Big Sandy Plant Unit 2

ORDER-OF-MAGNITUDE FGD COST ESTIMATE

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

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Draft Report for WFGD, DFGD, IAQCS
and NID Technologies

Volume 4 – IAQCS Technology

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Issue Summary Page

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Issue Summary Page Cont.

C	9/10/10	Review IAQCS - Volume 4	D. Anderson J. Hughes K. Nomanbhoy M. Ozan C. Woods	D. F. Franczak W. J. Staehlin P. Fisher	S. R. Bertheau	All

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* - Estimates 2A, 2B, 3A, 3B, 4A and 4B contain only accounts whose costs are different from the corresponding base estimates 1A and 1B.

1.0 INTRODUCTION

The purpose of this document is 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 is 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 will define 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.

The 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. 1) 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_C	IAQCS FGD Site Plan	4-2
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MSK-IAQCS-MB-007_B	IAQCS FGD Mass Balance Diagram – (4.5 lb/MMBtu Coal w/ESP)	4-3
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VOLUME 4 - EXHIBIT 4-1
Project Deliverable Index
IAQCS Technology

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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		
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**	S&L	S&L	Previous OEM proposals and S&L 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		
15.0	**RAIL INFRASTRUCTURE**	S&L	S&L		
16.0	**SITE IMPROVEMENTS - CIVIL WORK**	S&L	S&L		
17.0	**LIMESTONE HANDLING SYSTEM**	S&L	S&L		
18.0	**REAGENT (LIMESTONE) PREPARATION ISLAND**	S&L	S&L		
19.0	**BYPRODUCT DEWATERING ISLAND**	S&L	S&L		
20.0	**WET FGD ABSORBER ISLAND**	S&L	S&L		
21.0	**COMPRESSED AIR SYSTEMS (BY PRODUCT DEWATERING AREA)**	S&L	S&L		
22.0	**POTABLE WATER SYSTEM**	S&L	S&L		

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**
23.0	**FGD SUBSTATION**	S&L	S&L		
24.0	**FGD DCS SYSTEM**	S&L	S&L		
25.0	**SITE IMPROVEMENTS - CIVIL WORK**	S&L	S&L		
26.0	**BOP ITEMS**	S&L	S&L		
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		

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
INDIRECT 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
	OWNERS COST	AEP	
	EPC FEE	AEP	
	SALES/USE TAX	AEP	
	ESCALATION	S&L	Material, Equipment and Labor Indices
	CONTINGENCY	S&L	Range Estimating
	INTEREST DURING CONSTRUCTION (AFUDC)	AEP	

EXHIBIT 4-3
IAQCS Contingency Analysis

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

Exhibit 4-4. IAQCS OEM Cost Summary

	1.7 w/o ESP	3.0 w/o ESP	4.5 w/o ESP	7.5 w/o ESP	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 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 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 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 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

	1.7 w/o ESP	3.0 w/o ESP	4.5 w/o ESP	7.5 w/o ESP	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

	1.7 w/ ESP	3.0 w/ ESP	4.5 w/ ESP	7.5 w/ ESP	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 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 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	Addition[illegible] 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 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

	1.7 w/ ESP	3.0 w/ ESP	4.5 w/ ESP	7.5 w/ ESP	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.

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 1.75 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 1.75 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.

- 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

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

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 handling 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 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 present in the flue gas.

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

- 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.

Sargent & Lundy, LLC

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

Estimate No.: 30715B
Project No.: 12721-000
Date: 9/12/2010
Preparer: MNO
Reviewer: JMK
Approver: PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	EST 3B N/ESP 3.[illegible] SO2/MMBTU PHASED Total Projected Cost	EST 2B N/ESP 1.7 LB SO2/MMBTU PHASED Total Projected Cost	EST 3A N/ESP 3.0 LB SO2/MMBTU PHASED Total Projected Cost	EST 2A ESP 1.7 LB SO2/MMBTU NON-PHASED Total Projected Cost	EST 2B N/ESP 1.7 LB SO2/MMBTU PHASED Total Projected Cost	EST 3A N/ESP 3.0 LB SO2/MMBTU PHASED Total Projected Cost	EST 2A ESP 1.7 LB SO2/MMBTU NON-PHASED Total Projected Cost	Remarks
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	$ 9,808,700	$ 21,574,900	$ 43,428,600	$ 43,428,600	$ 42,597,200	$ 42,597,200	$ -	$ (831,400)	$ (831,400)	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 602,300	$ 2,501,200	$ 7,809,900	$ 10,913,300	$ 10,913,300	$ 10,851,500	$ 10,851,500	$ -	$ (61,800)	$ (61,800)	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	ID FANS	$ 12,647,300	$ 12,309,900	$ 29,384,800	$ 54,341,900	$ 54,341,900	$ 53,448,700	$ 53,448,700	$ -	$ (893,200)	$ (893,200)	
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		$ 22,359,400	$ 3,019,600	$ 17,368,900	$ 42,747,900	$ 43,048,600	$ 42,078,900	$ 42,263,000	$ 300,700	$ (669,000)	$ (484,900)	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 1,118,000	$ 770,000	$ 6,453,300	$ 8,341,300	$ 8,382,000	$ 8,248,500	$ 8,274,000	$ 40,700	$ (92,800)	$ (67,300)	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FABRIC FILTERS	$ 23,477,400	$ 3,789,600	$ 23,822,200	$ 51,089,200	$ 51,430,600	$ 50,327,400	$ 50,537,000	$ 341,400	$ (761,800)	$ (552,200)	
3.0	NEW STACK												
3.1	[illegible]CRETE STACK (WET)	PROVIDED BY AEP	$ 780,000	$ 15,000,000	$ 15,700,000	$ 31,480,000	$ 31,480,000	$ 31,480,000	$ 31,480,000	$ -	$ -	$ -	
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 equipment (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	$ 2,958,200	$ 5,898,400	$ 16,116,200	$ 11,833,300	$ 17,373,500	$ 12,235,000	$ (4,282,900)	$ 1,257,300	$ (3,881,200)	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 363,000	$ 754,300	$ 2,156,300	$ 3,273,600	$ 2,792,400	$ 3,408,500	$ 2,820,000	$ (481,200)	$ 134,900	$ (453,600)	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME HANDLING SYSTEM	$ 7,622,600	$ 3,712,500	$ 8,054,700	$ 19,389,800	$ 14,625,700	$ 20,782,000	$ 15,055,000	$ (4,764,100)	$ 1,392,200	$ (4,334,800)	
5.0	LIME SLAKER BUILDING												
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 8,183,300	$ 1,173,800	$ 6,534,000	$ 15,891,100	$ 12,500,100	$ 16,750,500	$ 13,007,400	$ (3,391,000)	$ 859,400	$ (2,883,700)	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 409,200	$ 299,300	$ 2,438,400	$ 3,146,900	$ 2,665,800	$ 3,263,900	$ 2,741,000	$ (481,100)	$ 117,000	$ (405,900)	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME SLAKER BUILDING	$ 8,592,500	$ 1,473,100	$ 8,972,400	$ 19,038,000	$ 15,165,900	$ 20,014,400	$ 15,748,400	$ (3,872,100)	$ 976,400	$ (3,289,600)	

Sargent & Lundy, LLC

AEP
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Project No.: 12721-000
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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		$ 5,642,300	$ 2,361,400	$ 5,249,100	$ 13,252,800	$ 12,281,100	$ 15,926,800	$ 15,269,200	$ (971,700)	$ 2,674,000	$ 2,016,400	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 282,100	$ 602,200	$ 1,953,700	$ 2,838,000	$ 2,748,400	$ 3,415,000	$ 3,345,600	$ (89,600)	$ 577,000	$ 507,600	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS	$ 5,924,400	$ 2,963,600	$ 7,202,800	$ 16,090,800	$ 15,029,500	$ 19,341,800	$ 18,614,800	$ (1,061,300)	$ 3,251,000	$ 2,524,000	
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	$ 12,556,000	$ 49,344,000	$ 103,906,800	$ 103,906,800	$ 110,883,700	$ 110,883,700	$ -	$ 6,976,900	$ 6,976,900	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 2,910,300	$ 3,201,800	$ 19,627,500	$ 25,739,600	$ 25,739,600	$ 27,958,100	$ 27,958,100	$ -	$ 2,218,500	$ 2,218,500	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SPRAY DRYER ABSORBER ISLAND	$ 44,917,100	$ 15,757,800	$ 68,971,500	$ 129,646,400	$ 129,646,400	$ 138,841,800	$ 138,841,800	$ -	$ 9,195,400	$ 9,195,400	
8.0	ACTIVATED CARBON INJECTION SYSTEM												
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 2,929,000	$ 321,300	$ 1,726,800	$ 4,977,100	$ 4,977,100	$ 4,977,100	$ 4,977,100	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 146,500	$ 81,900	$ 634,600	$ 863,000	$ 863,000	$ 863,000	$ 863,000	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	ACTIVATED CARBON INJECTION SYSTEM	$ 3,075,500	$ 403,200	$ 2,361,400	$ 5,840,100	$ 5,840,100	$ 5,840,100	$ 5,840,100	$ -	$ -	$ -	
9.0	COMPRESSED AIR SYSTEM												
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 1,390,600	$ 1,359,100	$ 2,588,700	$ 5,338,400	$ 5,338,400	$ 5,338,400	$ 5,338,400	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 69,500	$ 346,600	$ 946,400	$ 1,362,500	$ 1,362,500	$ 1,362,500	$ 1,362,500	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	COMPRESSED AIR SYSTEM	$ 1,460,100	$ 1,705,700	$ 3,535,100	$ 6,700,900	$ 6,700,900	$ 6,700,900	$ 6,700,900	$ -	$ -	$ -	
10.0	SERVICE WATER SYSTEM												

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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	$ 235,600	$ 691,200	$ 1,056,300	$ 1,056,300	$ 1,056,300	$ 1,056,300	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 6,500	$ 60,100	$ 252,000	$ 318,600	$ 318,600	$ 318,600	$ 318,600	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	POTABLE WATER SYSTEM	$ 135,975	$ 295,678	$ 943,238	$ 1,374,891	$ 1,374,891	$ 1,374,891	$ 1,374,891	$ -	$ -	$ -	
12.0	FGD SUBSTATION												
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 3,342,400	$ 924,500	$ 4,212,100	$ 8,479,000	$ 8,479,000	$ 8,479,000	$ 8,479,000	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 167,100	$ 235,700	$ 1,519,624	$ 1,922,500	$ 1,922,500	$ 1,922,500	$ 1,922,500	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FGD SUBSTATION	$ 3,509,500	$ 1,160,200	$ 5,731,700	$ 10,401,500	$ 10,401,500	$ 10,401,500	$ 10,401,500	$ -	$ -	$ -	
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												
14.1	CEM	PROVIDED BY AEP	$ 1,260,000	$ 540,000	$ 310,000	$ 2,110,000	$ 2,110,000	$ 2,110,000	$ 2,110,000	$ -	$ -	$ -	
15.0	TRUCK & RAIL INFRASTRUCTURE												
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 432,300	$ 2,587,900	$ 3,533,800	$ 6,554,000	$ 6,554,000	$ 6,554,000	$ 6,554,000	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 21,600	$ 659,900	$ 1,327,600	$ 2,009,100	$ 2,009,100	$ 2,009,100	$ 2,009,100	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	TRUCK & RAIL INFRASTRUCTURE	$ 453,900	$ 3,247,800	$ 4,861,400	$ 8,563,100	$ 8,563,100	$ 8,563,100	$ 8,563,100	$ -	$ -	$ -	
16.0	SITE IMPROVEMENTS - CIVIL WORK												
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 574,500	$ 2,968,000	$ 5,486,600	$ 9,029,100	$ 9,029,100	$ 9,029,100	$ 9,029,100	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 28,700	$ 756,800	$ 1,967,100	$ 2,752,600	$ 2,752,600	$ 2,752,600	$ 2,752,600	$ -	$ -	$ -	

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	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SITE IMPROVEMENTS - CIVIL WORK	$ 603,200	$ 3,724,800	$ 7,453,700	$ 11,781,700	$ 11,781,700	$ 11,781,700	$ 11,781,700	$ -	$ -	$ -	
17.0	BOP ITEMS												
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 210,000	$ 1,051,800	$ 1,969,900	$ 3,231,700	$ 3,231,700	$ 3,231,700	$ 3,231,700	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 10,500	$ 268,209	$ 750,035	$ 1,028,744	$ 1,028,744	$ 1,028,744	$ 1,028,744	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BOP ITEMS	$ 220,500	$ 1,320,000	$ 2,719,900	$ 4,260,400	$ 4,260,400	$ 4,260,400	$ 4,260,400	$ -	$ -	$ -	
18.0	CAPITAL REPLACEMENTS - REMOVAL AND RELOCATION OF EXISTING EQUIPMENT AND INFRASTRUCTURE												
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 500,000	$ 509,600	$ 1,451,200	$ 2,460,800	$ 2,460,800	$ 2,460,800	$ 2,460,800	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 25,000	$ 129,900	$ 514,700	$ 669,600	$ 669,600	$ 669,600	$ 669,600	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	CAPITAL REPLACEMENTS - REMOVAL AND RELOCATION OF EXISTING EQUIPMENT AND INFRASTRUCTURE	$ 525,000	$ 639,500	$ 1,965,900	$ 3,130,400	$ 3,130,400	$ 3,130,400	$ 3,130,400	$ -	$ -	$ -	
19.0	ARSENIC, ASBESTOS , LEAD ABATEMENT												
19.1	ARSENIC, ASBESTOS , LEAD ABATEMENT	ALLOWANCE PROVIDED BY AEP	$ -	$ -	$ -	$ 750,000	$ 750,000	750,000	$ 750,000	$ -	$ -	$ -	
99.0	PHASE I - OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 112,943,900	$ 60,533,400	$ 150,002,900	$ 324,230,200	$ 315,885,300	$ 334,497,400	$ 325,142,300	$ (8,344,900)	$ 10,267,200	$ 912,100	
	PHASE I - OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 6,355,200	$ 11,473,300	$ 50,685,200	$ 68,513,700	$ 67,502,500	$ 71,406,600	$ 70,251,300	$ (1,011,200)	$ 2,892,900	$ 1,737,600	
	PHASE I - OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 119,299,100	$ 72,006,700	$ 200,688,100	$ 392,743,900	$ 383,387,800	$ 405,904,000	$ 395,393,600	$ (9,356,100)	$ 13,160,100	$ 2,649,700	
	INDIRECT COSTS - PHASE I												
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES					$ 28,000,000	$ 28,000,000	$ 28,000,000	$ 28,000,000	$ -	$ -	$ -	
	CONSTRUCTION MANAGEMENT					$ 11,782,300	$ 11,501,600	$ 12,177,100	$ 11,861,800	$ (280,700)	$ 394,800	$ 79,500	
	S-U / COMMISSIONING					$ 3,927,400	$ 3,833,900	$ 4,059,000	$ 3,953,900	$ (93,500)	$ 131,600	$ 26,500	
	CRAFT START-UP SUPPORT					$ 1,767,500	$ 1,748,800	$ 1,837,400	$ 1,816,100	$ (18,700)	$ 69,900	$ 48,600	
	INITIAL FILLS					$ 1,178,200	$ 1,150,200	$ 1,217,700	$ 1,186,200	$ (28,000)	$ 39,500	$ 8,000	
	OPERATOR & TRAINING MANUALS					$ 300,000	$ 300,000	$ 300,000	$ 300,000	$ -	$ -	$ -	
	SUBCONTRACTORS (NOISE & DUCTWORK CONSULTANT,					$ 400,000	$ 400,000	$ 400,000	$ 400,000	$ -	$ -	$ -	
	OWNERS COST - % of ACCT NOS. 92, 93.1, 93.2, 93.3, 93.4					$ -	$ -	$ -	$ -	$ -	$ -	$ -	
	TOTAL PHASE I DIRECT AND INDIRECT COSTS					$ 440,099,300	$ 430,322,300	$ 453,895,200	$ 442,911,600	$ (9,777,000)	$ 13,795,900	$ 2,812,300	

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	SPARE PARTS FOR THE OEM & THE BOP EQUIPMENT - PHASE I					$ 1,550,900	$ 1,463,400	$ 1,572,700	$ 1,475,700	$ (87,500)	$ 21,800	$ (75,200)	
	SPARE PARTS FOR THE OEM EQUIPMENT	0.80				$ 961,558	$ 907,308	$ 975,074	$ 914,934	$ (54,250)	$ 13,516	$ (46,624)	
	SPARE PARTS FOR THE BOP EQUIPMENT	0.50				$ 589,342	$ 556,092	$ 597,626	$ 560,766	$ (33,250)	$ 8,284	$ (28,576)	
	CONTINGENCY - PHASE I	14.7				$ 65,044,900	$ 63,958,300	$ 67,481,600	$ 66,365,600	$ (1,086,600)	$ 2,436,700	$ 1,320,700	
	ESCALATION - PHASE I					$ 40,008,200	$ 39,039,100	$ 41,213,900	$ 40,127,300	$ (969,100)	$ 1,205,700	$ 119,100	
	EQUIPMENT					$ 12,450,000	$ 11,747,800	$ 12,625,200	$ 11,846,600	$ (702,200)	$ 175,200	$ (603,400)	
	MATERIAL					$ 5,167,700	$ 5,136,100	$ 5,413,700	$ 5,374,400	$ (31,600)	$ 246,000	$ 206,700	
	LABOR					$ 18,115,800	$ 17,918,500	$ 18,842,900	$ 18,616,900	$ (197,300)	$ 727,100	$ 501,100	
	INDIRECTS					$ 4,274,700	$ 4,236,700	$ 4,332,100	$ 4,289,400	$ (38,000)	$ 57,400	$ 14,700	
	INTEREST DURING CONSTRUCTION (AFUDC)	BY AEP				$ -	$ -	$ -	$ -	$ -	$ -	$ -	
	PHASE I - TOTAL PROJECT COST					$ 546,703,300	$ 534,783,100	$ 564,163,400	$ 550,880,200	$ (11,920,200)	$ 17,460,100	$ 4,176,900	
	PHASE II - WET FGD												
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		$ 6,283,800	$ 3,026,800	$ 10,647,800	$ 19,958,400	$ 19,958,400	$ 19,958,400	$ 19,947,500	$ -	$ -	$ (10,900)	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 314,200	$ 771,800	$ 4,081,400	$ 5,167,400	$ 5,167,400	$ 5,167,400	$ 5,163,200	$ -	$ -	$ (4,200)	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIMESTONE HANDLING SYSTEM	$ 6,598,000	$ 3,798,600	$ 14,729,200	$ 25,125,800	$ 25,125,800	$ 25,125,800	$ 25,110,700	$ -	$ -	$ (15,100)	
21.0	REAGENT (LIMESTONE) PREPARATION ISLAND												As fuel sulfur content increases more limestone is required and more byproduct is produced, therefore the reagent prep island costs and byproduct handling costs are increased.
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 14,035,400	$ 6,007,600	$ 17,687,500	$ 37,730,500	$ 34,368,200	$ 37,730,500	$ 34,368,200	$ (3,362,300)	$ -	$ (3,362,300)	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 701,800	$ 1,531,900	$ 6,779,500	$ 9,013,200	$ 8,412,100	$ 9,013,200	$ 8,412,100	$ (601,100)	$ -	$ (601,100)	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	REAGENT (LIMESTONE) PREPARATION ISLAND	$ 14,737,200	$ 7,539,500	$ 24,467,000	$ 46,743,700	$ 42,780,300	$ 46,743,700	$ 42,780,300	$ (3,963,400)	$ -	$ (3,963,400)	
22.0	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)												As fuel sulfur content increases more limestone is required and more byproduct is produced, therefore the reagent prep island costs and byproduct handling costs are increased.
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 11,277,800	$ 16,063,200	$ 30,765,700	$ 58,106,700	$ 55,595,000	$ 58,106,700	$ 55,595,000	$ (2,511,700)	$ -	$ (2,511,700)	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 563,900	$ 4,096,100	$ 11,792,100	$ 16,452,100	$ 16,019,400	$ 16,452,100	$ 16,019,400	$ (432,700)	$ -	$ (432,700)	

Sargent & Lundy, LLC

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

Estimate No.: 30715B
Project No.: 12721-000
Date: 9/12/2010
Preparer: MNO
Reviewer: JMK
Approver: PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	EST 3B N/ESP 3.0 LB SO2/MMBTU PHASED Total Projected Cost	EST 2B N/ESP 1.7 LB SO2/MMBTU PHASED Total Projected Cost	EST 3A N/ESP 3.0 LB SO2/MMBTU PHASED Total Projected Cost	EST 2A ESP 1.7 LB SO2/MMBTU NON-PHASED Total Projected Cost	EST 2B N/ESP 1.7 LB SO2/MMBTU PHASED Total Projected Cost	EST 3A N/ESP 3.0 LB SO2/MMBTU PHASED Total Projected Cost	EST 2A ESP 1.7 LB SO2/MMBTU NON-PHASED Total Projected Cost	Remarks
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)	$ 11,841,700	$ 20,159,300	$ 42,557,800	$ 74,558,800	$ 71,614,400	$ 74,558,800	$ 71,614,400	$ (2,944,400)	$ -	$ (2,944,400)	
23.0	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		$ 44,928,300	$ 22,498,900	$ 65,419,900	$ 132,847,100	$ 131,937,600	$ 132,847,100	$ 131,937,600	$ (909,500)	$ -	$ (909,500)	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 2,921,400	$ 5,737,200	$ 25,857,400	$ 34,516,100	$ 34,327,100	$ 34,516,100	$ 34,327,100	$ (189,000)	$ -	$ (189,000)	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 47,849,700	$ 28,236,100	$ 91,277,300	$ 167,363,200	$ 166,264,700	$ 167,363,200	$ 166,264,700	$ (1,098,500)	$ -	$ (1,098,500)	
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	$ 47,500	$ 85,500	$ 85,500	$ 85,500	$ 85,500	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT		$ 1,100	$ 4,300	$ 18,100	$ 23,400	$ 23,400	$ 23,400	$ 23,400	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	POTABLE WATER SYSTEM	$ 22,400	$ 21,000	$ 65,600	$ 108,900	$ 108,900	$ 108,900	$ 108,900	$ -	$ -	$ -	
26.0	FGD SUBSTATION												
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 1,376,000	$ 223,700	$ 727,200	$ 2,326,900	$ 2,326,900	$ 2,326,900	$ 2,326,900	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 68,800	$ 57,000	$ 278,499	$ 404,300	$ 404,300	$ 404,300	$ 404,300	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 1,444,800	$ 280,700	$ 1,005,700	$ 2,731,200	$ 2,731,200	$ 2,731,200	$ 2,731,200	$ -	$ -	$ -	
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	$ 966,500	$ 1,307,400	$ 2,276,900	$ 2,276,900	$ 2,276,900	$ 2,276,900	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 200	$ 246,500	$ 501,400	$ 748,000	$ 748,000	$ 748,000	$ 748,000	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SITE IMPROVEMENTS - CIVIL WORK	$ 3,200	$ 1,213,000	$ 1,808,800	$ 3,024,900	$ 3,024,900	$ 3,024,900	$ 3,024,900	$ -	$ -	$ -	
29.0	BOP ITEMS												
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 180,000	$ 1,150,300	$ 2,238,700	$ 3,569,000	$ 3,569,000	$ 3,569,000	$ 3,569,000	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 9,000	$ 293,327	$ 858,418	$ 1,160,745	$ 1,160,745	$ 1,160,745	$ 1,160,745	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BOP ITEMS	$ 189,000	$ 1,443,600	$ 3,097,100	$ 4,729,700	$ 4,729,700	$ 4,729,700	$ 4,729,700	$ -	$ -	$ -	

Sargent & Lundy, LLC

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

Estimate No.: 30715B
Project No.: 12721-000
Date: 9/12/2010
Preparer: MNO
Reviewer: JMK
Approver: PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	EST 3B N/ESP 3.0 LB SO2/MMBTU PHASED Total Projected Cost	EST 2B N/ESP 1.7 LB SO2/MMBTU PHASED Total Projected Cost	EST 3A N/ESP 3.0 LB SO2/MMBTU PHASED Total Projected Cost	EST 2A ESP 1.7 LB SO2/MMBTU NON-PHASED Total Projected Cost	EST 2B N/ESP 1.7 LB SO2/MMBTU PHASED Total Projected Cost	EST 3A N/ESP 3.0 LB SO2/MMBTU PHASED Total Projected Cost	EST 2A ESP 1.7 LB SO2/MMBTU NON-PHASED Total Projected Cost	Remarks
99.0	PHASE II - OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 78,851,900	$ 53,947,700	$ 131,630,500	$ 264,430,100	$ 257,646,600	$ 264,430,100	$ 257,635,700	$ (6,783,500)	$ -	$ (6,794,400)	
	PHASE II - OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 4,617,600	$ 13,756,700	$ 51,236,300	$ 69,610,600	$ 68,387,900	$ 69,610,600	$ 68,383,600	$ (1,222,700)	$ -	$ (1,227,000)	
	PHASE II - OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 83,469,500	$ 67,704,400	$ 182,866,800	$ 334,040,700	$ 326,034,500	$ 334,040,700	$ 326,019,300	$ (8,006,200)	$ -	$ (8,021,400)	
	INDIRECT COSTS - PHASE II												
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES					$ 23,000,000	$ 23,000,000	$ 23,000,000	$ 23,000,000	$ -	$ -	$ -	
	CONSTRUCTION MANAGEMENT					$ 10,021,200	$ 9,781,000	$ 10,021,200	$ 9,780,600	$ (240,200)	$ -	$ (240,600)	
	S-U / COMMISSIONING					$ 3,340,400	$ 3,260,300	$ 3,340,400	$ 3,260,200	$ (80,100)	$ -	$ (80,200)	
	CRAFT START-UP SUPPORT					$ 1,551,600	$ 1,522,700	$ 1,551,600	$ 1,522,600	$ (28,900)	$ -	$ (29,000)	
	INITIAL FILLS					$ 1,002,100	$ 978,100	$ 1,002,100	$ 978,100	$ (24,000)	$ -	$ (24,000)	
	OPERATOR & TRAINING MANUALS					$ 300,000	$ 300,000	$ 300,000	$ 300,000	$ -	$ -	$ -	
	SUBCONTRACTORS (NOISE CONSULTANT)					$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ -	$ -	$ -	
	OWNERS COST - % of ACCT NOS. 92, 93.1, 93.2, 93.3, 93.4					$ -	$ -	$ -	$ -	$ -	$ -	$ -	
	TOTAL PHASE II DIRECT AND INDIRECT COSTS					$ 373,356,000	$ 364,976,600	$ 373,356,000	$ 364,960,800	$ (8,379,400)	$ -	$ (8,395,200)	
	SPARE PARTS FOR THE OEM & THE BOP EQUIPMENT -					$ 1,085,100	$ 1,030,400	$ 1,085,100	$ 1,030,400	$ (54,700)	$ -	$ (54,700)	
	SPARE PARTS FOR THE OEM EQUIPMENT	0.80				$ 672,762	$ 618,240	$ 542,550	$ 638,848	$ (54,522)	$ (130,212)	$ (33,914)	
	SPARE PARTS FOR THE BOP EQUIPMENT	0.50				$ 412,338	$ 412,160	$ 542,550	$ 391,552	$ (178)	$ 130,212	$ (20,786)	
	CONTINGENCY - PHASE II.	15.8				$ 59,275,700	$ 58,140,300	$ 58,901,500	$ 57,877,600	$ (1,135,400)	$ (374,200)	$ (1,398,100)	
	ESCALATION - PHASE II					$ 85,284,800	$ 83,273,100	$ 85,284,800	$ 83,269,500	$ (2,011,700)	$ -	$ (2,015,300)	
	EQUIPMENT					$ 20,985,200	$ 19,927,400	$ 20,985,200	$ 19,927,400	$ (1,057,800)	$ -	$ (1,057,800)	
	MATERIAL					$ 12,411,400	$ 12,336,900	$ 12,411,400	$ 12,336,900	$ (74,500)	$ -	$ (74,500)	
	LABOR					$ 42,706,500	$ 41,914,300	$ 42,706,500	$ 41,910,800	$ (792,200)	$ -	$ (795,700)	
	INDIRECTS					$ 9,181,700	$ 9,094,500	$ 9,181,700	$ 9,094,400	$ (87,200)	$ -	$ (87,300)	
	INTEREST DURING CONSTRUCTION (AFUDC)					$ -	$ -	$ -	$ -	$ -	$ -	$ -	
	PHASE II - TOTAL PROJECT COST					$ 519,001,600	$ 507,420,400	$ 518,627,400	$ 507,138,300	$ (11,581,200)	$ (374,200)	$ (11,863,300)	
	OVERALL PROJECT INDIRECT COSTS (PHASE I + PHASE II)												
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES					$ 51,000,000	$ 51,000,000	$ 51,000,000	$ 51,000,000	$ -	$ -	$ -	
	CONSTRUCTION MANAGEMENT					$ 21,803,500	$ 21,282,700	$ 22,198,300	$ 21,642,400	$ (520,800)	$ 394,800	$ (161,100)	
	S-U / COMMISSIONING					$ 7,267,800	$ 7,094,200	$ 7,399,400	$ 7,214,100	$ (173,600)	$ 131,600	$ (53,700)	
	CRAFT START-UP SUPPORT					$ 3,319,100	$ 3,271,500	$ 3,389,000	$ 3,338,700	$ (47,600)	$ 69,900	$ 19,600	
	INITIAL FILLS					$ 2,180,300	$ 2,128,300	$ 2,219,800	$ 2,164,300	$ (52,000)	$ 39,500	$ (16,000)	
	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	$ -	$ -	$ -	
	OWNERS COST	BY AEP				$ -	$ -	$ -	$ -	$ -	$ -	$ -	
	OVERALL PROJECT DIRECT AND INDIRECT COSTS (PHASE I + PHASE II)					$ 813,455,300	$ 795,299,000	$ 827,251,200	$ 807,872,400	$ (18,156,300)	$ 13,795,900	$ (5,582,900)	

Sargent & Lundy, LLC

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

Estimate No.: 30715B
Project No.: 12721-000
Date: 9/12/2010
Preparer: MNO
Reviewer: JMK
Approver: PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	EST 3B N/ESP 3.0 LB SO2/MMBTU PHASED Total Projected Cost	EST 2B N/ESP 1.7 LB SO2/MMBTU PHASED Total Projected Cost	EST 3A N/ESP 3.0 LB SO2/MMBTU PHASED Total Projected Cost	EST 2A ESP 1.7 LB SO2/MMBTU NON-PHASED Total Projected Cost	EST 2B N/ESP 1.7 LB SO2/MMBTU PHASED Total Projected Cost	EST 3A N/ESP 3.0 LB SO2/MMBTU PHASED Total Projected Cost	EST 2A ESP 1.7 LB SO2/MMBTU NON-PHASED Total Projected Cost	Remarks
	SPARE PARTS FOR THE OEM & THE BOP EQUIPMENT (PHASE I + PHASE II)					$ 2,636,000	$ 2,493,800	$ 2,657,800	$ 2,506,100	$ (142,200)	$ 21,800	$ (129,900)	
	SPARE PARTS FOR THE OEM EQUIPMENT					$ 1,634,320	$ 1,525,548	$ 1,328,900	$ 1,553,782	$ (108,772)	$ (305,420)	$ (80,538)	
	SPARE PARTS FOR THE BOP EQUIPMENT					$ 1,001,680	$ 968,252	$ 1,328,900	$ 952,318	$ (33,428)	$ 327,220	$ (49,362)	
	CONTINGENCY (PHASE I + PHASE II)					$ 124,320,600	$ 122,098,600	$ 126,383,100	$ 124,243,200	$ (2,222,000)	$ 2,062,500	$ (77,400)	
	ESCALATION (PHASE I + PHASE II)					$ 125,293,000	$ 122,312,200	$ 126,498,700	$ 123,396,800	$ (2,980,800)	$ 1,205,700	$ (1,896,200)	
	EQUIPMENT					$ 33,435,200	$ 31,675,200	$ 33,610,400	$ 31,774,000	$ (1,760,000)	$ 175,200	$ (1,661,200)	
	MATERIAL					$ 17,579,100	$ 17,473,000	$ 17,825,100	$ 17,711,300	$ (106,100)	$ 246,000	$ 132,200	
	LABOR					$ 60,822,300	$ 59,832,800	$ 61,549,400	$ 60,527,700	$ (989,500)	$ 727,100	$ (294,600)	
	INDIRECTS					$ 13,456,400	$ 13,331,200	$ 13,513,800	$ 13,383,800	$ (125,200)	$ 57,400	$ (72,600)	
	INTEREST DURING CONSTRUCTION (AFUDC) (PHASE I + PHASE II)	BY AEP											
	TOTAL PROJECT COST (PHASE I + PHASE II)					$ 1,065,704,900	$ 1,042,203,600	$ 1,082,790,800	$ 1,058,018,500	$ (23,501,300)	$ 17,085,900	$ (7,686,400)	
	REFERENCE COSTS:												
A	ESP DEMOLITION	ALLOWANCE FOR 1000T STRUCTURE	$ -	$ -	$ 832,300	$ 832,300	$ 832,300						
B	REMOVE BOOSTER AIR FANS		$ -	$ -	$ 111,000	$ 111,000	$ 111,000						

Sargent & Lundy, LLC

AEP

BIG SANDY UNIT 2

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

COST ESTIMATE SUMMARY

Estimate No.:	30720B
Project No.:	12721-000
Date:	9/12/2010
Preparer:	MNO
Reviewer:	JMK
Approver:	PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	EST 1B N/ESP 4.5 LB SO2/MMBTU NON-PHASED Total Projected Cost	EST 4B N/ESP 7.5 LB SO2/MMBTU NON-PHASED Total Projected Cost	EST 1A ESP 4.5 LB SO2/MMBTU NON-PHASED Total Projected Cost	EST 4A ESP 7.5 LB SO2/MMBTU NON-PHASED Total Projected Cost	EST 4B N/ESP 7.5 LB SO2/MMBTU NON-PHASED Total Projected Cost	EST 1A ESP 4.5 LB SO2/MMBTU NON-PHASED Total Projected Cost	EST 4A ESP 7.5 LB SO2/MMBTU NON-PHASED Total Projected Cost	Remarks
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	$ 8,450,000	$ 18,984,500	$ 39,479,500	$ 39,479,500	$ 38,648,100	$ 38,648,100	$ -	$ (831,400)	$ (831,400)	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 602,300	$ 2,154,800	$ 6,891,100	$ 9,648,100	$ 9,648,100	$ 9,585,300	$ 9,585,300	$ -	$ (62,800)	$ (62,800)	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	ID FANS	$ 12,647,300	$ 10,604,800	$ 25,875,600	$ 49,127,600	$ 49,127,600	$ 48,233,400	$ 48,233,400	$ -	$ (894,200)	$ (894,200)	
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		$ 22,359,400	$ 3,019,600	$ 17,368,900	$ 42,747,900	$ 42,520,700	$ 42,034,900	$ 41,850,700	$ (227,200)	$ (713,000)	$ (897,200)	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 1,118,000	$ 770,000	$ 6,453,300	$ 8,341,300	$ 8,312,600	$ 8,246,300	$ 8,219,800	$ (28,700)	$ (95,000)	$ (121,500)	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FABRIC FILTERS	$ 23,477,400	$ 3,789,600	$ 23,822,200	$ 51,089,200	$ 50,833,300	$ 50,281,200	$ 50,070,500	$ (255,900)	$ (808,000)	$ (1,018,700)	
3.0	NEW STACK												
3.1	CONCRETE STACK (WET)	PROVIDED BY AEP	$ 780,000	$ 15,000,000	$ 15,700,000	$ 31,480,000	$ 31,480,000	$ 31,480,000	$ 31,480,000	$ -	$ -	$ -	
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 is greatly reduced, when compared to the phased approach, and does not vary greatly with fuel sulfur
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 2,227,600	$ 2,294,700	$ 4,811,000	$ 9,333,300	$ 9,734,000	$ 9,333,300	$ 9,734,000	$ 400,700	$ -	$ 400,700	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 111,400	$ 585,100	$ 1,733,000	$ 2,429,500	$ 2,458,700	$ 2,429,500	$ 2,458,700	$ 29,200	$ -	$ 29,200	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME HANDLING SYSTEM	$ 2,339,000	$ 2,879,800	$ 6,544,000	$ 11,762,800	$ 12,192,700	$ 11,762,800	$ 12,192,700	$ 429,900	$ -	$ 429,900	
5.0	LIME SLAKER BUILDING												
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 2,861,300	$ 1,200,300	$ 4,422,100	$ 8,483,700	$ 9,529,900	$ 8,483,700	$ 9,529,900	$ 1,046,200	$ -	$ 1,046,200	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 143,100	$ 306,100	$ 1,651,100	$ 2,100,200	$ 2,317,600	$ 2,100,200	$ 2,317,600	$ 217,400	$ -	$ 217,400	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME SLAKER BUILDING	$ 3,004,400	$ 1,506,400	$ 6,073,200	$ 10,583,900	$ 11,847,500	$ 10,583,900	$ 11,847,500	$ 1,263,600	$ -	$ 1,263,600	
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		$ 3,278,400	$ 2,225,700	$ 5,144,700	$ 10,648,800	$ 10,673,300	$ 13,757,500	$ 13,838,600	$ 24,500	$ 3,108,700	$ 3,189,800	

Sargent & Lundy, LLC

AEP

BIG SANDY UNIT 2

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

COST ESTIMATE SUMMARY

Estimate No.:	30720B
Project No.:	12721-000
Date:	9/12/2010
Preparer:	MNO
Reviewer:	JMK
Approver:	PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	EST 1B N/ESP 4.5 LB SO2/MMBTU NON-PHASED Total Projected Cost	EST 4B N/ESP 7.5 LB SO2/MMBTU NON-PHASED Total Projected Cost	EST 1A ESP 4.5 LB SO2/MMBTU NON-PHASED Total Projected Cost	EST 4A ESP 7.5 LB SO2/MMBTU NON-PHASED Total Projected Cost	EST 4B N/ESP 7.5 LB SO2/MMBTU NON-PHASED Total Projected Cost	EST 1A ESP 4.5 LB SO2/MMBTU NON-PHASED Total Projected Cost	EST 4A ESP 7.5 LB SO2/MMBTU NON-PHASED Total Projected Cost	Remarks
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 163,900	$ 567,600	$ 1,895,700	$ 2,627,200	$ 2,628,400	$ 3,287,100	$ 3,306,000	$ 1,200	$ 659,900	$ 678,800	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS	$ 3,442,300	$ 2,793,300	$ 7,040,400	$ 13,276,000	$ 13,301,700	$ 17,044,600	$ 17,144,600	$ 25,700	$ 3,768,600	$ 3,868,600	
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	$ 12,556,000	$ 49,344,000	$ 103,906,800	$ 103,906,800	$ 110,883,700	$ 110,883,700	$ -	$ 6,976,900	$ 6,976,900	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 2,910,300	$ 3,201,800	$ 19,627,500	$ 25,739,600	$ 25,739,600	$ 27,958,100	$ 27,958,100	$ -	$ 2,218,500	$ 2,218,500	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SPRAY DRYER ABSORBER ISLAND	$ 44,917,100	$ 15,757,800	$ 68,971,500	$ 129,646,400	$ 129,646,400	$ 138,841,800	$ 138,841,800	$ -	$ 9,195,400	$ 9,195,400	
8.0	ACTIVATED CARBON INJECTION SYSTEM												
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 2,929,000	$ 321,300	$ 1,726,800	$ 4,977,100	$ 4,977,100	$ 4,977,100	$ 4,977,100	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 146,500	$ 81,900	$ 634,600	$ 863,000	$ 863,000	$ 863,000	$ 863,000	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	ACTIVATED CARBON INJECTION SYSTEM	$ 3,075,500	$ 403,200	$ 2,361,400	$ 5,840,100	$ 5,840,100	$ 5,840,100	$ 5,840,100	$ -	$ -	$ -	
9.0	COMPRESSED AIR SYSTEM												
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 1,390,600	$ 1,359,100	$ 2,588,700	$ 5,338,400	$ 5,338,400	$ 5,338,400	$ 5,338,400	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 69,500	$ 346,600	$ 946,400	$ 1,362,500	$ 1,362,500	$ 1,362,500	$ 1,362,500	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	COMPRESSED AIR SYSTEM	$ 1,460,100	$ 1,705,700	$ 3,535,100	$ 6,700,900	$ 6,700,900	$ 6,700,900	$ 6,700,900	$ -	$ -	$ -	
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	$ 755,200	$ 1,142,700	$ 1,142,700	$ 1,142,700	$ 1,142,700	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 6,500	$ 65,800	$ 275,500	$ 347,700	$ 347,700	$ 347,700	$ 347,700	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	POTABLE WATER SYSTEM	$ 136,000	$ 323,800	$ 1,030,700	$ 1,490,400	$ 1,490,400	$ 1,490,400	$ 1,490,400	$ -	$ -	$ -	

Sargent & Lundy, LLC

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BIG SANDY UNIT 2

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

COST ESTIMATE SUMMARY

Estimate No.:	30720B
Project No.:	12721-000
Date:	9/12/2010
Preparer:	MNO
Reviewer:	JMK
Approver:	PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	EST 1B N/ESP 4.5 LB SO2/MMBTU NON-PHASED Total Projected Cost	EST 4B N/ESP 7.5 LB SO2/MMBTU NON-PHASED Total Projected Cost	EST 1A ESP 4.5 LB SO2/MMBTU NON-PHASED Total Projected Cost	EST 4A ESP 7.5 LB SO2/MMBTU NON-PHASED Total Projected Cost	EST 4B N/ESP 7.5 LB SO2/MMBTU NON-PHASED Total Projected Cost	EST 1A ESP 4.5 LB SO2/MMBTU NON-PHASED Total Projected Cost	EST 4A ESP 7.5 LB SO2/MMBTU NON-PHASED Total Projected Cost	Remarks
12.0	FGD SUBSTATION												
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 3,342,400	$ 924,500	$ 4,212,100	$ 8,479,000	$ 8,479,000	$ 8,479,000	$ 8,479,000	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 167,100	$ 235,700	$ 1,519,624	$ 1,922,500	$ 1,922,500	$ 1,922,500	$ 1,922,500	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FGD SUBSTATION	$ 3,509,500	$ 1,160,200	$ 5,731,700	$ 10,401,500	$ 10,401,500	$ 10,401,500	$ 10,401,500	$ -	$ -	$ -	
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												
14.1	CEM	PROVIDED BY AEP	$ 1,260,000	$ 540,000	$ 310,000	$ 2,110,000	$ 2,110,000	$ 2,110,000	$ 2,110,000	$ -	$ -	$ -	
15.0	TRUCK & RAIL INFRASTRUCTURE												
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 212,500	$ 2,044,200	$ 2,080,400	$ 4,337,100	$ 4,337,100	$ 4,337,100	$ 4,337,100	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 10,600	$ 521,300	$ 777,500	$ 1,309,400	$ 1,309,400	$ 1,309,400	$ 1,309,400	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	TRUCK & RAIL INFRASTRUCTURE	$ 223,100	$ 2,565,500	$ 2,857,900	$ 5,646,500	$ 5,646,500	$ 5,646,500	$ 5,646,500	$ -	$ -	$ -	
16.0	SITE IMPROVEMENTS - CIVIL WORK												
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 577,500	$ 4,573,300	$ 7,627,500	$ 12,778,300	$ 12,778,300	$ 12,778,300	$ 12,778,300	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 28,900	$ 1,166,200	$ 2,709,400	$ 3,904,500	$ 3,904,500	$ 3,904,500	$ 3,904,500	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SITE IMPROVEMENTS - CIVIL WORK	$ 606,400	$ 5,739,500	$ 10,336,900	$ 16,682,800	$ 16,682,800	$ 16,682,800	$ 16,682,800	$ -	$ -	$ -	
17.0	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		$ 6,413,600	$ 3,570,500	$ 12,066,600	$ 22,050,700	$ 22,050,700	$ 22,050,700	$ 22,050,700	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 320,700	$ 910,500	$ 4,624,800	$ 5,856,000	$ 5,856,000	$ 5,856,000	$ 5,856,000	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIMESTONE HANDLING SYSTEM	$ 6,734,300	$ 4,481,000	$ 16,691,400	$ 27,906,700	$ 27,906,700	$ 27,906,700	$ 27,906,700	$ -	$ -	$ -	
18.0	REAGENT (LIMESTONE) PREPARATION ISLAND												As fuel sulfur content increases more limestone is required and more byproduct is produced, therefore the reagent prep island costs and byproduct handling costs are increased.

Sargent & Lundy, LLC

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

Estimate No.:	30720B
Project No.:	12721-000
Date:	9/12/2010
Preparer:	MNO
Reviewer:	JMK
Approver:	PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	EST 1B N/ESP 4.5 LB SO2/MMBTU NON-PHASED Total Projected Cost	EST 4B N/ESP 7.5 LB SO2/MMBTU NON-PHASED Total Projected Cost	EST 1A ESP 4.5 LB SO2/MMBTU NON-PHASED Total Projected Cost	EST 4A ESP 7.5 LB SO2/MMBTU NON-PHASED Total Projected Cost	EST 4B N/ESP 7.5 LB SO2/MMBTU NON-PHASED Total Projected Cost	EST 1A ESP 4.5 LB SO2/MMBTU NON-PHASED Total Projected Cost	EST 4A ESP 7.5 LB SO2/MMBTU NON-PHASED Total Projected Cost	Remarks
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 15,772,400	$ 6,067,200	$ 18,599,100	$ 40,438,700	$ 43,316,800	$ 40,438,700	$ 43,316,800	$ 2,878,100	$ -	$ 2,878,100	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 788,600	$ 1,547,100	$ 7,128,700	$ 9,464,400	$ 9,960,700	$ 9,464,400	$ 9,960,700	$ 496,300	$ -	$ 496,300	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	REAGENT (LIMESTONE) PREPARATION ISLAND	$ 16,561,000	$ 7,614,300	$ 25,727,800	$ 49,903,100	$ 53,277,500	$ 49,903,100	$ 53,277,500	$ 3,374,400	$ -	$ 3,374,400	
19.0	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)												As fuel sulfur content increases more limestone is required and more byproduct is produced, therefore the reagent prep island costs and byproduct handling costs are increased.
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 12,728,800	$ 16,074,800	$ 31,462,800	$ 60,266,400	$ 62,648,400	$ 60,266,400	$ 62,648,400	$ 2,382,000	$ -	$ 2,382,000	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 636,400	$ 4,099,100	$ 12,059,700	$ 16,795,200	$ 17,177,800	$ 16,795,200	$ 17,177,800	$ 382,600	$ -	$ 382,600	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 13,365,200	$ 20,173,900	$ 43,522,500	$ 77,061,600	$ 79,826,200	$ 77,061,600	$ 79,826,200	$ 2,764,600	$ -	$ 2,764,600	
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		$ 45,262,300	$ 22,318,800	$ 65,226,500	$ 132,807,600	$ 133,590,200	$ 132,807,600	$ 133,590,200	$ 782,600	$ -	$ 782,600	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 2,938,100	$ 5,691,300	$ 25,783,100	$ 34,412,500	$ 34,592,000	$ 34,412,500	$ 34,592,000	$ 179,500	$ -	$ 179,500	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 48,200,400	$ 28,010,100	$ 91,009,600	$ 167,220,100	$ 168,182,200	$ 167,220,100	$ 168,182,200	$ 962,100	$ -	$ 962,100	
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	FGD SUBSTATION												
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 1,376,000	$ 223,700	$ 727,200	$ 2,326,900	$ 2,326,900	$ 2,326,900	$ 2,326,900	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 68,800	$ 57,000	$ 278,499	$ 404,300	$ 404,300	$ 404,300	$ 404,300	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 1,444,800	$ 280,700	$ 1,005,700	$ 2,731,200	$ 2,731,200	$ 2,731,200	$ 2,731,200	$ -	$ -	$ -	
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												
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 390,000	$ 2,242,000	$ 4,287,900	$ 6,919,900	$ 6,919,900	$ 6,919,900	$ 6,919,900	$ -	$ -	$ -	
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 19,500	$ 571,710	$ 1,643,680	$ 2,234,890	$ 2,234,890	$ 2,234,890	$ 2,234,890	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BOP ITEMS	$ 409,500	$ 2,813,700	$ 5,931,600	$ 9,154,800	$ 9,154,800	$ 9,154,800	$ 9,154,800	$ -	$ -	$ -	
27.0	CAPITAL REPLACEMENTS - REMOVAL AND RELOCATION OF EXISTING EQUIPMENT AND INFRASTRUCTURE												
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 500,000	$ 509,600	$ 1,451,200	$ 2,460,800	$ 2,460,800	$ 2,460,800	$ 2,460,800	$ -	$ -	$ -	

Sargent & Lundy, LLC

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

Estimate No.: 30720B
Project No.: 12721-000
Date: 9/12/2010
Preparer: MNO
Reviewer: JMK
Approver: PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	EST 1B N/ESP 4.5 LB SO2/MMBTU NON-PHASED Total Projected Cost	EST 4B N/ESP 7.5 LB SO2/MMBTU NON-PHASED Total Projected Cost	EST 1A ESP 4.5 LB SO2/MMBTU NON-PHASED Total Projected Cost	EST 4A ESP 7.5 LB SO2/MMBTU NON-PHASED Total Projected Cost	EST 4B N/ESP 7.5 LB SO2/MMBTU NON-PHASED Total Projected Cost	EST 1A ESP 4.5 LB SO2/MMBTU NON-PHASED Total Projected Cost	EST 4A ESP 7.5 LB SO2/MMBTU NON-PHASED Total Projected Cost	Remarks
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 25,000	$ 129,900	$ 514,700	$ 669,600	$ 669,600	$ 669,600	$ 669,600	$ -	$ -	$ -	
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 525,000	$ 639,500	$ 1,965,900	$ 3,130,400	$ 3,130,400	$ 3,130,400	$ 3,130,400	$ -	$ -	$ -	
28.0	ARSENIC, ASBESTOS , LEAD ABATEMENT												
28.1	ARSENIC, ASBESTOS , LEAD ABATEMENT	ALLOWANCE PROVIDED BY AEP	$ -	$ -	$ -	$ 750,000	$ 750,000	$ 750,000	$ 750,000	$ -	$ -	$ -	
99.0	OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 185,188,600	$ 109,925,200	$ 277,998,500	$ 573,862,300	$ 581,149,200	$ 582,403,500	$ 589,790,000	$ 7,286,900	$ 8,541,200	$ 15,927,700	
	OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 10,642,400	$ 24,068,200	$ 100,511,900	$ 135,222,600	$ 136,500,000	$ 137,943,200	$ 139,240,500	$ 1,277,400	$ 2,720,600	$ 4,017,900	
	OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 195,831,000	$ 133,993,400	$ 378,510,400	$ 709,084,900	$ 717,649,200	$ 720,346,700	$ 729,030,500	$ 8,564,300	$ 11,261,800	$ 19,945,600	
	INDIRECT COSTS												
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES					$ 45,000,000	$ 45,000,000	$ 45,000,000	$ 45,000,000	$ -	$ -	$ -	
	CONSTRUCTION MANAGEMENT					$ 21,272,500	$ 21,529,500	$ 21,610,400	$ 21,870,900	$ 257,000	$ 337,900	$ 598,400	
	S-U / COMMISSIONING					$ 7,090,800	$ 7,176,500	$ 7,203,500	$ 7,290,300	$ 85,700	$ 112,700	$ 199,500	
	CRAFT START-UP SUPPORT					$ 3,276,300	$ 3,306,100	$ 3,343,200	$ 3,373,400	$ 29,800	$ 66,900	$ 97,100	
	INITIAL FILLS					$ 2,127,300	$ 2,152,900	$ 2,161,000	$ 2,187,100	$ 25,600	$ 33,700	$ 59,800	
	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)	
	OWNERS COST - % of ACCT NOS. 92, 93.1, 93.2, 93.3, 93.4					$ -	$ -	$ -	$ -	$ -	$ -	$ -	
										$ -	$ -	$ -	
	TOTAL DIRECT AND INDIRECT COSTS					$ 789,201,800	$ 798,164,200	$ 800,764,800	$ 809,852,200	$ 8,962,400	$ 11,563,000	$ 20,650,400	
										$ -	$ -	$ -	
	SPARE PARTS FOR THE OEM & THE BOP EQUIPMENT					$ 2,545,800	$ 2,605,800	$ 2,547,400	$ 2,006,200	$ 60,000	$ 1,600	$ (539,600)	
	SPARE PARTS FOR THE OEM EQUIPMENT	0.80				$ 1,578,396	$ 1,615,596	$ 1,579,388	$ 1,243,844	$ 37,200	$ 992	$ (334,552)	
	SPARE PARTS FOR THE BOP EQUIPMENT	0.50				$ 967,404	$ 990,204	$ 968,012	$ 762,356	$ 22,800	$ 608	$ (205,048)	
										$ -	$ -	$ -	
	CONTINGENCY	13.7				$ 108,308,600	$ 110,135,400	$ 110,207,000	$ 111,658,500	$ 1,826,800	$ 1,898,400	$ 3,349,900	
										$ -	$ -	$ -	
	ESCALATION					$ 71,452,800	$ 72,318,400	$ 72,434,500	$ 73,249,700	$ 865,600	$ 981,700	$ 1,796,900	
	EQUIPMENT					$ 20,436,800	$ 20,918,200	$ 20,449,900	$ 20,874,500	$ 481,400	$ 13,100	$ 437,700	
	MATERIAL					$ 9,616,400	$ 9,649,400	$ 9,864,000	$ 9,898,300	$ 33,000	$ 247,600	$ 281,900	
	LABOR					$ 34,167,600	$ 34,482,800	$ 34,861,400	$ 35,181,200	$ 315,200	$ 693,800	$ 1,013,600	
	INDIRECTS					$ 7,232,000	$ 7,268,000	$ 7,259,200	$ 7,295,700	$ 36,000	$ 27,200	$ 63,700	
										$ -	$ -	$ -	
	INTEREST DURING CONSTRUCTION (AFUDC)					$ -	$ -	$ -	$ -	$ -	$ -	$ -	
										$ -	$ -	$ -	
	TOTAL PROJECT COST					$ 971,509,000	$ 983,223,800	$ 985,953,700	$ 996,766,600	$ 11,714,800	$ 14,444,700	$ 25,257,600	
	REFERENCE COSTS:												
A	ESP DEMOLITION	ALLOWANCE FOR 1000T STRUCTURE	$ -	$ -	$ 832,300	$ 832,300	$ 832,300						
B	REMOVE BOOSTER AIR FANS	0.0	$ -	$ -	$ 111,000	$ 111,000	$ 111,000						

EXHIBIT 4-5
IAQCS O&M Cost Estimate Summary

Exhibit 4-5. IAQCS O&M Cost Estimate Summary

Fuel	IAQCS (Phase One)				IAQCS (Phase Two)			
	1.7 w/o ESP	3.0 w/o ESP	4.5 w/o ESP	7.5 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 ($/year)								
Operating Labor	832,000	832,000	NA	NA	1,664,000	1,664,000	1,664,000	1,664,000
Maintenance Material	2,076,000	2,136,000	NA	NA	4,039,000	4,117,000	4,191,000	4,272,000
Maintenance Labor	1,384,000	1,424,000	NA	NA	2,693,000	2,744,000	2,795,000	2,849,000
Total Fixed O&M ($/year)	**4,292,000**	**4,392,000**	**NA**	**NA**	**8,396,000**	**8,525,000**	**8,650,000**	**8,785,000**
Variable O&M ($/year)								
Limestone Reagent Cost	NA	NA	NA	NA	2,376,000	4,558,000	6,442,000	9,685,000
Lime Reagent Cost	8,601,000	19,605,000	NA	NA	661,000	1,225,000	1,713,000	2,574,000
Activated Carbon	2,344,000	2,319,000	NA	NA	2,344,000	2,319,000	2,315,000	2,293,000
WFGD Byproduct Disposal Cost	NA	NA	NA	NA	1,215,000	2,425,000	3,472,000	5,227,000
DFGD Byproduct Disposal Cost	4,148,000	5,612,000	NA	NA	2,732,000	2,553,000	2,426,000	2,670,000
Total Makeup Water Cost	509,000	521,000	NA	NA	746,000	752,000	763,000	780,000
Wastewater Treatment Chemicals	NA	NA	NA	NA	NA	NA	NA	NA
Bags and Cages Replacement	651,000	651,000	NA	NA	651,000	651,000	651,000	651,000
Total Variable O&M excluding Auxiliary Power ($/year)	**16,253,000**	**28,708,000**	**NA**	**NA**	**10,725,000**	**14,483,000**	**17,782,000**	**23,880,000**
Auxiliary Power at Full Load (MW)								
Overall Draft (Furnace to Stack)	23	23	NA	NA	29	29	29	29
IAQCS Draft Only	8	8	NA	NA	14	14	15	16
FGD Equipment Load	4	5	NA	NA	11	15	17	24
Existing ESP	0	0	NA	NA	0	0	0	0
WESP	NA	NA	NA	NA	NA	NA	NA	NA
Total Auxiliary Power at Full Load (MW)	**27**	**28**	**NA**	**NA**	**40**	**44**	**46**	**53**

