
SL.P-6825.00	Dampers - Award	85	02-Oct-13	31-Jan-14
SL.P-6837.00	Insulation and Heat Tracing - Award	80	11-Nov-13	05-Mar-14
SL.P-6832.00	Engineered Pipe Supports - Bid	65	18-Nov-13	19-Feb-14
SL.P-6832.10	Engineered Pipe Supports - Award	45	19-Feb-14	23-Apr-14
Mechanical Procurement - Delivery / Mobilization		581	30-Oct-12	02-Feb-15
SL.P-6821.90	Ductwork Design Consultant - Mobilize Sub	21	30-Oct-12	28-Nov-12
SL.P-6822.90	Induced Draft Fans - Fabrication / Delivery	360	11-Jan-13	04-Jun-14
SL.P-6820.90	Noise Investigation Consultant - Mobilize Sub	21	25-Jan-13	25-Feb-13
SL.P-6853.90	Rail Car Scale - Fabrication / Delivery	85	21-Feb-13	20-Jun-13
SL.P-6823.90	Air Compressors - Fabrication / Delivery	169	12-Apr-13	06-Dec-13
SL.P-6826.90	General Service Pumps - Fabrication / Delivery	148	26-Apr-13	21-Nov-13
SL.P-6852.90	Truck Scale - Fabrication / Delivery	63	07-Jun-13	05-Sep-13
SL.P-6834.90	HVAC - Fabrication / Delivery	127	10-Jun-13	04-Dec-13
SL.P-6827.90	Sump Pumps - Fabrication / Delivery	127	24-Jun-13	19-Dec-13
SL.P-6830.90	General Service Valves - Fabrication / Delivery	106	09-Jul-13	04-Dec-13
SL.P-6831.90	Specialty Valves - Fabrication / Delivery	169	09-Jul-13	05-Mar-14
SL.P-6878.90	Control Valves - Fabrication / Delivery	106	09-Jul-13	04-Dec-13
SL.P-6828.90	Field Fabricated Tanks - Mobilize Sub	106	22-Jul-13	17-Dec-13
SL.P-6829.90	Shop Fabricated Tanks - Fabrication / Delivery	190	22-Jul-13	17-Apr-14
SL.P-6838.90	Fire Protection and Detection System - Fabrication / Delivery	85	27-Aug-13	23-Dec-13

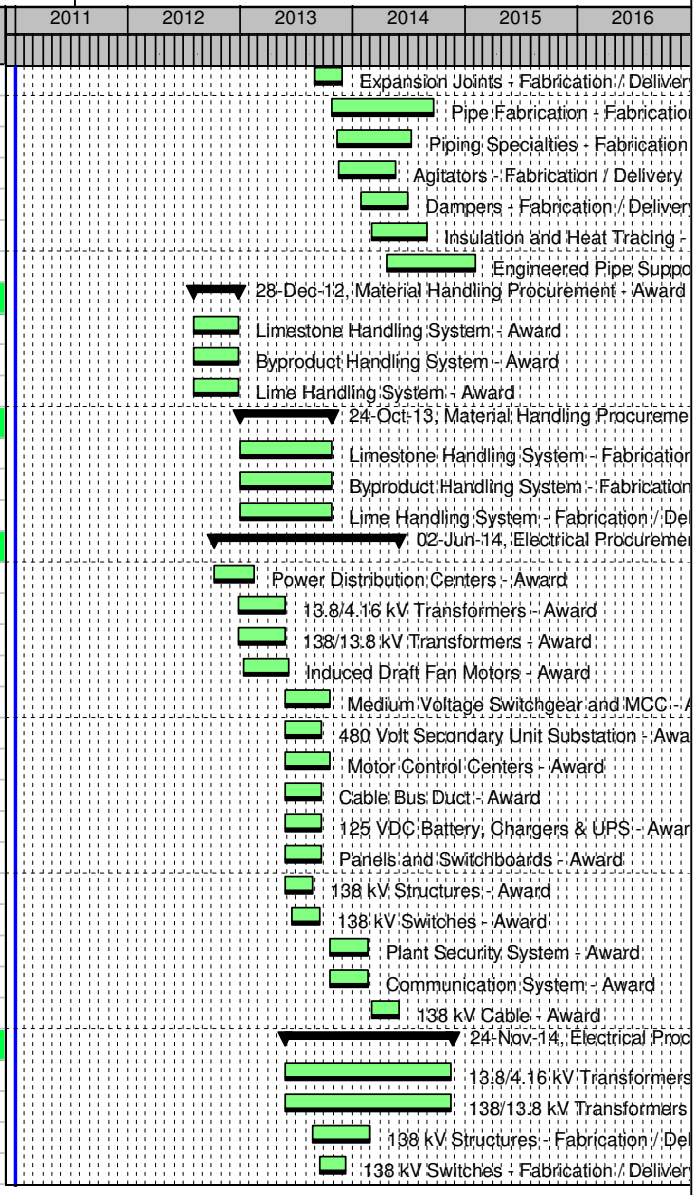


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

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Activity ID	Activity Name	Dur	Start	Finish
SL.P-6824.90	Expansion Joints - Fabrication / Delivery	63	30-Aug-13	27-Nov-13
SL.P-6835.90	Pipe Fabrication - Fabrication / Delivery	233	28-Oct-13	23-Sep-14
SL.P-6833.90	Piping Specialties - Fabrication / Delivery	169	11-Nov-13	09-Jul-14
SL.P-6836.90	Agitators - Fabrication / Delivery	127	20-Nov-13	20-May-14
SL.P-6825.90	Dampers - Fabrication / Delivery	106	31-Jan-14	30-Jun-14
SL.P-6837.90	Insulation and Heat Tracing - Fabrication / Delivery	127	05-Mar-14	01-Sep-14
SL.P-6832.90	Engineered Pipe Supports - Fabrication / Delivery	200	23-Apr-14	02-Feb-15
Material Handling Procurement - Award		106	02-Aug-12	28-Dec-12
SL.P-6850.00	Limestone Handling System - Award	106	02-Aug-12	28-Dec-12
SL.P-6873.00	Byproduct Handling System - Award	106	02-Aug-12	28-Dec-12
SL.P-6851.00	Lime Handling System - Award	106	02-Aug-12	28-Dec-12
Material Handling Procurement - Delivery / Mobilization		212	31-Dec-12	24-Oct-13
SL.P-6850.90	Limestone Handling System - Fabrication / Delivery	212	31-Dec-12	24-Oct-13
SL.P-6873.90	Byproduct Handling System - Fabrication / Delivery	212	31-Dec-12	24-Oct-13
SL.P-6851.90	Lime Handling System - Fabrication / Delivery	212	31-Dec-12	24-Oct-13
Electrical Procurement - Award		423	11-Oct-12	02-Jun-14
SL.P-6810.00	Power Distribution Centers - Award	90	11-Oct-12	15-Feb-13
SL.P-6861.00	13.8/4.16 kV Transformers - Award	106	28-Dec-12	27-May-13
SL.P-6872.10	138/13.8 kV Transformers - Award	106	28-Dec-12	27-May-13
SL.P-6860.00	Induced Draft Fan Motors - Award	106	11-Jan-13	10-Jun-13
SL.P-6862.00	Medium Voltage Switchgear and MCC - Award	106	28-May-13	23-Oct-13
SL.P-6863.00	480 Volt Secondary Unit Substation - Award	85	28-May-13	24-Sep-13
SL.P-6864.00	Motor Control Centers - Award	106	28-May-13	23-Oct-13
SL.P-6865.00	Cable Bus Duct - Award	85	28-May-13	24-Sep-13
SL.P-6866.00	125 VDC Battery, Chargers & UPS - Award	85	28-May-13	24-Sep-13
SL.P-6867.00	Panels and Switchboards - Award	85	28-May-13	24-Sep-13
SL.P-6877.00	138 kV Structures - Award	63	28-May-13	26-Aug-13
SL.P-6876.00	138 kV Switches - Award	63	18-Jun-13	16-Sep-13
SL.P-6869.00	Plant Security System - Award	85	23-Oct-13	21-Feb-14
SL.P-6870.00	Communication System - Award	85	23-Oct-13	21-Feb-14
SL.P-6871.00	138 kV Cable - Award	63	05-Mar-14	02-Jun-14
Electrical Procurement - Delivery / Mobilization		386	28-May-13	24-Nov-14
SL.P-6861.90	13.8/4.16 kV Transformers - Fabrication / Delivery	381	28-May-13	17-Nov-14
SL.P-6872.90	138/13.8 kV Transformers - Fabrication / Delivery	381	28-May-13	17-Nov-14
SL.P-6877.90	138 kV Structures - Fabrication / Delivery	130	26-Aug-13	26-Feb-14
SL.P-6876.90	138 kV Switches - Fabrication / Delivery	63	16-Sep-13	12-Dec-13

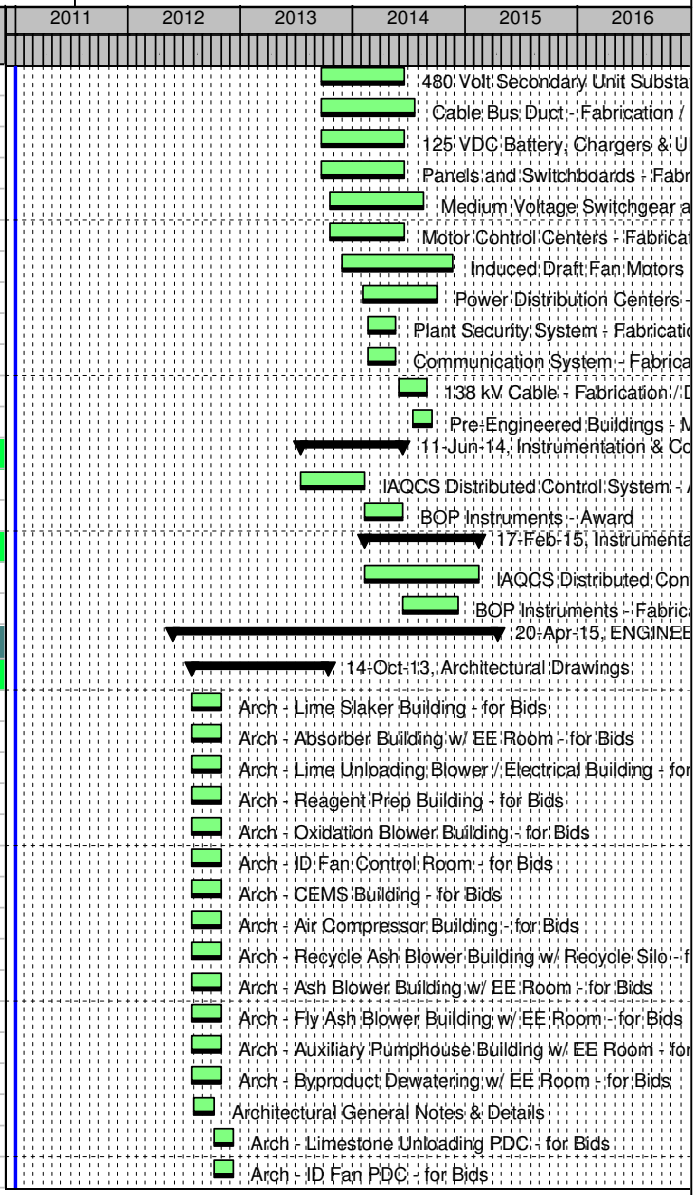


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

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Activity ID	Activity Name	Dur	Start	Finish
SL.P-6863.90	480 Volt Secondary Unit Substation - Fabrication / Delivery	190	24-Sep-13	20-Jun-14
SL.P-6865.90	Cable Bus Duct - Fabrication / Delivery	212	24-Sep-13	22-Jul-14
SL.P-6866.90	125 VDC Battery, Chargers & UPS - Fabrication / Delivery	190	24-Sep-13	20-Jun-14
SL.P-6867.90	Panels and Switchboards - Fabrication / Delivery	190	24-Sep-13	20-Jun-14
SL.P-6862.90	Medium Voltage Switchgear and MCC - Fabrication / Delivery	212	23-Oct-13	20-Aug-14
SL.P-6864.90	Motor Control Centers - Fabrication / Delivery	169	23-Oct-13	20-Jun-14
SL.P-6860.90	Induced Draft Fan Motors - Fabrication / Delivery	254	28-Nov-13	24-Nov-14
SL.P-6810.90	Power Distribution Centers - Fabrication / Delivery	169	05-Feb-14	01-Oct-14
SL.P-6869.90	Plant Security System - Fabrication / Delivery	63	21-Feb-14	21-May-14
SL.P-6870.90	Communication System - Fabrication / Delivery	63	21-Feb-14	21-May-14
SL.P-6871.90	138 kV Cable - Fabrication / Delivery	63	02-Jun-14	01-Sep-14
SL.P-681a.90	Pre-Engineered Buildings - Mobilize Sub	45	17-Jul-14	18-Sep-14
Instrumentation & Controls Procurement - Award		233	17-Jul-13	11-Jun-14
SL.P-6890.00	IAQCS Distributed Control System - Award	148	17-Jul-13	12-Feb-14
SL.P-6891.00	BOP Instruments - Award	85	12-Feb-14	11-Jun-14
Instrumentation & Controls Procurement - Delivery / Mobilization		261	12-Feb-14	17-Feb-15
SL.P-6890.90	IAQCS Distributed Control System - Fabrication / Delivery	261	12-Feb-14	17-Feb-15
SL.P-6891.90	BOP Instruments - Fabrication / Delivery	127	11-Jun-14	08-Dec-14
ENGINEERING / DESIGN		744	30-May-12	20-Apr-15
Architectural Drawings		312	31-Jul-12	14-Oct-13
SL.CA1200.00	Arch - Lime Slaker Building - for Bids	65	31-Jul-12	29-Oct-12
SL.CA1800.00	Arch - Absorber Building w/ EE Room - for Bids	65	31-Jul-12	29-Oct-12
SL.CA2500.00	Arch - Lime Unloading Blower / Electrical Building - for Bids	65	31-Jul-12	29-Oct-12
SL.CA3400.00	Arch - Reagent Prep Building - for Bids	65	31-Jul-12	29-Oct-12
SL.CA1500.00	Arch - Oxidation Blower Building - for Bids	65	31-Jul-12	29-Oct-12
SL.CA2100.00	Arch - ID Fan Control Room - for Bids	65	31-Jul-12	29-Oct-12
SL.CA1100.00	Arch - CEMS Building - for Bids	65	31-Jul-12	29-Oct-12
SL.CA1000.00	Arch - Air Compressor Building - for Bids	65	31-Jul-12	29-Oct-12
SL.CA5800.00	Arch - Recycle Ash Blower Building w/ Recycle Silo - for Bids	65	31-Jul-12	29-Oct-12
SL.CA5700.00	Arch - Ash Blower Building w/ EE Room - for Bids	65	31-Jul-12	29-Oct-12
SL.CA6200.00	Arch - Fly Ash Blower Building w/ EE Room - for Bids	65	31-Jul-12	29-Oct-12
SL.CA4400.00	Arch - Auxiliary Pumphouse Building w/ EE Room - for Bids	65	31-Jul-12	29-Oct-12
SL.CA8300.00	Arch - Byproduct Dewatering w/ EE Room - for Bids	65	31-Jul-12	29-Oct-12
SL.CA6000.00	Architectural General Notes & Details	50	02-Aug-12	10-Oct-12
SL.CA3500.00	Arch - Limestone Unloading PDC - for Bids	45	11-Oct-12	12-Dec-12
SL.CA2200.00	Arch - ID Fan PDC - for Bids	45	11-Oct-12	12-Dec-12

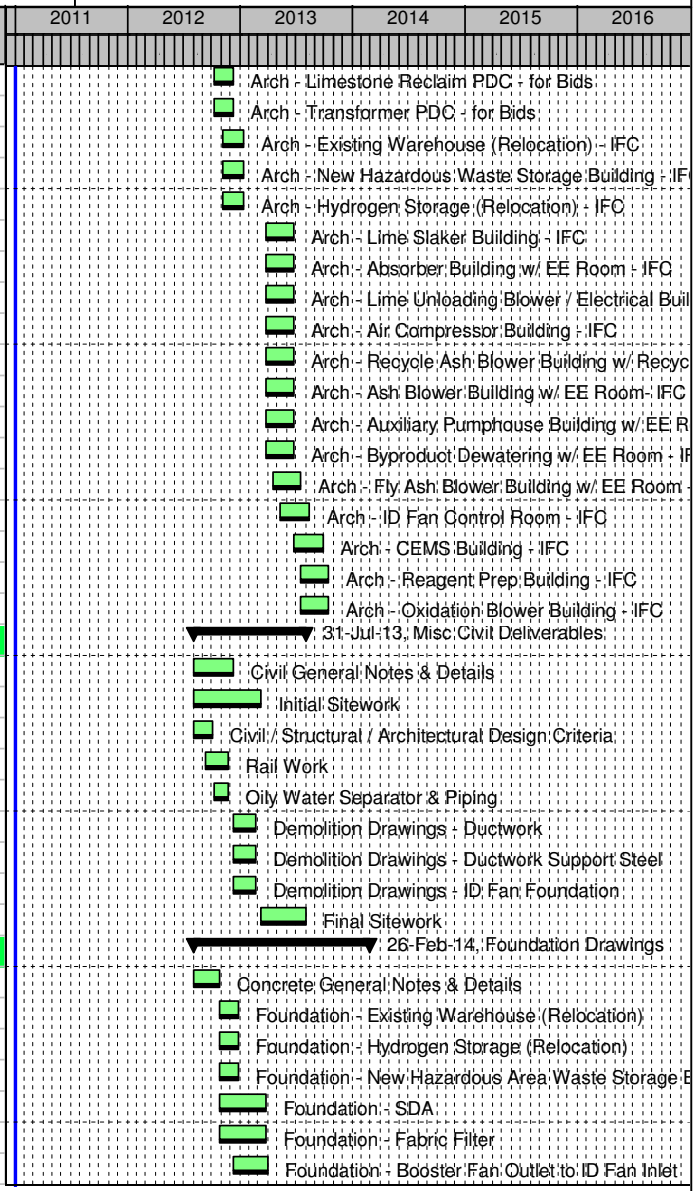


Remaining Level of Effort | Actual Level of Effort | Actual Work
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TASK filter: All Activities

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Activity ID	Activity Name	Dur	Start	Finish
SL.CA3600.00	Arch - Limestone Reclaim PDC - for Bids	45	11-Oct-12	12-Dec-12
SL.CA3700.00	Arch - Transformer PDC - for Bids	45	11-Oct-12	12-Dec-12
SL.CA4500.00	Arch - Existing Warehouse (Relocation) - IFC	45	08-Nov-12	11-Jan-13
SL.CA4700.00	Arch - New Hazardous Waste Storage Building - IFC	45	08-Nov-12	11-Jan-13
SL.CA4800.00	Arch - Hydrogen Storage (Relocation) - IFC	45	08-Nov-12	11-Jan-13
SL.CA1200.50	Arch - Lime Slaker Building - IFC	65	28-Mar-13	26-Jun-13
SL.CA1800.50	Arch - Absorber Building w/ EE Room - IFC	65	28-Mar-13	26-Jun-13
SL.CA2500.50	Arch - Lime Unloading Blower / Electrical Building - IFC	65	28-Mar-13	26-Jun-13
SL.CA1000.50	Arch - Air Compressor Building - IFC	65	28-Mar-13	26-Jun-13
SL.CA5800.50	Arch - Recycle Ash Blower Building w/ Recycle Silo - IFC	65	28-Mar-13	26-Jun-13
SL.CA5700.50	Arch - Ash Blower Building w/ EE Room- IFC	65	28-Mar-13	26-Jun-13
SL.CA4400.50	Arch - Auxiliary Pumphouse Building w/ EE Room- IFC	65	28-Mar-13	26-Jun-13
SL.CA8300.50	Arch - Byproduct Dewatering w/ EE Room - IFC	65	28-Mar-13	26-Jun-13
SL.CA6200.50	Arch - Fly Ash Blower Building w/ EE Room - IFC	65	18-Apr-13	19-Jul-13
SL.CA2100.50	Arch - ID Fan Control Room - IFC	65	10-May-13	12-Aug-13
SL.CA1100.50	Arch - CEMS Building - IFC	65	27-Jun-13	27-Sep-13
SL.CA3400.50	Arch - Reagent Prep Building - IFC	65	15-Jul-13	14-Oct-13
SL.CA1500.50	Arch - Oxidation Blower Building - IFC	65	15-Jul-13	14-Oct-13
Misc Civil Deliverables		257	02-Aug-12	31-Jul-13
SL.CC1000.00	Civil General Notes & Details	94	02-Aug-12	11-Dec-12
SL.CC4000.00	Initial Sitework	156	02-Aug-12	11-Mar-13
SL.CC0800.00	Civil / Structural / Architectural Design Criteria	45	02-Aug-12	03-Oct-12
SL.CC7200.00	Rail Work	50	13-Sep-12	21-Nov-12
SL.CC5300.00	Oily Water Separator & Piping	30	11-Oct-12	21-Nov-12
SL.CC1500.00	Demolition Drawings - Ductwork	50	12-Dec-12	21-Feb-13
SL.CC1600.00	Demolition Drawings - Ductwork Support Steel	50	12-Dec-12	21-Feb-13
SL.CC1700.00	Demolition Drawings - ID Fan Foundation	50	12-Dec-12	21-Feb-13
SL.CC3000.00	Final Sitework	101	12-Mar-13	31-Jul-13
Foundation Drawings		405	02-Aug-12	26-Feb-14
SL.CK1200.00	Concrete General Notes & Details	60	02-Aug-12	24-Oct-12
SL.CK3700.00	Foundation - Existing Warehouse (Relocation)	45	25-Oct-12	27-Dec-12
SL.CK3100.00	Foundation - Hydrogen Storage (Relocation)	45	25-Oct-12	27-Dec-12
SL.CK3800.00	Foundation - New Hazardous Area Waste Storage Building	45	25-Oct-12	27-Dec-12
SL.CK3300.00	Foundation - SDA	110	25-Oct-12	29-Mar-13
SL.CK3350.00	Foundation - Fabric Filter	110	25-Oct-12	29-Mar-13
SL.CK7100.00	Foundation - Booster Fan Outlet to ID Fan Inlet	80	11-Dec-12	04-Apr-13

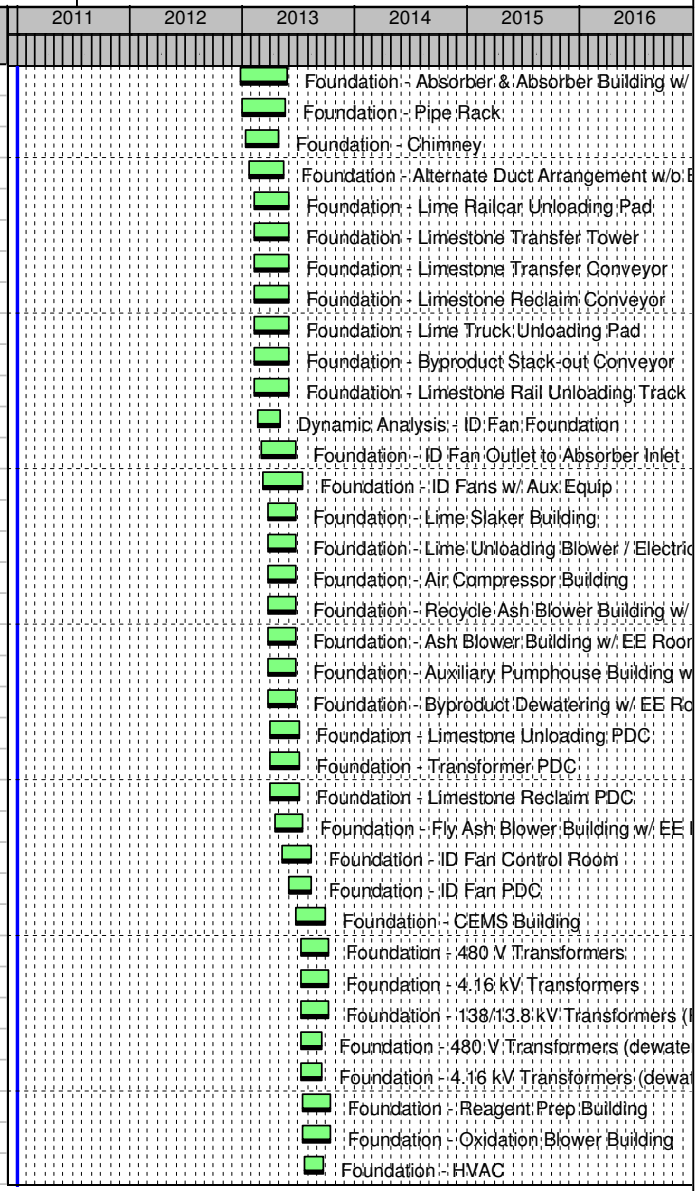


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

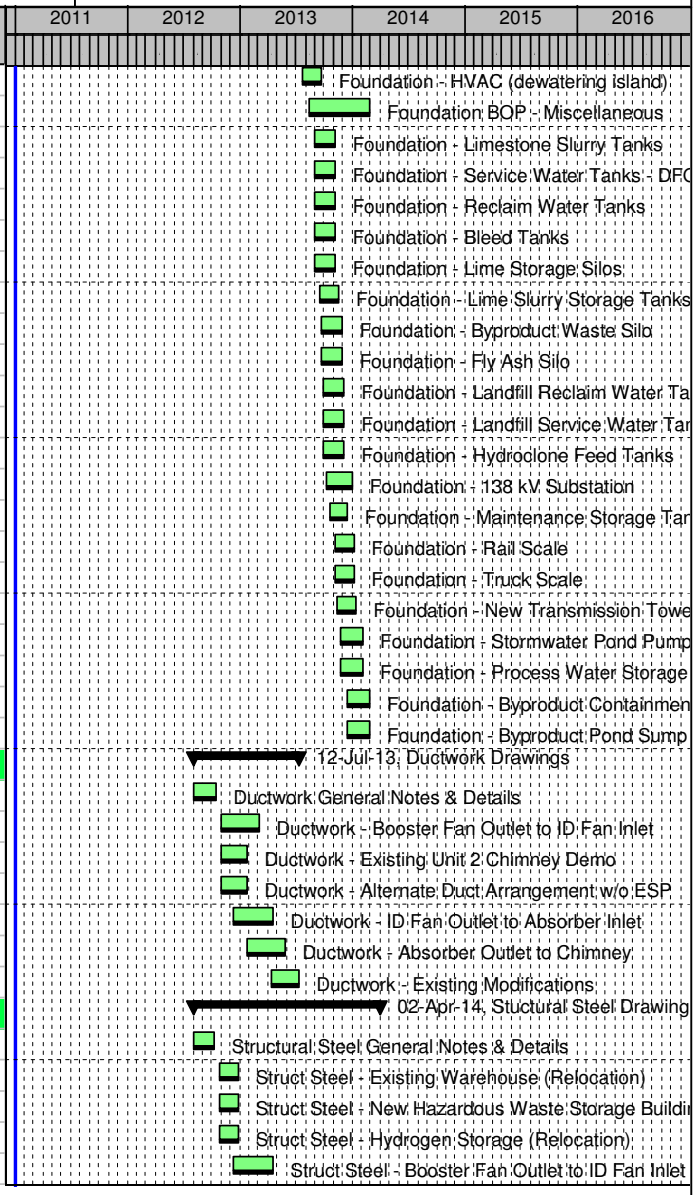
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Activity ID	Activity Name	Dur	Start	Finish
SL.CK3200.00	Foundation - Absorber & Absorber Building w/ EE Room	110	26-Dec-12	29-May-13
SL.CK4700.00	Foundation - Pipe Rack	100	04-Jan-13	24-May-13
SL.CK3500.00	Foundation - Chimney	80	11-Jan-13	02-May-13
SL.CK5600.00	Foundation - Alternate Duct Arrangement w/o ESP	80	24-Jan-13	16-May-13
SL.CK4100.00	Foundation - Lime Railcar Unloading Pad	80	12-Feb-13	03-Jun-13
SL.CK6500.00	Foundation - Limestone Transfer Tower	80	12-Feb-13	03-Jun-13
SL.CK6600.00	Foundation - Limestone Transfer Conveyor	80	12-Feb-13	03-Jun-13
SL.CK6700.00	Foundation - Limestone Reclaim Conveyor	80	12-Feb-13	03-Jun-13
SL.CK4000.00	Foundation - Lime Truck Unloading Pad	80	12-Feb-13	03-Jun-13
SL.CK6800.00	Foundation - Byproduct Stack-out Conveyor	80	12-Feb-13	03-Jun-13
SL.CK6650.00	Foundation - Limestone Rail Unloading Track Hopper	80	12-Feb-13	03-Jun-13
SL.CK1500.00	Dynamic Analysis - ID Fan Foundation	50	22-Feb-13	03-May-13
SL.CK7300.00	Foundation - ID Fan Outlet to Absorber Inlet	80	07-Mar-13	27-Jun-13
SL.CK3600.00	Foundation - ID Fans w/ Aux Equip	90	08-Mar-13	15-Jul-13
SL.CK2300.00	Foundation - Lime Slaker Building	65	28-Mar-13	26-Jun-13
SL.CK4200.00	Foundation - Lime Unloading Blower / Electrical Building	65	28-Mar-13	26-Jun-13
SL.CK1000.00	Foundation - Air Compressor Building	65	28-Mar-13	26-Jun-13
SL.CK7500.00	Foundation - Recycle Ash Blower Building w/ Recycle Silo	65	28-Mar-13	26-Jun-13
SL.CK7700.00	Foundation - Ash Blower Building w/ EE Room	65	28-Mar-13	26-Jun-13
SL.CK4400.00	Foundation - Auxiliary Pumphouse Building w/ EE Room	65	28-Mar-13	26-Jun-13
SL.CK8300.00	Foundation - Byproduct Dewatering w/ EE Room	65	28-Mar-13	26-Jun-13
SL.CK5400.00	Foundation - Limestone Unloading PDC	70	01-Apr-13	08-Jul-13
SL.CK5500.00	Foundation - Transformer PDC	70	01-Apr-13	08-Jul-13
SL.CK5470.00	Foundation - Limestone Reclaim PDC	70	01-Apr-13	08-Jul-13
SL.CK8200.00	Foundation - Fly Ash Blower Building w/ EE Room	65	18-Apr-13	19-Jul-13
SL.CK3620.00	Foundation - ID Fan Control Room	65	10-May-13	12-Aug-13
SL.CK3640.00	Foundation - ID Fan PDC	50	31-May-13	12-Aug-13
SL.CK1100.00	Foundation - CEMS Building	65	27-Jun-13	27-Sep-13
SL.CK6200.00	Foundation - 480 V Transformers	67	10-Jul-13	10-Oct-13
SL.CK6250.00	Foundation - 4.16 kV Transformers	67	10-Jul-13	10-Oct-13
SL.CK6230.00	Foundation - 138/13.8 kV Transformers (Replacements)	67	10-Jul-13	10-Oct-13
SL.CK6260.00	Foundation - 480 V Transformers (dewatering island)	50	10-Jul-13	17-Sep-13
SL.CK6270.00	Foundation - 4.16 kV Transformers (dewatering island)	50	10-Jul-13	17-Sep-13
SL.CK5300.00	Foundation - Reagent Prep Building	65	15-Jul-13	14-Oct-13
SL.CK2400.00	Foundation - Oxidation Blower Building	65	15-Jul-13	14-Oct-13
SL.CK3400.00	Foundation - HVAC	46	23-Jul-13	24-Sep-13



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Activity ID	Activity Name	Dur	Start	Finish
SL.CK3450.00	Foundation - HVAC (dewatering island)	46	23-Jul-13	24-Sep-13
SL.CK8000.00	Foundation BOP - Miscellaneous	140	12-Aug-13	26-Feb-14
SL.CK4250.00	Foundation - Limestone Slurry Tanks	46	02-Sep-13	05-Nov-13
SL.CK5800.00	Foundation - Service Water Tanks - DFGD	46	02-Sep-13	05-Nov-13
SL.CK5900.00	Foundation - Reclaim Water Tanks	46	02-Sep-13	05-Nov-13
SL.CK7800.00	Foundation - Bleed Tanks	46	02-Sep-13	05-Nov-13
SL.CK4300.00	Foundation - Lime Storage Silos	46	02-Sep-13	05-Nov-13
SL.CK4280.00	Foundation - Lime Slurry Storage Tanks	46	16-Sep-13	19-Nov-13
SL.CK4600.00	Foundation - Byproduct Waste Silo	46	23-Sep-13	26-Nov-13
SL.CK4800.00	Foundation - Fly Ash Silo	46	23-Sep-13	26-Nov-13
SL.CK9100.00	Foundation - Landfill Reclaim Water Tanks	46	30-Sep-13	03-Dec-13
SL.CK9200.00	Foundation - Landfill Service Water Tanks	46	30-Sep-13	03-Dec-13
SL.CK9300.00	Foundation - Hydroclone Feed Tanks	46	30-Sep-13	03-Dec-13
SL.CK6300.00	Foundation - 138 kV Substation	60	07-Oct-13	31-Dec-13
SL.CK6000.00	Foundation - Maintenance Storage Tank	40	21-Oct-13	16-Dec-13
SL.CK4030.00	Foundation - Rail Scale	45	04-Nov-13	08-Jan-14
SL.CK4060.00	Foundation - Truck Scale	45	04-Nov-13	08-Jan-14
SL.CK6350.00	Foundation - New Transmission Tower	45	11-Nov-13	15-Jan-14
SL.CK5100.00	Foundation - Stormwater Pond Pump Structure	50	25-Nov-13	05-Feb-14
SL.CK5200.00	Foundation - Process Water Storage Basin Sump	50	25-Nov-13	05-Feb-14
SL.CK8600.00	Foundation - Byproduct Containment Wall & Wind Screen	50	16-Dec-13	26-Feb-14
SL.CK8700.00	Foundation - Byproduct Pond Sump Structure	50	16-Dec-13	26-Feb-14
Ductwork Drawings		243	02-Aug-12	12-Jul-13
SL.CS2500.00	Ductwork General Notes & Details	55	02-Aug-12	17-Oct-12
SL.CS1200.00	Ductwork - Booster Fan Outlet to ID Fan Inlet	90	30-Oct-12	07-Mar-13
SL.CS1700.00	Ductwork - Existing Unit 2 Chimney Demo	60	30-Oct-12	24-Jan-13
SL.CS1800.00	Ductwork - Alternate Duct Arrangement w/o ESP	60	30-Oct-12	24-Jan-13
SL.CS2300.00	Ductwork - ID Fan Outlet to Absorber Inlet	90	11-Dec-12	18-Apr-13
SL.CS1400.00	Ductwork - Absorber Outlet to Chimney	90	24-Jan-13	30-May-13
SL.CS2000.00	Ductwork - Existing Modifications	65	11-Apr-13	12-Jul-13
Stuctural Steel Drawings		429	02-Aug-12	02-Apr-14
SL.CS7000.00	Structural Steel General Notes & Details	50	02-Aug-12	10-Oct-12
SL.CS1900.00	Struct Steel - Existing Warehouse (Relocation)	45	25-Oct-12	27-Dec-12
SL.CS1950.00	Struct Steel - New Hazardous Waste Storage Building	45	25-Oct-12	27-Dec-12
SL.CS2700.00	Struct Steel - Hydrogen Storage (Relocation)	45	25-Oct-12	27-Dec-12
SL.CS3300.00	Struct Steel - Booster Fan Outlet to ID Fan Inlet	90	11-Dec-12	18-Apr-13