Note: NA = Not Applicable

Exhibit 4-5. IAQCS O&M Cost Estimate Summary

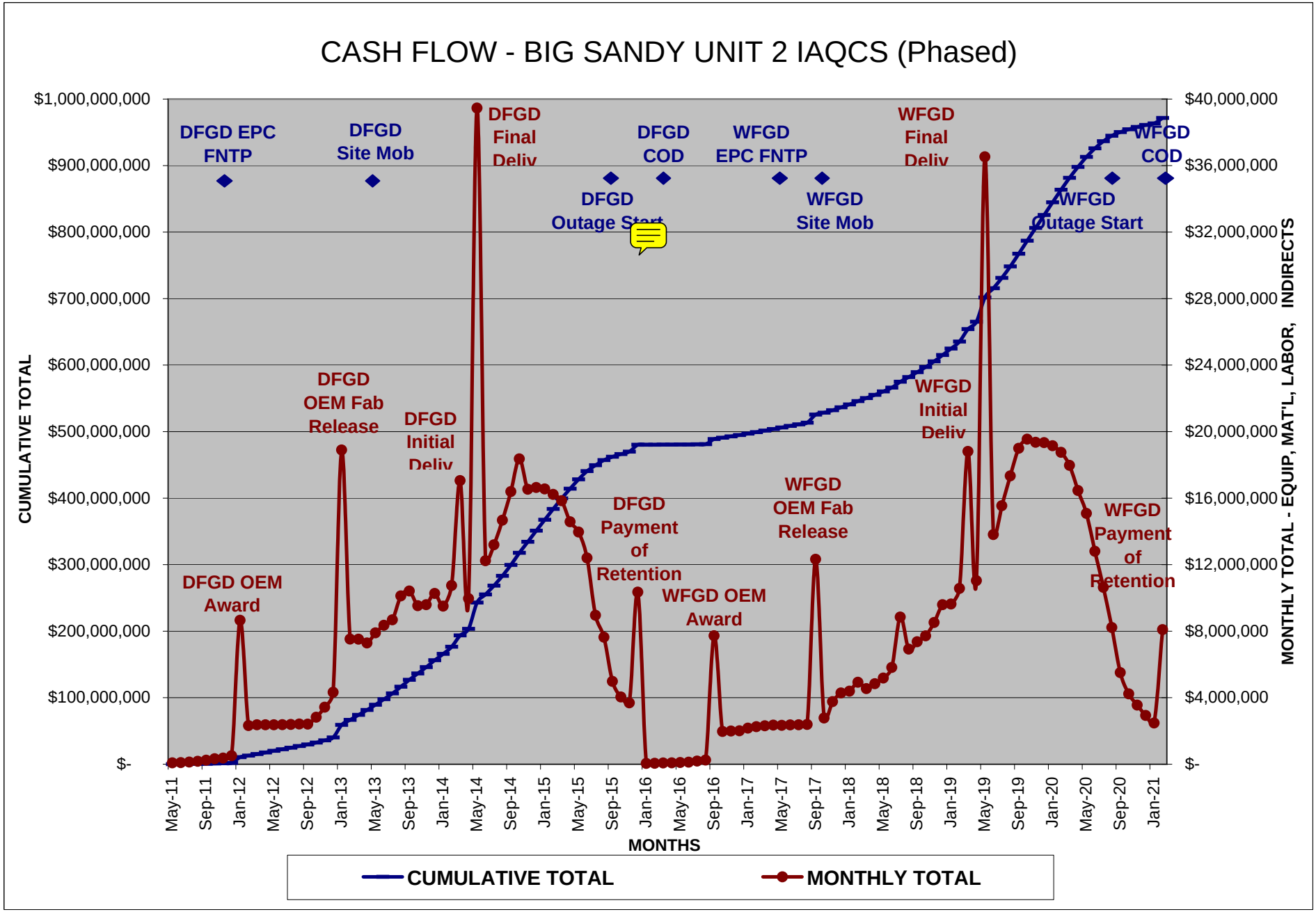
Fuel	IAQCS (Phase One)				IAQCS (Phase Two)			
	1.7 w/ ESP	3.0 w/ ESP	4.5 w/ ESP	7.5 w/ ESP	1.7 w/ ESP	3.0 w/ ESP	4.5 w/ ESP	7.5 w/ ESP
Fixed O&M ($/year)								
Operating Labor	832,000	832,000	NA	NA	1,664,000	1,664,000	1,664,000	1,664,000
Maintenance Material	2,076,000	2,136,000	NA	NA	4,039,000	4,117,000	4,191,000	4,272,000
Maintenance Labor	1,384,000	1,424,000	NA	NA	2,693,000	2,744,000	2,795,000	2,849,000
Total Fixed O&M ($/year)	**4,292,000**	**4,392,000**	**NA**	**NA**	**8,396,000**	**8,525,000**	**8,650,000**	**8,785,000**
Variable O&M ($/year)								
Limestone Reagent Cost	NA	NA	NA	NA	2,376,000	4,558,000	6,442,000	9,685,000
Lime Reagent Cost	9,924,000	23,281,000	NA	NA	661,000	1,225,000	1,713,000	2,574,000
Activated Carbon	2,267,000	2,243,000	NA	NA	2,267,000	2,243,000	2,239,000	2,218,000
WFGD Byproduct Disposal Cost	NA	NA	NA	NA	1,216,000	2,426,000	3,472,000	5,228,000
DFGD Byproduct Disposal Cost	1,793,000	3,817,000	NA	NA	182,000	245,000	300,000	420,000
Total Makeup Water Cost	464,000	482,000	NA	NA	701,000	709,000	721,000	737,000
Wastewater Treatment Chemicals	NA	NA	NA	NA	NA	NA	NA	NA
Bags and Cages Replacement	651,000	651,000	NA	NA	651,000	651,000	651,000	651,000
Total Variable O&M excluding Auxiliary Power ($/year)	**15,099,000**	**30,474,000**	**NA**	**NA**	**8,054,000**	**12,057,000**	**15,538,000**	**21,513,000**
Auxiliary Power at Full Load (MW)								
Overall Draft (Furnace to Stack)	27	27	NA	NA	34	34	34	34
IAQCS Draft Only	8	8	NA	NA	14	14	15	16
FGD Equipment Load	4	5	NA	NA	11	15	17	24
Existing ESP	4	4	NA	NA	4	4	4	4
WESP	NA	NA	NA	NA	NA	NA	NA	NA
Total Auxiliary Power at Full Load (MW)	**35**	**36**	**NA**	**NA**	**49**	**53**	**55**	**62**

Note: NA = Not Applicable

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

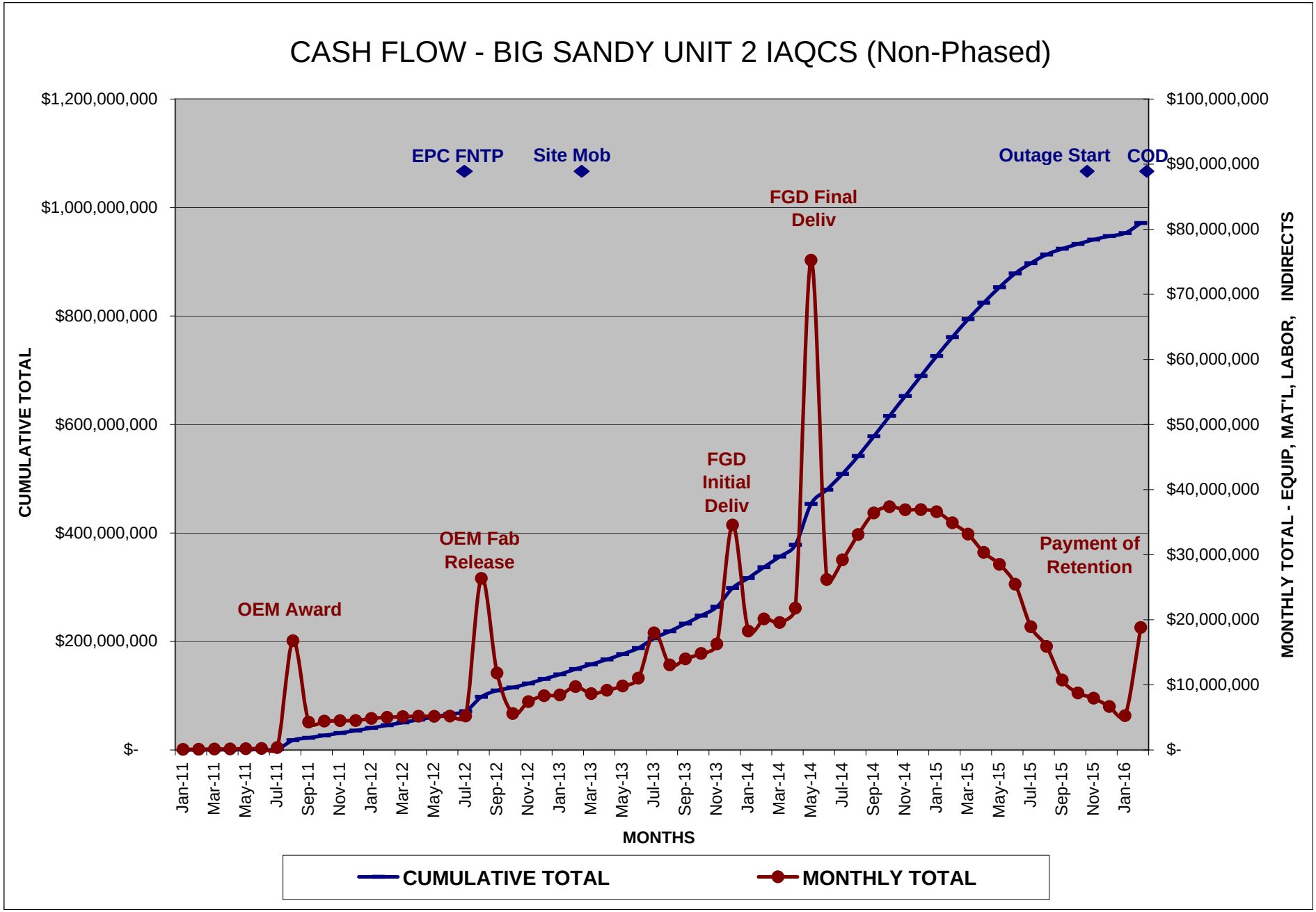
Kentucky Power Company & American Electric Power Service Corporation
Big Sandy Unit 2
IAQCS Phased (3.0 Lb/MMBtu)
Cash Flows - Cumulative Total and Monthly Totals

Sargent & Lundy
Date: 9/13/2010
Rev: A



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: 9/13/2010
Rev: A



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

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DATE	NO.	DESCRIPTION	APPD.

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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

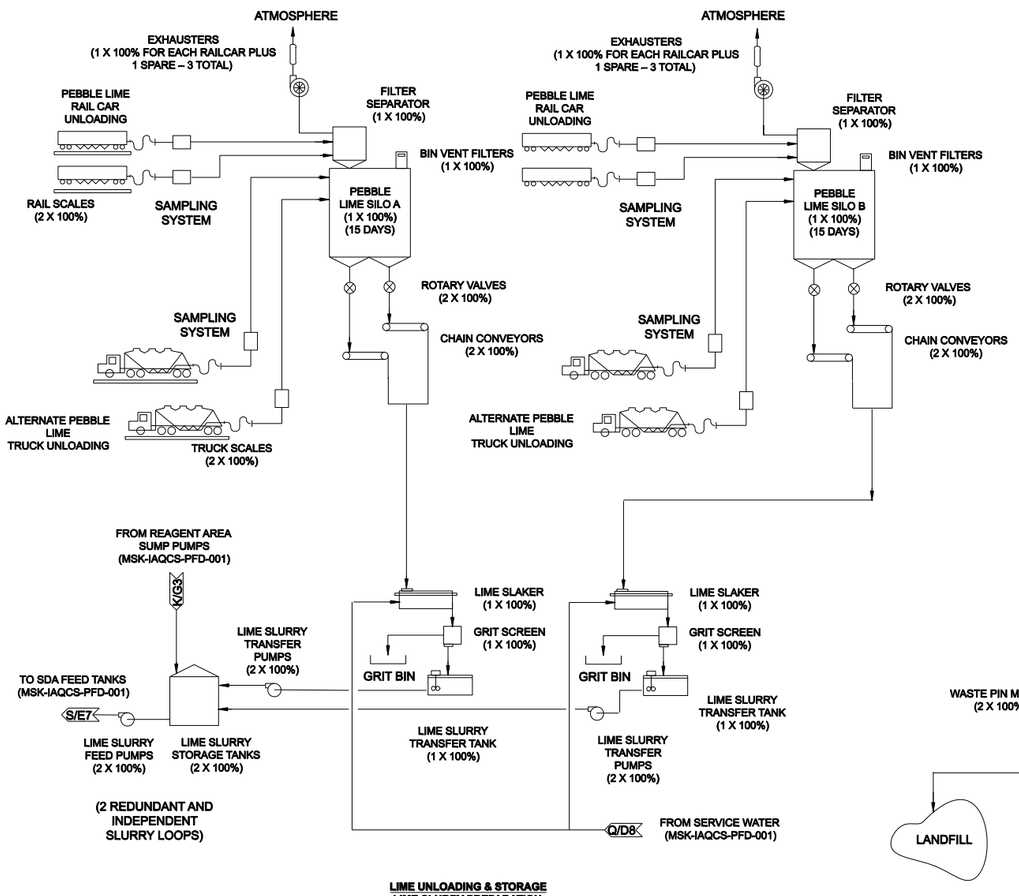
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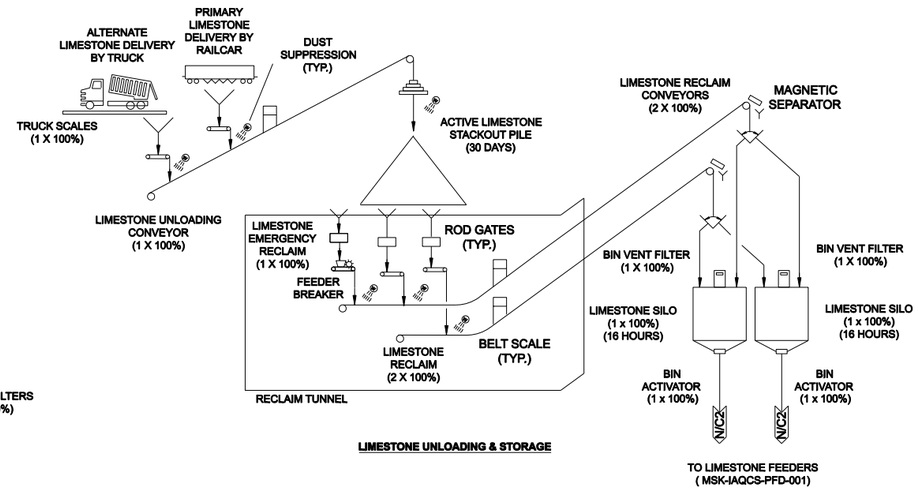
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SYSTEM TIME: HOUR:MINUTE

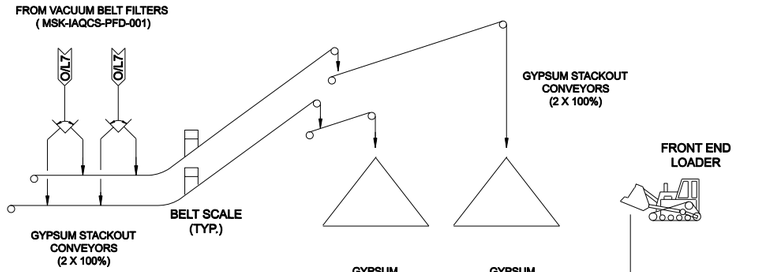
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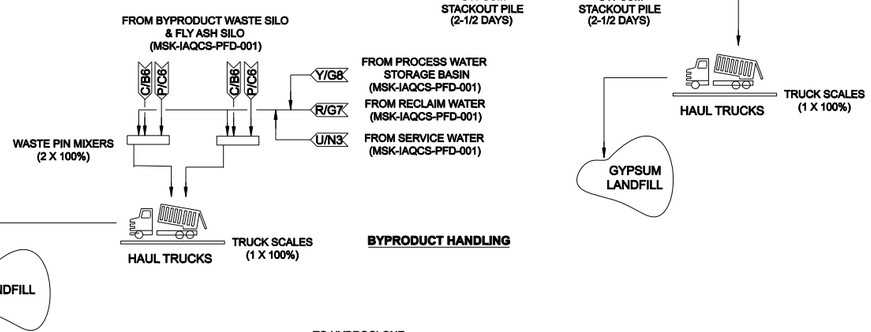




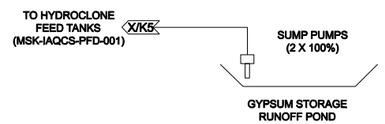
LIMESTONE UNLOADING & STORAGE



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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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

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ATTACHMENT 4-2
IAQCS Site Plan and General Arrangement Drawings

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

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 •								

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

SEE NOTE 6.

SEE NOTE 4.

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 1 OF THE PHASED CONSTRUCTION SEQUENCE.
6. THE PROCESS WATER STORAGE BASIN IS ONLY REQUIRED FOR THE PHASED OPTIONS (1.75 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_C

SCALE: 1"=100'-0"

DR:

CK:

APPROVED BY:

DATE:

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

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

DRAWING RELEASE RECORD

PROFESSIONAL ENGINEER'S STAMP

Bechtel & Lundy

CONTRACTOR/INSTALLER SHALL TAKE ALL APPROPRIATE PRECAUTIONS TO ENSURE THE SAFETY OF ALL PEOPLE ASSOCIATED WITH THE WORK SITE. CONTRACTOR/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:MIN:SEC

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_B

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 W/RECYCLE SILO (65'x100') •	46	AUXILIARY PUMPHOUSE BUILDING W/EE ROOM (35'x50')		
6	I.D FAN PDC/CONTROL ROOM (52'-6"x150') •	22	LIMESTONE TRANSFER TOWER			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 (20'x110') •		
11	REAGENT PREP BUILDING (120'x130')	27	SERVICE WATER TANKS •						
12	LIMESTONE SLURRY STORAGE TANKS (44' DIAM)	28	ALTERNATE DUCT ARRANGEMENT W/O ESP						
13	NOT USED	29	SEE DRAWING MSK-IAQC-GA-001						
14	OXIDATION BLOWER BUILDING (30'x30')	30	SEE DRAWING MSK-IAQC-GA-001						
15	LIME TRUCK UNLOADING •	31	SEE DRAWING MSK-IAQC-GA-001						
16	LIME SLAKER BUILDING •	32	138 kV FGD SUBSTATION •						

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, 41 AND 51 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-1AQCS-GA-0010.
5. LEGEND FACILITIES WITH AN ASTERIK (•) WILL BE COMPLETED IN PHASE 1 OF THE PHASED CONSTRUCTION SEQUENCE.
6. THE PROCESS WATER STORAGE BASIN IS ONLY REQUIRED FOR THE PHASED OPTIONS (1.75 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_B

SCALE: 1"=50'-0"

DR: CH: APPROVED BY: DATE:

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

REV	DATE RELEASED	PURPOSE	
B	09/10/2010	ISSUED FOR USE	PREPARED
A	08/09/2010	ISSUED FOR REVIEW	REVIEWED
			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/INSTALLER'S PERSONNEL, FOR THAT OF ITS SUBCONTRACTOR(S) 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

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

GRAPHIC SCALE: 1"= 50'-0"

PLANT NORTH

IGS0694

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

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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

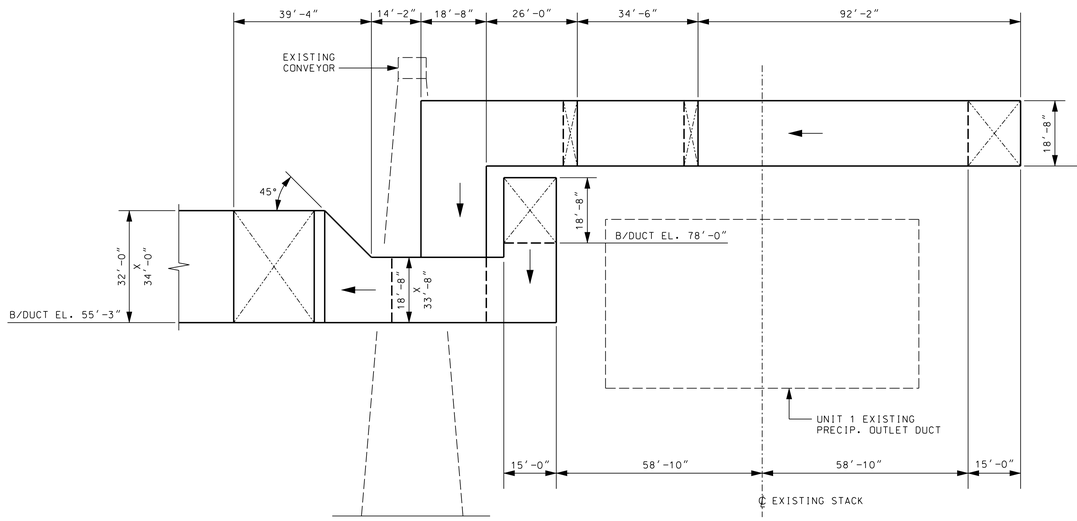
DATE:

AEP SERVICE CORP.
1 RIVERSIDE PLAZA
COLUMBUS, OH 43215

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

IGS0694

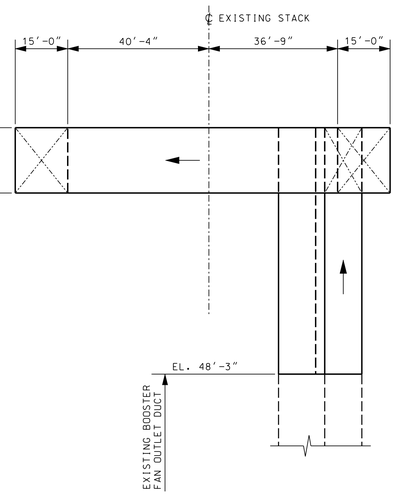
DWG. NO. MSK-IAQCS-GA-005_B



SECTION A-A (LOOKING EAST)

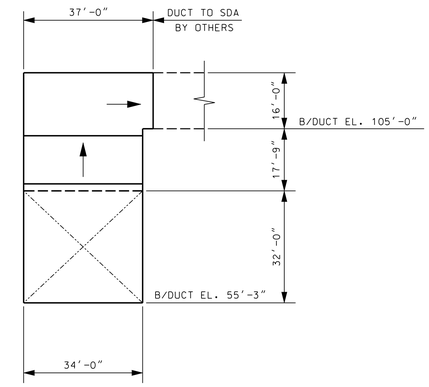
(ESP IN)

MSK-IAQCS-GA-003



SECTION B-B (LOOKING NORTH)

MSK-IAQCS-GA-003

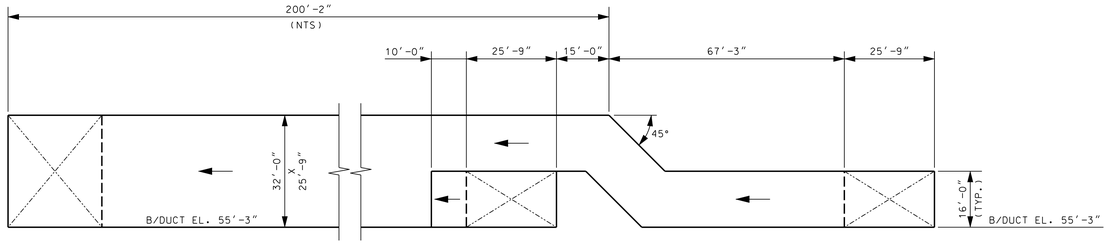


SECTION E-E (LOOKING WEST)

MSK-IAQCS-GA-003

NOTES

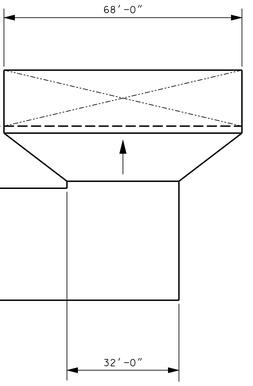
1. ALL DIMENSIONS AND ELEVATIONS SHOWN ARE PRELIMINARY AND FOR USE IN THE BIG SANDY FGD ORDER-OF-MAGNITUDE ESTIMATE ONLY.



SECTION C-C (LOOKING EAST)

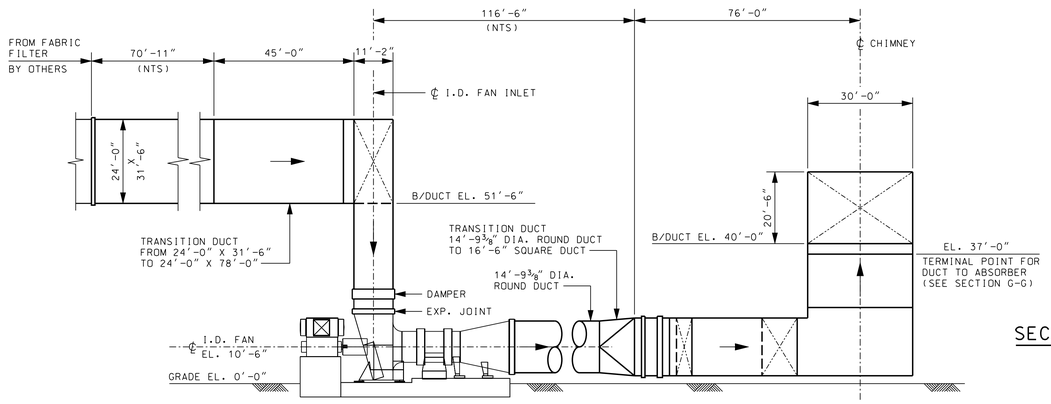
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MSK-IAQCS-GA-003



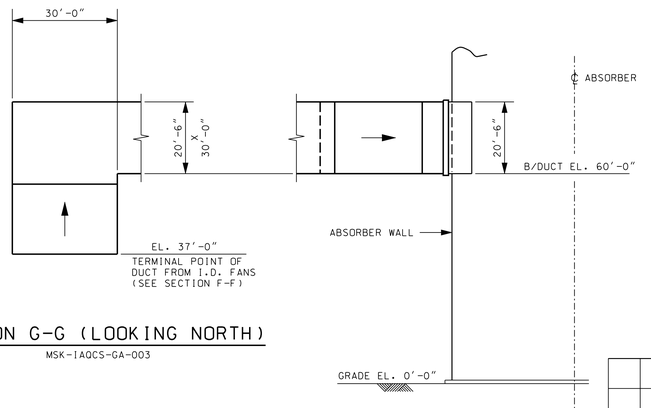
SECTION D-D (LOOKING NORTH)

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

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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

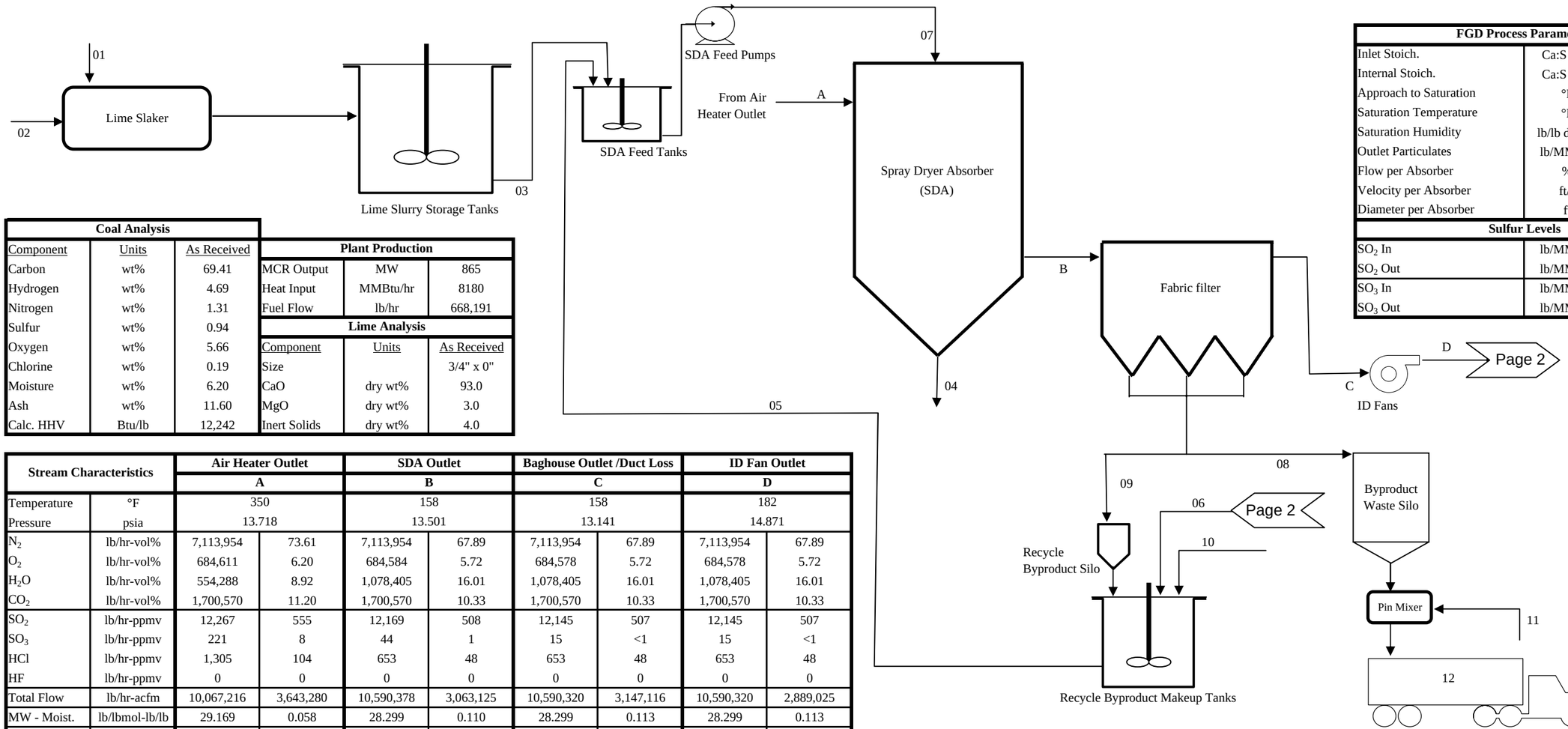
IGS0694

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

Project No.12721-000
9/10/2010
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

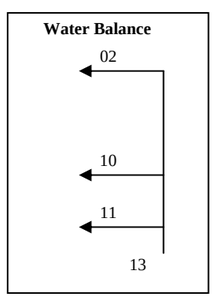
Coal Analysis		
Component	Units	As Received
Carbon	wt%	69.41
Hydrogen	wt%	4.69
Nitrogen	wt%	1.31
Sulfur	wt%	0.94
Oxygen	wt%	5.66
Chlorine	wt%	0.19
Moisture	wt%	6.20
Ash	wt%	11.60
Calc. HHV	Btu/lb	12,242

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 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%	7,113,954	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

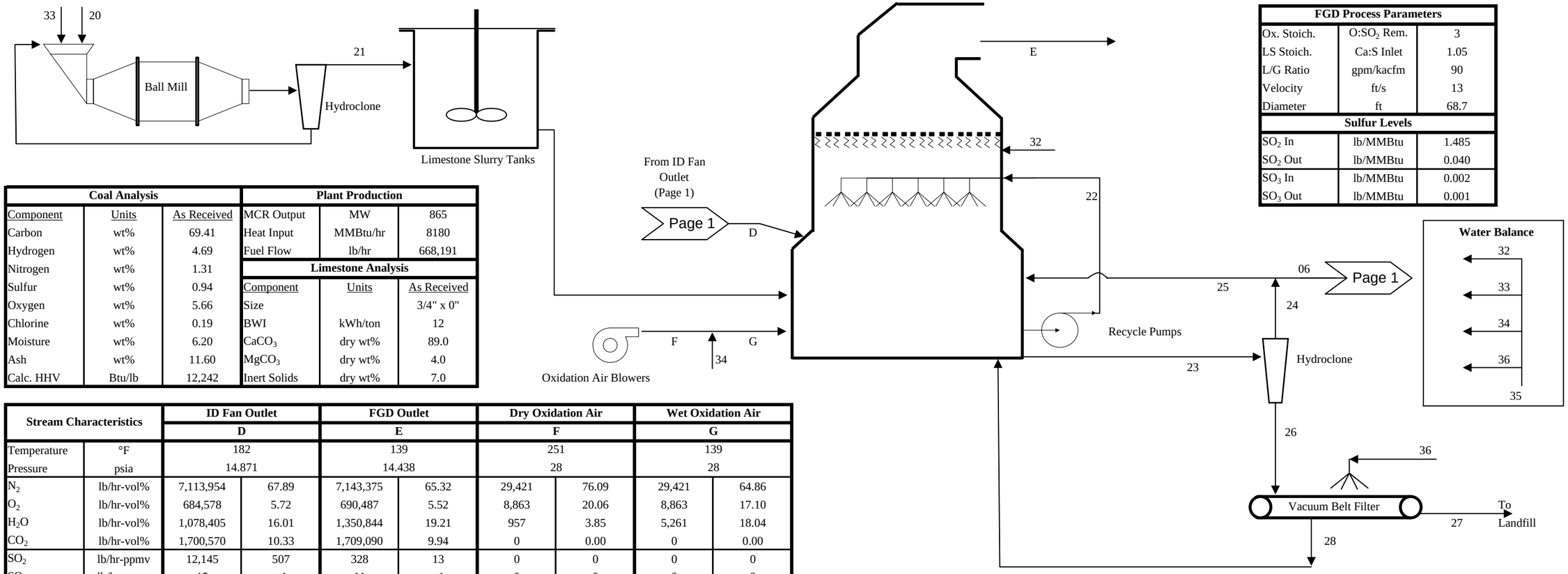
Stream Characteristics		Fresh Lime 01	Slaker H2O 02	Lime Slurry 03	Abs. Solids 04	Recycle 05	Purge 06	SDA Inlet 07	Waste Solids 08	Recycle Solids 09	Recycle H2O 10	Dust Control 11	Landfill 12	SDA Water 13
Inert Solids	lb/hr	51	0	51		366,192	552	366,243	61,944	365,640	0	0	61,944	0
CaO	lb/hr	1,189	0	0		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

Project No.12721-000
9/10/2010
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		
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

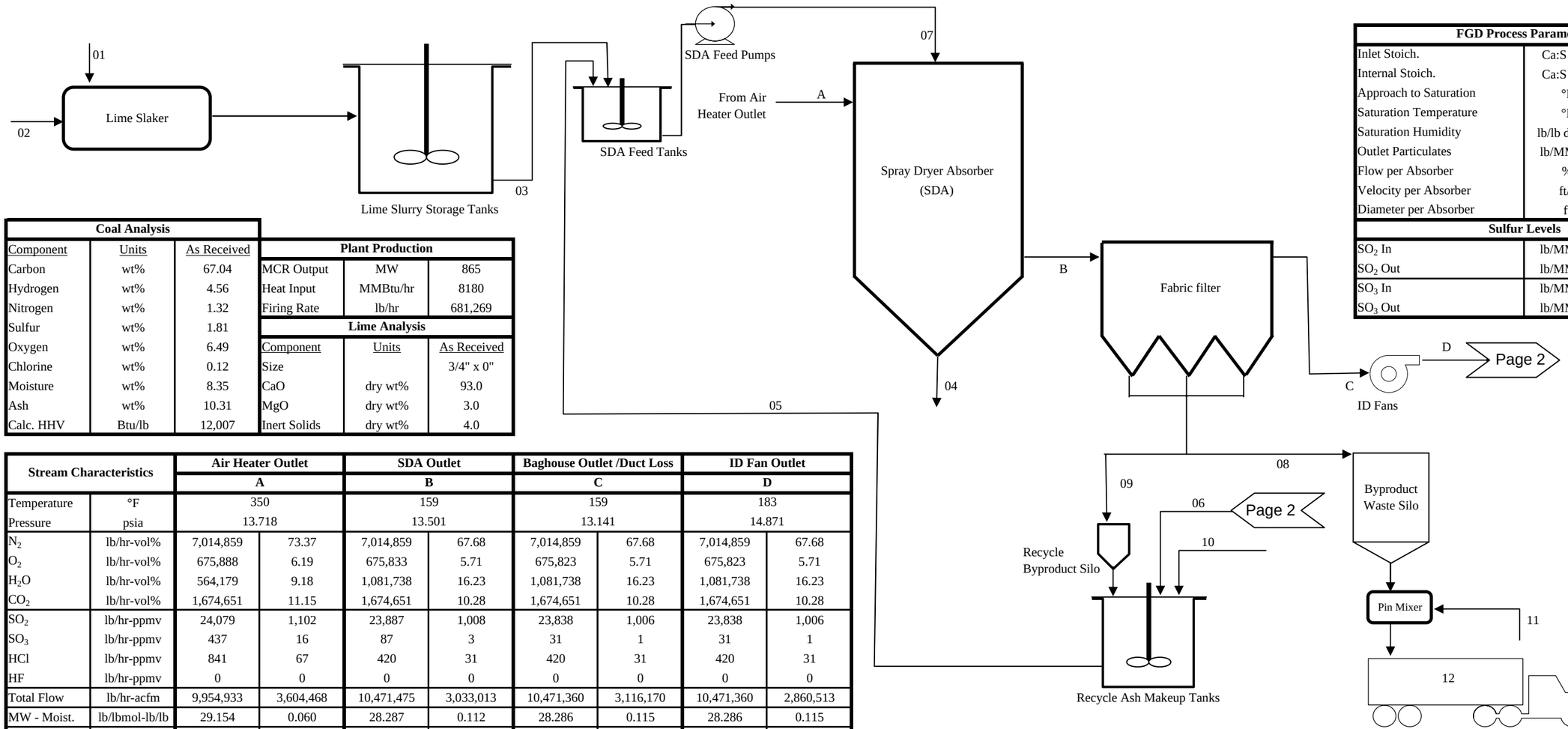
Stream Characteristics		ID Fan Outlet D		FGD Outlet E		Dry Oxidation Air F		Wet Oxidation Air G	
Temperature	°F	182		139		251		139	
Pressure	psia	14.871		14.438		28		28	
N_2	lb/hr-vol%	7,113,954	67.89	7,143,375	65.32	29,421	76.09	29,421	64.86
O_2	lb/hr-vol%	684,578	5.72	690,487	5.52	8,863	20.06	8,863	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 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	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

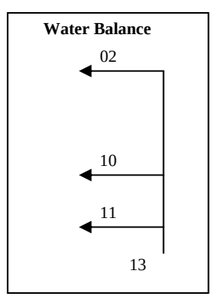
Coal Analysis		
Component	Units	As Received
Carbon	wt%	67.04
Hydrogen	wt%	4.56
Nitrogen	wt%	1.32
Sulfur	wt%	1.81
Oxygen	wt%	6.49
Chlorine	wt%	0.12
Moisture	wt%	8.35
Ash	wt%	10.31
Calc. HHV	Btu/lb	12,007

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

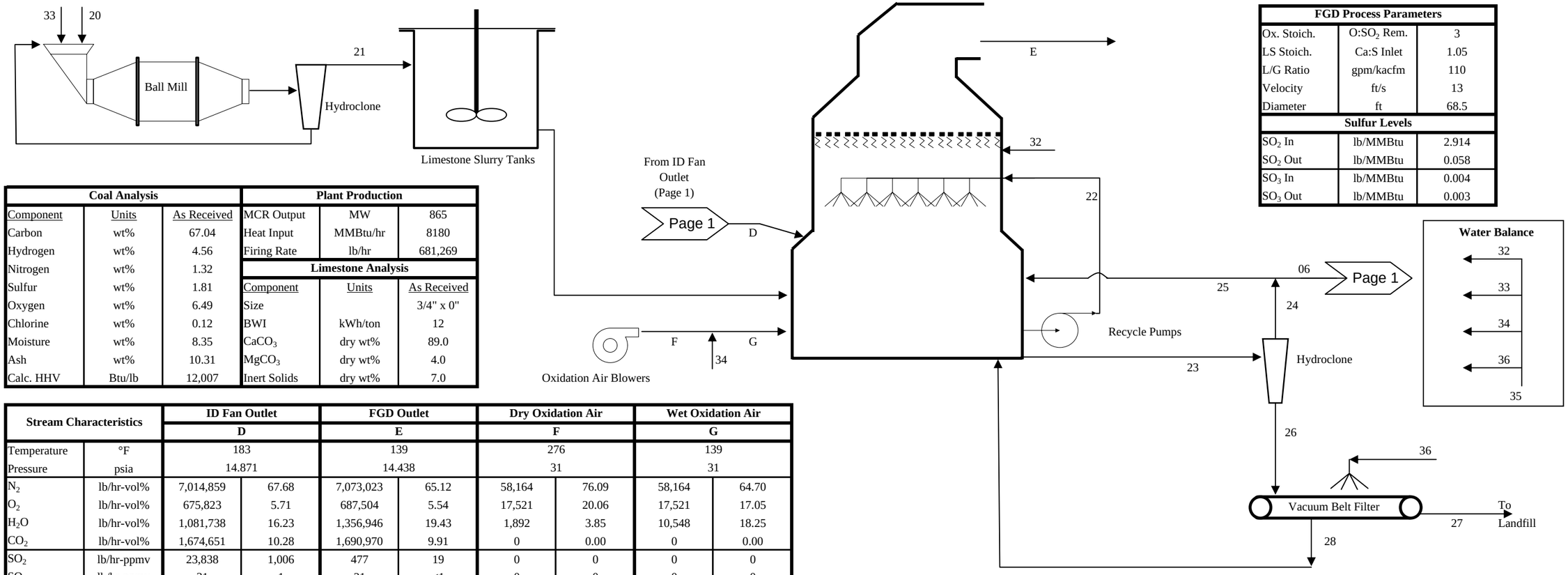
Stream Characteristics		Fresh Lime	Slaker H2O	Lime Slurry	Abs. Solids	Recycle	Purge	SDA Inlet	Waste Solids	Recycle Solids	Recycle H2O	Dust Control	Landfill	SDA Water
		01	02	03	04	05	06	07	08	09	10	11	12	13
Inert Solids	lb/hr	95	0	95		348,436	265	348,531	56,169	348,171	0	0	56,169	0
CaO	lb/hr	2,202	0	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

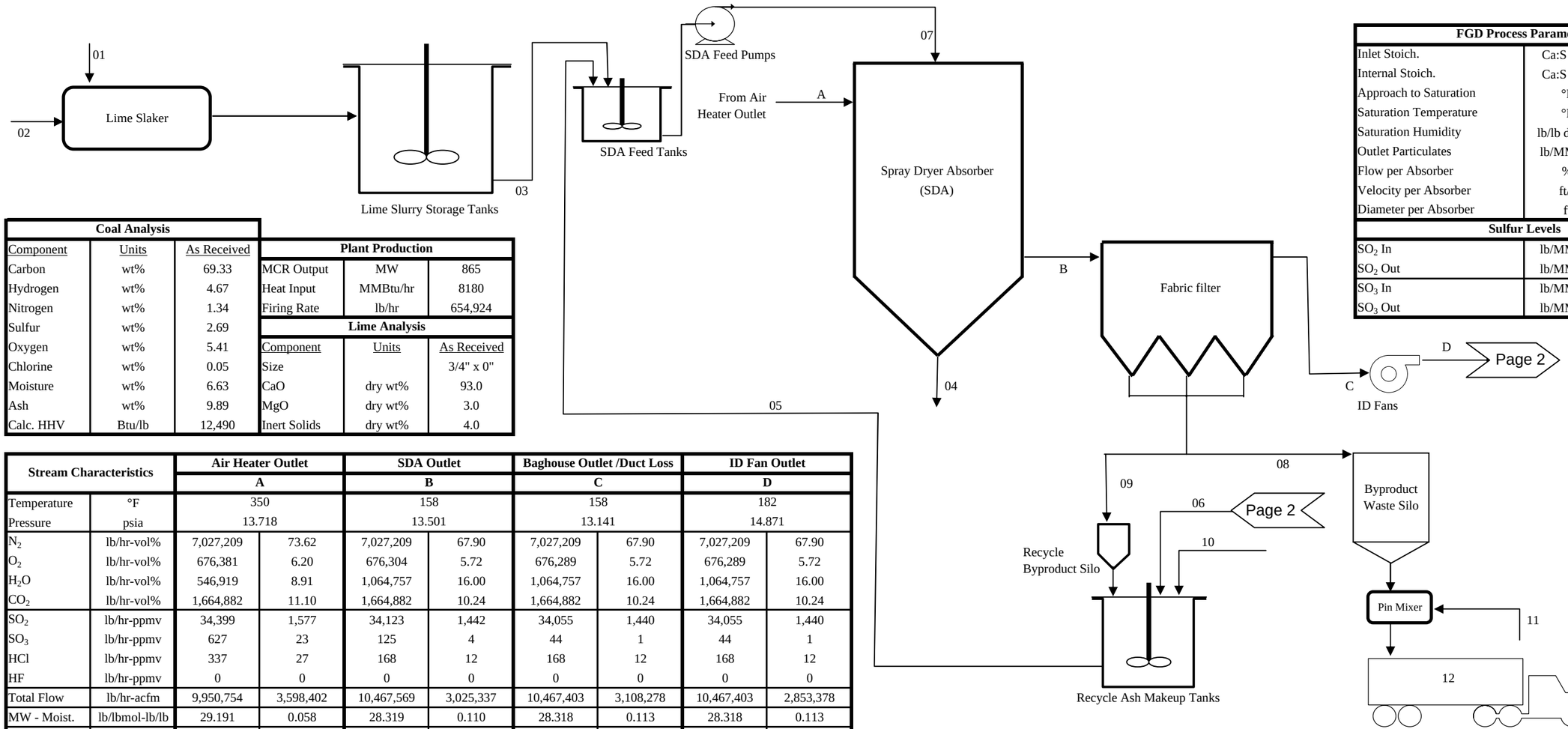
Stream Characteristics		ID Fan Outlet		FGD Outlet		Dry Oxidation Air		Wet Oxidation Air	
		D		E		F		G	
Temperature	°F	183		139		276		139	
Pressure	psia	14.871		14.438		31		31	
N_2	lb/hr-vol%	7,014,859	67.68	7,073,023	65.12	58,164	76.09	58,164	64.70
O_2	lb/hr-vol%	675,823	5.71	687,504	5.54	17,521	20.06	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

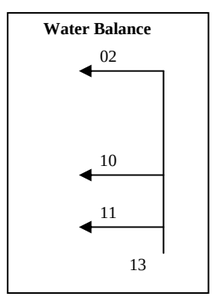
Coal Analysis		
Component	Units	As Received
Carbon	wt%	69.33
Hydrogen	wt%	4.67
Nitrogen	wt%	1.34
Sulfur	wt%	2.69
Oxygen	wt%	5.41
Chlorine	wt%	0.05
Moisture	wt%	6.63
Ash	wt%	9.89
Calc. HHV	Btu/lb	12,490

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

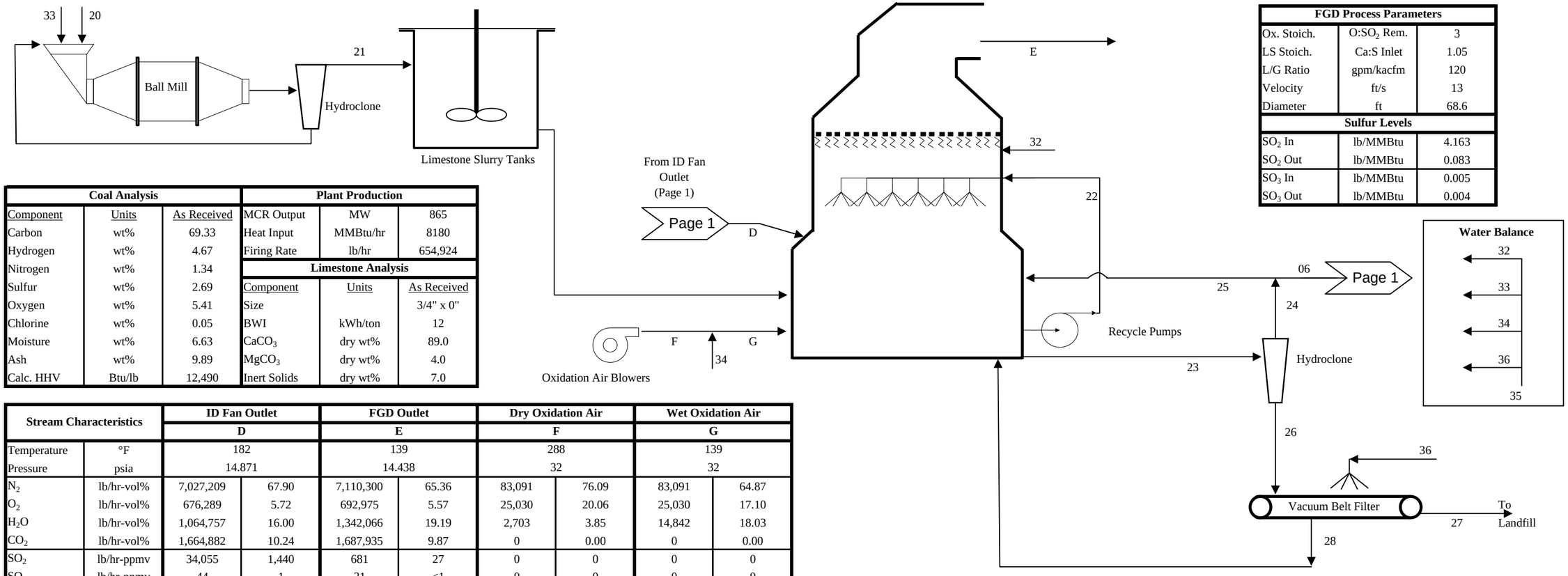
Stream Characteristics		Fresh Lime 01	Slaker H2O 02	Lime Slurry 03	Abs. Solids 04	Recycle 05	Purge 06	SDA Inlet 07	Waste Solids 08	Recycle Solids 09	Recycle H2O 10	Dust Control 11	Landfill 12	SDA Water 13
Inert Solids	lb/hr	132	0	132		336,603	75	336,736	51,837	336,528	0	0	51,837	0
CaO	lb/hr	3,080	0	0		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

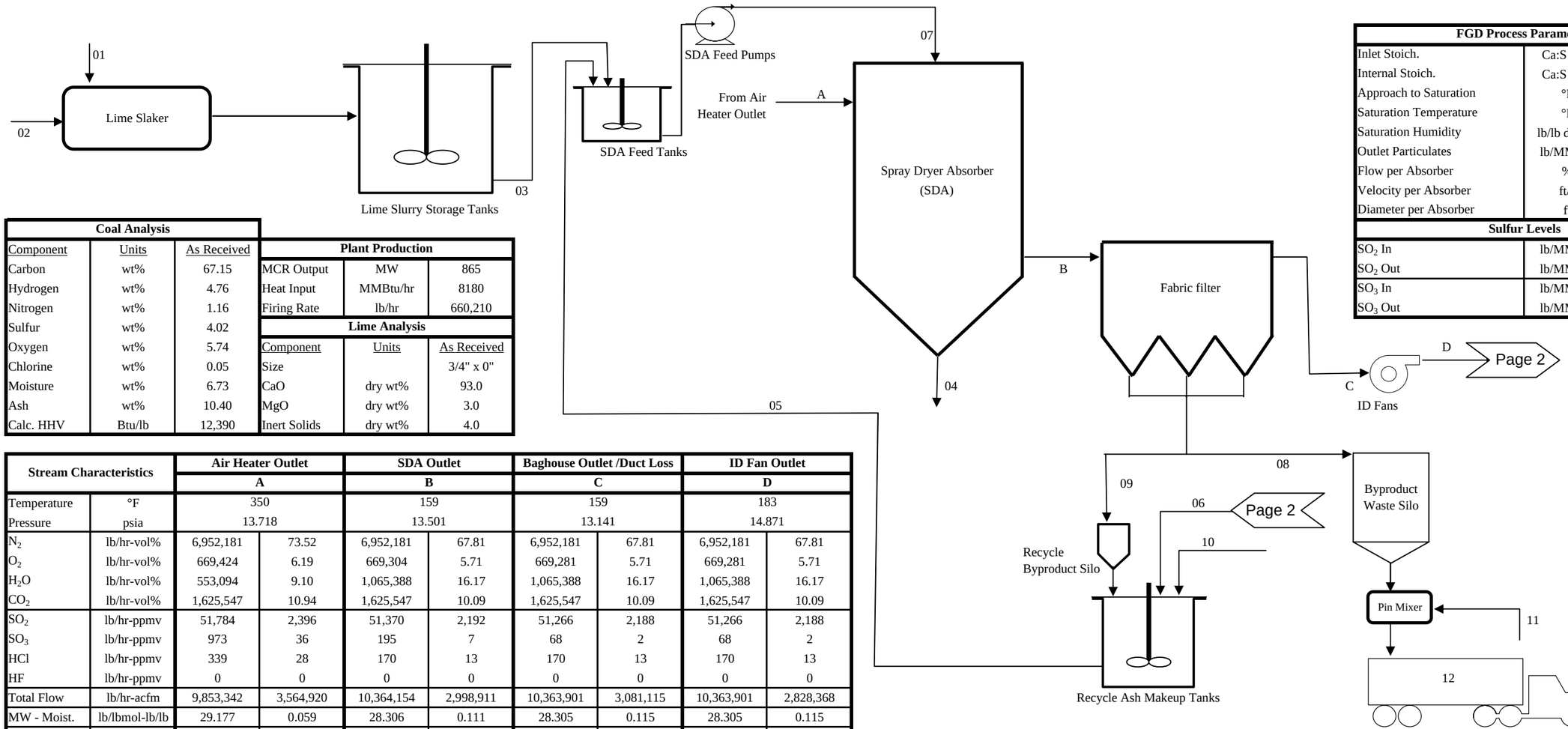
Stream Characteristics		ID Fan Outlet D		FGD Outlet E		Dry Oxidation Air F		Wet Oxidation Air G	
Temperature	°F	182		139		288		139	
Pressure	psia	14.871		14.438		32		32	
N_2	lb/hr-vol%	7,027,209	67.90	7,110,300	65.36	83,091	76.09	83,091	64.87
O_2	lb/hr-vol%	676,289	5.72	692,975	5.57	25,030	20.06	25,030	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

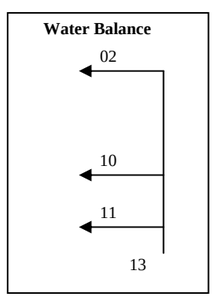
Coal Analysis		
Component	Units	As Received
Carbon	wt%	67.15
Hydrogen	wt%	4.76
Nitrogen	wt%	1.16
Sulfur	wt%	4.02
Oxygen	wt%	5.74
Chlorine	wt%	0.05
Moisture	wt%	6.73
Ash	wt%	10.40
Calc. HHV	Btu/lb	12,390

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

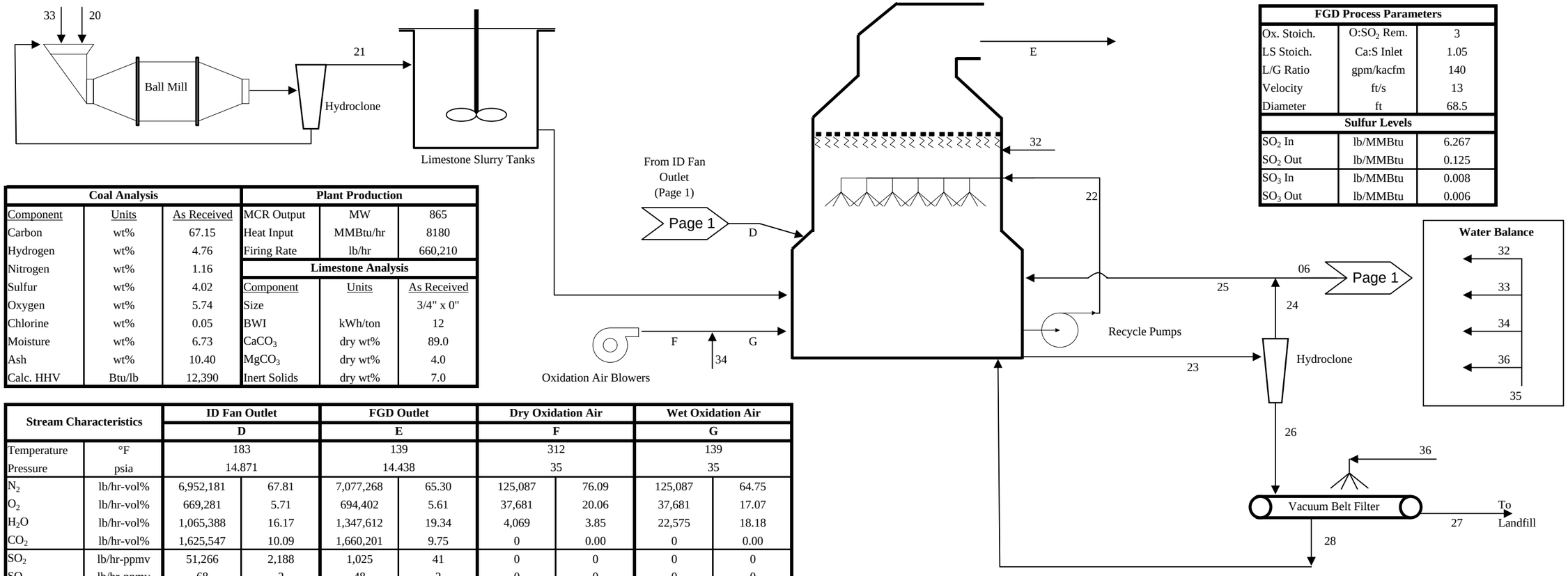
Stream Characteristics		Fresh Lime 01	Slaker H2O 02	Lime Slurry 03	Abs. Solids 04	Recycle 05	Purge 06	SDA Inlet 07	Waste Solids 08	Recycle Solids 09	Recycle H2O 10	Dust Control 11	Landfill 12	SDA Water 13
Inert Solids	lb/hr	199	0	199		318,207	60	318,406	55,016	318,147	0	0	55,016	0
CaO	lb/hr	4,625	0	0		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