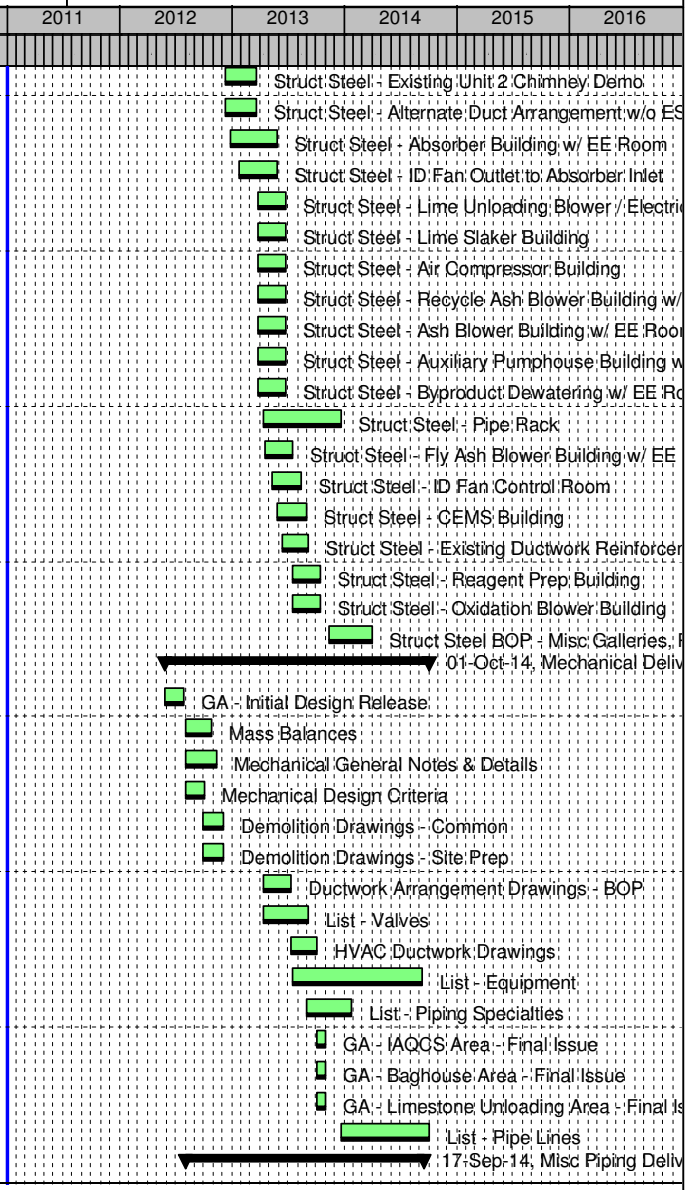


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

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Activity ID	Activity Name	Dur	Start	Finish
SL.CS5100.00	Struct Steel - Existing Unit 2 Chimney Demo	70	11-Dec-12	21-Mar-13
SL.CS5600.00	Struct Steel - Alternate Duct Arrangement w/o ESP	70	11-Dec-12	21-Mar-13
SL.CS5300.00	Struct Steel - Absorber Building w/ EE Room	110	26-Dec-12	29-May-13
SL.CS3300.10	Struct Steel - ID Fan Outlet to Absorber Inlet	90	24-Jan-13	30-May-13
SL.CS4700.00	Struct Steel - Lime Unloading Blower / Electrical Building	65	28-Mar-13	26-Jun-13
SL.CS5400.00	Struct Steel - Lime Slaker Building	65	28-Mar-13	26-Jun-13
SL.CS1000.00	Struct Steel - Air Compressor Building	65	28-Mar-13	26-Jun-13
SL.CS7500.00	Struct Steel - Recycle Ash Blower Building w/ Recycle Silo	65	28-Mar-13	26-Jun-13
SL.CS7700.00	Struct Steel - Ash Blower Building w/ EE Room	65	28-Mar-13	26-Jun-13
SL.CS4400.00	Struct Steel - Auxiliary Pumphouse Building w/ EE Room	65	28-Mar-13	26-Jun-13
SL.CS8300.00	Struct Steel - Byproduct Dewatering w/ EE Room	65	28-Mar-13	26-Jun-13
SL.CS4900.00	Struct Steel - Pipe Rack	180	12-Apr-13	23-Dec-13
SL.CS8200.00	Struct Steel - Fly Ash Blower Building w/ EE Room	65	18-Apr-13	19-Jul-13
SL.CS5200.00	Struct Steel - ID Fan Control Room	65	10-May-13	12-Aug-13
SL.CS1100.00	Struct Steel - CEMS Building	65	30-May-13	30-Aug-13
SL.CS5900.00	Struct Steel - Existing Ductwork Reinforcements	60	13-Jun-13	06-Sep-13
SL.CS5000.00	Struct Steel - Reagent Prep Building	65	15-Jul-13	14-Oct-13
SL.CS2400.00	Struct Steel - Oxidation Blower Building	65	15-Jul-13	14-Oct-13
SL.CS5800.00	Struct Steel BOP - Misc Galleries, Platforms & Walkways	100	11-Nov-13	02-Apr-14
Mechanical Deliverables		603	30-May-12	01-Oct-14
SL.MM3000.00	GA - Initial Design Release	43	30-May-12	30-Jul-12
SL.MM6000.00	Mass Balances	61	02-Aug-12	25-Oct-12
SL.MM7000.00	Mechanical General Notes & Details	75	02-Aug-12	14-Nov-12
SL.MM6500.00	Mechanical Design Criteria	45	02-Aug-12	03-Oct-12
SL.MM1200.00	Demolition Drawings - Common	50	27-Sep-12	05-Dec-12
SL.MM1300.00	Demolition Drawings - Site Prep	50	27-Sep-12	05-Dec-12
SL.MM2800.00	Ductwork Arrangement Drawings - BOP	65	11-Apr-13	12-Jul-13
SL.MM5800.00	List - Valves	100	15-Apr-13	03-Sep-13
SL.MM4000.00	HVAC Ductwork Drawings	60	12-Jul-13	04-Oct-13
SL.MM5200.00	List - Equipment	300	15-Jul-13	11-Sep-14
SL.MM5600.00	List - Piping Specialties	100	02-Sep-13	22-Jan-14
SL.MM3200.00	GA - IAQCS Area - Final Issue	20	04-Oct-13	01-Nov-13
SL.MM3300.00	GA - Baghouse Area - Final Issue	20	04-Oct-13	01-Nov-13
SL.MM3500.00	GA - Limestone Unloading Area - Final Issue	20	04-Oct-13	01-Nov-13
SL.MM5500.00	List - Pipe Lines	200	20-Dec-13	01-Oct-14
Misc Piping Deliverables		548	02-Aug-12	17-Sep-14

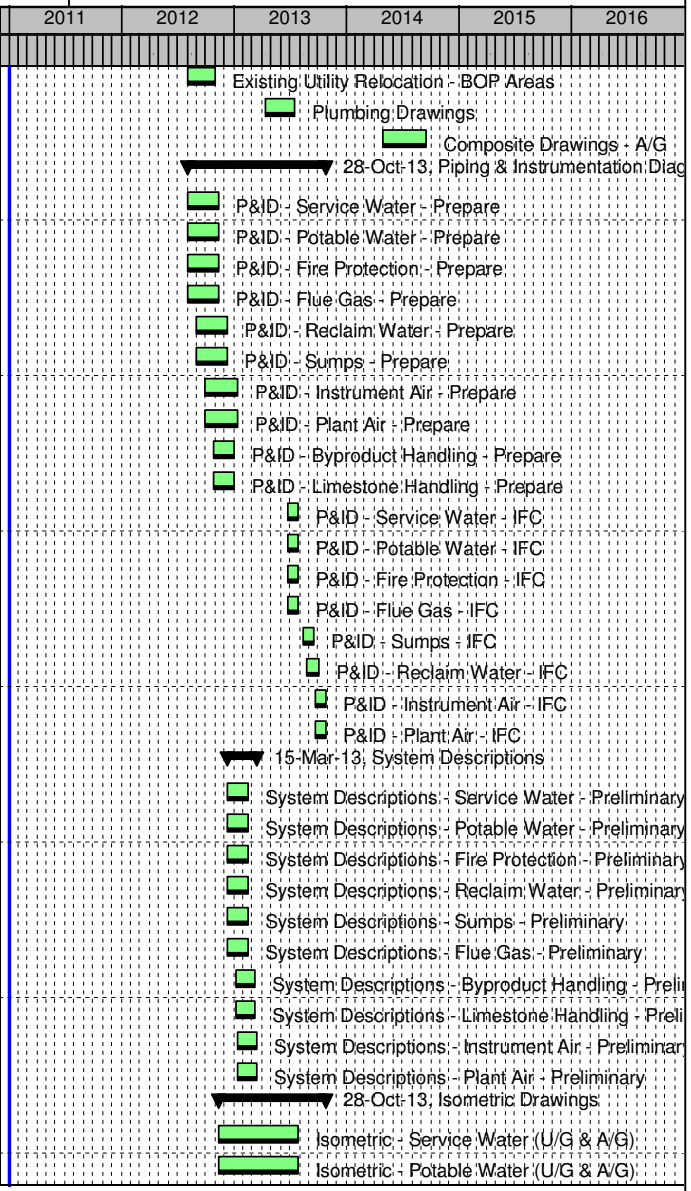


Remaining Level of Effort | Actual Level of Effort | Actual Work
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TASK filter: All Activities

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Activity ID	Activity Name	Dur	Start	Finish
SL.MP0700.00	Existing Utility Relocation - BOP Areas	65	02-Aug-12	31-Oct-12
SL.MP7800.00	Plumbing Drawings	65	15-Apr-13	15-Jul-13
SL.MP0400.00	Composite Drawings - A/G	99	30-Apr-14	17-Sep-14
Piping & Instrumentation Diagrams		319	02-Aug-12	28-Oct-13
SL.MP6003.00	P&ID - Service Water - Prepare	75	02-Aug-12	14-Nov-12
SL.MP6004.00	P&ID - Potable Water - Prepare	75	02-Aug-12	14-Nov-12
SL.MP6007.00	P&ID - Fire Protection - Prepare	75	02-Aug-12	14-Nov-12
SL.MP6002.00	P&ID - Flue Gas - Prepare	75	02-Aug-12	14-Nov-12
SL.MP6030.00	P&ID - Reclaim Water - Prepare	75	30-Aug-12	12-Dec-12
SL.MP6031.00	P&ID - Sumps - Prepare	75	30-Aug-12	12-Dec-12
SL.MP6005.00	P&ID - Instrument Air - Prepare	75	27-Sep-12	11-Jan-13
SL.MP6006.00	P&ID - Plant Air - Prepare	75	27-Sep-12	11-Jan-13
SL.MP6020.00	P&ID - Byproduct Handling - Prepare	50	25-Oct-12	04-Jan-13
SL.MP6021.00	P&ID - Limestone Handling - Prepare	50	25-Oct-12	04-Jan-13
SL.MP6003.50	P&ID - Service Water - IFC	25	24-Jun-13	29-Jul-13
SL.MP6004.50	P&ID - Potable Water - IFC	25	24-Jun-13	29-Jul-13
SL.MP6007.50	P&ID - Fire Protection - IFC	25	24-Jun-13	29-Jul-13
SL.MP6002.50	P&ID - Flue Gas - IFC	25	24-Jun-13	29-Jul-13
SL.MP6031.50	P&ID - Sumps - IFC	25	13-Aug-13	17-Sep-13
SL.MP6030.50	P&ID - Reclaim Water - IFC	25	27-Aug-13	01-Oct-13
SL.MP6005.50	P&ID - Instrument Air - IFC	25	23-Sep-13	28-Oct-13
SL.MP6006.50	P&ID - Plant Air - IFC	25	23-Sep-13	28-Oct-13
System Descriptions		65	13-Dec-12	15-Mar-13
SL.MP9003.00	System Descriptions - Service Water - Preliminary	45	13-Dec-12	15-Feb-13
SL.MP9004.00	System Descriptions - Potable Water - Preliminary	45	13-Dec-12	15-Feb-13
SL.MP9007.00	System Descriptions - Fire Protection - Preliminary	45	13-Dec-12	15-Feb-13
SL.MP9030.00	System Descriptions - Reclaim Water - Preliminary	45	13-Dec-12	15-Feb-13
SL.MP9031.00	System Descriptions - Sumps - Preliminary	45	13-Dec-12	15-Feb-13
SL.MP9002.00	System Descriptions - Flue Gas - Preliminary	45	13-Dec-12	15-Feb-13
SL.MP9020.00	System Descriptions - Byproduct Handling - Preliminary	45	07-Jan-13	08-Mar-13
SL.MP9021.00	System Descriptions - Limestone Handling - Preliminary	45	07-Jan-13	08-Mar-13
SL.MP9005.00	System Descriptions - Instrument Air - Preliminary	45	14-Jan-13	15-Mar-13
SL.MP9006.00	System Descriptions - Plant Air - Preliminary	45	14-Jan-13	15-Mar-13
Isometric Drawings		244	15-Nov-12	28-Oct-13
SL.MP1003.00	Isometric - Service Water (U/G & A/G)	180	15-Nov-12	29-Jul-13
SL.MP1004.00	Isometric - Potable Water (U/G & A/G)	180	15-Nov-12	29-Jul-13

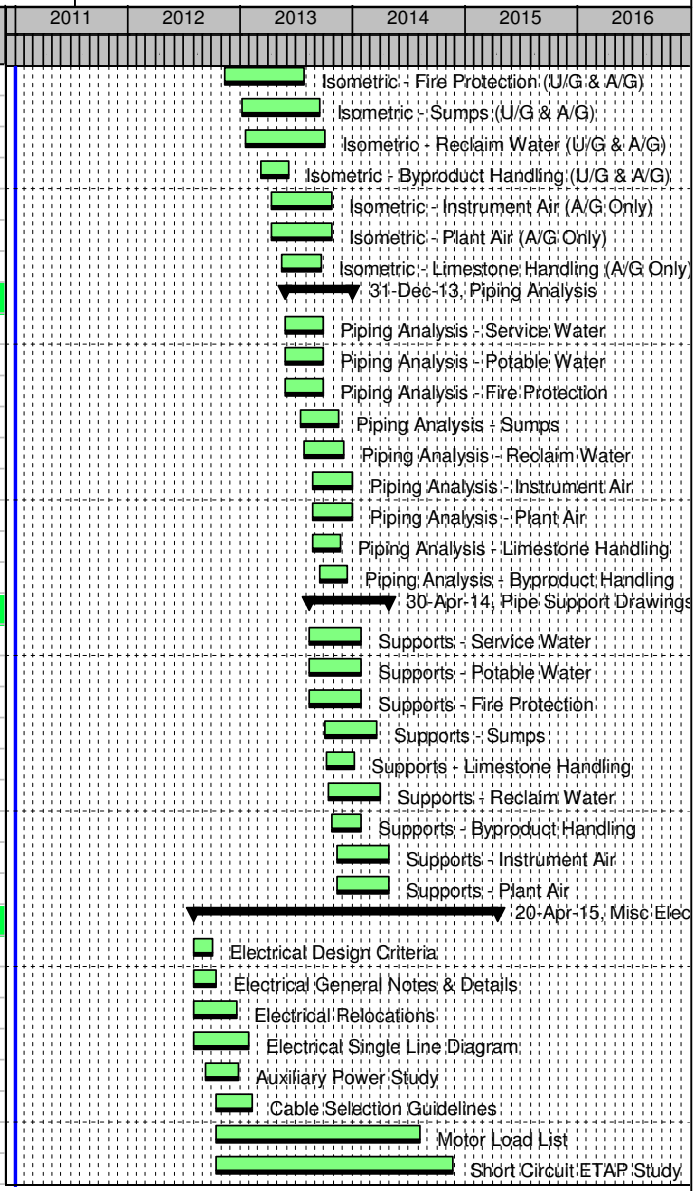


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

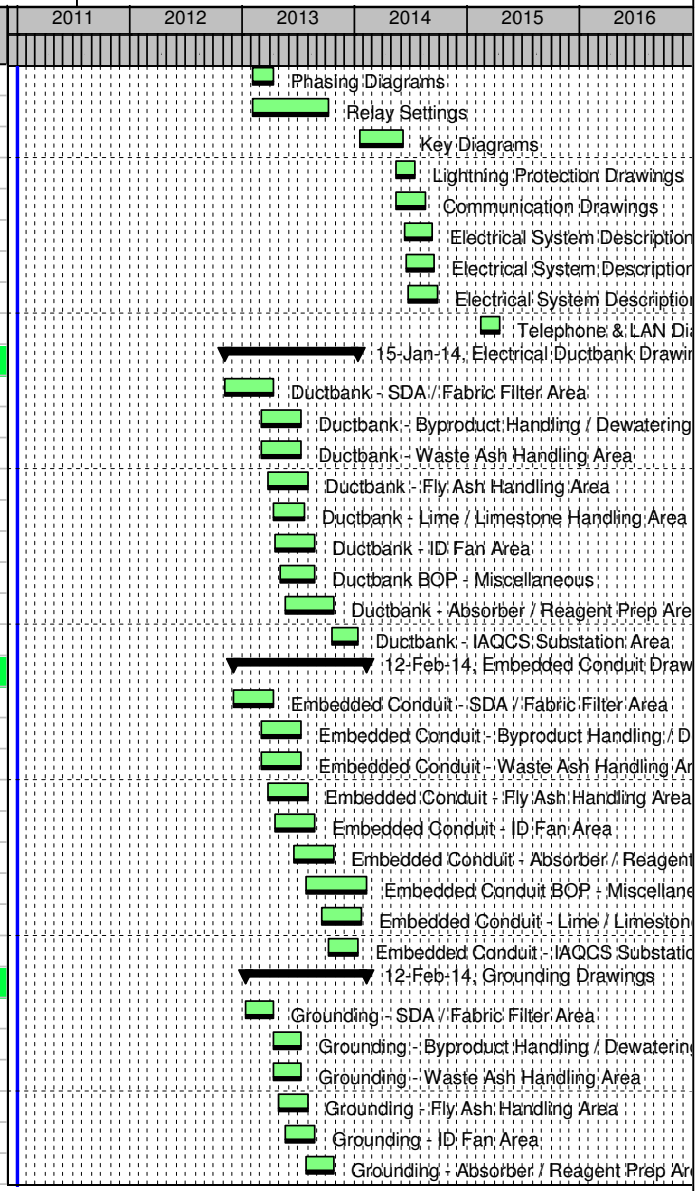
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Activity ID	Activity Name	Dur	Start	Finish
SL.MP1007.00	Isometric - Fire Protection (U/G & A/G)	180	15-Nov-12	29-Jul-13
SL.MP1031.00	Isometric - Sumps (U/G & A/G)	180	07-Jan-13	17-Sep-13
SL.MP1030.00	Isometric - Reclaim Water (U/G & A/G)	180	21-Jan-13	01-Oct-13
SL.MP1020.00	Isometric - Byproduct Handling (U/G & A/G)	65	08-Mar-13	07-Jun-13
SL.MP1005.00	Isometric - Instrument Air (A/G Only)	140	12-Apr-13	28-Oct-13
SL.MP1006.00	Isometric - Plant Air (A/G Only)	140	12-Apr-13	28-Oct-13
SL.MP1021.00	Isometric - Limestone Handling (A/G Only)	90	17-May-13	23-Sep-13
Piping Analysis		154	27-May-13	31-Dec-13
SL.MP7003.00	Piping Analysis - Service Water	90	27-May-13	30-Sep-13
SL.MP7004.00	Piping Analysis - Potable Water	90	27-May-13	30-Sep-13
SL.MP7007.00	Piping Analysis - Fire Protection	90	27-May-13	30-Sep-13
SL.MP7031.00	Piping Analysis - Sumps	90	16-Jul-13	19-Nov-13
SL.MP7030.00	Piping Analysis - Reclaim Water	90	30-Jul-13	03-Dec-13
SL.MP7005.00	Piping Analysis - Instrument Air	90	26-Aug-13	31-Dec-13
SL.MP7006.00	Piping Analysis - Plant Air	90	26-Aug-13	31-Dec-13
SL.MP7021.00	Piping Analysis - Limestone Handling	65	26-Aug-13	25-Nov-13
SL.MP7020.00	Piping Analysis - Byproduct Handling	65	16-Sep-13	16-Dec-13
Pipe Support Drawings		184	13-Aug-13	30-Apr-14
SL.MP8003.00	Supports - Service Water	120	13-Aug-13	29-Jan-14
SL.MP8004.00	Supports - Potable Water	120	13-Aug-13	29-Jan-14
SL.MP8007.00	Supports - Fire Protection	120	13-Aug-13	29-Jan-14
SL.MP8031.00	Supports - Sumps	120	01-Oct-13	20-Mar-14
SL.MP8021.00	Supports - Limestone Handling	65	07-Oct-13	08-Jan-14
SL.MP8030.00	Supports - Reclaim Water	120	15-Oct-13	03-Apr-14
SL.MP8020.00	Supports - Byproduct Handling	65	28-Oct-13	29-Jan-14
SL.MP8005.00	Supports - Instrument Air	120	11-Nov-13	30-Apr-14
SL.MP8006.00	Supports - Plant Air	120	11-Nov-13	30-Apr-14
Misc Electrical Deliverables		699	02-Aug-12	20-Apr-15
SL.E3100.00	Electrical Design Criteria	45	02-Aug-12	03-Oct-12
SL.E3200.00	Electrical General Notes & Details	53	02-Aug-12	15-Oct-12
SL.E3600.00	Electrical Relocations	100	02-Aug-12	19-Dec-12
SL.E3700.00	Electrical Single Line Diagram	130	02-Aug-12	01-Feb-13
SL.E0200.00	Auxiliary Power Study	75	13-Sep-12	27-Dec-12
SL.E0400.00	Cable Selection Guidelines	82	16-Oct-12	08-Feb-13
SL.E7800.00	Motor Load List	468	16-Oct-12	08-Aug-14
SL.E8700.00	Short Circuit ETAP Study	545	16-Oct-12	25-Nov-14



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Activity ID	Activity Name	Dur	Start	Finish
SL.E8200.00	Phasing Diagrams	48	04-Feb-13	10-Apr-13
SL.E8600.00	Relay Settings	179	04-Feb-13	11-Oct-13
SL.E5600.00	Key Diagrams	100	17-Jan-14	06-Jun-14
SL.E6700.00	Lightning Protection Drawings	45	14-May-14	17-Jul-14
SL.E1300.00	Communication Drawings	65	16-May-14	18-Aug-14
SL.E3820.00	Electrical System Descriptions - Main Power - Preliminary	65	11-Jun-14	11-Sep-14
SL.E3840.00	Electrical System Descriptions - Aux Power - Preliminary	65	18-Jun-14	18-Sep-14
SL.E3860.00	Electrical System Descriptions - DC Power - Preliminary	65	25-Jun-14	25-Sep-14
SL.E8800.00	Telephone & LAN Diagrams	45	16-Feb-15	20-Apr-15
Electrical Ductbank Drawings		304	08-Nov-12	15-Jan-14
SL.E2070.00	Ductbank - SDA / Fabric Filter Area	110	08-Nov-12	12-Apr-13
SL.E2050.00	Ductbank - Byproduct Handling / Dewatering Area	90	07-Mar-13	11-Jul-13
SL.E2080.00	Ductbank - Waste Ash Handling Area	90	07-Mar-13	11-Jul-13
SL.E2060.00	Ductbank - Fly Ash Handling Area	90	28-Mar-13	02-Aug-13
SL.E2040.00	Ductbank - Lime / Limestone Handling Area	70	15-Apr-13	22-Jul-13
SL.E2030.00	Ductbank - ID Fan Area	90	19-Apr-13	26-Aug-13
SL.E2099.00	Ductbank BOP - Miscellaneous	80	03-May-13	26-Aug-13
SL.E2020.00	Ductbank - Absorber / Reagent Prep Area	110	24-May-13	28-Oct-13
SL.E2010.00	Ductbank - IAQCS Substation Area	60	21-Oct-13	15-Jan-14
Embedded Conduit Drawings		305	06-Dec-12	12-Feb-14
SL.E4070.00	Embedded Conduit - SDA / Fabric Filter Area	90	06-Dec-12	12-Apr-13
SL.E4050.00	Embedded Conduit - Byproduct Handling / Dewatering Area	90	07-Mar-13	11-Jul-13
SL.E4080.00	Embedded Conduit - Waste Ash Handling Area	90	07-Mar-13	11-Jul-13
SL.E4060.00	Embedded Conduit - Fly Ash Handling Area	90	28-Mar-13	02-Aug-13
SL.E4030.00	Embedded Conduit - ID Fan Area	90	19-Apr-13	26-Aug-13
SL.E4020.00	Embedded Conduit - Absorber / Reagent Prep Area	90	21-Jun-13	28-Oct-13
SL.E4099.00	Embedded Conduit BOP - Miscellaneous	140	29-Jul-13	12-Feb-14
SL.E4040.00	Embedded Conduit - Lime / Limestone Handling Area	90	16-Sep-13	22-Jan-14
SL.E4010.00	Embedded Conduit - IAQCS Substation Area	70	07-Oct-13	15-Jan-14
Grounding Drawings		280	14-Jan-13	12-Feb-14
SL.E5070.00	Grounding - SDA / Fabric Filter Area	65	14-Jan-13	12-Apr-13
SL.E5050.00	Grounding - Byproduct Handling / Dewatering Area	65	11-Apr-13	11-Jul-13
SL.E5080.00	Grounding - Waste Ash Handling Area	65	11-Apr-13	11-Jul-13
SL.E5060.00	Grounding - Fly Ash Handling Area	65	02-May-13	02-Aug-13
SL.E5030.00	Grounding - ID Fan Area	65	24-May-13	26-Aug-13
SL.E5020.00	Grounding - Absorber / Reagent Prep Area	65	29-Jul-13	28-Oct-13

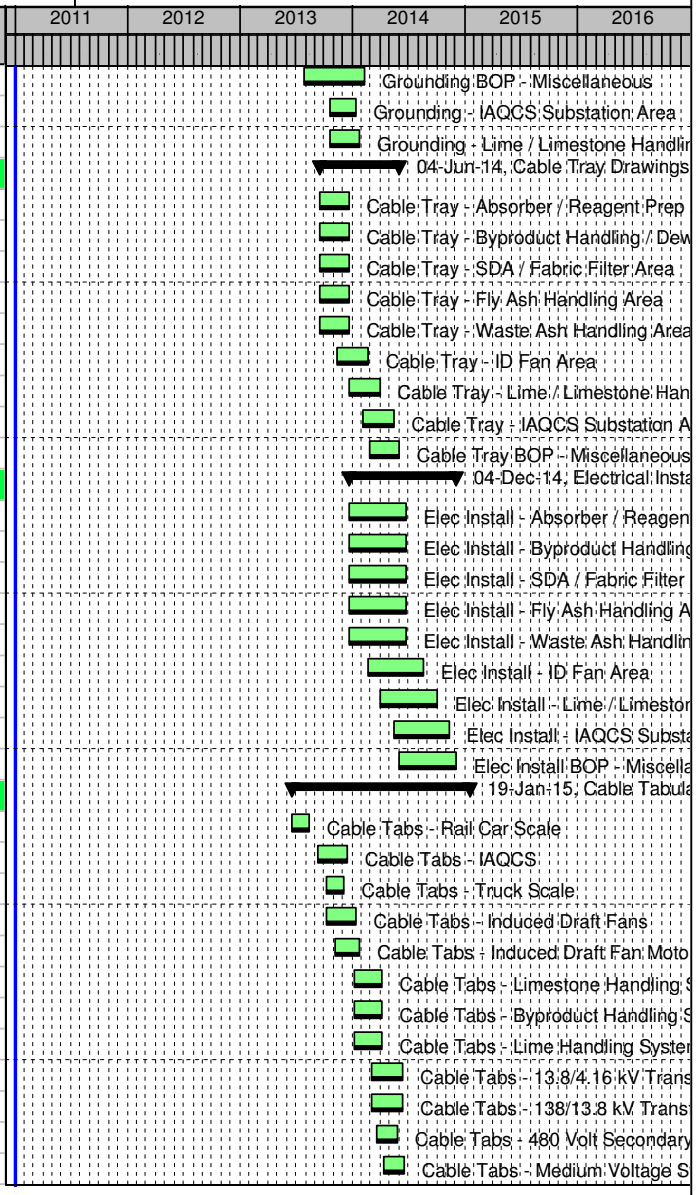


Remaining Level of Effort | Actual Level of Effort | Actual Work
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TASK filter: All Activities

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Activity ID	Activity Name	Dur	Start	Finish
SL.E5099.00	Grounding BOP - Miscellaneous	140	29-Jul-13	12-Feb-14
SL.E5010.00	Grounding - IAQCS Substation Area	60	21-Oct-13	15-Jan-14
SL.E5040.00	Grounding - Lime / Limestone Handling Area	65	21-Oct-13	22-Jan-14
Cable Tray Drawings		185	16-Sep-13	04-Jun-14
SL.E1020.00	Cable Tray - Absorber / Reagent Prep Area	70	16-Sep-13	23-Dec-13
SL.E1050.00	Cable Tray - Byproduct Handling / Dewatering Area	70	16-Sep-13	23-Dec-13
SL.E1070.00	Cable Tray - SDA / Fabric Filter Area	70	16-Sep-13	23-Dec-13
SL.E1060.00	Cable Tray - Fly Ash Handling Area	70	16-Sep-13	23-Dec-13
SL.E1080.00	Cable Tray - Waste Ash Handling Area	70	16-Sep-13	23-Dec-13
SL.E1030.00	Cable Tray - ID Fan Area	70	11-Nov-13	19-Feb-14
SL.E1040.00	Cable Tray - Lime / Limestone Handling Area	70	23-Dec-13	02-Apr-14
SL.E1010.00	Cable Tray - IAQCS Substation Area	70	05-Feb-14	14-May-14
SL.E1099.00	Cable Tray BOP - Miscellaneous	70	26-Feb-14	04-Jun-14
Electrical Installation Drawings		245	23-Dec-13	04-Dec-14
SL.E3020.00	Elec Install - Absorber / Reagent Prep Area	130	23-Dec-13	25-Jun-14
SL.E3050.00	Elec Install - Byproduct Handling / Dewatering Area	130	23-Dec-13	25-Jun-14
SL.E3070.00	Elec Install - SDA / Fabric Filter Area	130	23-Dec-13	25-Jun-14
SL.E3060.00	Elec Install - Fly Ash Handling Area	130	23-Dec-13	25-Jun-14
SL.E3080.00	Elec Install - Waste Ash Handling Area	130	23-Dec-13	25-Jun-14
SL.E3030.00	Elec Install - ID Fan Area	130	19-Feb-14	21-Aug-14
SL.E3040.00	Elec Install - Lime / Limestone Handling Area	130	02-Apr-14	02-Oct-14
SL.E3010.00	Elec Install - IAQCS Substation Area	130	14-May-14	13-Nov-14
SL.E3099.00	Elec Install BOP - Miscellaneous	130	04-Jun-14	04-Dec-14
Cable Tabulations & Drawings		406	20-Jun-13	19-Jan-15
SL.E0-6853.00	Cable Tabs - Rail Car Scale	40	20-Jun-13	16-Aug-13
SL.E0-6815.00	Cable Tabs - IAQCS	70	10-Sep-13	16-Dec-13
SL.E0-6852.00	Cable Tabs - Truck Scale	40	07-Oct-13	02-Dec-13
SL.E0-6822.00	Cable Tabs - Induced Draft Fans	70	08-Oct-13	15-Jan-14
SL.E0-6860.00	Cable Tabs - Induced Draft Fan Motors	55	05-Nov-13	22-Jan-14
SL.E0-6850.00	Cable Tabs - Limestone Handling System	65	09-Jan-14	09-Apr-14
SL.E0-6873.00	Cable Tabs - Byproduct Handling System	65	09-Jan-14	09-Apr-14
SL.E0-6851.00	Cable Tabs - Lime Handling System	65	09-Jan-14	09-Apr-14
SL.E0-6861.00	Cable Tabs - 13.8/4.16 kV Transformers	70	06-Mar-14	11-Jun-14
SL.E0-6872.00	Cable Tabs - 138/13.8 kV Transformers	70	06-Mar-14	11-Jun-14
SL.E0-6863.00	Cable Tabs - 480 Volt Secondary Unit Substation	50	20-Mar-14	28-May-14
SL.E0-6862.00	Cable Tabs - Medium Voltage Switchgear and MCC	50	10-Apr-14	18-Jun-14

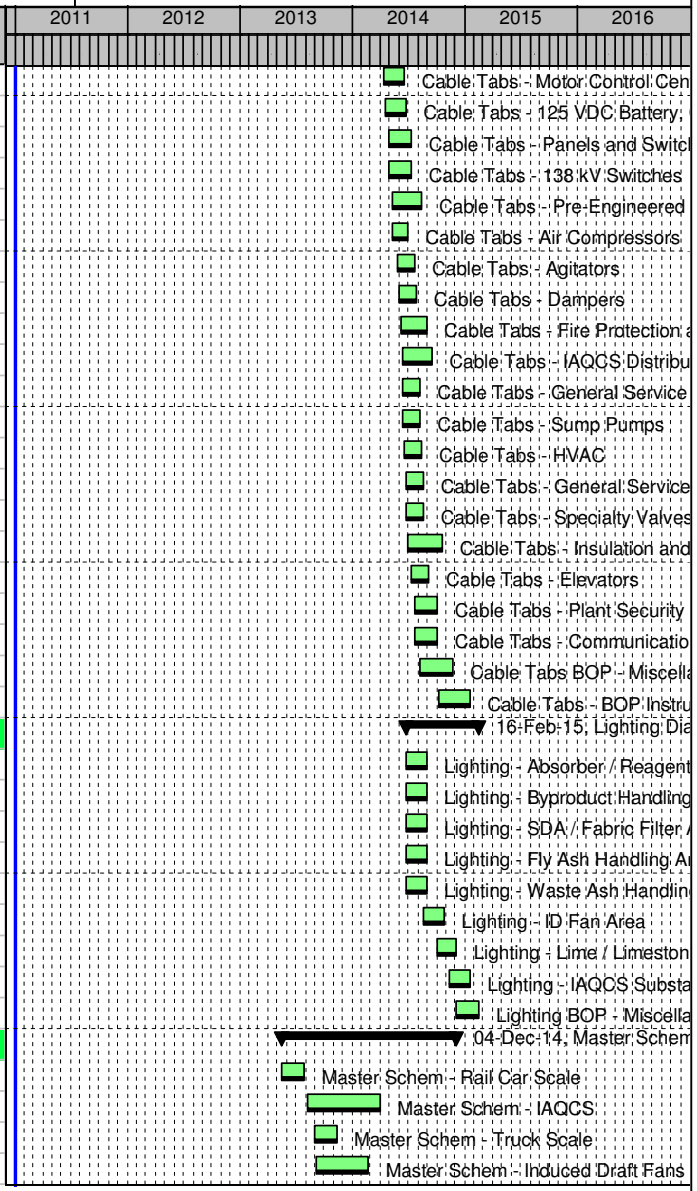


Remaining Level of Effort | Actual Level of Effort | Actual Work
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Activity ID	Activity Name	Dur	Start	Finish
SL.E0-6864.00	Cable Tabs - Motor Control Centers	50	10-Apr-14	18-Jun-14
SL.E0-6866.00	Cable Tabs - 125 VDC Battery, Chargers & UPS	50	17-Apr-14	25-Jun-14
SL.E0-6867.00	Cable Tabs - Panels and Switchboards	50	01-May-14	10-Jul-14
SL.E0-6876.00	Cable Tabs - 138 kV Switches	50	01-May-14	10-Jul-14
SL.E0-6810.00	Cable Tabs - Pre-Engineered Buildings	70	08-May-14	14-Aug-14
SL.E0-6823.00	Cable Tabs - Air Compressors	40	08-May-14	02-Jul-14
SL.E0-6836.00	Cable Tabs - Agitators	40	29-May-14	24-Jul-14
SL.E0-6825.00	Cable Tabs - Dampers	40	30-May-14	28-Jul-14
SL.E0-6838.00	Cable Tabs - Fire Protection and Detection System	60	05-Jun-14	28-Aug-14
SL.E0-6890.00	Cable Tabs - IAQCS Distributed Control System	70	11-Jun-14	18-Sep-14
SL.E0-6826.00	Cable Tabs - General Service Pumps	40	12-Jun-14	07-Aug-14
SL.E0-6827.00	Cable Tabs - Sump Pumps	40	12-Jun-14	07-Aug-14
SL.E0-6834.00	Cable Tabs - HVAC	40	19-Jun-14	14-Aug-14
SL.E0-6830.00	Cable Tabs - General Service Valves	40	26-Jun-14	21-Aug-14
SL.E0-6831.00	Cable Tabs - Specialty Valves	40	26-Jun-14	21-Aug-14
SL.E0-6837.00	Cable Tabs - Insulation and Heat Tracing	80	02-Jul-14	23-Oct-14
SL.E0-6807.00	Cable Tabs - Elevators	40	11-Jul-14	04-Sep-14
SL.E0-6869.00	Cable Tabs - Plant Security System	50	25-Jul-14	02-Oct-14
SL.E0-6870.00	Cable Tabs - Communication System	50	25-Jul-14	02-Oct-14
SL.E0-6999.00	Cable Tabs BOP - Miscellaneous	75	08-Aug-14	20-Nov-14
SL.E0-6891.00	Cable Tabs - BOP Instruments	70	09-Oct-14	19-Jan-15
Lighting Diagrams		165	25-Jun-14	16-Feb-15
SL.E6020.00	Lighting - Absorber / Reagent Prep Area	45	25-Jun-14	28-Aug-14
SL.E6050.00	Lighting - Byproduct Handling / Dewatering Area	45	25-Jun-14	28-Aug-14
SL.E6070.00	Lighting - SDA / Fabric Filter Area	45	25-Jun-14	28-Aug-14
SL.E6060.00	Lighting - Fly Ash Handling Area	45	25-Jun-14	28-Aug-14
SL.E6080.00	Lighting - Waste Ash Handling Area	45	25-Jun-14	28-Aug-14
SL.E6030.00	Lighting - ID Fan Area	45	21-Aug-14	23-Oct-14
SL.E6040.00	Lighting - Lime / Limestone Handling Area	45	02-Oct-14	04-Dec-14
SL.E6010.00	Lighting - IAQCS Substation Area	45	13-Nov-14	19-Jan-15
SL.E6099.00	Lighting BOP - Miscellaneous	50	04-Dec-14	16-Feb-15
Master Schematic Diagrams		401	16-May-13	04-Dec-14
SL.E7-6853.00	Master Schem - Rail Car Scale	50	16-May-13	26-Jul-13
SL.E7-6815.00	Master Schem - IAQCS	170	06-Aug-13	02-Apr-14
SL.E7-6852.00	Master Schem - Truck Scale	50	02-Sep-13	11-Nov-13
SL.E7-6822.00	Master Schem - Induced Draft Fans	120	03-Sep-13	19-Feb-14