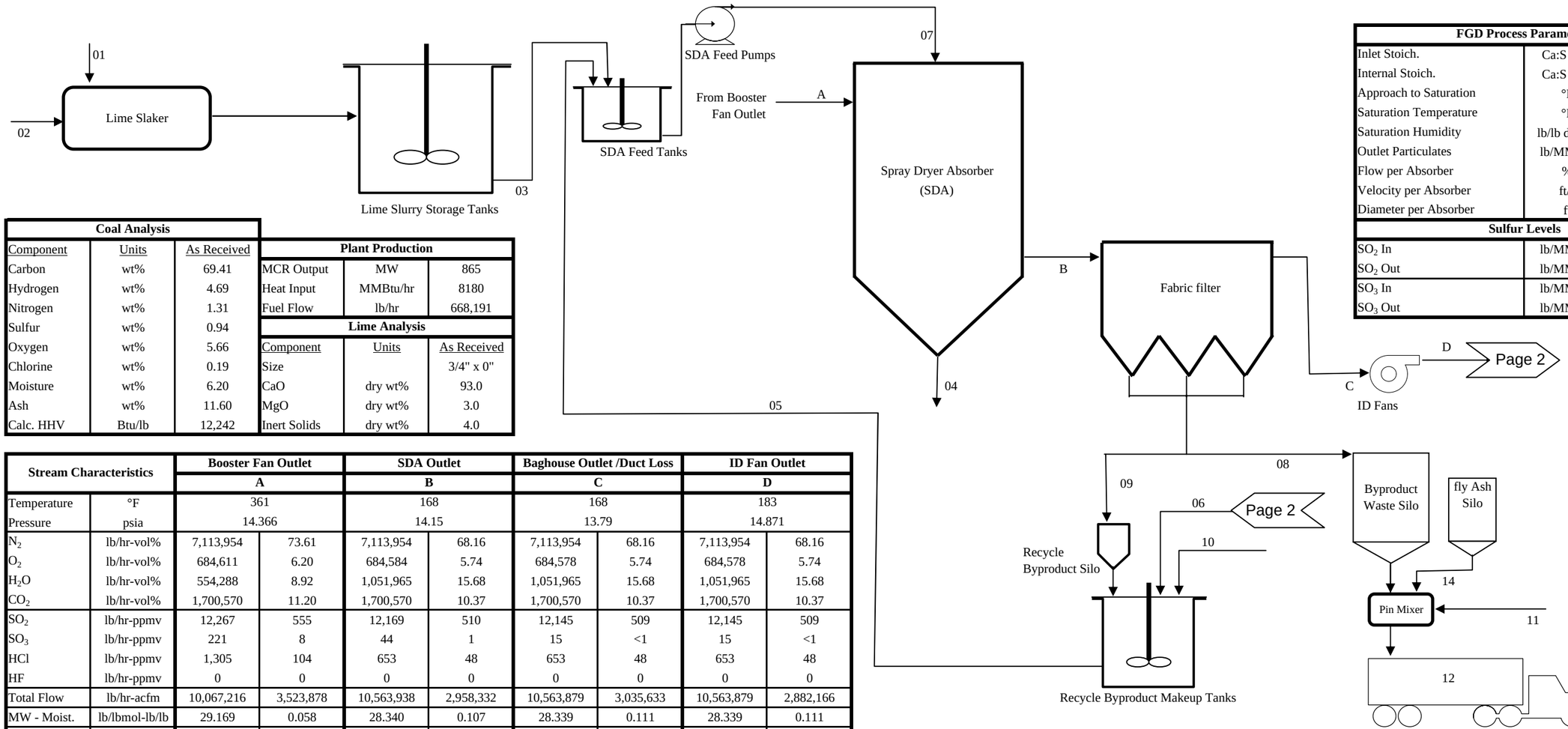
Stream Characteristics		ID Fan Outlet D		FGD Outlet E		Dry Oxidation Air F		Wet Oxidation Air G	
Temperature	°F	183		139		312		139	
Pressure	psia	14.871		14.438		35		35	
N_2	lb/hr-vol%	6,952,181	67.81	7,077,268	65.30	125,087	76.09	125,087	64.75
O_2	lb/hr-vol%	669,281	5.71	694,402	5.61	37,681	20.06	37,681	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

Project No.12721-000
9/10/2010
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

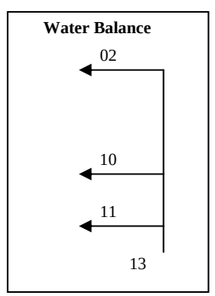
Plant Production		
MCR Output	MW	865
Heat Input	MMBtu/hr	8180
Fuel Flow	lb/hr	668,191

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

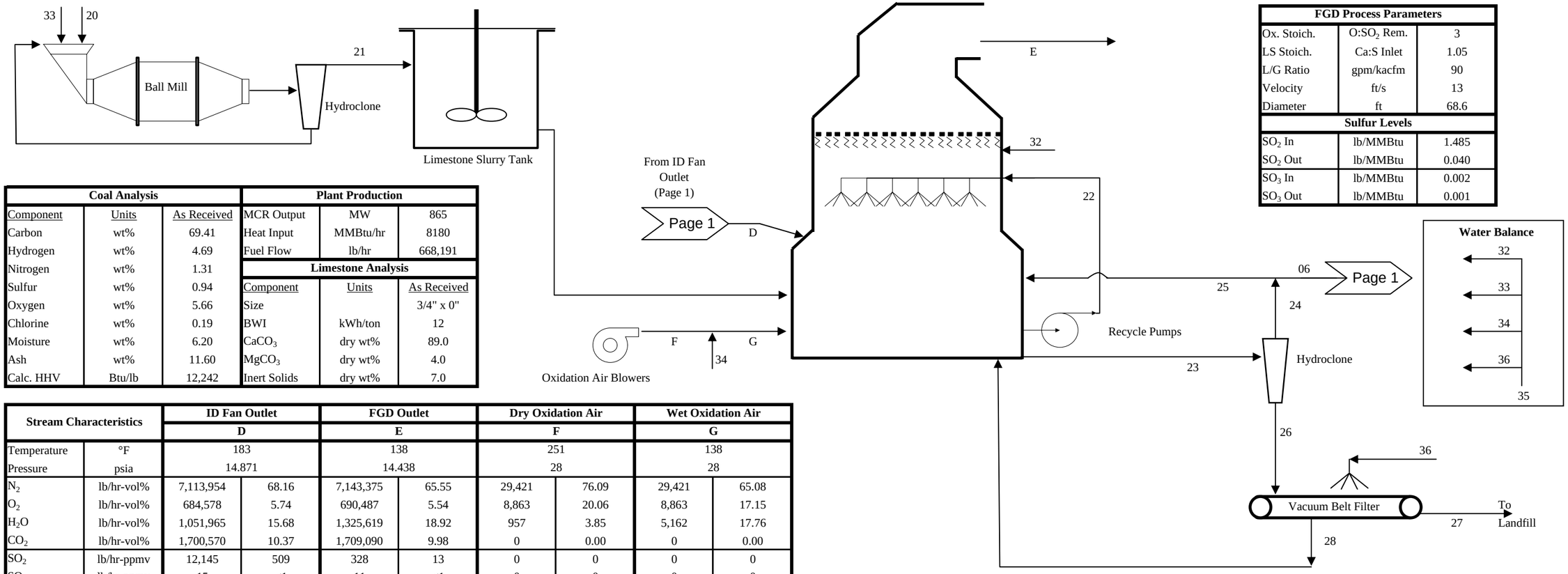
Water Balance



Client: AEP
Station: Big Sandy - Unit 2

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

Project No.12721-000
9/10/2010
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			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

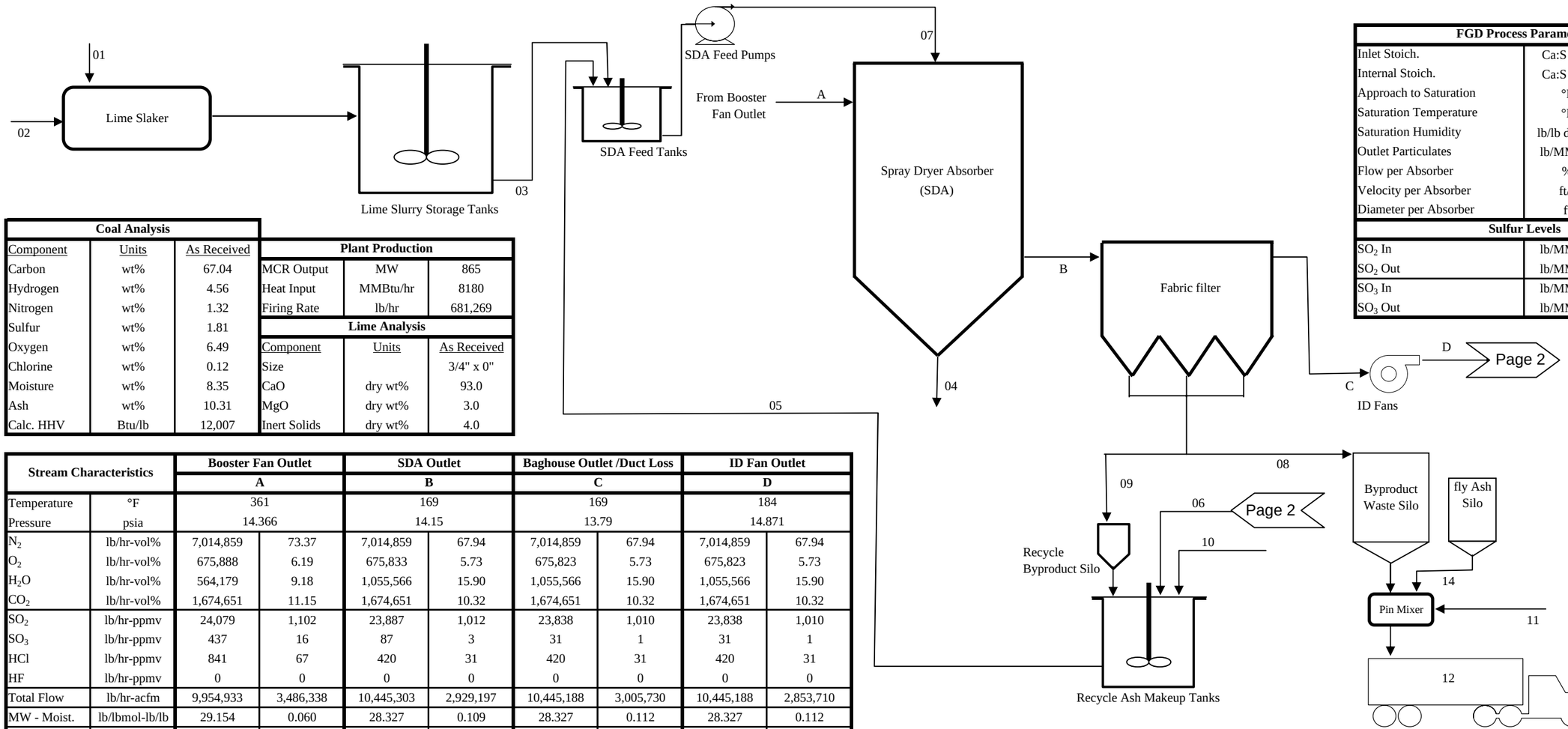
Stream Characteristics		ID Fan Outlet		FGD Outlet		Dry Oxidation Air		Wet Oxidation Air	
		D		E		F		G	
Temperature	°F	183		138		251		138	
Pressure	psia	14.871		14.438		28		28	
N_2	lb/hr-vol%	7,113,954	68.16	7,143,375	65.55	29,421	76.09	29,421	65.08
O_2	lb/hr-vol%	684,578	5.74	690,487	5.54	8,863	20.06	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

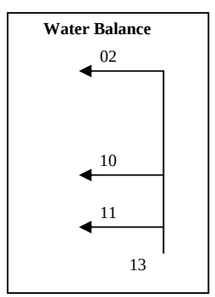
Coal Analysis		
Component	Units	As Received
Carbon	wt%	67.04
Hydrogen	wt%	4.56
Nitrogen	wt%	1.32
Sulfur	wt%	1.81
Oxygen	wt%	6.49
Chlorine	wt%	0.12
Moisture	wt%	8.35
Ash	wt%	10.31
Calc. HHV	Btu/lb	12,007

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

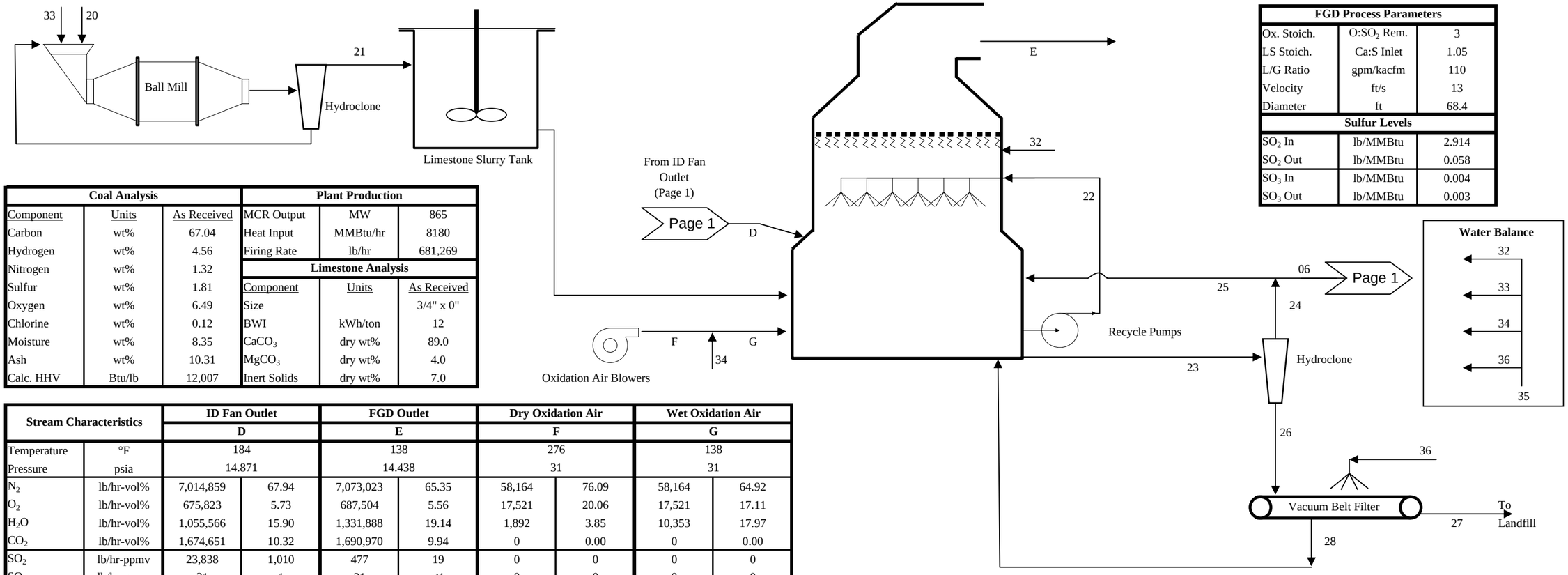
Stream Characteristics		Fresh Lime	Slaker H2O	Lime Slurry	Abs. Solids	Recycle	Purge	SDA Inlet	Waste Solids	Recycle Solids	Recycle H2O	Pin Mixer H2O	Landfill	SDA Water	Stabilization
		01	02	03	04	05	06	07	08	09	10	11	12	13	14
Inert Solids	lb/hr	95	0	95		108,871	240	108,966	1,734	108,631	0	0	2,012	0	278
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

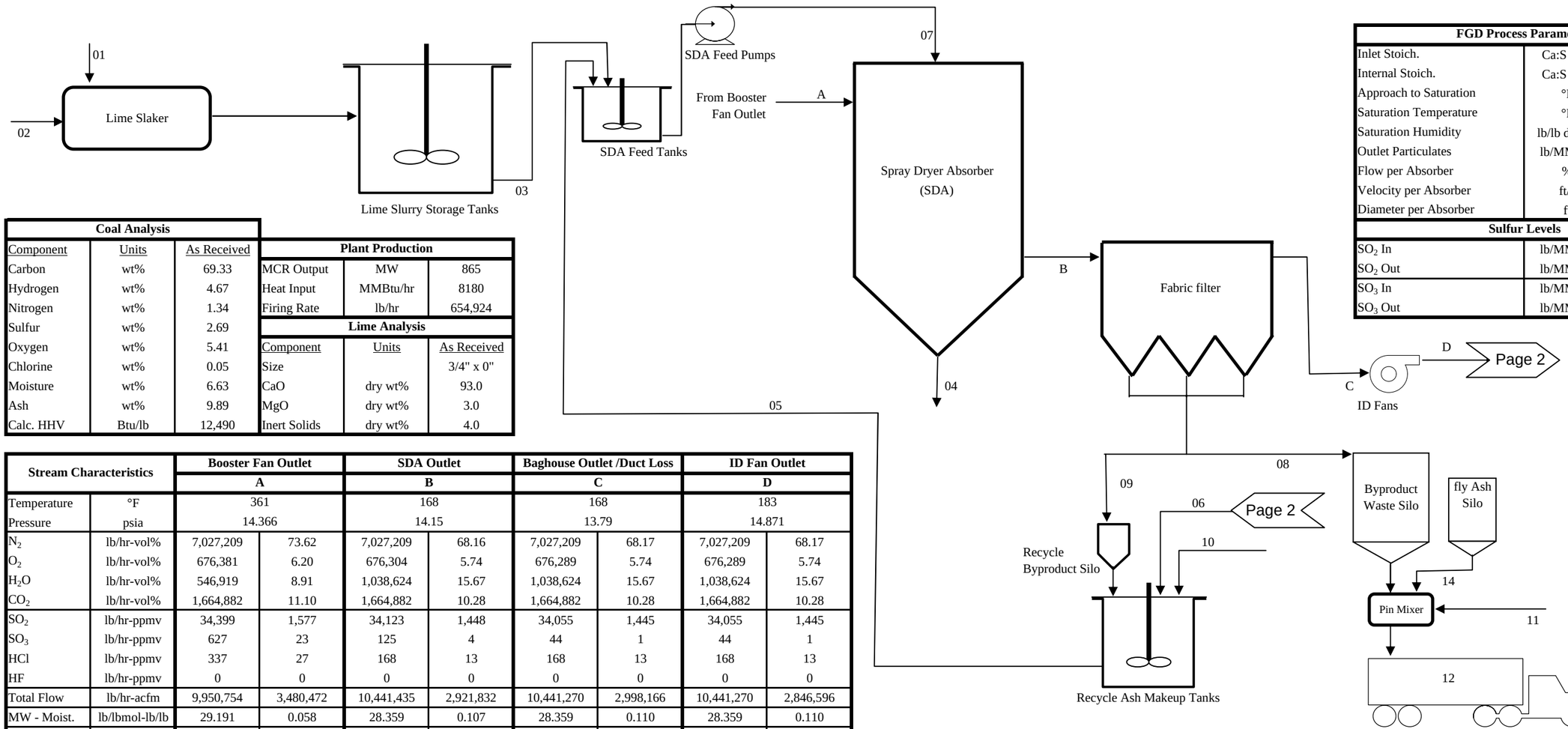
Stream Characteristics		ID Fan Outlet		FGD Outlet		Dry Oxidation Air		Wet Oxidation Air	
		D		E		F		G	
Temperature	°F	184		138		276		138	
Pressure	psia	14.871		14.438		31		31	
N_2	lb/hr-vol%	7,014,859	67.94	7,073,023	65.35	58,164	76.09	58,164	64.92
O_2	lb/hr-vol%	675,823	5.73	687,504	5.56	17,521	20.06	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

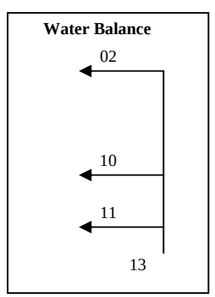
Coal Analysis		
Component	Units	As Received
Carbon	wt%	69.33
Hydrogen	wt%	4.67
Nitrogen	wt%	1.34
Sulfur	wt%	2.69
Oxygen	wt%	5.41
Chlorine	wt%	0.05
Moisture	wt%	6.63
Ash	wt%	9.89
Calc. HHV	Btu/lb	12,490

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

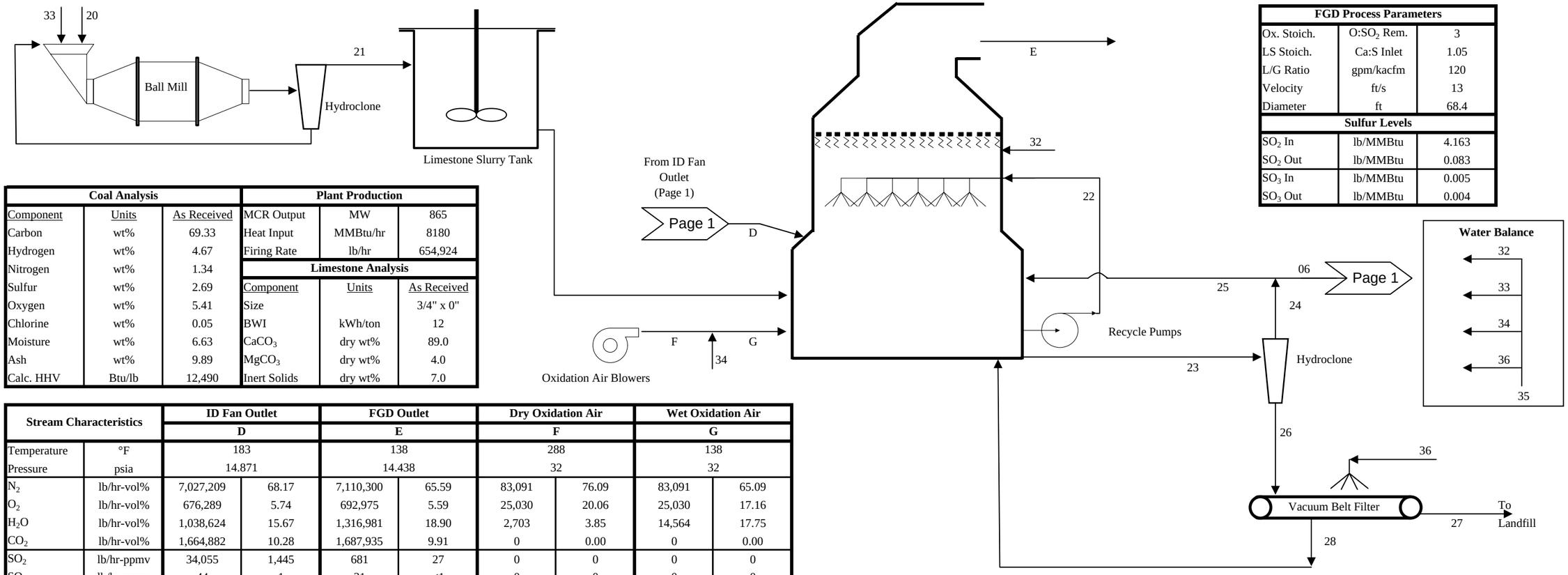
Stream Characteristics		Fresh Lime 01	Slaker H2O 02	Lime Slurry 03	Abs. Solids 04	Recycle 05	Purge 06	SDA Inlet 07	Waste Solids 08	Recycle Solids 09	Recycle H2O 10	Pin Mixer H2O 11	Landfill 12	SDA Water 13	Stabilization 14
Inert Solids	lb/hr	132	0	132		83,509	53	83,642	1,635	83,456	0	0	1,975	0	340
CaO	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

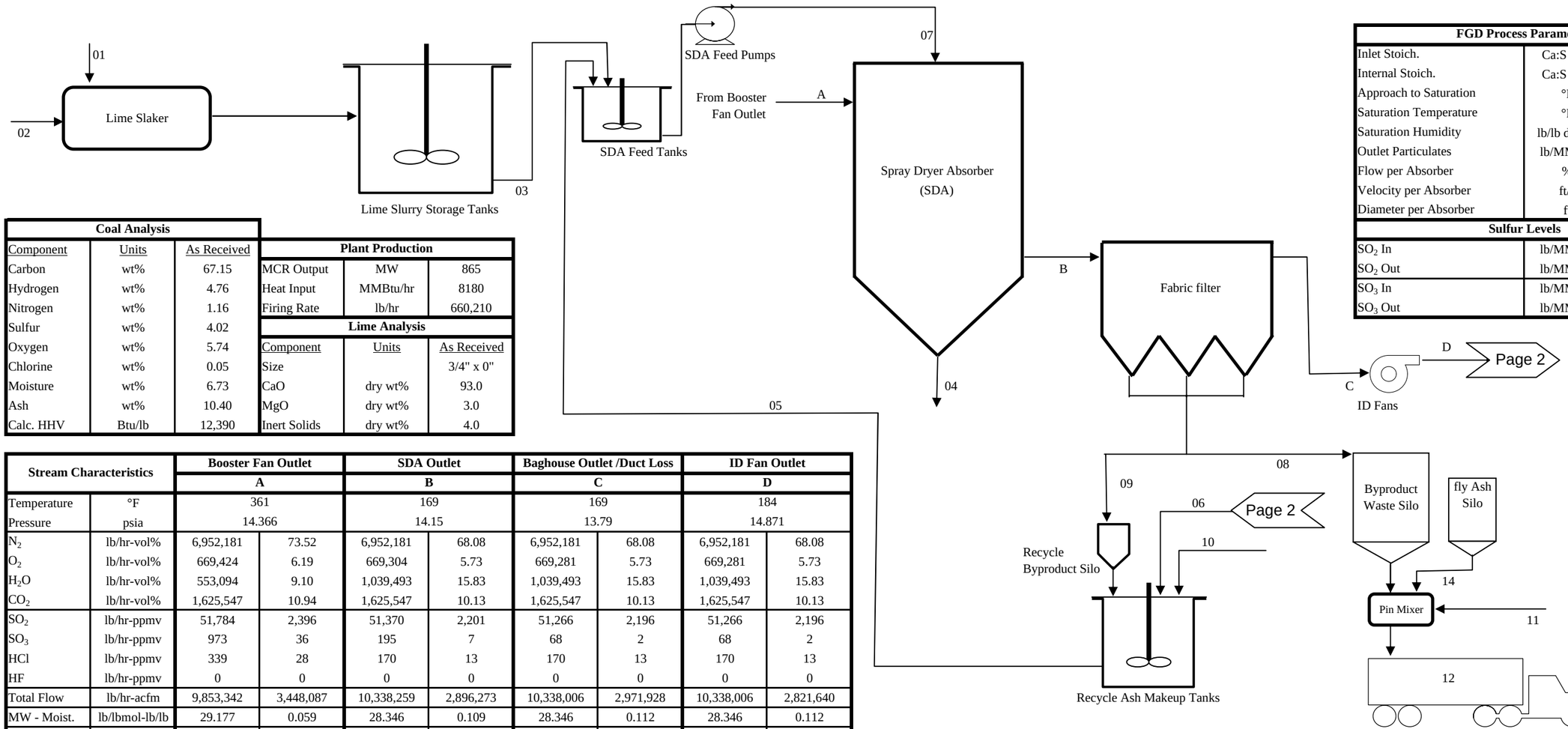
Stream Characteristics		ID Fan Outlet D		FGD Outlet E		Dry Oxidation Air F		Wet Oxidation Air G	
Temperature	°F	183		138		288		138	
Pressure	psia	14.871		14.438		32		32	
N_2	lb/hr-vol%	7,027,209	68.17	7,110,300	65.59	83,091	76.09	83,091	65.09
O_2	lb/hr-vol%	676,289	5.74	692,975	5.59	25,030	20.06	25,030	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

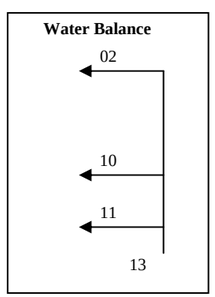
Coal Analysis		
Component	Units	As Received
Carbon	wt%	67.15
Hydrogen	wt%	4.76
Nitrogen	wt%	1.16
Sulfur	wt%	4.02
Oxygen	wt%	5.74
Chlorine	wt%	0.05
Moisture	wt%	6.73
Ash	wt%	10.40
Calc. HHV	Btu/lb	12,390

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

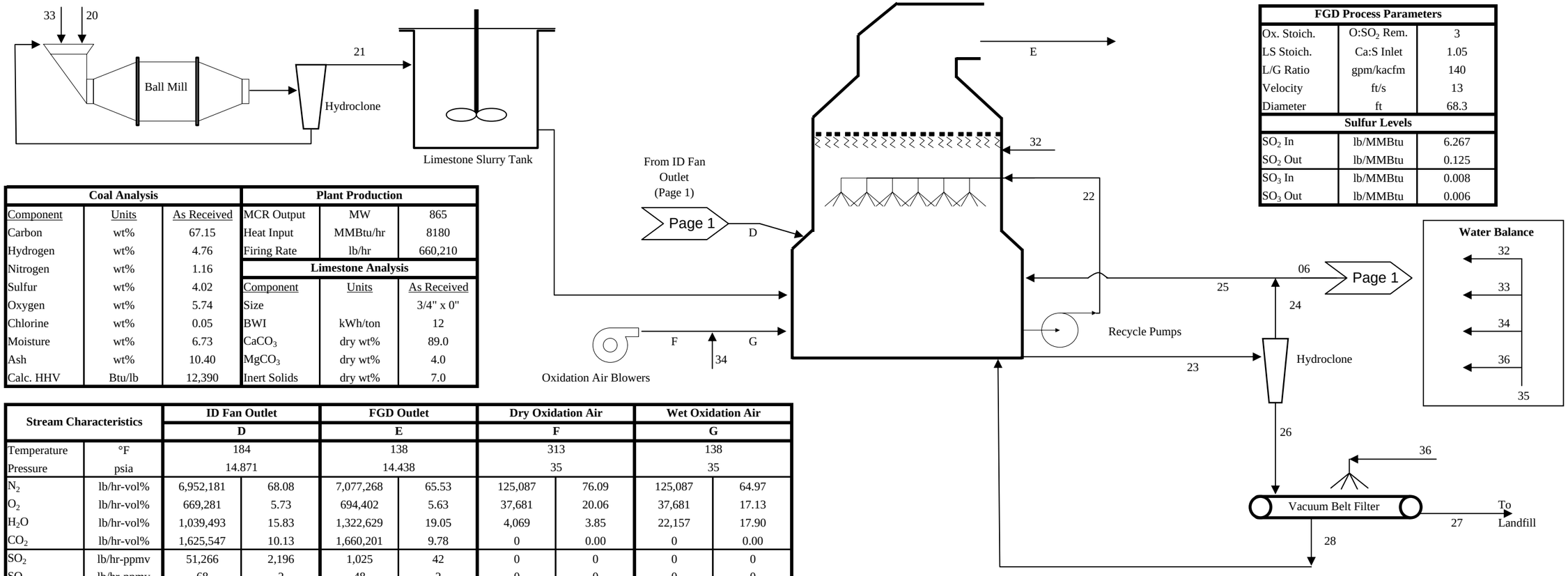
Stream Characteristics		Fresh Lime	Slaker H2O	Lime Slurry	Abs. Solids	Recycle	Purge	SDA Inlet	Waste Solids	Recycle Solids	Recycle H2O	Pin Mixer H2O	Landfill	SDA Water	Stabilization
		01	02	03	04	05	06	07	08	09	10	11	12	13	14
Inert Solids	lb/hr	199	0	199		64,070	40	64,269	1,797	64,030	0	0	2,274	0	477
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 1.5 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.

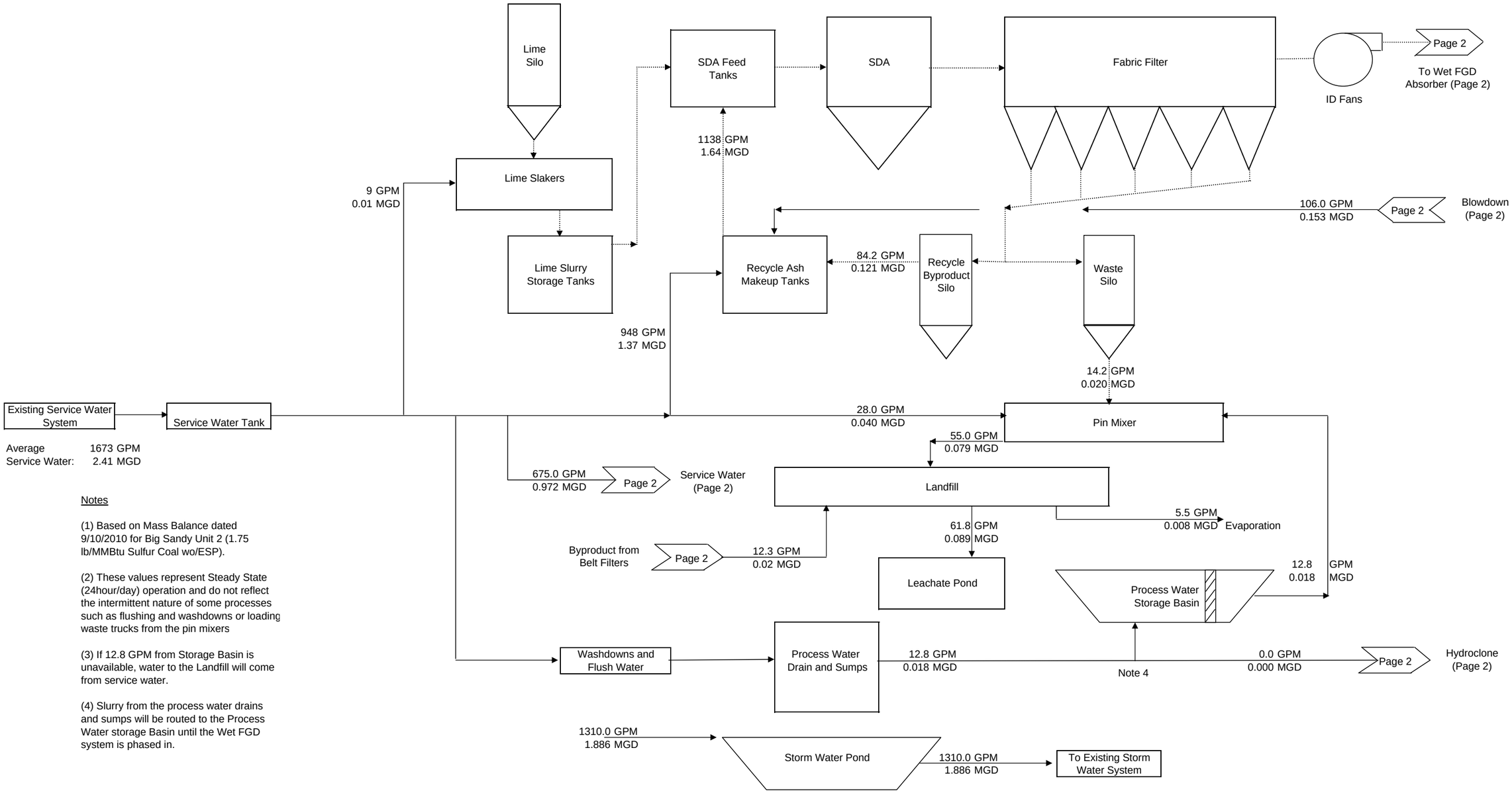
5. 10% of the water sprayed for dust suppression (without ESP) or pin mixing (with ESP) is lost to evaporation

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
1.75 lb/mmbtu Sulfur Coal wo/ESP



Notes

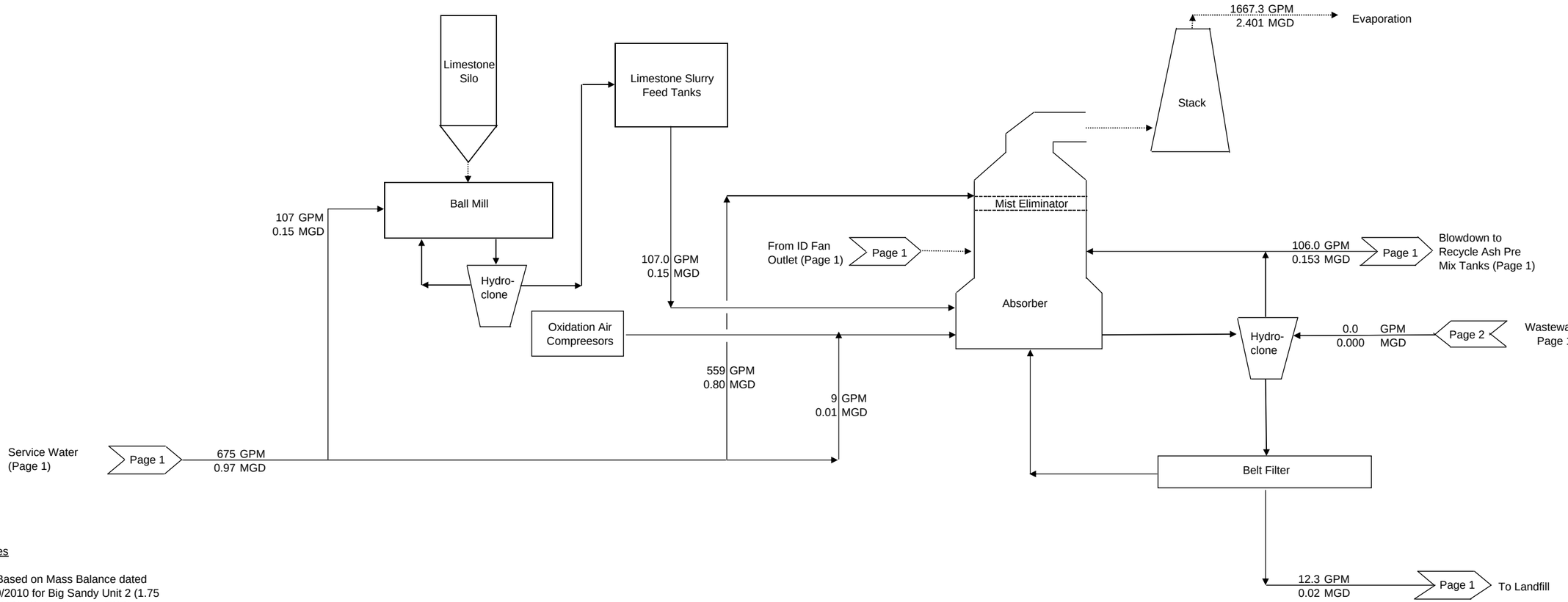
(1) Based on Mass Balance dated 9/10/2010 for Big Sandy Unit 2 (1.75 lb/MMBtu Sulfur Coal wo/ESP).

(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
1.75 lb/mmbtu Sulfur Coal wo/ESP

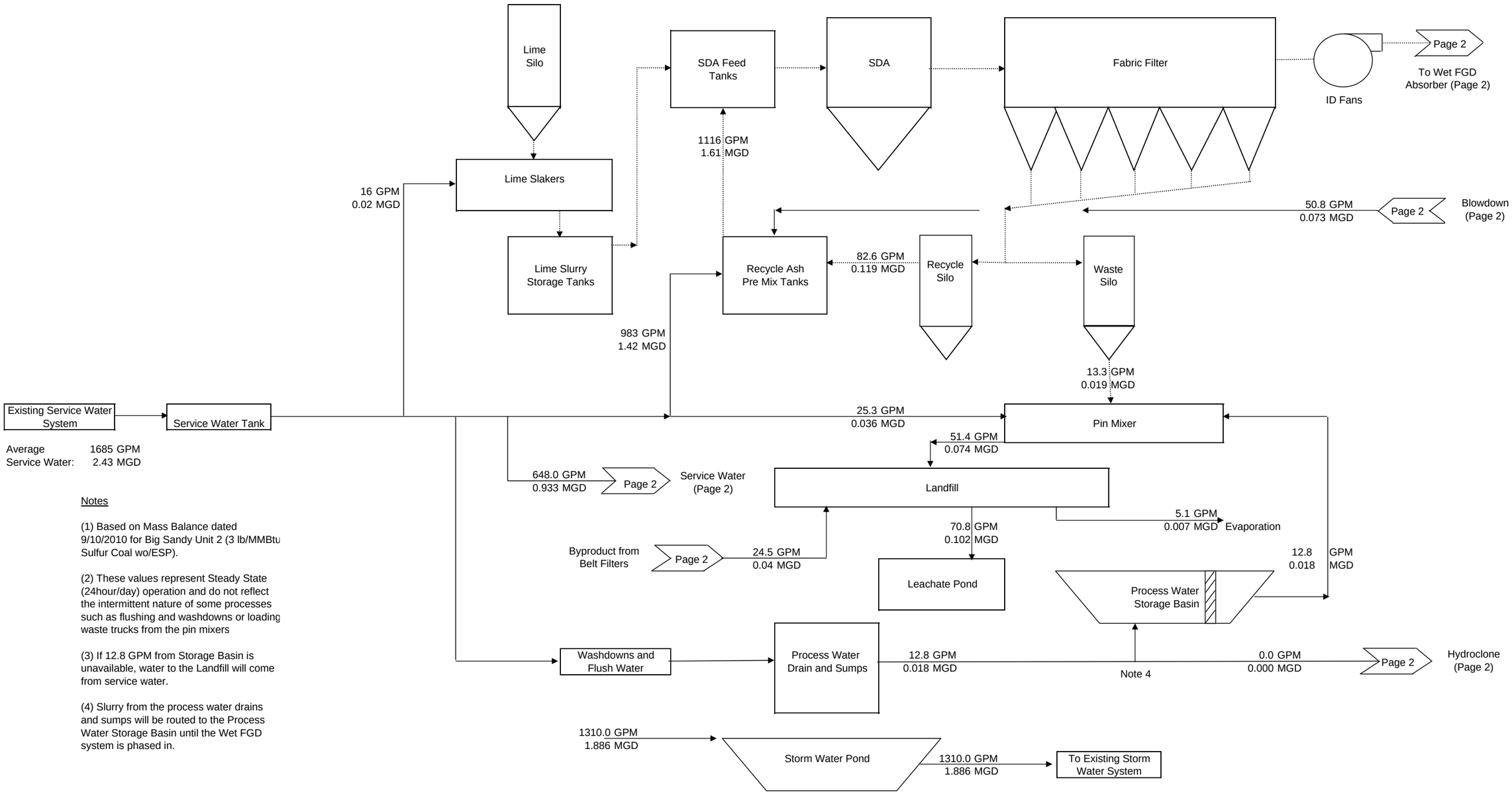


Notes

(1) Based on Mass Balance dated 9/10/2010 for Big Sandy Unit 2 (1.75 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
3 lb/mmbtu Sulfur Coal wo/ESP



Notes

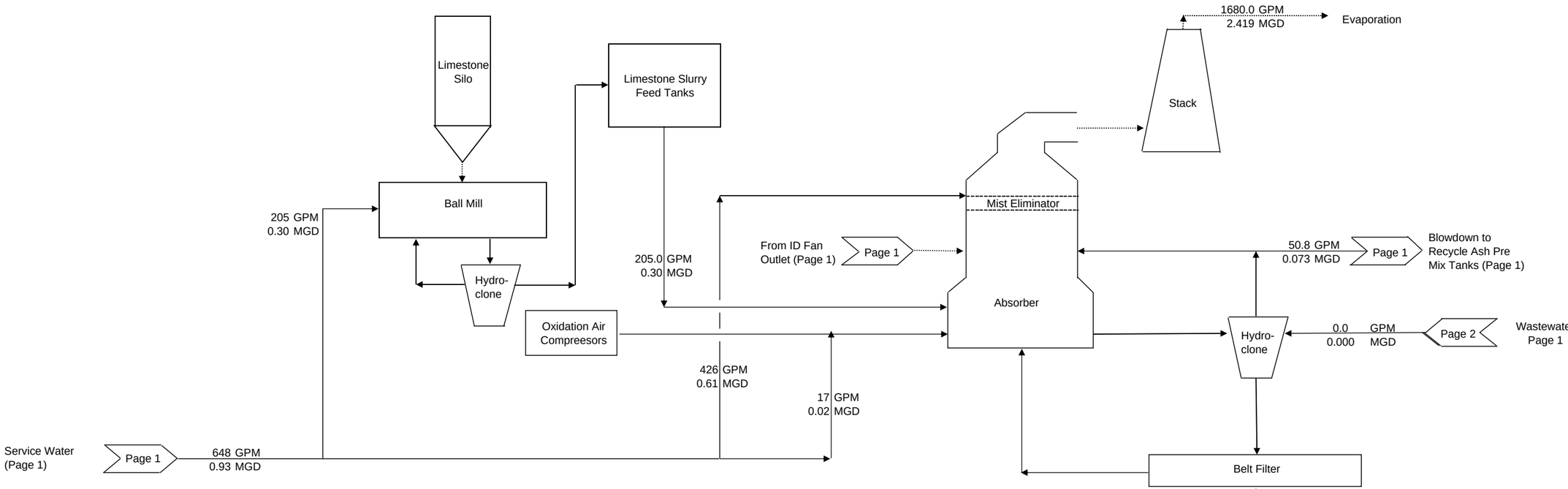
(1) Based on Mass Balance dated 9/10/2010 for Big Sandy Unit 2 (3 lb/MMBtu Sulfur Coal wo/ESP).

(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

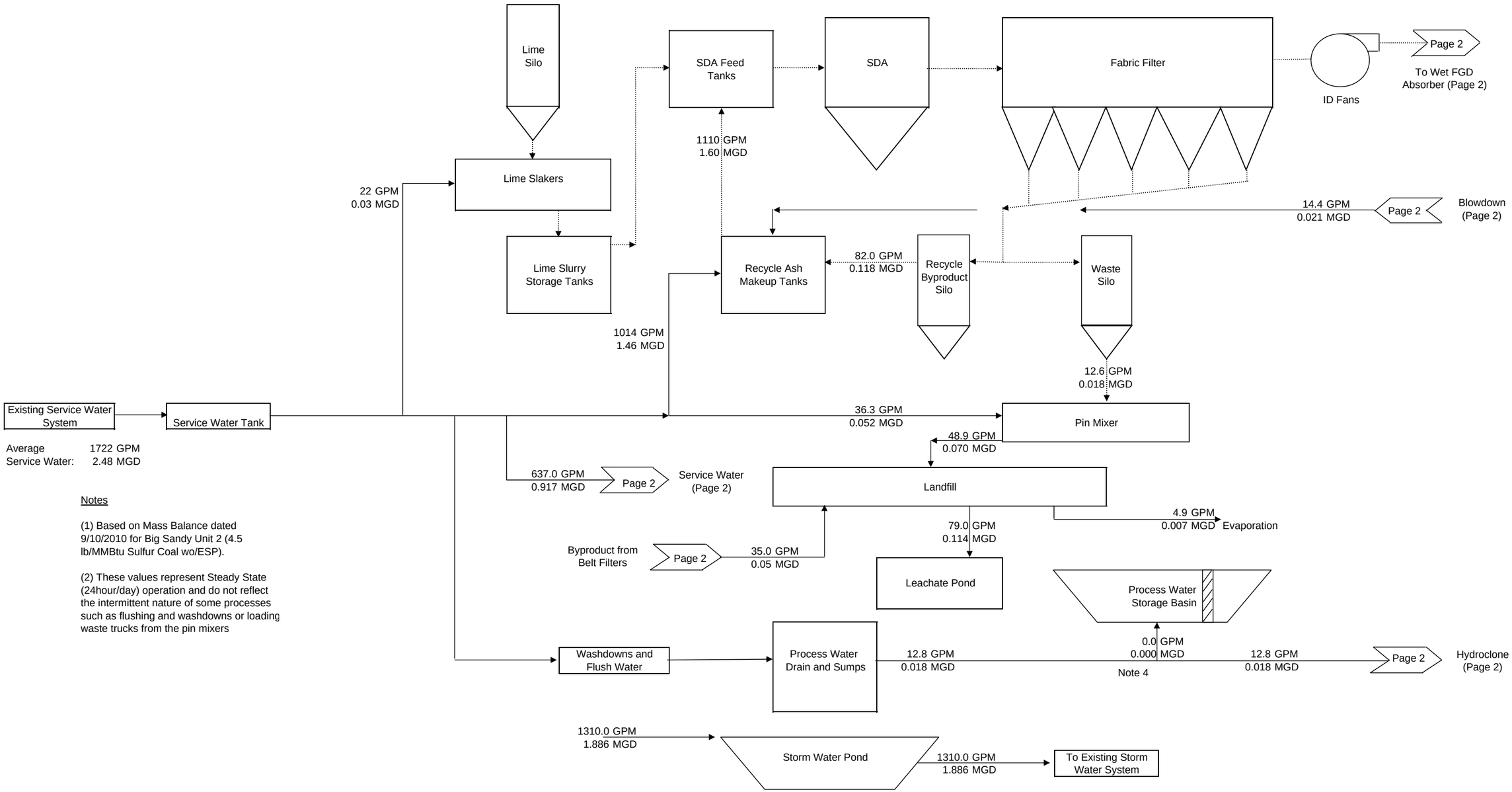


Notes

(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



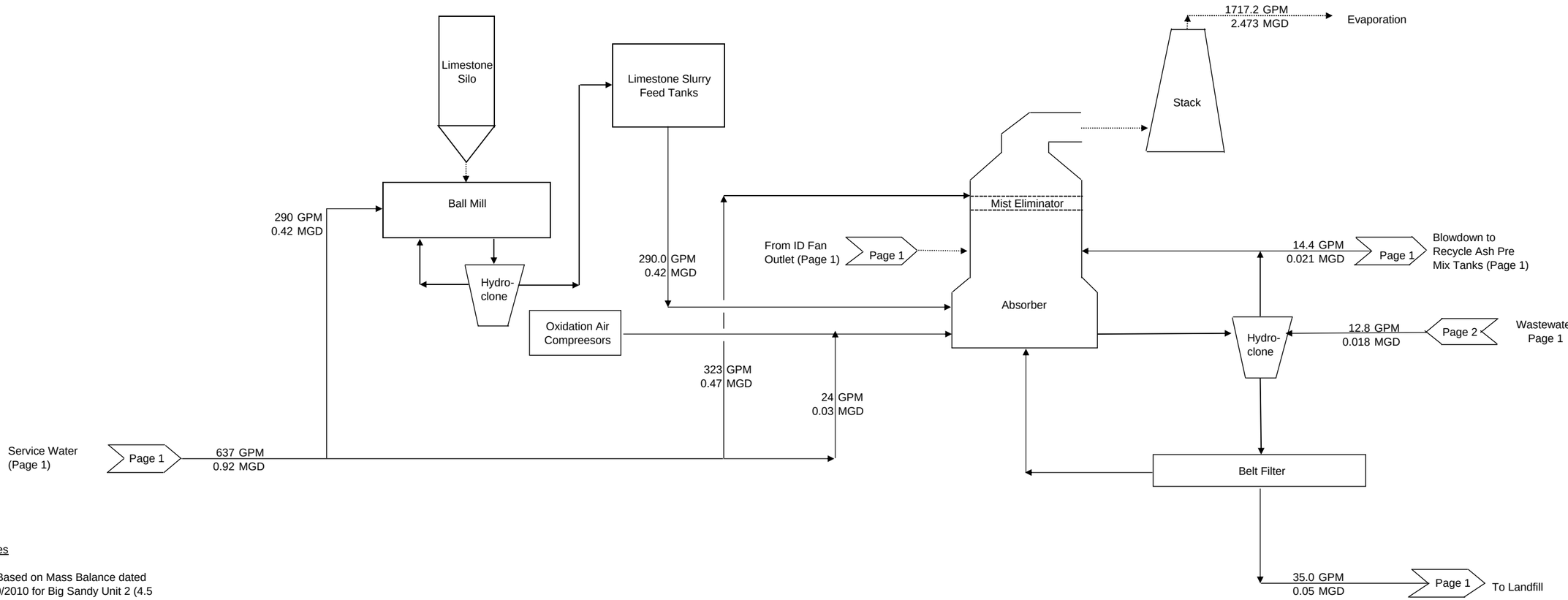
Average Service Water: 1722 GPM 2.48 MGD

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

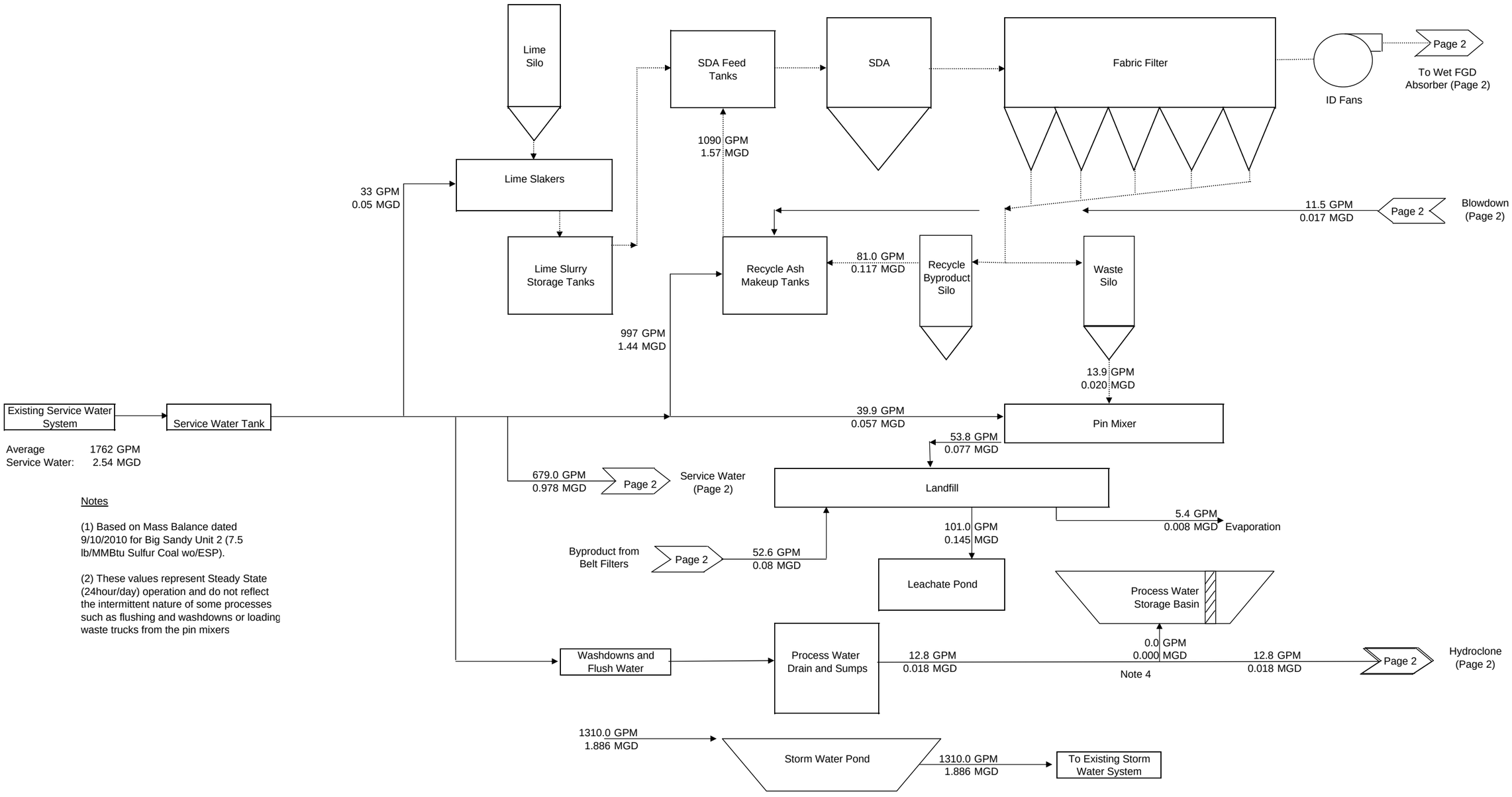


Notes

(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

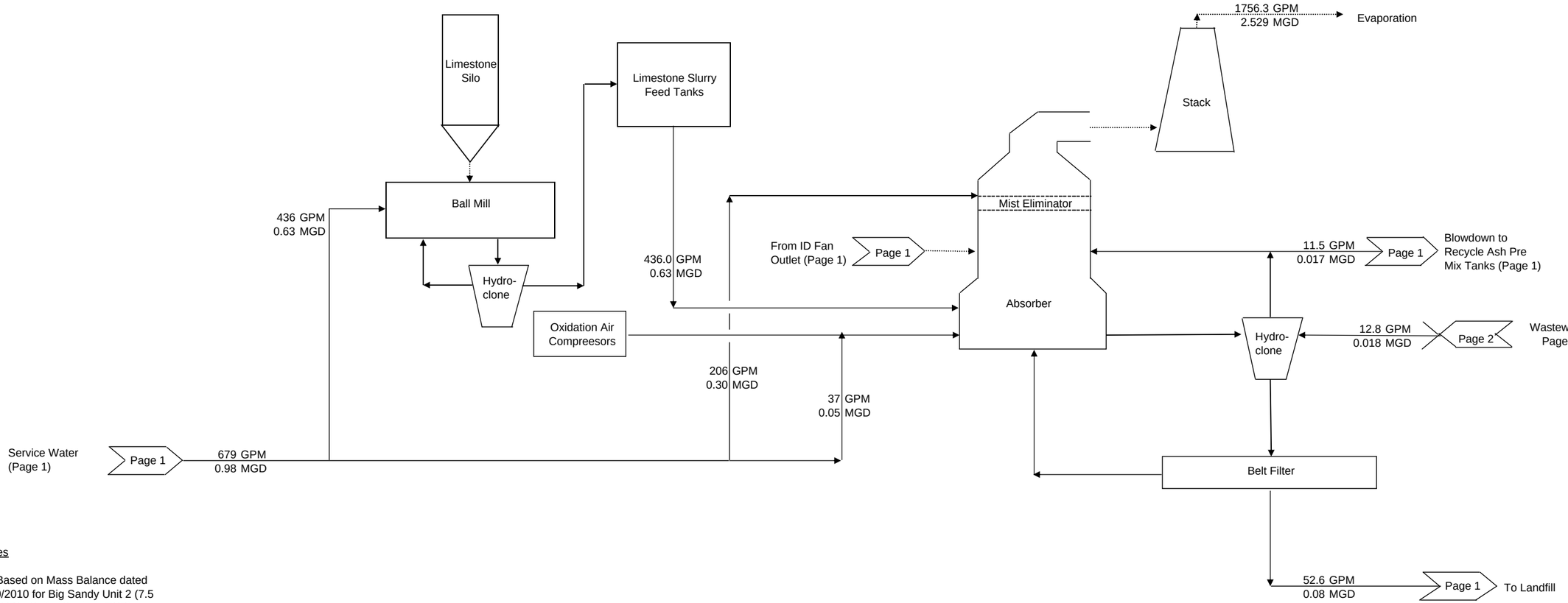


Notes

(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

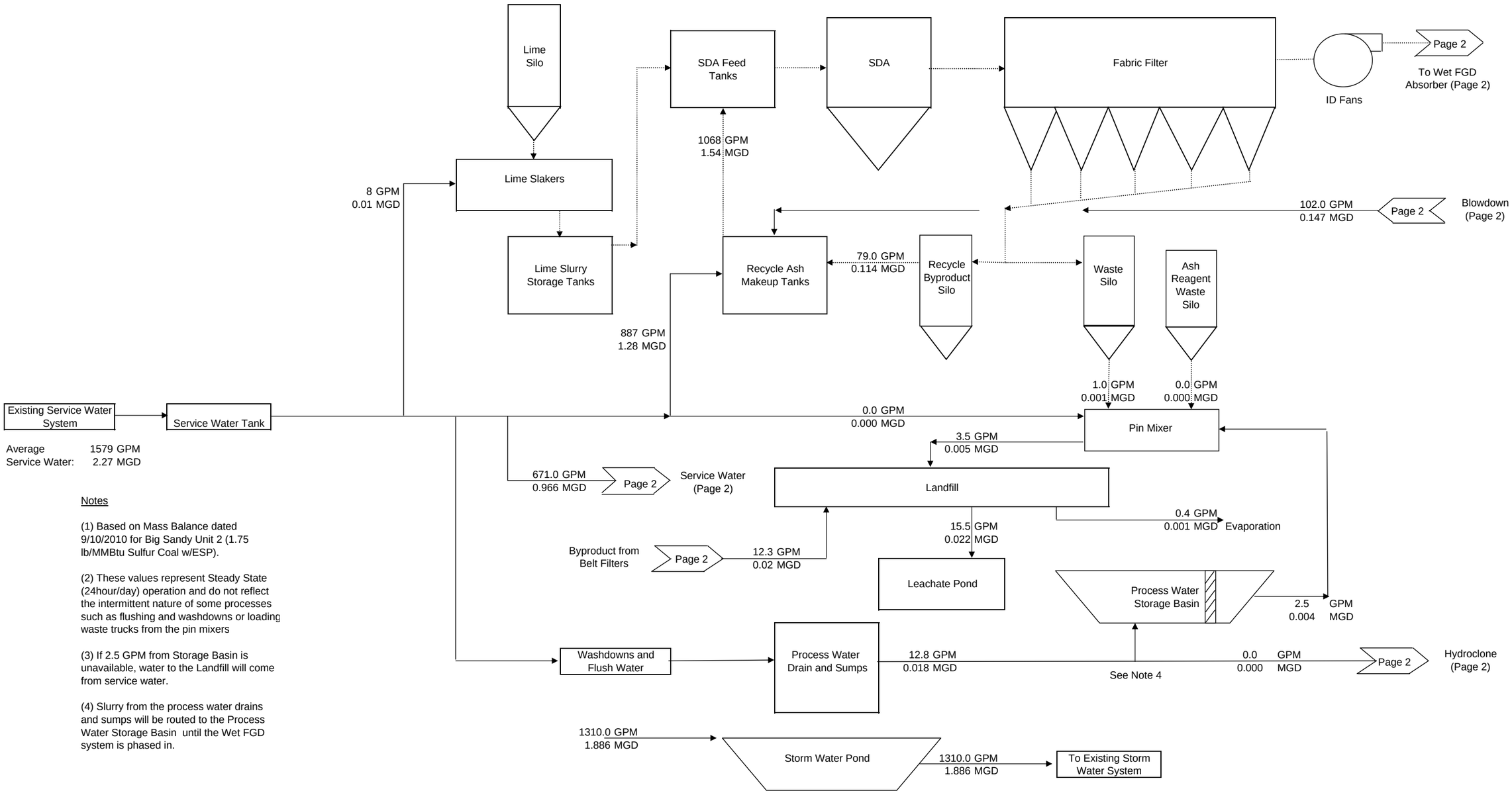


Notes

(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
1.75 lb/mmbtu Sulfur Coal w/ESP



Average Service Water: 1579 GPM 2.27 MGD

Notes

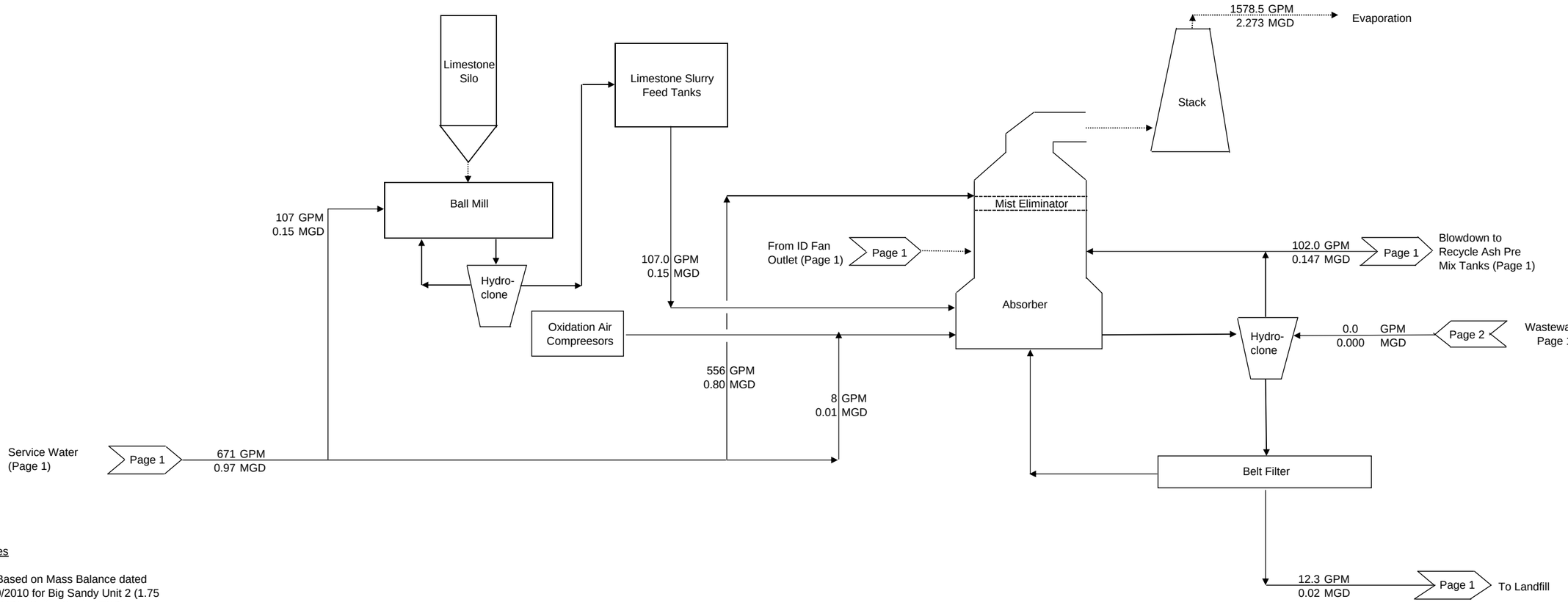
(1) Based on Mass Balance dated 9/10/2010 for Big Sandy Unit 2 (1.75 lb/MMBtu Sulfur Coal w/ESP).