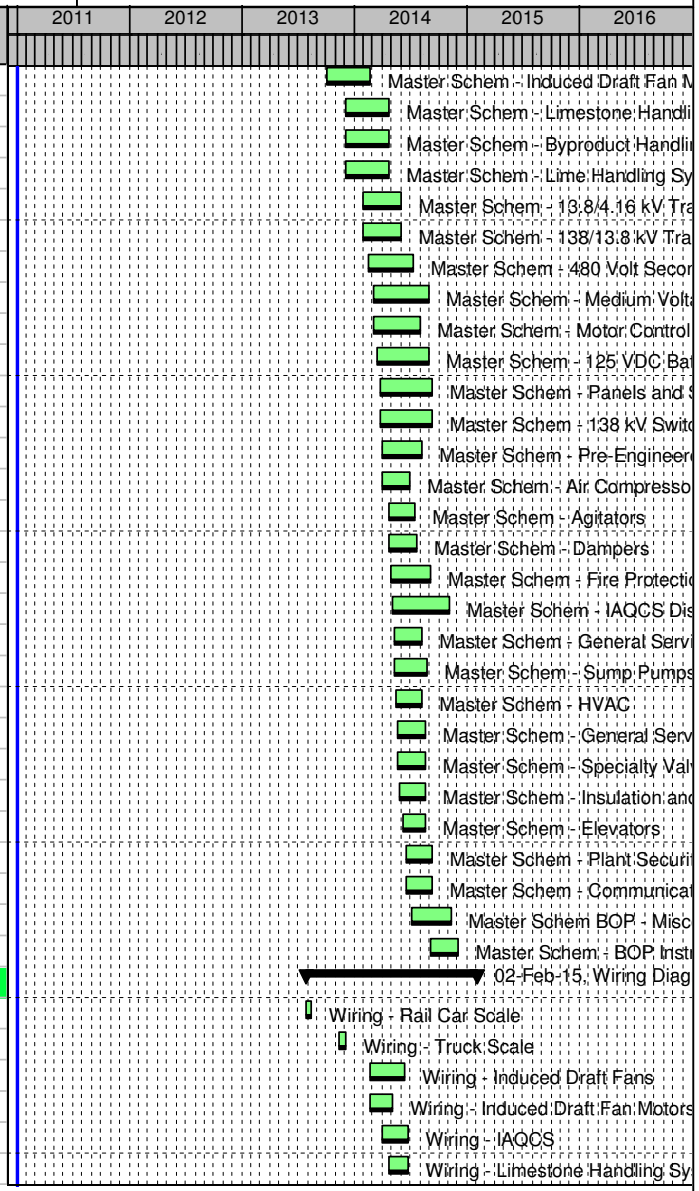


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

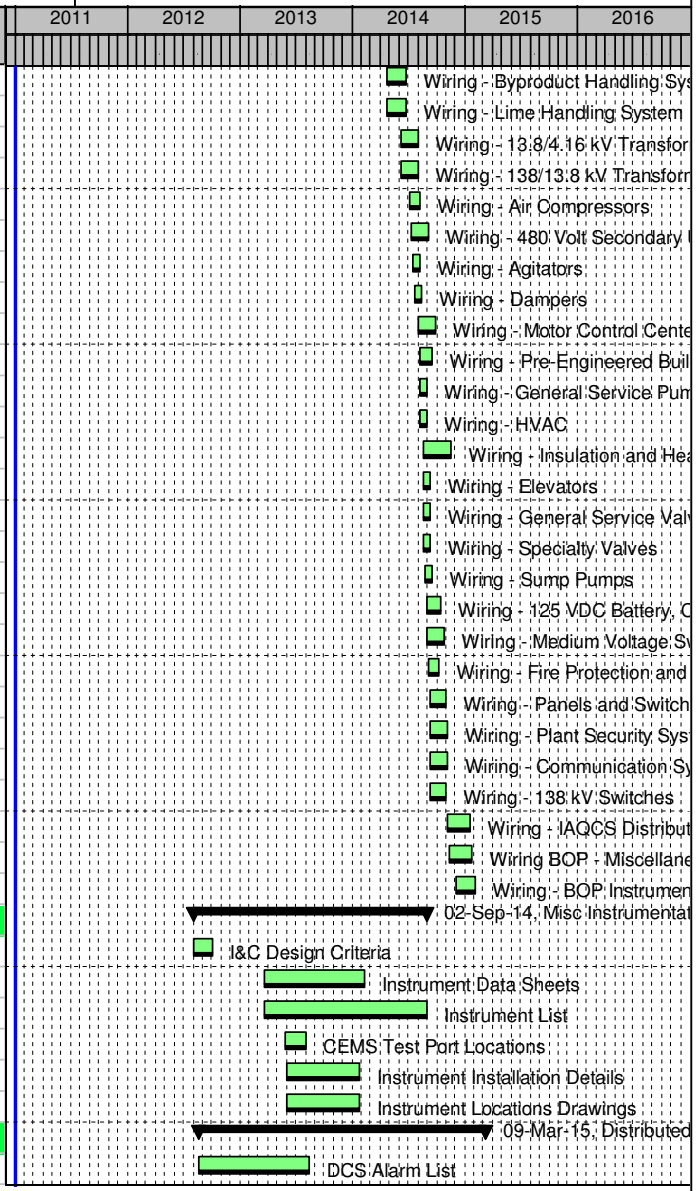
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Activity ID	Activity Name	Dur	Start	Finish
SL.E7-6860.00	Master Schem - Induced Draft Fan Motors	100	01-Oct-13	19-Feb-14
SL.E7-6850.00	Master Schem - Limestone Handling System	100	03-Dec-13	23-Apr-14
SL.E7-6873.00	Master Schem - Byproduct Handling System	100	03-Dec-13	23-Apr-14
SL.E7-6851.00	Master Schem - Lime Handling System	100	03-Dec-13	23-Apr-14
SL.E7-6861.00	Master Schem - 13.8/4.16 kV Transformers	90	30-Jan-14	04-Jun-14
SL.E7-6872.00	Master Schem - 138/13.8 kV Transformers	90	30-Jan-14	04-Jun-14
SL.E7-6863.00	Master Schem - 480 Volt Secondary Unit Substation	105	13-Feb-14	10-Jul-14
SL.E7-6862.00	Master Schem - Medium Voltage Switchgear and MCC	127	06-Mar-14	01-Sep-14
SL.E7-6864.00	Master Schem - Motor Control Centers	105	06-Mar-14	31-Jul-14
SL.E7-6866.00	Master Schem - 125 VDC Battery, Chargers & UPS	120	13-Mar-14	28-Aug-14
SL.E7-6867.00	Master Schem - Panels and Switchboards	120	27-Mar-14	11-Sep-14
SL.E7-6876.00	Master Schem - 138 kV Switches	120	27-Mar-14	11-Sep-14
SL.E7-6810.00	Master Schem - Pre-Engineered Buildings	90	03-Apr-14	07-Aug-14
SL.E7-6823.00	Master Schem - Air Compressors	65	03-Apr-14	02-Jul-14
SL.E7-6836.00	Master Schem - Agitators	60	24-Apr-14	17-Jul-14
SL.E7-6825.00	Master Schem - Dampers	60	25-Apr-14	21-Jul-14
SL.E7-6838.00	Master Schem - Fire Protection and Detection System	90	01-May-14	04-Sep-14
SL.E7-6890.00	Master Schem - IAQCS Distributed Control System	128	07-May-14	04-Nov-14
SL.E7-6826.00	Master Schem - General Service Pumps	65	08-May-14	07-Aug-14
SL.E7-6827.00	Master Schem - Sump Pumps	77	08-May-14	25-Aug-14
SL.E7-6834.00	Master Schem - HVAC	60	15-May-14	07-Aug-14
SL.E7-6830.00	Master Schem - General Service Valves	65	22-May-14	21-Aug-14
SL.E7-6831.00	Master Schem - Specialty Valves	65	22-May-14	21-Aug-14
SL.E7-6837.00	Master Schem - Insulation and Heat Tracing	60	28-May-14	21-Aug-14
SL.E7-6807.00	Master Schem - Elevators	55	05-Jun-14	21-Aug-14
SL.E7-6869.00	Master Schem - Plant Security System	60	19-Jun-14	11-Sep-14
SL.E7-6870.00	Master Schem - Communication System	60	19-Jun-14	11-Sep-14
SL.E7-6999.00	Master Schem BOP - Miscellaneous	95	03-Jul-14	13-Nov-14
SL.E7-6891.00	Master Schem - BOP Instruments	65	04-Sep-14	04-Dec-14
Wiring Diagrams		391	26-Jul-13	02-Feb-15
SL.E9-6853.00	Wiring - Rail Car Scale	15	26-Jul-13	16-Aug-13
SL.E9-6852.00	Wiring - Truck Scale	15	11-Nov-13	02-Dec-13
SL.E9-6822.00	Wiring - Induced Draft Fans	80	20-Feb-14	11-Jun-14
SL.E9-6860.00	Wiring - Induced Draft Fan Motors	55	20-Feb-14	07-May-14
SL.E9-6815.00	Wiring - IAQCS	60	03-Apr-14	25-Jun-14
SL.E9-6850.00	Wiring - Limestone Handling System	45	24-Apr-14	25-Jun-14



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Activity ID	Activity Name	Dur	Start	Finish
SL.E9-6873.00	Wiring - Byproduct Handling System	45	24-Apr-14	25-Jun-14
SL.E9-6851.00	Wiring - Lime Handling System	45	24-Apr-14	25-Jun-14
SL.E9-6861.00	Wiring - 13.8/4.16 kV Transformers	40	05-Jun-14	31-Jul-14
SL.E9-6872.00	Wiring - 138/13.8 kV Transformers	40	05-Jun-14	31-Jul-14
SL.E9-6823.00	Wiring - Air Compressors	25	03-Jul-14	07-Aug-14
SL.E9-6863.00	Wiring - 480 Volt Secondary Unit Substation	40	11-Jul-14	04-Sep-14
SL.E9-6836.00	Wiring - Agitators	15	18-Jul-14	07-Aug-14
SL.E9-6825.00	Wiring - Dampers	15	21-Jul-14	11-Aug-14
SL.E9-6864.00	Wiring - Motor Control Centers	40	01-Aug-14	25-Sep-14
SL.E9-6810.00	Wiring - Pre-Engineered Buildings	30	08-Aug-14	18-Sep-14
SL.E9-6826.00	Wiring - General Service Pumps	15	08-Aug-14	28-Aug-14
SL.E9-6834.00	Wiring - HVAC	15	08-Aug-14	28-Aug-14
SL.E9-6837.00	Wiring - Insulation and Heat Tracing	65	21-Aug-14	20-Nov-14
SL.E9-6807.00	Wiring - Elevators	15	22-Aug-14	11-Sep-14
SL.E9-6830.00	Wiring - General Service Valves	15	22-Aug-14	11-Sep-14
SL.E9-6831.00	Wiring - Specialty Valves	15	22-Aug-14	11-Sep-14
SL.E9-6827.00	Wiring - Sump Pumps	15	26-Aug-14	15-Sep-14
SL.E9-6866.00	Wiring - 125 VDC Battery, Chargers & UPS	35	29-Aug-14	16-Oct-14
SL.E9-6862.00	Wiring - Medium Voltage Switchgear and MCC	40	02-Sep-14	27-Oct-14
SL.E9-6838.00	Wiring - Fire Protection and Detection System	25	05-Sep-14	09-Oct-14
SL.E9-6867.00	Wiring - Panels and Switchboards	35	12-Sep-14	30-Oct-14
SL.E9-6869.00	Wiring - Plant Security System	40	12-Sep-14	06-Nov-14
SL.E9-6870.00	Wiring - Communication System	40	12-Sep-14	06-Nov-14
SL.E9-6876.00	Wiring - 138 kV Switches	35	12-Sep-14	30-Oct-14
SL.E9-6890.00	Wiring - IAQCS Distributed Control System	50	04-Nov-14	15-Jan-15
SL.E9-6999.00	Wiring BOP - Miscellaneous	50	14-Nov-14	26-Jan-15
SL.E9-6891.00	Wiring - BOP Instruments	40	04-Dec-14	02-Feb-15
Misc Instrumentation & Control Deliverables		538	02-Aug-12	02-Sep-14
SL.J5000.00	I&C Design Criteria	45	02-Aug-12	03-Oct-12
SL.J6100.00	Instrument Data Sheets	230	22-Mar-13	12-Feb-14
SL.J6300.00	Instrument List	373	22-Mar-13	02-Sep-14
SL.J1000.00	CEMS Test Port Locations	45	30-May-13	02-Aug-13
SL.J6200.00	Instrument Installation Details	165	31-May-13	22-Jan-14
SL.J6400.00	Instrument Locations Drawings	165	31-May-13	22-Jan-14
Distributed Control System Deliverables		657	21-Aug-12	09-Mar-15
SL.J2000.00	DCS Alarm List	255	21-Aug-12	15-Aug-13

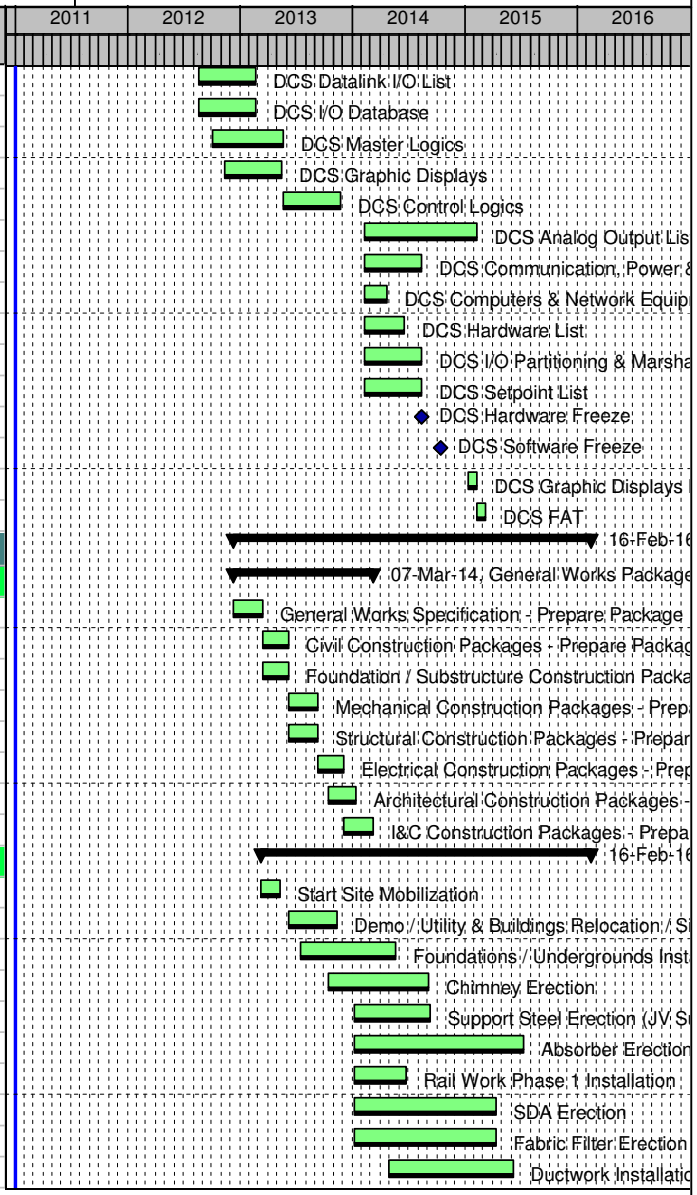


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

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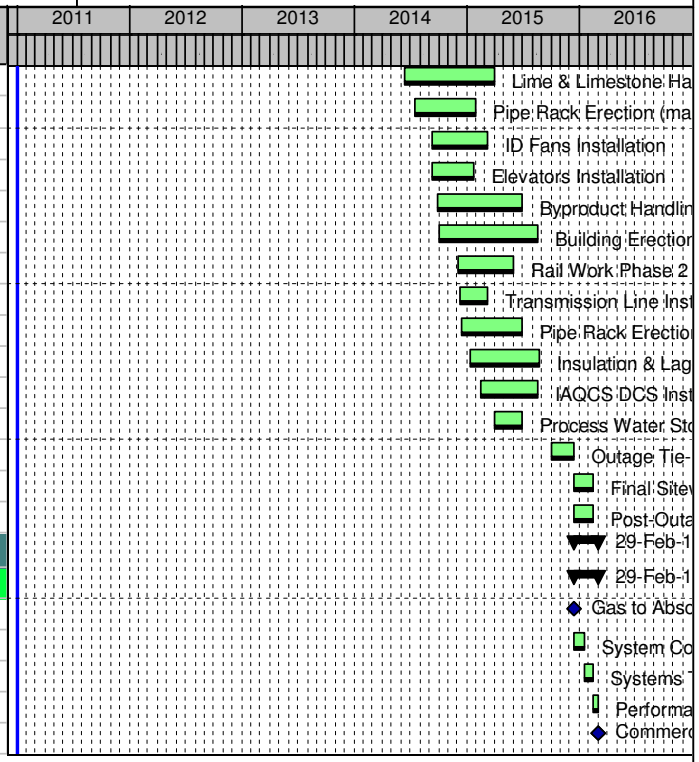
Activity ID	Activity Name	Dur	Start	Finish
SL.J2500.00	DCS Datalink I/O List	130	21-Aug-12	20-Feb-13
SL.J3700.00	DCS I/O Database	130	21-Aug-12	20-Feb-13
SL.J4000.00	DCS Master Logics	163	04-Oct-12	22-May-13
SL.J3100.00	DCS Graphic Displays	130	15-Nov-12	17-May-13
SL.J2400.00	DCS Control Logics	130	23-May-13	21-Nov-13
SL.J2100.00	DCS Analog Output List	255	12-Feb-14	09-Feb-15
SL.J2200.00	DCS Communication, Power & Grounding Schematics	130	12-Feb-14	14-Aug-14
SL.J2300.00	DCS Computers & Network Equipment Lists	50	12-Feb-14	23-Apr-14
SL.J3500.00	DCS Hardware List	90	12-Feb-14	18-Jun-14
SL.J3800.00	DCS I/O Partitioning & Marshalling Cabinet Design	130	12-Feb-14	14-Aug-14
SL.J4800.00	DCS Setpoint List	130	12-Feb-14	14-Aug-14
SL.J3000.00	DCS Hardware Freeze	0		14-Aug-14
SL.J3000.10	DCS Software Freeze	0		16-Oct-14
SL.J3200.00	DCS Graphic Displays List	20	12-Jan-15	09-Feb-15
SL.J3000.20	DCS FAT	20	09-Feb-15	09-Mar-15
CONSTRUCTION		819	12-Dec-12	16-Feb-16
General Works Packages		317	12-Dec-12	07-Mar-14
SL.P-6896.00	General Works Specification - Prepare Package	63	12-Dec-12	13-Mar-13
SL.P-6896C.00	Civil Construction Packages - Prepare Package	63	13-Mar-13	10-Jun-13
SL.P-6896U.00	Foundation / Substructure Construction Packages - Prepare Package	63	13-Mar-13	10-Jun-13
SL.P-6896M.00	Mechanical Construction Packages - Prepare Package	63	10-Jun-13	09-Sep-13
SL.P-6896S.00	Structural Construction Packages - Prepare Package	63	10-Jun-13	09-Sep-13
SL.P-6896E.00	Electrical Construction Packages - Prepare Package	63	09-Sep-13	05-Dec-13
SL.P-6896A.00	Architectural Construction Packages - Prepare Package	63	14-Oct-13	13-Jan-14
SL.P-6896J.00	I&C Construction Packages - Prepare Package	63	05-Dec-13	07-Mar-14
Construction		758	11-Mar-13	16-Feb-16
P1EPC7000	Start Site Mobilization	45	11-Mar-13*	10-May-13
P1EPC7010	Demo / Utility & Buildings Relocation / Site Development	110	10-Jun-13	11-Nov-13
P1EPC7030	Foundations / Undergrounds Installation	220	15-Jul-13	19-May-14
P1EPC7050	Chimney Erection	230	16-Oct-13	03-Sep-14
P1EPC7040	Support Steel Erection (JV Supplied, excl pipe rack)	175	06-Jan-14	08-Sep-14
P1EPC7056	Absorber Erection	395	06-Jan-14	13-Jul-15
P1EPC7120	Rail Work Phase 1 Installation	120	06-Jan-14	23-Jun-14
P1EPC7076	SDA Erection	330	06-Jan-14	13-Apr-15
P1EPC7086	Fabric Filter Erection	330	06-Jan-14	13-Apr-15
P1EPC7080	Ductwork Installation	290	28-Apr-14	08-Jun-15



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Big Sandy - Level 2 Schedule Layout	Big Sandy IAQCS (Non-Phased)	Data Date: 03-Jan-11 12:00 AM

Activity ID	Activity Name	Dur	Start	Finish
P1EPC7060	Lime & Limestone Handling Installation	210	11-Jun-14	01-Apr-15
P1EPC7180	Pipe Rack Erection (main plant)	140	17-Jul-14	29-Jan-15
P1EPC7070	ID Fans Installation	130	08-Sep-14	09-Mar-15
P1EPC7066	Elevators Installation	100	08-Sep-14	26-Jan-15
P1EPC7200	Byproduct Handling & Dewatering Island Installation	200	25-Sep-14	02-Jul-15
P1EPC7140	Building Erection	230	01-Oct-14	19-Aug-15
P1EPC7100	Rail Work Phase 2 Installation	130	04-Dec-14	04-Jun-15
P1EPC7150	Transmission Line Installation	65	08-Dec-14	09-Mar-15
P1EPC7210	Pipe Rack Erection (dewatering island)	140	18-Dec-14	02-Jul-15
P1EPC7170	Insulation & Lagging Installation	160	12-Jan-15	24-Aug-15
P1EPC7190	IAQCS DCS Installation	130	17-Feb-15	18-Aug-15
P1EPC7110	Process Water Storage Basin Installation	65	02-Apr-15	02-Jul-15
P1EPC7090	Outage Tie-in	75	01-Oct-15	15-Dec-15
P1EPC7130	Final Sitework	45	15-Dec-15	16-Feb-16
P1EPC7160	Post-Outage Work	45	15-Dec-15	16-Feb-16
START-UP		51	16-Dec-15	29-Feb-16
Start-up		51	16-Dec-15	29-Feb-16
P1EPC8000	Gas to Absorber	0		16-Dec-15
P1EPC8010	System Commissioning	30	16-Dec-15	15-Jan-16
P1EPC8030	Systems Tuning	30	15-Jan-16	14-Feb-16
P1EPC8020	Performance and Emissions Testing	15	14-Feb-16	29-Feb-16
P1EPC8040	Commercial Operation	0		29-Feb-16*



Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

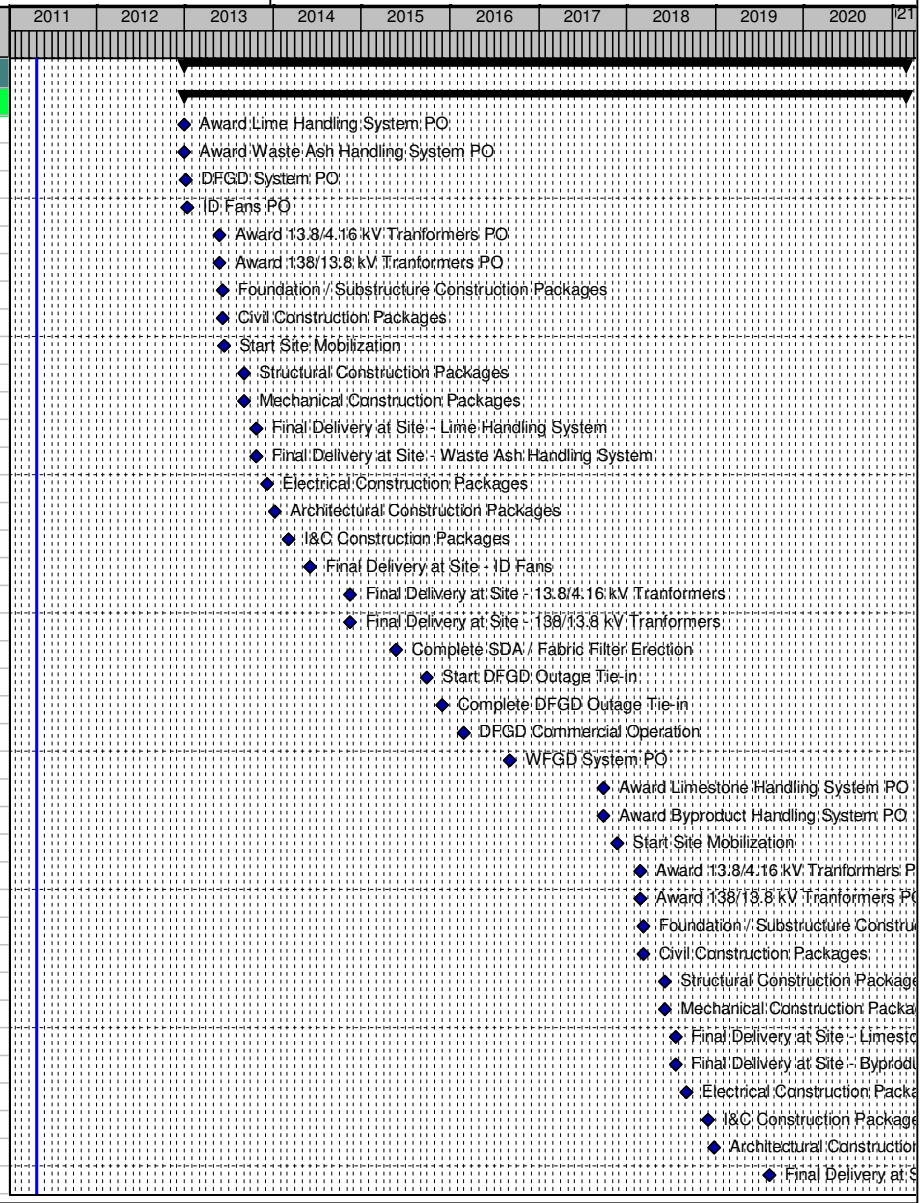
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ATTACHMENT 4-24
Project Schedule (IAQCS - Phased)

Attachment 4-24

Big Sandy - Level 2 Schedule Layout - 2 | **Big Sandy IAQCS (Phased)** | **Data Date: 02-May-11 12:00 AM**

Activity ID	Activity Name	Dur	Start	Finish
KEY PROJECT MILESTONES		2116	27-Dec-12	28-Feb-21
Key Project Milestones		2116	27-Dec-12	28-Feb-21
MS.SL.120	Award Lime Handling System PO	0		27-Dec-12
MS.SL.260	Award Waste Ash Handling System PO	0		27-Dec-12
MS.SL.290	DFGD System PO	0		03-Jan-13
MS.SL.280	ID Fans PO	0		10-Jan-13
MS.SL.300	Award 13.8/4.16 kV Tranformers PO	0		24-May-13
MS.SL.310	Award 138/13.8 kV Tranformers PO	0		24-May-13
MS.SL.320	Foundation / Substructure Construction Packages	0		07-Jun-13
MS.SL.330	Civil Construction Packages	0		07-Jun-13
MS.SL.340	Start Site Mobilization	0		10-Jun-13
MS.SL.350	Structural Construction Packages	0		06-Sep-13
MS.SL.360	Mechanical Construction Packages	0		06-Sep-13
MS.SL.370	Final Delivery at Site - Lime Handling System	0		23-Oct-13
MS.SL.380	Final Delivery at Site - Waste Ash Handling System	0		23-Oct-13
MS.SL.390	Electrical Construction Packages	0		04-Dec-13
MS.SL.400	Architectural Construction Packages	0		10-Jan-14
MS.SL.410	I&C Construction Packages	0		06-Mar-14
MS.SL.420	Final Delivery at Site - ID Fans	0		03-Jun-14
MS.SL.430	Final Delivery at Site - 13.8/4.16 kV Tranformers	0		14-Nov-14
MS.SL.440	Final Delivery at Site - 138/13.8 kV Tranformers	0		14-Nov-14
MS.TC.230	Complete SDA / Fabric Filter Erection	0		25-May-15
MS.TC.240	Start DFGD Outage Tie-in	0		01-Oct-15
MS.TC.250	Complete DFGD Outage Tie-in	0		30-Nov-15
MS.TC.260	DFGD Commercial Operation	0		29-Feb-16
MS.SL.200	WFGD System PO	0		02-Sep-16
MS.SL.070	Award Limestone Handling System PO	0		28-Sep-17
MS.SL.080	Award Byproduct Handling System PO	0		28-Sep-17
MS.SL.190	Start Site Mobilization	0		23-Nov-17
MS.SL.090	Award 13.8/4.16 kV Tranformers PO	0		23-Feb-18
MS.SL.230	Award 138/13.8 kV Tranformers PO	0		23-Feb-18
MS.SL.240	Foundation / Substructure Construction Packages	0		09-Mar-18
MS.SL.140	Civil Construction Packages	0		09-Mar-18
MS.SL.150	Structural Construction Packages	0		07-Jun-18
MS.SL.160	Mechanical Construction Packages	0		07-Jun-18
MS.SL.110	Final Delivery at Site - Limestone Handling System	0		24-Jul-18
MS.SL.270	Final Delivery at Site - Byproduct Handling System	0		24-Jul-18
MS.SL.170	Electrical Construction Packages	0		04-Sep-18
MS.SL.180	I&C Construction Packages	0		03-Dec-18
MS.SL.250	Architectural Construction Packages	0		24-Dec-18
MS.SL.130	Final Delivery at Site - 13.8/4.16 kV Tranformers	0		12-Aug-19



Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

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Activity ID	Activity Name	Dur	Start	Finish
MS.SL.220	Final Delivery at Site - 138/13.8 kV Tranformers	0		12-Aug-19
MS.TC.200	Complete Absorber Erection	0		15-Jul-20
MS.TC.210	Start WFGD Outage Tie-in	0		01-Oct-20
MS.TC.220	Complete WFGD Outage Tie-in	0		30-Nov-20
MS.TC.270	WFGD Commercial Operation	0		28-Feb-21
EPC CONTRACT		1615	02-May-11	03-Aug-17
Wet FGD		409	04-Jan-16	03-Aug-17
EPC1000	Select EPC Contractor	0		04-Jan-16*
EPC1010	EPC Contractor LNTP	0		04-Jan-16
EPC1020	WFGD Specification Develop / Bid / Award	173	05-Jan-16	02-Sep-16
EPC1030	EPC Contractor Scope / Cost / Schedule Development	260	02-Aug-16	03-Aug-17
EPC1040	EPC Contractor FNTP	0		03-Aug-17
Dry FGD		412	02-May-11	03-Dec-12
EPC1050	Select EPC Contractor	0		02-May-11*
EPC1060	EPC Contractor LNTP	0		02-May-11
EPC1070	DFGD Specification Develop / Bid / Award	174	02-May-11	03-Jan-12
EPC1080	EPC Contractor Scope / Cost / Schedule Development	260	01-Dec-11	03-Dec-12
EPC1090	EPC Contractor FNTP	0		03-Dec-12
WET FGD (WFGD)		278	02-Sep-16	03-Oct-17
Wet FGD		278	02-Sep-16	03-Oct-17
SL.P-6815.10	WFGD Vendor LNTP	0		02-Sep-16
SL.P-6815.50	WFGD Vendor FNTP	0		05-Sep-17
SL.P-6815.90	WFGD System - Fabrication / Delivery	0	03-Oct-17	03-Oct-17
DRY FGD (DFGD)		608	03-Jan-12	12-May-14
Dry FGD		608	03-Jan-12	12-May-14
SL.P-6815.20	DFGD Vendor LNTP	0		03-Jan-12
SL.P-6815.60	DFGD Vendor FNTP	0		03-Jan-13
SL.P-6815.100	DFGD System - Fabrication / Delivery	329	01-Feb-13	12-May-14
PROCUREMENT		1922	01-Aug-12	03-Jan-20
Owner Furnished Procurement		1634	01-Aug-12	28-Nov-18
SL.P-6800.00	Chimney - Award	85	01-Aug-12*	27-Nov-12
SL.P-6800.90	Chimney - Mobilize Sub	45	31-May-13	02-Aug-13
SL.P-6892.00	CEMS - Award	85	28-Feb-18	27-Jun-18
SL.P-6892.90	CEMS - Fabrication / Delivery	110	27-Jun-18	28-Nov-18
Civil / Structural Procurement - Award		1687	10-Oct-12	19-Apr-19
SL.P-6804.10	Structural Steel Fabrication - Award	85	10-Oct-12	07-Feb-13
SL.P-6811.10	Pre-Engineered Buildings - Award	75	31-Oct-12	14-Feb-13
SL.P-6809.10	Railwork - Award	85	21-Nov-12	21-Mar-13
SL.P-6804.5P10	Structural Steel Fabrication - Relocated Buildings Package	15	08-Feb-13	28-Feb-13
SL.P-6804.5N10	Structural Steel Fabrication - Existing Unit 2 Chimney Demo Package	15	20-Mar-13	10-Apr-13

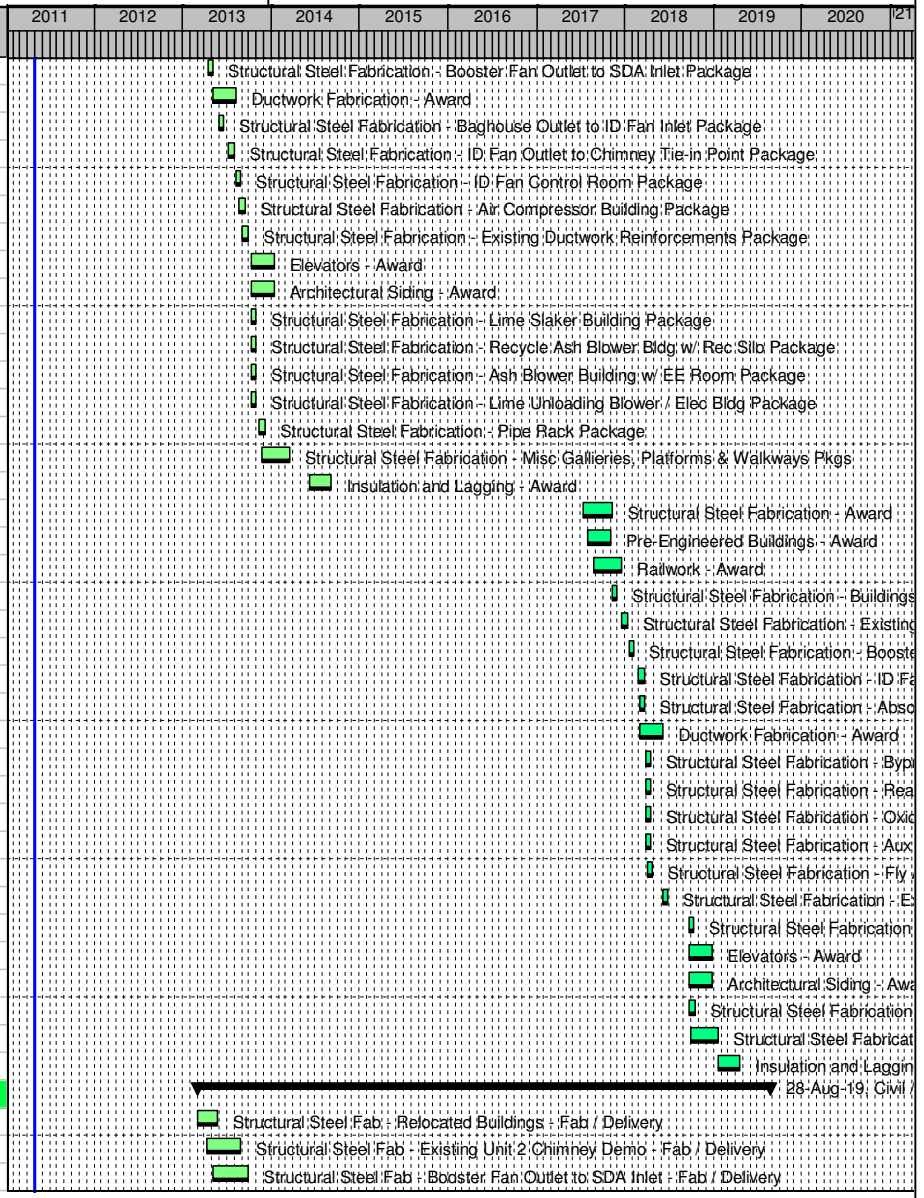


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

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Activity ID	Activity Name	Dur	Start	Finish
SL.P-6804.5B10	Structural Steel Fabrication - Booster Fan Outlet to SDA Inlet Package	15	17-Apr-13	08-May-13
SL.P-6805.10	Ductwork Fabrication - Award	63	08-May-13	06-Aug-13
SL.P-6804.5C	Structural Steel Fabrication - Baghouse Outlet to ID Fan Inlet Package	15	29-May-13	19-Jun-13
SL.P-6804.5D	Structural Steel Fabrication - ID Fan Outlet to Chimney Tie-in Point P...	15	11-Jul-13	01-Aug-13
SL.P-6804.5L10	Structural Steel Fabrication - ID Fan Control Room Package	15	09-Aug-13	30-Aug-13
SL.P-6804.5K10	Structural Steel Fabrication - Air Compressor Building Package	15	23-Aug-13	13-Sep-13
SL.P-6804.5Q10	Structural Steel Fabrication - Existing Ductwork Reinforcements Pack...	15	05-Sep-13	26-Sep-13
SL.P-6807.10	Elevators - Award	63	11-Oct-13	13-Jan-14
SL.P-6808.10	Architectural Siding - Award	63	11-Oct-13	13-Jan-14
SL.P-6804.5E10	Structural Steel Fabrication - Lime Slaker Building Package	15	11-Oct-13	01-Nov-13
SL.P-6804.5G10	Structural Steel Fabrication - Recycle Ash Blower Bldg w/ Rec Silo P...	15	11-Oct-13	01-Nov-13
SL.P-6804.5H10	Structural Steel Fabrication - Ash Blower Building w/ EE Room Package	15	11-Oct-13	01-Nov-13
SL.P-6804.5J10	Structural Steel Fabrication - Lime Unloading Blower / Elec Bldg Pack...	15	11-Oct-13	01-Nov-13
SL.P-6804.5F10	Structural Steel Fabrication - Pipe Rack Package	15	15-Nov-13	06-Dec-13
SL.P-6804.5X10	Structural Steel Fabrication - Misc Gallieries, Platforms & Walkways ...	80	22-Nov-13	18-Mar-14
SL.P-6806.10	Insulation and Lagging - Award	63	10-Jun-14	08-Sep-14
SL.P-6804.00	Structural Steel Fabrication - Award	85	13-Jul-17	08-Nov-17
SL.P-6811.00	Pre-Engineered Buildings - Award	65	03-Aug-17	01-Nov-17
SL.P-6809.00	Railwork - Award	85	24-Aug-17	20-Dec-17
SL.P-6804.5P	Structural Steel Fabrication - Buildings Relocation Package	15	09-Nov-17	29-Nov-17
SL.P-6804.5N	Structural Steel Fabrication - Existing Unit 2 Chimney Demo Package	15	19-Dec-17	10-Jan-18
SL.P-6804.5B	Structural Steel Fabrication - Booster Fan Outlet to ID Fan Inlet Pack...	15	17-Jan-18	07-Feb-18
SL.P-6804.5M	Structural Steel Fabrication - ID Fan Outlet to Absorber Inlet Package	15	28-Feb-18	21-Mar-18
SL.P-6804.5J	Structural Steel Fabrication - Absorber Building w/ EE Room Package	15	02-Mar-18	22-Mar-18
SL.P-6805.00	Ductwork Fabrication - Award	63	07-Mar-18	04-Jun-18
SL.P-6804.5E	Structural Steel Fabrication - Byproduct Dewatering w/ EE Room Pac...	15	30-Mar-18	19-Apr-18
SL.P-6804.5G	Structural Steel Fabrication - Reagent Prep Building Package	15	30-Mar-18	19-Apr-18
SL.P-6804.5H	Structural Steel Fabrication - Oxidation Blower Building Package	15	30-Mar-18	19-Apr-18
SL.P-6804.5W	Structural Steel Fabrication - Aux Pumphouse Bldg w/ EE Room Pac...	15	30-Mar-18	19-Apr-18
SL.P-6804.5V	Structural Steel Fabrication - Fly Ash Blower Building Package	15	04-Apr-18	25-Apr-18
SL.P-6804.5Q	Structural Steel Fabrication - Existing Ductwork Reinforcements Pack...	15	06-Jun-18	27-Jun-18
SL.P-6804.5F	Structural Steel Fabrication - Pipe Rack Package	15	24-Sep-18	12-Oct-18
SL.P-6807.00	Elevators - Award	63	26-Sep-18	24-Dec-18
SL.P-6808.00	Architectural Siding - Award	63	26-Sep-18	24-Dec-18
SL.P-6804.5Y	Structural Steel Fabrication - CEMS Building Package	15	26-Sep-18	17-Oct-18
SL.P-6804.5X	Structural Steel Fabrication - Misc Gallieries, Platforms & Walkways ...	80	01-Oct-18	18-Jan-19
SL.P-6806.00	Insulation and Lagging - Award	63	22-Jan-19	19-Apr-19
Civil / Structural Procurement - Delivery / Mobilization		1679	01-Mar-13	28-Aug-19
SL.P-6804.9P10	Structural Steel Fab - Relocated Buildings - Fab / Delivery	60	01-Mar-13	23-May-13
SL.P-6804.9N10	Structural Steel Fab - Existing Unit 2 Chimney Demo - Fab / Delivery	100	10-Apr-13	29-Aug-13
SL.P-6804.9B10	Structural Steel Fab - Booster Fan Outlet to SDA Inlet - Fab / Delivery	100	08-May-13	26-Sep-13