(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
1.75 lb/mmbtu Sulfur Coal w/ESP

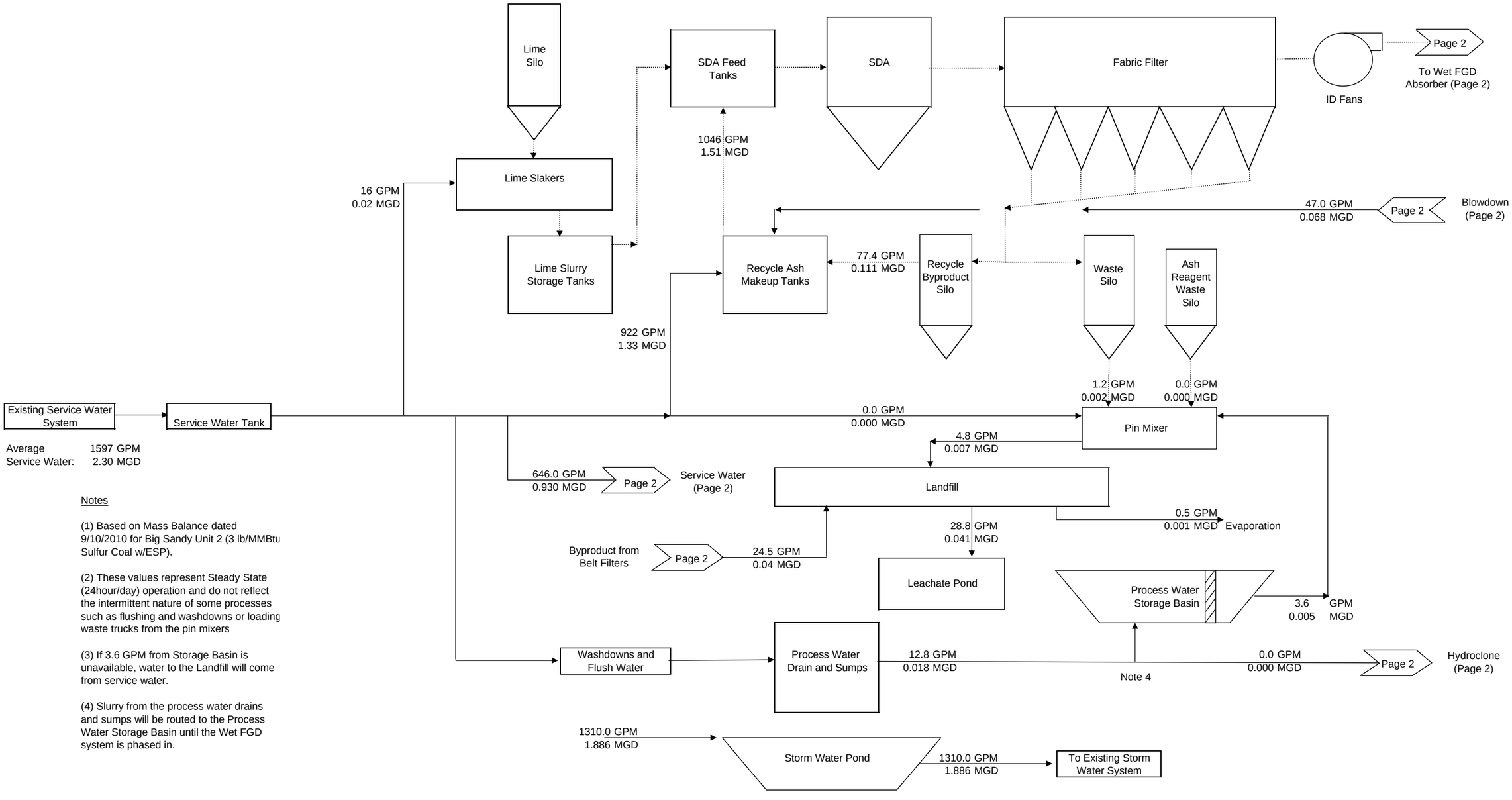


Notes

(1) Based on Mass Balance dated 9/10/2010 for Big Sandy Unit 2 (1.75 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
3 lb/mmbtu Sulfur Coal w/ESP



Average Service Water: 1597 GPM 2.30 MGD

Notes

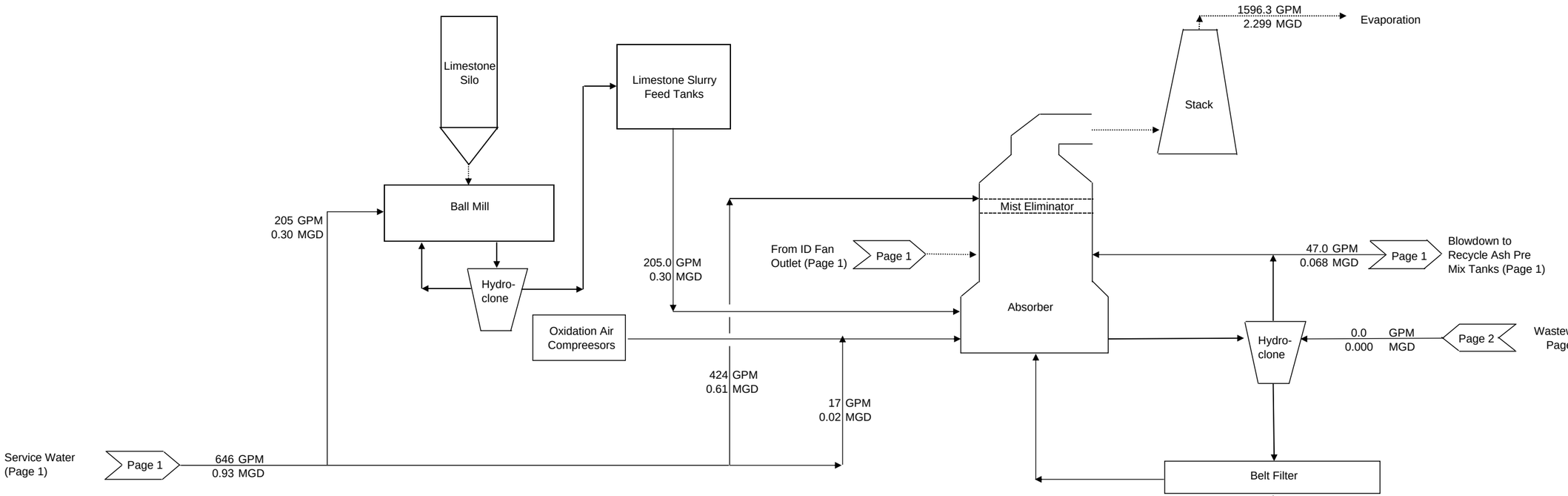
(1) Based on Mass Balance dated 9/10/2010 for Big Sandy Unit 2 (3 lb/MMBtu Sulfur Coal w/ESP).

(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

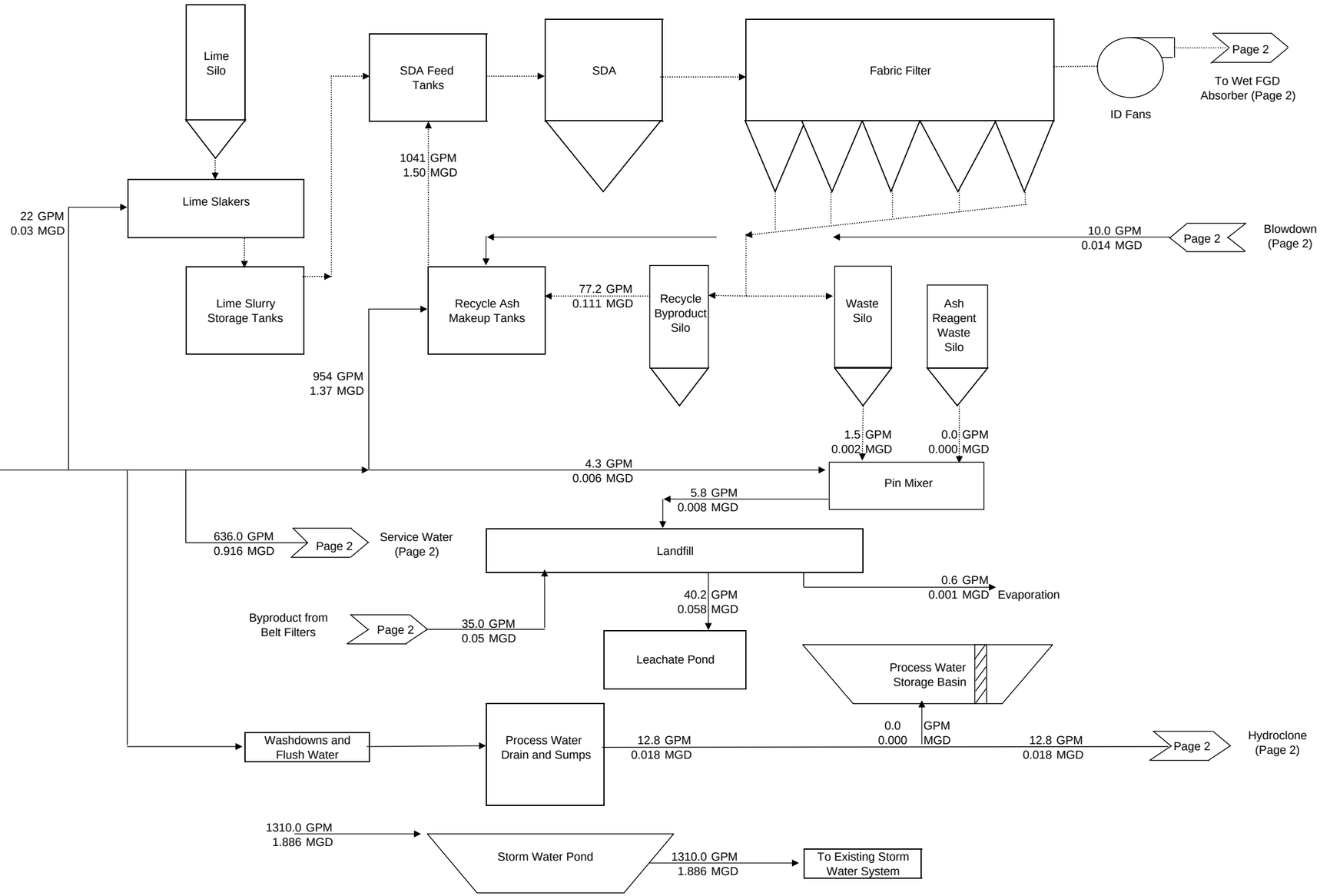


Notes

(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



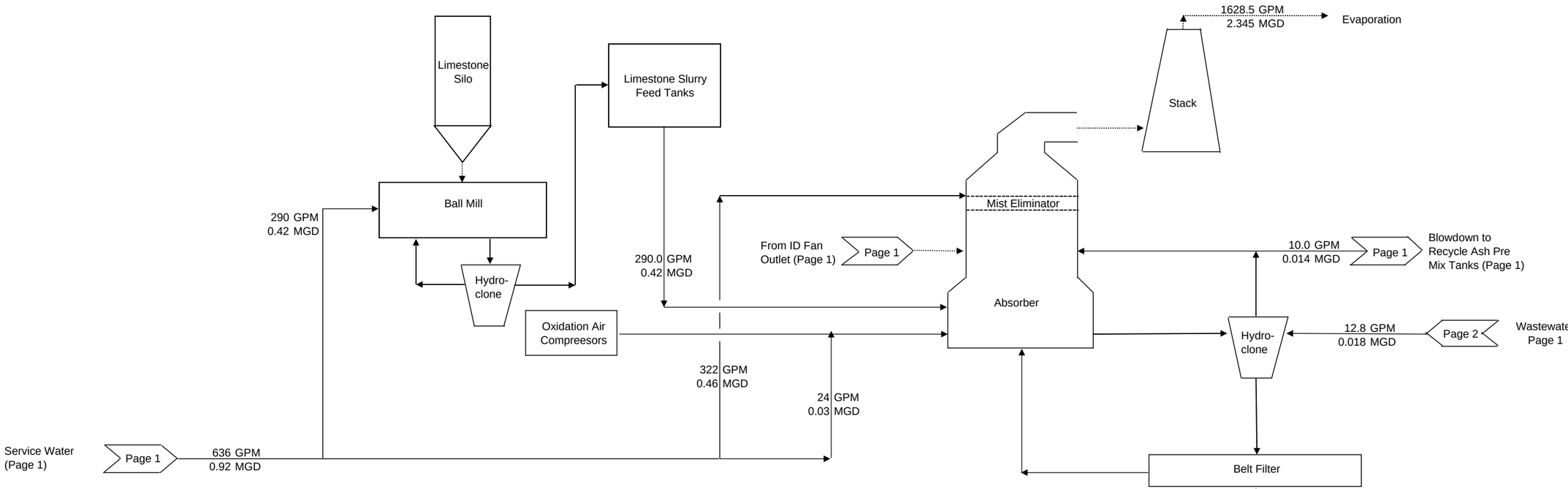
Average Service Water: 1629 GPM, 2.35 MGD

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

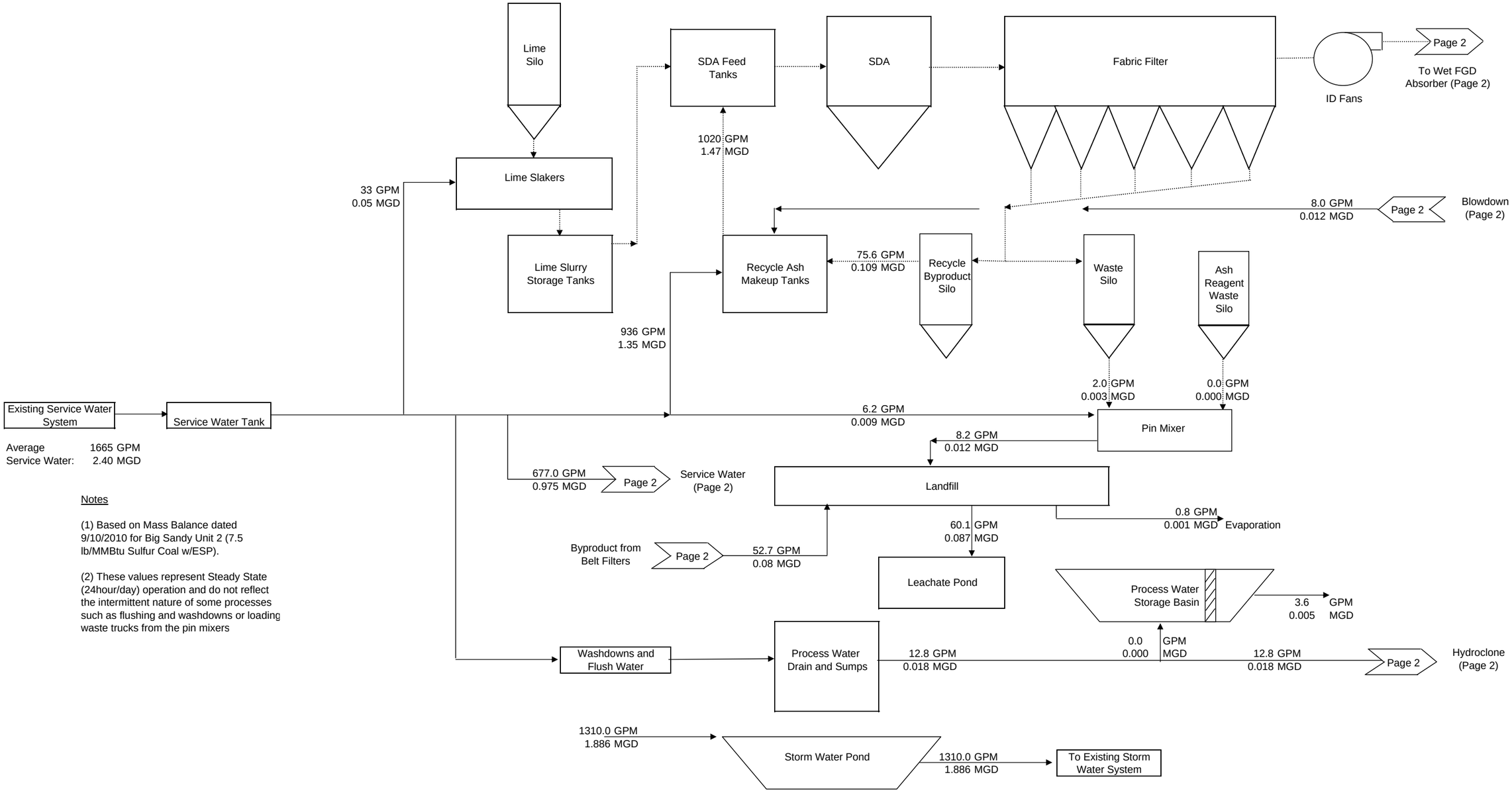


Notes

(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

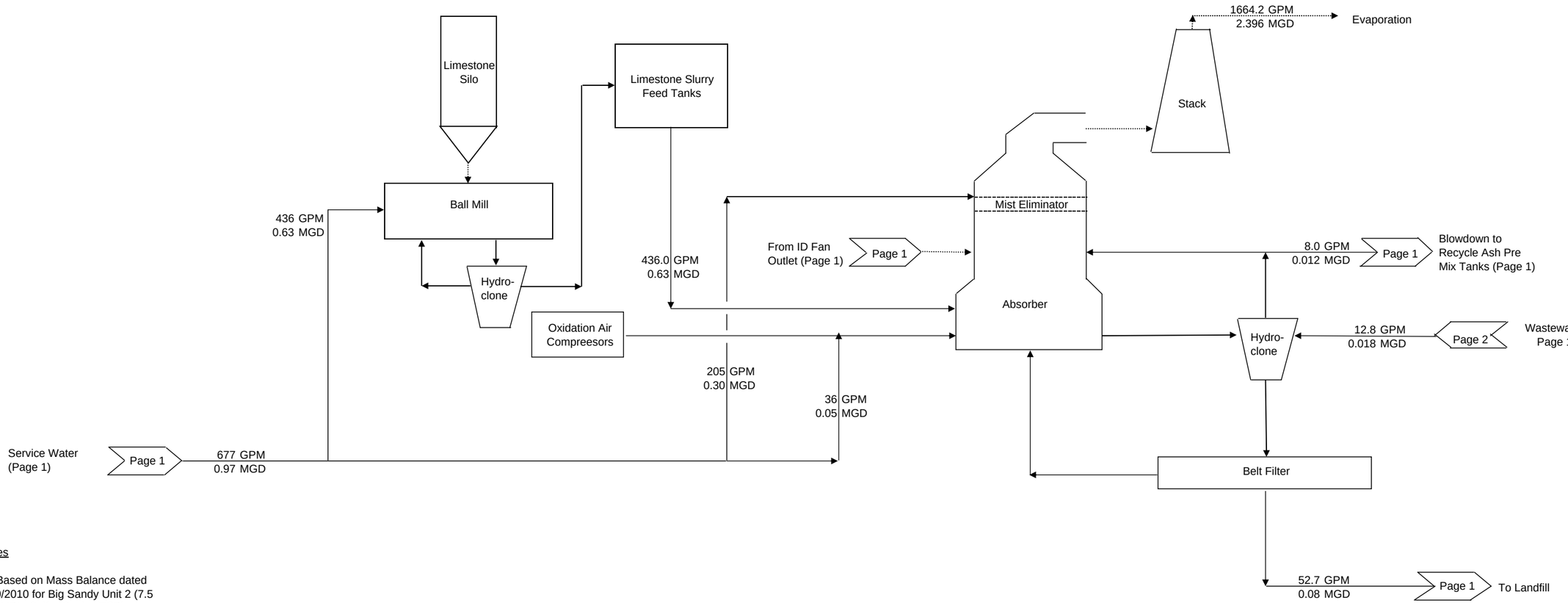


Notes

(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

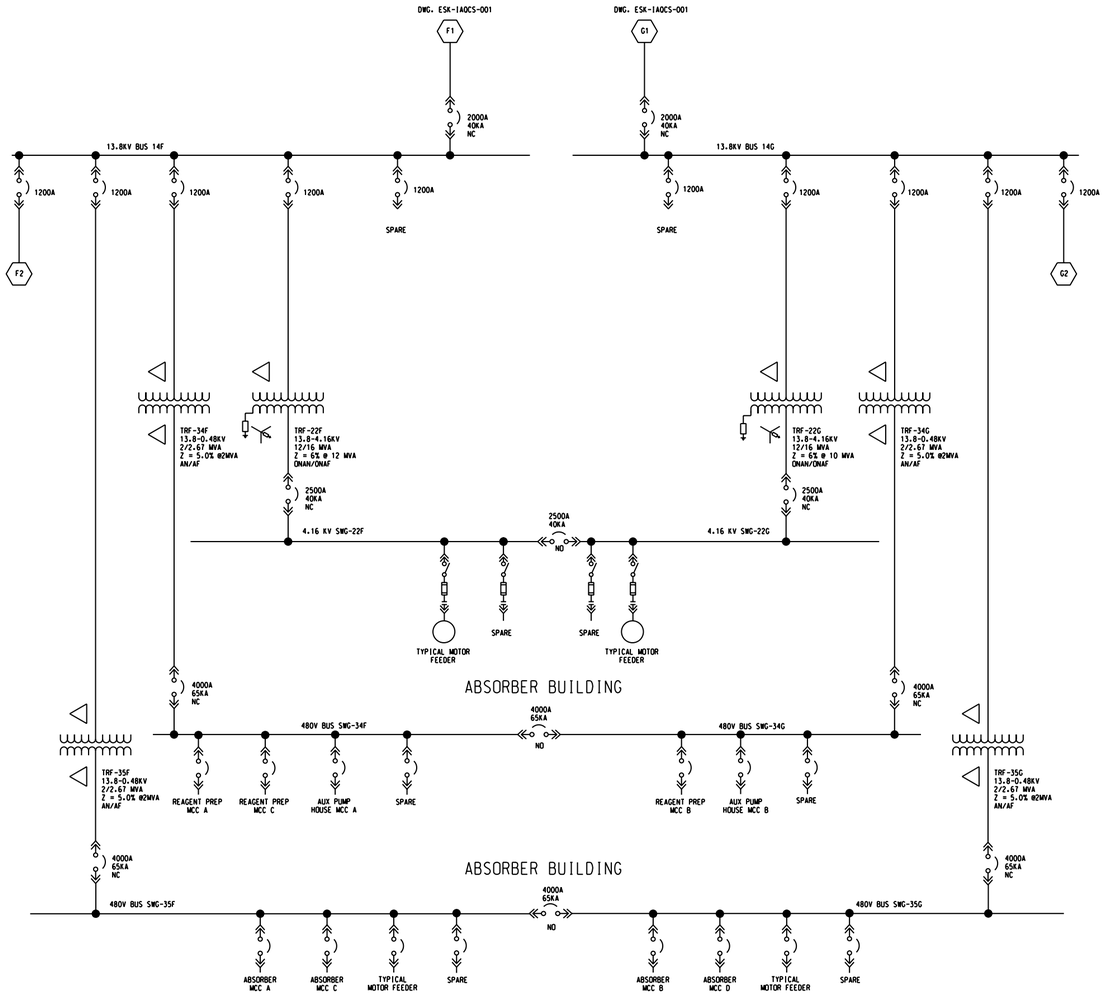
AEP AMERICAN ELECTRIC POWER

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

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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	

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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: -	

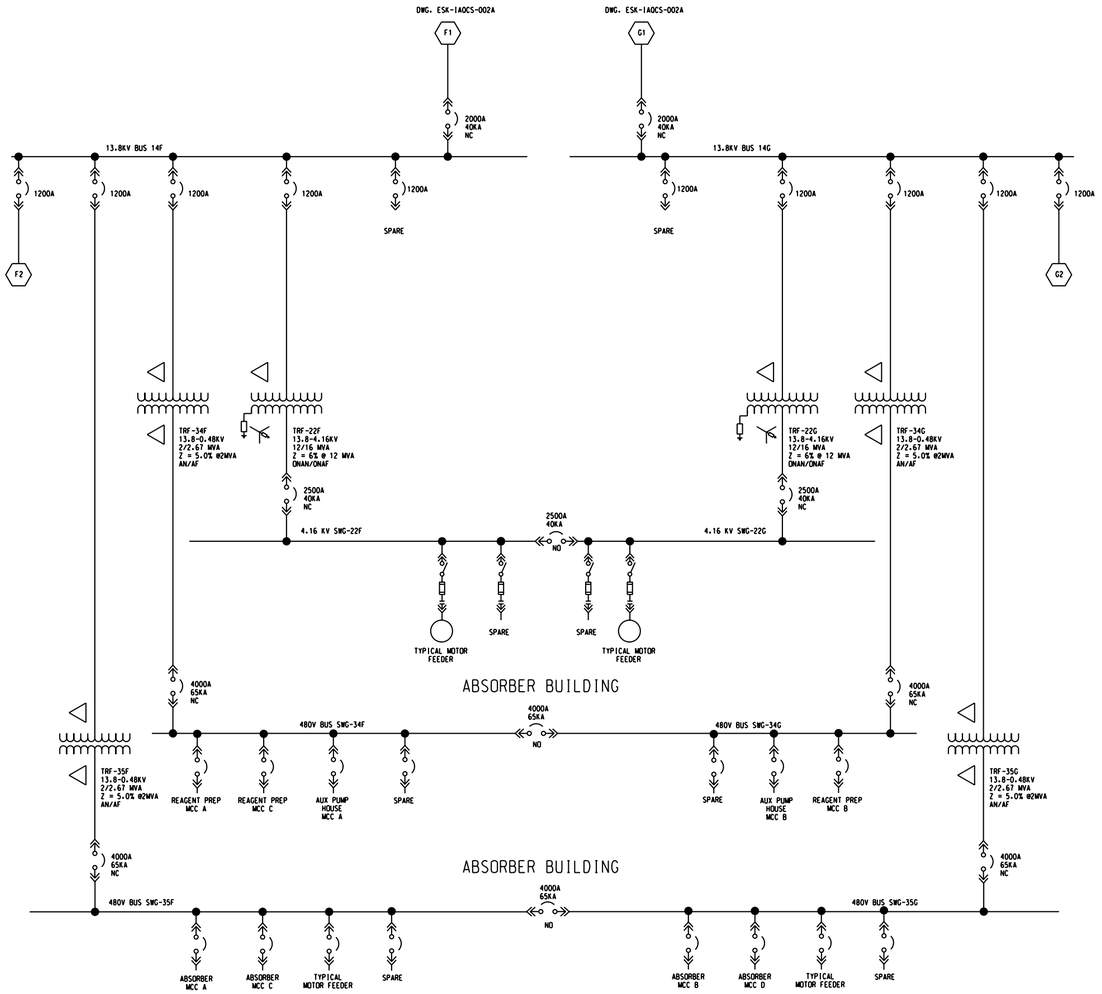
AMERICAN ELECTRIC POWER

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	

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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)

				AEP										Estimate No.:	30716B
				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS BASE (ESP)-1A - 4.5 LB/MM BTU - NON PHASED										Date:	9/12/2010
				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	80	TN		3,250.00	0	260,000	60.00	5,520	FLDU	107.96	595,900	855,900
1.6	DUCT SUPPORT STEEL	THREE COAT SHOP PAINT	EST	40	TN		2,900.00	0	116,000	24.00	1,104	STST	105.71	116,700	232,700
1.7	ID FAN INSULATION & LAGGING	TOTAL FOR TWO FANS. PRICING REFLECTS 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	8,100	SF		12.00	0	97,200	0.25	2,329	DINS	81.75	190,400	287,600
1.9	DUCT SUPPORT STEEL - FOUNDATIONS							0	30,400					54,700	85,100
	EXCAVATION / BACKFILL		EST	190	CY			0	0	0.15	33	EXFD	90.00	2,900	2,900
	REINFORCING		EST	11	TN		1,150.00	0	12,700	20.00	253	REIN	78.27	19,800	32,500
	FORMWORK		EST	620	SF		2.50	0	1,600	0.14	100	FORM	99.43	9,900	11,500
	CONCRETE		EST	120	CY		105.00	0	12,600	1.50	207	CONP	79.64	16,500	29,100
	MUD MAT		EST	19	CY		105.00	0	2,000	1.50	33	CONP	79.64	2,600	4,600
	EMBEDDED STEEL		EST	600	LB		2.50	0	1,500	0.06	41	CARP	71.88	3,000	4,500
1.10	ID FAN FOUNDATIONS INCLUDING ID FAN AUX EQUIPMENT							0	328,600					537,200	865,800
	EXCAVATION / BACKFILL		EST	1,600	CY			0	0	0.15	276	EXFD	90.00	24,800	24,800
	REINFORCING		EST	130	TN		1,150.00	0	149,500	20.00	2,990	REIN	78.27	234,000	383,500
	FORMWORK		EST	2,800	SF		2.50	0	7,000	0.14	451	FORM	99.43	44,800	51,800
	CONCRETE		EST	1,400	CY		105.00	0	147,000	1.50	2,415	CONP	79.64	192,300	339,300
	MUD MAT		EST	120	CY		105.00	0	12,600	1.50	207	CONP	79.64	16,500	29,100
	EMBEDDED STEEL		EST	5,000	LB		2.50	0	12,500	0.06	345	CARP	71.88	24,800	37,300

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1.11	ID FAN IAQCS CONTROL ROOM - FOUNDATIONS							0	270,100					491,200	761,300
	EXCAVATION / BACKFILL		EST	800	CY			0	0	0.15	138	EXFD	90.00	12,400	12,400
	REINFORCING		EST	100	TN		1,150.00	0	115,000	20.00	2,300	REIN	78.27	180,000	295,000
	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

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	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	10,378	WIRE	98.84	1,025,700	1,386,700
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			140,800	202,700
	EXCAVATION / BACKFILL		EST	1,000	CY			0	0	0.15	173	EXFD	90.00	15,500	15,500
	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
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							11,277,000	8,450,000		200,765			18,921,100	38,648,100

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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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						17,458		83.48	1,457,000	1,457,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						21,822			1,530,860	1,530,860
	PER DIEM	NONE		0.00	HR						240,045			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				42,250					94,606	136,856
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				422,500						422,500
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			563,850							563,850
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				422,500					946,055	1,368,555
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				1,267,500					2,838,165	4,105,665
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							563,900	2,154,800					6,866,700	9,585,300
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	ID FANS						11,840,900	10,604,800					25,787,800	48,233,400
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

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2.6	FABRIC FILTER - FOUNDATIONS							0	550,700					973,600	1,524,300
	EXCAVATION / BACKFILL		EST	4,945	CY			0	0	0.15	853	EXFD	90.00	76,800	76,800
	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													
2.90	LIGHT FIXTURE		EST	22	EA		750.00	0	16,500	4.00	101	WIRE	98.84	10,000	26,500
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							21,830,400	3,019,600		192,245			17,184,900	42,034,900
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						16,717		83.48	1,396,000	1,396,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						20,896			1,465,896	1,465,896
	PER DIEM	NONE		0.00	HR						229,858			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				15,098					85,925	101,023
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				150,980						150,980
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			1,091,520							1,091,520
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				150,980					859,245	1,010,225
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				452,940					2,577,735	3,030,675
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							1,091,500	770,000					6,384,800	8,246,300
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FABRIC FILTERS						22,921,900	3,789,600					23,569,700	50,281,200
3.0	NEW STACK														
3.1	CONCRETE STACK (WET)	PROVIDED BY AEP						780,000	15,000,000					15,700,000	31,480,000
4.0	LIME HANDLING SYSTEM														
4.1	LIME STORAGE SILO							1,020,000	0					0	1,020,000

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		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
	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	2800.00	3,220	MECH	88.89	286,200	636,200
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					42,600	65,200
	EXCAVATION / BACKFILL		EST	300	CY			0	0	0.15	52	EXFD	90.00	4,700	4,700
	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					132,200	212,800
	EXCAVATION / BACKFILL		EST	340	CY			0	0	0.15	59	EXFD	90.00	5,300	5,300
	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					132,900	208,000
	EXCAVATION / BACKFILL		EST	790	CY			0	0	0.15	136	EXFD	90.00	12,300	12,300

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	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					20,300	31,000
	EXCAVATION / BACKFILL		EST	95	CY			0	0	0.15	16	EXFD	90.00	1,500	1,500
	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					208,200	302,400
	EXCAVATION / BACKFILL		EST	1,360	CY			0	0	0.15	235	EXFD	90.00	21,100	21,100
	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
	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

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	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	16,200	LF		6.13	0	99,300	0.23	4,285	WIRE	98.84	423,500	522,800
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	18,000	LF		3.20	0	57,600	0.08	1,635	WIRE	98.84	161,600	219,200
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					10,300	15,600
	EXCAVATION / BACKFILL		EST	75	CY			0	0	0.15	13	EXFD	90.00	1,200	1,200
	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	FIREWALL FOR TRANSFORMERS							0	0					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
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							2,227,600	2,294,700		50,198			4,811,000	9,333,300
	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										

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	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						4,365		83.48	364,000	364,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						5,456			382,764	382,764
	PER DIEM	NONE		0.00	HR						60,019			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				11,474					24,055	35,529
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				114,735						114,735
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			111,380							111,380
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				114,735					240,550	355,285
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				344,205					721,650	1,065,855
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							111,400	585,100					1,733,000	2,429,500
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME HANDLING SYSTEM						2,339,000	2,879,800					6,544,000	11,762,800
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
	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					278,300	444,700
	EXCAVATION / BACKFILL		EST	969	CY			0	0	0.15	167	EXFD	90.00	15,000	15,000
	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					194,200	313,400
	EXCAVATION / BACKFILL		EST	450	CY			0	0	0.15	78	EXFD	90.00	7,000	7,000

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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
	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		50,035			4,422,100	8,483,700
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						4,351		83.48	363,000	363,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						5,439			381,525	381,525
	PER DIEM	NONE		0.00	HR						59,825			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				6,002					22,111	28,112
	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
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				60,015					221,105	281,120
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				180,045					663,315	843,360
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							143,100	306,100					1,651,100	2,100,200
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME SLAKER BUILDING						3,004,400	1,506,400					6,073,200	10,583,900
6.0	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS														0

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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 BYPRODUCT SILO	INCLUDED WITH OEM EQUIPMENT													
6.8	FLY ASH SILO	4T STEEL -STORAGE SILO, 10' DIA X 10' H						45,000	14,500					55,600	115,100
	SILO BIN	PIN MIXERS INCLUDED WITH FLY ASH HANDLING 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	5	TN		2,900.00	0	14,500	24.00	138	STST	105.71	14,600	29,100
6.9	BYPRODUCT WASTE SILO - FOUNDATIONS							0	23,200					45,800	69,000

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	EXCAVATION / BACKFILL		EST	380	CY			0	0	0.15	66	EXFD	90.00	5,900	5,900
	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	4,300					10,200	14,500
	EXCAVATION / BACKFILL		EST	115	CY			0	0	0.15	20	EXFD	90.00	1,800	1,800
	REINFORCING		EST	1.0	TN		1,150.00	0	1,200	20.00	23	REIN	78.27	1,800	3,000
	FORMWORK		EST	135	SF		2.50	0	300	0.14	22	FORM	99.43	2,200	2,500
	CONCRETE		EST	15	CY		105.00	0	1,600	1.50	26	CONP	79.64	2,100	3,700
	MUD MAT		EST	1	CY		105.00	0	100	1.50	2	CONP	79.64	100	200
	EMBEDDED STEEL		EST	450	LB		2.50	0	1,100	0.06	31	CARP	71.88	2,200	3,300
6.11	FLY ASH BLOWER AND ELECTRICAL BUILDING - FOUNDATIONS							0	49,600					93,200	142,800
	EXCAVATION / BACKFILL		EST	578	CY			0	0	0.15	100	EXFD	90.00	9,000	9,000
	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						75,000	276,500					24,400	375,900
	PREENGINEERED BUILDING INCLUDING H&V AND LIGHTING	SUBCONTRACT PRICE, INCLUDES LABOR	EST	2,700	SF		95	0	256,500	0.00	0	STST	105.71	0	256,500
	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
6.13	RECYCLE ASH BUILDING - FOUNDATIONS							0	234,300					373,100	607,400
	EXCAVATION / BACKFILL		EST	950	CY			0	0	0.15	164	EXFD	90.00	14,700	14,700
	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

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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
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	MEDIUM VOLTAGE POWER CABLE & TERMINATION	1/C # 350KCMIL-5KV	EST	4,200	LF		6.13	0	25,700	0.23	1,111	WIRE	98.84	109,800	135,500
6.21	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
6.22	CONTROL & INSTRUMENT CABLE		EST	17,000	LF		3.20	0	54,400	0.23	4,497	WIRE	98.84	444400	498,800
6.23	DUCT BANK							0	109,700					268,900	378,600
	DUCT BANK WITH 8-5" & 8-3" CONDUITS		EST	125	LF		398.82	0	49,900	7.51	1,080	FORM	99.43	107,400	157,300
	DUCT BANK WITH 6-5" & 6-3" CONDUITS		EST	125	LF		265.88	0	33,200	6.01	864	FORM	99.43	85,900	119,100
	DUCT BANK WITH 2-5" & 2-3" CONDUITS		EST	200	LF		132.94	0	26,600	3.31	760	FORM	99.43	75,600	102,200
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							4,695,400	2,574,200		71,596			6,487,900	13,757,500
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						6,226		83.48	520,000	520,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						7,782			545,931	545,931
	PER DIEM	NONE		0.00	HR						85,604			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				12,871					32,440	45,311
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				128,710						128,710
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			234,770							234,770
	SALES TAX - NOT INCLUDED														0

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	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				128,710					324,395	453,105
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				386,130					973,185	1,359,315
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							234,800	656,400					2,396,000	3,287,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS						4,930,200	3,230,600					8,883,900	17,044,600
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

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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					15,736,600	21,911,600
	SPRAY DRYER INLET	INCLUDES INTERNAL BRACING AND TURNING VANES	EST	1,900	TN		3,250.00	0	6,175,000	60.00	131,100	FLDU	107.96	14,153,600	20,328,600
	SPRAY DRYER OUTLET TO FABRIC FILTER INLET	INSTALLATION ONLY - MATERIAL INCLUDED WITH OEM EQUIPMENT	EST	213	TN			0	0	60.00	14,663	FLDU	107.96	1,583,000	1,583,000
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					2,975,600	4,654,200
	EXCAVATION / BACKFILL		EST	16,000	CY			0	0	0.15	2,760	EXFD	90.00	248,400	248,400
	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					126,000	195,000
	EXCAVATION / BACKFILL		EST	784	CY			0	0	0.15	135	EXFD	90.00	12,200	12,200
	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													
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							42,006,800	14,956,800		574,559			53,920,100	110,883,700
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														

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	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						49,962		83.48	4,171,000	4,171,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						63,942			4,485,647	4,485,647
	PER DIEM	NONE		0.00	HR						703,367			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				74,784					269,601	344,385
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				747,840						747,840
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			2,100,340							2,100,340
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				747,840					2,696,005	3,443,845
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				2,243,520					8,088,015	10,331,535
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							2,910,300	3,814,000					21,233,800	27,958,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SPRAY DRYER ABSORBER ISLAND						44,917,100	18,770,800					75,153,900	138,841,800
8.0	ACTIVATED CARBON INJECTION SYSTEM														0
8.1	ACI MECHANICAL EQUIPMENT:		EST	1	LT	2805900		2,805,900	0	8690.00	9,994	MECH	88.89	888,300	3,694,200
	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
	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

				AEP										Estimate No.:	30716B
				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS BASE (ESP)-1A - 4.5 LB/MM BTU - NON PHASED										Date:	9/12/2010
				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
	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					79,200	120,700
	EXCAVATION / BACKFILL		EST	404	CY			0	0	0.15	70	EXFD	90.00	6,300	6,300
	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	84,600					276,700	361,300
	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
	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		1.46	0	4,400	0.08	273	WIRE	98.84	26900	31,300
	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	FORM	99.43	55600	84,200
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

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90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							2,929,000	321,300		18,831			1,726,800	4,977,100
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						1,637		83.48	137,000	137,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						2,047			143,591	143,591
	PER DIEM	NONE		0.00	HR						22,516			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				1,607					8,634	10,241
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				16,065						16,065
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			146,450							146,450
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				16,065					86,340	102,405
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				48,195					259,020	307,215
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							146,500	81,900					634,600	863,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	ACTIVATED CARBON INJECTION SYSTEM						3,075,500	403,200					2,361,400	5,840,100
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
	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

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	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					174,000	270,100
	EXCAVATION / BACKFILL		EST	950	CY			0	0	0.15	164	EXFD	90.00	14,700	14,700
	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	FORM	99.43	56,700	76,600
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							1,390,600	1,359,100		27,898			2,588,700	5,338,400
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						2,426		83.48	203,000	203,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						3,032			212,726	212,726
	PER DIEM	NONE		0.00	HR						33,356			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				6,796					12,944	19,739
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				67,955						67,955
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			69,530							69,530
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				67,955					129,435	197,390
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				203,865					388,305	592,170
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							69,500	346,600					946,400	1,362,500
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	COMPRESSED AIR SYSTEM						1,460,100	1,705,700					3,535,100	6,700,900
10.0	SERVICE WATER SYSTEM														
10.1	PUMPS							260,000	0					110,500	370,500

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	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	0.15	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
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														

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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
	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	%						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
	SALES TAX - NOT INCLUDED														0
	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					736,800	1,094,300
	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	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	TOTAL FOR TWO TANKS						0	10,100					17,700	27,800
	EXCAVATION / BACKFILL		EST	40	CY			0	0	0.15	7	EXFD	90.00	600	600
	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
11.5	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE ARE INCLUDED IN SECTION 1.0 - ID FANS													

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90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							129,500	258,000		8,087			755,200	1,142,700
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						703		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	%						879			61,668	61,668
	PER DIEM	NONE		0.00	HR						9,670			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				1,290					3,776	5,066
	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
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				12,900					37,760	50,660
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				38,700					113,280	151,980
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							6,500	65,800					275,500	347,700
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	POTABLE WATER SYSTEM						136,000	323,800					1,030,700	1,490,400
12.0	FGD SUBSTATION														
12.1	TRANSFORMERS							1,560,500	0					273,100	1,833,600
	FGD SUBSTATION-AUX TRANSFORMERS: 11A & 11B	138KV-13.8KV- 2 WINDING XFMR	EST	2	EA	695250		1,390,500	0	1200.00	2,760	EHEA	79.16	218,500	1,609,000
	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					131,700	204,900
	EXCAVATION / BACKFILL		EST	700	CY			0	0	0.15	121	EXFD	90.00	10,900	10,900
	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							714,200	0					121,600	835,800
	13.8 KV MEDIUM VOLTAGE (11A/B)	PRICE PER SECTION	EST	8	EA	50000		400,000	0	40.00	368	EHEA	79.16	29,100	429,100
	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	4	EA	30000		120,000	0	16.00	74	WIRE	98.84	7,300	127,300

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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
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	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

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	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					183,600	253,800
	EXCAVATION / BACKFILL		EST	1,000	CY			0	0	0.15	173	EXFD	90.00	15,500	15,500
	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
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							3,342,400	924,500		44,084			4,212,100	8,479,000
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						3,833		83.48	320,000	320,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						4,792			336,144	336,144
	PER DIEM	NONE		0.00	HR						52,709			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				4,623					21,061	25,683
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				46,225						46,225
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			167,120							167,120
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				46,225					210,605	256,830
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				138,675					631,815	770,490
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							167,100	235,700					1,519,624	1,922,500
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FGD SUBSTATION						3,509,500	1,160,200					5,731,700	10,401,500
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														

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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
	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	%						3,733		83.48	312,000	312,000
	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
	SALES TAX - NOT INCLUDED														0
	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
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	CEM SYSTEM													
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	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

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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						0	33,200					67,700	100,900
	EXCAVATION / BACKFILL		EST	170	CY			0	0	0.15	29	EXFD	90.00	2,600	2,600
	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
	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		23,607			2,080,400	4,337,100
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						2,053		83.48	171,000	171,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						2,566			180,008	180,008
	PER DIEM	NONE		0.00	HR						28,226			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				10,221					10,402	20,623
	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
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				102,210					104,020	206,230
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				306,630					312,060	618,690
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							10,600	521,300					777,500	1,309,400
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	TRUCK & RAIL INFRASTRUCTURE						223,100	2,565,500					2,857,900	5,646,500
16.0	SITE IMPROVEMENTS - CIVIL WORK (DFGD + WFGD AREAS)														
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

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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	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
	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					262,700	407,000
	EXCAVATION / BACKFILL		EST	1,100	CY			0	0	0.15	190	EXFD	90.00	17,100	17,100
	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	41,900					70,400	112,300
	EXCAVATION / BACKFILL		EST	192	CY			0	0	0.15	33	EXFD	90.00	3,000	3,000
	REINFORCING		EST	16	TN		1,150.00	0	18,400	20.00	368	REIN	78.27	28,800	47,200
	FORMWORK		EST	510	SF		2.50	0	1,300	0.14	82	FORM	99.43	8,200	9,500
	CONCRETE		EST	167	CY		105.00	0	17,500	1.50	288	CONP	79.64	22,900	40,400
	MUD MAT		EST	25	CY		105.00	0	2,600	1.50	43	CONP	79.64	3,400	6,000
	EMBEDDED STEEL		EST	835	LB		2.50	0	2,100	0.06	58	CARP	71.88	4,100	6,200
16.6	TRUCK WASH AREA - ENCLOSURE							0	67,400					95,300	162,700
	TRUCK WASH AREA - STEEL		EST	10	TN		2,650.00	0	26,500	24.00	276	STST	105.71	29,200	55,700
	TRUCK WASH AREA - SIDNG	20' X 40' X 2O'H	EST	2,400	SF		12.00	0	28,800	0.11	304	SDNG	93.41	28,400	57,200
	TRUCK WASH AREA - LIGHTING	ALLOWANCE	EST	2,400	SF		2.50	0	6,000	0.05	138	WIRE	98.84	13,600	19,600
	TRUCK WASH AREA - DRAINAGE	10" HDPE (UNDERGROUND)	EST	200	LF		26.4	0	5,300	0.98	225	MECH	88.89	20,000	25,300

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	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
16.7	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
16.8	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
16.9	PROCESS WATER STORAGE BASIN PUMP STRUCTURE - CONCRETE							0	47,000					105,400	152,400
	EXCAVATION / BACKFILL		EST	0	CY			0	0	0.15	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
16.10	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
16.11	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
16.12	STORM WATER POND PUMP STRUCTURE - CONCRETE							90,000	42,300					182,200	314,500
	EXCAVATION / BACKFILL		EST	0	CY			0	0	0.15	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
16.13	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
16.14	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
16.15	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

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	PIPING	4" HDPE (UNDERGROUND)	EST	1,500	LF		3.4	0	5,100	0.46	794	YDPP	90.14	71,500	76,600
16.16	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
16.17	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
16.18	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
16.19	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
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							577,500	4,573,300		76,955			7,627,500	12,778,300
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						6,692		83.48	559,000	559,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						8,365			586,791	586,791
	PER DIEM	NONE		0.00	HR						92,011			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				22,867					38,138	61,004
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				228,665						228,665
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			28,875							28,875
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				228,665					381,375	610,040
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				685,995					1,144,125	1,830,120
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							28,900	1,166,200					2,709,400	3,904,500
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SITE IMPROVEMENTS - CIVIL WORK (DFGD + WFGD AREAS)						606,400	5,739,500					10,336,900	16,682,800
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

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	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	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							9,600	3,400		0			26,400	39,400
	LARGE BORE PIPING	2.5" CS, SCHEDULE 40, WELDED		250	LF		10.8	0	2,700	0.64	183	SPNG	94.41	17,300	20,000
	VALVE	2.5" GLOBE, 150 #, CS, WELDED	EST	10	EA	955		9,600	0	4.70	54	SPNG	94.41	5,100	14,700
	PIPE SUPPORTS			26	EA		25	0	700	1.50	45	MECH	88.89	4,000	4,700
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			1,330,800	1,872,800
	EXCAVATION / BACKFILL		EST	13,000	CY			0	0	0.15	2,243	EXFD	90.00	201,800	201,800
	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

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	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			45,500	61,500
	EXCAVATION / BACKFILL		EST	148	CY			0	0	0.15	26	EXFD	90.00	2,300	2,300
	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			28,200	43,600
	EXCAVATION / BACKFILL		EST	106	CY			0	0	0.15	18	EXFD	90.00	1,600	1,600
	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
17.8	LIMESTONE TRANSFER CONVEYOR - FOUNDATIONS							0	62,000		0			116,600	178,600
	EXCAVATION / BACKFILL		EST	421	CY			0	0	0.15	73	EXFD	90.00	6,500	6,500
	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			1,330,800	1,872,800
	EXCAVATION / BACKFILL		EST	13,000	CY			0	0	0.15	2,243	EXFD	90.00	201,800	201,800
	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			42,000	66,100
	EXCAVATION / BACKFILL		EST	129	CY			0	0	0.15	22	EXFD	90.00	2,000	2,000
	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			30,100	46,900
	EXCAVATION / BACKFILL		EST	99	CY			0	0	0.15	17	EXFD	90.00	1,500	1,500
	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

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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
	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

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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
											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	FORM	99.43	240500	267,100
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							6,413,600	3,570,500		130,667			12,066,600	22,050,700
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						11,362		92.35	1,049,000	1,049,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						14,203			1,102,174	1,102,174
	PER DIEM	NONE		0.00	HR						156,232			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				17,853					60,333	78,186
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				178,525						178,525
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			320,680							320,680
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				178,525					603,330	781,855
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				535,575					1,809,990	2,345,565
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							320,700	910,500					4,624,800	5,856,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIMESTONE HANDLING SYSTEM						6,734,300	4,481,000					16,691,400	27,906,700
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	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

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	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
18.3	LIMESTONE SLURRY TANKS - FOUNDATIONS							0	166,400					278,300	444,700
	EXCAVATION / BACKFILL		EST	969	CY			0	0	0.15	167	EXFD	90.00	15,000	15,000
	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
18.4	REAGENT PREPARATION BUILDING - FOUNDATIONS							0	682,000					1,072,100	1,754,100
	EXCAVATION / BACKFILL		EST	2,767	CY			0	0	0.15	477	EXFD	90.00	43,000	43,000
	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
18.5	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
18.6	PIPE SUPPORT PAD - REAGENT PREP BUILDING							0	13,800					25,100	38,900
	EXCAVATION / BACKFILL		EST	110	CY			0	0	0.15	19	EXFD	90.00	1,700	1,700
	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
18.7	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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18.8	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
18.9	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE ARE INCLUDED IN SECTION 20.0 - ABSORBER ISLAND													
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							15,772,400	6,067,200		207,250			18,599,100	40,438,700
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						18,022		89.74	1,617,000	1,617,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						22,527			1,698,858	1,698,858
	PER DIEM	NONE		0.00	HR						247,799			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				30,336					92,996	123,332
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				303,360						303,360
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			788,620							788,620
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				303,360					929,955	1,233,315
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				910,080					2,789,865	3,699,945
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							788,600	1,547,100					7,128,700	9,464,400
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	REAGENT (LIMESTONE) PREPARATION ISLAND						16,561,000	7,614,300					25,727,800	49,903,100
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

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	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					47,600	73,600
	EXCAVATION / BACKFILL		EST	295	CY			0	0	0.15	51	EXFD	90.00	4,600	4,600
	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					163,900	263,900
	EXCAVATION / BACKFILL		EST	614	CY			0	0	0.15	106	EXFD	90.00	9,500	9,500
	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					141,700	222,600
	EXCAVATION / BACKFILL		EST	614	CY			0	0	0.15	106	EXFD	90.00	9,500	9,500
	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					47,600	73,600
	EXCAVATION / BACKFILL		EST	295	CY			0	0	0.15	51	EXFD	90.00	4,600	4,600
	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					577,200	917,400
	EXCAVATION / BACKFILL		EST	1,915	CY			0	0	0.15	330	EXFD	90.00	29,700	29,700

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	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					31,700	47,800
	EXCAVATION / BACKFILL		EST	140	CY			0	0	0.15	24	EXFD	90.00	2,200	2,200
	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					1,364,300	2,256,000
	EXCAVATION / BACKFILL		EST	2,900	CY			0	0	0.15	500	EXFD	90.00	45,000	45,000
	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					125,100	185,900
	EXCAVATION / BACKFILL		EST	1,120	CY			0	0	0.15	193	EXFD	90.00	17,400	17,400
	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					224,400	361,700
	EXCAVATION / BACKFILL		EST	489	CY			0	0	0.15	84	EXFD	90.00	7,600	7,600
	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					456,200	747,600
	EXCAVATION / BACKFILL		EST	1,220	CY			0	0	0.15	210	EXFD	90.00	18,900	18,900
	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

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	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					34,000	52,300
	EXCAVATION / BACKFILL		EST	92	CY			0	0	0.15	16	EXFD	90.00	1,400	1,400
	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					56,300	88,600
	EXCAVATION / BACKFILL		EST	210	CY			0	0	0.15	36	EXFD	90.00	3,300	3,300
	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

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	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	0.15	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	6,300					10,300	16,600
	SILT FENCE		EST	1,300	LF		1.0	0	1,300	0.02	30	LAND	61.45	1,800	3,100
	ROCK CHECK DAMS		EST	10	EA		500.0	0	5,000	12.00	138	LAND	61.45	8,500	13,500
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

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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
	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	0.15	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
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

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	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
	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

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		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
	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					183,600	253,800
	EXCAVATION / BACKFILL		EST	1,000	CY			0	0	0.15	173	EXFD	90.00	15,500	15,500
	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
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							12,728,800	16,074,800		350,775			31,462,800	60,266,400
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						30,502		89.70	2,736,000	2,736,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						38,128			2,873,840	2,873,840
	PER DIEM	NONE		0.00	HR						419,404			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				80,374					157,314	237,688
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				803,740						803,740
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			636,440							636,440
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				803,740					1,573,140	2,376,880

				AEP										Estimate No.:	30716B
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				FGD PROJECT - IAQCS BASE (ESP)-1A - 4.5 LB/MM BTU - NON PHASED										Date:	9/12/2010
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	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				2,411,220					4,719,420	7,130,640
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							636,400	4,099,100					12,059,700	16,795,200
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)						13,365,200	20,173,900					43,522,500	77,061,600
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	LABOR COST REFLECTS DIFFICULTY FACTOR WORKING WITH C276 VS. A2205	EST	49,800	SF		300.00	0	14,940,000	1.50	85,905	MECH	88.89	7,636,100	22,576,100
20.3	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
20.4	PIPING - MECHANICAL	ALL PIPING INCLUDED IN OEM EQUIPMENT COST. NO BOP PIPING						0	0					0	0
20.5	ABSORBER VESSEL - FOUNDATIONS							0	366,900					609,400	976,300
	EXCAVATION / BACKFILL		EST	2,921	CY			0	0	0.15	504	EXFD	90.00	45,300	45,300
	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
20.6	ABSORBER BUILDING - FOUNDATIONS							0	579,500					908,200	1,487,700
	EXCAVATION / BACKFILL		EST	2,440	CY			0	0	0.15	421	EXFD	90.00	37,900	37,900
	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
20.7	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

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	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
20.8	PIPE SUPPORT PAD - ABSORBER BUILDING							0	7,700					14,100	21,800
	EXCAVATION / BACKFILL		EST	95	CY			0	0	0.15	16	EXFD	90.00	1,500	1,500
	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
20.9	OXIDATION AIR BLOWER BUILDING - FOUNDATIONS							0	37,000					63,200	100,200
	EXCAVATION / BACKFILL		EST	188	CY			0	0	0.15	32	EXFD	90.00	2,900	2,900
	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
20.10	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
20.11	PIPE SUPPORT PAD - OXIDATION BUILDING							0	7,700					13,100	20,800
	EXCAVATION / BACKFILL		EST	30	CY			0	0	0.15	5	EXFD	90.00	500	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
20.12	DUCTWORK	INCLUDES INTERNAL BRACING AND TURNING VANES	EST	115	TN		3,250.00	0	373,800	60.00	7,935	FLDU	107.96	856,700	1,230,500

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20.13	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
20.14	DUCTWORK INSULATION & LAGGING		EST	11,000	SF		12.00	0	132,000	0.25	3,163	DINS	81.75	258,500	390,500
20.15	FOUNDATIONS FOR DUCT SUPPORT STEEL							0	17,700					32,100	49,800
	EXCAVATION / BACKFILL		EST	144	CY			0	0	0.15	25	EXFD	90.00	2,200	2,200
	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
20.16	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
20.17	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
20.18	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
20.19	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
20.20	MIMIC PANELS		EST	2	EA	17500		35,000	0	40.00	80	WIRE	98.84	7,900	42,900
20.21	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
20.22	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

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	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
20.23	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
20.24	RACEWAY, CABLE TRAY, & CONDUIT							0	1,388,600					5,513,200	6,901,800
	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	8,400	LF		31.00	0	260,400	0.81	6,779	WIRE	98.84	670000	930,400
	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,050	LF		21.50	0	22,600	0.65	677	WIRE	98.84	66900	89,500
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	13,300	LF		9.25	0	123,000	0.35	4,682	WIRE	98.84	462700	585,700
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	16,900	LF		7.15	0	120,800	0.28	4,800	WIRE	98.84	474400	595,200
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	29,200	LF		4.44	0	129,600	0.24	6,979	WIRE	98.84	689800	819,400
	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	FORM	99.43	148200	224,600
20.25	HIGH VOLTAGE POWER CABLE & TERMINATION							0	41,700					117,600	159,300
	1/C # 500KCMIL-15KV		EST	4,500	LF		9.27	0	41,700	0.23	1,190	WIRE	98.84	117600	159,300
20.26	MEDIUM VOLTAGE POWER CABLE & TERMINATION							0	92,100		0			302,400	394,500
	1/C # 500KCMIL-5KV		EST	6,600	LF		8.08	0	53,300	0.17	1,313	WIRE	98.84	129800	183,100
	1/C # 350KCMIL-5KV		EST	5,400	LF		6.13	0	33,100	0.23	1,428	WIRE	98.84	141200	174,300
	1/C # 250KCMIL-5KV		EST	1,200	LF		4.74	0	5,700	0.23	317	WIRE	98.84	31400	37,100
20.27	LOW VOLTAGE POWER CABLE & TERMINATION							0	566,000					810,600	1,376,600
	3/C # 500KCMIL- 600V		EST	2,320	LF		26.12	0	60,600	0.69	1,841	WIRE	98.84	182000	242,600
	#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
20.28	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
20.29	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

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	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
20.30	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
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							45,262,300	22,318,800		723,359			65,226,500	132,807,600
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						63,549		90.17	5,730,000	5,730,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						79,436			6,019,224	6,019,224
	PER DIEM	NONE		0.00	HR						873,796			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				111,594					326,133	437,727
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				1,115,940						1,115,940
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			2,263,115							2,263,115
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				1,115,940					3,261,325	4,377,265
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				3,347,820					9,783,975	13,131,795
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							2,938,100	5,691,300					25,783,100	34,412,500
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	WET FGD ABSORBER ISLAND						48,200,400	28,010,100					91,009,600	167,220,100
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

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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										
	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
	SALES TAX - NOT INCLUDED														0
	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													
23.0	FGD SUBSTATION														
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
	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					121,300	184,800
	EXCAVATION / BACKFILL		EST	600	CY			0	0	0.15	104	EXFD	90.00	9,300	9,300
	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

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90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							1,376,000	223,700		9,112			727,200	2,326,900
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						792		79.81	63,000	63,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						990			66,423	66,423
	PER DIEM	NONE		0.00	HR						10,894			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				1,119					3,636	4,755
	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
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				11,185					36,360	47,545
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				33,555					109,080	142,635
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							68,800	57,000					278,499	404,300
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FGD SUBSTATION						1,444,800	280,700					1,005,700	2,731,200
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														
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					56,900	88,900

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	EXCAVATION / BACKFILL		EST	125	CY			0	0	0.15	22	EXFD	90.00	1,900	1,900
	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		50,966			4,287,900	6,919,900
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						4,432		84.13	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	%						5,540			391,661	391,661
	PER DIEM	NONE		0.00	HR						60,938			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				11,210					21,440	32,650
	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
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				112,100					214,395	326,495
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				336,300					643,185	979,485
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							19,500	571,710					1,643,680	2,234,890
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BOP ITEMS						409,500	2,813,700					5,931,600	9,154,800
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	EROSION & SEDIMENT CONTROL							0	30,600					48,900	79,500
	SILT FENCE		EST	10,600	LF		1.0	0	10,600	0.02	244	LAND	61.45	15,000	25,600
	ROCK CHECK DAMS		EST	40	EA		500.0	0	20,000	12.00	552	LAND	61.45	33,900	53,900

				AEP										Estimate No.:	30716B
				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS BASE (ESP)-1A - 4.5 LB/MM BTU - NON PHASED										Date:	9/12/2010
				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
27.5	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
27.6	OUTAGE TIE-IN DUCTWORK	ALLOWANCE FOR 85 TON DUCTWORK	ALLOW	85	TN		3250	0	276,300	70.00	6,843	FLDU	107.96	738,700	1,015,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							500,000	509,600		14,582			1,451,200	2,460,800
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						1,268		83.48	106,000	106,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						1,585			111,193	111,193
	PER DIEM	NONE		0.00	HR						17,435			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				2,548					7,256	9,804
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				25,480						25,480
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			25,000							25,000
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				25,480					72,560	98,040
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				76,440					217,680	294,120
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							25,000	129,900					514,700	669,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	CAPITAL REPLACEMENTS - REMOVAL AND RELOCATION OF EXISTING EQUIPMENT AND INFRASTRUCTURE						525,000	639,500					1,965,900	3,130,400
28.0	ARSENIC, ASBESTOS , LEAD ABATEMENT														
28.1	ARSENIC, ASBESTOS , LEAD ABATEMENT	ALLOWANCE PROVIDED BY AEP													750,000
99.00	OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS							185,308,600	112,674,500		2,925,315			283,670,400	582,403,500
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						255,023		96.97	22,125,000	22,125,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						320,269			23,344,196	23,344,196
	PER DIEM	NONE		0.00	HR									0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				485,673					1,338,302	1,823,975
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				4,856,725						4,856,725
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			9,163,430							9,163,430
	SALES TAX - NOT INCLUDED														0

				AEP										Estimate No.:	30716B
				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS BASE (ESP)-1A - 4.5 LB/MM BTU - NON PHASED										Date:	9/12/2010
				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
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				4,856,725					13,383,020	18,239,745
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				14,570,175					40,149,060	54,719,235
	OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							10,648,400	24,769,300					102,525,500	137,943,200
	OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST							195,957,000	137,443,800					386,195,900	720,346,700
	TOTAL DIRECT AND CONSTRUCTION INDIRECT COSTS							195,957,000	137,443,800					386,195,900	720,346,700
	INDIRECT COSTS														
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES			1.0	LT										45,000,000
	CONSTRUCTION MANAGEMENT			3.0	%										21,610,400
	S-U / COMMISSIONING			1.0											7,203,500
	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	%						31,803		96.97	3,343,200	3,343,200
	INITIAL FILLS			0.3	%										2,161,000
	OPERATOR & TRAINING MANUALS			1.0	LT										600,000
	SUBCONTRACTORS (NOISE & DUCTWORK CONSULTANT, GEOTECHNICAL INVESTIGATION)			1.0	LT										500,000
	OWNERS COST - % of ACCT NOS. 92, 93.1, 93.2, 93.3, 93.4	BY AEP		0.0	%										0
	SUBTOTAL - INDIRECT COSTS														80,418,100
	TOTAL DIRECT AND INDIRECT COSTS														800,764,800
	SPARE PARTS FOR THE OEM & THE BOP EQUIPMENT			1.3	%			2,547,400							2,547,400
	SPARE PARTS FOR THE OEM EQUIPMENT			0.80	%			1,579,388							1,579,388
	SPARE PARTS FOR THE BOP EQUIPMENT			0.50	%			968,012							968,012
	CONTINGENCY			13.7	%										110,207,000
	ESCALATION														72,434,500
	EQUIPMENT	4.0%/yr		4.0	%			20,449,900							20,449,900
	MATERIAL	2.0%/yr		2.0	%				9,864,000						9,864,000
	LABOR	2.5%/yr		2.5	%									34,861,400	34,861,400
	INDIRECTS	2.5%/yr		2.5	%									7,259,200	7,259,200
	INTEREST DURING CONSTRUCTION (AFUDC)	BY AEP													-
	TOTAL PROJECT COST														985,953,700
	REFERENCE COSTS:														
A	ESP STRUCTURAL INTEGRITY MODS	ALLOWANCE FOR 150 TON FRAMING REINFORCEMENT	EST	150	TN		2900	0	435,000	120.00	20,700	STST	105.71	2,188,200	2,623,200

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.:	30720B
				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED										Date:	9/12/2010
				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	1,865,000 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	80	TN		3,250.00	0	260,000	60.00	5,520	FLDU	107.96	595,900	855,900
1.6	DUCT SUPPORT STEEL	THREE COAT SHOP PAINT	EST	40	TN		2,900.00	0	116,000	24.00	1,104	STST	105.71	116,700	232,700
1.7	ID FAN INSULATION & LAGGING	TOTAL FOR TWO FANS. PRICING REFLECTS 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	8,100	SF		12.00	0	97,200	0.25	2,329	DINS	81.75	190,400	287,600
1.9	DUCT SUPPORT STEEL - FOUNDATIONS							0	30,400					54,700	85,100
	EXCAVATION / BACKFILL		EST	190	CY			0	0	0.15	33	EXFD	90.00	2,900	2,900
	REINFORCING		EST	11	TN		1,150.00	0	12,700	20.00	253	REIN	78.27	19,800	32,500
	FORMWORK		EST	620	SF		2.50	0	1,600	0.14	100	FORM	99.43	9,900	11,500
	CONCRETE		EST	120	CY		105.00	0	12,600	1.50	207	CONP	79.64	16,500	29,100
	MUD MAT		EST	19	CY		105.00	0	2,000	1.50	33	CONP	79.64	2,600	4,600
	EMBEDDED STEEL		EST	600	LB		2.50	0	1,500	0.06	41	CARP	71.88	3,000	4,500
1.10	ID FAN FOUNDATIONS INCLUDING ID FAN AUX EQUIPMENT							0	328,600					537,200	865,800
	EXCAVATION / BACKFILL		EST	1,600	CY			0	0	0.15	276	EXFD	90.00	24,800	24,800
	REINFORCING		EST	130	TN		1,150.00	0	149,500	20.00	2,990	REIN	78.27	234,000	383,500
	FORMWORK		EST	2,800	SF		2.50	0	7,000	0.14	451	FORM	99.43	44,800	51,800
	CONCRETE		EST	1,400	CY		105.00	0	147,000	1.50	2,415	CONP	79.64	192,300	339,300
	MUD MAT		EST	120	CY		105.00	0	12,600	1.50	207	CONP	79.64	16,500	29,100
	EMBEDDED STEEL		EST	5,000	LB		2.50	0	12,500	0.06	345	CARP	71.88	24,800	37,300

				AEP										Estimate No.:	30720B
				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED										Date:	9/12/2010
				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
1.11	ID FAN IAQCS CONTROL ROOM - FOUNDATIONS							0	270,100					491,200	761,300
	EXCAVATION / BACKFILL		EST	800	CY			0	0	0.15	138	EXFD	90.00	12,400	12,400
	REINFORCING		EST	100	TN		1,150.00	0	115,000	20.00	2,300	REIN	78.27	180,000	295,000
	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

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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						
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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		
	3/4" 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	10,378	WIRE	98.84	1,025,700	1,386,700		
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			140,800	202,700		
	EXCAVATION / BACKFILL		EST	1,000	CY			0	0	0.15	173	EXFD	90.00	15,500	15,500		
	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		
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							12,045,000	8,450,000		201,478			18,984,500	39,479,500		

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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												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						17,520		83.48	1,463,000	1,463,000		
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						21,900			1,536,297	1,536,297		
	PER DIEM	NONE		0.00	HR						240,898			0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				42,250					94,923	137,173		
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				422,500						422,500		
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			602,250							602,250		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				422,500					949,225	1,371,725		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				1,267,500					2,847,675	4,115,175		
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							602,300	2,154,800					6,891,100	9,648,100		
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	ID FANS						12,647,300	10,604,800					25,875,600	49,127,600		
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		

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2.6	FABRIC FILTER - FOUNDATIONS							0	550,700					973,600	1,524,300		
	EXCAVATION / BACKFILL		EST	4,945	CY			0	0	0.15	853	EXFD	90.00	76,800	76,800		
	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	LIGHT FIXTURE		EST	22	EA		750.00	0	16,500	4.00	101	WIRE	98.84	10,000	26,500		
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							22,359,400	3,019,600		194,315			17,368,900	42,747,900		
	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												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						16,897		83.48	1,411,000	1,411,000		
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						21,121			1,481,680	1,481,680		
	PER DIEM	NONE		0.00	HR						232,333			0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				15,098					86,845	101,943		
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				150,980						150,980		
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			1,117,970							1,117,970		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				150,980					868,445	1,019,425		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				452,940					2,605,335	3,058,275		
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							1,118,000	770,000					6,453,300	8,341,300		
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FABRIC FILTERS						23,477,400	3,789,600					23,822,200	51,089,200		
3.0	NEW STACK																
3.1	CONCRETE STACK (WET)	PROVIDED BY AEP						780,000	15,000,000					15,700,000	31,480,000		
4.0	LIME HANDLING SYSTEM																
4.1	LIME STORAGE SILO							1,020,000	0					0	1,020,000		

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	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	2800.00	3,220	MECH	88.89	286,200	636,200
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					42,600	65,200
	EXCAVATION / BACKFILL		EST	300	CY			0	0	0.15	52	EXFD	90.00	4,700	4,700
	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					132,200	212,800
	EXCAVATION / BACKFILL		EST	340	CY			0	0	0.15	59	EXFD	90.00	5,300	5,300
	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					132,900	208,000
	EXCAVATION / BACKFILL		EST	790	CY			0	0	0.15	136	EXFD	90.00	12,300	12,300

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	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					20,300	31,000		
	EXCAVATION / BACKFILL		EST	95	CY			0	0	0.15	16	EXFD	90.00	1,500	1,500		
	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					208,200	302,400		
	EXCAVATION / BACKFILL		EST	1,360	CY			0	0	0.15	235	EXFD	90.00	21,100	21,100		
	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		
	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		

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	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	16,200	LF		6.13	0	99,300	0.23	4,285	WIRE	98.84	423,500	522,800		
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	18,000	LF		3.20	0	57,600	0.08	1,635	WIRE	98.84	161,600	219,200		
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					10,300	15,600		
	EXCAVATION / BACKFILL		EST	75	CY			0	0	0.15	13	EXFD	90.00	1,200	1,200		
	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	FIREWALL FOR TRANSFORMERS							0	0					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		
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							2,227,600	2,294,700		50,198			4,811,000	9,333,300		
	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												

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	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						4,365		83.48	364,000	364,000		
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						5,456			382,764	382,764		
	PER DIEM	NONE		0.00	HR						60,019			0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				11,474					24,055	35,529		
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				114,735						114,735		
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			111,380							111,380		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				114,735					240,550	355,285		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				344,205					721,650	1,065,855		
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							111,400	585,100					1,733,000	2,429,500		
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME HANDLING SYSTEM						2,339,000	2,879,800					6,544,000	11,762,800		
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		
	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					278,300	444,700		
	EXCAVATION / BACKFILL		EST	969	CY			0	0	0.15	167	EXFD	90.00	15,000	15,000		
	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					194,200	313,400		
	EXCAVATION / BACKFILL		EST	450	CY			0	0	0.15	78	EXFD	90.00	7,000	7,000		

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	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		50,035			4,422,100	8,483,700		
	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												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						4,351		83.48	363,000	363,000		
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						5,439			381,525	381,525		
	PER DIEM	NONE		0.00	HR						59,825			0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				6,002					22,111	28,112		
	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		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				60,015					221,105	281,120		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				180,045					663,315	843,360		
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							143,100	306,100					1,651,100	2,100,200		
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME SLAKER BUILDING						3,004,400	1,506,400					6,073,200	10,583,900		
6.0	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS														0		

				AEP											Estimate No.:	30720B		
				BIG SANDY UNIT 2											Project No.:	12721-000		
				FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED											Date:	9/12/2010		
				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		
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	450,000		450,000	0	3200.00	3,680	MECH	88.89	327,100	777,100		
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	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 BYPRODUCT 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					107,700	167,900		
	EXCAVATION / BACKFILL		EST	670	CY			0	0	0.15	116	EXFD	90.00	10,400	10,400		
	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		

				AEP										Estimate No.:	30720B		
				BIG SANDY UNIT 2										Project No.:	12721-000		
				FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED										Date:	9/12/2010		
				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		
6.10	FLY ASH SILO - FOUNDATIONS	NOT REQUIRED						0	0					0	0		
	EXCAVATION / BACKFILL		EST	0	CY			0	0	0.15	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	0.15	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					373,100	607,400		
	EXCAVATION / BACKFILL		EST	950	CY			0	0	0.15	164	EXFD	90.00	14,700	14,700		
	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		

				AEP										Estimate No.:	30720B		
				BIG SANDY UNIT 2										Project No.:	12721-000		
				FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED										Date:	9/12/2010		
				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		
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	MEDIUM VOLTAGE POWER CABLE & TERMINATION	1/C # 350KCMIL-5KV	EST	4,200	LF		6.13	0	25,700	0.23	1,111	WIRE	98.84	109,800	135,500		
6.21	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		
6.22	CONTROL & INSTRUMENT CABLE		EST	17,000	LF		3.20	0	54,400	0.23	4,497	WIRE	98.84	444400	498,800		
6.23	DUCT BANK							0	109,700					268,900	378,600		
	DUCT BANK WITH 8-5" & 8-3" CONDUITS		EST	125	LF		398.82	0	49,900	7.51	1,080	FORM	99.43	107,400	157,300		
	DUCT BANK WITH 6-5" & 6-3" CONDUITS		EST	125	LF		265.88	0	33,200	6.01	864	FORM	99.43	85,900	119,100		
	DUCT BANK WITH 2-5" & 2-3" CONDUITS		EST	200	LF		132.94	0	26,600	3.31	760	FORM	99.43	75,600	102,200		
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							3,278,400	2,225,700		56,534			5,144,700	10,648,800		
	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												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						4,916		83.48	410,000	410,000		
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						6,145			431,082	431,082		
	PER DIEM	NONE		0.00	HR						67,595			0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				11,129					25,724	36,852		
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				111,285						111,285		
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			163,920							163,920		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				111,285					257,235	368,520		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				333,855					771,705	1,105,560		
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							163,900	567,600					1,895,700	2,627,200		
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS						3,442,300	2,793,300					7,040,400	13,276,000		
7.0	SPRAY DRYER ABSORBER ISLAND														0		

				AEP										Estimate No.:	30720B
				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED										Date:	9/12/2010
				ORDER OF MAGNITUDE COST ESTIMATE										Preparer:	MNO
		Cost Type:												Reviewer:	JMK
		Est=Estimated												Approver:	PEF
		Allow.=Allowance								Wage Rates Based on:		BIG SANDY			
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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

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7.11	DUCTWORK							0	4,797,000					12,578,100	17,375,100		
	SPRAY DRYER INLET	INCLUDES INTERNAL BRACING AND TURNING VANES	EST	1,476	TN		3,250.00	0	4,797,000	60.00	101,844	FLDU	107.96	10,995,100	15,792,100		
	SPRAY DRYER OUTLET TO FABRIC FILTER INLET	INSTALLATION ONLY - MATERIAL INCLUDED WITH OEM EQUIPMENT	EST	213	TN			0	0	60.00	14,663	FLDU	107.96	1,583,000	1,583,000		
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					2,975,600	4,654,200		
	EXCAVATION / BACKFILL		EST	16,000	CY			0	0	0.15	2,760	EXFD	90.00	248,400	248,400		
	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					126,000	195,000		
	EXCAVATION / BACKFILL		EST	784	CY			0	0	0.15	135	EXFD	90.00	12,200	12,200		
	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															
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							42,006,800	12,556,000		529,677			49,344,000	103,906,800		
	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												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						46,059		83.48	3,845,000	3,845,000		

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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	%						59,064			4,143,414	4,143,414		
	PER DIEM	NONE		0.00	HR						649,704			0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				62,780					246,720	309,500		
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				627,800						627,800		
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			2,100,340							2,100,340		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				627,800					2,467,200	3,095,000		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				1,883,400					7,401,600	9,285,000		
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							2,910,300	3,201,800					19,627,500	25,739,600		
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SPRAY DRYER ABSORBER ISLAND						44,917,100	15,757,800					68,971,500	129,646,400		
8.0	ACTIVATED CARBON INJECTION SYSTEM														0		
8.1	ACI MECHANICAL EQUIPMENT:		EST	1	LT	2805900		2,805,900	0	8690.00	9,994	MECH	88.89	888,300	3,694,200		
	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		
	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		

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8.3	ACI SYSTEM - FOUNDATIONS							0	41,500					79,200	120,700
	EXCAVATION / BACKFILL		EST	404	CY			0	0	0.15	70	EXFD	90.00	6,300	6,300
	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	84,600					276,700	361,300
	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
	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		1.46	0	4,400	0.08	273	WIRE	98.84	26900	31,300
	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	FORM	99.43	55600	84,200
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							2,929,000	321,300		18,831			1,726,800	4,977,100
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0
	MOBILIZATION / DEMOBILIZATION - INCLUDED IN WAGE RATES ABOVE														0

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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:	9/12/2010		
				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 WORKING 5 X10 HOUR DAYS			1	LS												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						1,637		83.48	137,000	137,000		
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						2,047			143,591	143,591		
	PER DIEM	NONE		0.00	HR						22,516			0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				1,607					8,634	10,241		
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				16,065						16,065		
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			146,450							146,450		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				16,065					86,340	102,405		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				48,195					259,020	307,215		
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							146,500	81,900					634,600	863,000		
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	ACTIVATED CARBON INJECTION SYSTEM						3,075,500	403,200					2,361,400	5,840,100		
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		
	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					174,000	270,100		
	EXCAVATION / BACKFILL		EST	950	CY			0	0	0.15	164	EXFD	90.00	14,700	14,700		
	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		

				AEP										Estimate No.:	30720B		
				BIG SANDY UNIT 2										Project No.:	12721-000		
				FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED										Date:	9/12/2010		
				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	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	FORM	99.43	56,700	76,600		
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							1,390,600	1,359,100		27,898			2,588,700	5,338,400		
	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												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						2,426		83.48	203,000	203,000		
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						3,032			212,726	212,726		
	PER DIEM	NONE		0.00	HR						33,356			0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				6,796					12,944	19,739		
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				67,955						67,955		
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			69,530							69,530		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				67,955					129,435	197,390		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				203,865					388,305	592,170		
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							69,500	346,600					946,400	1,362,500		
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	COMPRESSED AIR SYSTEM						1,460,100	1,705,700					3,535,100	6,700,900		
10.0	SERVICE WATER SYSTEM																
10.1	PUMPS							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		

				AEP										Estimate No.:	30720B
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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
	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	0.15	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
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										

				AEP										Estimate No.:	30720B
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		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
	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
	SALES TAX - NOT INCLUDED														0
	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					736,800	1,094,300
	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	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					17,700	27,800
	EXCAVATION / BACKFILL		EST	40	CY			0	0	0.15	7	EXFD	90.00	600	600
	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
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		8,087			755,200	1,142,700
	OTHER DIRECT & CONSTRUCTION INDIRECT COSTS														
	ADDITIONAL CRANE ALLOWANCE								0					0	0

				AEP											Estimate No.:	30720B		
				BIG SANDY UNIT 2											Project No.:	12721-000		
				FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED											Date:	9/12/2010		
				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		
	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	%						703		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	%						879			61,668	61,668		
	PER DIEM	NONE		0.00	HR						9,670			0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				1,290					3,776	5,066		
	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		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				12,900					37,760	50,660		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				38,700					113,280	151,980		
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							6,500	65,800					275,500	347,700		
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	POTABLE WATER SYSTEM						136,000	323,800					1,030,700	1,490,400		
12.0	FGD SUBSTATION																
12.1	TRANSFORMERS							1,560,500	0					273,100	1,833,600		
	FGD SUBSTATION-AUX TRANSFORMERS: 11A & 11B	138KV-13.8KV- 2 WINDING XFMR	EST	2	EA	695250		1,390,500	0	1200.00	2,760	EHEA	79.16	218,500	1,609,000		
	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					131,700	204,900		
	EXCAVATION / BACKFILL		EST	700	CY			0	0	0.15	121	EXFD	90.00	10,900	10,900		
	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							714,200	0					121,600	835,800		
	13.8 KV MEDIUM VOLTAGE (11A/B)	PRICE PER SECTION	EST	8	EA	50000		400,000	0	40.00	368	EHEA	79.16	29,100	429,100		
	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	4	EA	30000		120,000	0	16.00	74	WIRE	98.84	7,300	127,300		
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		

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12.19	FOUNDATION FOR AUX TRANSFORMER							0	70,200					183,600	253,800		
	EXCAVATION / BACKFILL		EST	1,000	CY			0	0	0.15	173	EXFD	90.00	15,500	15,500		
	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		
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							3,342,400	924,500		44,084			4,212,100	8,479,000		
	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												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						3,833		83.48	320,000	320,000		
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						4,792			336,144	336,144		
	PER DIEM	NONE		0.00	HR						52,709			0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				4,623					21,061	25,683		
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				46,225						46,225		
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			167,120							167,120		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				46,225					210,605	256,830		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				138,675					631,815	770,490		
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							167,100	235,700					1,519,624	1,922,500		
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FGD SUBSTATION						3,509,500	1,160,200					5,731,700	10,401,500		
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		

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	COST DUE TO OVERTIME WORKING 5 X10 HOUR DAYS			1	LS												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						3,733		83.48	312,000	312,000		
	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		
	SALES TAX - NOT INCLUDED														0		
	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		
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	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					67,700	100,900		
	EXCAVATION / BACKFILL		EST	170	CY			0	0	0.15	29	EXFD	90.00	2,600	2,600		
	REINFORCING		EST	13	TN		1,150.00	0	14,400	20.00	288	REIN	78.27	22,500	36,900		

				AEP											Estimate No.:	30720B		
				BIG SANDY UNIT 2											Project No.:	12721-000		
				FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED											Date:	9/12/2010		
				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	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		
	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		23,607			2,080,400	4,337,100		
	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												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						2,053		83.48	171,000	171,000		
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						2,566			180,008	180,008		
	PER DIEM	NONE		0.00	HR						28,226			0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				10,221					10,402	20,623		
	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		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				102,210					104,020	206,230		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				306,630					312,060	618,690		
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							10,600	521,300					777,500	1,309,400		
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	TRUCK & RAIL INFRASTRUCTURE						223,100	2,565,500					2,857,900	5,646,500		
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		

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.: 30720B
Project No.: 12721-000
Date: 9/12/2010
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
	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
	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					262,700	407,000
	EXCAVATION / BACKFILL		EST	1,100	CY			0	0	0.15	190	EXFD	90.00	17,100	17,100
	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	41,900					70,400	112,300
	EXCAVATION / BACKFILL		EST	192	CY			0	0	0.15	33	EXFD	90.00	3,000	3,000
	REINFORCING		EST	16	TN		1,150.00	0	18,400	20.00	368	REIN	78.27	28,800	47,200
	FORMWORK		EST	510	SF		2.50	0	1,300	0.14	82	FORM	99.43	8,200	9,500
	CONCRETE		EST	167	CY		105.00	0	17,500	1.50	288	CONP	79.64	22,900	40,400
	MUD MAT		EST	25	CY		105.00	0	2,600	1.50	43	CONP	79.64	3,400	6,000
	EMBEDDED STEEL		EST	835	LB		2.50	0	2,100	0.06	58	CARP	71.88	4,100	6,200
16.6	TRUCK WASH AREA - ENCLOSURE							0	67,400					95,300	162,700
	TRUCK WASH AREA - STEEL		EST	10	TN		2,650.00	0	26,500	24.00	276	STST	105.71	29,200	55,700
	TRUCK WASH AREA - SIDNG	20' X 40' X 20'H	EST	2,400	SF		12.00	0	28,800	0.11	304	SDNG	93.41	28,400	57,200
	TRUCK WASH AREA - LIGHTING	ALLOWANCE	EST	2,400	SF		2.50	0	6,000	0.05	138	WIRE	98.84	13,600	19,600
	TRUCK WASH AREA - DRAINAGE	10" HDPE (UNDERGROUND)	EST	200	LF		26.4	0	5,300	0.98	225	MECH	88.89	20,000	25,300
	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
16.7	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
16.8	PROCESS WATER STORAGE BASIN							60,000	110,400					312,600	483,000

				AEP										Estimate No.:	30720B		
				BIG SANDY UNIT 2										Project No.:	12721-000		
				FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED										Date:	9/12/2010		
				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		
	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		
16.9	PROCESS WATER STORAGE BASIN PUMP STRUCTURE - CONCRETE							0	47,000					105,400	152,400		
	EXCAVATION / BACKFILL		EST	0	CY			0	0	0.15	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		
16.10	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		
16.11	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		
16.12	STORM WATER POND PUMP STRUCTURE - CONCRETE							90,000	42,300					182,200	314,500		
	EXCAVATION / BACKFILL		EST	0	CY			0	0	0.15	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		
16.13	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		
16.14	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		
16.15	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		
16.16	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		
16.17	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		

				AEP										Estimate No.:	30720B		
				BIG SANDY UNIT 2										Project No.:	12721-000		
				FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED										Date:	9/12/2010		
				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		
16.18	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		
16.19	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		
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							577,500	4,573,300		76,955			7,627,500	12,778,300		
	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												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						6,692		83.48	559,000	559,000		
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						8,365			586,791	586,791		
	PER DIEM	NONE		0.00	HR						92,011			0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				22,867					38,138	61,004		
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				228,665						228,665		
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			28,875							28,875		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				228,665					381,375	610,040		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				685,995					1,144,125	1,830,120		
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							28,900	1,166,200					2,709,400	3,904,500		
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SITE IMPROVEMENTS - CIVIL WORK						606,400	5,739,500					10,336,900	16,682,800		
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		
	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		

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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
	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							9,600	3,400		0			26,400	39,400
	LARGE BORE PIPING	2.5" CS, SCHEDULE 40, WELDED		250	LF		10.8	0	2,700	0.64	183	SPNG	94.41	17,300	20,000
	VALVE	2.5" GLOBE, 150 #, CS, WELDED	EST	10	EA	955		9,600	0	4.70	54	SPNG	94.41	5,100	14,700
	PIPE SUPPORTS			26	EA		25	0	700	1.50	45	MECH	88.89	4,000	4,700
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			1,330,800	1,872,800
	EXCAVATION / BACKFILL		EST	13,000	CY			0	0	0.15	2,243	EXFD	90.00	201,800	201,800
	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			45,500	61,500
	EXCAVATION / BACKFILL		EST	148	CY			0	0	0.15	26	EXFD	90.00	2,300	2,300
	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

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17.7	LIMESTONE TRANSFER TOWER - FOUNDATIONS							0	15,400		0			28,200	43,600		
	EXCAVATION / BACKFILL		EST	106	CY			0	0	0.15	18	EXFD	90.00	1,600	1,600		
	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		
17.8	LIMESTONE TRANSFER CONVEYOR - FOUNDATIONS							0	62,000		0			116,600	178,600		
	EXCAVATION / BACKFILL		EST	421	CY			0	0	0.15	73	EXFD	90.00	6,500	6,500		
	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			1,330,800	1,872,800		
	EXCAVATION / BACKFILL		EST	13,000	CY			0	0	0.15	2,243	EXFD	90.00	201,800	201,800		
	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			42,000	66,100		
	EXCAVATION / BACKFILL		EST	129	CY			0	0	0.15	22	EXFD	90.00	2,000	2,000		
	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			30,100	46,900		
	EXCAVATION / BACKFILL		EST	99	CY			0	0	0.15	17	EXFD	90.00	1,500	1,500		
	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		

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	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		
	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		

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17.24	DUCT BANK	DUCT BANK WITH 6-5" & 6-3" CONDUIT	EST	350	LF		265.88	0	26,600	6.01	2,419	FORM	99.43	240500	267,100		
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							6,413,600	3,570,500		130,667			12,066,600	22,050,700		
	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												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						11,362		92.35	1,049,000	1,049,000		
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						14,203			1,102,174	1,102,174		
	PER DIEM	NONE		0.00	HR						156,232			0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				17,853					60,333	78,186		
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				178,525						178,525		
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			320,680							320,680		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				178,525					603,330	781,855		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				535,575					1,809,990	2,345,565		
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							320,700	910,500					4,624,800	5,856,000		
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIMESTONE HANDLING SYSTEM						6,734,300	4,481,000					16,691,400	27,906,700		
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	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		
18.3	LIMESTONE SLURRY TANKS - FOUNDATIONS							0	166,400					278,300	444,700		
	EXCAVATION / BACKFILL		EST	969	CY			0	0	0.15	167	EXFD	90.00	15,000	15,000		
	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		

				AEP											Estimate No.:	30720B		
				BIG SANDY UNIT 2											Project No.:	12721-000		
				FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED											Date:	9/12/2010		
				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	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		
18.4	REAGENT PREPARATION BUILDING - FOUNDATIONS							0	682,000					1,072,100	1,754,100		
	EXCAVATION / BACKFILL		EST	2,767	CY			0	0	0.15	477	EXFD	90.00	43,000	43,000		
	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		
18.5	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		
18.6	PIPE SUPPORT PAD - REAGENT PREP BUILDING							0	13,800					25,100	38,900		
	EXCAVATION / BACKFILL		EST	110	CY			0	0	0.15	19	EXFD	90.00	1,700	1,700		
	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		
18.7	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		
18.8	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		

				AEP											Estimate No.:	30720B		
				BIG SANDY UNIT 2											Project No.:	12721-000		
				FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED											Date:	9/12/2010		
				ORDER OF MAGNITUDE COST ESTIMATE											Preparer:	MNO		
		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		
18.9	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE ARE INCLUDED IN SECTION 20.0 - ABSORBER ISLAND															
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							15,772,400	6,067,200		207,250			18,599,100	40,438,700		
	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												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						18,022		89.74	1,617,000	1,617,000		
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						22,527			1,698,858	1,698,858		
	PER DIEM	NONE		0.00	HR						247,799			0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				30,336					92,996	123,332		
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				303,360						303,360		
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			788,620							788,620		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				303,360					929,955	1,233,315		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				910,080					2,789,865	3,699,945		
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							788,600	1,547,100					7,128,700	9,464,400		
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	REAGENT (LIMESTONE) PREPARATION ISLAND						16,561,000	7,614,300					25,727,800	49,903,100		
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		

				AEP										Estimate No.:	30720B		
				BIG SANDY UNIT 2										Project No.:	12721-000		
				FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED										Date:	9/12/2010		
				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		
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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				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		
	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					47,600	73,600		
	EXCAVATION / BACKFILL		EST	295	CY			0	0	0.15	51	EXFD	90.00	4,600	4,600		
	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					163,900	263,900		
	EXCAVATION / BACKFILL		EST	614	CY			0	0	0.15	106	EXFD	90.00	9,500	9,500		
	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					141,700	222,600		
	EXCAVATION / BACKFILL		EST	614	CY			0	0	0.15	106	EXFD	90.00	9,500	9,500		
	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					47,600	73,600		
	EXCAVATION / BACKFILL		EST	295	CY			0	0	0.15	51	EXFD	90.00	4,600	4,600		
	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					577,200	917,400		
	EXCAVATION / BACKFILL		EST	1,915	CY			0	0	0.15	330	EXFD	90.00	29,700	29,700		
	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					31,700	47,800		
	EXCAVATION / BACKFILL		EST	140	CY			0	0	0.15	24	EXFD	90.00	2,200	2,200		
	REINFORCING		EST	6	TN		1,150.00	0	6,900	20.00	138	REIN	78.27	10,800	17,700		

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	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					1,364,300	2,256,000		
	EXCAVATION / BACKFILL		EST	2,900	CY			0	0	0.15	500	EXFD	90.00	45,000	45,000		
	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					125,100	185,900		
	EXCAVATION / BACKFILL		EST	1,120	CY			0	0	0.15	193	EXFD	90.00	17,400	17,400		
	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					224,400	361,700		
	EXCAVATION / BACKFILL		EST	489	CY			0	0	0.15	84	EXFD	90.00	7,600	7,600		
	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					456,200	747,600		
	EXCAVATION / BACKFILL		EST	1,220	CY			0	0	0.15	210	EXFD	90.00	18,900	18,900		
	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		

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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	18,300					34,000	52,300		
	EXCAVATION / BACKFILL		EST	92	CY			0	0	0.15	16	EXFD	90.00	1,400	1,400		
	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					56,300	88,600		
	EXCAVATION / BACKFILL		EST	210	CY			0	0	0.15	36	EXFD	90.00	3,300	3,300		
	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		

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	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	0.15	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	6,300					10,300	16,600		
	SILT FENCE		EST	1,300	LF		1.0	0	1,300	0.02	30	LAND	61.45	1,800	3,100		
	ROCK CHECK DAMS		EST	10	EA		500.0	0	5,000	12.00	138	LAND	61.45	8,500	13,500		
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		

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				FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED											Date:	9/12/2010		
				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		
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	0.15	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		
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		

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	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		
	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		

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				ORDER OF MAGNITUDE COST ESTIMATE												Preparer:	MNO		
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	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					183,600	253,800		
	EXCAVATION / BACKFILL		EST	1,000	CY			0	0	0.15	173	EXFD	90.00	15,500	15,500		
	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		
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							12,728,800	16,074,800		350,775			31,462,800	60,266,400		
	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												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						30,502		89.70	2,736,000	2,736,000		
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						38,128			2,873,840	2,873,840		
	PER DIEM	NONE		0.00	HR						419,404			0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				80,374					157,314	237,688		
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				803,740						803,740		
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			636,440							636,440		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				803,740					1,573,140	2,376,880		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				2,411,220					4,719,420	7,130,640		
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							636,400	4,099,100					12,059,700	16,795,200		
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)						13,365,200	20,173,900					43,522,500	77,061,600		

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.: 30720B
Project No.: 12721-000
Date: 9/12/2010
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
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	LABOR COST REFLECTS DIFFICULTY FACTOR WORKING WITH C276 VS. A2205	EST	49,800	SF		300.00	0	14,940,000	1.50	85,905	MECH	88.89	7,636,100	22,576,100
20.3	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
20.4	PIPING - MECHANICAL	ALL PIPING INCLUDED IN OEM EQUIPMENT COST. NO BOP PIPING						0	0					0	0
20.5	ABSORBER VESSEL - FOUNDATIONS							0	366,900					609,400	976,300
	EXCAVATION / BACKFILL		EST	2,921	CY			0	0	0.15	504	EXFD	90.00	45,300	45,300
	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
20.6	ABSORBER BUILDING - FOUNDATIONS							0	579,500					908,200	1,487,700
	EXCAVATION / BACKFILL		EST	2,440	CY			0	0	0.15	421	EXFD	90.00	37,900	37,900
	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
20.7	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

				AEP											Estimate No.:	30720B		
				BIG SANDY UNIT 2											Project No.:	12721-000		
				FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED											Date:	9/12/2010		
				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		
	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		
20.8	PIPE SUPPORT PAD - ABSORBER BUILDING							0	7,700					14,100	21,800		
	EXCAVATION / BACKFILL		EST	95	CY			0	0	0.15	16	EXFD	90.00	1,500	1,500		
	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		
20.9	OXIDATION AIR BLOWER BUILDING - FOUNDATIONS							0	37,000					63,200	100,200		
	EXCAVATION / BACKFILL		EST	188	CY			0	0	0.15	32	EXFD	90.00	2,900	2,900		
	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		
20.10	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		
20.11	PIPE SUPPORT PAD - OXIDATION BUILDING							0	7,700					13,100	20,800		
	EXCAVATION / BACKFILL		EST	30	CY			0	0	0.15	5	EXFD	90.00	500	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		
20.12	DUCTWORK	INCLUDES INTERNAL BRACING AND TURNING VANES	EST	115	TN		3,250.00	0	373,800	60.00	7,935	FLDU	107.96	856,700	1,230,500		
20.13	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		
20.14	DUCTWORK INSULATION & LAGGING		EST	11,000	SF		12.00	0	132,000	0.25	3,163	DINS	81.75	258,500	390,500		
20.15	FOUNDATIONS FOR DUCT SUPPORT STEEL							0	17,700					32,100	49,800		
	EXCAVATION / BACKFILL		EST	144	CY			0	0	0.15	25	EXFD	90.00	2,200	2,200		

				AEP										Estimate No.:	30720B		
				BIG SANDY UNIT 2										Project No.:	12721-000		
				FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED										Date:	9/12/2010		
				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		
	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		
20.16	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		
20.17	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		
20.18	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		
20.19	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		
20.20	MIMIC PANELS		EST	2	EA	17500		35,000	0	40.00	80	WIRE	98.84	7,900	42,900		
20.21	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		
20.22	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		
20.23	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										Estimate No.:	30720B		
				BIG SANDY UNIT 2										Project No.:	12721-000		
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		Cost Type:												Reviewer:	JMK		
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20.24	RACEWAY, CABLE TRAY, & CONDUIT							0	1,388,600					5,513,200	6,901,800		
	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	8,400	LF		31.00	0	260,400	0.81	6,779	WIRE	98.84	670000	930,400		
	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,050	LF		21.50	0	22,600	0.65	677	WIRE	98.84	66900	89,500		
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	13,300	LF		9.25	0	123,000	0.35	4,682	WIRE	98.84	462700	585,700		
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	16,900	LF		7.15	0	120,800	0.28	4,800	WIRE	98.84	474400	595,200		
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	29,200	LF		4.44	0	129,600	0.24	6,979	WIRE	98.84	689800	819,400		
	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	FORM	99.43	148200	224,600		
20.25	HIGH VOLTAGE POWER CABLE & TERMINATION							0	41,700					117,600	159,300		
	1/C # 500KCMIL-15KV		EST	4,500	LF		9.27	0	41,700	0.23	1,190	WIRE	98.84	117600	159,300		
20.26	MEDIUM VOLTAGE POWER CABLE & TERMINATION							0	92,100		0			302,400	394,500		
	1/C # 500KCMIL-5KV		EST	6,600	LF		8.08	0	53,300	0.17	1,313	WIRE	98.84	129800	183,100		
	1/C # 350KCMIL-5KV		EST	5,400	LF		6.13	0	33,100	0.23	1,428	WIRE	98.84	141200	174,300		
	1/C # 250KCMIL-5KV		EST	1,200	LF		4.74	0	5,700	0.23	317	WIRE	98.84	31400	37,100		
20.27	LOW VOLTAGE POWER CABLE & TERMINATION							0	566,000					810,600	1,376,600		
	3/C # 500KCMIL- 600V		EST	2,320	LF		26.12	0	60,600	0.69	1,841	WIRE	98.84	182000	242,600		
	#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		
20.28	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		
20.29	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		
20.30	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		
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							45,262,300	22,318,800		723,359			65,226,500	132,807,600		

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				FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED											Date:	9/12/2010		
				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		
	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												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						63,549		90.17	5,730,000	5,730,000		
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						79,436			6,019,224	6,019,224		
	PER DIEM	NONE		0.00	HR						873,796			0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				111,594					326,133	437,727		
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				1,115,940						1,115,940		
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			2,263,115							2,263,115		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				1,115,940					3,261,325	4,377,265		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				3,347,820					9,783,975	13,131,795		
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							2,938,100	5,691,300					25,783,100	34,412,500		
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	WET FGD ABSORBER ISLAND						48,200,400	28,010,100					91,009,600	167,220,100		
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		

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	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	%						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		
	SALES TAX - NOT INCLUDED														0		
	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															
23.0	FGD SUBSTATION																
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		
	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					121,300	184,800		
	EXCAVATION / BACKFILL		EST	600	CY			0	0	0.15	104	EXFD	90.00	9,300	9,300		
	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		9,112			727,200	2,326,900		
	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												

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	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						792		79.81	63,000	63,000		
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						990			66,423	66,423		
	PER DIEM	NONE		0.00	HR						10,894			0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				1,119					3,636	4,755		
	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		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				11,185					36,360	47,545		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				33,555					109,080	142,635		
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							68,800	57,000					278,499	404,300		
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FGD SUBSTATION						1,444,800	280,700					1,005,700	2,731,200		
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																
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					56,900	88,900		
	EXCAVATION / BACKFILL		EST	125	CY			0	0	0.15	22	EXFD	90.00	1,900	1,900		
	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		

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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		50,966			4,287,900	6,919,900		
	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												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						4,432		84.13	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	%						5,540			391,661	391,661		
	PER DIEM	NONE		0.00	HR						60,938			0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				11,210					21,440	32,650		
	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		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				112,100					214,395	326,495		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				336,300					643,185	979,485		
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							19,500	571,710					1,643,680	2,234,890		
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BOP ITEMS						409,500	2,813,700					5,931,600	9,154,800		
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	EROSION & SEDIMENT CONTROL							0	30,600					48,900	79,500		
	SILT FENCE		EST	10,600	LF		1.0	0	10,600	0.02	244	LAND	61.45	15,000	25,600		
	ROCK CHECK DAMS		EST	40	EA		500.0	0	20,000	12.00	552	LAND	61.45	33,900	53,900		
27.5	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		
27.6	OUTAGE TIE-IN DUCTWORK	ALLOWANCE FOR 85 TON DUCTWORK	ALLOW	85	TN		3250	0	276,300	70.00	6,843	FLDU	107.96	738,700	1,015,000		
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							500,000	509,600		14,582			1,451,200	2,460,800		

				AEP											Estimate No.:	30720B		
				BIG SANDY UNIT 2											Project No.:	12721-000		
				FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED											Date:	9/12/2010		
				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		
	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	%						1,268		83.48	106,000	106,000		
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						1,585			111,193	111,193		
	PER DIEM	NONE		0.00	HR						17,435			0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				2,548					7,256	9,804		
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				25,480						25,480		
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			25,000							25,000		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				25,480					72,560	98,040		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				76,440					217,680	294,120		
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							25,000	129,900					514,700	669,600		
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	CAPITAL REPLACEMENTS - REMOVAL AND RELOCATION OF EXISTING EQUIPMENT AND INFRASTRUCTURE						525,000	639,500					1,965,900	3,130,400		
28.0	ARSENIC, ASBESTOS , LEAD ABATEMENT																
28.1	ARSENIC, ASBESTOS , LEAD ABATEMENT	ALLOWANCE PROVIDED BY AEP													750,000		
99.00	OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS							185,188,600	109,925,200		2,868,154			277,998,500	573,862,300		
	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												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						250,053		96.93	21,710,000	21,710,000		
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						314,056			22,908,335	22,908,335		44,618,335
	PER DIEM	NONE		0.00	HR									0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				471,926					1,309,943	1,781,869		
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				4,719,260						4,719,260		
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			9,157,430							9,157,430		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				4,719,260					13,099,425	17,818,685		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				14,157,780					39,298,275	53,456,055		
	OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							10,642,400	24,068,200					100,511,900	135,222,600		
	OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST							195,831,000	133,993,400					378,510,400	709,084,900		

				AEP										Estimate No.:	30720B		
				BIG SANDY UNIT 2										Project No.:	12721-000		
				FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED										Date:	9/12/2010		
				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 DIRECT AND CONSTRUCTION INDIRECT COSTS							195,831,000	133,993,400					378,510,400	709,084,900		
	INDIRECT COSTS																
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES			1.0	LT										45,000,000		
	CONSTRUCTION MANAGEMENT			3.0	%										21,272,500		
	S-U / COMMISSIONING			1.0											7,090,800		
	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	%						31,182		96.93	3,276,300	3,276,300		
	INITIAL FILLS			0.3	%										2,127,300		
	OPERATOR & TRAINING MANUALS			1.0	LT										600,000		
	SUBCONTRACTORS (NOISE & DUCTWORK CONSULTANT, GEOTECHNICAL INVESTIGATION)			1.0	LT										750,000		
	OWNERS COST - % of ACCT NOS. 92, 93.1, 93.2, 93.3, 93.4	BY AEP		0.0	%										0		
	SUBTOTAL - INDIRECT COSTS														80,116,900		
	TOTAL DIRECT AND INDIRECT COSTS														789,201,800		
	SPARE PARTS FOR THE OEM & THE BOP EQUIPMENT			1.3	%			2,545,800							2,545,800		791,747,600
	SPARE PARTS FOR THE OEM EQUIPMENT			0.80	%			1,578,396							1,578,396		
	SPARE PARTS FOR THE BOP EQUIPMENT			0.50	%			967,404							967,404		
	CONTINGENCY			13.7	%										108,308,600		
	ESCALATION														71,452,800		
	EQUIPMENT	4.0%/yr		4.0	%			20,436,800							20,436,800		
	MATERIAL	2.0%/yr		2.0	%				9,616,400						9,616,400		
	LABOR	2.5%/yr		2.5	%									34,167,600	34,167,600		
	INDIRECTS	2.5%/yr		2.5	%									7,232,000	7,232,000		
	INTEREST DURING CONSTRUCTION (AFUDC)	BY AEP													-		
	TOTAL PROJECT COST														971,509,000		
	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		

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

				AEP										Estimate No.:	30714B
				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS (ESP)-2A - 1.7 LB/MM BTU - PHASED										Date:	9/10/2010
				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														
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
2.6	FABRIC FILTER - FOUNDATIONS							0	550,700					973,600	1,524,300
	EXCAVATION / BACKFILL		EST	4,945	CY			0	0	0.15	853	EXFD	90.00	76,800	76,800
	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	LIGHT FIXTURE		EST	22	EA		750.00	0	16,500	4.00	101	WIRE	98.84	10,000	26,500
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

				AEP										Estimate No.:	30714B
				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS (ESP)-2A - 1.7 LB/MM BTU - PHASED										Date:	9/10/2010
				ORDER OF MAGNITUDE COST ESTIMATE										Preparer:	MNO
		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
	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							22,007,400	3,019,600		192,820			17,236,000	42,263,000
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						16,767		83.48	1,400,000	1,400,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						20,959			1,470,280	1,470,280
	PER DIEM	NONE		0.00	HR						230,546			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				15,098					86,180	101,278
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				150,980						150,980
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			1,100,370							1,100,370
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				150,980					861,800	1,012,780
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				452,940					2,585,400	3,038,340
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							1,100,400	770,000					6,403,700	8,274,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FABRIC FILTERS						23,107,800	3,789,600					23,639,700	50,537,000
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
	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

				AEP										Estimate No.:	30714B
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				ORDER OF MAGNITUDE COST ESTIMATE										Preparer:	MNO
		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
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					158,400	243,700
	EXCAVATION / BACKFILL		EST	1,000	CY			0	0	0.15	173	EXFD	90.00	15,500	15,500
	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	160,700					281,500	442,200
	EXCAVATION / BACKFILL		EST	1,900	CY			0	0	0.15	328	EXFD	90.00	29,500	29,500
	REINFORCING		EST	100	TN		1,150.00	0	115,000	20.00	2,300	REIN	78.27	180,000	295,000
	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					306,000	488,500
	EXCAVATION / BACKFILL		EST	1,500	CY			0	0	0.15	259	EXFD	90.00	23,300	23,300
	REINFORCING		EST	70.0	TN		1,150.00	0	80,500	20.00	1,610	REIN	78.27	126,000	206,500
	FORMWORK		EST	1,300	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					26,200	40,400
	EXCAVATION / BACKFILL		EST	110	CY			0	0	0.15	19	EXFD	90.00	1,700	1,700
	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					208,200	302,400
	EXCAVATION / BACKFILL		EST	1,360	CY			0	0	0.15	235	EXFD	90.00	21,100	21,100
	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	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	296,400					1,429,900	1,726,300
	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

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	3/4" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	8,200	LF		1.46	0	12,000	0.08	745	WIRE	98.84	73,600	85,600
4.22	HIGH VOLTAGE POWER CABLE & TERMINATION	1/C # 500KCMIL-15KV, 12000' UNIT 2 + 3600' LIME UNLOAD	EST	15,600	LF		9.27	0	144,600	0.23	4,126	WIRE	98.84	407,800	552,400
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
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							4,261,600	2,671,100		56,362			5,302,300	12,235,000
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						4,901		83.48	409,000	409,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						6,126			429,771	429,771
	PER DIEM	NONE		0.00	HR						67,390			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				13,356					26,512	39,867
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				133,555						133,555
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			213,080							213,080
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				133,555					265,115	398,670
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				400,665					795,345	1,196,010
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							213,100	681,100					1,925,700	2,820,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME HANDLING SYSTEM						4,474,700	3,352,200					7,228,000	15,055,000
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	5,914,000		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