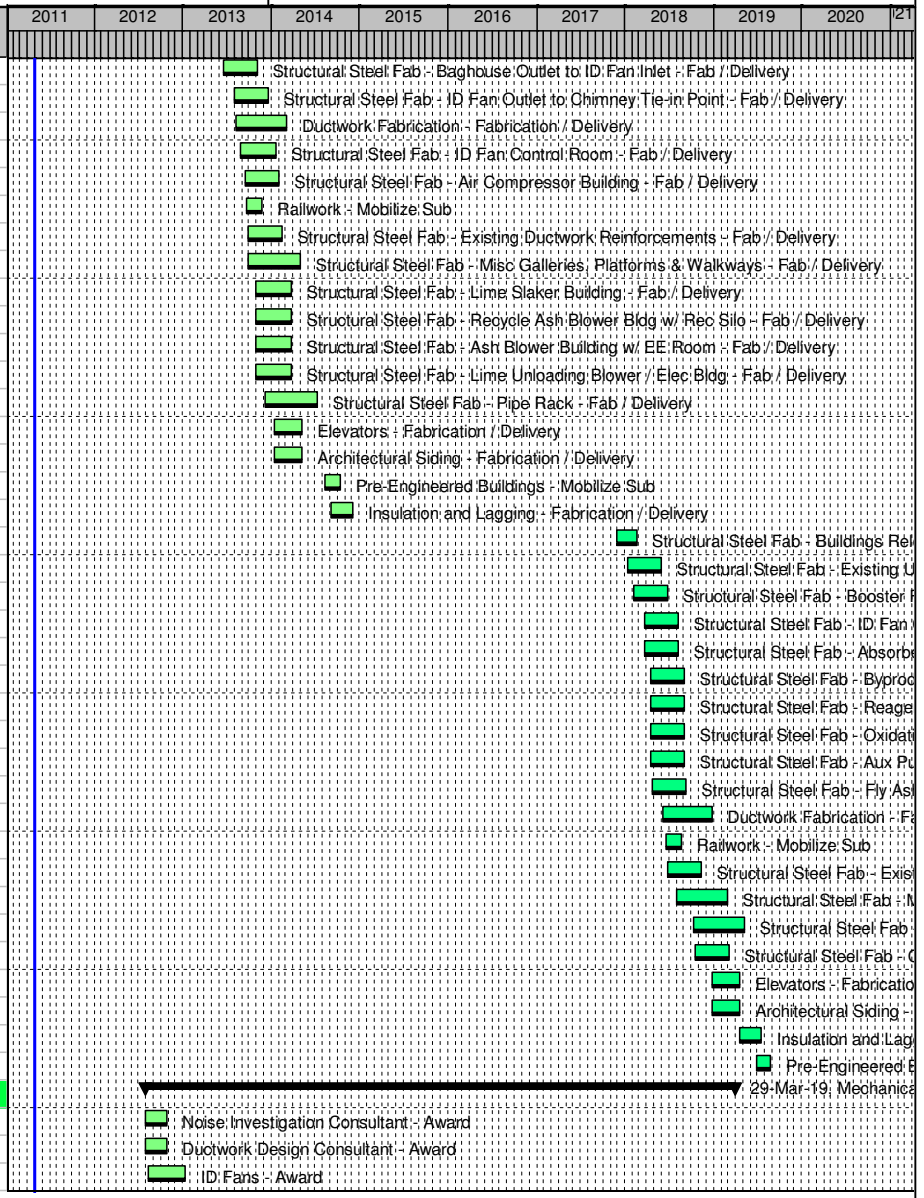


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

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Activity ID	Activity Name	Dur	Start	Finish
SL.P-6804.9C	Structural Steel Fab - Baghouse Outlet to ID Fan Inlet - Fab / Delivery	100	19-Jun-13	07-Nov-13
SL.P-6804.9D	Structural Steel Fab - ID Fan Outlet to Chimney Tie-in Point - Fab / D...	100	01-Aug-13	19-Dec-13
SL.P-6805.100	Ductwork Fabrication - Fabrication / Delivery	148	06-Aug-13	05-Mar-14
SL.P-6804.9L10	Structural Steel Fab - ID Fan Control Room - Fab / Delivery	100	30-Aug-13	21-Jan-14
SL.P-6804.9K10	Structural Steel Fab - Air Compressor Building - Fab / Delivery	100	13-Sep-13	04-Feb-14
SL.P-6809.100	Railwork - Mobilize Sub	45	23-Sep-13	22-Nov-13
SL.P-6804.9Q10	Structural Steel Fab - Existing Ductwork Reinforcements - Fab / Deliv...	100	26-Sep-13	17-Feb-14
SL.P-6804.9X10	Structural Steel Fab - Misc Galleries, Platforms & Walkways - Fab / D...	150	27-Sep-13	29-Apr-14
SL.P-6804.9E10	Structural Steel Fab - Lime Slaker Building - Fab / Delivery	100	01-Nov-13	25-Mar-14
SL.P-6804.9G10	Structural Steel Fab - Recycle Ash Blower Bldg w/ Rec Silo - Fab / D...	100	01-Nov-13	25-Mar-14
SL.P-6804.9H10	Structural Steel Fab - Ash Blower Building w/ EE Room - Fab / Delivery	100	01-Nov-13	25-Mar-14
SL.P-6804.9J10	Structural Steel Fab - Lime Unloading Blower / Elec Bldg - Fab / Deliv...	100	01-Nov-13	25-Mar-14
SL.P-6804.9F10	Structural Steel Fab - Pipe Rack - Fab / Delivery	150	06-Dec-13	09-Jul-14
SL.P-6807.100	Elevators - Fabrication / Delivery	85	13-Jan-14	09-May-14
SL.P-6808.100	Architectural Siding - Fabrication / Delivery	85	13-Jan-14	09-May-14
SL.P-6811.90	Pre-Engineered Buildings - Mobilize Sub	45	13-Aug-14	15-Oct-14
SL.P-6806.100	Insulation and Lagging - Fabrication / Delivery	63	08-Sep-14	04-Dec-14
SL.P-6804.9P	Structural Steel Fab - Buildings Relocation - Fab / Delivery	60	30-Nov-17	22-Feb-18
SL.P-6804.9N	Structural Steel Fab - Existing Unit 2 Chimney Demo - Fab / Delivery	100	10-Jan-18	30-May-18
SL.P-6804.9B	Structural Steel Fab - Booster Fan Outlet to ID Fan Inlet - Fab / Delivery	100	07-Feb-18	27-Jun-18
SL.P-6804.9M	Structural Steel Fab - ID Fan Outlet to Absorber Inlet - Fab / Delivery	100	21-Mar-18	08-Aug-18
SL.P-6804.9J	Structural Steel Fab - Absorber Building w/ EE Room - Fab / Delivery	100	23-Mar-18	09-Aug-18
SL.P-6804.9E	Structural Steel Fab - Byproduct Dewatering w/ EE Room - Fab / Deli...	100	20-Apr-18	06-Sep-18
SL.P-6804.9G	Structural Steel Fab - Reagent Prep Building - Fab / Delivery	100	20-Apr-18	06-Sep-18
SL.P-6804.9H	Structural Steel Fab - Oxidation Blower Building - Fab / Delivery	100	20-Apr-18	06-Sep-18
SL.P-6804.9W	Structural Steel Fab - Aux Pumphouse Bldg w/ EE Room - Fab / Deli...	100	20-Apr-18	06-Sep-18
SL.P-6804.9V	Structural Steel Fab - Fly Ash Blower Building - Fab / Delivery	100	25-Apr-18	12-Sep-18
SL.P-6805.90	Ductwork Fabrication - Fabrication / Delivery	148	04-Jun-18	28-Dec-18
SL.P-6809.90	Railwork - Mobilize Sub	45	22-Jun-18	23-Aug-18
SL.P-6804.9Q	Structural Steel Fab - Existing Ductwork Reinforcements - Fab / Deliv...	100	27-Jun-18	14-Nov-18
SL.P-6804.9X	Structural Steel Fab - Misc Galleries, Platforms & Walkways - Fab / D...	150	06-Aug-18	01-Mar-19
SL.P-6804.9F	Structural Steel Fab - Pipe Rack - Fab / Delivery	150	15-Oct-18	10-May-19
SL.P-6804.9Y	Structural Steel Fab - CEMS Building - Fab / Delivery	100	17-Oct-18	06-Mar-19
SL.P-6807.90	Elevators - Fabrication / Delivery	85	24-Dec-18	22-Apr-19
SL.P-6808.90	Architectural Siding - Fabrication / Delivery	85	24-Dec-18	22-Apr-19
SL.P-6806.90	Insulation and Lagging - Fabrication / Delivery	63	19-Apr-19	18-Jul-19
SL.P-6818.90	Pre-Engineered Buildings - Mobilize Sub	45	26-Jun-19	28-Aug-19
Mechanical Procurement - Award		1722	01-Aug-12	29-Mar-19
SL.P-6820.10	Noise Investigation Consultant - Award	63	01-Aug-12	29-Oct-12
SL.P-6821.10	Ductwork Design Consultant - Award	63	01-Aug-12	29-Oct-12
SL.P-6822.10	ID Fans - Award	106	13-Aug-12	10-Jan-13

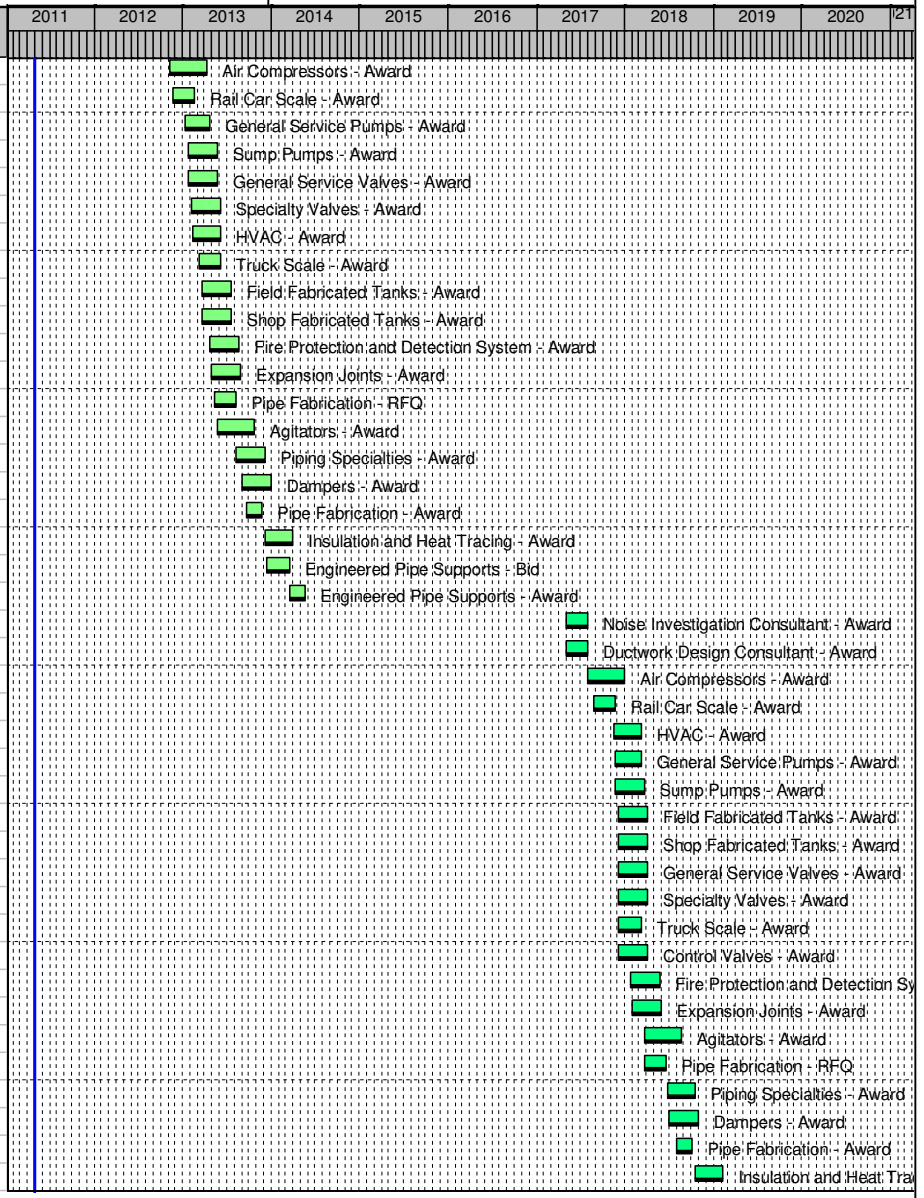


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

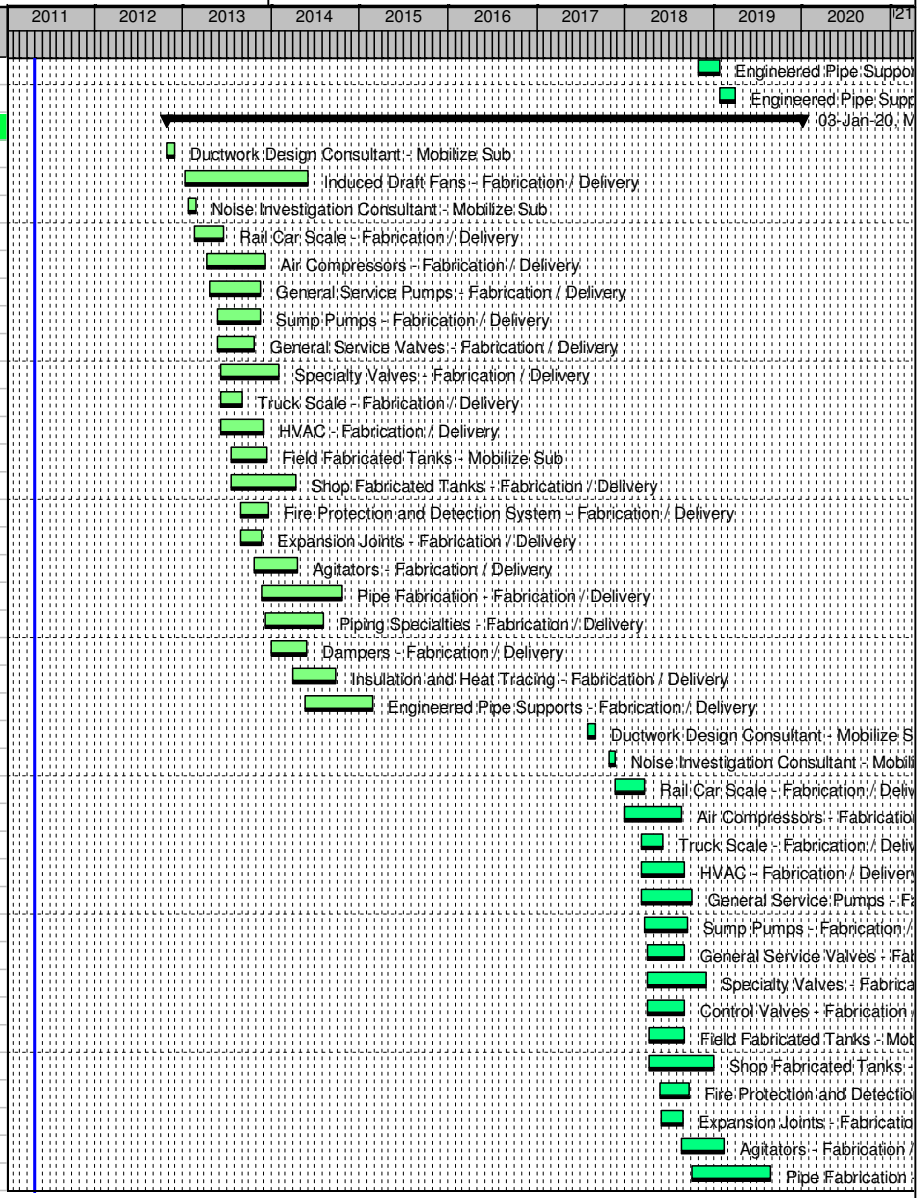
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Activity ID	Activity Name	Dur	Start	Finish
SL.P-6823.10	Air Compressors - Award	106	12-Nov-12	11-Apr-13
SL.P-6853.10	Rail Car Scale - Award	63	21-Nov-12	20-Feb-13
SL.P-6826.10	General Service Pumps - Award	75	10-Jan-13	25-Apr-13
SL.P-6827.10	Sump Pumps - Award	85	24-Jan-13	23-May-13
SL.P-6830.10	General Service Valves - Award	85	24-Jan-13	23-May-13
SL.P-6831.10	Specialty Valves - Award	85	07-Feb-13	06-Jun-13
SL.P-6834.10	HVAC - Award	80	15-Feb-13	06-Jun-13
SL.P-6852.10	Truck Scale - Award	63	11-Mar-13	06-Jun-13
SL.P-6828.10	Field Fabricated Tanks - Award	85	21-Mar-13	19-Jul-13
SL.P-6829.10	Shop Fabricated Tanks - Award	85	21-Mar-13	19-Jul-13
SL.P-6838.10	Fire Protection and Detection System - Award	85	26-Apr-13	23-Aug-13
SL.P-6824.10	Expansion Joints - Award	85	01-May-13	29-Aug-13
SL.P-6835.20	Pipe Fabrication - RFQ	65	09-May-13	09-Aug-13
SL.P-6836.10	Agitators - Award	106	23-May-13	21-Oct-13
SL.P-6833.10	Piping Specialties - Award	85	09-Aug-13	06-Dec-13
SL.P-6825.10	Dampers - Award	85	03-Sep-13	02-Jan-14
SL.P-6835.30	Pipe Fabrication - Award	45	20-Sep-13	22-Nov-13
SL.P-6837.10	Insulation and Heat Tracing - Award	80	06-Dec-13	01-Apr-14
SL.P-6832.20	Engineered Pipe Supports - Bid	65	13-Dec-13	18-Mar-14
SL.P-6832.30	Engineered Pipe Supports - Award	45	18-Mar-14	20-May-14
SL.P-6820.00	Noise Investigation Consultant - Award	63	03-May-17	01-Aug-17
SL.P-6821.00	Ductwork Design Consultant - Award	63	03-May-17	01-Aug-17
SL.P-6823.00	Air Compressors - Award	106	03-Aug-17	29-Dec-17
SL.P-6853.00	Rail Car Scale - Award	63	24-Aug-17	21-Nov-17
SL.P-6834.00	HVAC - Award	80	16-Nov-17	08-Mar-18
SL.P-6826.00	General Service Pumps - Award	75	24-Nov-17	09-Mar-18
SL.P-6827.00	Sump Pumps - Award	85	24-Nov-17	23-Mar-18
SL.P-6828.00	Field Fabricated Tanks - Award	85	08-Dec-17	06-Apr-18
SL.P-6829.00	Shop Fabricated Tanks - Award	85	08-Dec-17	06-Apr-18
SL.P-6830.00	General Service Valves - Award	85	08-Dec-17	06-Apr-18
SL.P-6831.00	Specialty Valves - Award	85	08-Dec-17	06-Apr-18
SL.P-6852.00	Truck Scale - Award	63	08-Dec-17	08-Mar-18
SL.P-6878.00	Control Valves - Award	85	08-Dec-17	06-Apr-18
SL.P-6838.00	Fire Protection and Detection System - Award	85	26-Jan-18	24-May-18
SL.P-6824.00	Expansion Joints - Award	85	31-Jan-18	30-May-18
SL.P-6836.00	Agitators - Award	106	23-Mar-18	20-Aug-18
SL.P-6835.00	Pipe Fabrication - RFQ	65	26-Mar-18	22-Jun-18
SL.P-6833.00	Piping Specialties - Award	85	25-Jun-18	19-Oct-18
SL.P-6825.00	Dampers - Award	85	02-Jul-18	29-Oct-18
SL.P-6835.10	Pipe Fabrication - Award	45	06-Aug-18	05-Oct-18
SL.P-6837.00	Insulation and Heat Tracing - Award	80	19-Oct-18	08-Feb-19



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Activity ID	Activity Name	Dur	Start	Finish
SL.P-6832.00	Engineered Pipe Supports - Bid	65	29-Oct-18	25-Jan-19
SL.P-6832.10	Engineered Pipe Supports - Award	45	28-Jan-19	29-Mar-19
Mechanical Procurement - Delivery / Mobilization		1859	29-Oct-12	03-Jan-20
SL.P-6821.100	Ductwork Design Consultant - Mobilize Sub	21	29-Oct-12	27-Nov-12
SL.P-6822.100	Induced Draft Fans - Fabrication / Delivery	360	10-Jan-13	03-Jun-14
SL.P-6820.100	Noise Investigation Consultant - Mobilize Sub	21	24-Jan-13	22-Feb-13
SL.P-6853.100	Rail Car Scale - Fabrication / Delivery	85	20-Feb-13	19-Jun-13
SL.P-6823.100	Air Compressors - Fabrication / Delivery	169	11-Apr-13	05-Dec-13
SL.P-6826.100	General Service Pumps - Fabrication / Delivery	148	25-Apr-13	20-Nov-13
SL.P-6827.100	Sump Pumps - Fabrication / Delivery	127	23-May-13	19-Nov-13
SL.P-6830.100	General Service Valves - Fabrication / Delivery	106	23-May-13	21-Oct-13
SL.P-6831.100	Specialty Valves - Fabrication / Delivery	169	06-Jun-13	03-Feb-14
SL.P-6852.100	Truck Scale - Fabrication / Delivery	63	06-Jun-13	04-Sep-13
SL.P-6834.100	HVAC - Fabrication / Delivery	127	07-Jun-13	03-Dec-13
SL.P-6828.100	Field Fabricated Tanks - Mobilize Sub	106	19-Jul-13	16-Dec-13
SL.P-6829.100	Shop Fabricated Tanks - Fabrication / Delivery	190	19-Jul-13	16-Apr-14
SL.P-6838.100	Fire Protection and Detection System - Fabrication / Delivery	85	26-Aug-13	20-Dec-13
SL.P-6824.100	Expansion Joints - Fabrication / Delivery	63	29-Aug-13	26-Nov-13
SL.P-6836.100	Agitators - Fabrication / Delivery	127	21-Oct-13	18-Apr-14
SL.P-6835.100	Pipe Fabrication - Fabrication / Delivery	233	22-Nov-13	20-Oct-14
SL.P-6833.100	Piping Specialties - Fabrication / Delivery	169	06-Dec-13	05-Aug-14
SL.P-6825.100	Dampers - Fabrication / Delivery	106	02-Jan-14	30-May-14
SL.P-6837.100	Insulation and Heat Tracing - Fabrication / Delivery	127	01-Apr-14	26-Sep-14
SL.P-6832.100	Engineered Pipe Supports - Fabrication / Delivery	200	20-May-14	27-Feb-15
SL.P-6821.90	Ductwork Design Consultant - Mobilize Sub	21	01-Aug-17	30-Aug-17
SL.P-6820.90	Noise Investigation Consultant - Mobilize Sub	21	25-Oct-17	23-Nov-17
SL.P-6853.90	Rail Car Scale - Fabrication / Delivery	85	21-Nov-17	21-Mar-18
SL.P-6823.90	Air Compressors - Fabrication / Delivery	169	29-Dec-17	24-Aug-18
SL.P-6852.90	Truck Scale - Fabrication / Delivery	63	08-Mar-18	05-Jun-18
SL.P-6834.90	HVAC - Fabrication / Delivery	127	09-Mar-18	03-Sep-18
SL.P-6826.90	General Service Pumps - Fabrication / Delivery	148	12-Mar-18	03-Oct-18
SL.P-6827.90	Sump Pumps - Fabrication / Delivery	127	23-Mar-18	18-Sep-18
SL.P-6830.90	General Service Valves - Fabrication / Delivery	106	06-Apr-18	03-Sep-18
SL.P-6831.90	Specialty Valves - Fabrication / Delivery	169	06-Apr-18	29-Nov-18
SL.P-6878.90	Control Valves - Fabrication / Delivery	106	06-Apr-18	03-Sep-18
SL.P-6828.90	Field Fabricated Tanks - Mobilize Sub	106	09-Apr-18	03-Sep-18
SL.P-6829.90	Shop Fabricated Tanks - Fabrication / Delivery	190	09-Apr-18	31-Dec-18
SL.P-6838.90	Fire Protection and Detection System - Fabrication / Delivery	85	25-May-18	20-Sep-18
SL.P-6824.90	Expansion Joints - Fabrication / Delivery	63	30-May-18	27-Aug-18
SL.P-6836.90	Agitators - Fabrication / Delivery	127	20-Aug-18	13-Feb-19
SL.P-6835.90	Pipe Fabrication - Fabrication / Delivery	233	08-Oct-18	28-Aug-19

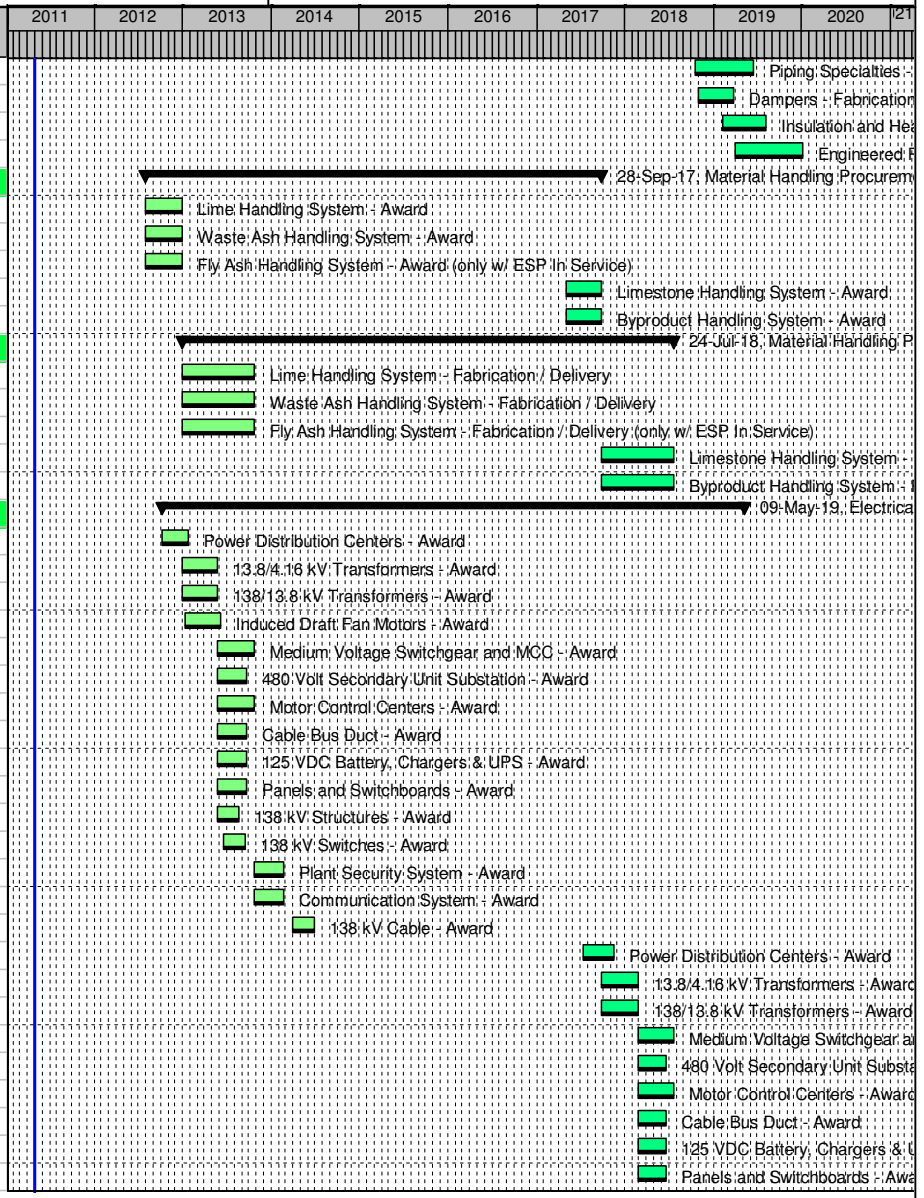


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

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Activity ID	Activity Name	Dur	Start	Finish
SL.P-6833.90	Piping Specialties - Fabrication / Delivery	169	19-Oct-18	13-Jun-19
SL.P-6825.90	Dampers - Fabrication / Delivery	106	29-Oct-18	26-Mar-19
SL.P-6837.90	Insulation and Heat Tracing - Fabrication / Delivery	127	08-Feb-19	06-Aug-19
SL.P-6832.90	Engineered Pipe Supports - Fabrication / Delivery	200	01-Apr-19	03-Jan-20
Material Handling Procurement - Award		1332	01-Aug-12	28-Sep-17
SL.P-6850.10	Lime Handling System - Award	106	01-Aug-12	27-Dec-12
SL.P-6851.00	Waste Ash Handling System - Award	106	01-Aug-12	27-Dec-12
SL.P-6875.00	Fly Ash Handling System - Award (only w/ ESP In Service)	106	01-Aug-12	27-Dec-12
SL.P-6850.00	Limestone Handling System - Award	106	03-May-17	28-Sep-17
SL.P-6873.00	Byproduct Handling System - Award	106	03-May-17	28-Sep-17
Material Handling Procurement - Delivery / Mobilization		1438	28-Dec-12	24-Jul-18
SL.P-6850.100	Lime Handling System - Fabrication / Delivery	212	28-Dec-12	23-Oct-13
SL.P-6851.90	Waste Ash Handling System - Fabrication / Delivery	212	28-Dec-12	23-Oct-13
SL.P-6875.90	Fly Ash Handling System - Fabrication / Delivery (only w/ ESP In Serv...	212	28-Dec-12	23-Oct-13
SL.P-6850.90	Limestone Handling System - Fabrication / Delivery	212	29-Sep-17	24-Jul-18
SL.P-6873.90	Byproduct Handling System - Fabrication / Delivery	212	29-Sep-17	24-Jul-18
Electrical Procurement - Award		1700	10-Oct-12	09-May-19
SL.P-6810.10	Power Distribution Centers - Award	75	10-Oct-12	24-Jan-13
SL.P-6861.10	13.8/4.16 kV Transformers - Award	106	27-Dec-12	24-May-13
SL.P-6872.20	138/13.8 kV Transformers - Award	106	27-Dec-12	24-May-13
SL.P-6860.10	Induced Draft Fan Motors - Award	106	10-Jan-13	07-Jun-13
SL.P-6862.10	Medium Voltage Switchgear and MCC - Award	106	27-May-13	22-Oct-13
SL.P-6863.10	480 Volt Secondary Unit Substation - Award	85	27-May-13	23-Sep-13
SL.P-6864.10	Motor Control Centers - Award	106	27-May-13	22-Oct-13
SL.P-6865.10	Cable Bus Duct - Award	85	27-May-13	23-Sep-13
SL.P-6866.10	125 VDC Battery, Chargers & UPS - Award	85	27-May-13	23-Sep-13
SL.P-6867.10	Panels and Switchboards - Award	85	27-May-13	23-Sep-13
SL.P-6877.10	138 kV Structures - Award	63	27-May-13	23-Aug-13
SL.P-6876.10	138 kV Switches - Award	63	17-Jun-13	13-Sep-13
SL.P-6869.10	Plant Security System - Award	85	22-Oct-13	20-Feb-14
SL.P-6870.10	Communication System - Award	85	22-Oct-13	20-Feb-14
SL.P-6871.10	138 kV Cable - Award	63	01-Apr-14	27-Jun-14
SL.P-6810.00	Power Distribution Centers - Award	90	13-Jul-17	15-Nov-17
SL.P-6861.00	13.8/4.16 kV Transformers - Award	106	28-Sep-17	23-Feb-18
SL.P-6872.10	138/13.8 kV Transformers - Award	106	28-Sep-17	23-Feb-18
SL.P-6862.00	Medium Voltage Switchgear and MCC - Award	106	26-Feb-18	23-Jul-18
SL.P-6863.00	480 Volt Secondary Unit Substation - Award	85	26-Feb-18	22-Jun-18
SL.P-6864.00	Motor Control Centers - Award	106	26-Feb-18	23-Jul-18
SL.P-6865.00	Cable Bus Duct - Award	85	26-Feb-18	22-Jun-18
SL.P-6866.00	125 VDC Battery, Chargers & UPS - Award	85	26-Feb-18	22-Jun-18
SL.P-6867.00	Panels and Switchboards - Award	85	26-Feb-18	22-Jun-18