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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					278,300	444,700
	EXCAVATION / BACKFILL		EST	969	CY			0	0	0.15	167	EXFD	90.00	15,000	15,000
	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					194,200	313,400
	EXCAVATION / BACKFILL		EST	450	CY			0	0	0.15	78	EXFD	90.00	7,000	7,000
	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	776,800					721,000	1,538,300
	STRUCTURAL STEEL		EST	100	TN		2650	0	265,000	16.00	1,840	STST	105.71	194,500	459,500
	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

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5.8	ELECTRICAL	INCLUDED WITH LIME HANDLING SYSTEM, ACCOUNT 4.0													
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							6,112,300	1,173,800		64,686			5,721,300	13,007,400
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						5,625		83.48	470,000	470,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						7,031			493,241	493,241
	PER DIEM	NONE		0.00	HR						77,342			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				5,869					28,607	34,476
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				58,690						58,690
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			305,615							305,615
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				58,690					286,065	344,755
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				176,070					858,195	1,034,265
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							305,600	299,300					2,136,100	2,741,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME SLAKER BUILDING						6,417,900	1,473,100					7,857,400	15,748,400
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

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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
	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 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	SDA FLY ASH SILO	46T STEEL -STORAGE SILO, 15' DIA X 19' H						25,000	20,300					61,400	106,700
	SILO BIN	PIN MIXERS INCLUDED WITH FLY ASH HANDLING MECHANICAL EQUIPMENT	EST	1	EA	25,000		25,000	0	400.00	460	TANK	89.16	41,000	66,000
	SUPPORT STEEL FOR SILO	THREE-COAT SHOP PAINT	EST	7	TN		2,900.00	0	20,300	24.00	193	STST	105.71	20,400	40,700
6.9	WASTE ASH STORAGE SILO - FOUNDATIONS							0	92,200					159,700	251,900
	EXCAVATION / BACKFILL		EST	900	CY			0	0	0.15	155	EXFD	90.00	14,000	14,000
	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					21,000	31,800
	EXCAVATION / BACKFILL		EST	160	CY			0	0	0.15	28	EXFD	90.00	2,500	2,500
	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					93,200	142,800
	EXCAVATION / BACKFILL		EST	578	CY			0	0	0.15	100	EXFD	90.00	9,000	9,000
	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

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	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					373,100	607,400
	EXCAVATION / BACKFILL		EST	950	CY			0	0	0.15	164	EXFD	90.00	14,700	14,700
	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	32,800					177,400	210,200
	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		1.46	0	6,600	0.08	409	WIRE	98.84	40400	47,000
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	0.23	3,174	WIRE	98.84	313,700	352,100

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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
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							6,325,300	2,542,400		71,836			6,401,500	15,269,200
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						6,247		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	%						7,808			547,763	547,763
	PER DIEM	NONE		0.00	HR						85,891			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				12,712					32,008	44,720
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				127,120						127,120
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			316,265							316,265
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				127,120					320,075	447,195
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				381,360					960,225	1,341,585
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							316,300	648,300					2,381,100	3,345,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS						6,641,600	3,190,700					8,782,600	18,614,800
7.0	SPRAY DRYER ABSORBER ISLAND														0
8.0	ACTIVATED CARBON INJECTION SYSTEM														0
9.0	COMPRESSED AIR SYSTEM														0
10.0	SERVICE WATER SYSTEM														
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					672,800	1,007,900
	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

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	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					8,800	14,000
	EXCAVATION / BACKFILL		EST	20	CY			0	0	0.15	3	EXFD	90.00	300	300
	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
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		7,389			691,200	1,056,300
	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										
	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	%						803			56,342	56,342
	PER DIEM	NONE		0.00	HR						8,835			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				1,178					3,456	4,634
	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
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				11,780					34,560	46,340
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				35,340					103,680	139,020
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							6,500	60,100					252,000	318,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	POTABLE WATER SYSTEM						135,975	295,678					943,238	1,374,891
12.0	FGD SUBSTATION														
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

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	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						1,715		83.48	143,000	143,000
	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
	SALES TAX - NOT INCLUDED														0
	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
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	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

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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					67,700	100,900
	EXCAVATION / BACKFILL		EST	170	CY			0	0	0.15	29	EXFD	90.00	2,600	2,600
	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
	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			1,330,800	1,872,800
	EXCAVATION / BACKFILL		EST	13,000	CY			0	0	0.15	2,243	EXFD	90.00	201,800	201,800
	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 UNLOAIDING 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		40,544			3,533,800	6,554,000
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						3,526		83.48	294,000	294,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						4,407			309,152	309,152
	PER DIEM	NONE		0.00	HR						48,476			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				12,940					17,669	30,609
	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
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				129,395					176,690	306,085

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	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				388,185					530,070	918,255
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							21,600	659,900					1,327,600	2,009,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	TRUCK & RAIL INFRASTRUCTURE						453,900	3,247,800					4,861,400	8,563,100
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
	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	NEW CONCRETE ENCASEMENT	16' X 4' X 40' - FOR EXISTING ASH PIPE HAUL ROAD CROSSING						0	144,300					262,700	407,000
	EXCAVATION / BACKFILL		EST	1,100	CY			0	0	0.15	190	EXFD	90.00	17,100	17,100
	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
16.4	TRUCK WASH AREA - CONCRETE PAD							0	41,900					70,400	112,300
	EXCAVATION / BACKFILL		EST	192	CY			0	0	0.15	33	EXFD	90.00	3,000	3,000
	REINFORCING		EST	16	TN		1,150.00	0	18,400	20.00	368	REIN	78.27	28,800	47,200
	FORMWORK		EST	510	SF		2.50	0	1,300	0.14	82	FORM	99.43	8,200	9,500
	CONCRETE		EST	167	CY		105.00	0	17,500	1.50	288	CONP	79.64	22,900	40,400

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	MUD MAT		EST	25	CY		105.00	0	2,600	1.50	43	CONP	79.64	3,400	6,000
	EMBEDDED STEEL		EST	835	LB		2.50	0	2,100	0.06	58	CARP	71.88	4,100	6,200
16.5	TRUCK WASH AREA - ENCLOSURE							0	67,400					95,300	162,700
	TRUCK WASH AREA - STEEL		EST	10	TN		2,650.00	0	26,500	24.00	276	STST	105.71	29,200	55,700
	TRUCK WASH AREA - SIDNG	20' X 40' X 20'H	EST	2,400	SF		12.00	0	28,800	0.11	304	SDNG	93.41	28,400	57,200
	TRUCK WASH AREA - LIGHTING	ALLOWANCE	EST	2,400	SF		2.50	0	6,000	0.05	138	WIRE	98.84	13,600	19,600
	TRUCK WASH AREA - DRAINAGE	10" HDPE (UNDERGROUND)	EST	200	LF		26.4	0	5,300	0.98	225	MECH	88.89	20,000	25,300
	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
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	0.15	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	0.15	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

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	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
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							574,500	2,968,000		56,565			5,486,600	9,029,100
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						4,919		83.48	411,000	411,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						6,148			431,314	431,314
	PER DIEM	NONE		0.00	HR						67,632			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				14,840					27,433	42,273
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				148,400						148,400
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			28,725							28,725
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				148,400					274,330	422,730
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				445,200					822,990	1,268,190
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							28,700	756,800					1,967,100	2,752,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SITE IMPROVEMENTS - CIVIL WORK						603,200	3,724,800					7,453,700	11,781,700

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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
	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					19,600	30,100
	EXCAVATION / BACKFILL		EST	65	CY			0	0	0.15	11	EXFD	90.00	1,000	1,000
	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		23,240			1,969,900	3,231,700
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						2,021		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	%						2,526			177,205	177,205
	PER DIEM	NONE		0.00	HR						27,787			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				5,259					9,850	15,109
	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
	SALES TAX - NOT INCLUDED														0

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	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				52,590					98,495	151,085
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				157,770					295,485	453,255
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							10,500	268,209					750,035	1,028,744
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BOP ITEMS						220,500	1,320,000					2,719,900	4,260,400
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	EROSION & SEDIMENT CONTROL							0	30,600					48,900	79,500
	SILT FENCE		EST	10,600	LF		1.0	0	10,600	0.02	244	LAND	61.45	15,000	25,600
	ROCK CHECK DAMS		EST	40	EA		500.0	0	20,000	12.00	552	LAND	61.45	33,900	53,900
18.5	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
18.6	OUTAGE TIE-IN DUCTWORK	ALLOWANCE FOR 85 TON DUCTWORK	ALLOW	85	TN		3250	0	276,300	70.00	6,843	FLDU	107.96	738,700	1,015,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							500,000	509,600		14,582			1,451,200	2,460,800
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						1,268		83.48	106,000	106,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						1,585			111,193	111,193
	PER DIEM	NONE		0.00	HR						17,435			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				2,548					7,256	9,804
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				25,480						25,480
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			25,000							25,000
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				25,480					72,560	98,040
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				76,440					217,680	294,120
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							25,000	129,900					514,700	669,600

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	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	CAPITAL REPLACEMENTS - REMOVAL AND RELOCATION OF EXISTING EQUIPMENT AND INFRASTRUCTURE						525,000	639,500					1,965,900	3,130,400
19.0	ARSENIC, ASBESTOS , LEAD ABATEMENT														
19.1	ARSENIC, ASBESTOS , LEAD ABATEMENT	ALLOWANCE PROVIDED BY AEP													750,000
99.00	PHASE I - OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS							107,437,900	62,828,100		1,489,426			154,126,300	325,142,300
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						129,515		103.48	10,814,000	10,814,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						163,384			11,461,627	11,461,627
	PER DIEM	NONE		0.00	HR									0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				236,441					690,582	927,022
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				2,364,405						2,364,405
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			5,269,895							5,269,895
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				2,364,405					6,905,815	9,270,220
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				7,093,215					20,717,445	27,810,660
	PHASE I - OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							6,079,900	12,058,500					52,113,000	70,251,300
	PHASE I - OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST	DRY FGD						113,517,800	74,886,600					206,239,300	395,393,600
	TOTAL PHASE I DIRECT AND CONSTRUCTION INDIRECT COSTS							113,517,800	74,886,600					206,239,300	395,393,600
	INDIRECT COSTS - PHASE I														
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES			1.0	LT										28,000,000
	CONSTRUCTION MANAGEMENT			3.0	%										11,861,800
	S-U / COMMISSIONING			1.0											3,953,900
	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	%						16,189		103.48	1,816,100	1,816,100
	INITIAL FILLS			0.3	%										1,186,200
	OPERATOR & TRAINING MANUALS			1.0	LT										300,000

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	SUBCONTRACTORS (NOISE & DUCTWORK CONSULTANT, GEOTECHNICAL INVESTIGATION)			1.0	LT										400,000
	OWNERS COST - % of ACCT NOS. 92, 93.1, 93.2, 93.3, 93.4	BY AEP		0.0	%										0
	SUBTOTAL - INDIRECT COSTS														47,518,000
	TOTAL PHASE I DIRECT AND INDIRECT COSTS														442,911,600
	SPARE PARTS FOR THE OEM & THE BOP EQUIPMENT - PHASE I			1.3	%			1,475,700							1,475,700
	SPARE PARTS FOR THE OEM EQUIPMENT			0.80	%			914,934							914,934
	SPARE PARTS FOR THE BOP EQUIPMENT			0.50	%			560,766							560,766
	CONTINGENCY - PHASE I			14.9	%										66,365,600
	ESCALATION - PHASE I														40,127,300
	EQUIPMENT	4.0%/yr		4.0	%			11,846,600							11,846,600
	MATERIAL	2.0%/yr		2.0	%				5,374,400						5,374,400
	LABOR	2.5%/yr		2.5	%									18,616,900	18,616,900
	INDIRECTS	2.5%/yr		2.5	%									4,289,400	4,289,400
	INTEREST DURING CONSTRUCTION (AFUDC)	BY AEP													-
	PHASE I - TOTAL PROJECT COST														550,880,200
	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

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	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
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							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
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			45,500	61,500
	EXCAVATION / BACKFILL		EST	148	CY			0	0	0.15	26	EXFD	90.00	2,300	2,300
	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			28,200	43,600
	EXCAVATION / BACKFILL		EST	106	CY			0	0	0.15	18	EXFD	90.00	1,600	1,600
	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			116,600	178,600
	EXCAVATION / BACKFILL		EST	421	CY			0	0	0.15	73	EXFD	90.00	6,500	6,500
	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			1,330,800	1,872,800
	EXCAVATION / BACKFILL		EST	13,000	CY			0	0	0.15	2,243	EXFD	90.00	201,800	201,800
	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

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20.9	LIMESTONE UNLOADING PDC - FOUNDATIONS							0	24,100		0			42,000	66,100
	EXCAVATION / BACKFILL		EST	129	CY			0	0	0.15	22	EXFD	90.00	2,000	2,000
	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
20.11	LIMESTONE RECLAIM PDC - FOUNDATIONS							0	16,800		0			30,100	46,900
	EXCAVATION / BACKFILL		EST	99	CY			0	0	0.15	17	EXFD	90.00	1,500	1,500
	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
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			3,586,500	4,387,600

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	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	5,244	WIRE	98.84	518300	595,800
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	FORM	99.43	240500	267,100
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							6,283,800	3,026,800		114,011			10,636,900	19,947,500
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						9,914		93.30	925,000	925,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						12,392			971,584	971,584
	PER DIEM	NONE		0.00	HR						136,317			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				15,134					53,185	68,319
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				151,340						151,340
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			314,190							314,190
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				151,340					531,845	683,185
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				454,020					1,595,535	2,049,555

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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 - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							314,200	771,800					4,077,100	5,163,200
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIMESTONE HANDLING SYSTEM						6,598,000	3,798,600					14,714,000	25,110,700
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	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
21.3	LIMESTONE SLURRY TANKS - FOUNDATIONS							0	166,400					278,300	444,700
	EXCAVATION / BACKFILL		EST	969	CY			0	0	0.15	167	EXFD	90.00	15,000	15,000
	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
21.4	REAGENT PREPARATION BUILDING - FOUNDATIONS							0	649,100					1,020,200	1,669,300
	EXCAVATION / BACKFILL		EST	2,630	CY			0	0	0.15	454	EXFD	90.00	40,800	40,800
	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
21.5	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
21.6	PIPE SUPPORT PAD - REAGENT PREP BUILDING							0	13,800					24,800	38,600
	EXCAVATION / BACKFILL		EST	105	CY			0	0	0.15	18	EXFD	90.00	1,600	1,600
	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
21.7	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
21.8	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
21.9	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE ARE INCLUDED IN SECTION 23.0 - ABSORBER ISLAND													
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							12,030,400	5,853,500		183,584			16,484,300	34,368,200
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						15,964		89.79	1,433,000	1,433,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						19,955			1,505,691	1,505,691
	PER DIEM	NONE		0.00	HR						219,503			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				29,268					82,422	111,689
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				292,675						292,675
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			601,520							601,520
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				292,675					824,215	1,116,890

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	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				878,025					2,472,645	3,350,670
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							601,500	1,492,600					6,318,000	8,412,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	REAGENT (LIMESTONE) PREPARATION ISLAND						12,631,900	7,346,100					22,802,300	42,780,300
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

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	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					47,600	73,600
	EXCAVATION / BACKFILL		EST	295	CY			0	0	0.15	51	EXFD	90.00	4,600	4,600
	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					163,900	263,900
	EXCAVATION / BACKFILL		EST	614	CY			0	0	0.15	106	EXFD	90.00	9,500	9,500
	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

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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
22.11	LANDFILL SERVICE WATER TANKS & PUMP - FOUNDATIONS							0	80,900					141,700	222,600
	EXCAVATION / BACKFILL		EST	614	CY			0	0	0.15	106	EXFD	90.00	9,500	9,500
	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					47,600	73,600
	EXCAVATION / BACKFILL		EST	295	CY			0	0	0.15	51	EXFD	90.00	4,600	4,600
	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					577,200	917,400
	EXCAVATION / BACKFILL		EST	1,915	CY			0	0	0.15	330	EXFD	90.00	29,700	29,700
	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					31,700	47,800
	EXCAVATION / BACKFILL		EST	140	CY			0	0	0.15	24	EXFD	90.00	2,200	2,200
	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					1,364,300	2,256,000
	EXCAVATION / BACKFILL		EST	2,900	CY			0	0	0.15	500	EXFD	90.00	45,000	45,000
	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					125,100	185,900
	EXCAVATION / BACKFILL		EST	1,120	CY			0	0	0.15	193	EXFD	90.00	17,400	17,400
	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					224,400	361,700
	EXCAVATION / BACKFILL		EST	489	CY			0	0	0.15	84	EXFD	90.00	7,600	7,600
	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

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	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					432,400	707,900
	EXCAVATION / BACKFILL		EST	1,200	CY			0	0	0.15	207	EXFD	90.00	18,600	18,600
	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					24,700	38,500
	EXCAVATION / BACKFILL		EST	95	CY			0	0	0.15	16	EXFD	90.00	1,500	1,500
	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					56,300	88,600
	EXCAVATION / BACKFILL		EST	210	CY			0	0	0.15	36	EXFD	90.00	3,300	3,300
	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

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	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	0.15	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	6,300					10,300	16,600

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				FGD PROJECT - IAQCS (ESP)-2A - 1.7 LB/MM BTU - PHASED										Date:	9/10/2010
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	SILT FENCE		EST	1,300	LF		1.0	0	1,300	0.02	30	LAND	61.45	1,800	3,100
	ROCK CHECK DAMS		EST	10	EA		500.0	0	5,000	12.00	138	LAND	61.45	8,500	13,500
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	0.15	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

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	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
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

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	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
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					183,600	253,800
	EXCAVATION / BACKFILL		EST	1,000	CY			0	0	0.15	173	EXFD	90.00	15,500	15,500
	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

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90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							9,715,800	15,995,100		333,034			29,884,100	55,595,000
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						28,959		89.73	2,599,000	2,599,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						36,199			2,729,640	2,729,640
	PER DIEM	NONE		0.00	HR						398,193			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				79,976					149,421	229,396
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				799,755						799,755
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			485,790							485,790
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				799,755					1,494,205	2,293,960
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				2,399,265					4,482,615	6,881,880
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							485,800	4,078,800					11,454,900	16,019,400
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)						10,201,600	20,073,900					41,339,000	71,614,400
23.0	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	LABOR COST REFLECTS DIFFICULTY FACTOR WORKING WITH C276 VS. A2205	EST	49,800	SF		300.00	0	14,940,000	1.50	85,905	MECH	88.89	7,636,100	22,576,100
23.3	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
23.4	PIPING - MECHANICAL	ALL PIPING INCLUDED IN OEM EQUIPMENT COST. NO BOP PIPING						0	0					0	0
23.5	ABSORBER VESSEL - FOUNDATIONS							0	366,900					609,400	976,300

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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	2,921	CY			0	0	0.15	504	EXFD	90.00	45,300	45,300
	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
23.6	ABSORBER BUILDING - FOUNDATIONS							0	544,300					852,800	1,397,100
	EXCAVATION / BACKFILL		EST	2,300	CY			0	0	0.15	397	EXFD	90.00	35,700	35,700
	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
23.7	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
	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
23.8	PIPE SUPPORT PAD - ABSORBER BUILDING							0	7,700					14,100	21,800
	EXCAVATION / BACKFILL		EST	95	CY			0	0	0.15	16	EXFD	90.00	1,500	1,500
	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
23.9	OXIDATION AIR BLOWER BUILDING - FOUNDATIONS							0	37,000					63,200	100,200
	EXCAVATION / BACKFILL		EST	188	CY			0	0	0.15	32	EXFD	90.00	2,900	2,900
	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
23.10	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

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	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
23.11	PIPE SUPPORT PAD - OXIDATION BUILDING							0	7,700					13,100	20,800
	EXCAVATION / BACKFILL		EST	30	CY			0	0	0.15	5	EXFD	90.00	500	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
23.12	DUCTWORK	INCLUDES INTERNAL BRACING AND TURNING VANES	EST	160	TN		3,250.00	0	520,000	60.00	11,040	FLDU	107.96	1,191,900	1,711,900
23.13	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
23.14	DUCTWORK INSULATION & LAGGING		EST	12,250	SF		12.00	0	147,000	0.25	3,522	DINS	81.75	287,900	434,900
23.15	FOUNDATIONS FOR DUCT SUPPORT STEEL							0	27,800					49,300	77,100
	EXCAVATION / BACKFILL		EST	180	CY			0	0	0.15	31	EXFD	90.00	2,800	2,800
	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
23.16	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
23.17	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
23.18	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
23.19	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
23.20	MIMIC PANELS		EST	2	EA	17500		35,000	0	40.00	80	WIRE	98.84	7,900	42,900
23.21	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
23.22	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
23.23	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
23.24	RACEWAY, CABLE TRAY, & CONDUIT							0	1,388,600					5,513,200	6,901,800
	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	8,400	LF		31.00	0	260,400	0.81	6,779	WIRE	98.84	670000	930,400
	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,050	LF		21.50	0	22,600	0.65	677	WIRE	98.84	66900	89,500
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	13,300	LF		9.25	0	123,000	0.35	4,682	WIRE	98.84	462700	585,700
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	16,900	LF		7.15	0	120,800	0.28	4,800	WIRE	98.84	474400	595,200
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	29,200	LF		4.44	0	129,600	0.24	6,979	WIRE	98.84	689800	819,400
	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

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	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	FORM	99.43	148200	224,600
23.25	HIGH VOLTAGE POWER CABLE & TERMINATION							0	41,700					117,600	159,300
	1/C # 500KCMIL-15KV		EST	4,500	LF		9.27	0	41,700	0.23	1,190	WIRE	98.84	117600	159,300
23.26	MEDIUM VOLTAGE POWER CABLE & TERMINATION							0	92,100		0			302,400	394,500
	1/C # 500KCMIL-5KV		EST	6,600	LF		8.08	0	53,300	0.17	1,313	WIRE	98.84	129800	183,100
	1/C # 350KCMIL-5KV		EST	5,400	LF		6.13	0	33,100	0.23	1,428	WIRE	98.84	141200	174,300
	1/C # 250KCMIL-5KV		EST	1,200	LF		4.74	0	5,700	0.23	317	WIRE	98.84	31400	37,100
23.27	LOW VOLTAGE POWER CABLE & TERMINATION							0	566,000					810,600	1,376,600
	3/C # 500KCMIL- 600V		EST	2,320	LF		26.12	0	60,600	0.69	1,841	WIRE	98.84	182000	242,600
	#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
23.28	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
23.29	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
23.30	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
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							44,488,300	22,397,000		720,666			65,052,300	131,937,600
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						63,315		90.27	5,715,000	5,715,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						79,143			6,003,377	6,003,377
	PER DIEM	NONE		0.00	HR						870,576			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				111,985					325,262	437,247
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				1,119,850						1,119,850
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			2,224,415							2,224,415
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				1,119,850					3,252,615	4,372,465
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				3,359,550					9,757,845	13,117,395
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							2,899,400	5,711,200					25,716,500	34,327,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	ABSORBER ISLAND						47,387,700	28,108,200					90,768,800	166,264,700
24.0	COMPRESSED AIR SYSTEM (BYPRODUCT DEWATERING AREA)														0

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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
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
	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					8,800	14,000
	EXCAVATION / BACKFILL		EST	20	CY			0	0	0.15	3	EXFD	90.00	300	300
	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		523			47,500	85,500
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						45		90.85	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			4,339	4,339
	PER DIEM	NONE		0.00	HR						625			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				84					238	321
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				835						835
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			1,065							1,065
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				835					2,375	3,210
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				2,505					7,125	9,630
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							1,100	4,300					18,100	23,400
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	POTABLE WATER SYSTEM						22,400	21,000					65,600	108,900
26.0	FGD SUBSTATION														
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

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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
	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										
	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
	SALES TAX - NOT INCLUDED														0
	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
	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

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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
	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
28.8	EROSION & SEDIMENT CONTROL							0	1,200					1,700	2,900
	SILT FENCE		EST	1,200	LF		1.0	0	1,200	0.02	28	LAND	61.45	1,700	2,900
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							3,000	966,500		11,578			1,307,400	2,276,900
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						1,007		112.92	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	%						1,258			119,419	119,419
	PER DIEM	NONE		0.00	HR						13,843			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				4,833					6,537	11,370
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				48,325						48,325
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			150							150
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				48,325					65,370	113,695
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				144,975					196,110	341,085
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							200	246,500					501,400	748,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SITE IMPROVEMENTS - CIVIL WORK						3,200	1,213,000					1,808,800	3,024,900
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

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	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	165,100					633,300	798,400
	TOUCH UP PAINT FOR SHOP PAINTED STEEL		EST	24,190	SF		3	0	72,600	0.15	4,173	PNTR	66.72	278,400	351,000
	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	18,840	SF		3	0	56,500	0.15	3,250	PNTR	66.72	216,800	273,300
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					16,700	25,300
	EXCAVATION / BACKFILL		EST	60	CY			0	0	0.15	10	EXFD	90.00	900	900
	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	1,150,300		26,832			2,238,700	3,569,000
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						2,333		83.43	195,000	195,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						2,916			204,485	204,485
	PER DIEM	NONE		0.00	HR						32,081			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				5,752					11,194	16,945
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				57,515						57,515
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			9,000							9,000
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				57,515					111,935	169,450
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				172,545					335,805	508,350

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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 - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							9,000	293,327					858,418	1,160,745
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BOP ITEMS						189,000	1,443,600					3,097,100	4,729,700
99.00	PHASE II - OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS							74,844,900	53,623,600		1,430,456			129,167,200	257,635,700
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						125,035		90.30	11,291,000	11,291,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						156,294			11,859,688	11,859,688
	PER DIEM	NONE		0.00	HR									0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				268,118					645,836	913,954
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				2,681,180						2,681,180
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			3,742,245							3,742,245
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				2,681,180					6,458,360	9,139,540
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				8,043,540					19,375,080	27,418,620
	PHASE II - OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							4,417,200	13,674,000					50,292,400	68,383,600
	PHASE II - OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST	WET FGD						79,262,100	67,297,600					179,459,600	326,019,300
	TOTAL PHASE II DIRECT AND CONSTRUCTION INDIRECT COSTS							79,262,100	67,297,600					179,459,600	326,019,300
	INDIRECT COSTS - PHASE II														
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES			1.0	LT										23,000,000
	CONSTRUCTION MANAGEMENT			3.0	%										9,780,600
	S-U / COMMISSIONING			1.0											3,260,200
	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	%						15,555		90.30	1,522,600	1,522,600
	INITIAL FILLS			0.3	%										978,100
	OPERATOR & TRAINING MANUALS			1.0	LT										300,000
	SUBCONTRACTORS (NOISE CONSULTANT)			1.0	LT										100,000
	OWNERS COST - % of ACCT NOS. 92, 93.1, 93.2, 93.3, 93.4	BY AEP		0.0	%										0
	SUBTOTAL - INDIRECT COSTS														38,941,500

				AEP										Estimate No.:	30714B
				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS (ESP)-2A - 1.7 LB/MM BTU - PHASED										Date:	9/10/2010
				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 PHASE II DIRECT AND INDIRECT COSTS														364,960,800
	SPARE PARTS FOR THE OEM & THE BOP EQUIPMENT - PHASE II			1.3	%			1,030,400							1,030,400
	SPARE PARTS FOR THE OEM EQUIPMENT			0.80				638,848							638,848
	SPARE PARTS FOR THE BOP EQUIPMENT			0.50				391,552							391,552
	CONTINGENCY - PHASE II.			15.8	%										57,877,600
	ESCALATION - PHASE II														83,269,500
	EQUIPMENT	3.0%/yr		3.0	%			19,927,400							19,927,400
	MATERIAL	2.0%/yr		2.0	%				12,336,900						12,336,900
	LABOR	2.5%/yr		2.5	%									41,910,800	41,910,800
	INDIRECTS	2.5%/yr		2.5	%									9,094,400	9,094,400
	INTEREST DURING CONSTRUCTION (AFUDC)	BY AEP													-
	PHASE II - TOTAL PROJECT COST														507,138,300
99.00	PHASE I + PHASE II OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS							182,282,800	116,451,700		2,919,881			283,293,500	582,778,000
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						254,551		97.02	22,105,000	22,105,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						319,679			23,321,316	23,321,316
	PER DIEM	NONE		0.00	HR									0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				504,559					1,336,418	1,840,976
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				5,045,585						5,045,585
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			9,012,140							9,012,140
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				5,045,585					13,364,175	18,409,760
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				15,136,755					40,092,525	55,229,280
	PHASE I + PHASE II OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							10,497,100	25,732,500					102,405,400	138,635,000
	PHASE I + PHASE II OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST							192,779,900	142,184,200					385,698,900	721,413,000
	TOTAL PHASE I + PHASE II DIRECT AND CONSTRUCTION INDIRECT COSTS							192,779,900	142,184,200					385,698,900	721,412,900
	INDIRECT COSTS														
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES			1.0	LT										51,000,000

				AEP											Estimate No.:	30714B
				BIG SANDY UNIT 2											Project No.:	12721-000
				FGD PROJECT - IAQCS (ESP)-2A - 1.7 LB/MM BTU - PHASED											Date:	9/10/2010
				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
	CONSTRUCTION MANAGEMENT			3.0	%										21,642,400
	S-U / COMMISSIONING			1.0											7,214,100
	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	%										3,338,700
	INITIAL FILLS			0.3	%										2,164,300
	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
	OWNERS COST - % of ACCT NOS. 92, 93.1, 93.2, 93.3, 93.4	BY AEP		0.0	%										0
	SUBTOTAL - INDIRECT COSTS														86,459,500
	TOTAL PROJECT DIRECT AND INDIRECT COSTS														807,872,400
	SPARE PARTS FOR THE OEM & THE BOP EQUIPMENT			1.3	%			2,506,100							2,506,100
	SPARE PARTS FOR THE OEM EQUIPMENT			0.80				1,553,782							1,553,782
	SPARE PARTS FOR THE BOP EQUIPMENT			0.50				952,318							952,318
	CONTINGENCY														124,243,200
	ESCALATION														123,396,800
	EQUIPMENT							31,774,000							31,774,000
	MATERIAL								17,711,300						17,711,300
	LABOR													60,527,700	60,527,700
	INDIRECTS													13,383,800	13,383,800
	INTEREST DURING CONSTRUCTION (AFUDC)	BY AEP													-
	TOTAL PROJECT COST														1,058,018,500
	REFERENCE COSTS:														
A	ESP STRUCTURAL INTEGRITY MODS	ALLOWANCE FOR 150 TON FRAMING REINFORCEMENT	EST	150	TN		2900	0	435,000	120.00	20,700	STST	105.71	2,188,200	2,623,200

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

				AEP										Estimate No.:	30718B
				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS (N/ESP)-2B - 1.7 LB/MM BTU - PHASED										Date:	9/12/2010
				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														
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					973,600	1,524,300
	EXCAVATION / BACKFILL		EST	4,945	CY			0	0	0.15	853	EXFD	90.00	76,800	76,800
	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	LIGHT FIXTURE		EST	22	EA		750.00	0	16,500	4.00	101	WIRE	98.84	10,000	26,500
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

				AEP										Estimate No.:	30718B
				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS (N/ESP)-2B - 1.7 LB/MM BTU - PHASED										Date:	9/12/2010
				ORDER OF MAGNITUDE COST ESTIMATE										Preparer:	MNO
		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
	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							22,578,400	3,019,600		195,235			17,450,600	43,048,600
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						16,977		83.48	1,417,000	1,417,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						21,221			1,488,695	1,488,695
	PER DIEM	NONE		0.00	HR						233,433			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				15,098					87,253	102,351
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				150,980						150,980
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			1,128,920							1,128,920
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				150,980					872,530	1,023,510
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				452,940					2,617,590	3,070,530
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							1,128,900	770,000					6,483,100	8,382,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FABRIC FILTERS						23,707,300	3,789,600					23,933,700	51,430,600
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
	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

				AEP										Estimate No.:	30718B
				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS (N/ESP)-2B - 1.7 LB/MM BTU - PHASED										Date:	9/12/2010
				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
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					158,400	243,700
	EXCAVATION / BACKFILL		EST	1,000	CY			0	0	0.15	173	EXFD	90.00	15,500	15,500
	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	160,700					281,500	442,200
	EXCAVATION / BACKFILL		EST	1,900	CY			0	0	0.15	328	EXFD	90.00	29,500	29,500
	REINFORCING		EST	100	TN		1,150.00	0	115,000	20.00	2,300	REIN	78.27	180,000	295,000
	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					288,500	460,800
	EXCAVATION / BACKFILL		EST	1,350	CY			0	0	0.15	233	EXFD	90.00	21,000	21,000
	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					26,200	40,400
	EXCAVATION / BACKFILL		EST	110	CY			0	0	0.15	19	EXFD	90.00	1,700	1,700
	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					208,200	302,400
	EXCAVATION / BACKFILL		EST	1,360	CY			0	0	0.15	235	EXFD	90.00	21,100	21,100
	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

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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
4.14	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	296,400					1,429,900	1,726,300
	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		1.46	0	12,000	0.08	745	WIRE	98.84	73,600	85,600

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4.22	HIGH VOLTAGE POWER CABLE & TERMINATION	1/C # 500KCMIL-15KV, 12000' UNIT 2 + 3600' LIME UNLOAD	EST	15,600	LF		9.27	0	144,600	0.23	4,126	WIRE	98.84	407,800	552,400
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
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							3,887,600	2,660,900		56,146			5,284,800	11,833,300
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						4,882		83.48	408,000	408,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						6,103			428,122	428,122
	PER DIEM	NONE		0.00	HR						67,131			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				13,305					26,424	39,729
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				133,045						133,045
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			194,380							194,380
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				133,045					264,240	397,285
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				399,135					792,720	1,191,855
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							194,400	678,500					1,919,500	2,792,400
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME HANDLING SYSTEM						4,082,000	3,339,400					7,204,300	14,625,700
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

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	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					278,300	444,700
	EXCAVATION / BACKFILL		EST	969	CY			0	0	0.15	167	EXFD	90.00	15,000	15,000
	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					194,200	313,400
	EXCAVATION / BACKFILL		EST	450	CY			0	0	0.15	78	EXFD	90.00	7,000	7,000
	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	776,800					721,000	1,538,300
	STRUCTURAL STEEL		EST	100	TN		2650	0	265,000	16.00	1,840	STST	105.71	194,500	459,500
	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	1,173,800		62,961			5,568,000	12,500,100
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						5,475		83.48	457,000	457,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						6,844			480,088	480,088
	PER DIEM	NONE		0.00	HR						75,280			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				5,869					27,840	33,709
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				58,690						58,690
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			287,915							287,915
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				58,690					278,400	337,090
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				176,070					835,200	1,011,270
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							287,900	299,300					2,078,500	2,665,800
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME SLAKER BUILDING						6,046,200	1,473,100					7,646,500	15,165,900
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	50,000.00	400,000	50,000	3200.00	3,680	MECH	88.89	327,100	777,100
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

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	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													
6.8	SDA 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	WASTE ASH STORAGE SILO - FOUNDATIONS							0	132,100					223,900	356,000
	EXCAVATION / BACKFILL		EST	1,100	CY			0	0	0.15	190	EXFD	90.00	17,100	17,100
	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	0.15	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	0.15	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					373,100	607,400
	EXCAVATION / BACKFILL		EST	950	CY			0	0	0.15	164	EXFD	90.00	14,700	14,700
	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

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	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	32,800					177,400	210,200
	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		1.46	0	6,600	0.08	409	WIRE	98.84	40400	47,000
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	0.23	3,174	WIRE	98.84	313,700	352,100
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
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							4,812,300	2,307,100		57,872			5,161,700	12,281,100
	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	%						5,032		83.48	420,000	420,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						6,290			441,285	441,285
	PER DIEM	NONE		0.00	HR						69,195			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				11,536					25,809	37,344
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				115,355						115,355
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			240,615							240,615
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				115,355					258,085	373,440
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				346,065					774,255	1,120,320
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							240,600	588,300					1,919,400	2,748,400
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS						5,052,900	2,895,400					7,081,100	15,029,500
7.0	SPRAY DRYER ABSORBER ISLAND														0
8.0	ACTIVATED CARBON INJECTION SYSTEM														0
9.0	COMPRESSED AIR SYSTEM														0
10.0	SERVICE WATER SYSTEM														
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					672,800	1,007,900
	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					8,800	14,000
	EXCAVATION / BACKFILL		EST	20	CY			0	0	0.15	3	EXFD	90.00	300	300

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	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
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		7,389			691,200	1,056,300
	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										
	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	%						803			56,342	56,342
	PER DIEM	NONE		0.00	HR						8,835			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				1,178					3,456	4,634
	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
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				11,780					34,560	46,340
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				35,340					103,680	139,020
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							6,500	60,100					252,000	318,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	POTABLE WATER SYSTEM						135,975	295,678					943,238	1,374,891
12.0	FGD SUBSTATION														
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										

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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
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						1,715		83.48	143,000	143,000
	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
	SALES TAX - NOT INCLUDED														0
	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
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	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					67,700	100,900
	EXCAVATION / BACKFILL		EST	170	CY			0	0	0.15	29	EXFD	90.00	2,600	2,600
	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

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	MUD MAT		EST	20	CY		105.00	0	2,100	1.50	35	CONP	79.64	2,700	4,800
	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			1,330,800	1,872,800
	EXCAVATION / BACKFILL		EST	13,000	CY			0	0	0.15	2,243	EXFD	90.00	201,800	201,800
	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 UNLOAIDING 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		40,544			3,533,800	6,554,000
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						3,526		83.48	294,000	294,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						4,407			309,152	309,152
	PER DIEM	NONE		0.00	HR						48,476			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				12,940					17,669	30,609
	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
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				129,395					176,690	306,085
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				388,185					530,070	918,255
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							21,600	659,900					1,327,600	2,009,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	TRUCK & RAIL INFRASTRUCTURE						453,900	3,247,800					4,861,400	8,563,100
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

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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	NEW CONCRETE ENCASEMENT	16' X 4' X 40' - FOR EXISTING ASH PIPE HAUL ROAD CROSSING						0	144,300					262,700	407,000
	EXCAVATION / BACKFILL		EST	1,100	CY			0	0	0.15	190	EXFD	90.00	17,100	17,100
	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
16.4	TRUCK WASH AREA - CONCRETE PAD							0	41,900					70,400	112,300
	EXCAVATION / BACKFILL		EST	192	CY			0	0	0.15	33	EXFD	90.00	3,000	3,000
	REINFORCING		EST	16	TN		1,150.00	0	18,400	20.00	368	REIN	78.27	28,800	47,200
	FORMWORK		EST	510	SF		2.50	0	1,300	0.14	82	FORM	99.43	8,200	9,500
	CONCRETE		EST	167	CY		105.00	0	17,500	1.50	288	CONP	79.64	22,900	40,400
	MUD MAT		EST	25	CY		105.00	0	2,600	1.50	43	CONP	79.64	3,400	6,000
	EMBEDDED STEEL		EST	835	LB		2.50	0	2,100	0.06	58	CARP	71.88	4,100	6,200
16.5	TRUCK WASH AREA - ENCLOSURE							0	67,400					95,300	162,700
	TRUCK WASH AREA - STEEL		EST	10	TN		2,650.00	0	26,500	24.00	276	STST	105.71	29,200	55,700
	TRUCK WASH AREA - SIDNG	20' X 40' X 2O'H	EST	2,400	SF		12.00	0	28,800	0.11	304	SDNG	93.41	28,400	57,200
	TRUCK WASH AREA - LIGHTING	ALLOWANCE	EST	2,400	SF		2.50	0	6,000	0.05	138	WIRE	98.84	13,600	19,600
	TRUCK WASH AREA - DRAINAGE	10" HDPE (UNDERGROUND)	EST	200	LF		26.4	0	5,300	0.98	225	MECH	88.89	20,000	25,300
	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
16.6	TRUCK SCALE & CONCRETE APPROACH							170,000	27,300					92,000	289,300

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	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	0.15	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	0.15	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

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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	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
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							574,500	2,968,000		56,565			5,486,600	9,029,100
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						4,919		83.48	411,000	411,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						6,148			431,314	431,314
	PER DIEM	NONE		0.00	HR						67,632			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				14,840					27,433	42,273
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				148,400						148,400
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			28,725							28,725
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				148,400					274,330	422,730
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				445,200					822,990	1,268,190
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							28,700	756,800					1,967,100	2,752,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SITE IMPROVEMENTS - CIVIL WORK						603,200	3,724,800					7,453,700	11,781,700
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
	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

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	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					19,600	30,100
	EXCAVATION / BACKFILL		EST	65	CY			0	0	0.15	11	EXFD	90.00	1,000	1,000
	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		23,240			1,969,900	3,231,700
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						2,021		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	%						2,526			177,205	177,205
	PER DIEM	NONE		0.00	HR						27,787			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				5,259					9,850	15,109
	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
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				52,590					98,495	151,085
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				157,770					295,485	453,255
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							10,500	268,209					750,035	1,028,744
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BOP ITEMS						220,500	1,320,000					2,719,900	4,260,400
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

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	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	EROSION & SEDIMENT CONTROL							0	30,600					48,900	79,500
	SILT FENCE		EST	10,600	LF		1.0	0	10,600	0.02	244	LAND	61.45	15,000	25,600
	ROCK CHECK DAMS		EST	40	EA		500.0	0	20,000	12.00	552	LAND	61.45	33,900	53,900
18.5	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
18.6	OUTAGE TIE-IN DUCTWORK	ALLOWANCE FOR 85 TON DUCTWORK	ALLOW	85	TN		3250	0	276,300	70.00	6,843	FLDU	107.96	738,700	1,015,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							500,000	509,600		14,582			1,451,200	2,460,800
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						1,268		83.48	106,000	106,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						1,585			111,193	111,193
	PER DIEM	NONE		0.00	HR						17,435			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				2,548					7,256	9,804
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				25,480						25,480
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			25,000							25,000
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				25,480					72,560	98,040
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				76,440					217,680	294,120
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							25,000	129,900					514,700	669,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	CAPITAL REPLACEMENTS - REMOVAL AND RELOCATION OF EXISTING EQUIPMENT AND INFRASTRUCTURE						525,000	639,500					1,965,900	3,130,400
19.0	ARSENIC, ASBESTOS , LEAD ABATEMENT														
19.1	ARSENIC, ASBESTOS , LEAD ABATEMENT	ALLOWANCE PROVIDED BY AEP													750,000
99.00	PHASE I - OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS							106,535,900	60,181,800		1,431,766			148,417,600	315,885,300

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	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						124,501		103.66	10,395,000	10,395,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						157,117			11,021,966	11,021,966
	PER DIEM	NONE		0.00	HR									0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				223,209					662,038	885,247
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				2,232,090						2,232,090
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			5,224,795							5,224,795
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				2,232,090					6,620,380	8,852,470
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				6,696,270					19,861,140	26,557,410
	PHASE I - OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							6,034,800	11,383,700					50,084,000	67,502,500
	PHASE I - OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST	DRY FGD						112,570,700	71,565,500					198,501,600	383,387,800
	TOTAL PHASE I DIRECT AND CONSTRUCTION INDIRECT COSTS							112,570,700	71,565,500					198,501,600	383,387,800
	INDIRECT COSTS - PHASE I														
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES			1.0	LT										28,000,000
	CONSTRUCTION MANAGEMENT			3.0	%										11,501,600
	S-U / COMMISSIONING			1.0											3,833,900
	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	%						15,563		103.66	1,748,800	1,748,800
	INITIAL FILLS			0.3	%										1,150,200
	OPERATOR & TRAINING MANUALS			1.0	LT										300,000
	SUBCONTRACTORS (NOISE & DUCTWORK CONSULTANT, GEOTECHNICAL INVESTIGATION)			1.0	LT										400,000
	OWNERS COST - % of ACCT NOS. 92, 93.1, 93.2, 93.3, 93.4	BY AEP		0.0	%										0
	SUBTOTAL - INDIRECT COSTS														46,934,500
	TOTAL PHASE I DIRECT AND INDIRECT COSTS														430,322,300
	SPARE PARTS FOR THE OEM & THE BOP EQUIPMENT - PHASE I			1.3	%			1,463,400							1,463,400
	SPARE PARTS FOR THE OEM EQUIPMENT			0.80	%			907,308							907,308
	SPARE PARTS FOR THE BOP EQUIPMENT			0.50	%			556,092							556,092

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	CONTINGENCY - PHASE I			14.8	%										63,958,300
	ESCALATION - PHASE I														39,039,100
	EQUIPMENT	4.0%/yr		4.0	%			11,747,800							11,747,800
	MATERIAL	2.0%/yr		2.0	%				5,136,100						5,136,100
	LABOR	2.5%/yr		2.5	%									17,918,500	17,918,500
	INDIRECTS	2.5%/yr		2.5	%									4,236,700	4,236,700
	INTEREST DURING CONSTRUCTION (AFUDC)	BY AEP													-
	PHASE I - TOTAL PROJECT COST														534,783,100
	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
	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

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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							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
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
50.5	CONVEYOR SUPPORT STEEL - FOUNDATIONS							0	16,000		0			45,500	61,500
	EXCAVATION / BACKFILL		EST	148	CY			0	0	0.15	26	EXFD	90.00	2,300	2,300
	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			28,200	43,600
	EXCAVATION / BACKFILL		EST	106	CY			0	0	0.15	18	EXFD	90.00	1,600	1,600
	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			116,600	178,600
	EXCAVATION / BACKFILL		EST	421	CY			0	0	0.15	73	EXFD	90.00	6,500	6,500
	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			1,330,800	1,872,800
	EXCAVATION / BACKFILL		EST	13,000	CY			0	0	0.15	2,243	EXFD	90.00	201,800	201,800
	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			42,000	66,100
	EXCAVATION / BACKFILL		EST	129	CY			0	0	0.15	22	EXFD	90.00	2,000	2,000
	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			30,100	46,900
	EXCAVATION / BACKFILL		EST	99	CY			0	0	0.15	17	EXFD	90.00	1,500	1,500
	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

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	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
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	FORM	99.43	240500	267,100
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							6,283,800	3,026,800		114,121			10,647,800	19,958,400
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						9,924		93.30	926,000	926,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						12,404			972,579	972,579
	PER DIEM	NONE		0.00	HR						136,449			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				15,134					53,239	68,373
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				151,340						151,340
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			314,190							314,190
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				151,340					532,390	683,730
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				454,020					1,597,170	2,051,190
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							314,200	771,800					4,081,400	5,167,400
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIMESTONE HANDLING SYSTEM						6,598,000	3,798,600					14,729,200	25,125,800
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	11,425,000		11,425,000	0	101240.00	116,426	MECH	88.89	10,349,100	21,774,100
21.2	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

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	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
21.3	LIMESTONE SLURRY TANKS - FOUNDATIONS							0	166,400					278,300	444,700
	EXCAVATION / BACKFILL		EST	969	CY			0	0	0.15	167	EXFD	90.00	15,000	15,000
	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
21.4	REAGENT PREPARATION BUILDING - FOUNDATIONS							0	649,100					1,020,200	1,669,300
	EXCAVATION / BACKFILL		EST	2,630	CY			0	0	0.15	454	EXFD	90.00	40,800	40,800
	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
21.5	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
21.6	PIPE SUPPORT PAD - REAGENT PREP BUILDING							0	13,800					24,800	38,600
	EXCAVATION / BACKFILL		EST	105	CY			0	0	0.15	18	EXFD	90.00	1,600	1,600
	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

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	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
21.7	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
21.8	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
21.9	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE ARE INCLUDED IN SECTION 28.0 - ABSORBER ISLAND													
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							12,030,400	5,853,500		183,584			16,484,300	34,368,200
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						15,964		89.79	1,433,000	1,433,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						19,955			1,505,691	1,505,691
	PER DIEM	NONE		0.00	HR						219,503			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				29,268					82,422	111,689
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				292,675						292,675
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			601,520							601,520
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				292,675					824,215	1,116,890
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				878,025					2,472,645	3,350,670
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							601,500	1,492,600					6,318,000	8,412,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	REAGENT (LIMESTONE) PREPARATION ISLAND						12,631,900	7,346,100					22,802,300	42,780,300
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

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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					47,600	73,600
	EXCAVATION / BACKFILL		EST	295	CY			0	0	0.15	51	EXFD	90.00	4,600	4,600
	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					163,900	263,900
	EXCAVATION / BACKFILL		EST	614	CY			0	0	0.15	106	EXFD	90.00	9,500	9,500
	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					141,700	222,600
	EXCAVATION / BACKFILL		EST	614	CY			0	0	0.15	106	EXFD	90.00	9,500	9,500
	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					47,600	73,600
	EXCAVATION / BACKFILL		EST	295	CY			0	0	0.15	51	EXFD	90.00	4,600	4,600
	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

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	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					577,200	917,400
	EXCAVATION / BACKFILL		EST	1,915	CY			0	0	0.15	330	EXFD	90.00	29,700	29,700
	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					31,700	47,800
	EXCAVATION / BACKFILL		EST	140	CY			0	0	0.15	24	EXFD	90.00	2,200	2,200
	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					1,364,300	2,256,000
	EXCAVATION / BACKFILL		EST	2,900	CY			0	0	0.15	500	EXFD	90.00	45,000	45,000
	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					125,100	185,900
	EXCAVATION / BACKFILL		EST	1,120	CY			0	0	0.15	193	EXFD	90.00	17,400	17,400
	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					224,400	361,700
	EXCAVATION / BACKFILL		EST	489	CY			0	0	0.15	84	EXFD	90.00	7,600	7,600
	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					432,400	707,900
	EXCAVATION / BACKFILL		EST	1,200	CY			0	0	0.15	207	EXFD	90.00	18,600	18,600
	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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	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					24,700	38,500
	EXCAVATION / BACKFILL		EST	95	CY			0	0	0.15	16	EXFD	90.00	1,500	1,500
	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					56,300	88,600
	EXCAVATION / BACKFILL		EST	210	CY			0	0	0.15	36	EXFD	90.00	3,300	3,300
	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

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	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	0.15	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	6,300					10,300	16,600
	SILT FENCE		EST	1,300	LF		1.0	0	1,300	0.02	30	LAND	61.45	1,800	3,100
	ROCK CHECK DAMS		EST	10	EA		500.0	0	5,000	12.00	138	LAND	61.45	8,500	13,500
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

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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	0.15	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

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	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
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

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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
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					183,600	253,800
	EXCAVATION / BACKFILL		EST	1,000	CY			0	0	0.15	173	EXFD	90.00	15,500	15,500
	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
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							9,715,800	15,995,100		333,034			29,884,100	55,595,000
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						28,959		89.73	2,599,000	2,599,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						36,199			2,729,640	2,729,640
	PER DIEM	NONE		0.00	HR						398,193			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				79,976					149,421	229,396
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				799,755						799,755
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			485,790							485,790
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				799,755					1,494,205	2,293,960
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				2,399,265					4,482,615	6,881,880
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							485,800	4,078,800					11,454,900	16,019,400
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)						10,201,600	20,073,900					41,339,000	71,614,400
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	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	LABOR COST REFLECTS DIFFICULTY FACTOR WORKING WITH C276 VS. A2205	EST	49,800	SF		300.00	0	14,940,000	1.50	85,905	MECH	88.89	7,636,100	22,576,100
23.3	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
23.4	PIPING - MECHANICAL	ALL PIPING INCLUDED IN OEM EQUIPMENT COST. NO BOP PIPING						0	0					0	0
23.5	ABSORBER VESSEL - FOUNDATIONS							0	366,900					609,400	976,300
	EXCAVATION / BACKFILL		EST	2,921	CY			0	0	0.15	504	EXFD	90.00	45,300	45,300
	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

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	EMBEDDED STEEL		EST	7,855	LB		2.50	0	19,600	0.06	542	CARP	71.88	39,000	58,600
23.6	ABSORBER BUILDING - FOUNDATIONS							0	544,300					852,800	1,397,100
	EXCAVATION / BACKFILL		EST	2,300	CY			0	0	0.15	397	EXFD	90.00	35,700	35,700
	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
23.7	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
	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
23.8	PIPE SUPPORT PAD - ABSORBER BUILDING							0	7,700					14,100	21,800
	EXCAVATION / BACKFILL		EST	95	CY			0	0	0.15	16	EXFD	90.00	1,500	1,500
	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
23.9	OXIDATION AIR BLOWER BUILDING - FOUNDATIONS							0	37,000					63,200	100,200
	EXCAVATION / BACKFILL		EST	188	CY			0	0	0.15	32	EXFD	90.00	2,900	2,900
	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
23.10	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

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	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
23.11	PIPE SUPPORT PAD - OXIDATION BUILDING							0	7,700					13,100	20,800
	EXCAVATION / BACKFILL		EST	30	CY			0	0	0.15	5	EXFD	90.00	500	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
23.12	DUCTWORK	INCLUDES INTERNAL BRACING AND TURNING VANES	EST	160	TN		3,250.00	0	520,000	60.00	11,040	FLDU	107.96	1,191,900	1,711,900
23.13	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
23.14	DUCTWORK INSULATION & LAGGING		EST	12,250	SF		12.00	0	147,000	0.25	3,522	DINS	81.75	287,900	434,900
23.15	FOUNDATIONS FOR DUCT SUPPORT STEEL							0	27,800					49,300	77,100
	EXCAVATION / BACKFILL		EST	180	CY			0	0	0.15	31	EXFD	90.00	2,800	2,800
	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
23.16	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
23.17	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
23.18	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
23.19	MCC							216,300	0					11,100	227,400

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	480V MCC	PER MCC LINE UP	EST	7	EA	30900		216,300	0	16.00	112	WIRE	98.84	11,100	227,400
23.20	MIMIC PANELS		EST	2	EA	17500		35,000	0	40.00	80	WIRE	98.84	7,900	42,900
23.21	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
23.22	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
23.23	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
23.24	RACEWAY, CABLE TRAY, & CONDUIT							0	1,388,600					5,513,200	6,901,800
	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	8,400	LF		31.00	0	260,400	0.81	6,779	WIRE	98.84	670000	930,400
	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,050	LF		21.50	0	22,600	0.65	677	WIRE	98.84	66900	89,500
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	13,300	LF		9.25	0	123,000	0.35	4,682	WIRE	98.84	462700	585,700
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	16,900	LF		7.15	0	120,800	0.28	4,800	WIRE	98.84	474400	595,200
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	29,200	LF		4.44	0	129,600	0.24	6,979	WIRE	98.84	689800	819,400
	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	FORM	99.43	148200	224,600
23.25	HIGH VOLTAGE POWER CABLE & TERMINATION							0	41,700					117,600	159,300

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	1/C # 500KCMIL-15KV		EST	4,500	LF		9.27	0	41,700	0.23	1,190	WIRE	98.84	117600	159,300
23.26	MEDIUM VOLTAGE POWER CABLE & TERMINATION							0	92,100		0			302,400	394,500
	1/C # 500KCMIL-5KV		EST	6,600	LF		8.08	0	53,300	0.17	1,313	WIRE	98.84	129800	183,100
	1/C # 350KCMIL-5KV		EST	5,400	LF		6.13	0	33,100	0.23	1,428	WIRE	98.84	141200	174,300
	1/C # 250KCMIL-5KV		EST	1,200	LF		4.74	0	5,700	0.23	317	WIRE	98.84	31400	37,100
23.27	LOW VOLTAGE POWER CABLE & TERMINATION							0	566,000					810,600	1,376,600
	3/C # 500KCMIL- 600V		EST	2,320	LF		26.12	0	60,600	0.69	1,841	WIRE	98.84	182000	242,600
	#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
23.28	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
23.29	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
23.30	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
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							44,488,300	22,397,000		720,666			65,052,300	131,937,600
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						63,315		90.27	5,715,000	5,715,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						79,143			6,003,377	6,003,377
	PER DIEM	NONE		0.00	HR						870,576			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				111,985					325,262	437,247
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				1,119,850						1,119,850
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			2,224,415							2,224,415
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				1,119,850					3,252,615	4,372,465
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				3,359,550					9,757,845	13,117,395
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							2,899,400	5,711,200					25,716,500	34,327,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	WET FGD ABSORBER ISLAND						47,387,700	28,108,200					90,768,800	166,264,700
24.0	COMPRESSED AIR SYSTEM (BYPRODUCT DEWATERING AREA)														0
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

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				ORDER OF MAGNITUDE COST ESTIMATE										Preparer:	MNO
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		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
	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
	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					8,800	14,000
	EXCAVATION / BACKFILL		EST	20	CY			0	0	0.15	3	EXFD	90.00	300	300
	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		523			47,500	85,500
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						45		90.85	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			4,339	4,339
	PER DIEM	NONE		0.00	HR						625			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				84					238	321
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				835						835
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			1,065							1,065
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				835					2,375	3,210
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				2,505					7,125	9,630
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							1,100	4,300					18,100	23,400
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	POTABLE WATER SYSTEM						22,400	21,000					65,600	108,900
26.0	FGD SUBSTATION														
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					121,300	184,800

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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
	EXCAVATION / BACKFILL		EST	600	CY			0	0	0.15	104	EXFD	90.00	9,300	9,300
	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		9,112			727,200	2,326,900
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						792		79.81	63,000	63,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						990			66,423	66,423
	PER DIEM	NONE		0.00	HR						10,894			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				1,119					3,636	4,755
	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
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				11,185					36,360	47,545
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				33,555					109,080	142,635
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							68,800	57,000					278,499	404,300
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FGD SUBSTATION						1,444,800	280,700					1,005,700	2,731,200
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										
	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

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	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
	SALES TAX - NOT INCLUDED														0
	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
	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

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	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
28.8	EROSION & SEDIMENT CONTROL							0	1,200					1,700	2,900
	SILT FENCE		EST	1,200	LF		1.0	0	1,200	0.02	28	LAND	61.45	1,700	2,900
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							3,000	966,500		11,578			1,307,400	2,276,900
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						1,007		112.92	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	%						1,258			119,419	119,419
	PER DIEM	NONE		0.00	HR						13,843			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				4,833					6,537	11,370
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				48,325						48,325
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			150							150
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				48,325					65,370	113,695
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				144,975					196,110	341,085
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							200	246,500					501,400	748,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SITE IMPROVEMENTS - CIVIL WORK						3,200	1,213,000					1,808,800	3,024,900
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	165,100					633,300	798,400
	TOUCH UP PAINT FOR SHOP PAINTED STEEL		EST	24,190	SF		3	0	72,600	0.15	4,173	PNTR	66.72	278,400	351,000
	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	18,840	SF		3	0	56,500	0.15	3,250	PNTR	66.72	216,800	273,300
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