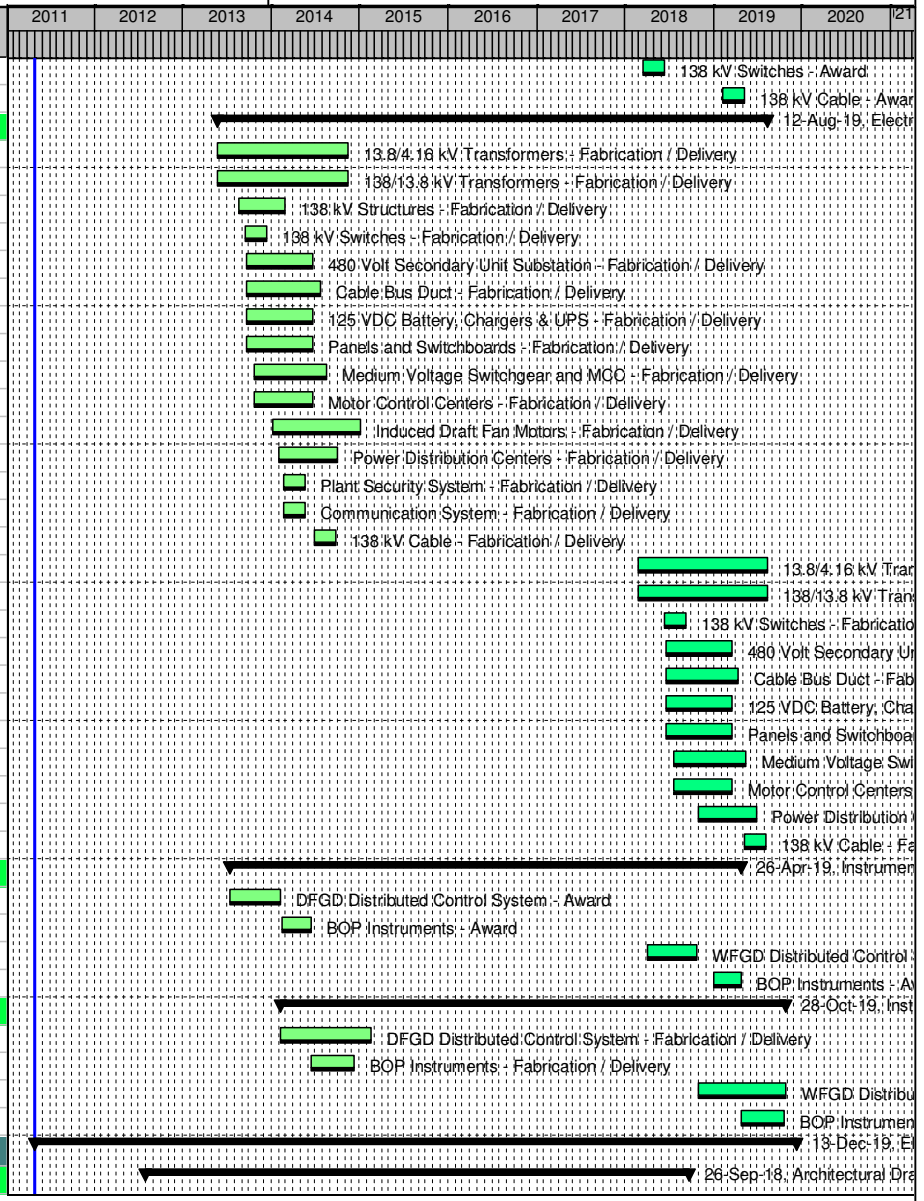


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

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Activity ID	Activity Name	Dur	Start	Finish
SL.P-6876.00	138 kV Switches - Award	63	19-Mar-18	14-Jun-18
SL.P-6871.00	138 kV Cable - Award	63	08-Feb-19	09-May-19
Electrical Procurement - Delivery / Mobilization		1607	27-May-13	12-Aug-19
SL.P-6861.100	13.8/4.16 kV Transformers - Fabrication / Delivery	381	27-May-13	14-Nov-14
SL.P-6872.100	138/13.8 kV Transformers - Fabrication / Delivery	381	27-May-13	14-Nov-14
SL.P-6877.100	138 kV Structures - Fabrication / Delivery	130	23-Aug-13	25-Feb-14
SL.P-6876.100	138 kV Switches - Fabrication / Delivery	63	13-Sep-13	11-Dec-13
SL.P-6863.100	480 Volt Secondary Unit Substation - Fabrication / Delivery	190	23-Sep-13	19-Jun-14
SL.P-6865.100	Cable Bus Duct - Fabrication / Delivery	212	23-Sep-13	21-Jul-14
SL.P-6866.100	125 VDC Battery, Chargers & UPS - Fabrication / Delivery	190	23-Sep-13	19-Jun-14
SL.P-6867.100	Panels and Switchboards - Fabrication / Delivery	190	23-Sep-13	19-Jun-14
SL.P-6862.100	Medium Voltage Switchgear and MCC - Fabrication / Delivery	212	22-Oct-13	19-Aug-14
SL.P-6864.100	Motor Control Centers - Fabrication / Delivery	169	22-Oct-13	19-Jun-14
SL.P-6860.100	Induced Draft Fan Motors - Fabrication / Delivery	254	10-Jan-14	06-Jan-15
SL.P-6810.100	Power Distribution Centers - Fabrication / Delivery	169	04-Feb-14	30-Sep-14
SL.P-6869.100	Plant Security System - Fabrication / Delivery	63	20-Feb-14	20-May-14
SL.P-6870.100	Communication System - Fabrication / Delivery	63	20-Feb-14	20-May-14
SL.P-6871.100	138 kV Cable - Fabrication / Delivery	63	27-Jun-14	26-Sep-14
SL.P-6861.90	13.8/4.16 kV Transformers - Fabrication / Delivery	381	26-Feb-18	12-Aug-19
SL.P-6872.90	138/13.8 kV Transformers - Fabrication / Delivery	381	26-Feb-18	12-Aug-19
SL.P-6876.90	138 kV Switches - Fabrication / Delivery	63	14-Jun-18	11-Sep-18
SL.P-6863.90	480 Volt Secondary Unit Substation - Fabrication / Delivery	190	22-Jun-18	18-Mar-19
SL.P-6865.90	Cable Bus Duct - Fabrication / Delivery	212	22-Jun-18	16-Apr-19
SL.P-6866.90	125 VDC Battery, Chargers & UPS - Fabrication / Delivery	190	22-Jun-18	18-Mar-19
SL.P-6867.90	Panels and Switchboards - Fabrication / Delivery	190	22-Jun-18	18-Mar-19
SL.P-6862.90	Medium Voltage Switchgear and MCC - Fabrication / Delivery	212	23-Jul-18	15-May-19
SL.P-6864.90	Motor Control Centers - Fabrication / Delivery	169	23-Jul-18	18-Mar-19
SL.P-6810.90	Power Distribution Centers - Fabrication / Delivery	169	01-Nov-18	26-Jun-19
SL.P-6871.90	138 kV Cable - Fabrication / Delivery	63	09-May-19	06-Aug-19
Instrumentation & Controls Procurement - Award		1495	16-Jul-13	26-Apr-19
SL.P-6890.10	DFGD Distributed Control System - Award	148	16-Jul-13	11-Feb-14
SL.P-6891.10	BOP Instruments - Award	85	18-Feb-14	17-Jun-14
SL.P-6890.00	WFGD Distributed Control System - Award	148	03-Apr-18	26-Oct-18
SL.P-6891.00	BOP Instruments - Award	85	31-Dec-18	26-Apr-19
Instrumentation & Controls Procurement - Delivery / Mobilization		1478	11-Feb-14	28-Oct-19
SL.P-6890.100	DFGD Distributed Control System - Fabrication / Delivery	261	11-Feb-14	16-Feb-15
SL.P-6891.100	BOP Instruments - Fabrication / Delivery	127	17-Jun-14	12-Dec-14
SL.P-6890.90	WFGD Distributed Control System - Fabrication / Delivery	261	29-Oct-18	28-Oct-19
SL.P-6891.90	BOP Instruments - Fabrication / Delivery	127	26-Apr-19	22-Oct-19
ENGINEERING / DESIGN		2230	02-May-11	13-Dec-19
Architectural Drawings		1589	01-Aug-12	26-Sep-18

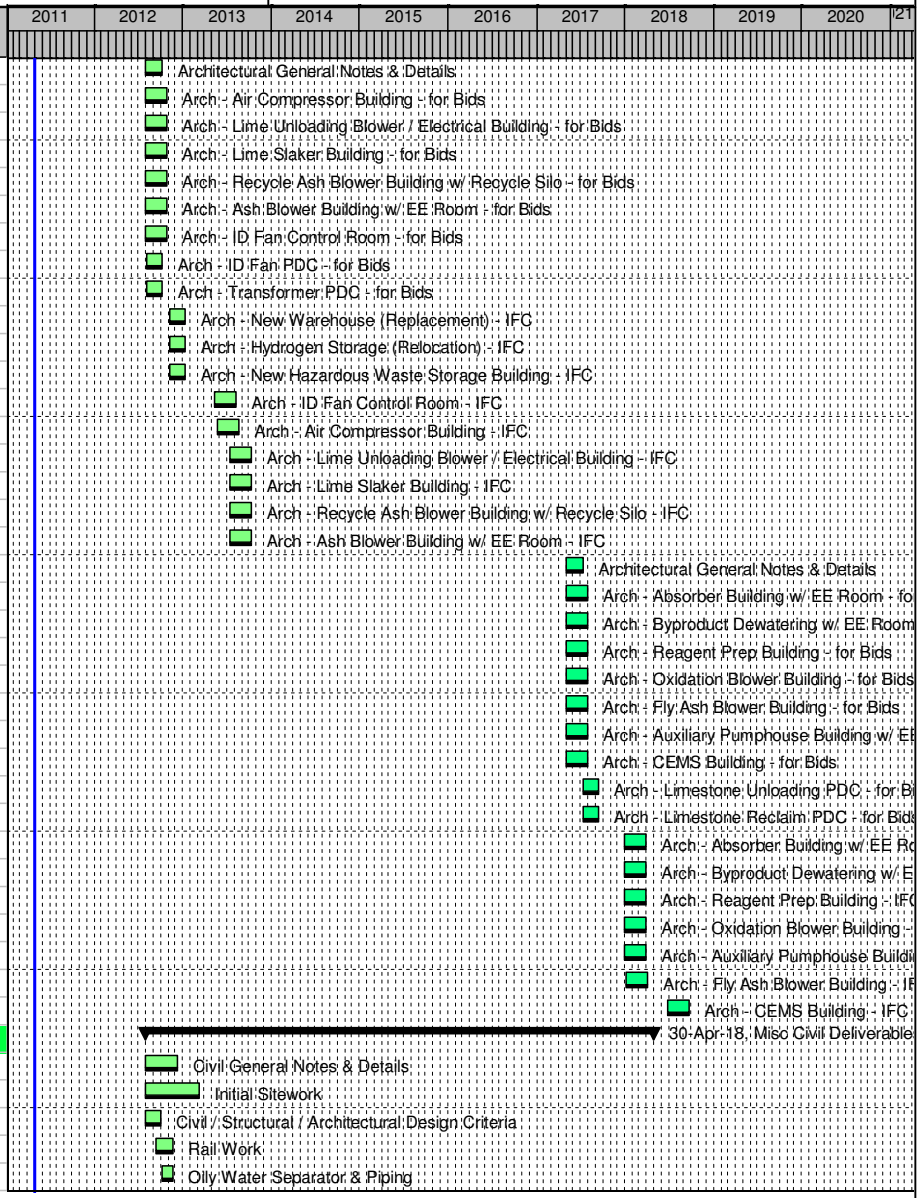


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

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Activity ID	Activity Name	Dur	Start	Finish
SL.CA6000.10	Architectural General Notes & Details	50	01-Aug-12	09-Oct-12
SL.CA1200.10	Arch - Air Compressor Building - for Bids	65	01-Aug-12	30-Oct-12
SL.CA1800.10	Arch - Lime Unloading Blower / Electrical Building - for Bids	65	01-Aug-12	30-Oct-12
SL.CA2500.10	Arch - Lime Slaker Building - for Bids	65	01-Aug-12	30-Oct-12
SL.CA3400.10	Arch - Recycle Ash Blower Building w/ Recycle Silo - for Bids	65	01-Aug-12	30-Oct-12
SL.CA1500.10	Arch - Ash Blower Building w/ EE Room - for Bids	65	01-Aug-12	30-Oct-12
SL.CA2100.10	Arch - ID Fan Control Room - for Bids	65	01-Aug-12	30-Oct-12
SL.CA2200.10	Arch - ID Fan PDC - for Bids	45	08-Aug-12	09-Oct-12
SL.CA2250.00	Arch - Transformer PDC - for Bids	45	08-Aug-12	09-Oct-12
SL.CA1900.00	Arch - New Warehouse (Replacement) - IFC	45	07-Nov-12	10-Jan-13
SL.CA2300.00	Arch - Hydrogen Storage (Relocation) - IFC	45	07-Nov-12	10-Jan-13
SL.CA2000.00	Arch - New Hazardous Waste Storage Building - IFC	45	07-Nov-12	10-Jan-13
SL.CA2100.60	Arch - ID Fan Control Room - IFC	65	09-May-13	09-Aug-13
SL.CA1200.60	Arch - Air Compressor Building - IFC	65	23-May-13	23-Aug-13
SL.CA1800.60	Arch - Lime Unloading Blower / Electrical Building - IFC	65	12-Jul-13	11-Oct-13
SL.CA2500.60	Arch - Lime Slaker Building - IFC	65	12-Jul-13	11-Oct-13
SL.CA3400.60	Arch - Recycle Ash Blower Building w/ Recycle Silo - IFC	65	12-Jul-13	11-Oct-13
SL.CA1500.60	Arch - Ash Blower Building w/ EE Room - IFC	65	12-Jul-13	11-Oct-13
SL.CA6000.00	Architectural General Notes & Details	50	03-May-17	12-Jul-17
SL.CA1800.00	Arch - Absorber Building w/ EE Room - for Bids	65	03-May-17	02-Aug-17
SL.CA2500.00	Arch - Byproduct Dewatering w/ EE Room - for Bids	65	03-May-17	02-Aug-17
SL.CA3400.00	Arch - Reagent Prep Building - for Bids	65	03-May-17	02-Aug-17
SL.CA1500.00	Arch - Oxidation Blower Building - for Bids	65	03-May-17	02-Aug-17
SL.CA3700.00	Arch - Fly Ash Blower Building - for Bids	65	03-May-17	02-Aug-17
SL.CA3720.00	Arch - Auxiliary Pumphouse Building w/ EE Room - for Bids	65	03-May-17	02-Aug-17
SL.CA3740.00	Arch - CEMS Building - for Bids	65	03-May-17	02-Aug-17
SL.CA3500.00	Arch - Limestone Unloading PDC - for Bids	45	13-Jul-17	13-Sep-17
SL.CA3600.00	Arch - Limestone Reclaim PDC - for Bids	45	13-Jul-17	13-Sep-17
SL.CA1800.50	Arch - Absorber Building w/ EE Room - IFC	65	29-Dec-17	29-Mar-18
SL.CA2500.50	Arch - Byproduct Dewatering w/ EE Room - IFC	65	29-Dec-17	29-Mar-18
SL.CA3400.50	Arch - Reagent Prep Building - IFC	65	29-Dec-17	29-Mar-18
SL.CA1500.50	Arch - Oxidation Blower Building - IFC	65	29-Dec-17	29-Mar-18
SL.CA3720.50	Arch - Auxiliary Pumphouse Building w/ EE Room - IFC	65	29-Dec-17	29-Mar-18
SL.CA3700.50	Arch - Fly Ash Blower Building - IFC	65	03-Jan-18	04-Apr-18
SL.CA3740.50	Arch - CEMS Building - IFC	65	27-Jun-18	26-Sep-18
Misc Civil Deliverables		1483	01-Aug-12	30-Apr-18
SL.CC1000.10	Civil General Notes & Details	94	01-Aug-12	10-Dec-12
SL.CC4000.10	Initial Sitework	156	01-Aug-12	08-Mar-13
SL.CC0800.10	Civil / Structural / Architectural Design Criteria	45	01-Aug-12	02-Oct-12
SL.CC7200.10	Rail Work	50	12-Sep-12	20-Nov-12
SL.CC5300.10	Oily Water Separator & Piping	30	10-Oct-12	20-Nov-12

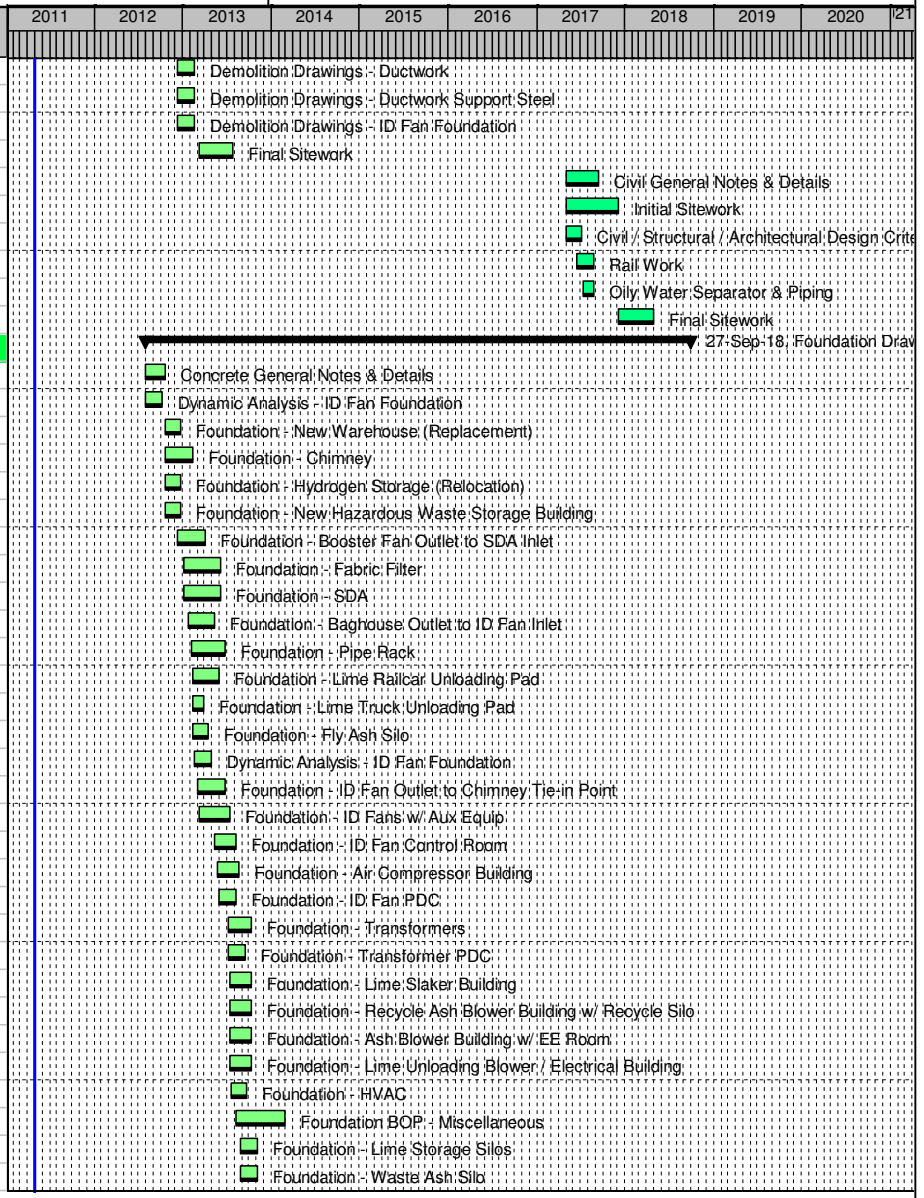


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

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Activity ID	Activity Name	Dur	Start	Finish
SL.CC1500.10	Demolition Drawings - Ductwork	50	11-Dec-12	20-Feb-13
SL.CC1600.10	Demolition Drawings - Ductwork Support Steel	50	11-Dec-12	20-Feb-13
SL.CC1700.10	Demolition Drawings - ID Fan Foundation	50	11-Dec-12	20-Feb-13
SL.CC3000.10	Final Sitework	101	11-Mar-13	30-Jul-13
SL.CC1000.00	Civil General Notes & Details	94	03-May-17	12-Sep-17
SL.CC4000.00	Initial Sitework	156	03-May-17	07-Dec-17
SL.CC0800.00	Civil / Structural / Architectural Design Criteria	45	03-May-17	05-Jul-17
SL.CC7200.00	Rail Work	50	14-Jun-17	23-Aug-17
SL.CC5300.00	Oily Water Separator & Piping	30	13-Jul-17	23-Aug-17
SL.CC3000.00	Final Sitework	101	08-Dec-17	30-Apr-18
Foundation Drawings		1591	01-Aug-12	27-Sep-18
SL.CK1200.10	Concrete General Notes & Details	60	01-Aug-12	23-Oct-12
SL.CK1500.00	Dynamic Analysis - ID Fan Foundation	50	01-Aug-12	09-Oct-12
SL.CK3700.10	Foundation - New Warehouse (Replacement)	45	24-Oct-12	26-Dec-12
SL.CK3500.10	Foundation - Chimney	80	24-Oct-12	14-Feb-13
SL.CK3100.10	Foundation - Hydrogen Storage (Relocation)	45	24-Oct-12	26-Dec-12
SL.CK3800.10	Foundation - New Hazardous Waste Storage Building	45	24-Oct-12	26-Dec-12
SL.CK7100.10	Foundation - Booster Fan Outlet to SDA Inlet	80	10-Dec-12	03-Apr-13
SL.CK3000.00	Foundation - Fabric Filter	110	04-Jan-13	06-Jun-13
SL.CK5600.00	Foundation - SDA	110	04-Jan-13	06-Jun-13
SL.CK7300.10	Foundation - Baghouse Outlet to ID Fan Inlet	80	23-Jan-13	15-May-13
SL.CK4700.10	Foundation - Pipe Rack	100	07-Feb-13	27-Jun-13
SL.CK4100.10	Foundation - Lime Railcar Unloading Pad	80	11-Feb-13	31-May-13
SL.CK4400.10	Foundation - Lime Truck Unloading Pad	35	11-Feb-13	29-Mar-13
SL.CK9000.00	Foundation - Fly Ash Silo	50	11-Feb-13	19-Apr-13
SL.CK1500.10	Dynamic Analysis - ID Fan Foundation	50	21-Feb-13	02-May-13
SL.CK7400.00	Foundation - ID Fan Outlet to Chimney Tie-in Point	80	06-Mar-13	26-Jun-13
SL.CK3600.10	Foundation - ID Fans w/ Aux Equip	90	07-Mar-13	12-Jul-13
SL.CK3620.10	Foundation - ID Fan Control Room	65	09-May-13	09-Aug-13
SL.CK2300.10	Foundation - Air Compressor Building	65	23-May-13	23-Aug-13
SL.CK3640.10	Foundation - ID Fan PDC	50	30-May-13	09-Aug-13
SL.CK6200.10	Foundation - Transformers	67	09-Jul-13	09-Oct-13
SL.CK3670.00	Foundation - Transformer PDC	50	09-Jul-13	16-Sep-13
SL.CK4200.10	Foundation - Lime Slaker Building	65	12-Jul-13	11-Oct-13
SL.CK5300.10	Foundation - Recycle Ash Blower Building w/ Recycle Silo	65	12-Jul-13	11-Oct-13
SL.CK2400.10	Foundation - Ash Blower Building w/ EE Room	65	12-Jul-13	11-Oct-13
SL.CK3200.10	Foundation - Lime Unloading Blower / Electrical Building	65	12-Jul-13	11-Oct-13
SL.CK3400.10	Foundation - HVAC	46	22-Jul-13	23-Sep-13
SL.CK8000.10	Foundation BOP - Miscellaneous	140	09-Aug-13	25-Feb-14
SL.CK4300.00	Foundation - Lime Storage Silos	46	30-Aug-13	04-Nov-13
SL.CK7200.00	Foundation - Waste Ash Silo	46	30-Aug-13	04-Nov-13

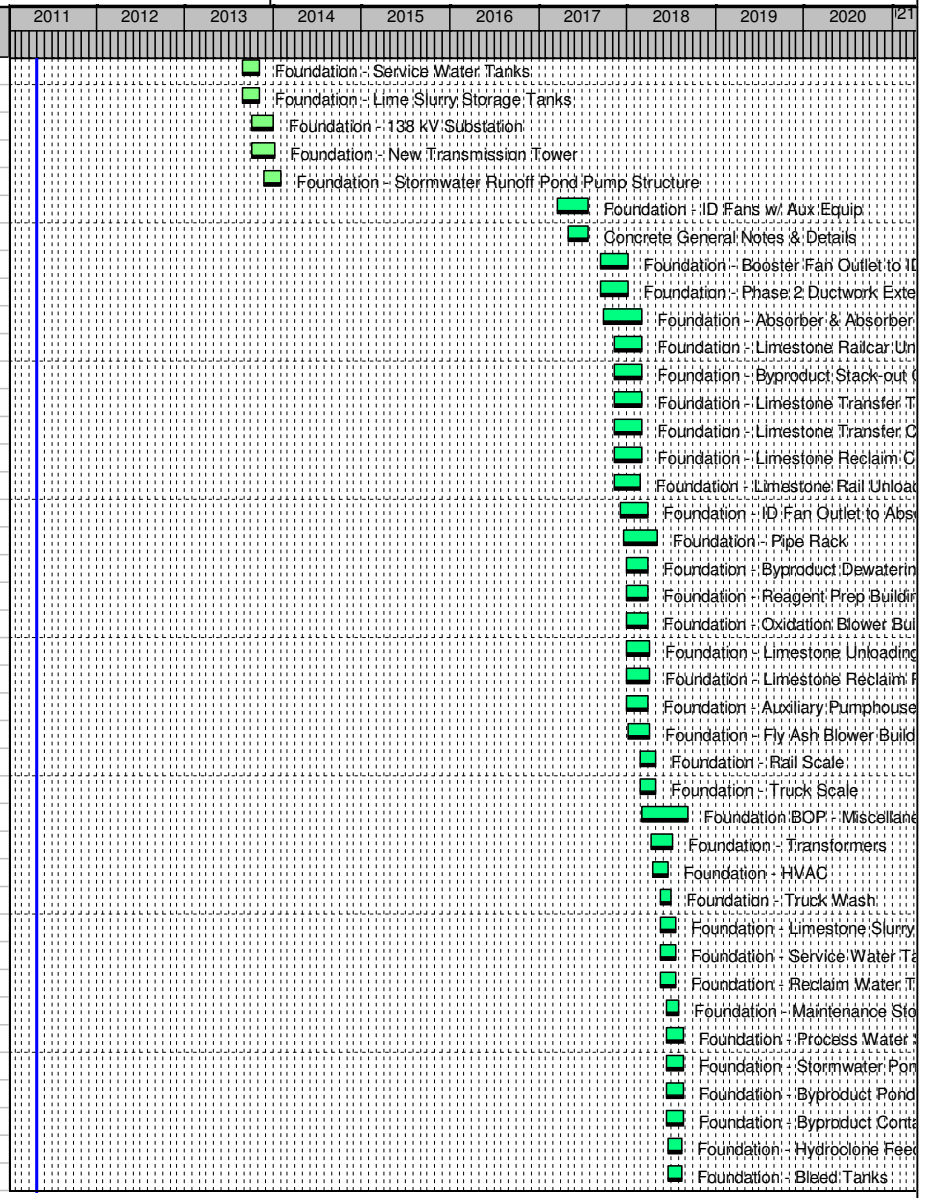


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

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Activity ID	Activity Name	Dur	Start	Finish
SL.CK5800.10	Foundation - Service Water Tanks	46	30-Aug-13	04-Nov-13
SL.CK4250.20	Foundation - Lime Slurry Storage Tanks	46	30-Aug-13	04-Nov-13
SL.CK2500.10	Foundation - 138 kV Substation	60	04-Oct-13	30-Dec-13
SL.CK6240.00	Foundation - New Transmission Tower	67	04-Oct-13	09-Jan-14
SL.CK5100.10	Foundation - Stormwater Runoff Pond Pump Structure	50	22-Nov-13	04-Feb-14
SL.CK3600.00	Foundation - ID Fans w/ Aux Equip	90	22-Mar-17	26-Jul-17
SL.CK1200.00	Concrete General Notes & Details	60	03-May-17	26-Jul-17
SL.CK7100.00	Foundation - Booster Fan Outlet to ID Fan Inlet	80	12-Sep-17	03-Jan-18
SL.CK7140.00	Foundation - Phase 2 Ductwork Extension to WFGD	80	12-Sep-17	03-Jan-18
SL.CK3200.00	Foundation - Absorber & Absorber Building w/ EE Room	110	28-Sep-17	01-Mar-18
SL.CK4100.00	Foundation - Limestone Railcar Unloading Pad	80	10-Nov-17	02-Mar-18
SL.CK6400.00	Foundation - Byproduct Stack-out Conveyor	80	10-Nov-17	02-Mar-18
SL.CK6500.00	Foundation - Limestone Transfer Tower	80	10-Nov-17	02-Mar-18
SL.CK6600.00	Foundation - Limestone Transfer Conveyor	80	10-Nov-17	02-Mar-18
SL.CK6700.00	Foundation - Limestone Reclaim Conveyor	80	10-Nov-17	02-Mar-18
SL.CK6730.00	Foundation - Limestone Rail Unloading Track Hopper	75	10-Nov-17	23-Feb-18
SL.CK7300.00	Foundation - ID Fan Outlet to Absorber Inlet	80	05-Dec-17	28-Mar-18
SL.CK4700.00	Foundation - Pipe Rack	100	15-Dec-17	04-May-18
SL.CK4200.00	Foundation - Byproduct Dewatering w/ EE Room	65	29-Dec-17	29-Mar-18
SL.CK5300.00	Foundation - Reagent Prep Building	65	29-Dec-17	29-Mar-18
SL.CK2400.00	Foundation - Oxidation Blower Building	65	29-Dec-17	29-Mar-18
SL.CK5400.00	Foundation - Limestone Unloading PDC	70	29-Dec-17	05-Apr-18
SL.CK5500.00	Foundation - Limestone Reclaim PDC	70	29-Dec-17	05-Apr-18
SL.CK5320.10	Foundation - Auxiliary Pumphouse Building w/ EE Room	65	29-Dec-17	29-Mar-18
SL.CK5320.00	Foundation - Fly Ash Blower Building	65	03-Jan-18	04-Apr-18
SL.CK6760.00	Foundation - Rail Scale	45	26-Feb-18	27-Apr-18
SL.CK6770.00	Foundation - Truck Scale	45	26-Feb-18	27-Apr-18
SL.CK8000.00	Foundation BOP - Miscellaneous	140	02-Mar-18	13-Sep-18
SL.CK6200.00	Foundation - Transformers	67	09-Apr-18	10-Jul-18
SL.CK3400.00	Foundation - HVAC	46	20-Apr-18	22-Jun-18
SL.CK4400.00	Foundation - Truck Wash	35	18-May-18	05-Jul-18
SL.CK4250.10	Foundation - Limestone Slurry Tanks	46	21-May-18	23-Jul-18
SL.CK5800.00	Foundation - Service Water Tank	46	21-May-18	23-Jul-18
SL.CK5900.00	Foundation - Reclaim Water Tanks	46	21-May-18	23-Jul-18
SL.CK6000.00	Foundation - Maintenance Storage Tank	40	11-Jun-18	03-Aug-18
SL.CK4800.00	Foundation - Process Water Storage Basin	50	15-Jun-18	23-Aug-18
SL.CK5100.00	Foundation - Stormwater Pond Pump Structure	50	15-Jun-18	23-Aug-18
SL.CK5200.00	Foundation - Byproduct Pond Pump Structure	50	15-Jun-18	23-Aug-18
SL.CK5250.00	Foundation - Byproduct Containment Walls & Wind Screen	50	15-Jun-18	23-Aug-18
SL.CK6150.00	Foundation - Hydroclone Feed Tanks	45	18-Jun-18	17-Aug-18
SL.CK6350.00	Foundation - Bleed Tanks	45	18-Jun-18	17-Aug-18

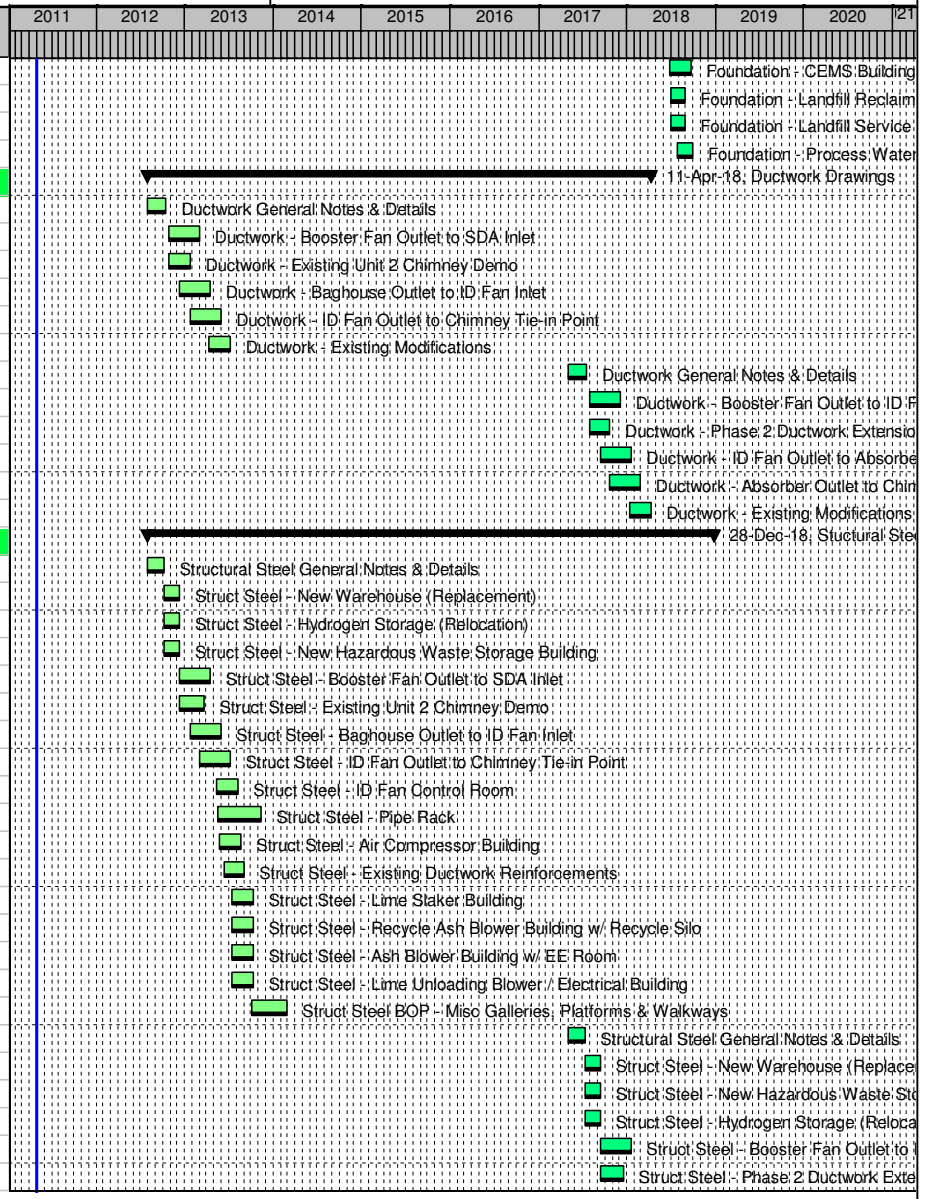


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TASK filter: All Activities

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Activity ID	Activity Name	Dur	Start	Finish
SL.CK5320.20	Foundation - CEMS Building	65	27-Jun-18	26-Sep-18
SL.CK6100.00	Foundation - Landfill Reclaim Water Tanks	45	02-Jul-18	31-Aug-18
SL.CK6300.00	Foundation - Landfill Service Water Tanks	45	02-Jul-18	31-Aug-18
SL.CK4850.00	Foundation - Process Water Storage Basin Sump	45	27-Jul-18	27-Sep-18
Ductwork Drawings		1469	01-Aug-12	11-Apr-18
SL.CS2500.10	Ductwork General Notes & Details	55	01-Aug-12	16-Oct-12
SL.CS1200.10	Ductwork - Booster Fan Outlet to SDA Inlet	90	29-Oct-12	06-Mar-13
SL.CS1700.10	Ductwork - Existing Unit 2 Chimney Demo	60	29-Oct-12	23-Jan-13
SL.CS1400.10	Ductwork - Baghouse Outlet to ID Fan Inlet	90	10-Dec-12	17-Apr-13
SL.CS1600.00	Ductwork - ID Fan Outlet to Chimney Tie-in Point	90	23-Jan-13	29-May-13
SL.CS2000.10	Ductwork - Existing Modifications	65	10-Apr-13	11-Jul-13
SL.CS2500.00	Ductwork General Notes & Details	55	03-May-17	19-Jul-17
SL.CS1200.00	Ductwork - Booster Fan Outlet to ID Fan Inlet	90	01-Aug-17	05-Dec-17
SL.CS1700.00	Ductwork - Phase 2 Ductwork Extension to WFGD	60	01-Aug-17	24-Oct-17
SL.CS2300.00	Ductwork - ID Fan Outlet to Absorber Inlet	90	12-Sep-17	17-Jan-18
SL.CS1400.00	Ductwork - Absorber Outlet to Chimney	90	24-Oct-17	28-Feb-18
SL.CS2000.00	Ductwork - Existing Modifications	65	10-Jan-18	11-Apr-18
Stuctural Steel Drawings		1657	01-Aug-12	28-Dec-18
SL.CS7000.10	Structural Steel General Notes & Details	50	01-Aug-12	09-Oct-12
SL.CS1900.10	Struct Steel - New Warehouse (Replacement)	45	10-Oct-12	11-Dec-12
SL.CS2300.10	Struct Steel - Hydrogen Storage (Relocation)	45	10-Oct-12	11-Dec-12
SL.CS2200.00	Struct Steel - New Hazardous Waste Storage Building	45	10-Oct-12	11-Dec-12
SL.CS3300.20	Struct Steel - Booster Fan Outlet to SDA Inlet	90	10-Dec-12	17-Apr-13
SL.CS5100.10	Struct Steel - Existing Unit 2 Chimney Demo	70	10-Dec-12	20-Mar-13
SL.CS4000.00	Struct Steel - Baghouse Outlet to ID Fan Inlet	90	23-Jan-13	29-May-13
SL.CS4500.00	Struct Steel - ID Fan Outlet to Chimney Tie-in Point	90	06-Mar-13	11-Jul-13
SL.CS5200.10	Struct Steel - ID Fan Control Room	65	09-May-13	09-Aug-13
SL.CS4900.10	Struct Steel - Pipe Rack	130	16-May-13	15-Nov-13
SL.CS5600.00	Struct Steel - Air Compressor Building	65	23-May-13	23-Aug-13
SL.CS5900.10	Struct Steel - Existing Ductwork Reinforcements	60	12-Jun-13	05-Sep-13
SL.CS4700.10	Struct Steel - Lime Slaker Building	65	12-Jul-13	11-Oct-13
SL.CS5000.10	Struct Steel - Recycle Ash Blower Building w/ Recycle Silo	65	12-Jul-13	11-Oct-13
SL.CS2400.10	Struct Steel - Ash Blower Building w/ EE Room	65	12-Jul-13	11-Oct-13
SL.CS5300.10	Struct Steel - Lime Unloading Blower / Electrical Building	65	12-Jul-13	11-Oct-13
SL.CS5800.10	Struct Steel BOP - Misc Galleries, Platforms & Walkways	100	04-Oct-13	25-Feb-14
SL.CS7000.00	Structural Steel General Notes & Details	50	03-May-17	12-Jul-17
SL.CS1900.00	Struct Steel - New Warehouse (Replacement)	45	13-Jul-17	13-Sep-17
SL.CS1950.00	Struct Steel - New Hazardous Waste Storage Building	45	13-Jul-17	13-Sep-17
SL.CS2700.00	Struct Steel - Hydrogen Storage (Relocation)	45	13-Jul-17	13-Sep-17
SL.CS3300.00	Struct Steel - Booster Fan Outlet to ID Fan Inlet	90	12-Sep-17	17-Jan-18
SL.CS5100.00	Struct Steel - Phase 2 Ductwork Extension to WFGD	70	12-Sep-17	19-Dec-17