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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					16,700	25,300
	EXCAVATION / BACKFILL		EST	60	CY			0	0	0.15	10	EXFD	90.00	900	900
	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	1,150,300		26,832			2,238,700	3,569,000
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						2,333		83.43	195,000	195,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						2,916			204,485	204,485
	PER DIEM	NONE		0.00	HR						32,081			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				5,752					11,194	16,945
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				57,515						57,515
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			9,000							9,000
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				57,515					111,935	169,450
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				172,545					335,805	508,350
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							9,000	293,327					858,418	1,160,745
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BOP ITEMS						189,000	1,443,600					3,097,100	4,729,700
99.00	PHASE II - OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS							74,844,900	53,623,600		1,430,566			129,178,100	257,646,600
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						125,045		90.30	11,292,000	11,292,000

				AEP											Estimate No.:	30718B
				BIG SANDY UNIT 2											Project No.:	12721-000
				FGD PROJECT - IAQCS (N/ESP)-2B - 1.7 LB/MM BTU - PHASED											Date:	9/12/2010
				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	%						156,306			11,860,684	11,860,684
	PER DIEM	NONE		0.00	HR									0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				268,118					645,891	914,009
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				2,681,180						2,681,180
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			3,742,245							3,742,245
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				2,681,180					6,458,905	9,140,085
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				8,043,540					19,376,715	27,420,255
	PHASE II - OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							4,417,200	13,674,000					50,296,600	68,387,900
	PHASE II - OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST	WET FGD						79,262,100	67,297,600					179,474,700	326,034,500
	TOTAL PHASE II DIRECT AND CONSTRUCTION INDIRECT COSTS							79,262,100	67,297,600					179,474,700	326,034,500
	INDIRECT COSTS - PHASE II														
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES			1.0	LT										23,000,000
	CONSTRUCTION MANAGEMENT			3.0	%										9,781,000
	S-U / COMMISSIONING			1.0											3,260,300
	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	%						15,556		90.30	1,522,700	1,522,700
	INITIAL FILLS			0.3	%										978,100
	OPERATOR & TRAINING MANUALS			1.0	LT										300,000
	SUBCONTRACTORS (NOISE CONSULTANT)			1.0	LT										100,000
	OWNERS COST - % of ACCT NOS. 92, 93.1, 93.2, 93.3, 93.4	BY AEP		0.0	%										0
	SUBTOTAL - INDIRECT COSTS														38,942,100
	TOTAL PHASE II DIRECT AND INDIRECT COSTS														364,976,600
	SPARE PARTS FOR THE OEM & THE BOP EQUIPMENT - PHASE II			1.3	%			1,030,400							1,030,400
	SPARE PARTS FOR THE OEM EQUIPMENT			0.80	%			618,240							618,240
	SPARE PARTS FOR THE BOP EQUIPMENT			0.50	%			412,160							412,160
	CONTINGENCY - PHASE II.			15.9	%										58,140,300
	ESCALATION - PHASE II														83,273,100
	EQUIPMENT	3.0%/yr		3.0	%			19,927,400							19,927,400
	MATERIAL	2.0%/yr		2.0	%				12,336,900						12,336,900
	LABOR	2.5%/yr		2.5	%									41,914,300	41,914,300
	INDIRECTS	2.5%/yr		2.5	%									9,094,500	9,094,500
	INTEREST DURING CONSTRUCTION (AFUDC)	BY AEP													-

				AEP										Estimate No.:	30718B
				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS (N/ESP)-2B - 1.7 LB/MM BTU - PHASED										Date:	9/12/2010
				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 - TOTAL PROJECT COST														507,420,400
99.00	PHASE I + PHASE II OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS							181,380,800	113,805,400		2,862,332			277,595,700	573,531,900
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						249,546		96.98	21,687,000	21,687,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						313,423			22,882,650	22,882,650
	PER DIEM	NONE		0.00	HR									0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				491,327					1,307,929	1,799,256
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				4,913,270						4,913,270
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			8,967,040							8,967,040
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				4,913,270					13,079,285	17,992,555
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				14,739,810					39,237,855	53,977,665
	PHASE I + PHASE II OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							10,452,000	25,057,700					100,380,600	135,890,400
	PHASE I + PHASE II OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST							191,832,800	138,863,100					377,976,300	709,422,300
	TOTAL PHASE I + PHASE II DIRECT AND CONSTRUCTION INDIRECT COSTS							191,832,800	138,863,100					377,976,300	709,422,300
	INDIRECT COSTS														
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES			1.0	LT										51,000,000
	CONSTRUCTION MANAGEMENT			3.0	%										21,282,700
	S-U / COMMISSIONING			1.0											7,094,200
	CRAFT START-UP SUPPORT														3,271,500
	INITIAL FILLS														2,128,300
	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
	OWNERS COST - % of ACCT NOS. 92, 93.1, 93.2, 93.3, 93.4	BY AEP		0.0	%										0
	SUBTOTAL - INDIRECT COSTS														85,876,700
	TOTAL PROJECT DIRECT AND INDIRECT COSTS														795,299,000
	SPARE PARTS FOR THE OEM & THE BOP EQUIPMENT			1.3	%			2,493,800							2,493,800
	SPARE PARTS FOR THE OEM EQUIPMENT			0.80	%			1,525,548							1,525,548
	SPARE PARTS FOR THE BOP EQUIPMENT			0.50	%			968,252							968,252

				AEP											Estimate No.:	30718B
				BIG SANDY UNIT 2											Project No.:	12721-000
				FGD PROJECT - IAQCS (N/ESP)-2B - 1.7 LB/MM BTU - PHASED											Date:	9/12/2010
				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
	CONTINGENCY														122,098,600
	ESCALATION														122,312,200
	EQUIPMENT							31,675,200							31,675,200
	MATERIAL								17,473,000						17,473,000
	LABOR													59,832,800	59,832,800
	INDIRECTS													13,331,200	13,331,200
	INTEREST DURING CONSTRUCTION (AFUDC)	BY AEP													-
	TOTAL PROJECT COST														1,042,203,600
	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

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

				AEP										Estimate No.:	30715B		
				BIG SANDY UNIT 2										Project No.:	12721-000		
				FGD PROJECT - IAQCS (ESP)-3A - 3.0 LB/MM BTU - PHASED										Date:	9/12/2010		
				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																
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					973,600	1,524,300		
	EXCAVATION / BACKFILL		EST	4,945	CY			0	0	0.15	853	EXFD	90.00	76,800	76,800		
	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	LIGHT FIXTURE		EST	22	EA		750.00	0	16,500	4.00	101	WIRE	98.84	10,000	26,500		
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		

				AEP										Estimate No.:	30715B
				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS (ESP)-3A - 3.0 LB/MM BTU - PHASED										Date:	9/12/2010
				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
	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							21,874,400	3,019,600		192,245			17,184,900	42,078,900
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						16,717		83.48	1,396,000	1,396,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						20,896			1,465,896	1,465,896
	PER DIEM	NONE		0.00	HR						229,858			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				15,098					85,925	101,023
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				150,980						150,980
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			1,093,720							1,093,720
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				150,980					859,245	1,010,225
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				452,940					2,577,735	3,030,675
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							1,093,700	770,000					6,384,800	8,248,500
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FABRIC FILTERS						22,968,100	3,789,600					23,569,700	50,327,400
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
	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

				AEP											Estimate No.:	30715B		
				BIG SANDY UNIT 2											Project No.:	12721-000		
				FGD PROJECT - IAQCS (ESP)-3A - 3.0 LB/MM BTU - PHASED											Date:	9/12/2010		
				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		
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					158,400	243,700		
	EXCAVATION / BACKFILL		EST	1,000	CY			0	0	0.15	173	EXFD	90.00	15,500	15,500		
	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	160,700					281,500	442,200		
	EXCAVATION / BACKFILL		EST	1,900	CY			0	0	0.15	328	EXFD	90.00	29,500	29,500		
	REINFORCING		EST	100	TN		1,150.00	0	115,000	20.00	2,300	REIN	78.27	180,000	295,000		
	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					929,500	1,493,200		
	EXCAVATION / BACKFILL		EST	4,320	CY			0	0	0.15	745	EXFD	90.00	67,100	67,100		
	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					26,200	40,400		
	EXCAVATION / BACKFILL		EST	110	CY			0	0	0.15	19	EXFD	90.00	1,700	1,700		
	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					208,200	302,400		
	EXCAVATION / BACKFILL		EST	1,360	CY			0	0	0.15	235	EXFD	90.00	21,100	21,100		
	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	296,400					1,429,900	1,726,300		
	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		

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	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		1.46	0	12,000	0.08	745	WIRE	98.84	73,600	85,600		
4.22	HIGH VOLTAGE POWER CABLE & TERMINATION	1/C # 500KCMIL-15KV, 12000' UNIT 2 + 3600' LIME UNLOAD	EST	15,600	LF		9.27	0	144,600	0.23	4,126	WIRE	98.84	407,800	552,400		
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		
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							8,267,600	3,052,300		65,546			6,053,600	17,373,500		
	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												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						5,700		83.48	476,000	476,000		
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						7,125			499,795	499,795		
	PER DIEM	NONE		0.00	HR						78,370			0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				15,262					30,268	45,530		
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				152,615						152,615		
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			413,380							413,380		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				152,615					302,680	455,295		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				457,845					908,040	1,365,885		
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							413,400	778,300					2,216,800	3,408,500		
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME HANDLING SYSTEM						8,681,000	3,830,600					8,270,400	20,782,000		
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		

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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					278,300	444,700		
	EXCAVATION / BACKFILL		EST	969	CY			0	0	0.15	167	EXFD	90.00	15,000	15,000		
	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					194,200	313,400		
	EXCAVATION / BACKFILL		EST	450	CY			0	0	0.15	78	EXFD	90.00	7,000	7,000		
	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	776,800					721,000	1,538,300		
	STRUCTURAL STEEL		EST	100	TN		2650	0	265,000	16.00	1,840	STST	105.71	194,500	459,500		
	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		

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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		
5.8	ELECTRICAL	INCLUDED WITH LIME HANDLING SYSTEM, ACCOUNT 4.0															
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							8,814,300	1,173,800		76,398			6,762,400	16,750,500		
	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												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						6,643		83.48	555,000	555,000		
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						8,304			582,548	582,548		
	PER DIEM	NONE		0.00	HR						91,346			0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				5,869					33,812	39,681		
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				58,690						58,690		
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			440,715							440,715		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				58,690					338,120	396,810		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				176,070					1,014,360	1,190,430		
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							440,700	299,300					2,523,800	3,263,900		
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME SLAKER BUILDING						9,255,000	1,473,100					9,286,200	20,014,400		
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		

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	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 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	SDA 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					237,800	381,900		
	EXCAVATION / BACKFILL		EST	980	CY			0	0	0.15	169	EXFD	90.00	15,200	15,200		
	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					21,000	31,800		
	EXCAVATION / BACKFILL		EST	160	CY			0	0	0.15	28	EXFD	90.00	2,500	2,500		
	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					93,200	142,800		
	EXCAVATION / BACKFILL		EST	578	CY			0	0	0.15	100	EXFD	90.00	9,000	9,000		
	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					16,200	288,700		

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	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	200	HVAC	81.24	16,200	59,200		
6.13	RECYCLE ASH BUILDING - FOUNDATIONS							0	234,300					373,100	607,400		
	EXCAVATION / BACKFILL		EST	950	CY			0	0	0.15	164	EXFD	90.00	14,700	14,700		
	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	32,800					177,400	210,200		
	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		1.46	0	6,600	0.08	409	WIRE	98.84	40400	47,000		
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	0.23	3,174	WIRE	98.84	313,700	352,100		

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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		
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							6,855,300	2,597,200		72,754			6,474,300	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												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						6,326		83.48	528,000	528,000		
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						7,908			554,759	554,759		
	PER DIEM	NONE		0.00	HR						86,988			0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				12,986					32,372	45,358		
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				129,860						129,860		
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			342,765							342,765		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				129,860					323,715	453,575		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				389,580					971,145	1,360,725		
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							342,800	662,300					2,410,000	3,415,000		
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS						7,198,100	3,259,500					8,884,300	19,341,800		
7.0	SPRAY DRYER ABSORBER ISLAND														0		
8.0	ACTIVATED CARBON INJECTION SYSTEM														0		
9.0	COMPRESSED AIR SYSTEM														0		
10.0	SERVICE WATER SYSTEM																
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					672,800	1,007,900		
	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		

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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		
	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					8,800	14,000		
	EXCAVATION / BACKFILL		EST	20	CY			0	0	0.15	3	EXFD	90.00	300	300		
	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		
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		7,389			691,200	1,056,300		
	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												
	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	%						803			56,342	56,342		
	PER DIEM	NONE		0.00	HR						8,835			0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				1,178					3,456	4,634		
	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		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				11,780					34,560	46,340		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				35,340					103,680	139,020		
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							6,500	60,100					252,000	318,600		
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	POTABLE WATER SYSTEM						135,975	295,678					943,238	1,374,891		
12.0	FGD SUBSTATION																
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		

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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		
	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												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						1,715		83.48	143,000	143,000		
	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		
	SALES TAX - NOT INCLUDED														0		
	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		
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	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		

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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		
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					67,700	100,900		
	EXCAVATION / BACKFILL		EST	170	CY			0	0	0.15	29	EXFD	90.00	2,600	2,600		
	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		
	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			1,330,800	1,872,800		
	EXCAVATION / BACKFILL		EST	13,000	CY			0	0	0.15	2,243	EXFD	90.00	201,800	201,800		
	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 UNLOAIDING 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		40,544			3,533,800	6,554,000		
	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												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						3,526		83.48	294,000	294,000		
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						4,407			309,152	309,152		
	PER DIEM	NONE		0.00	HR						48,476			0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				12,940					17,669	30,609		
	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		
	SALES TAX - NOT INCLUDED														0		

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	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				129,395					176,690	306,085
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				388,185					530,070	918,255
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							21,600	659,900					1,327,600	2,009,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	TRUCK & RAIL INFRASTRUCTURE						453,900	3,247,800					4,861,400	8,563,100
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
	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	NEW CONCRETE ENCASEMENT	16' X 4' X 40' - FOR EXISTING ASH PIPE HAUL ROAD CROSSING						0	144,300					262,700	407,000
	EXCAVATION / BACKFILL		EST	1,100	CY			0	0	0.15	190	EXFD	90.00	17,100	17,100
	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
16.4	TRUCK WASH AREA - CONCRETE PAD							0	41,900					70,400	112,300
	EXCAVATION / BACKFILL		EST	192	CY			0	0	0.15	33	EXFD	90.00	3,000	3,000
	REINFORCING		EST	16	TN		1,150.00	0	18,400	20.00	368	REIN	78.27	28,800	47,200
	FORMWORK		EST	510	SF		2.50	0	1,300	0.14	82	FORM	99.43	8,200	9,500

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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		
	CONCRETE		EST	167	CY		105.00	0	17,500	1.50	288	CONP	79.64	22,900	40,400		
	MUD MAT		EST	25	CY		105.00	0	2,600	1.50	43	CONP	79.64	3,400	6,000		
	EMBEDDED STEEL		EST	835	LB		2.50	0	2,100	0.06	58	CARP	71.88	4,100	6,200		
16.5	TRUCK WASH AREA - ENCLOSURE							0	67,400					95,300	162,700		
	TRUCK WASH AREA - STEEL		EST	10	TN		2,650.00	0	26,500	24.00	276	STST	105.71	29,200	55,700		
	TRUCK WASH AREA - SIDNG	20' X 40' X 20'H	EST	2,400	SF		12.00	0	28,800	0.11	304	SDNG	93.41	28,400	57,200		
	TRUCK WASH AREA - LIGHTING	ALLOWANCE	EST	2,400	SF		2.50	0	6,000	0.05	138	WIRE	98.84	13,600	19,600		
	TRUCK WASH AREA - DRAINAGE	10" HDPE (UNDERGROUND)	EST	200	LF		26.4	0	5,300	0.98	225	MECH	88.89	20,000	25,300		
	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		
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	0.15	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	0.15	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		

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	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		
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							574,500	2,968,000		56,565			5,486,600	9,029,100		
	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												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						4,919		83.48	411,000	411,000		
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						6,148			431,314	431,314		
	PER DIEM	NONE		0.00	HR						67,632			0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				14,840					27,433	42,273		
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				148,400						148,400		
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			28,725							28,725		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				148,400					274,330	422,730		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				445,200					822,990	1,268,190		
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							28,700	756,800					1,967,100	2,752,600		

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	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SITE IMPROVEMENTS - CIVIL WORK						603,200	3,724,800					7,453,700	11,781,700
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
	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					19,600	30,100
	EXCAVATION / BACKFILL		EST	65	CY			0	0	0.15	11	EXFD	90.00	1,000	1,000
	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		23,240			1,969,900	3,231,700
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						2,021		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	%						2,526			177,205	177,205
	PER DIEM	NONE		0.00	HR						27,787			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				5,259					9,850	15,109
	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

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	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				52,590					98,495	151,085
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				157,770					295,485	453,255
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							10,500	268,209					750,035	1,028,744
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BOP ITEMS						220,500	1,320,000					2,719,900	4,260,400
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	EROSION & SEDIMENT CONTROL							0	30,600					48,900	79,500
	SILT FENCE		EST	10,600	LF		1.0	0	10,600	0.02	244	LAND	61.45	15,000	25,600
	ROCK CHECK DAMS		EST	40	EA		500.0	0	20,000	12.00	552	LAND	61.45	33,900	53,900
18.5	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
18.6	OUTAGE TIE-IN DUCTWORK	ALLOWANCE FOR 85 TON DUCTWORK	ALLOW	85	TN		3250	0	276,300	70.00	6,843	FLDU	107.96	738,700	1,015,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							500,000	509,600		14,582			1,451,200	2,460,800
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						1,268		83.48	106,000	106,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						1,585			111,193	111,193
	PER DIEM	NONE		0.00	HR						17,435			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				2,548					7,256	9,804
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				25,480						25,480
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			25,000							25,000
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				25,480					72,560	98,040
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				76,440					217,680	294,120
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							25,000	129,900					514,700	669,600

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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		
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	CAPITAL REPLACEMENTS - REMOVAL AND RELOCATION OF EXISTING EQUIPMENT AND INFRASTRUCTURE						525,000	639,500					1,965,900	3,130,400		
19.0	ARSENIC, ASBESTOS , LEAD ABATEMENT	BY AEP															
19.1	ARSENIC, ASBESTOS , LEAD ABATEMENT	ALLOWANCE PROVIDED BY AEP													750,000		
99.00	PHASE I - OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS							114,542,900	63,264,100		1,510,664			155,940,400	334,497,400		
	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												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						131,362		103.23	10,969,000	10,969,000		
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						165,693			11,623,570	11,623,570		
	PER DIEM	NONE		0.00	HR									0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				238,621					699,652	938,273		
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				2,386,205						2,386,205		
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			5,625,145							5,625,145		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				2,386,205					6,996,520	9,382,725		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				7,158,615					20,989,560	28,148,175		
	PHASE I - OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							6,435,100	12,169,600					52,801,800	71,406,600		
	PHASE I - OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST	DRY FGD						120,978,000	75,433,700					208,742,200	405,904,000		
	TOTAL PHASE I DIRECT AND CONSTRUCTION INDIRECT COSTS							120,978,000	75,433,700					208,742,200	405,904,000		
	INDIRECT COSTS - PHASE I																
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES			1.0	LT										28,000,000		
	CONSTRUCTION MANAGEMENT			3.0	%										12,177,100		
	S-U / COMMISSIONING			1.0											4,059,000		
	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	%						16,420		103.23	1,837,400	1,837,400		
	INITIAL FILLS			0.3	%										1,217,700		
	OPERATOR & TRAINING MANUALS			1.0	LT										300,000		
	SUBCONTRACTORS (NOISE & DUCTWORK CONSULTANT, GEOTECHNICAL INVESTIGATION)			1.0	LT										400,000		
	OWNERS COST - % of ACCT NOS. 92, 93.1, 93.2, 93.3, 93.4	BY AEP		0.0	%										0		

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	SUBTOTAL - INDIRECT COSTS														47,991,200		
	TOTAL PHASE I DIRECT AND INDIRECT COSTS														453,895,200		
	SPARE PARTS FOR THE OEM & THE BOP EQUIPMENT - PHASE I			1.3	%			1,572,700							1,572,700		455,467,900
	SPARE PARTS FOR THE OEM EQUIPMENT			0.80	%			975,074							975,074		
	SPARE PARTS FOR THE BOP EQUIPMENT			0.50	%			597,626							597,626		
	CONTINGENCY - PHASE I			14.8	%										67,481,600		
	ESCALATION - PHASE I														41,213,900		
	EQUIPMENT	4.0%/yr		4.0	%			12,625,200							12,625,200		
	MATERIAL	2.0%/yr		2.0	%				5,413,700						5,413,700		
	LABOR	2.5%/yr		2.5	%									18,842,900	18,842,900		
	INDIRECTS	2.5%/yr		2.5	%									4,332,100	4,332,100		
	INTEREST DURING CONSTRUCTION (AFUDC)	BY AEP													-		
	PHASE I - TOTAL PROJECT COST														564,163,400		
	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		

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	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		
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							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		
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			45,500	61,500		
	EXCAVATION / BACKFILL		EST	148	CY			0	0	0.15	26	EXFD	90.00	2,300	2,300		
	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			28,200	43,600		
	EXCAVATION / BACKFILL		EST	106	CY			0	0	0.15	18	EXFD	90.00	1,600	1,600		
	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			116,600	178,600		
	EXCAVATION / BACKFILL		EST	421	CY			0	0	0.15	73	EXFD	90.00	6,500	6,500		
	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			1,330,800	1,872,800		
	EXCAVATION / BACKFILL		EST	13,000	CY			0	0	0.15	2,243	EXFD	90.00	201,800	201,800		
	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			42,000	66,100		
	EXCAVATION / BACKFILL		EST	129	CY			0	0	0.15	22	EXFD	90.00	2,000	2,000		

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	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		
20.11	LIMESTONE RECLAIM PDC - FOUNDATIONS							0	16,800		0			30,100	46,900		
	EXCAVATION / BACKFILL		EST	99	CY			0	0	0.15	17	EXFD	90.00	1,500	1,500		
	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		
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		

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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		
	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		
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	FORM	99.43	240500	267,100		
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							6,283,800	3,026,800		114,121			10,647,800	19,958,400		
	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												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						9,924		93.30	926,000	926,000		
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						12,404			972,579	972,579		
	PER DIEM	NONE		0.00	HR						136,449			0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				15,134					53,239	68,373		
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				151,340						151,340		
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			314,190							314,190		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				151,340					532,390	683,730		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				454,020					1,597,170	2,051,190		
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							314,200	771,800					4,081,400	5,167,400		
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIMESTONE HANDLING SYSTEM						6,598,000	3,798,600					14,729,200	25,125,800		
21.0	REAGENT (LIMESTONE) PREPARATION ISLAND														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		
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	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		
21.3	LIMESTONE SLURRY TANKS - FOUNDATIONS							0	166,400					278,300	444,700		
	EXCAVATION / BACKFILL		EST	969	CY			0	0	0.15	167	EXFD	90.00	15,000	15,000		
	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		
21.4	REAGENT PREPARATION BUILDING - FOUNDATIONS							0	674,900					1,060,900	1,735,800		
	EXCAVATION / BACKFILL		EST	2,740	CY			0	0	0.15	473	EXFD	90.00	42,500	42,500		
	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		
21.5	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		

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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		
21.6	PIPE SUPPORT PAD - REAGENT PREP BUILDING							0	13,800					24,900	38,700		
	EXCAVATION / BACKFILL		EST	108	CY			0	0	0.15	19	EXFD	90.00	1,700	1,700		
	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		
21.7	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		
21.8	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		
21.9	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE ARE INCLUDED IN SECTION 28.0 - ABSORBER ISLAND															
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							14,035,400	6,007,600		197,036			17,687,500	37,730,500		
	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												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						17,134		89.77	1,538,000	1,538,000		
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						21,417			1,615,592	1,615,592		
	PER DIEM	NONE		0.00	HR						235,587			0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				30,038					88,438	118,476		
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				300,380						300,380		
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			701,770							701,770		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				300,380					884,375	1,184,755		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				901,140					2,653,125	3,554,265		
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							701,800	1,531,900					6,779,500	9,013,200		

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	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	REAGENT (LIMESTONE) PREPARATION ISLAND						14,737,200	7,539,500					24,467,000	46,743,700		
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		
	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		

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	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					47,600	73,600		
	EXCAVATION / BACKFILL		EST	295	CY			0	0	0.15	51	EXFD	90.00	4,600	4,600		
	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					163,900	263,900		
	EXCAVATION / BACKFILL		EST	614	CY			0	0	0.15	106	EXFD	90.00	9,500	9,500		
	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		

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22.11	LANDFILL SERVICE WATER TANKS & PUMP - FOUNDATIONS							0	80,900					141,700	222,600		
	EXCAVATION / BACKFILL		EST	614	CY			0	0	0.15	106	EXFD	90.00	9,500	9,500		
	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					47,600	73,600		
	EXCAVATION / BACKFILL		EST	295	CY			0	0	0.15	51	EXFD	90.00	4,600	4,600		
	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					577,200	917,400		
	EXCAVATION / BACKFILL		EST	1,915	CY			0	0	0.15	330	EXFD	90.00	29,700	29,700		
	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					31,700	47,800		
	EXCAVATION / BACKFILL		EST	140	CY			0	0	0.15	24	EXFD	90.00	2,200	2,200		
	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					1,364,300	2,256,000		
	EXCAVATION / BACKFILL		EST	2,900	CY			0	0	0.15	500	EXFD	90.00	45,000	45,000		
	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					125,100	185,900		
	EXCAVATION / BACKFILL		EST	1,120	CY			0	0	0.15	193	EXFD	90.00	17,400	17,400		
	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					224,400	361,700		
	EXCAVATION / BACKFILL		EST	489	CY			0	0	0.15	84	EXFD	90.00	7,600	7,600		
	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		

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	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					451,900	740,600		
	EXCAVATION / BACKFILL		EST	1,200	CY			0	0	0.15	207	EXFD	90.00	18,600	18,600		
	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					34,000	52,300		
	EXCAVATION / BACKFILL		EST	92	CY			0	0	0.15	16	EXFD	90.00	1,400	1,400		
	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					56,300	88,600		
	EXCAVATION / BACKFILL		EST	210	CY			0	0	0.15	36	EXFD	90.00	3,300	3,300		
	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		

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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		
	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	0.15	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	6,300					10,300	16,600		
	SILT FENCE		EST	1,300	LF		1.0	0	1,300	0.02	30	LAND	61.45	1,800	3,100		

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		Cost Type:												Reviewer:	JMK		
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	ROCK CHECK DAMS		EST	10	EA		500.0	0	5,000	12.00	138	LAND	61.45	8,500	13,500		
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	0.15	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		

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	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		
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		

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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		
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		
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					183,600	253,800		
	EXCAVATION / BACKFILL		EST	1,000	CY			0	0	0.15	173	EXFD	90.00	15,500	15,500		
	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		
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							11,277,800	16,063,200		342,929			30,765,700	58,106,700		

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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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						29,820		89.71	2,675,000	2,675,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						37,275			2,810,166	2,810,166
	PER DIEM	NONE		0.00	HR						410,024			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				80,316					153,829	234,145
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				803,160						803,160
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			563,890							563,890
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				803,160					1,538,285	2,341,445
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				2,409,480					4,614,855	7,024,335
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							563,900	4,096,100					11,792,100	16,452,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)						11,841,700	20,159,300					42,557,800	74,558,800
23.0	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	LABOR COST REFLECTS DIFFICULTY FACTOR WORKING WITH C276 VS. A2205	EST	49,800	SF		300.00	0	14,940,000	1.50	85,905	MECH	88.89	7,636,100	22,576,100
23.3	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
23.4	PIPING - MECHANICAL	ALL PIPING INCLUDED IN OEM EQUIPMENT COST. NO BOP PIPING						0	0					0	0
23.5	ABSORBER VESSEL - FOUNDATIONS							0	366,900					609,400	976,300
	EXCAVATION / BACKFILL		EST	2,921	CY			0	0	0.15	504	EXFD	90.00	45,300	45,300

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	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		
23.6	ABSORBER BUILDING - FOUNDATIONS							0	564,200					884,300	1,448,500		
	EXCAVATION / BACKFILL		EST	2,410	CY			0	0	0.15	416	EXFD	90.00	37,400	37,400		
	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		
23.7	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		
23.8	PIPE SUPPORT PAD - ABSORBER BUILDING							0	7,700					14,100	21,800		
	EXCAVATION / BACKFILL		EST	95	CY			0	0	0.15	16	EXFD	90.00	1,500	1,500		
	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		
23.9	OXIDATION AIR BLOWER BUILDING - FOUNDATIONS							0	37,000					63,200	100,200		
	EXCAVATION / BACKFILL		EST	188	CY			0	0	0.15	32	EXFD	90.00	2,900	2,900		
	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		
23.10	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		

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	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		
23.11	PIPE SUPPORT PAD - OXIDATION BUILDING							0	7,700					13,100	20,800		
	EXCAVATION / BACKFILL		EST	30	CY			0	0	0.15	5	EXFD	90.00	500	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		
23.12	DUCTWORK	INCLUDES INTERNAL BRACING AND TURNING VANES	EST	160	TN		3,250.00	0	520,000	60.00	11,040	FLDU	107.96	1,191,900	1,711,900		
23.13	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		
23.14	DUCTWORK INSULATION & LAGGING		EST	12,250	SF		12.00	0	147,000	0.25	3,522	DINS	81.75	287,900	434,900		
23.15	FOUNDATIONS FOR DUCT SUPPORT STEEL							0	27,800					49,300	77,100		
	EXCAVATION / BACKFILL		EST	180	CY			0	0	0.15	31	EXFD	90.00	2,800	2,800		
	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		
23.16	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		
23.17	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		
23.18	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		
23.19	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		
23.20	MIMIC PANELS		EST	2	EA	17500		35,000	0	40.00	80	WIRE	98.84	7,900	42,900		
23.21	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		
23.22	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		
23.23	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		
23.24	RACEWAY, CABLE TRAY, & CONDUIT							0	1,388,600					5,513,200	6,901,800		
	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	8,400	LF		31.00	0	260,400	0.81	6,779	WIRE	98.84	670000	930,400		
	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,050	LF		21.50	0	22,600	0.65	677	WIRE	98.84	66900	89,500		
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	13,300	LF		9.25	0	123,000	0.35	4,682	WIRE	98.84	462700	585,700		
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	16,900	LF		7.15	0	120,800	0.28	4,800	WIRE	98.84	474400	595,200		
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	29,200	LF		4.44	0	129,600	0.24	6,979	WIRE	98.84	689800	819,400		
	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		

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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		
	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	FORM	99.43	148200	224,600		
23.25	HIGH VOLTAGE POWER CABLE & TERMINATION							0	41,700					117,600	159,300		
	1/C # 500KCMIL-15KV		EST	4,500	LF		9.27	0	41,700	0.23	1,190	WIRE	98.84	117600	159,300		
23.26	MEDIUM VOLTAGE POWER CABLE & TERMINATION							0	92,100		0			302,400	394,500		
	1/C # 500KCMIL-5KV		EST	6,600	LF		8.08	0	53,300	0.17	1,313	WIRE	98.84	129800	183,100		
	1/C # 350KCMIL-5KV		EST	5,400	LF		6.13	0	33,100	0.23	1,428	WIRE	98.84	141200	174,300		
	1/C # 250KCMIL-5KV		EST	1,200	LF		4.74	0	5,700	0.23	317	WIRE	98.84	31400	37,100		
23.27	LOW VOLTAGE POWER CABLE & TERMINATION							0	566,000					810,600	1,376,600		
	3/C # 500KCMIL- 600V		EST	2,320	LF		26.12	0	60,600	0.69	1,841	WIRE	98.84	182000	242,600		
	#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		
23.28	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		
23.29	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		
23.30	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		
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							44,928,300	22,498,900		724,799			65,419,900	132,847,100		
	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												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						63,674		90.26	5,747,000	5,747,000		
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						79,592			6,036,949	6,036,949		
	PER DIEM	NONE		0.00	HR						875,517			0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				112,495					327,100	439,594		
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				1,124,945						1,124,945		
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			2,246,415							2,246,415		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				1,124,945					3,270,995	4,395,940		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				3,374,835					9,812,985	13,187,820		
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							2,921,400	5,737,200					25,857,400	34,516,100		
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	ABSORBER ISLAND						47,849,700	28,236,100					91,277,300	167,363,200		
24.0	COMPRESSED AIR SYSTEM (BYPRODUCT DEWATERING AREA)														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		
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		
	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					8,800	14,000		
	EXCAVATION / BACKFILL		EST	20	CY			0	0	0.15	3	EXFD	90.00	300	300		
	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		523			47,500	85,500		
	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												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						45		90.85	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			4,339	4,339		
	PER DIEM	NONE		0.00	HR						625			0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				84					238	321		
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				835						835		
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			1,065							1,065		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				835					2,375	3,210		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				2,505					7,125	9,630		
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							1,100	4,300					18,100	23,400		
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	POTABLE WATER SYSTEM						22,400	21,000					65,600	108,900		
26.0	FGD SUBSTATION																
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		

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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		
	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												
	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		
	SALES TAX - NOT INCLUDED														0		
	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		
	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		

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	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		
28.8	EROSION & SEDIMENT CONTROL							0	1,200					1,700	2,900		
	SILT FENCE		EST	1,200	LF		1.0	0	1,200	0.02	28	LAND	61.45	1,700	2,900		
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							3,000	966,500		11,578			1,307,400	2,276,900		
	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												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						1,007		112.92	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	%						1,258			119,419	119,419		
	PER DIEM	NONE		0.00	HR						13,843			0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				4,833					6,537	11,370		
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				48,325						48,325		
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			150							150		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				48,325					65,370	113,695		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				144,975					196,110	341,085		
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							200	246,500					501,400	748,000		
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SITE IMPROVEMENTS - CIVIL WORK						3,200	1,213,000					1,808,800	3,024,900		
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		

				AEP										Estimate No.:	30715B		
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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		
	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	165,100					633,300	798,400		
	TOUCH UP PAINT FOR SHOP PAINTED STEEL		EST	24,190	SF		3	0	72,600	0.15	4,173	PNTR	66.72	278,400	351,000		
	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	18,840	SF		3	0	56,500	0.15	3,250	PNTR	66.72	216,800	273,300		
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					16,700	25,300		
	EXCAVATION / BACKFILL		EST	60	CY			0	0	0.15	10	EXFD	90.00	900	900		
	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	1,150,300		26,832			2,238,700	3,569,000		
	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												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						2,333		83.43	195,000	195,000		
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						2,916			204,485	204,485		
	PER DIEM	NONE		0.00	HR						32,081			0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				5,752					11,194	16,945		
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				57,515						57,515		
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			9,000							9,000		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				57,515					111,935	169,450		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				172,545					335,805	508,350		

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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 - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							9,000	293,327					858,418	1,160,745		
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BOP ITEMS						189,000	1,443,600					3,097,100	4,729,700		
99.00	PHASE II - OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS							78,851,900	53,947,700		1,458,046			131,630,500	264,430,100		
	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												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						127,435		90.28	11,505,000	11,505,000		
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						159,293			12,084,683	12,084,683		
	PER DIEM	NONE		0.00	HR									0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				269,739					658,153	927,891		
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				2,697,385						2,697,385		
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			3,942,595							3,942,595		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				2,697,385					6,581,525	9,278,910		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				8,092,155					19,744,575	27,836,730		
	PHASE II - OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							4,617,600	13,756,700					51,236,300	69,610,600		
	PHASE II - OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST	WET FGD						83,469,500	67,704,400					182,866,800	334,040,700		
	TOTAL PHASE II DIRECT AND CONSTRUCTION INDIRECT COSTS							83,469,500	67,704,400					182,866,800	334,040,700		
	INDIRECT COSTS - PHASE II																
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES			1.0	LT										23,000,000		
	CONSTRUCTION MANAGEMENT			3.0	%										10,021,200		
	S-U / COMMISSIONING			1.0											3,340,400		
	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	%						15,855		90.28	1,551,600	1,551,600		
	INITIAL FILLS			0.3	%										1,002,100		
	OPERATOR & TRAINING MANUALS			1.0	LT										300,000		
	SUBCONTRACTORS (NOISE CONSULTANT)			1.0	LT										100,000		
	OWNERS COST - % of ACCT NOS. 92, 93.1, 93.2, 93.3, 93.4	BY AEP		0.0	%										0		
	SUBTOTAL - INDIRECT COSTS														39,315,300		
	TOTAL PHASE II DIRECT AND INDIRECT COSTS														373,356,000		

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	SPARE PARTS FOR THE OEM & THE BOP EQUIPMENT - PHASE II			1.3	%			1,085,100							1,085,100		374,441,100
	SPARE PARTS FOR THE OEM EQUIPMENT			0.80	%			542,550							542,550		
	SPARE PARTS FOR THE BOP EQUIPMENT			0.50	%			542,550							542,550		
	CONTINGENCY - PHASE II.			15.7	%										58,901,500		
	ESCALATION - PHASE II														85,284,800		
	EQUIPMENT	3.0%/yr		3.0	%			20,985,200							20,985,200		
	MATERIAL	2.0%/yr		2.0	%				12,411,400						12,411,400		
	LABOR	2.5%/yr		2.5	%									42,706,500	42,706,500		
	INDIRECTS	2.5%/yr		2.5	%									9,181,700	9,181,700		
	INTEREST DURING CONSTRUCTION (AFUDC)	BY AEP													-		
	PHASE II - TOTAL PROJECT COST														518,627,400		
99.00	PHASE I + PHASE II OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS							193,394,800	117,211,800		2,968,710			287,570,900	598,927,500		
	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												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						258,797		96.87	22,474,000	22,474,000		
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						324,986			23,708,254	23,708,254		
	PER DIEM	NONE		0.00	HR									0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				508,359					1,357,805	1,866,164		
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				5,083,590						5,083,590		
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			9,567,740							9,567,740		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				5,083,590					13,578,045	18,661,635		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				15,250,770					40,734,135	55,984,905		
	PHASE I + PHASE II OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							11,052,700	25,926,300					104,038,200	141,017,200		
	PHASE I + PHASE II OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST							204,447,500	143,138,100					391,609,100	739,944,700		
	TOTAL PHASE I + PHASE II DIRECT AND CONSTRUCTION INDIRECT COSTS							204,447,500	143,138,100					391,609,000	739,944,700		
	INDIRECT COSTS																
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES			1.0	LT										51,000,000		
	CONSTRUCTION MANAGEMENT			3.0	%										22,198,300		
	S-U / COMMISSIONING			1.0											7,399,400		

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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		
	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	%										3,389,000		
	INITIAL FILLS			0.3	%										2,219,800		
	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		
	OWNERS COST - % of ACCT NOS. 92, 93.1, 93.2, 93.3, 93.4	BY AEP		0.0	%										0		
	SUBTOTAL - INDIRECT COSTS														87,306,500		
	TOTAL PROJECT DIRECT AND INDIRECT COSTS														827,251,200		
	SPARE PARTS FOR THE OEM & THE BOP EQUIPMENT			1.3	%			2,657,800							2,657,800		
	SPARE PARTS FOR THE OEM EQUIPMENT			0.80	%			1,328,900							1,328,900		
	SPARE PARTS FOR THE BOP EQUIPMENT			0.50	%			1,328,900							1,328,900		
	CONTINGENCY														126,383,100		
	ESCALATION (PHASE I + PHASE II)														126,498,700		
	EQUIPMENT							33,610,400							33,610,400		
	MATERIAL								17,825,100						17,825,100		
	LABOR													61,549,400	61,549,400		
	INDIRECTS													13,513,800	13,513,800		
	INTEREST DURING CONSTRUCTION (AFUDC)	BY AEP													-		
	TOTAL PROJECT COST														1,082,790,800		
	REFERENCE COSTS:																
A	ESP STRUCTURAL INTEGRITY MODS	ALLOWANCE FOR 150 TON FRAMING REINFORCEMENT	EST	150	TN		2900	0	435,000	120.00	20,700	STST	#REF!	#REF!	#REF!		

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.:	30719B		
				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		
	PHASE I - DRY FGD																
1.0	ID FANS																
2.0	FABRIC FILTERS																
3.0	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					158,400	243,700		
	EXCAVATION / BACKFILL		EST	1,000	CY			0	0	0.15	173	EXFD	90.00	15,500	15,500		
	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	160,700					281,500	442,200		
	EXCAVATION / BACKFILL		EST	1,900	CY			0	0	0.15	328	EXFD	90.00	29,500	29,500		
	REINFORCING		EST	100	TN		1,150.00	0	115,000	20.00	2,300	REIN	78.27	180,000	295,000		
	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		

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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
	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					774,300	1,243,900
	EXCAVATION / BACKFILL		EST	3,600	CY			0	0	0.15	621	EXFD	90.00	55,900	55,900
	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					26,200	40,400
	EXCAVATION / BACKFILL		EST	110	CY			0	0	0.15	19	EXFD	90.00	1,700	1,700
	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					208,200	302,400
	EXCAVATION / BACKFILL		EST	1,360	CY			0	0	0.15	235	EXFD	90.00	21,100	21,100
	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

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	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	296,400					1,429,900	1,726,300		
	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		1.46	0	12,000	0.08	745	WIRE	98.84	73,600	85,600		
4.22	HIGH VOLTAGE POWER CABLE & TERMINATION	1/C # 500KCMIL-15KV, 12000' UNIT 2 + 3600' LIME UNLOAD	EST	15,600	LF		9.27	0	144,600	0.23	4,126	WIRE	98.84	407,800	552,400		
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		
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							7,259,600	2,958,200		63,617			5,898,400	16,116,200		
	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												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						5,532		83.48	462,000	462,000		
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						6,915			485,085	485,085		
	PER DIEM	NONE		0.00	HR						76,063			0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				14,791					29,492	44,283		
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				147,910						147,910		
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			362,980							362,980		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				147,910					294,920	442,830		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				443,730					884,760	1,328,490		
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							363,000	754,300					2,156,300	3,273,600		
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME HANDLING SYSTEM						7,622,600	3,712,500					8,054,700	19,389,800		
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					278,300	444,700		
	EXCAVATION / BACKFILL		EST	969	CY			0	0	0.15	167	EXFD	90.00	15,000	15,000		
	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		

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5.6	LIME SLAKER BUILDING - FOUNDATIONS							0	119,200					194,200	313,400		
	EXCAVATION / BACKFILL		EST	450	CY			0	0	0.15	78	EXFD	90.00	7,000	7,000		
	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	776,800					721,000	1,538,300		
	STRUCTURAL STEEL		EST	100	TN		2650	0	265,000	16.00	1,840	STST	105.71	194,500	459,500		
	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	1,173,800		73,829			6,534,000	15,891,100		
	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												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						6,420		83.48	536,000	536,000		
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						8,025			562,954	562,954		
	PER DIEM	NONE		0.00	HR						88,273			0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				5,869					32,670	38,539		
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				58,690						58,690		
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			409,165							409,165		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				58,690					326,700	385,390		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				176,070					980,100	1,156,170		
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							409,200	299,300					2,438,400	3,146,900		
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME SLAKER BUILDING						8,592,500	1,473,100					8,972,400	19,038,000		
6.0	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS														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		
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	50,000.00	400,000	50,000	3200.00	3,680	MECH	88.89	327,100	777,100		
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		
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	SDA 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	WASTE ASH STORAGE SILO - FOUNDATIONS							0	186,400					311,300	497,700		
	EXCAVATION / BACKFILL		EST	1,500	CY			0	0	0.15	259	EXFD	90.00	23,300	23,300		

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	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	0.15	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	0.15	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					373,100	607,400		
	EXCAVATION / BACKFILL		EST	950	CY			0	0	0.15	164	EXFD	90.00	14,700	14,700		
	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		

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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	32,800					177,400	210,200		
	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		1.46	0	6,600	0.08	409	WIRE	98.84	40400	47,000		
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		
															0		
6.20	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	EST	12,000	LF		3.20	0	38,400	0.23	3,174	WIRE	98.84	313,700	352,100		
											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		
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							5,642,300	2,361,400		58,965			5,249,100	13,252,800		
	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												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						5,127		83.48	428,000	428,000		
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						6,409			449,615	449,615		
	PER DIEM	NONE		0.00	HR						70,501			0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				11,807					26,246	38,053		
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				118,070						118,070		
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			282,115							282,115		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				118,070					262,455	380,525		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				354,210					787,365	1,141,575		
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							282,100	602,200					1,953,700	2,838,000		

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	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS						5,924,400	2,963,600					7,202,800	16,090,800		
7.0	SPRAY DRYER ABSORBER ISLAND														0		
8.0	ACTIVATED CARBON INJECTION SYSTEM														0		
9.0	COMPRESSED AIR SYSTEM														0		
10.0	SERVICE WATER SYSTEM																
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					672,800	1,007,900		
	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					8,800	14,000		
	EXCAVATION / BACKFILL		EST	20	CY			0	0	0.15	3	EXFD	90.00	300	300		
	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		
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		7,389			691,200	1,056,300		
	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												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						643		83.48	54,000	54,000		

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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	%						803			56,342	56,342		
	PER DIEM	NONE		0.00	HR						8,835			0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				1,178					3,456	4,634		
	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		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				11,780					34,560	46,340		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				35,340					103,680	139,020		
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							6,500	60,100					252,000	318,600		
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	POTABLE WATER SYSTEM						135,975	295,678					943,238	1,374,891		
12.0	FGD SUBSTATION																
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												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						1,715		83.48	143,000	143,000		
	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		
	SALES TAX - NOT INCLUDED														0		
	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		
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		

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	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	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					67,700	100,900		
	EXCAVATION / BACKFILL		EST	170	CY			0	0	0.15	29	EXFD	90.00	2,600	2,600		
	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		
	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			1,330,800	1,872,800		
	EXCAVATION / BACKFILL		EST	13,000	CY			0	0	0.15	2,243	EXFD	90.00	201,800	201,800		
	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 UNLOAIDING 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		

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	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		40,544			3,533,800	6,554,000		
	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												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						3,526		83.48	294,000	294,000		
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						4,407			309,152	309,152		
	PER DIEM	NONE		0.00	HR						48,476			0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				12,940					17,669	30,609		
	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		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				129,395					176,690	306,085		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				388,185					530,070	918,255		
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							21,600	659,900					1,327,600	2,009,100		
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	TRUCK & RAIL INFRASTRUCTURE						453,900	3,247,800					4,861,400	8,563,100		
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	NEW CONCRETE ENCASEMENT	16' X 4' X 40' - FOR EXISTING ASH PIPE HAUL ROAD CROSSING						0	144,300					262,700	407,000		
	EXCAVATION / BACKFILL		EST	1,100	CY			0	0	0.15	190	EXFD	90.00	17,100	17,100		
	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		
16.4	TRUCK WASH AREA - CONCRETE PAD							0	41,900					70,400	112,300		
	EXCAVATION / BACKFILL		EST	192	CY			0	0	0.15	33	EXFD	90.00	3,000	3,000		
	REINFORCING		EST	16	TN		1,150.00	0	18,400	20.00	368	REIN	78.27	28,800	47,200		
	FORMWORK		EST	510	SF		2.50	0	1,300	0.14	82	FORM	99.43	8,200	9,500		
	CONCRETE		EST	167	CY		105.00	0	17,500	1.50	288	CONP	79.64	22,900	40,400		
	MUD MAT		EST	25	CY		105.00	0	2,600	1.50	43	CONP	79.64	3,400	6,000		
	EMBEDDED STEEL		EST	835	LB		2.50	0	2,100	0.06	58	CARP	71.88	4,100	6,200		
16.5	TRUCK WASH AREA - ENCLOSURE							0	67,400					95,300	162,700		
	TRUCK WASH AREA - STEEL		EST	10	TN		2,650.00	0	26,500	24.00	276	STST	105.71	29,200	55,700		
	TRUCK WASH AREA - SIDNG	20' X 40' X 20'H	EST	2,400	SF		12.00	0	28,800	0.11	304	SDNG	93.41	28,400	57,200		
	TRUCK WASH AREA - LIGHTING	ALLOWANCE	EST	2,400	SF		2.50	0	6,000	0.05	138	WIRE	98.84	13,600	19,600		
	TRUCK WASH AREA - DRAINAGE	10" HDPE (UNDERGROUND)	EST	200	LF		26.4	0	5,300	0.98	225	MECH	88.89	20,000	25,300		
	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		
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	0.15	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	0.15	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		

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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		
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		
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							574,500	2,968,000		56,565			5,486,600	9,029,100		
	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												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						4,919		83.48	411,000	411,000		
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						6,148			431,314	431,314		
	PER DIEM	NONE		0.00	HR						67,632			0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				14,840					27,433	42,273		
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				148,400						148,400		
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			28,725							28,725		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				148,400					274,330	422,730		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				445,200					822,990	1,268,190		
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							28,700	756,800					1,967,100	2,752,600		
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SITE IMPROVEMENTS - CIVIL WORK						603,200	3,724,800					7,453,700	11,781,700		
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		
	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		

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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					19,600	30,100		
	EXCAVATION / BACKFILL		EST	65	CY			0	0	0.15	11	EXFD	90.00	1,000	1,000		
	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		23,240			1,969,900	3,231,700		
	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												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						2,021		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	%						2,526			177,205	177,205		
	PER DIEM	NONE		0.00	HR						27,787			0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				5,259					9,850	15,109		
	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		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				52,590					98,495	151,085		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				157,770					295,485	453,255		
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							10,500	268,209					750,035	1,028,744		
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BOP ITEMS						220,500	1,320,000					2,719,900	4,260,400		
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		

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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	EROSION & SEDIMENT CONTROL							0	30,600					48,900	79,500
	SILT FENCE		EST	10,600	LF		1.0	0	10,600	0.02	244	LAND	61.45	15,000	25,600
	ROCK CHECK DAMS		EST	40	EA		500.0	0	20,000	12.00	552	LAND	61.45	33,900	53,900
18.5	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
18.6	OUTAGE TIE-IN DUCTWORK	ALLOWANCE FOR 85 TON DUCTWORK	ALLOW	85	TN		3250	0	276,300	70.00	6,843	FLDU	107.96	738,700	1,015,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							500,000	509,600		14,582			1,451,200	2,460,800
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						1,268		83.48	106,000	106,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						1,585			111,193	111,193
	PER DIEM	NONE		0.00	HR						17,435			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				2,548					7,256	9,804
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				25,480						25,480
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			25,000							25,000
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				25,480					72,560	98,040
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				76,440					217,680	294,120
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							25,000	129,900					514,700	669,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	CAPITAL REPLACEMENTS - REMOVAL AND RELOCATION OF EXISTING EQUIPMENT AND INFRASTRUCTURE						525,000	639,500					1,965,900	3,130,400
19.0	ARSENIC, ASBESTOS , LEAD ABATEMENT														
19.1	ARSENIC, ASBESTOS , LEAD ABATEMENT	ALLOWANCE PROVIDED BY AEP													750,000
99.00	PHASE I - OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS							112,943,900	60,533,400		1,450,276			150,002,900	324,230,200
	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										

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	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						126,111		103.43	10,530,000	10,530,000		
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						159,129			11,163,110	11,163,110		
	PER DIEM	NONE		0.00	HR									0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				224,967					669,965	894,932		
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				2,249,670						2,249,670		
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			5,545,195							5,545,195		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				2,249,670					6,699,645	8,949,315		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				6,749,010					20,098,935	26,847,945		
	PHASE I - OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							6,355,200	11,473,300					50,685,200	68,513,700		
	PHASE I - OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST	DRY FGD						119,299,100	72,006,700					200,688,100	392,743,900		
	TOTAL PHASE I DIRECT AND CONSTRUCTION INDIRECT COSTS							119,299,100	72,006,700					200,688,100	392,743,900		
	INDIRECT COSTS - PHASE I																
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES			1.0	LT										28,000,000		
	CONSTRUCTION MANAGEMENT			3.0	%										11,782,300		
	S-U / COMMISSIONING			1.0											3,927,400		
	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	%						15,764		103.43	1,767,500	1,767,500		
	INITIAL FILLS			0.3	%										1,178,200		
	OPERATOR & TRAINING MANUALS			1.0	LT										300,000		
	SUBCONTRACTORS (NOISE & DUCTWORK CONSULTANT, GEOTECHNICAL INVESTIGATION)			1.0	LT										400,000		
	OWNERS COST - % of ACCT NOS. 92, 93.1, 93.2, 93.3, 93.4	BY AEP		0.0	%										0		
	SUBTOTAL - INDIRECT COSTS														47,355,400		
	TOTAL PHASE I DIRECT AND INDIRECT COSTS														440,099,300		
	SPARE PARTS FOR THE OEM & THE BOP EQUIPMENT - PHASE I			1.3	%			1,550,900							1,550,900		441,650,200
	SPARE PARTS FOR THE OEM EQUIPMENT			0.80	%			961,558							961,558		
	SPARE PARTS FOR THE BOP EQUIPMENT			0.50	%			589,342							589,342		
	CONTINGENCY - PHASE I			14.7	%										65,044,900		
	ESCALATION - PHASE I														40,008,200		
	EQUIPMENT	4.0%/yr		4.0	%			12,450,000							12,450,000		
	MATERIAL	2.0%/yr		2.0	%				5,167,700						5,167,700		
	LABOR	2.5%/yr		2.5	%									18,115,800	18,115,800		
	INDIRECTS	2.5%/yr		2.5	%									4,274,700	4,274,700		
	INTEREST DURING CONSTRUCTION (AFUDC)	BY AEP													-		

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				FGD PROJECT - IAQCS (N/ESP)-3B - 3.0 LB/MM BTU - PHASED										Date:	9/12/2010		
				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		
	PHASE I - TOTAL PROJECT COST														546,703,300		
	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		
	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							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		

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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			45,500	61,500		
	EXCAVATION / BACKFILL		EST	148	CY			0	0	0.15	26	EXFD	90.00	2,300	2,300		
	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			28,200	43,600		
	EXCAVATION / BACKFILL		EST	106	CY			0	0	0.15	18	EXFD	90.00	1,600	1,600		
	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			116,600	178,600		
	EXCAVATION / BACKFILL		EST	421	CY			0	0	0.15	73	EXFD	90.00	6,500	6,500		
	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			1,330,800	1,872,800		
	EXCAVATION / BACKFILL		EST	13,000	CY			0	0	0.15	2,243	EXFD	90.00	201,800	201,800		
	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			42,000	66,100		
	EXCAVATION / BACKFILL		EST	129	CY			0	0	0.15	22	EXFD	90.00	2,000	2,000		
	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		
20.11	LIMESTONE RECLAIM PDC - FOUNDATIONS							0	16,800		0			30,100	46,900		
	EXCAVATION / BACKFILL		EST	99	CY			0	0	0.15	17	EXFD	90.00	1,500	1,500		
	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		

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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		
	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		

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											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	FORM	99.43	240500	267,100		
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							6,283,800	3,026,800		114,121			10,647,800	19,958,400		
	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												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						9,924		93.30	926,000	926,000		
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						12,404			972,579	972,579		
	PER DIEM	NONE		0.00	HR						136,449			0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				15,134					53,239	68,373		
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				151,340						151,340		
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			314,190							314,190		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				151,340					532,390	683,730		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				454,020					1,597,170	2,051,190		
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							314,200	771,800					4,081,400	5,167,400		
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIMESTONE HANDLING SYSTEM						6,598,000	3,798,600					14,729,200	25,125,800		
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	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		

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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		
	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		
21.3	LIMESTONE SLURRY TANKS - FOUNDATIONS							0	166,400					278,300	444,700		
	EXCAVATION / BACKFILL		EST	969	CY			0	0	0.15	167	EXFD	90.00	15,000	15,000		
	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		
21.4	REAGENT PREPARATION BUILDING - FOUNDATIONS							0	674,900					1,060,900	1,735,800		
	EXCAVATION / BACKFILL		EST	2,740	CY			0	0	0.15	473	EXFD	90.00	42,500	42,500		
	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		
21.5	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		
21.6	PIPE SUPPORT PAD - REAGENT PREP BUILDING							0	13,800					24,900	38,700		
	EXCAVATION / BACKFILL		EST	108	CY			0	0	0.15	19	EXFD	90.00	1,700	1,700		
	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		
21.7	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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21.8	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		
21.9	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE ARE INCLUDED IN SECTION 28.0 - ABSORBER ISLAND															
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							14,035,400	6,007,600		197,036			17,687,500	37,730,500		
	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												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						17,134		89.77	1,538,000	1,538,000		
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						21,417			1,615,592	1,615,592		
	PER DIEM	NONE		0.00	HR						235,587			0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				30,038					88,438	118,476		
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				300,380						300,380		
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			701,770							701,770		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				300,380					884,375	1,184,755		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				901,140					2,653,125	3,554,265		
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							701,800	1,531,900					6,779,500	9,013,200		
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	REAGENT (LIMESTONE) PREPARATION ISLAND						14,737,200	7,539,500					24,467,000	46,743,700		
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		

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	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		
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		

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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		
22.9	RECLAIM WATER TANKS & PUMPS - FOUNDATIONS							0	26,000					47,600	73,600		
	EXCAVATION / BACKFILL		EST	295	CY			0	0	0.15	51	EXFD	90.00	4,600	4,600		
	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					163,900	263,900		
	EXCAVATION / BACKFILL		EST	614	CY			0	0	0.15	106	EXFD	90.00	9,500	9,500		
	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					141,700	222,600		
	EXCAVATION / BACKFILL		EST	614	CY			0	0	0.15	106	EXFD	90.00	9,500	9,500		
	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					47,600	73,600		
	EXCAVATION / BACKFILL		EST	295	CY			0	0	0.15	51	EXFD	90.00	4,600	4,600		
	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					577,200	917,400		
	EXCAVATION / BACKFILL		EST	1,915	CY			0	0	0.15	330	EXFD	90.00	29,700	29,700		