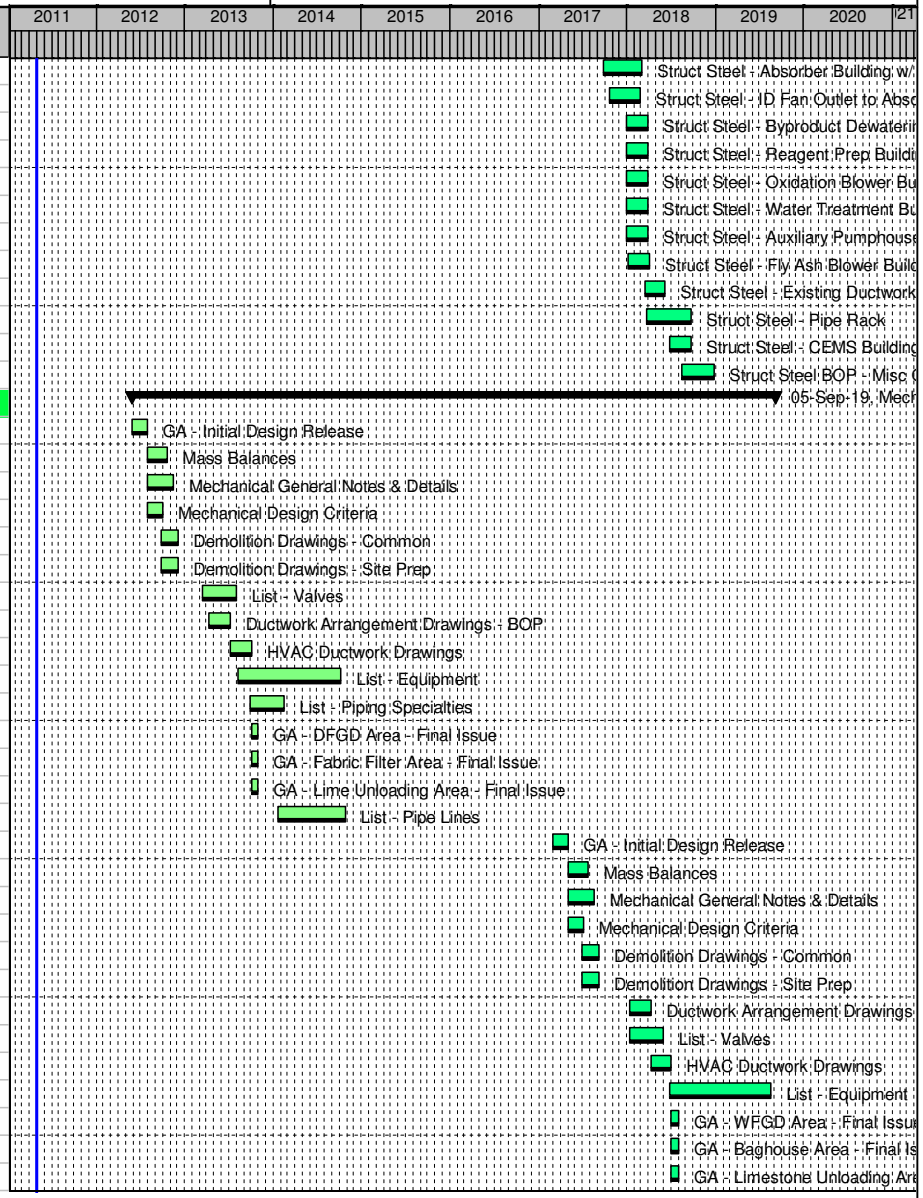


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

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Activity ID	Activity Name	Dur	Start	Finish
SL.CS5300.00	Struct Steel - Absorber Building w/ EE Room	110	28-Sep-17	01-Mar-18
SL.CS3300.10	Struct Steel - ID Fan Outlet to Absorber Inlet	90	24-Oct-17	28-Feb-18
SL.CS4700.00	Struct Steel - Byproduct Dewatering w/ EE Room	65	29-Dec-17	29-Mar-18
SL.CS5000.00	Struct Steel - Reagent Prep Building	65	29-Dec-17	29-Mar-18
SL.CS2400.00	Struct Steel - Oxidation Blower Building	65	29-Dec-17	29-Mar-18
SL.CS5400.00	Struct Steel - Water Treatment Building w/ EE Room	65	29-Dec-17	29-Mar-18
SL.CS5250.10	Struct Steel - Auxiliary Pumphouse Building w/ EE Room	65	29-Dec-17	29-Mar-18
SL.CS5250.00	Struct Steel - Fly Ash Blower Building	65	03-Jan-18	04-Apr-18
SL.CS5900.00	Struct Steel - Existing Ductwork Reinforcements	60	14-Mar-18	06-Jun-18
SL.CS4900.00	Struct Steel - Pipe Rack	130	26-Mar-18	21-Sep-18
SL.CS5250.20	Struct Steel - CEMS Building	65	27-Jun-18	26-Sep-18
SL.CS5800.00	Struct Steel BOP - Misc Galleries, Platforms & Walkways	100	13-Aug-18	28-Dec-18
Mechanical Deliverables		1880	30-May-12	05-Sep-19
SL.MM3000.10	GA - Initial Design Release	44	30-May-12	31-Jul-12
SL.MM6000.10	Mass Balances	61	01-Aug-12	24-Oct-12
SL.MM7000.10	Mechanical General Notes & Details	75	01-Aug-12	13-Nov-12
SL.MM6500.10	Mechanical Design Criteria	45	01-Aug-12	02-Oct-12
SL.MM1200.10	Demolition Drawings - Common	50	26-Sep-12	04-Dec-12
SL.MM1300.10	Demolition Drawings - Site Prep	50	26-Sep-12	04-Dec-12
SL.MM5800.10	List - Valves	100	14-Mar-13	02-Aug-13
SL.MM2800.10	Ductwork Arrangement Drawings - BOP	65	10-Apr-13	11-Jul-13
SL.MM4000.10	HVAC Ductwork Drawings	60	11-Jul-13	03-Oct-13
SL.MM5200.10	List - Equipment	300	09-Aug-13	08-Oct-14
SL.MM5600.10	List - Piping Specialties	100	27-Sep-13	18-Feb-14
SL.MM3200.10	GA - DFGD Area - Final Issue	20	03-Oct-13	31-Oct-13
SL.MM3300.10	GA - Fabric Filter Area - Final Issue	20	03-Oct-13	31-Oct-13
SL.MM3500.10	GA - Lime Unloading Area - Final Issue	20	03-Oct-13	31-Oct-13
SL.MM5500.10	List - Pipe Lines	200	20-Jan-14	28-Oct-14
SL.MM3000.00	GA - Initial Design Release	43	03-Mar-17	02-May-17
SL.MM6000.00	Mass Balances	61	03-May-17	27-Jul-17
SL.MM7000.00	Mechanical General Notes & Details	75	03-May-17	16-Aug-17
SL.MM6500.00	Mechanical Design Criteria	45	03-May-17	05-Jul-17
SL.MM1200.00	Demolition Drawings - Common	50	28-Jun-17	06-Sep-17
SL.MM1300.00	Demolition Drawings - Site Prep	50	28-Jun-17	06-Sep-17
SL.MM2800.00	Ductwork Arrangement Drawings - BOP	65	10-Jan-18	11-Apr-18
SL.MM5800.00	List - Valves	100	12-Jan-18	01-Jun-18
SL.MM4000.00	HVAC Ductwork Drawings	60	11-Apr-18	04-Jul-18
SL.MM5200.00	List - Equipment	300	25-Jun-18	16-Aug-19
SL.MM3200.00	GA - WFGD Area - Final Issue	20	04-Jul-18	01-Aug-18
SL.MM3300.00	GA - Baghouse Area - Final Issue	20	04-Jul-18	01-Aug-18
SL.MM3500.00	GA - Limestone Unloading Area - Final Issue	20	04-Jul-18	01-Aug-18

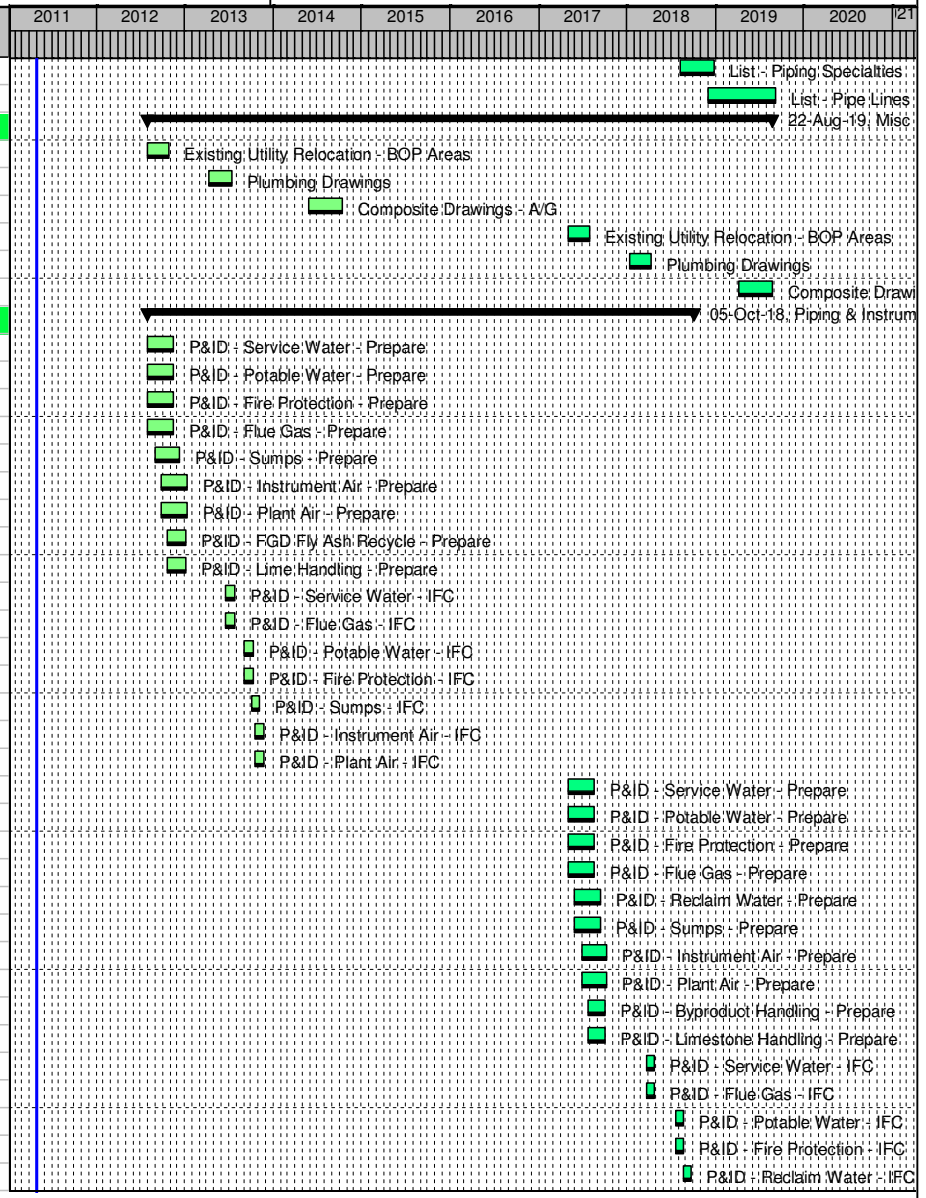


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

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Activity ID	Activity Name	Dur	Start	Finish
SL.MM5600.00	List - Piping Specialties	100	10-Aug-18	28-Dec-18
SL.MM5500.00	List - Pipe Lines	200	30-Nov-18	05-Sep-19
Misc Piping Deliverables		1826	01-Aug-12	22-Aug-19
SL.MP0700.10	Existing Utility Relocation - BOP Areas	65	01-Aug-12	30-Oct-12
SL.MP7800.10	Plumbing Drawings	65	12-Apr-13	12-Jul-13
SL.MP0400.10	Composite Drawings - A/G	99	27-May-14	14-Oct-14
SL.MP0700.00	Existing Utility Relocation - BOP Areas	65	03-May-17	02-Aug-17
SL.MP7800.00	Plumbing Drawings	65	12-Jan-18	12-Apr-18
SL.MP0400.00	Composite Drawings - A/G	99	08-Apr-19	22-Aug-19
Piping & Instrumentation Diagrams		1597	01-Aug-12	05-Oct-18
SL.MP6003.10	P&ID - Service Water - Prepare	75	01-Aug-12	13-Nov-12
SL.MP6004.10	P&ID - Potable Water - Prepare	75	01-Aug-12	13-Nov-12
SL.MP6007.10	P&ID - Fire Protection - Prepare	75	01-Aug-12	13-Nov-12
SL.MP6002.10	P&ID - Flue Gas - Prepare	75	01-Aug-12	13-Nov-12
SL.MP6031.10	P&ID - Sumps - Prepare	75	29-Aug-12	11-Dec-12
SL.MP6005.10	P&ID - Instrument Air - Prepare	75	26-Sep-12	10-Jan-13
SL.MP6006.10	P&ID - Plant Air - Prepare	75	26-Sep-12	10-Jan-13
SL.MP6020.10	P&ID - FGD Fly Ash Recycle - Prepare	50	24-Oct-12	03-Jan-13
SL.MP6021.10	P&ID - Lime Handling - Prepare	50	24-Oct-12	03-Jan-13
SL.MP6003.60	P&ID - Service Water - IFC	25	21-Jun-13	26-Jul-13
SL.MP6002.60	P&ID - Flue Gas - IFC	25	21-Jun-13	26-Jul-13
SL.MP6004.60	P&ID - Potable Water - IFC	25	06-Sep-13	11-Oct-13
SL.MP6007.60	P&ID - Fire Protection - IFC	25	06-Sep-13	11-Oct-13
SL.MP6031.60	P&ID - Sumps - IFC	25	04-Oct-13	08-Nov-13
SL.MP6005.60	P&ID - Instrument Air - IFC	25	18-Oct-13	22-Nov-13
SL.MP6006.60	P&ID - Plant Air - IFC	25	18-Oct-13	22-Nov-13
SL.MP6003.00	P&ID - Service Water - Prepare	75	03-May-17	16-Aug-17
SL.MP6004.00	P&ID - Potable Water - Prepare	75	03-May-17	16-Aug-17
SL.MP6007.00	P&ID - Fire Protection - Prepare	75	03-May-17	16-Aug-17
SL.MP6002.00	P&ID - Flue Gas - Prepare	75	03-May-17	16-Aug-17
SL.MP6030.00	P&ID - Reclaim Water - Prepare	75	31-May-17	13-Sep-17
SL.MP6031.00	P&ID - Sumps - Prepare	75	31-May-17	13-Sep-17
SL.MP6005.00	P&ID - Instrument Air - Prepare	75	28-Jun-17	11-Oct-17
SL.MP6006.00	P&ID - Plant Air - Prepare	75	28-Jun-17	11-Oct-17
SL.MP6020.00	P&ID - Byproduct Handling - Prepare	50	27-Jul-17	04-Oct-17
SL.MP6021.00	P&ID - Limestone Handling - Prepare	50	27-Jul-17	04-Oct-17
SL.MP6003.50	P&ID - Service Water - IFC	25	23-Mar-18	26-Apr-18
SL.MP6002.50	P&ID - Flue Gas - IFC	25	23-Mar-18	26-Apr-18
SL.MP6004.50	P&ID - Potable Water - IFC	25	23-Jul-18	24-Aug-18
SL.MP6007.50	P&ID - Fire Protection - IFC	25	23-Jul-18	24-Aug-18
SL.MP6030.50	P&ID - Reclaim Water - IFC	25	20-Aug-18	21-Sep-18

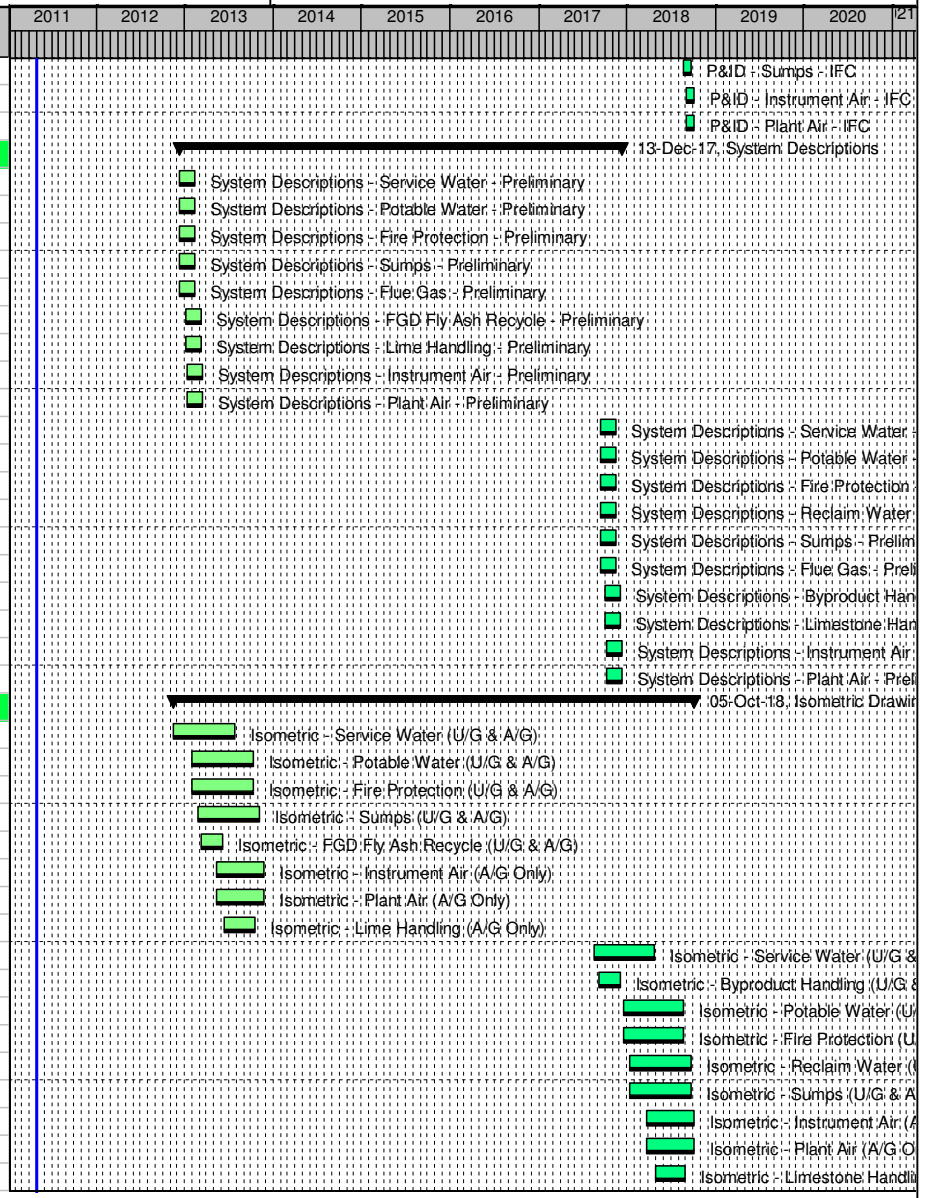


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

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Activity ID	Activity Name	Dur	Start	Finish
SL.MP6031.50	P&ID - Sumps - IFC	25	20-Aug-18	21-Sep-18
SL.MP6005.50	P&ID - Instrument Air - IFC	25	03-Sep-18	05-Oct-18
SL.MP6006.50	P&ID - Plant Air - IFC	25	03-Sep-18	05-Oct-18
System Descriptions		1291	12-Dec-12	13-Dec-17
SL.MP9003.10	System Descriptions - Service Water - Preliminary	45	12-Dec-12	14-Feb-13
SL.MP9004.10	System Descriptions - Potable Water - Preliminary	45	12-Dec-12	14-Feb-13
SL.MP9007.10	System Descriptions - Fire Protection - Preliminary	45	12-Dec-12	14-Feb-13
SL.MP9031.10	System Descriptions - Sumps - Preliminary	45	12-Dec-12	14-Feb-13
SL.MP9002.10	System Descriptions - Flue Gas - Preliminary	45	12-Dec-12	14-Feb-13
SL.MP9020.10	System Descriptions - FGD Fly Ash Recycle - Preliminary	45	04-Jan-13	07-Mar-13
SL.MP9021.10	System Descriptions - Lime Handling - Preliminary	45	04-Jan-13	07-Mar-13
SL.MP9005.10	System Descriptions - Instrument Air - Preliminary	45	11-Jan-13	14-Mar-13
SL.MP9006.10	System Descriptions - Plant Air - Preliminary	45	11-Jan-13	14-Mar-13
SL.MP9003.00	System Descriptions - Service Water - Preliminary	45	14-Sep-17	15-Nov-17
SL.MP9004.00	System Descriptions - Potable Water - Preliminary	45	14-Sep-17	15-Nov-17
SL.MP9007.00	System Descriptions - Fire Protection - Preliminary	45	14-Sep-17	15-Nov-17
SL.MP9030.00	System Descriptions - Reclaim Water - Preliminary	45	14-Sep-17	15-Nov-17
SL.MP9031.00	System Descriptions - Sumps - Preliminary	45	14-Sep-17	15-Nov-17
SL.MP9002.00	System Descriptions - Flue Gas - Preliminary	45	14-Sep-17	15-Nov-17
SL.MP9020.00	System Descriptions - Byproduct Handling - Preliminary	45	05-Oct-17	06-Dec-17
SL.MP9021.00	System Descriptions - Limestone Handling - Preliminary	45	05-Oct-17	06-Dec-17
SL.MP9005.00	System Descriptions - Instrument Air - Preliminary	45	12-Oct-17	13-Dec-17
SL.MP9006.00	System Descriptions - Plant Air - Preliminary	45	12-Oct-17	13-Dec-17
Isometric Drawings		1522	14-Nov-12	05-Oct-18
SL.MP1003.10	Isometric - Service Water (U/G & A/G)	180	14-Nov-12	26-Jul-13
SL.MP1004.10	Isometric - Potable Water (U/G & A/G)	180	31-Jan-13	11-Oct-13
SL.MP1007.10	Isometric - Fire Protection (U/G & A/G)	180	31-Jan-13	11-Oct-13
SL.MP1031.10	Isometric - Sumps (U/G & A/G)	180	28-Feb-13	08-Nov-13
SL.MP1020.10	Isometric - FGD Fly Ash Recycle (U/G & A/G)	65	07-Mar-13	06-Jun-13
SL.MP1005.10	Isometric - Instrument Air (A/G Only)	140	09-May-13	22-Nov-13
SL.MP1006.10	Isometric - Plant Air (A/G Only)	140	09-May-13	22-Nov-13
SL.MP1021.10	Isometric - Lime Handling (A/G Only)	90	13-Jun-13	18-Oct-13
SL.MP1003.00	Isometric - Service Water (U/G & A/G)	180	17-Aug-17	26-Apr-18
SL.MP1020.00	Isometric - Byproduct Handling (U/G & A/G)	65	06-Sep-17	05-Dec-17
SL.MP1004.00	Isometric - Potable Water (U/G & A/G)	180	15-Dec-17	24-Aug-18
SL.MP1007.00	Isometric - Fire Protection (U/G & A/G)	180	15-Dec-17	24-Aug-18
SL.MP1030.00	Isometric - Reclaim Water (U/G & A/G)	180	15-Jan-18	21-Sep-18
SL.MP1031.00	Isometric - Sumps (U/G & A/G)	180	15-Jan-18	21-Sep-18
SL.MP1005.00	Isometric - Instrument Air (A/G Only)	140	26-Mar-18	05-Oct-18
SL.MP1006.00	Isometric - Plant Air (A/G Only)	140	26-Mar-18	05-Oct-18
SL.MP1021.00	Isometric - Limestone Handling (A/G Only)	90	30-Apr-18	31-Aug-18

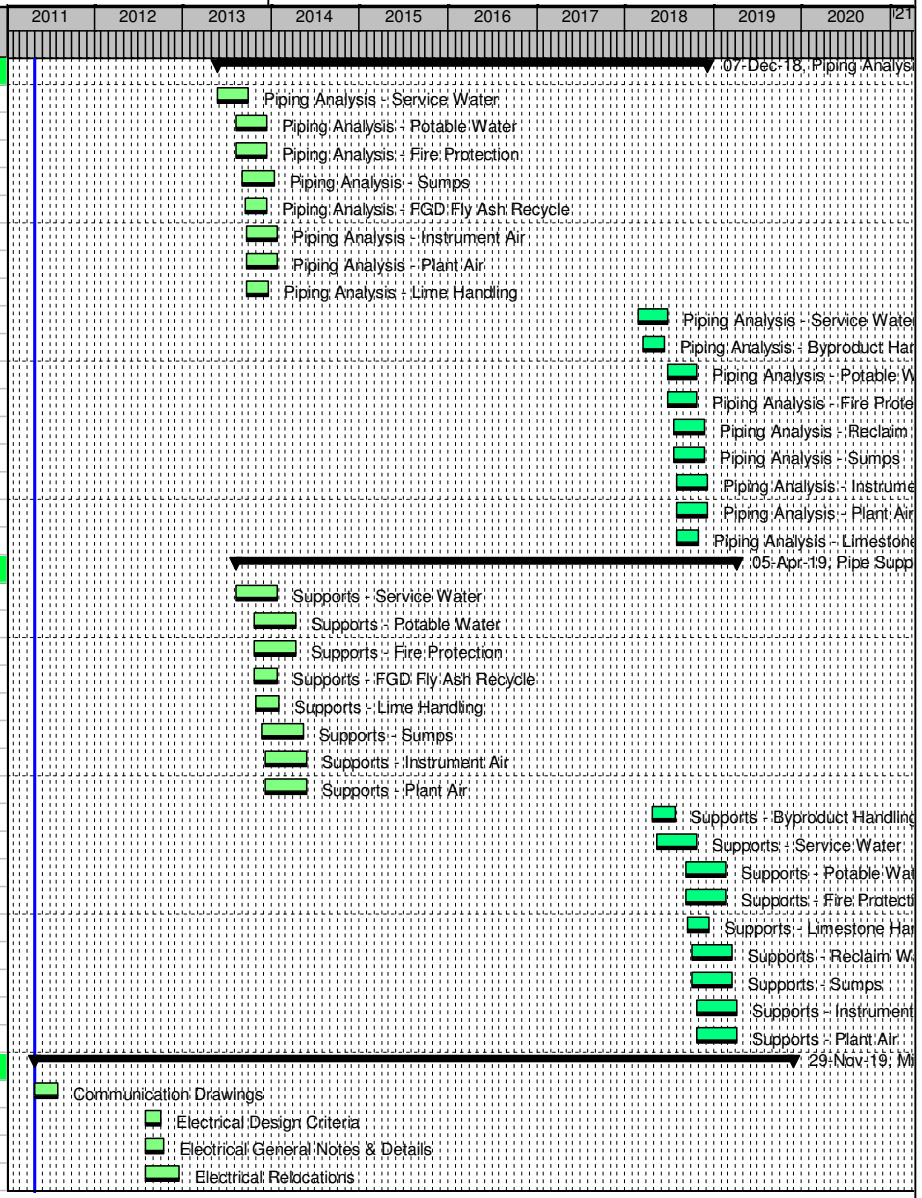


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

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Activity ID	Activity Name	Dur	Start	Finish
Piping Analysis		1432	24-May-13	07-Dec-18
SL.MP7003.10	Piping Analysis - Service Water	90	24-May-13	27-Sep-13
SL.MP7004.10	Piping Analysis - Potable Water	90	09-Aug-13	13-Dec-13
SL.MP7007.10	Piping Analysis - Fire Protection	90	09-Aug-13	13-Dec-13
SL.MP7031.10	Piping Analysis - Sumps	90	06-Sep-13	14-Jan-14
SL.MP7020.10	Piping Analysis - FGD Fly Ash Recycle	65	13-Sep-13	13-Dec-13
SL.MP7005.10	Piping Analysis - Instrument Air	90	20-Sep-13	28-Jan-14
SL.MP7006.10	Piping Analysis - Plant Air	90	20-Sep-13	28-Jan-14
SL.MP7021.10	Piping Analysis - Lime Handling	65	20-Sep-13	20-Dec-13
SL.MP7003.00	Piping Analysis - Service Water	90	23-Feb-18	28-Jun-18
SL.MP7020.00	Piping Analysis - Byproduct Handling	65	15-Mar-18	13-Jun-18
SL.MP7004.00	Piping Analysis - Potable Water	90	25-Jun-18	26-Oct-18
SL.MP7007.00	Piping Analysis - Fire Protection	90	25-Jun-18	26-Oct-18
SL.MP7030.00	Piping Analysis - Reclaim Water	90	23-Jul-18	23-Nov-18
SL.MP7031.00	Piping Analysis - Sumps	90	23-Jul-18	23-Nov-18
SL.MP7005.00	Piping Analysis - Instrument Air	90	06-Aug-18	07-Dec-18
SL.MP7006.00	Piping Analysis - Plant Air	90	06-Aug-18	07-Dec-18
SL.MP7021.00	Piping Analysis - Limestone Handling	65	06-Aug-18	02-Nov-18
Pipe Support Drawings		1462	12-Aug-13	05-Apr-19
SL.MP8003.10	Supports - Service Water	120	12-Aug-13	28-Jan-14
SL.MP8004.10	Supports - Potable Water	120	25-Oct-13	15-Apr-14
SL.MP8007.10	Supports - Fire Protection	120	25-Oct-13	15-Apr-14
SL.MP8020.10	Supports - FGD Fly Ash Recycle	65	25-Oct-13	28-Jan-14
SL.MP8021.10	Supports - Lime Handling	65	01-Nov-13	04-Feb-14
SL.MP8031.10	Supports - Sumps	120	22-Nov-13	13-May-14
SL.MP8005.10	Supports - Instrument Air	120	06-Dec-13	27-May-14
SL.MP8006.10	Supports - Plant Air	120	06-Dec-13	27-May-14
SL.MP8020.00	Supports - Byproduct Handling	65	26-Apr-18	25-Jul-18
SL.MP8003.00	Supports - Service Water	120	11-May-18	25-Oct-18
SL.MP8004.00	Supports - Potable Water	120	10-Sep-18	22-Feb-19
SL.MP8007.00	Supports - Fire Protection	120	10-Sep-18	22-Feb-19
SL.MP8021.00	Supports - Limestone Handling	65	17-Sep-18	14-Dec-18
SL.MP8030.00	Supports - Reclaim Water	120	08-Oct-18	22-Mar-19
SL.MP8031.00	Supports - Sumps	120	08-Oct-18	22-Mar-19
SL.MP8005.00	Supports - Instrument Air	120	22-Oct-18	05-Apr-19
SL.MP8006.00	Supports - Plant Air	120	22-Oct-18	05-Apr-19
Misc Electrical Deliverables		2220	02-May-11	29-Nov-19
SL.E1300.00	Communication Drawings	65	02-May-11	01-Aug-11
SL.E3100.10	Electrical Design Criteria	45	01-Aug-12	02-Oct-12
SL.E3200.10	Electrical General Notes & Details	53	01-Aug-12	12-Oct-12
SL.E3600.10	Electrical Relocations	100	01-Aug-12	18-Dec-12

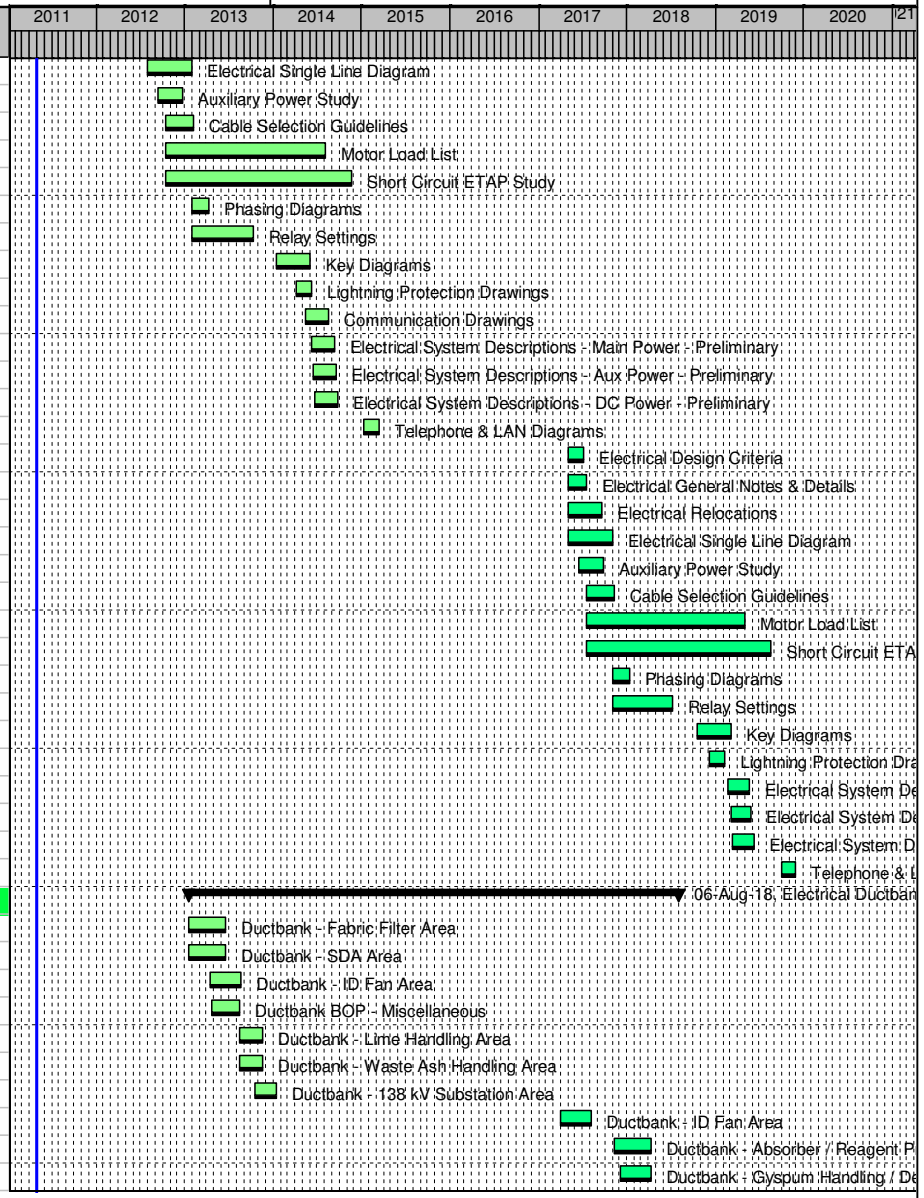


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TASK filter: All Activities

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Activity ID	Activity Name	Dur	Start	Finish
SL.E3700.10	Electrical Single Line Diagram	130	01-Aug-12	31-Jan-13
SL.E0200.10	Auxiliary Power Study	75	12-Sep-12	26-Dec-12
SL.E0400.10	Cable Selection Guidelines	82	15-Oct-12	07-Feb-13
SL.E7800.10	Motor Load List	468	15-Oct-12	07-Aug-14
SL.E8700.10	Short Circuit ETAP Study	545	15-Oct-12	24-Nov-14
SL.E8200.10	Phasing Diagrams	48	01-Feb-13	09-Apr-13
SL.E8600.10	Relay Settings	179	01-Feb-13	10-Oct-13
SL.E5600.10	Key Diagrams	100	16-Jan-14	05-Jun-14
SL.E6700.10	Lightning Protection Drawings	45	08-Apr-14	10-Jun-14
SL.E1300.10	Communication Drawings	65	15-May-14	15-Aug-14
SL.E3820.10	Electrical System Descriptions - Main Power - Preliminary	65	10-Jun-14	10-Sep-14
SL.E3840.10	Electrical System Descriptions - Aux Power - Preliminary	65	17-Jun-14	17-Sep-14
SL.E3860.10	Electrical System Descriptions - DC Power - Preliminary	65	24-Jun-14	24-Sep-14
SL.E8800.10	Telephone & LAN Diagrams	45	09-Jan-15	13-Mar-15
SL.E3100.00	Electrical Design Criteria	45	03-May-17	05-Jul-17
SL.E3200.00	Electrical General Notes & Details	53	03-May-17	17-Jul-17
SL.E3600.00	Electrical Relocations	100	03-May-17	20-Sep-17
SL.E3700.00	Electrical Single Line Diagram	130	03-May-17	01-Nov-17
SL.E0200.00	Auxiliary Power Study	75	14-Jun-17	27-Sep-17
SL.E0400.00	Cable Selection Guidelines	82	18-Jul-17	08-Nov-17
SL.E7800.00	Motor Load List	468	18-Jul-17	03-May-19
SL.E8700.00	Short Circuit ETAP Study	545	18-Jul-17	20-Aug-19
SL.E8200.00	Phasing Diagrams	48	02-Nov-17	09-Jan-18
SL.E8600.00	Relay Settings	179	02-Nov-17	11-Jul-18
SL.E5600.00	Key Diagrams	100	15-Oct-18	04-Mar-19
SL.E6700.00	Lightning Protection Drawings	45	10-Dec-18	08-Feb-19
SL.E3820.00	Electrical System Descriptions - Main Power - Preliminary	65	25-Feb-19	24-May-19
SL.E3840.00	Electrical System Descriptions - Aux Power - Preliminary	65	04-Mar-19	31-May-19
SL.E3860.00	Electrical System Descriptions - DC Power - Preliminary	65	11-Mar-19	07-Jun-19
SL.E8800.00	Telephone & LAN Diagrams	45	30-Sep-19	29-Nov-19
Electrical Ductbank Drawings		1433	18-Jan-13	06-Aug-18
SL.E2020.10	Ductbank - Fabric Filter Area	110	18-Jan-13	20-Jun-13
SL.E2050.10	Ductbank - SDA Area	110	18-Jan-13	20-Jun-13
SL.E2030.10	Ductbank - ID Fan Area	90	18-Apr-13	23-Aug-13
SL.E2090.10	Ductbank BOP - Miscellaneous	80	26-Apr-13	16-Aug-13
SL.E2040.10	Ductbank - Lime Handling Area	70	12-Aug-13	18-Nov-13
SL.E2060.10	Ductbank - Waste Ash Handling Area	70	12-Aug-13	18-Nov-13
SL.E2010.10	Ductbank - 138 kV Substation Area	60	18-Oct-13	14-Jan-14
SL.E2030.00	Ductbank - ID Fan Area	90	05-Apr-17	09-Aug-17
SL.E2020.00	Ductbank - Absorber / Reagent Prep Area	110	09-Nov-17	12-Apr-18
SL.E2050.00	Ductbank - Gyspum Handling / Dewatering Island	90	07-Dec-17	12-Apr-18

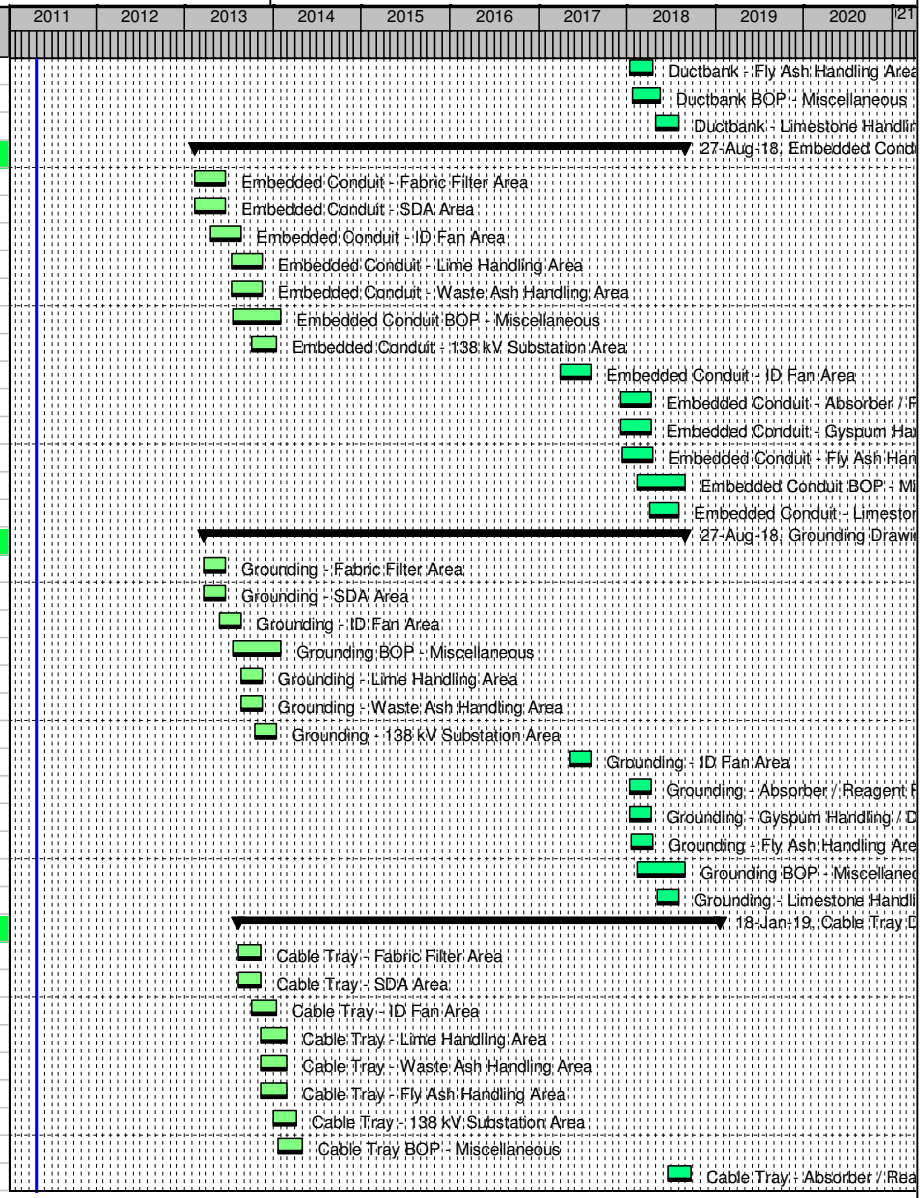


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Activity ID	Activity Name	Dur	Start	Finish
SL.E2070.00	Ductbank - Fly Ash Handling Area	70	10-Jan-18	18-Apr-18
SL.E2090.00	Ductbank BOP - Miscellaneous	80	26-Jan-18	17-May-18
SL.E2040.00	Ductbank - Limestone Handling Area	70	01-May-18	06-Aug-18
Embedded Conduit Drawings		1428	15-Feb-13	27-Aug-18
SL.E4020.10	Embedded Conduit - Fabric Filter Area	90	15-Feb-13	20-Jun-13
SL.E4050.10	Embedded Conduit - SDA Area	90	15-Feb-13	20-Jun-13
SL.E4030.10	Embedded Conduit - ID Fan Area	90	18-Apr-13	23-Aug-13
SL.E4040.10	Embedded Conduit - Lime Handling Area	90	15-Jul-13	18-Nov-13
SL.E4060.10	Embedded Conduit - Waste Ash Handling Area	90	15-Jul-13	18-Nov-13
SL.E4090.10	Embedded Conduit BOP - Miscellaneous	140	19-Jul-13	04-Feb-14
SL.E4010.10	Embedded Conduit - 138 kV Substation Area	70	04-Oct-13	14-Jan-14
SL.E4030.00	Embedded Conduit - ID Fan Area	90	05-Apr-17	09-Aug-17
SL.E4020.00	Embedded Conduit - Absorber / Reagent Prep Area	90	07-Dec-17	12-Apr-18
SL.E4050.00	Embedded Conduit - Gyspum Handling / Dewatering Island	90	07-Dec-17	12-Apr-18
SL.E4070.00	Embedded Conduit - Fly Ash Handling Area	90	12-Dec-17	18-Apr-18
SL.E4090.00	Embedded Conduit BOP - Miscellaneous	140	13-Feb-18	27-Aug-18
SL.E4040.00	Embedded Conduit - Limestone Handling Area	90	03-Apr-18	06-Aug-18
Grounding Drawings		1403	22-Mar-13	27-Aug-18
SL.E5020.10	Grounding - Fabric Filter Area	65	22-Mar-13	20-Jun-13
SL.E5050.10	Grounding - SDA Area	65	22-Mar-13	20-Jun-13
SL.E5030.10	Grounding - ID Fan Area	65	23-May-13	23-Aug-13
SL.E5090.10	Grounding BOP - Miscellaneous	140	19-Jul-13	04-Feb-14
SL.E5040.10	Grounding - Lime Handling Area	65	19-Aug-13	18-Nov-13
SL.E5060.10	Grounding - Waste Ash Handling Area	65	19-Aug-13	18-Nov-13
SL.E5010.10	Grounding - 138 kV Substation Area	60	18-Oct-13	14-Jan-14
SL.E5030.00	Grounding - ID Fan Area	65	10-May-17	09-Aug-17
SL.E5020.00	Grounding - Absorber / Reagent Prep Area	65	12-Jan-18	12-Apr-18
SL.E5050.00	Grounding - Gyspum Handling / Dewatering Island	65	12-Jan-18	12-Apr-18
SL.E5070.00	Grounding - Fly Ash Handling Area	65	17-Jan-18	18-Apr-18
SL.E5090.00	Grounding BOP - Miscellaneous	140	13-Feb-18	27-Aug-18
SL.E5040.00	Grounding - Limestone Handling Area	65	08-May-18	06-Aug-18
Cable Tray Drawings		1407	09-Aug-13	18-Jan-19
SL.E1020.10	Cable Tray - Fabric Filter Area	70	09-Aug-13	15-Nov-13
SL.E1050.10	Cable Tray - SDA Area	70	09-Aug-13	15-Nov-13
SL.E1030.10	Cable Tray - ID Fan Area	70	04-Oct-13	14-Jan-14
SL.E1040.10	Cable Tray - Lime Handling Area	70	15-Nov-13	25-Feb-14
SL.E1060.10	Cable Tray - Waste Ash Handling Area	70	15-Nov-13	25-Feb-14
SL.E1070.00	Cable Tray - Fly Ash Handling Area	70	15-Nov-13	25-Feb-14
SL.E1010.10	Cable Tray - 138 kV Substation Area	70	30-Dec-13	08-Apr-14
SL.E1090.10	Cable Tray BOP - Miscellaneous	70	21-Jan-14	29-Apr-14
SL.E1020.00	Cable Tray - Absorber / Reagent Prep Area	70	18-Jun-18	21-Sep-18

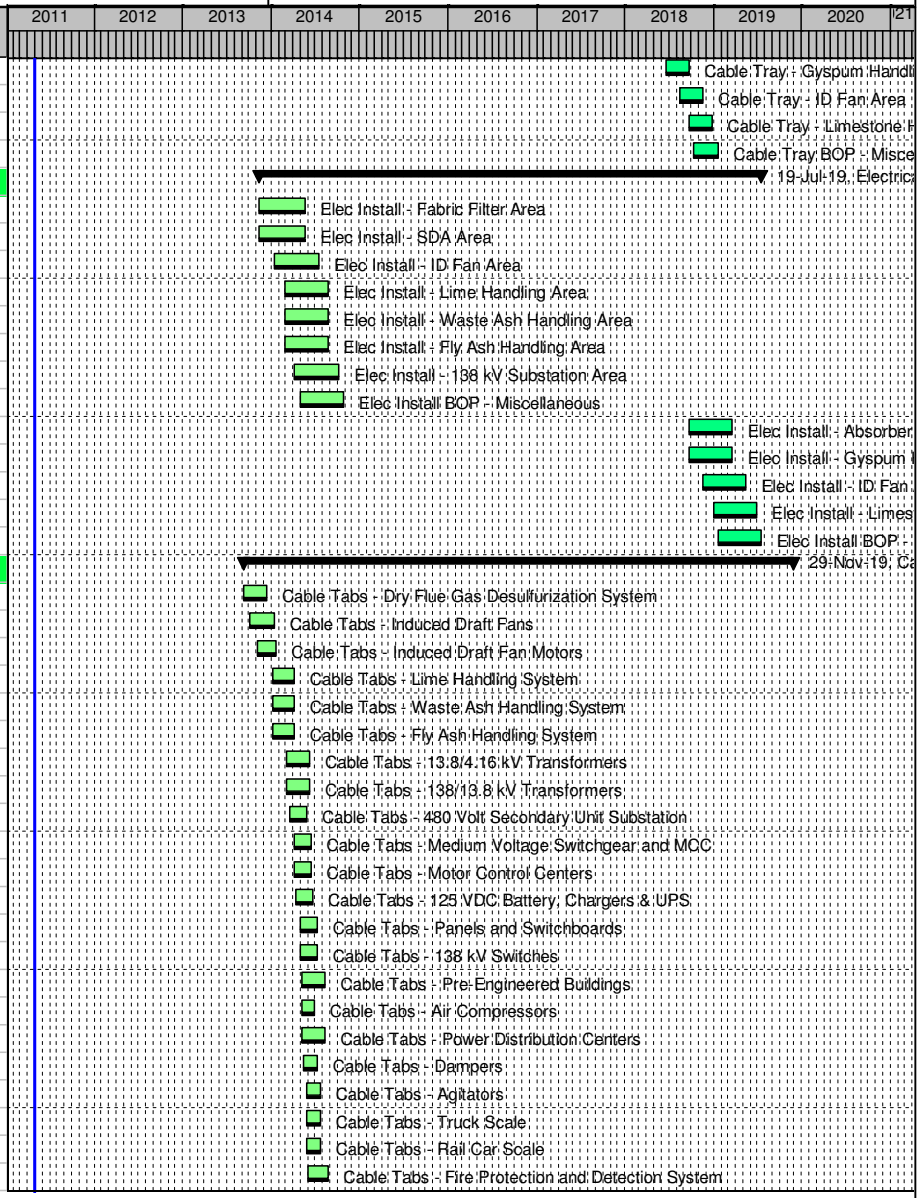


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

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Activity ID	Activity Name	Dur	Start	Finish
SL.E1050.00	Cable Tray - Gyspum Handling / Dewatering Island	70	18-Jun-18	21-Sep-18
SL.E1030.00	Cable Tray - ID Fan Area	70	13-Aug-18	16-Nov-18
SL.E1040.00	Cable Tray - Limestone Handling Area	70	24-Sep-18	28-Dec-18
SL.E1090.00	Cable Tray BOP - Miscellaneous	70	15-Oct-18	18-Jan-19
Electrical Installation Drawings		1467	15-Nov-13	19-Jul-19
SL.E3020.10	Elec Install - Fabric Filter Area	130	15-Nov-13	20-May-14
SL.E3050.10	Elec Install - SDA Area	130	15-Nov-13	20-May-14
SL.E3030.10	Elec Install - ID Fan Area	130	14-Jan-14	16-Jul-14
SL.E3040.10	Elec Install - Lime Handling Area	130	25-Feb-14	27-Aug-14
SL.E3060.10	Elec Install - Waste Ash Handling Area	130	25-Feb-14	27-Aug-14
SL.E3070.00	Elec Install - Fly Ash Handling Area	130	25-Feb-14	27-Aug-14
SL.E3010.10	Elec Install - 138 kV Substation Area	130	08-Apr-14	08-Oct-14
SL.E3090.10	Elec Install BOP - Miscellaneous	130	29-Apr-14	29-Oct-14
SL.E3020.00	Elec Install - Absorber / Reagent Prep Area	130	24-Sep-18	22-Mar-19
SL.E3050.00	Elec Install - Gyspum Handling / Dewatering Island	130	24-Sep-18	22-Mar-19
SL.E3030.00	Elec Install - ID Fan Area	130	19-Nov-18	17-May-19
SL.E3040.00	Elec Install - Limestone Handling Area	130	31-Dec-18	28-Jun-19
SL.E3090.00	Elec Install BOP - Miscellaneous	130	21-Jan-19	19-Jul-19
Cable Tabulations & Drawings		1612	09-Sep-13	29-Nov-19
SL.E0-6815.10	Cable Tabs - Dry Flue Gas Desulfurization System	70	09-Sep-13	13-Dec-13
SL.E0-6822.10	Cable Tabs - Induced Draft Fans	70	07-Oct-13	14-Jan-14
SL.E0-6860.10	Cable Tabs - Induced Draft Fan Motors	55	04-Nov-13	21-Jan-14
SL.E0-6850.10	Cable Tabs - Lime Handling System	65	08-Jan-14	08-Apr-14
SL.E0-6851.10	Cable Tabs - Waste Ash Handling System	65	08-Jan-14	08-Apr-14
SL.E0-6875.00	Cable Tabs - Fly Ash Handling System	65	08-Jan-14	08-Apr-14
SL.E0-6861.10	Cable Tabs - 13.8/4.16 kV Transformers	70	05-Mar-14	10-Jun-14
SL.E0-6872.10	Cable Tabs - 138/13.8 kV Transformers	70	05-Mar-14	10-Jun-14
SL.E0-6863.10	Cable Tabs - 480 Volt Secondary Unit Substation	50	19-Mar-14	27-May-14
SL.E0-6862.10	Cable Tabs - Medium Voltage Switchgear and MCC	50	09-Apr-14	17-Jun-14
SL.E0-6864.10	Cable Tabs - Motor Control Centers	50	09-Apr-14	17-Jun-14
SL.E0-6866.10	Cable Tabs - 125 VDC Battery, Chargers & UPS	50	16-Apr-14	24-Jun-14
SL.E0-6867.10	Cable Tabs - Panels and Switchboards	50	30-Apr-14	09-Jul-14
SL.E0-6876.10	Cable Tabs - 138 kV Switches	50	30-Apr-14	09-Jul-14
SL.E0-6811.00	Cable Tabs - Pre-Engineered Buildings	70	07-May-14	13-Aug-14
SL.E0-6823.10	Cable Tabs - Air Compressors	40	07-May-14	01-Jul-14
SL.E0-6810.10	Cable Tabs - Power Distribution Centers	70	07-May-14	13-Aug-14
SL.E0-6825.10	Cable Tabs - Dampers	40	14-May-14	09-Jul-14
SL.E0-6836.10	Cable Tabs - Agitators	40	28-May-14	23-Jul-14
SL.E0-6852.10	Cable Tabs - Truck Scale	40	28-May-14	23-Jul-14
SL.E0-6853.10	Cable Tabs - Rail Car Scale	40	28-May-14	23-Jul-14
SL.E0-6838.10	Cable Tabs - Fire Protection and Detection System	60	04-Jun-14	27-Aug-14

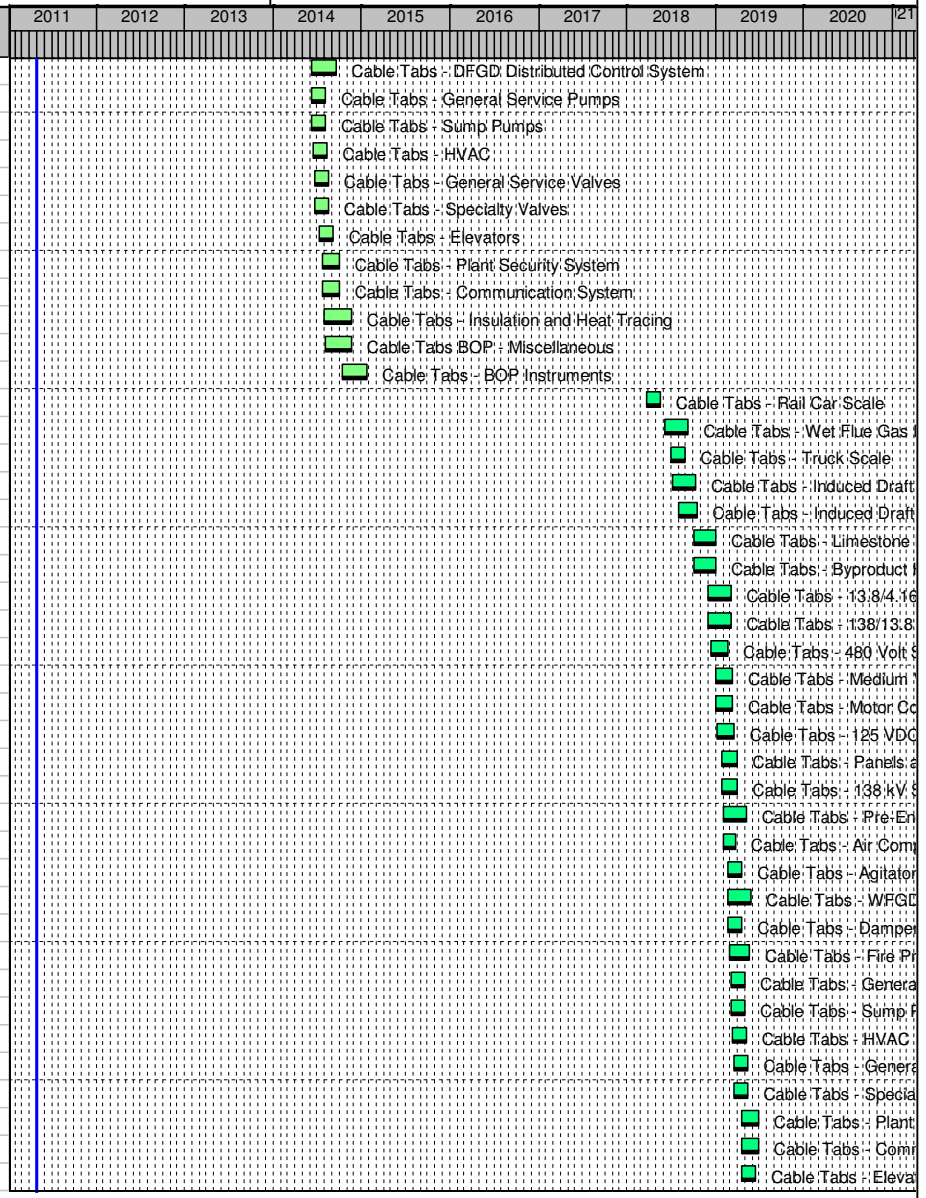


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

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Activity ID	Activity Name	Dur	Start	Finish
SL.E0-6890.10	Cable Tabs - DFGD Distributed Control System	70	10-Jun-14	17-Sep-14
SL.E0-6826.10	Cable Tabs - General Service Pumps	40	11-Jun-14	06-Aug-14
SL.E0-6827.10	Cable Tabs - Sump Pumps	40	11-Jun-14	06-Aug-14
SL.E0-6834.10	Cable Tabs - HVAC	40	18-Jun-14	13-Aug-14
SL.E0-6830.10	Cable Tabs - General Service Valves	40	25-Jun-14	20-Aug-14
SL.E0-6831.10	Cable Tabs - Specialty Valves	40	25-Jun-14	20-Aug-14
SL.E0-6807.10	Cable Tabs - Elevators	40	10-Jul-14	03-Sep-14
SL.E0-6869.10	Cable Tabs - Plant Security System	50	24-Jul-14	01-Oct-14
SL.E0-6870.10	Cable Tabs - Communication System	50	24-Jul-14	01-Oct-14
SL.E0-6837.10	Cable Tabs - Insulation and Heat Tracing	80	30-Jul-14	19-Nov-14
SL.E0-6999.10	Cable Tabs BOP - Miscellaneous	75	07-Aug-14	19-Nov-14
SL.E0-6891.10	Cable Tabs - BOP Instruments	70	15-Oct-14	23-Jan-15
SL.E0-6853.00	Cable Tabs - Rail Car Scale	40	21-Mar-18	16-May-18
SL.E0-6815.00	Cable Tabs - Wet Flue Gas Desulfurization System	70	08-Jun-18	13-Sep-18
SL.E0-6852.00	Cable Tabs - Truck Scale	40	05-Jul-18	30-Aug-18
SL.E0-6822.00	Cable Tabs - Induced Draft Fans	70	06-Jul-18	11-Oct-18
SL.E0-6860.00	Cable Tabs - Induced Draft Fan Motors	55	03-Aug-18	18-Oct-18
SL.E0-6850.00	Cable Tabs - Limestone Handling System	65	05-Oct-18	03-Jan-19
SL.E0-6873.00	Cable Tabs - Byproduct Handling System	65	05-Oct-18	03-Jan-19
SL.E0-6861.00	Cable Tabs - 13.8/4.16 kV Transformers	70	30-Nov-18	07-Mar-19
SL.E0-6872.00	Cable Tabs - 138/13.8 kV Transformers	70	30-Nov-18	07-Mar-19
SL.E0-6863.00	Cable Tabs - 480 Volt Secondary Unit Substation	50	14-Dec-18	21-Feb-19
SL.E0-6862.00	Cable Tabs - Medium Voltage Switchgear and MCC	50	04-Jan-19	14-Mar-19
SL.E0-6864.00	Cable Tabs - Motor Control Centers	50	04-Jan-19	14-Mar-19
SL.E0-6866.00	Cable Tabs - 125 VDC Battery, Chargers & UPS	50	11-Jan-19	21-Mar-19
SL.E0-6867.00	Cable Tabs - Panels and Switchboards	50	25-Jan-19	04-Apr-19
SL.E0-6876.00	Cable Tabs - 138 kV Switches	50	25-Jan-19	04-Apr-19
SL.E0-6810.00	Cable Tabs - Pre-Engineered Buildings	70	01-Feb-19	09-May-19
SL.E0-6823.00	Cable Tabs - Air Compressors	40	01-Feb-19	28-Mar-19
SL.E0-6836.00	Cable Tabs - Agitators	40	22-Feb-19	18-Apr-19
SL.E0-6890.00	Cable Tabs - WFGD Distributed Control System	70	25-Feb-19	31-May-19
SL.E0-6825.00	Cable Tabs - Dampers	40	25-Feb-19	22-Apr-19
SL.E0-6838.00	Cable Tabs - Fire Protection and Detection System	60	01-Mar-19	23-May-19
SL.E0-6826.00	Cable Tabs - General Service Pumps	40	08-Mar-19	02-May-19
SL.E0-6827.00	Cable Tabs - Sump Pumps	40	08-Mar-19	02-May-19
SL.E0-6834.00	Cable Tabs - HVAC	40	15-Mar-19	09-May-19
SL.E0-6830.00	Cable Tabs - General Service Valves	40	22-Mar-19	16-May-19
SL.E0-6831.00	Cable Tabs - Specialty Valves	40	22-Mar-19	16-May-19
SL.E0-6869.00	Cable Tabs - Plant Security System	50	19-Apr-19	27-Jun-19
SL.E0-6870.00	Cable Tabs - Communication System	50	19-Apr-19	27-Jun-19
SL.E0-6807.00	Cable Tabs - Elevators	40	22-Apr-19	17-Jun-19

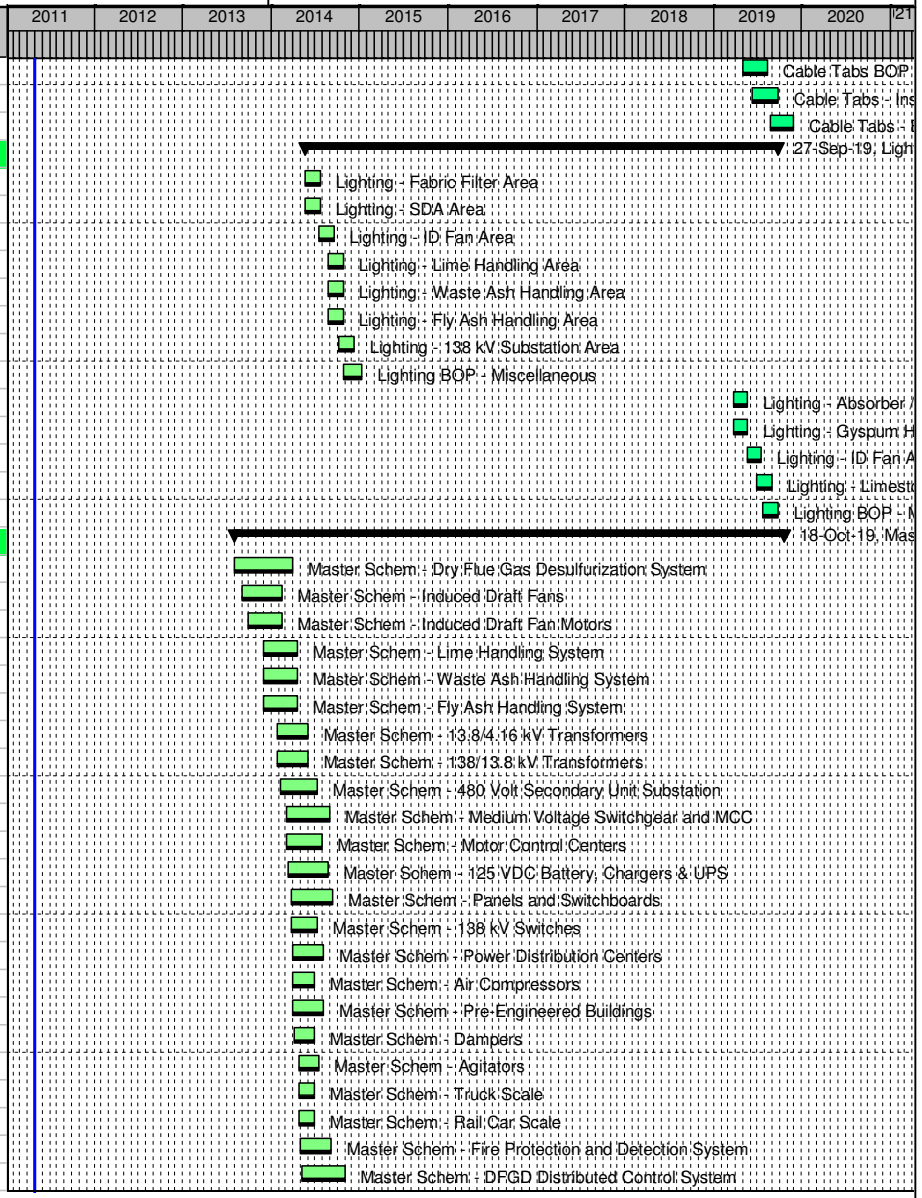


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

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Activity ID	Activity Name	Dur	Start	Finish
SL.E0-6999.00	Cable Tabs BOP - Miscellaneous	75	03-May-19	15-Aug-19
SL.E0-6837.00	Cable Tabs - Insulation and Heat Tracing	80	07-Jun-19	27-Sep-19
SL.E0-6891.00	Cable Tabs - BOP Instruments	70	23-Aug-19	29-Nov-19
Lighting Diagrams		1387	20-May-14	27-Sep-19
SL.E6020.10	Lighting - Fabric Filter Area	45	20-May-14	23-Jul-14
SL.E6050.10	Lighting - SDA Area	45	20-May-14	23-Jul-14
SL.E6030.10	Lighting - ID Fan Area	45	16-Jul-14	17-Sep-14
SL.E6040.10	Lighting - Lime Handling Area	45	27-Aug-14	29-Oct-14
SL.E6060.10	Lighting - Waste Ash Handling Area	45	27-Aug-14	29-Oct-14
SL.E6070.00	Lighting - Fly Ash Handling Area	45	27-Aug-14	29-Oct-14
SL.E6010.10	Lighting - 138 kV Substation Area	45	08-Oct-14	10-Dec-14
SL.E6090.10	Lighting BOP - Miscellaneous	50	29-Oct-14	09-Jan-15
SL.E6020.00	Lighting - Absorber / Reagent Prep Area	45	25-Mar-19	24-May-19
SL.E6050.00	Lighting - Gyspum Handling / Dewatering Island	45	25-Mar-19	24-May-19
SL.E6030.00	Lighting - ID Fan Area	45	20-May-19	19-Jul-19
SL.E6040.00	Lighting - Limestone Handling Area	45	01-Jul-19	30-Aug-19
SL.E6090.00	Lighting BOP - Miscellaneous	50	22-Jul-19	27-Sep-19
Master Schematic Diagrams		1607	05-Aug-13	18-Oct-19
SL.E7-6815.10	Master Schem - Dry Flue Gas Desulfurization System	170	05-Aug-13	01-Apr-14
SL.E7-6822.10	Master Schem - Induced Draft Fans	120	02-Sep-13	18-Feb-14
SL.E7-6860.10	Master Schem - Induced Draft Fan Motors	100	30-Sep-13	18-Feb-14
SL.E7-6850.10	Master Schem - Lime Handling System	100	02-Dec-13	22-Apr-14
SL.E7-6851.10	Master Schem - Waste Ash Handling System	100	02-Dec-13	22-Apr-14
SL.E7-6875.00	Master Schem - Fly Ash Handling System	100	02-Dec-13	22-Apr-14
SL.E7-6861.10	Master Schem - 13.8/4.16 kV Transformers	90	29-Jan-14	03-Jun-14
SL.E7-6872.10	Master Schem - 138/13.8 kV Transformers	90	29-Jan-14	03-Jun-14
SL.E7-6863.10	Master Schem - 480 Volt Secondary Unit Substation	105	12-Feb-14	09-Jul-14
SL.E7-6862.10	Master Schem - Medium Voltage Switchgear and MCC	127	05-Mar-14	29-Aug-14
SL.E7-6864.10	Master Schem - Motor Control Centers	105	05-Mar-14	30-Jul-14
SL.E7-6866.10	Master Schem - 125 VDC Battery, Chargers & UPS	120	12-Mar-14	27-Aug-14
SL.E7-6867.10	Master Schem - Panels and Switchboards	120	26-Mar-14	10-Sep-14
SL.E7-6876.10	Master Schem - 138 kV Switches	75	26-Mar-14	09-Jul-14
SL.E7-6810.10	Master Schem - Power Distribution Centers	90	02-Apr-14	06-Aug-14
SL.E7-6823.10	Master Schem - Air Compressors	65	02-Apr-14	01-Jul-14
SL.E7-6811.00	Master Schem - Pre-Engineered Buildings	90	02-Apr-14	06-Aug-14
SL.E7-6825.10	Master Schem - Dampers	60	09-Apr-14	01-Jul-14
SL.E7-6836.10	Master Schem - Agitators	60	23-Apr-14	16-Jul-14
SL.E7-6852.10	Master Schem - Truck Scale	50	23-Apr-14	01-Jul-14
SL.E7-6853.10	Master Schem - Rail Car Scale	50	23-Apr-14	01-Jul-14
SL.E7-6838.10	Master Schem - Fire Protection and Detection System	90	30-Apr-14	03-Sep-14
SL.E7-6890.10	Master Schem - DFGD Distributed Control System	128	06-May-14	03-Nov-14

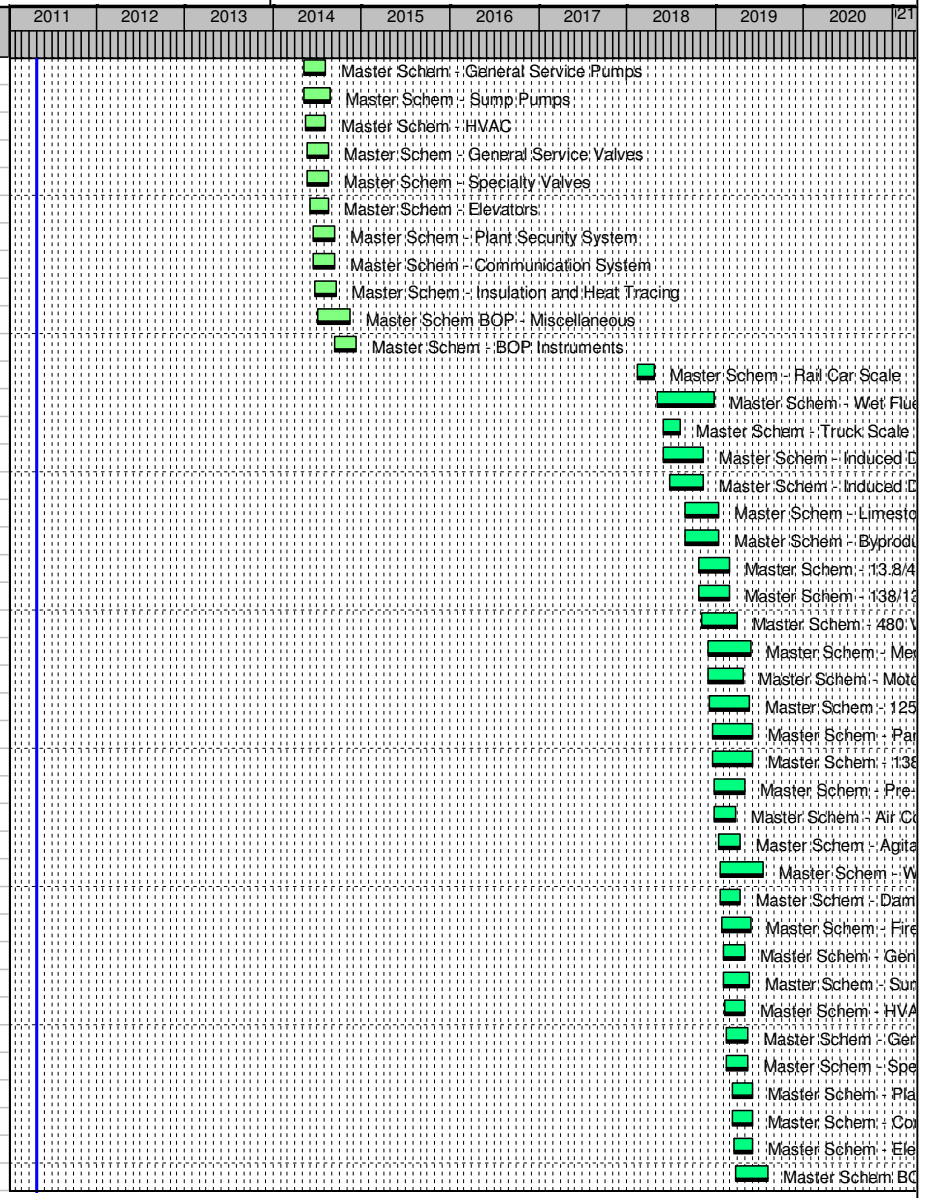


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

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Activity ID	Activity Name	Dur	Start	Finish
SL.E7-6826.10	Master Schem - General Service Pumps	65	07-May-14	06-Aug-14
SL.E7-6827.10	Master Schem - Sump Pumps	77	07-May-14	22-Aug-14
SL.E7-6834.10	Master Schem - HVAC	60	14-May-14	06-Aug-14
SL.E7-6830.10	Master Schem - General Service Valves	65	21-May-14	20-Aug-14
SL.E7-6831.10	Master Schem - Specialty Valves	65	21-May-14	20-Aug-14
SL.E7-6807.10	Master Schem - Elevators	55	04-Jun-14	20-Aug-14
SL.E7-6869.10	Master Schem - Plant Security System	60	18-Jun-14	10-Sep-14
SL.E7-6870.10	Master Schem - Communication System	60	18-Jun-14	10-Sep-14
SL.E7-6837.10	Master Schem - Insulation and Heat Tracing	60	24-Jun-14	17-Sep-14
SL.E7-6999.10	Master Schem BOP - Miscellaneous	95	02-Jul-14	12-Nov-14
SL.E7-6891.10	Master Schem - BOP Instruments	65	10-Sep-14	10-Dec-14
SL.E7-6853.00	Master Schem - Rail Car Scale	50	14-Feb-18	25-Apr-18
SL.E7-6815.00	Master Schem - Wet Flue Gas Desulfurization System	170	04-May-18	27-Dec-18
SL.E7-6852.00	Master Schem - Truck Scale	50	31-May-18	09-Aug-18
SL.E7-6822.00	Master Schem - Induced Draft Fans	120	01-Jun-18	15-Nov-18
SL.E7-6860.00	Master Schem - Induced Draft Fan Motors	100	29-Jun-18	15-Nov-18
SL.E7-6850.00	Master Schem - Limestone Handling System	100	31-Aug-18	17-Jan-19
SL.E7-6873.00	Master Schem - Byproduct Handling System	100	31-Aug-18	17-Jan-19
SL.E7-6861.00	Master Schem - 13.8/4.16 kV Transformers	90	26-Oct-18	28-Feb-19
SL.E7-6872.00	Master Schem - 138/13.8 kV Transformers	90	26-Oct-18	28-Feb-19
SL.E7-6863.00	Master Schem - 480 Volt Secondary Unit Substation	105	09-Nov-18	04-Apr-19
SL.E7-6862.00	Master Schem - Medium Voltage Switchgear and MCC	127	30-Nov-18	27-May-19
SL.E7-6864.00	Master Schem - Motor Control Centers	105	30-Nov-18	25-Apr-19
SL.E7-6866.00	Master Schem - 125 VDC Battery, Chargers & UPS	120	07-Dec-18	23-May-19
SL.E7-6867.00	Master Schem - Panels and Switchboards	120	21-Dec-18	06-Jun-19
SL.E7-6876.00	Master Schem - 138 kV Switches	120	21-Dec-18	06-Jun-19
SL.E7-6810.00	Master Schem - Pre-Engineered Buildings	90	28-Dec-18	02-May-19
SL.E7-6823.00	Master Schem - Air Compressors	65	28-Dec-18	28-Mar-19
SL.E7-6836.00	Master Schem - Agitators	60	18-Jan-19	11-Apr-19
SL.E7-6890.00	Master Schem - WFGD Distributed Control System	128	21-Jan-19	17-Jul-19
SL.E7-6825.00	Master Schem - Dampers	60	21-Jan-19	15-Apr-19
SL.E7-6838.00	Master Schem - Fire Protection and Detection System	90	25-Jan-19	30-May-19
SL.E7-6826.00	Master Schem - General Service Pumps	65	01-Feb-19	02-May-19
SL.E7-6827.00	Master Schem - Sump Pumps	77	01-Feb-19	20-May-19
SL.E7-6834.00	Master Schem - HVAC	60	08-Feb-19	02-May-19
SL.E7-6830.00	Master Schem - General Service Valves	65	15-Feb-19	16-May-19
SL.E7-6831.00	Master Schem - Specialty Valves	65	15-Feb-19	16-May-19
SL.E7-6869.00	Master Schem - Plant Security System	60	15-Mar-19	06-Jun-19
SL.E7-6870.00	Master Schem - Communication System	60	15-Mar-19	06-Jun-19
SL.E7-6807.00	Master Schem - Elevators	55	18-Mar-19	03-Jun-19
SL.E7-6999.00	Master Schem BOP - Miscellaneous	95	29-Mar-19	08-Aug-19

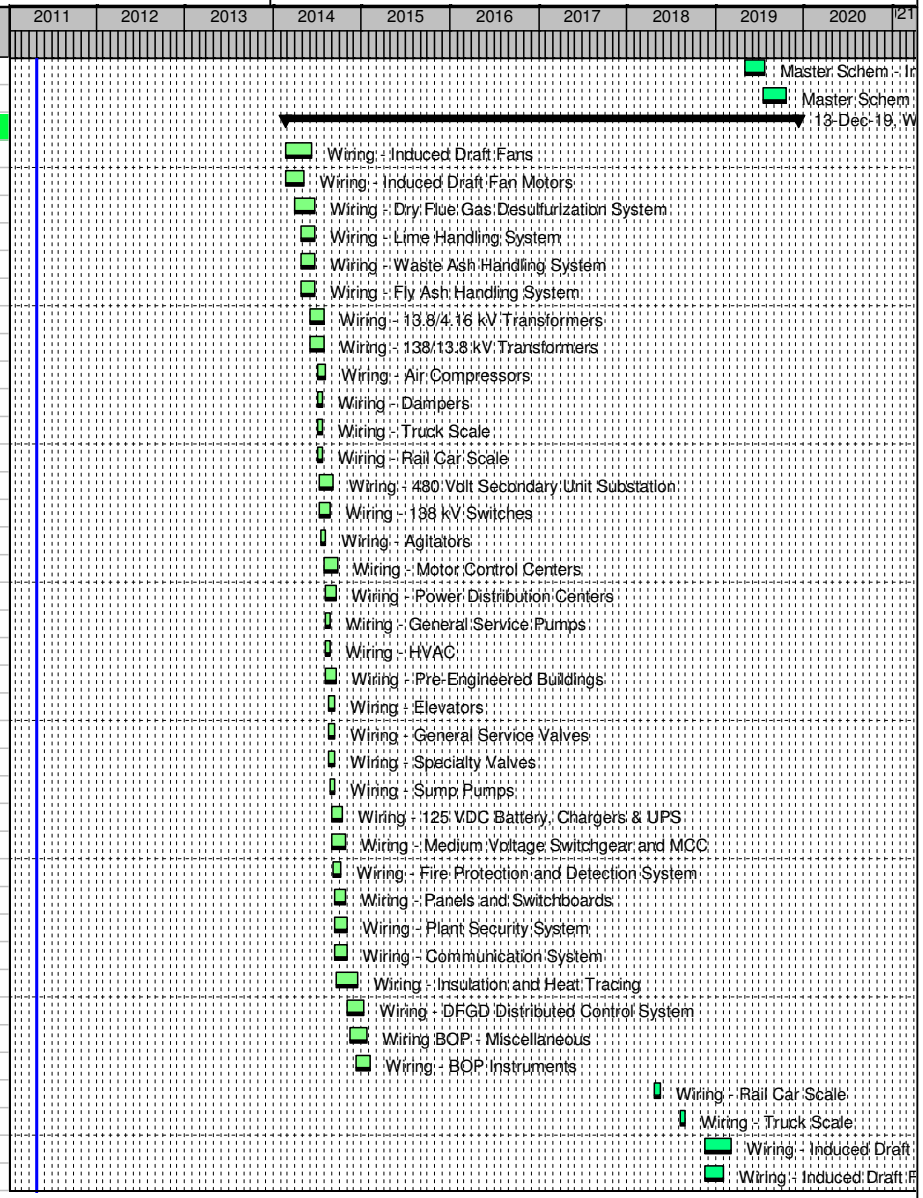


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

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Activity ID	Activity Name	Dur	Start	Finish
SL.E7-6837.00	Master Schem - Insulation and Heat Tracing	60	03-May-19	26-Jul-19
SL.E7-6891.00	Master Schem - BOP Instruments	65	19-Jul-19	18-Oct-19
Wiring Diagrams		1507	19-Feb-14	13-Dec-19
SL.E9-6822.10	Wiring - Induced Draft Fans	80	19-Feb-14	10-Jun-14
SL.E9-6860.10	Wiring - Induced Draft Fan Motors	55	19-Feb-14	06-May-14
SL.E9-6815.10	Wiring - Dry Flue Gas Desulfurization System	60	02-Apr-14	24-Jun-14
SL.E9-6850.10	Wiring - Lime Handling System	45	23-Apr-14	24-Jun-14
SL.E9-6851.10	Wiring - Waste Ash Handling System	45	23-Apr-14	24-Jun-14
SL.E9-6875.00	Wiring - Fly Ash Handling System	45	23-Apr-14	24-Jun-14
SL.E9-6861.10	Wiring - 13.8/4.16 kV Transformers	40	04-Jun-14	30-Jul-14
SL.E9-6872.10	Wiring - 138/13.8 kV Transformers	40	04-Jun-14	30-Jul-14
SL.E9-6823.10	Wiring - Air Compressors	25	02-Jul-14	06-Aug-14
SL.E9-6825.10	Wiring - Dampers	15	02-Jul-14	23-Jul-14
SL.E9-6852.10	Wiring - Truck Scale	15	02-Jul-14	23-Jul-14
SL.E9-6853.10	Wiring - Rail Car Scale	15	02-Jul-14	23-Jul-14
SL.E9-6863.10	Wiring - 480 Volt Secondary Unit Substation	40	10-Jul-14	03-Sep-14
SL.E9-6876.10	Wiring - 138 kV Switches	35	10-Jul-14	27-Aug-14
SL.E9-6836.10	Wiring - Agitators	15	17-Jul-14	06-Aug-14
SL.E9-6864.10	Wiring - Motor Control Centers	40	31-Jul-14	24-Sep-14
SL.E9-6810.10	Wiring - Power Distribution Centers	30	07-Aug-14	17-Sep-14
SL.E9-6826.10	Wiring - General Service Pumps	15	07-Aug-14	27-Aug-14
SL.E9-6834.10	Wiring - HVAC	15	07-Aug-14	27-Aug-14
SL.E9-6811.00	Wiring - Pre-Engineered Buildings	30	07-Aug-14	17-Sep-14
SL.E9-6807.10	Wiring - Elevators	15	21-Aug-14	10-Sep-14
SL.E9-6830.10	Wiring - General Service Valves	15	21-Aug-14	10-Sep-14
SL.E9-6831.10	Wiring - Specialty Valves	15	21-Aug-14	10-Sep-14
SL.E9-6827.10	Wiring - Sump Pumps	15	25-Aug-14	12-Sep-14
SL.E9-6866.10	Wiring - 125 VDC Battery, Chargers & UPS	35	28-Aug-14	15-Oct-14
SL.E9-6862.10	Wiring - Medium Voltage Switchgear and MCC	40	01-Sep-14	24-Oct-14
SL.E9-6838.10	Wiring - Fire Protection and Detection System	25	04-Sep-14	08-Oct-14
SL.E9-6867.10	Wiring - Panels and Switchboards	35	11-Sep-14	29-Oct-14
SL.E9-6869.10	Wiring - Plant Security System	40	11-Sep-14	05-Nov-14
SL.E9-6870.10	Wiring - Communication System	40	11-Sep-14	05-Nov-14
SL.E9-6837.10	Wiring - Insulation and Heat Tracing	65	17-Sep-14	17-Dec-14
SL.E9-6890.10	Wiring - DFGD Distributed Control System	50	03-Nov-14	14-Jan-15
SL.E9-6999.10	Wiring BOP - Miscellaneous	50	13-Nov-14	23-Jan-15
SL.E9-6891.10	Wiring - BOP Instruments	40	10-Dec-14	06-Feb-15
SL.E9-6853.00	Wiring - Rail Car Scale	15	25-Apr-18	16-May-18
SL.E9-6852.00	Wiring - Truck Scale	15	09-Aug-18	30-Aug-18
SL.E9-6822.00	Wiring - Induced Draft Fans	80	16-Nov-18	07-Mar-19
SL.E9-6860.00	Wiring - Induced Draft Fan Motors	55	16-Nov-18	31-Jan-19

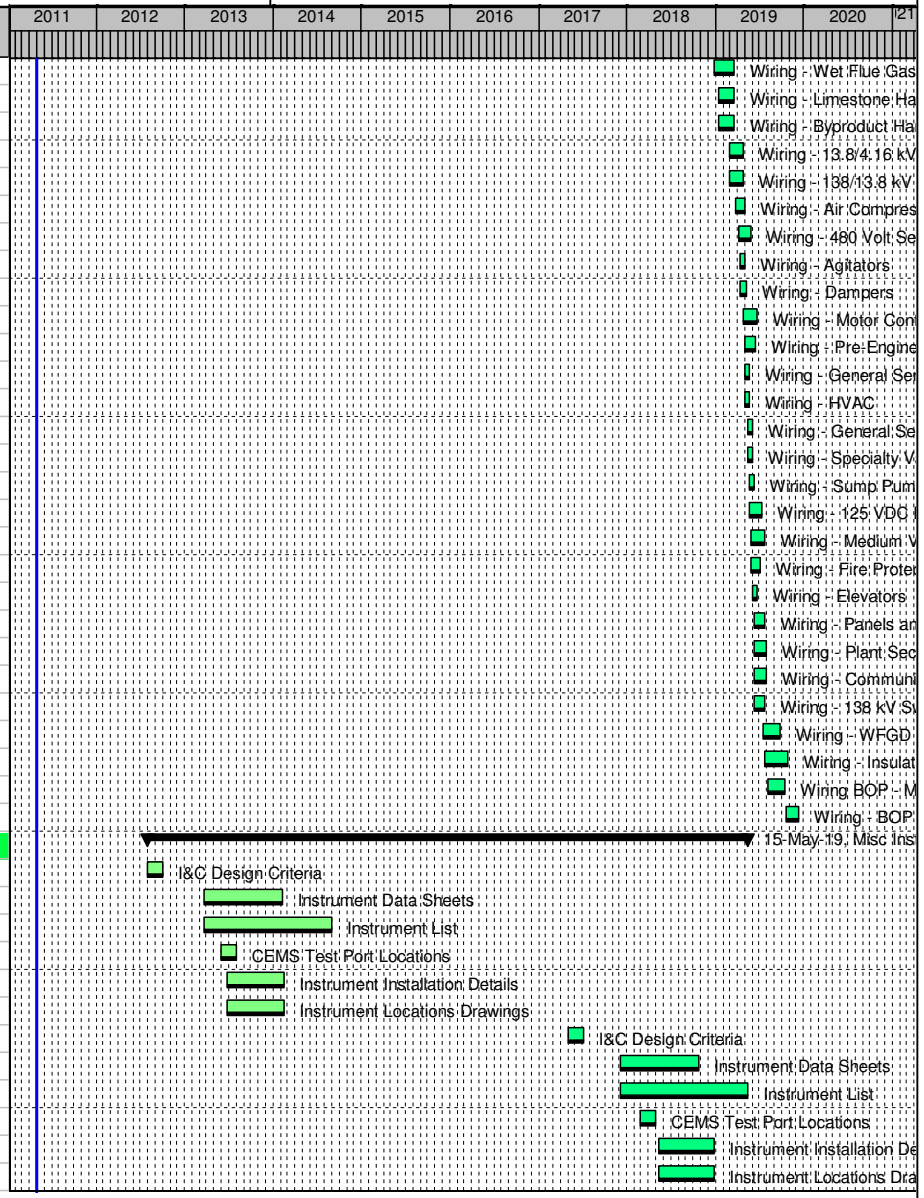


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

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Activity ID	Activity Name	Dur	Start	Finish
SL.E9-6815.00	Wiring - Wet Flue Gas Desulfurization System	60	28-Dec-18	21-Mar-19
SL.E9-6850.00	Wiring - Limestone Handling System	45	18-Jan-19	21-Mar-19
SL.E9-6873.00	Wiring - Byproduct Handling System	45	18-Jan-19	21-Mar-19
SL.E9-6861.00	Wiring - 13.8/4.16 kV Transformers	40	01-Mar-19	25-Apr-19
SL.E9-6872.00	Wiring - 138/13.8 kV Transformers	40	01-Mar-19	25-Apr-19
SL.E9-6823.00	Wiring - Air Compressors	25	29-Mar-19	02-May-19
SL.E9-6863.00	Wiring - 480 Volt Secondary Unit Substation	40	05-Apr-19	30-May-19
SL.E9-6836.00	Wiring - Agitators	15	12-Apr-19	02-May-19
SL.E9-6825.00	Wiring - Dampers	15	15-Apr-19	06-May-19
SL.E9-6864.00	Wiring - Motor Control Centers	40	26-Apr-19	20-Jun-19
SL.E9-6810.00	Wiring - Pre-Engineered Buildings	30	03-May-19	13-Jun-19
SL.E9-6826.00	Wiring - General Service Pumps	15	03-May-19	23-May-19
SL.E9-6834.00	Wiring - HVAC	15	03-May-19	23-May-19
SL.E9-6830.00	Wiring - General Service Valves	15	17-May-19	06-Jun-19
SL.E9-6831.00	Wiring - Specialty Valves	15	17-May-19	06-Jun-19
SL.E9-6827.00	Wiring - Sump Pumps	15	21-May-19	10-Jun-19
SL.E9-6866.00	Wiring - 125 VDC Battery, Chargers & UPS	35	24-May-19	11-Jul-19
SL.E9-6862.00	Wiring - Medium Voltage Switchgear and MCC	40	28-May-19	22-Jul-19
SL.E9-6838.00	Wiring - Fire Protection and Detection System	25	31-May-19	04-Jul-19
SL.E9-6807.00	Wiring - Elevators	15	03-Jun-19	24-Jun-19
SL.E9-6867.00	Wiring - Panels and Switchboards	35	07-Jun-19	25-Jul-19
SL.E9-6869.00	Wiring - Plant Security System	40	07-Jun-19	01-Aug-19
SL.E9-6870.00	Wiring - Communication System	40	07-Jun-19	01-Aug-19
SL.E9-6876.00	Wiring - 138 kV Switches	35	07-Jun-19	25-Jul-19
SL.E9-6890.00	Wiring - WFGD Distributed Control System	50	18-Jul-19	25-Sep-19
SL.E9-6837.00	Wiring - Insulation and Heat Tracing	65	26-Jul-19	25-Oct-19
SL.E9-6999.00	Wiring BOP - Miscellaneous	50	09-Aug-19	17-Oct-19
SL.E9-6891.00	Wiring - BOP Instruments	40	18-Oct-19	13-Dec-19
Misc Instrumentation & Control Deliverables		1755	01-Aug-12	15-May-19
SL.J5000.10	I&C Design Criteria	45	01-Aug-12	02-Oct-12
SL.J6100.10	Instrument Data Sheets	230	21-Mar-13	11-Feb-14
SL.J6300.10	Instrument List	373	21-Mar-13	01-Sep-14
SL.J1000.10	CEMS Test Port Locations	45	29-May-13	01-Aug-13
SL.J6200.10	Instrument Installation Details	165	27-Jun-13	18-Feb-14
SL.J6400.10	Instrument Locations Drawings	165	27-Jun-13	18-Feb-14
SL.J5000.00	I&C Design Criteria	45	03-May-17	05-Jul-17
SL.J6100.00	Instrument Data Sheets	230	08-Dec-17	26-Oct-18
SL.J6300.00	Instrument List	373	08-Dec-17	15-May-19
SL.J1000.00	CEMS Test Port Locations	45	28-Feb-18	02-May-18
SL.J6200.00	Instrument Installation Details	165	14-May-18	28-Dec-18
SL.J6400.00	Instrument Locations Drawings	165	14-May-18	28-Dec-18

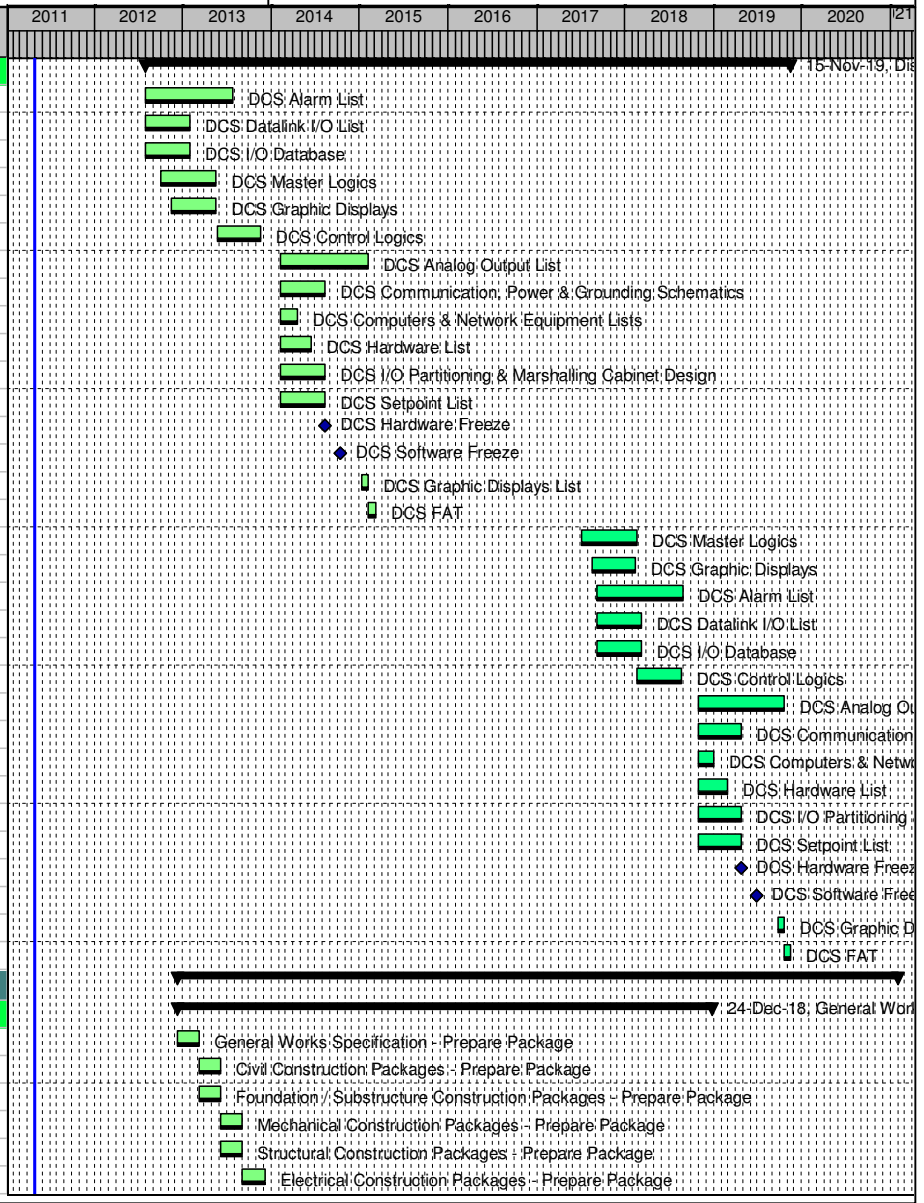


Remaining Level of Effort | Actual Level of Effort | Actual Work
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TASK filter: All Activities

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Activity ID	Activity Name	Dur	Start	Finish
Distributed Control System Deliverables		1887	01-Aug-12	15-Nov-19
SL.J2000.10	DCS Alarm List	255	01-Aug-12	26-Jul-13
SL.J2500.10	DCS Datalink I/O List	130	01-Aug-12	31-Jan-13
SL.J3700.10	DCS I/O Database	130	01-Aug-12	31-Jan-13
SL.J4000.10	DCS Master Logics	163	03-Oct-12	21-May-13
SL.J3100.10	DCS Graphic Displays	130	14-Nov-12	16-May-13
SL.J2400.10	DCS Control Logics	130	22-May-13	20-Nov-13
SL.J2100.10	DCS Analog Output List	255	11-Feb-14	06-Feb-15
SL.J2200.10	DCS Communication, Power & Grounding Schematics	130	11-Feb-14	13-Aug-14
SL.J2300.10	DCS Computers & Network Equipment Lists	50	11-Feb-14	22-Apr-14
SL.J3500.10	DCS Hardware List	90	11-Feb-14	17-Jun-14
SL.J3800.10	DCS I/O Partitioning & Marshalling Cabinet Design	130	11-Feb-14	13-Aug-14
SL.J4800.10	DCS Setpoint List	130	11-Feb-14	13-Aug-14
SL.J3000.30	DCS Hardware Freeze	0		13-Aug-14
SL.J3000.40	DCS Software Freeze	0		15-Oct-14
SL.J3200.10	DCS Graphic Displays List	20	09-Jan-15	06-Feb-15
SL.J3000.50	DCS FAT	20	06-Feb-15	06-Mar-15
SL.J4000.00	DCS Master Logics	163	06-Jul-17	20-Feb-18
SL.J3100.00	DCS Graphic Displays	130	17-Aug-17	15-Feb-18
SL.J2000.00	DCS Alarm List	255	06-Sep-17	29-Aug-18
SL.J2500.00	DCS Datalink I/O List	130	06-Sep-17	07-Mar-18
SL.J3700.00	DCS I/O Database	130	06-Sep-17	07-Mar-18
SL.J2400.00	DCS Control Logics	130	21-Feb-18	21-Aug-18
SL.J2100.00	DCS Analog Output List	255	29-Oct-18	18-Oct-19
SL.J2200.00	DCS Communication, Power & Grounding Schematics	130	29-Oct-18	26-Apr-19
SL.J2300.00	DCS Computers & Network Equipment Lists	50	29-Oct-18	04-Jan-19
SL.J3500.00	DCS Hardware List	90	29-Oct-18	01-Mar-19
SL.J3800.00	DCS I/O Partitioning & Marshalling Cabinet Design	130	29-Oct-18	26-Apr-19
SL.J4800.00	DCS Setpoint List	130	29-Oct-18	26-Apr-19
SL.J3000.00	DCS Hardware Freeze	0		26-Apr-19
SL.J3000.10	DCS Software Freeze	0		28-Jun-19
SL.J3200.00	DCS Graphic Displays List	20	23-Sep-19	18-Oct-19
SL.J3000.20	DCS FAT	20	21-Oct-19	15-Nov-19
CONSTRUCTION		2109	11-Dec-12	01-Feb-21
General Works Packages		1558	11-Dec-12	24-Dec-18
SL.P-6896.10	General Works Specification - Prepare Package	63	11-Dec-12	12-Mar-13
SL.P-6896C.10	Civil Construction Packages - Prepare Package	63	12-Mar-13	07-Jun-13
SL.P-6896U.10	Foundation / Substructure Construction Packages - Prepare Package	63	12-Mar-13	07-Jun-13
SL.P-6896M.10	Mechanical Construction Packages - Prepare Package	63	07-Jun-13	06-Sep-13
SL.P-6896S.10	Structural Construction Packages - Prepare Package	63	07-Jun-13	06-Sep-13
SL.P-6896E.10	Electrical Construction Packages - Prepare Package	63	06-Sep-13	04-Dec-13

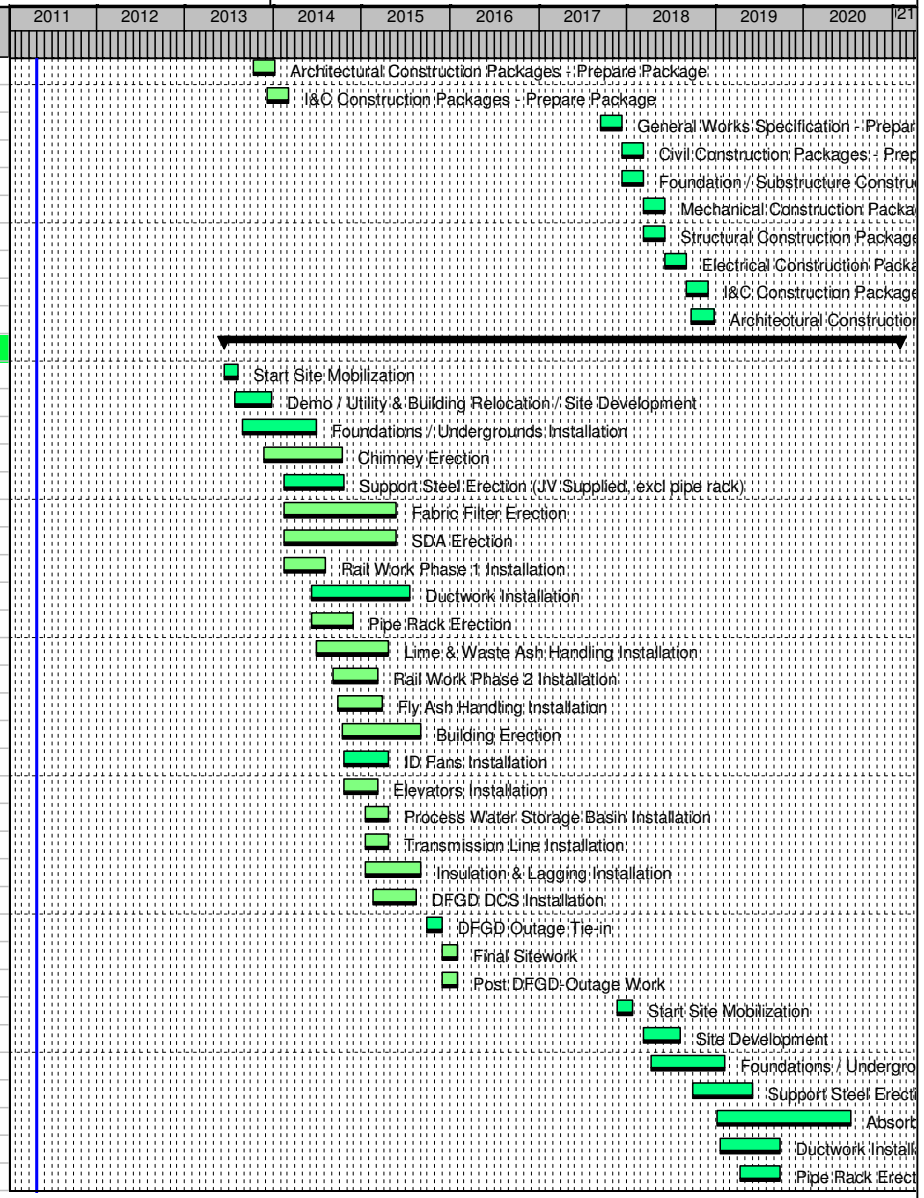


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TASK filter: All Activities

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Activity ID	Activity Name	Dur	Start	Finish
SL.P-6896A.10	Architectural Construction Packages - Prepare Package	63	11-Oct-13	10-Jan-14
SL.P-6896J.10	I&C Construction Packages - Prepare Package	63	04-Dec-13	06-Mar-14
SL.P-6896.00	General Works Specification - Prepare Package	63	13-Sep-17	11-Dec-17
SL.P-6896C.00	Civil Construction Packages - Prepare Package	63	11-Dec-17	09-Mar-18
SL.P-6896U.00	Foundation / Substructure Construction Packages - Prepare Package	63	11-Dec-17	09-Mar-18
SL.P-6896M.00	Mechanical Construction Packages - Prepare Package	63	09-Mar-18	07-Jun-18
SL.P-6896S.00	Structural Construction Packages - Prepare Package	63	09-Mar-18	07-Jun-18
SL.P-6896E.00	Electrical Construction Packages - Prepare Package	63	07-Jun-18	04-Sep-18
SL.P-6896J.00	I&C Construction Packages - Prepare Package	63	04-Sep-18	03-Dec-18
SL.P-6896A.00	Architectural Construction Packages - Prepare Package	63	26-Sep-18	24-Dec-18
Construction		1982	10-Jun-13	01-Feb-21
P1EPC7020	Start Site Mobilization	45	10-Jun-13*	09-Aug-13
P1EPC7200	Demo / Utility & Building Relocation / Site Development	110	29-Jul-13	27-Dec-13
P1EPC7210	Foundations / Undergrounds Installation	220	27-Aug-13	30-Jun-14
P1EPC7220	Chimney Erection	230	26-Nov-13	13-Oct-14
P1EPC7230	Support Steel Erection (JV Supplied, excl pipe rack)	175	18-Feb-14	20-Oct-14
P1EPC7054	Fabric Filter Erection	330	18-Feb-14	25-May-15
P1EPC7076	SDA Erection	330	18-Feb-14	25-May-15
P1EPC7240	Rail Work Phase 1 Installation	120	18-Feb-14	04-Aug-14
P1EPC7250	Ductwork Installation	290	10-Jun-14	20-Jul-15
P1EPC7260	Pipe Rack Erection	120	10-Jun-14	25-Nov-14
P1EPC7270	Lime & Waste Ash Handling Installation	210	01-Jul-14	20-Apr-15
P1EPC7290	Rail Work Phase 2 Installation	130	09-Sep-14	09-Mar-15
P1EPC7300	Fly Ash Handling Installation	130	26-Sep-14	27-Mar-15
P1EPC7280	Building Erection	230	15-Oct-14	02-Sep-15
P1EPC7310	ID Fans Installation	130	21-Oct-14	20-Apr-15
P1EPC7086	Elevators Installation	100	21-Oct-14	09-Mar-15
P1EPC7330	Process Water Storage Basin Installation	65	20-Jan-15	20-Apr-15
P1EPC7340	Transmission Line Installation	65	20-Jan-15	20-Apr-15
P1EPC7350	Insulation & Lagging Installation	160	20-Jan-15	31-Aug-15
P1EPC7320	DFGD DCS Installation	130	16-Feb-15	17-Aug-15
P1EPC7360	DFGD Outage Tie-in	61	01-Oct-15	30-Nov-15
P1EPC7370	Final Sitework	45	01-Dec-15	01-Feb-16
P1EPC7380	Post DFGD-Outage Work	45	01-Dec-15	01-Feb-16
P1EPC7000	Start Site Mobilization	45	23-Nov-17*	25-Jan-18
P1EPC7010	Site Development	110	09-Mar-18	10-Aug-18
P1EPC7030	Foundations / Undergrounds Installation	220	09-Apr-18	11-Feb-19
P1EPC7040	Support Steel Erection (JV Supplied, excl pipe rack)	175	01-Oct-18	03-Jun-19
P1EPC7056	Absorber Erection	395	10-Jan-19	15-Jul-20
P1EPC7080	Ductwork Installation	175	22-Jan-19	24-Sep-19
P1EPC7180	Pipe Rack Erection	120	15-Apr-19	27-Sep-19

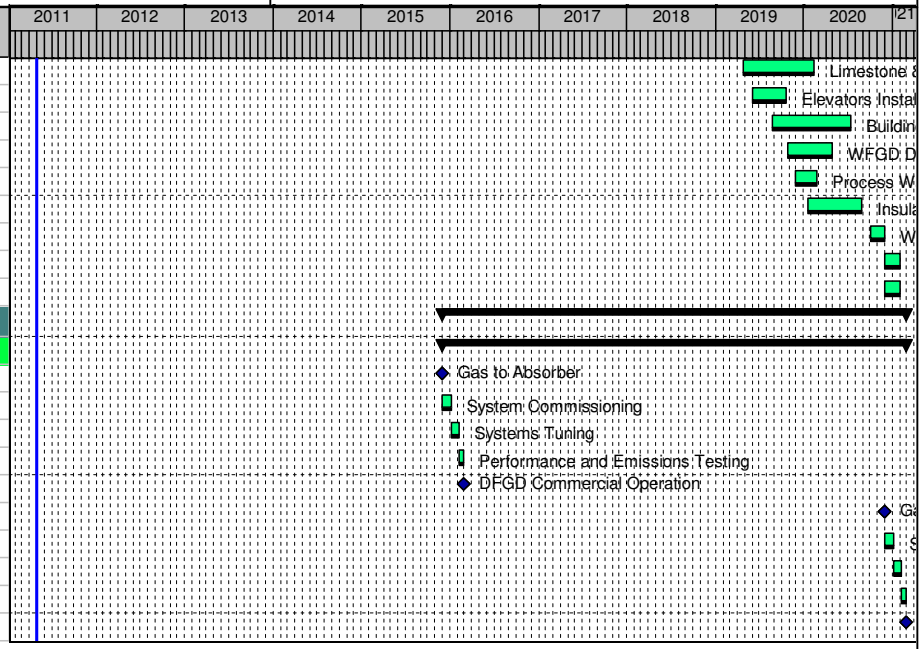


Remaining Level of Effort | Actual Level of Effort | Actual Work
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Activity ID	Activity Name	Dur	Start	Finish
P1EPC7060	Limestone & Byproduct Handling Installation	210	29-Apr-19	14-Feb-20
P1EPC7066	Elevators Installation	100	03-Jun-19	21-Oct-19
P1EPC7140	Building Erection	230	28-Aug-19	15-Jul-20
P1EPC7190	WFGD DCS Installation	130	29-Oct-19	27-Apr-20
P1EPC7110	Process Water Storage Basin Installation	65	27-Nov-19	26-Feb-20
P1EPC7170	Insulation & Lagging Installation	160	16-Jan-20	26-Aug-20
P1EPC7090	WFGD Outage Tie-in	61	01-Oct-20	30-Nov-20
P1EPC7130	Final Sitework	45	01-Dec-20	01-Feb-21
P1EPC7160	Post WFGD-Outage Work	45	01-Dec-20	01-Feb-21
START-UP		1361	01-Dec-15	28-Feb-21
Start-up		1361	01-Dec-15	28-Feb-21
P1EPC8050	Gas to Absorber	0		01-Dec-15
P1EPC8060	System Commissioning	35	02-Dec-15	05-Jan-16
P1EPC8070	Systems Tuning	35	06-Jan-16	09-Feb-16
P1EPC8080	Performance and Emissions Testing	20	10-Feb-16	29-Feb-16
P1EPC8090	DFGD Commercial Operation	0		29-Feb-16*
P1EPC8000	Gas to Absorber	0		01-Dec-20
P1EPC8010	System Commissioning	35	02-Dec-20	05-Jan-21
P1EPC8030	Systems Tuning	34	06-Jan-21	08-Feb-21
P1EPC8020	Performance and Emissions Testing	20	09-Feb-21	28-Feb-21
P1EPC8040	WFGD Commercial Operation	0		28-Feb-21*



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