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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
	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					31,700	47,800
	EXCAVATION / BACKFILL		EST	140	CY			0	0	0.15	24	EXFD	90.00	2,200	2,200
	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					1,364,300	2,256,000
	EXCAVATION / BACKFILL		EST	2,900	CY			0	0	0.15	500	EXFD	90.00	45,000	45,000
	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					125,100	185,900
	EXCAVATION / BACKFILL		EST	1,120	CY			0	0	0.15	193	EXFD	90.00	17,400	17,400
	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					224,400	361,700
	EXCAVATION / BACKFILL		EST	489	CY			0	0	0.15	84	EXFD	90.00	7,600	7,600
	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					451,900	740,600
	EXCAVATION / BACKFILL		EST	1,200	CY			0	0	0.15	207	EXFD	90.00	18,600	18,600
	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

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	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					34,000	52,300
	EXCAVATION / BACKFILL		EST	92	CY			0	0	0.15	16	EXFD	90.00	1,400	1,400
	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					56,300	88,600
	EXCAVATION / BACKFILL		EST	210	CY			0	0	0.15	36	EXFD	90.00	3,300	3,300
	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

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	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	0.15	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	6,300					10,300	16,600		
	SILT FENCE		EST	1,300	LF		1.0	0	1,300	0.02	30	LAND	61.45	1,800	3,100		
	ROCK CHECK DAMS		EST	10	EA		500.0	0	5,000	12.00	138	LAND	61.45	8,500	13,500		
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		

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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	0.15	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		

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	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		
	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		

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	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					183,600	253,800		
	EXCAVATION / BACKFILL		EST	1,000	CY			0	0	0.15	173	EXFD	90.00	15,500	15,500		
	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		
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							11,277,800	16,063,200		342,929			30,765,700	58,106,700		
	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												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						29,820		89.71	2,675,000	2,675,000		
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						37,275			2,810,166	2,810,166		
	PER DIEM	NONE		0.00	HR						410,024			0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				80,316					153,829	234,145		
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				803,160						803,160		
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			563,890							563,890		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				803,160					1,538,285	2,341,445		

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	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				2,409,480					4,614,855	7,024,335		
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							563,900	4,096,100					11,792,100	16,452,100		
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)						11,841,700	20,159,300					42,557,800	74,558,800		
23.0	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	LABOR COST REFLECTS DIFFICULTY FACTOR WORKING WITH C276 VS. A2205	EST	49,800	SF		300.00	0	14,940,000	1.50	85,905	MECH	88.89	7,636,100	22,576,100		
23.3	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		
23.4	PIPING - MECHANICAL	ALL PIPING INCLUDED IN OEM EQUIPMENT COST. NO BOP PIPING						0	0					0	0		
23.5	ABSORBER VESSEL - FOUNDATIONS							0	366,900					609,400	976,300		
	EXCAVATION / BACKFILL		EST	2,921	CY			0	0	0.15	504	EXFD	90.00	45,300	45,300		
	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		
23.6	ABSORBER BUILDING - FOUNDATIONS							0	564,200					884,300	1,448,500		
	EXCAVATION / BACKFILL		EST	2,410	CY			0	0	0.15	416	EXFD	90.00	37,400	37,400		
	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		
23.7	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		

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	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
23.8	PIPE SUPPORT PAD - ABSORBER BUILDING							0	7,700					14,100	21,800
	EXCAVATION / BACKFILL		EST	95	CY			0	0	0.15	16	EXFD	90.00	1,500	1,500
	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
23.9	OXIDATION AIR BLOWER BUILDING - FOUNDATIONS							0	37,000					63,200	100,200
	EXCAVATION / BACKFILL		EST	188	CY			0	0	0.15	32	EXFD	90.00	2,900	2,900
	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
23.10	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
23.11	PIPE SUPPORT PAD - OXIDATION BUILDING							0	7,700					13,100	20,800
	EXCAVATION / BACKFILL		EST	30	CY			0	0	0.15	5	EXFD	90.00	500	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

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23.12	DUCTWORK	INCLUDES INTERNAL BRACING AND TURNING VANES	EST	160	TN		3,250.00	0	520,000	60.00	11,040	FLDU	107.96	1,191,900	1,711,900		
23.13	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		
23.14	DUCTWORK INSULATION & LAGGING		EST	12,250	SF		12.00	0	147,000	0.25	3,522	DINS	81.75	287,900	434,900		
23.15	FOUNDATIONS FOR DUCT SUPPORT STEEL							0	27,800					49,300	77,100		
	EXCAVATION / BACKFILL		EST	180	CY			0	0	0.15	31	EXFD	90.00	2,800	2,800		
	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		
23.16	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		
23.17	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		
23.18	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		
23.19	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		
23.20	MIMIC PANELS		EST	2	EA	17500		35,000	0	40.00	80	WIRE	98.84	7,900	42,900		
23.21	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		
23.22	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		

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	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		
23.23	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		
23.24	RACEWAY, CABLE TRAY, & CONDUIT							0	1,388,600					5,513,200	6,901,800		
	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	8,400	LF		31.00	0	260,400	0.81	6,779	WIRE	98.84	670000	930,400		
	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,050	LF		21.50	0	22,600	0.65	677	WIRE	98.84	66900	89,500		
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	13,300	LF		9.25	0	123,000	0.35	4,682	WIRE	98.84	462700	585,700		
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	16,900	LF		7.15	0	120,800	0.28	4,800	WIRE	98.84	474400	595,200		
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	29,200	LF		4.44	0	129,600	0.24	6,979	WIRE	98.84	689800	819,400		
	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	FORM	99.43	148200	224,600		
23.25	HIGH VOLTAGE POWER CABLE & TERMINATION							0	41,700					117,600	159,300		
	1/C # 500KCMIL-15KV		EST	4,500	LF		9.27	0	41,700	0.23	1,190	WIRE	98.84	117600	159,300		
23.26	MEDIUM VOLTAGE POWER CABLE & TERMINATION							0	92,100		0			302,400	394,500		
	1/C # 500KCMIL-5KV		EST	6,600	LF		8.08	0	53,300	0.17	1,313	WIRE	98.84	129800	183,100		
	1/C # 350KCMIL-5KV		EST	5,400	LF		6.13	0	33,100	0.23	1,428	WIRE	98.84	141200	174,300		
	1/C # 250KCMIL-5KV		EST	1,200	LF		4.74	0	5,700	0.23	317	WIRE	98.84	31400	37,100		
23.27	LOW VOLTAGE POWER CABLE & TERMINATION							0	566,000					810,600	1,376,600		
	3/C # 500KCMIL- 600V		EST	2,320	LF		26.12	0	60,600	0.69	1,841	WIRE	98.84	182000	242,600		
	#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		
23.28	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		

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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		
23.29	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		
23.30	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		
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							44,928,300	22,498,900		724,799			65,419,900	132,847,100		
	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												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						63,674		90.26	5,747,000	5,747,000		
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						79,592			6,036,949	6,036,949		
	PER DIEM	NONE		0.00	HR						875,517			0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				112,495					327,100	439,594		
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				1,124,945						1,124,945		
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			2,246,415							2,246,415		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				1,124,945					3,270,995	4,395,940		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				3,374,835					9,812,985	13,187,820		
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							2,921,400	5,737,200					25,857,400	34,516,100		
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	ABSORBER ISLAND						47,849,700	28,236,100					91,277,300	167,363,200		
24.0	COMPRESSED AIR SYSTEM (BYPRODUCT DEWATERING AREA)														0		
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		
	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					8,800	14,000		
	EXCAVATION / BACKFILL		EST	20	CY			0	0	0.15	3	EXFD	90.00	300	300		
	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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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							21,300	16,700		523			47,500	85,500		
	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												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						45		90.85	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			4,339	4,339		
	PER DIEM	NONE		0.00	HR						625			0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				84					238	321		
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				835						835		
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			1,065							1,065		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				835					2,375	3,210		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				2,505					7,125	9,630		
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							1,100	4,300					18,100	23,400		
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	POTABLE WATER SYSTEM						22,400	21,000					65,600	108,900		
26.0	FGD SUBSTATION																
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					121,300	184,800		
	EXCAVATION / BACKFILL		EST	600	CY			0	0	0.15	104	EXFD	90.00	9,300	9,300		
	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		9,112			727,200	2,326,900		
	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												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						792		79.81	63,000	63,000		
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						990			66,423	66,423		
	PER DIEM	NONE		0.00	HR						10,894			0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				1,119					3,636	4,755		
	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		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				11,185					36,360	47,545		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				33,555					109,080	142,635		
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							68,800	57,000					278,499	404,300		
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FGD SUBSTATION						1,444,800	280,700					1,005,700	2,731,200		
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												
	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		
	SALES TAX - NOT INCLUDED														0		
	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		

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	CUT		EST	1,500	CY			0	0	0.08	138	ETWK	177.49	24,500	24,500		
	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		
28.8	EROSION & SEDIMENT CONTROL							0	1,200					1,700	2,900		
	SILT FENCE		EST	1,200	LF		1.0	0	1,200	0.02	28	LAND	61.45	1,700	2,900		
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							3,000	966,500		11,578			1,307,400	2,276,900		
	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												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						1,007		112.92	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	%						1,258			119,419	119,419		
	PER DIEM	NONE		0.00	HR						13,843			0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				4,833					6,537	11,370		
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				48,325						48,325		
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			150							150		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				48,325					65,370	113,695		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				144,975					196,110	341,085		
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							200	246,500					501,400	748,000		
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SITE IMPROVEMENTS - CIVIL WORK						3,200	1,213,000					1,808,800	3,024,900		
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	165,100					633,300	798,400		
	TOUCH UP PAINT FOR SHOP PAINTED STEEL		EST	24,190	SF		3	0	72,600	0.15	4,173	PNTR	66.72	278,400	351,000		
	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	18,840	SF		3	0	56,500	0.15	3,250	PNTR	66.72	216,800	273,300		
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					16,700	25,300		
	EXCAVATION / BACKFILL		EST	60	CY			0	0	0.15	10	EXFD	90.00	900	900		
	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		

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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		
	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	1,150,300		26,832			2,238,700	3,569,000		
	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												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						2,333		83.43	195,000	195,000		
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						2,916			204,485	204,485		
	PER DIEM	NONE		0.00	HR						32,081			0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				5,752					11,194	16,945		
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				57,515						57,515		
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			9,000							9,000		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				57,515					111,935	169,450		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				172,545					335,805	508,350		
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							9,000	293,327					858,418	1,160,745		
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BOP ITEMS						189,000	1,443,600					3,097,100	4,729,700		
99.00	PHASE II - OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS							78,851,900	53,947,700		1,458,046			131,630,500	264,430,100		
	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												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						127,435		90.28	11,505,000	11,505,000		
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						159,293			12,084,683	12,084,683		
	PER DIEM	NONE		0.00	HR									0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				269,739					658,153	927,891		
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				2,697,385						2,697,385		
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			3,942,595							3,942,595		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				2,697,385					6,581,525	9,278,910		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				8,092,155					19,744,575	27,836,730		
	PHASE II - OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							4,617,600	13,756,700					51,236,300	69,610,600		

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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		
	PHASE II - OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST	WET FGD						83,469,500	67,704,400					182,866,800	334,040,700		
	TOTAL PHASE II DIRECT AND CONSTRUCTION INDIRECT COSTS							83,469,500	67,704,400					182,866,800	334,040,700		
	INDIRECT COSTS - PHASE II																
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES			1.0	LT										23,000,000		
	CONSTRUCTION MANAGEMENT			3.0	%										10,021,200		
	S-U / COMMISSIONING			1.0											3,340,400		
	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	%						15,855		90.28	1,551,600	1,551,600		
	INITIAL FILLS			0.3	%										1,002,100		
	OPERATOR & TRAINING MANUALS			1.0	LT										300,000		
	SUBCONTRACTORS (NOISE CONSULTANT)			1.0	LT										100,000		
	OWNERS COST - % of ACCT NOS. 92, 93.1, 93.2, 93.3, 93.4	BY AEP		0.0	%										0		
	SUBTOTAL - INDIRECT COSTS														39,315,300		
	TOTAL PHASE II DIRECT AND INDIRECT COSTS														373,356,000		
	SPARE PARTS FOR THE OEM & THE BOP EQUIPMENT - PHASE II			1.3	%			1,085,100							1,085,100		
	SPARE PARTS FOR THE OEM EQUIPMENT			0.80	%			672,762							672,762		
	SPARE PARTS FOR THE BOP EQUIPMENT			0.50	%			412,338							412,338		
	CONTINGENCY - PHASE II.			15.8	%										59,275,700		
	ESCALATION - PHASE II														85,284,800		
	EQUIPMENT	3.0%/yr		3.0	%			20,985,200							20,985,200		
	MATERIAL	2.0%/yr		2.0	%				12,411,400						12,411,400		
	LABOR	2.5%/yr		2.5	%									42,706,500	42,706,500		
	INDIRECTS	2.5%/yr		2.5	%									9,181,700	9,181,700		
	INTEREST DURING CONSTRUCTION (AFUDC)	BY AEP													-		
	PHASE II - TOTAL PROJECT COST														519,001,600		
99.00	PHASE I + PHASE II OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS							191,795,800	114,481,100		2,908,323			281,633,400	588,660,300		
	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												
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						253,546		96.84	22,035,000	22,035,000		

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				ORDER OF MAGNITUDE COST ESTIMATE										Preparer:	MNO		
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		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		
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						318,422			23,247,794	23,247,794		
	PER DIEM	NONE		0.00	HR									0	0		
	CONSUMABLES - % of ACCT NO. 90			0.5	%				494,706					1,328,117	1,822,823		
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				4,947,055						4,947,055		
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			9,487,790							9,487,790		
	SALES TAX - NOT INCLUDED														0		
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				4,947,055					13,281,170	18,228,225		
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT- % of ACCT NO. 90			15	%				14,841,165					39,843,510	54,684,675		
	PHASE I + PHASE II OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							10,972,800	25,230,000					101,921,500	138,124,300		
	PHASE I + PHASE II OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST							202,768,600	139,711,100					383,554,900	726,784,600		
	TOTAL PHASE I + PHASE II DIRECT AND CONSTRUCTION INDIRECT COSTS							202,768,600	139,711,100					383,554,900	726,784,600		
	INDIRECT COSTS																
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES			1.0	LT										51,000,000		
	CONSTRUCTION MANAGEMENT			3.0	%										21,803,500		
	S-U / COMMISSIONING			1.0											7,267,800		
	CRAFT START-UP SUPPORT														3,319,100		
	INITIAL FILLS														2,180,300		
	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		
	OWNERS COST - % of ACCT NOS. 92, 93.1, 93.2, 93.3, 93.4	BY AEP		0.0	%										0		
	SUBTOTAL - INDIRECT COSTS														86,670,700		
	TOTAL PROJECT DIRECT AND INDIRECT COSTS														813,455,300		
	SPARE PARTS FOR THE OEM & THE BOP EQUIPMENT			1.3	%			2,636,000							2,636,000		
	SPARE PARTS FOR THE OEM EQUIPMENT			0.80	%			1,634,320							1,634,320		
	SPARE PARTS FOR THE BOP EQUIPMENT			0.50	%			1,001,680							1,001,680		
	CONTINGENCY														124,320,600		
	ESCALATION														125,293,000		
	EQUIPMENT							33,435,200							33,435,200		
	MATERIAL								17,579,100						17,579,100		
	LABOR													60,822,300	60,822,300		
	INDIRECTS													13,456,400	13,456,400		
	INTEREST DURING CONSTRUCTION (AFUDC)	BY AEP													-		
	TOTAL PROJECT COST														1,065,704,900		
	REFERENCE COSTS:																

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				FGD PROJECT - IAQCS (N/ESP)-3B - 3.0 LB/MM BTU - PHASED										Date:	9/12/2010		
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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		
18.7	ESP DEMOLITION	ALLOWANCE FOR 1000T STRUCTURE	EST	1,000	TN			0	0	6.00	6,900	WRKG	120.63	832,300	832,300		
18.8	REMOVE BOOSTER AIR FANS		EST	2	EA			0	0	400.00	920	WRKG	120.63	111,000	111,000		

ATTACHMENT 4-12
IAQCS Detailed Capital Cost Estimate No. 30717 Est-4A ESP in Service (7.5 lb SO_2/MMbtu)

				AEP										Estimate No.:	30717B
				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS (ESP)-4A - 7.5 LB/MM BTU - NON PHASED										Date:	9/12/2010
				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														
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					973,600	1,524,300
	EXCAVATION / BACKFILL		EST	4,945	CY			0	0	0.15	853	EXFD	90.00	76,800	76,800
	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	LIGHT FIXTURE		EST	22	EA		750.00	0	16,500	4.00	101	WIRE	98.84	10,000	26,500
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

				AEP										Estimate No.:	30717B
				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS (ESP)-4A - 7.5 LB/MM BTU - NON PHASED										Date:	9/12/2010
				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
	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							21,697,400	3,019,600		191,670			17,133,700	41,850,700
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						16,667		83.48	1,391,000	1,391,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						20,834			1,461,511	1,461,511
	PER DIEM	NONE		0.00	HR						229,171			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				15,098					85,669	100,767
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				150,980						150,980
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			1,084,870							1,084,870
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				150,980					856,685	1,007,665
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				452,940					2,570,055	3,022,995
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							1,084,900	770,000					6,364,900	8,219,800
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FABRIC FILTERS						22,782,300	3,789,600					23,498,600	50,070,500
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	2800.00	3,220	MECH	88.89	286,200	636,200
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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				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
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					42,600	65,200
	EXCAVATION / BACKFILL		EST	300	CY			0	0	0.15	52	EXFD	90.00	4,700	4,700
	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					132,200	212,800
	EXCAVATION / BACKFILL		EST	340	CY			0	0	0.15	59	EXFD	90.00	5,300	5,300
	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					151,600	238,700
	EXCAVATION / BACKFILL		EST	900	CY			0	0	0.15	155	EXFD	90.00	14,000	14,000
	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					20,300	31,000
	EXCAVATION / BACKFILL		EST	95	CY			0	0	0.15	16	EXFD	90.00	1,500	1,500
	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					208,200	302,400
	EXCAVATION / BACKFILL		EST	1,360	CY			0	0	0.15	235	EXFD	90.00	21,100	21,100
	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

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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

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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	16,200	LF		6.13	0	99,300	0.23	4,285	WIRE	98.84	423,500	522,800
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	18,000	LF		3.20	0	57,600	0.08	1,635	WIRE	98.84	161,600	219,200
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					10,300	15,600
	EXCAVATION / BACKFILL		EST	75	CY			0	0	0.15	13	EXFD	90.00	1,200	1,200
	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	FIREWALL FOR TRANSFORMERS							0	0					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
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							2,597,600	2,306,700		50,422			4,829,700	9,734,000
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						4,385		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	%						5,481			384,474	384,474
	PER DIEM	NONE		0.00	HR						60,287			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				11,534					24,149	35,682
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				115,335						115,335
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			129,880							129,880
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				115,335					241,485	356,820
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				346,005					724,455	1,070,460
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							129,900	588,200					1,740,600	2,458,700
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME HANDLING SYSTEM						2,727,500	2,894,900					6,570,300	12,192,700
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

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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					278,300	444,700
	EXCAVATION / BACKFILL		EST	969	CY			0	0	0.15	167	EXFD	90.00	15,000	15,000
	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					194,200	313,400
	EXCAVATION / BACKFILL		EST	450	CY			0	0	0.15	78	EXFD	90.00	7,000	7,000
	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

				AEP										Estimate No.:	30717B
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				FGD PROJECT - IAQCS (ESP)-4A - 7.5 LB/MM BTU - NON PHASED										Date:	9/12/2010
				ORDER OF MAGNITUDE COST ESTIMATE										Preparer:	MNO
		Cost Type:												Reviewer:	JMK
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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		55,785			4,933,300	9,529,900
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						4,851		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	%						6,064			425,370	425,370
	PER DIEM	NONE		0.00	HR						66,700			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				6,002					24,667	30,668
	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
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				60,015					246,665	306,680
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				180,045					739,995	920,040
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							169,800	306,100					1,841,700	2,317,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME SLAKER BUILDING						3,566,100	1,506,400					6,775,000	11,847,500
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

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	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 BYPRODUCT SILO	INCLUDED WITH OEM EQUIPMENT													
6.8	FLY ASH SILO	6T STEEL -STORAGE SILO, 10' DIA X 12' H						55,000	17,400					66,200	138,600
	SILO BIN	PIN MIXERS INCLUDED WITH FLY ASH HANDLING EQUIPMENT	EST	1	EA	55,000		55,000	0	475.00	546	TANK	89.16	48,700	103,700
	SUPPORT STEEL FOR SILO	THREE-COAT SHOP PAINT	EST	6	TN		2,900.00	0	17,400	24.00	166	STST	105.71	17,500	34,900
6.9	BYPRODUCT WASTE SILO - FOUNDATIONS							0	23,200					45,800	69,000
	EXCAVATION / BACKFILL		EST	380	CY			0	0	0.15	66	EXFD	90.00	5,900	5,900
	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	4,300					10,200	14,500
	EXCAVATION / BACKFILL		EST	115	CY			0	0	0.15	20	EXFD	90.00	1,800	1,800
	REINFORCING		EST	1.0	TN		1,150.00	0	1,200	20.00	23	REIN	78.27	1,800	3,000
	FORMWORK		EST	135	SF		2.50	0	300	0.14	22	FORM	99.43	2,200	2,500
	CONCRETE		EST	15	CY		105.00	0	1,600	1.50	26	CONP	79.64	2,100	3,700
	MUD MAT		EST	1	CY		105.00	0	100	1.50	2	CONP	79.64	100	200
	EMBEDDED STEEL		EST	450	LB		2.50	0	1,100	0.06	31	CARP	71.88	2,200	3,300
6.11	FLY ASH BLOWER AND ELECTRICAL BUILDING - FOUNDATIONS							0	49,600					93,200	142,800
	EXCAVATION / BACKFILL		EST	578	CY			0	0	0.15	100	EXFD	90.00	9,000	9,000
	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						75,000	276,500					24,400	375,900

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	PREENGINEERED BUILDING INCLUDING H&V AND LIGHTING	SUBCONTRACT PRICE, INCLUDES LABOR	EST	2,700	SF		95	0	256,500	0.00	0	STST	105.71	0	256,500
	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
6.13	RECYCLE ASH BUILDING - FOUNDATIONS							0	234,300					373,100	607,400
	EXCAVATION / BACKFILL		EST	950	CY			0	0	0.15	164	EXFD	90.00	14,700	14,700
	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	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

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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
	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	MEDIUM VOLTAGE POWER CABLE & TERMINATION	1/C # 350KCMIL-5KV	EST	4,200	LF		6.13	0	25,700	0.23	1,111	WIRE	98.84	109,800	135,500
6.21	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
6.22	CONTROL & INSTRUMENT CABLE		EST	17,000	LF		3.20	0	54,400	0.23	4,497	WIRE	98.84	444400	498,800
6.23	DUCT BANK							0	109,700					268,900	378,600
	DUCT BANK WITH 8-5" & 8-3" CONDUITS		EST	125	LF		398.82	0	49,900	7.51	1,080	FORM	99.43	107,400	157,300
	DUCT BANK WITH 6-5" & 6-3" CONDUITS		EST	125	LF		265.88	0	33,200	6.01	864	FORM	99.43	85,900	119,100
	DUCT BANK WITH 2-5" & 2-3" CONDUITS		EST	200	LF		132.94	0	26,600	3.31	760	FORM	99.43	75,600	102,200
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							4,724,300	2,588,700		71,993			6,525,600	13,838,600
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						6,260		83.48	523,000	523,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						7,825			548,956	548,956
	PER DIEM	NONE		0.00	HR						86,079			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				12,944					32,628	45,572
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				129,435						129,435
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			236,215							236,215
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				129,435					326,280	455,715
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				388,305					978,840	1,367,145
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							236,200	660,100					2,409,700	3,306,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS						4,960,500	3,248,800					8,935,300	17,144,600
7.0	SPRAY DRYER ABSORBER ISLAND														0
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														
13.0	FGD DCS SYSTEM	DRY AND WET FGD COMBINED													0
14.0	CEM SYSTEM														0

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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	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
18.3	LIMESTONE SLURRY TANKS - FOUNDATIONS							0	166,400					278,300	444,700
	EXCAVATION / BACKFILL		EST	969	CY			0	0	0.15	167	EXFD	90.00	15,000	15,000
	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
18.4	REAGENT PREPARATION BUILDING - FOUNDATIONS							0	701,800					1,103,100	1,804,900
	EXCAVATION / BACKFILL		EST	2,850	CY			0	0	0.15	492	EXFD	90.00	44,200	44,200
	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
18.5	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

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	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
18.6	PIPE SUPPORT PAD - REAGENT PREP BUILDING							0	14,400					26,100	40,500
	EXCAVATION / BACKFILL		EST	115	CY			0	0	0.15	20	EXFD	90.00	1,800	1,800
	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
18.7	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
18.8	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
18.9	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE ARE INCLUDED IN SECTION 20.0 - ABSORBER ISLAND													
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							17,541,400	6,207,600		218,087			19,567,800	43,316,800
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						18,964		89.72	1,702,000	1,702,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						23,705			1,787,340	1,787,340
	PER DIEM	NONE		0.00	HR						260,756			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				31,038					97,839	128,877
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				310,380						310,380

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	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			877,070							877,070
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				310,380					978,390	1,288,770
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				931,140					2,935,170	3,866,310
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							877,100	1,582,900					7,500,700	9,960,700
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	REAGENT (LIMESTONE) PREPARATION ISLAND						18,418,500	7,790,500					27,068,500	53,277,500
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
	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

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	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					47,600	73,600
	EXCAVATION / BACKFILL		EST	295	CY			0	0	0.15	51	EXFD	90.00	4,600	4,600
	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					163,900	263,900
	EXCAVATION / BACKFILL		EST	614	CY			0	0	0.15	106	EXFD	90.00	9,500	9,500
	REINFORCING		EST	42.0	TN		1,150.00	0	48,300	20.00	966	REIN	78.27	75,600	123,900

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	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					141,700	222,600
	EXCAVATION / BACKFILL		EST	614	CY			0	0	0.15	106	EXFD	90.00	9,500	9,500
	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					47,600	73,600
	EXCAVATION / BACKFILL		EST	295	CY			0	0	0.15	51	EXFD	90.00	4,600	4,600
	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					577,200	917,400
	EXCAVATION / BACKFILL		EST	1,915	CY			0	0	0.15	330	EXFD	90.00	29,700	29,700
	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					31,700	47,800
	EXCAVATION / BACKFILL		EST	140	CY			0	0	0.15	24	EXFD	90.00	2,200	2,200
	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					1,364,300	2,256,000
	EXCAVATION / BACKFILL		EST	2,900	CY			0	0	0.15	500	EXFD	90.00	45,000	45,000
	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					125,100	185,900
	EXCAVATION / BACKFILL		EST	1,120	CY			0	0	0.15	193	EXFD	90.00	17,400	17,400
	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					224,400	361,700

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	EXCAVATION / BACKFILL		EST	489	CY			0	0	0.15	84	EXFD	90.00	7,600	7,600
	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					473,200	775,100
	EXCAVATION / BACKFILL		EST	1,260	CY			0	0	0.15	217	EXFD	90.00	19,600	19,600
	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					25,000	38,800
	EXCAVATION / BACKFILL		EST	100	CY			0	0	0.15	17	EXFD	90.00	1,600	1,600
	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					56,300	88,600
	EXCAVATION / BACKFILL		EST	210	CY			0	0	0.15	36	EXFD	90.00	3,300	3,300
	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

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	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	0.15	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

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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	6,300					10,300	16,600
	SILT FENCE		EST	1,300	LF		1.0	0	1,300	0.02	30	LAND	61.45	1,800	3,100
	ROCK CHECK DAMS		EST	10	EA		500.0	0	5,000	12.00	138	LAND	61.45	8,500	13,500
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	0.15	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

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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
	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

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	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					183,600	253,800
	EXCAVATION / BACKFILL		EST	1,000	CY			0	0	0.15	173	EXFD	90.00	15,500	15,500
	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

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	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
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							14,294,800	16,136,800		359,238			32,216,800	62,648,400
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						31,238		89.68	2,801,000	2,801,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						39,048			2,942,711	2,942,711
	PER DIEM	NONE		0.00	HR						429,523			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				80,684					161,084	241,768
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				806,840						806,840
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			714,740							714,740
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				806,840					1,610,840	2,417,680
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				2,420,520					4,832,520	7,253,040
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							714,700	4,114,900					12,348,200	17,177,800
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)						15,009,500	20,251,700					44,565,000	79,826,200
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	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	LABOR COST REFLECTS DIFFICULTY FACTOR WORKING WITH C276 VS. A2205	EST	49,800	SF		300.00	0	14,940,000	1.50	85,905	MECH	88.89	7,636,100	22,576,100
20.3	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
20.4	PIPING - MECHANICAL	ALL PIPING INCLUDED IN OEM EQUIPMENT COST. NO BOP PIPING						0	0					0	0
20.5	ABSORBER VESSEL - FOUNDATIONS							0	366,900					609,400	976,300

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	EXCAVATION / BACKFILL		EST	2,921	CY			0	0	0.15	504	EXFD	90.00	45,300	45,300
	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
20.6	ABSORBER BUILDING - FOUNDATIONS							0	608,300					951,900	1,560,200
	EXCAVATION / BACKFILL		EST	2,560	CY			0	0	0.15	442	EXFD	90.00	39,700	39,700
	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
20.7	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
20.8	PIPE SUPPORT PAD - ABSORBER BUILDING							0	7,700					14,400	22,100
	EXCAVATION / BACKFILL		EST	100	CY			0	0	0.15	17	EXFD	90.00	1,600	1,600
	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
20.9	OXIDATION AIR BLOWER BUILDING - FOUNDATIONS							0	37,000					63,200	100,200
	EXCAVATION / BACKFILL		EST	188	CY			0	0	0.15	32	EXFD	90.00	2,900	2,900
	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
20.10	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

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	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
20.11	PIPE SUPPORT PAD - OXIDATION BUILDING							0	7,700					13,100	20,800
	EXCAVATION / BACKFILL		EST	30	CY			0	0	0.15	5	EXFD	90.00	500	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
20.12	DUCTWORK	INCLUDES INTERNAL BRACING AND TURNING VANES	EST	115	TN		3,250.00	0	373,800	60.00	7,935	FLDU	107.96	856,700	1,230,500
20.13	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
20.14	DUCTWORK INSULATION & LAGGING		EST	11,000	SF		12.00	0	132,000	0.25	3,163	DINS	81.75	258,500	390,500
20.15	FOUNDATIONS FOR DUCT SUPPORT STEEL							0	17,700					32,100	49,800
	EXCAVATION / BACKFILL		EST	144	CY			0	0	0.15	25	EXFD	90.00	2,200	2,200
	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
20.16	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
20.17	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
20.18	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
20.19	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
20.20	MIMIC PANELS		EST	2	EA	17500		35,000	0	40.00	80	WIRE	98.84	7,900	42,900
20.21	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
20.22	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
20.23	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
20.24	RACEWAY, CABLE TRAY, & CONDUIT							0	1,388,600					5,513,200	6,901,800
	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	8,400	LF		31.00	0	260,400	0.81	6,779	WIRE	98.84	670000	930,400
	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,050	LF		21.50	0	22,600	0.65	677	WIRE	98.84	66900	89,500
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	13,300	LF		9.25	0	123,000	0.35	4,682	WIRE	98.84	462700	585,700
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	16,900	LF		7.15	0	120,800	0.28	4,800	WIRE	98.84	474400	595,200
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	29,200	LF		4.44	0	129,600	0.24	6,979	WIRE	98.84	689800	819,400
	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

				AEP										Estimate No.:	30717B
				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS (ESP)-4A - 7.5 LB/MM BTU - NON PHASED										Date:	9/12/2010
				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
	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	FORM	99.43	148200	224,600
20.25	HIGH VOLTAGE POWER CABLE & TERMINATION							0	41,700					117,600	159,300
	1/C # 500KCMIL-15KV		EST	4,500	LF		9.27	0	41,700	0.23	1,190	WIRE	98.84	117600	159,300
20.26	MEDIUM VOLTAGE POWER CABLE & TERMINATION							0	92,100		0			302,400	394,500
	1/C # 500KCMIL-5KV		EST	6,600	LF		8.08	0	53,300	0.17	1,313	WIRE	98.84	129800	183,100
	1/C # 350KCMIL-5KV		EST	5,400	LF		6.13	0	33,100	0.23	1,428	WIRE	98.84	141200	174,300
	1/C # 250KCMIL-5KV		EST	1,200	LF		4.74	0	5,700	0.23	317	WIRE	98.84	31400	37,100
20.27	LOW VOLTAGE POWER CABLE & TERMINATION							0	566,000					810,600	1,376,600
	3/C # 500KCMIL- 600V		EST	2,320	LF		26.12	0	60,600	0.69	1,841	WIRE	98.84	182000	242,600
	#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
20.28	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
20.29	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
20.30	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
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							45,567,300	22,470,800		726,957			65,552,100	133,590,200
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						63,862		90.17	5,759,000	5,759,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						79,827			6,048,965	6,048,965
	PER DIEM	NONE		0.00	HR						878,098			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				112,354					327,761	440,115
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				1,123,540						1,123,540
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			2,278,365							2,278,365
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				1,123,540					3,277,605	4,401,145
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				3,370,620					9,832,815	13,203,435
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							2,953,400	5,730,100					25,908,500	34,592,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	WET FGD ABSORBER ISLAND						48,520,700	28,200,900					91,460,600	168,182,200
21.0	COMPRESSED AIR SYSTEM (BYPRODUCT DEWATERING AREA)														0

				AEP										Estimate No.:	30717B
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		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
22.0	POTABLE WATER SYSTEM	INCLUDED WITH ACCOUNT 11.0													
23.0	FGD SUBSTATION														
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	BY AEP													
99.00	OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS							189,749,500	113,055,400		2,954,009			286,235,100	589,790,000
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						257,518		96.90	22,346,000	22,346,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						323,388			23,575,486	23,575,486
	PER DIEM	NONE		0.00	HR									0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				487,577					1,351,126	1,838,703
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				4,875,770						4,875,770
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			9,385,475							9,385,475
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				4,875,770					13,511,255	18,387,025
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				14,627,310					40,533,765	55,161,075
	CONTRACTOR'S PROFIT - % of ACCT NO. 90	BY AEP		0	%				0					0	0
	OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							10,870,500	24,866,400					103,503,600	139,240,500
	OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST							200,620,000	137,921,800					389,738,700	729,030,500
	TOTAL DIRECT AND CONSTRUCTION INDIRECT COSTS							200,620,000	137,921,800					389,738,700	729,030,500
	INDIRECT COSTS								0						
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES			1.0	LT										45,000,000
	CONSTRUCTION MANAGEMENT			3.0	%										21,870,900
	S-U / COMMISSIONING			1.0											7,290,300

				AEP										Estimate No.:	30717B
				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS (ESP)-4A - 7.5 LB/MM BTU - NON PHASED										Date:	9/12/2010
				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
	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	%						32,115		96.90	3,373,400	3,373,400
	INITIAL FILLS			0.3	%										2,187,100
	OPERATOR & TRAINING MANUALS			1.0	LT										600,000
	SUBCONTRACTORS (NOISE & DUCTWORK CONSULTANT, GEOTECHNICAL INVESTIGATION)			1.0	LT										500,000
	OWNERS COST - % of ACCT NOS. 92, 93.1, 93.2, 93.3, 93.4	BY AEP		0.0	%										0
	SUBTOTAL - INDIRECT COSTS														80,821,700
	TOTAL DIRECT AND INDIRECT COSTS														809,852,200
	SPARE PARTS FOR THE OEM & THE BOP EQUIPMENT			1.0	%			2,006,200							2,006,200
	SPARE PARTS FOR THE OEM EQUIPMENT			0.80	%			1,243,844							1,243,844
	SPARE PARTS FOR THE BOP EQUIPMENT			0.50	%			762,356							762,356
	CONTINGENCY			13.8	%										111,658,500
	ESCALATION														73,249,700
	EQUIPMENT	4.0%/yr		4.0	%			20,874,500							20,874,500
	MATERIAL	2.0%/yr		2.0	%				9,898,300						9,898,300
	LABOR	2.5%/yr		2.5	%									35,181,200	35,181,200
	INDIRECTS	2.5%/yr		2.5	%									7,295,700	7,295,700
	INTEREST DURING CONSTRUCTION (AFUDC)	BY AEP													-
	TOTAL PROJECT COST														996,766,600
	REFERENCE COSTS:														
A	ESP STRUCTURAL INTEGRITY MODS	ALLOWANCE FOR 150 TON FRAMING REINFORCEMENT	EST	150	TN		2900	0	435,000	120.00	20,700	STST	105.71	2,188,200	2,623,200

ATTACHMENT 4-13
IAQCS Detailed Capital Cost Estimate No. 30721 Est-4B ESP not in Service (7.5 lb SO_2/MMbtu)

				AEP										Estimate No.:	30721B
				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS (N/ESP)-4B - 7.5 LB/MM BTU - NON PHASED										Date:	9/12/2010
				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														
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					973,600	1,524,300
	EXCAVATION / BACKFILL		EST	4,945	CY			0	0	0.15	853	EXFD	90.00	76,800	76,800
	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	LIGHT FIXTURE		EST	22	EA		750.00	0	16,500	4.00	101	WIRE	98.84	10,000	26,500
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

				AEP										Estimate No.:	30721B
				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS (N/ESP)-4B - 7.5 LB/MM BTU - NON PHASED										Date:	9/12/2010
				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
	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							22,183,400	3,019,600		193,740			17,317,700	42,520,700
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						16,847		83.48	1,406,000	1,406,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						21,059			1,477,295	1,477,295
	PER DIEM	NONE		0.00	HR						231,646			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				15,098					86,589	101,687
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				150,980						150,980
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			1,109,170							1,109,170
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				150,980					865,885	1,016,865
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				452,940					2,597,655	3,050,595
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							1,109,200	770,000					6,433,400	8,312,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FABRIC FILTERS						23,292,600	3,789,600					23,751,100	50,833,300
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	2800.00	3,220	MECH	88.89	286,200	636,200
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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				BIG SANDY UNIT 2											Project No.:	12721-000
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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
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					42,600	65,200
	EXCAVATION / BACKFILL		EST	300	CY			0	0	0.15	52	EXFD	90.00	4,700	4,700
	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					132,200	212,800
	EXCAVATION / BACKFILL		EST	340	CY			0	0	0.15	59	EXFD	90.00	5,300	5,300
	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					151,600	238,700
	EXCAVATION / BACKFILL		EST	900	CY			0	0	0.15	155	EXFD	90.00	14,000	14,000
	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					20,300	31,000
	EXCAVATION / BACKFILL		EST	95	CY			0	0	0.15	16	EXFD	90.00	1,500	1,500
	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					208,200	302,400
	EXCAVATION / BACKFILL		EST	1,360	CY			0	0	0.15	235	EXFD	90.00	21,100	21,100
	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

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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

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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	16,200	LF		6.13	0	99,300	0.23	4,285	WIRE	98.84	423,500	522,800
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	18,000	LF		3.20	0	57,600	0.08	1,635	WIRE	98.84	161,600	219,200
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					10,300	15,600
	EXCAVATION / BACKFILL		EST	75	CY			0	0	0.15	13	EXFD	90.00	1,200	1,200
	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	FIREWALL FOR TRANSFORMERS							0	0					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
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							2,597,600	2,306,700		50,422			4,829,700	9,734,000
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						4,385		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	%						5,481			384,474	384,474
	PER DIEM	NONE		0.00	HR						60,287			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				11,534					24,149	35,682
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				115,335						115,335
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			129,880							129,880
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				115,335					241,485	356,820
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				346,005					724,455	1,070,460
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							129,900	588,200					1,740,600	2,458,700
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME HANDLING SYSTEM						2,727,500	2,894,900					6,570,300	12,192,700
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

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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					278,300	444,700
	EXCAVATION / BACKFILL		EST	969	CY			0	0	0.15	167	EXFD	90.00	15,000	15,000
	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					194,200	313,400
	EXCAVATION / BACKFILL		EST	450	CY			0	0	0.15	78	EXFD	90.00	7,000	7,000
	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

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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		55,785			4,933,300	9,529,900
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						4,851		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	%						6,064			425,370	425,370
	PER DIEM	NONE		0.00	HR						66,700			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				6,002					24,667	30,668
	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
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				60,015					246,665	306,680
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				180,045					739,995	920,040
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							169,800	306,100					1,841,700	2,317,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME SLAKER BUILDING						3,566,100	1,506,400					6,775,000	11,847,500
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	450,000		450,000	0	3200.00	3,680	MECH	88.89	327,100	777,100
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

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	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 BYPRODUCT 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					107,700	167,900
	EXCAVATION / BACKFILL		EST	670	CY			0	0	0.15	116	EXFD	90.00	10,400	10,400
	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	0.15	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	0.15	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

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	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					373,100	607,400
	EXCAVATION / BACKFILL		EST	950	CY			0	0	0.15	164	EXFD	90.00	14,700	14,700
	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	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

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6.20	MEDIUM VOLTAGE POWER CABLE & TERMINATION	1/C # 350KCMIL-5KV	EST	4,200	LF		6.13	0	25,700	0.23	1,111	WIRE	98.84	109,800	135,500
6.21	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
6.22	CONTROL & INSTRUMENT CABLE		EST	17,000	LF		3.20	0	54,400	0.23	4,497	WIRE	98.84	444400	498,800
6.23	DUCT BANK							0	109,700					268,900	378,600
	DUCT BANK WITH 8-5" & 8-3" CONDUITS		EST	125	LF		398.82	0	49,900	7.51	1,080	FORM	99.43	107,400	157,300
	DUCT BANK WITH 6-5" & 6-3" CONDUITS		EST	125	LF		265.88	0	33,200	6.01	864	FORM	99.43	85,900	119,100
	DUCT BANK WITH 2-5" & 2-3" CONDUITS		EST	200	LF		132.94	0	26,600	3.31	760	FORM	99.43	75,600	102,200
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							3,302,900	2,225,700		56,534			5,144,700	10,673,300
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						4,916		83.48	410,000	410,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						6,145			431,082	431,082
	PER DIEM	NONE		0.00	HR						67,595			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				11,129					25,724	36,852
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				111,285						111,285
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			165,145							165,145
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				111,285					257,235	368,520
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				333,855					771,705	1,105,560
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							165,100	567,600					1,895,700	2,628,400
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS						3,468,000	2,793,300					7,040,400	13,301,700
7.0	SPRAY DRYER ABSORBER ISLAND														0
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														
13.0	FGD DCS SYSTEM	DRY AND WET FGD COMBINED													0
14.0	CEM SYSTEM														0
15.0	TRUCK & RAIL INFRASTRUCTURE														0

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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	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
18.3	LIMESTONE SLURRY TANKS - FOUNDATIONS							0	166,400					278,300	444,700
	EXCAVATION / BACKFILL		EST	969	CY			0	0	0.15	167	EXFD	90.00	15,000	15,000
	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
18.4	REAGENT PREPARATION BUILDING - FOUNDATIONS							0	701,800					1,103,100	1,804,900
	EXCAVATION / BACKFILL		EST	2,850	CY			0	0	0.15	492	EXFD	90.00	44,200	44,200
	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
18.5	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

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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	4,820	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
18.6	PIPE SUPPORT PAD - REAGENT PREP BUILDING							0	14,400					26,100	40,500
	EXCAVATION / BACKFILL		EST	115	CY			0	0	0.15	20	EXFD	90.00	1,800	1,800
	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
18.7	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
18.8	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
18.9	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE ARE INCLUDED IN SECTION 20.0 - ABSORBER ISLAND													
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							17,541,400	6,207,600		218,087			19,567,800	43,316,800
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						18,964		89.72	1,702,000	1,702,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						23,705			1,787,340	1,787,340
	PER DIEM	NONE		0.00	HR						260,756			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				31,038					97,839	128,877
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				310,380						310,380
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			877,070							877,070
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				310,380					978,390	1,288,770

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	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				931,140					2,935,170	3,866,310
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							877,100	1,582,900					7,500,700	9,960,700
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	REAGENT (LIMESTONE) PREPARATION ISLAND						18,418,500	7,790,500					27,068,500	53,277,500
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
	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

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	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					47,600	73,600
	EXCAVATION / BACKFILL		EST	295	CY			0	0	0.15	51	EXFD	90.00	4,600	4,600
	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					163,900	263,900
	EXCAVATION / BACKFILL		EST	614	CY			0	0	0.15	106	EXFD	90.00	9,500	9,500
	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

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				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS (N/ESP)-4B - 7.5 LB/MM BTU - NON PHASED										Date:	9/12/2010
				ORDER OF MAGNITUDE COST ESTIMATE										Preparer:	MNO
		Cost Type:												Reviewer:	JMK
		Est=Estimated												Approver:	PEF
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	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					141,700	222,600
	EXCAVATION / BACKFILL		EST	614	CY			0	0	0.15	106	EXFD	90.00	9,500	9,500
	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					47,600	73,600
	EXCAVATION / BACKFILL		EST	295	CY			0	0	0.15	51	EXFD	90.00	4,600	4,600
	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					577,200	917,400
	EXCAVATION / BACKFILL		EST	1,915	CY			0	0	0.15	330	EXFD	90.00	29,700	29,700
	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					31,700	47,800
	EXCAVATION / BACKFILL		EST	140	CY			0	0	0.15	24	EXFD	90.00	2,200	2,200
	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					1,364,300	2,256,000
	EXCAVATION / BACKFILL		EST	2,900	CY			0	0	0.15	500	EXFD	90.00	45,000	45,000
	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					125,100	185,900
	EXCAVATION / BACKFILL		EST	1,120	CY			0	0	0.15	193	EXFD	90.00	17,400	17,400
	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					224,400	361,700
	EXCAVATION / BACKFILL		EST	489	CY			0	0	0.15	84	EXFD	90.00	7,600	7,600
	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

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	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					473,200	775,100
	EXCAVATION / BACKFILL		EST	1,260	CY			0	0	0.15	217	EXFD	90.00	19,600	19,600
	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					25,000	38,800
	EXCAVATION / BACKFILL		EST	100	CY			0	0	0.15	17	EXFD	90.00	1,600	1,600
	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					56,300	88,600
	EXCAVATION / BACKFILL		EST	210	CY			0	0	0.15	36	EXFD	90.00	3,300	3,300
	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

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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
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	0.15	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

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19.31	EROSION & SEDIMENT CONTROL - GYPSUM HANDLING AREA							0	6,300					10,300	16,600
	SILT FENCE		EST	1,300	LF		1.0	0	1,300	0.02	30	LAND	61.45	1,800	3,100
	ROCK CHECK DAMS		EST	10	EA		500.0	0	5,000	12.00	138	LAND	61.45	8,500	13,500
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	0.15	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

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	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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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					183,600	253,800
	EXCAVATION / BACKFILL		EST	1,000	CY			0	0	0.15	173	EXFD	90.00	15,500	15,500
	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

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		Est=Estimated												Approver:	PEF
		Allow.=Allowance								Wage Rates Based on:		BIG SANDY			
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	CONCRETE		EST	15	CY		105.00	0	1,600	3.50	60	CONP	79.64	4,800	6,400
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							14,294,800	16,136,800		359,238			32,216,800	62,648,400
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						31,238		89.68	2,801,000	2,801,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						39,048			2,942,711	2,942,711
	PER DIEM	NONE		0.00	HR						429,523			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				80,684					161,084	241,768
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				806,840						806,840
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			714,740							714,740
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				806,840					1,610,840	2,417,680
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				2,420,520					4,832,520	7,253,040
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							714,700	4,114,900					12,348,200	17,177,800
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)						15,009,500	20,251,700					44,565,000	79,826,200
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	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	LABOR COST REFLECTS DIFFICULTY FACTOR WORKING WITH C276 VS. A2205	EST	49,800	SF		300.00	0	14,940,000	1.50	85,905	MECH	88.89	7,636,100	22,576,100
20.3	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
20.4	PIPING - MECHANICAL	ALL PIPING INCLUDED IN OEM EQUIPMENT COST. NO BOP PIPING						0	0					0	0
20.5	ABSORBER VESSEL - FOUNDATIONS							0	366,900					609,400	976,300
	EXCAVATION / BACKFILL		EST	2,921	CY			0	0	0.15	504	EXFD	90.00	45,300	45,300
	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
20.6	ABSORBER BUILDING - FOUNDATIONS							0	608,300					951,900	1,560,200
	EXCAVATION / BACKFILL		EST	2,560	CY			0	0	0.15	442	EXFD	90.00	39,700	39,700
	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
20.7	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
20.8	PIPE SUPPORT PAD - ABSORBER BUILDING							0	7,700					14,400	22,100
	EXCAVATION / BACKFILL		EST	100	CY			0	0	0.15	17	EXFD	90.00	1,600	1,600
	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
20.9	OXIDATION AIR BLOWER BUILDING - FOUNDATIONS							0	37,000					63,200	100,200
	EXCAVATION / BACKFILL		EST	188	CY			0	0	0.15	32	EXFD	90.00	2,900	2,900
	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
20.10	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

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	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
20.11	PIPE SUPPORT PAD - OXIDATION BUILDING							0	7,700					13,100	20,800
	EXCAVATION / BACKFILL		EST	30	CY			0	0	0.15	5	EXFD	90.00	500	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
20.12	DUCTWORK	INCLUDES INTERNAL BRACING AND TURNING VANES	EST	115	TN		3,250.00	0	373,800	60.00	7,935	FLDU	107.96	856,700	1,230,500
20.13	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
20.14	DUCTWORK INSULATION & LAGGING		EST	11,000	SF		12.00	0	132,000	0.25	3,163	DINS	81.75	258,500	390,500
20.15	FOUNDATIONS FOR DUCT SUPPORT STEEL							0	17,700					32,100	49,800
	EXCAVATION / BACKFILL		EST	144	CY			0	0	0.15	25	EXFD	90.00	2,200	2,200
	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
20.16	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
20.17	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
20.18	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

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20.19	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
20.20	MIMIC PANELS		EST	2	EA	17500		35,000	0	40.00	80	WIRE	98.84	7,900	42,900
20.21	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
20.22	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
20.23	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
20.24	RACEWAY, CABLE TRAY, & CONDUIT							0	1,388,600					5,513,200	6,901,800
	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	8,400	LF		31.00	0	260,400	0.81	6,779	WIRE	98.84	670000	930,400
	3" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	1,050	LF		21.50	0	22,600	0.65	677	WIRE	98.84	66900	89,500
	2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	13,300	LF		9.25	0	123,000	0.35	4,682	WIRE	98.84	462700	585,700
	1-1/2" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	16,900	LF		7.15	0	120,800	0.28	4,800	WIRE	98.84	474400	595,200
	1" RGS CONDUIT	INCLUDING SUPPORT & FITTINGS	EST	29,200	LF		4.44	0	129,600	0.24	6,979	WIRE	98.84	689800	819,400
	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	FORM	99.43	148200	224,600

				AEP											Estimate No.:	30721B
				BIG SANDY UNIT 2											Project No.:	12721-000
				FGD PROJECT - IAQCS (N/ESP)-4B - 7.5 LB/MM BTU - NON PHASED											Date:	9/12/2010
				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
20.25	HIGH VOLTAGE POWER CABLE & TERMINATION							0	41,700					117,600	159,300
	1/C # 500KCMIL-15KV		EST	4,500	LF		9.27	0	41,700	0.23	1,190	WIRE	98.84	117600	159,300
20.26	MEDIUM VOLTAGE POWER CABLE & TERMINATION							0	92,100		0			302,400	394,500
	1/C # 500KCMIL-5KV		EST	6,600	LF		8.08	0	53,300	0.17	1,313	WIRE	98.84	129800	183,100
	1/C # 350KCMIL-5KV		EST	5,400	LF		6.13	0	33,100	0.23	1,428	WIRE	98.84	141200	174,300
	1/C # 250KCMIL-5KV		EST	1,200	LF		4.74	0	5,700	0.23	317	WIRE	98.84	31400	37,100
20.27	LOW VOLTAGE POWER CABLE & TERMINATION							0	566,000					810,600	1,376,600
	3/C # 500KCMIL- 600V		EST	2,320	LF		26.12	0	60,600	0.69	1,841	WIRE	98.84	182000	242,600
	#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
20.28	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
20.29	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
20.30	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
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS							45,567,300	22,470,800		726,957			65,552,100	133,590,200
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						63,862		90.17	5,759,000	5,759,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						79,827			6,048,965	6,048,965
	PER DIEM	NONE		0.00	HR						878,098			0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				112,354					327,761	440,115
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				1,123,540						1,123,540
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			2,278,365							2,278,365
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				1,123,540					3,277,605	4,401,145
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				3,370,620					9,832,815	13,203,435
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							2,953,400	5,730,100					25,908,500	34,592,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	WET FGD ABSORBER ISLAND						48,520,700	28,200,900					91,460,600	168,182,200
21.0	COMPRESSED AIR SYSTEM (BYPRODUCT DEWATERING AREA)														0
22.0	POTABLE WATER SYSTEM	INCLUDED WITH ACCOUNT 11.0													

				AEP										Estimate No.:	30721B
				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS (N/ESP)-4B - 7.5 LB/MM BTU - NON PHASED										Date:	9/12/2010
				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
23.0	FGD SUBSTATION														
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														
99.00	OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS							189,582,100	110,291,600		2,896,452			280,525,500	581,149,200
	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										
	COST DUE TO OVERTIME INEFFICIENCY - SPECIFY % INEFFICIENCY			8.00	%						252,513		96.85	21,928,000	21,928,000
	COST DUE TO OVERTIME PAY @1.5 TIMES OVERTIME PAY RATE - SPECIFY % ADDITIONAL HOURS PAID ON ACTUAL HOURS WORKED			10.00	%						317,132			23,136,599	23,136,599
	PER DIEM	NONE		0.00	HR									0	0
	CONSUMABLES - % of ACCT NO. 90			0.5	%				473,758					1,322,578	1,796,336
	FREIGHT ON MATERIAL - % of ACCT NO. 90			5.0	%				4,737,580						4,737,580
	FREIGHT ON EQUIPMENT - % of ACCT NO. 90			5.0	%			9,377,105							9,377,105
	SALES TAX - NOT INCLUDED														0
	SCAFFOLDING - % OF ACCT NO. 90			5.0	%				4,737,580					13,225,775	17,963,355
	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE & PROFIT - % of ACCT NO. 90			15	%				14,212,740					39,677,325	53,890,065
	OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS							10,862,100	24,161,700					101,476,200	136,500,000
	OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST							200,444,200	134,453,300					382,001,700	717,649,200
	TOTAL DIRECT AND CONSTRUCTION INDIRECT COSTS							200,444,200	134,453,300					382,001,700	717,649,200
	INDIRECT COSTS							0							
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES			1.0	LT										45,000,000
	CONSTRUCTION MANAGEMENT			3.0	%										21,529,500
	S-U / COMMISSIONING			1.0											7,176,500
	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	%						31,490		96.85	3,306,100	3,306,100

				AEP										Estimate No.:	30721B
				BIG SANDY UNIT 2										Project No.:	12721-000
				FGD PROJECT - IAQCS (N/ESP)-4B - 7.5 LB/MM BTU - NON PHASED										Date:	9/12/2010
				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
	INITIAL FILLS			0.3	%										2,152,900
	OPERATOR & TRAINING MANUALS			1.0	LT										600,000
	SUBCONTRACTORS (NOISE & DUCTWORK CONSULTANT, GEOTECHNICAL INVESTIGATION)			1.0	LT										750,000
	OWNERS COST - % of ACCT NOS. 92, 93.1, 93.2, 93.3, 93.4	BY AEP		0.0	%										0
	SUBTOTAL - INDIRECT COSTS														80,515,000
	TOTAL DIRECT AND INDIRECT COSTS														798,164,200
	SPARE PARTS FOR THE OEM & THE BOP EQUIPMENT			1.3	%			2,605,800							2,605,800
	SPARE PARTS FOR THE OEM EQUIPMENT			0.80	%			1,615,596							1,615,596
	SPARE PARTS FOR THE BOP EQUIPMENT			0.50	%			990,204							990,204
	CONTINGENCY			13.8	%										110,135,400
	ESCALATION														72,318,400
	EQUIPMENT	4.0%/yr		4.0	%			20,918,200							20,918,200
	MATERIAL	2.0%/yr		2.0	%				9,649,400						9,649,400
	LABOR	2.5%/yr		2.5	%									34,482,800	34,482,800
	INDIRECTS	2.5%/yr		2.5	%									7,268,000	7,268,000
	INTEREST DURING CONSTRUCTION (AFUDC)	BY AEP													-
	TOTAL PROJECT COST														983,223,800
	REFERENCE COSTS:														
27.7	ESP DEMOLITION	ALLOWANCE FOR 1000T STRUCTURE	ALLOW	1,000	TN			0	0	6.00	6,900	WRKG	120.63	832,300	832,300
27.8	REMOVE BOOSTER AIR FANS		ALLOW	2	EA			0	0	400.00	920	WRKG	120.63	111,000	111,000

ATTACHMENT 4-14
IAQCS Summary Capital Cost Estimate No. 30716 Base Est-1A ESP in Service (4.5 lb SO_2/MMbtu)

Sargent & Lundy, LLC	AEP BIG SANDY UNIT 2 FGD PROJECT - IAQCS BASE (ESP)-1A - 4.5 LB/MM BTU - NON PHASED COST ESTIMATE SUMMARY	Estimate No.: Project No.: Date: Preparer: Reviewer: Approver:	30716B 12721-000 9/12/2010 MNO JMK 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	$ -	$ 260,000	$ 595,900	$ 855,900
1.6	DUCT SUPPORT STEEL	THREE COAT SHOP PAINT	$ -	$ 116,000	$ 116,700	$ 232,700
1.7	ID FAN INSULATION & LAGGING	TOTAL FOR TWO FANS. PRICING REFLECTS 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	$ -	$ 97,200	$ 190,400	$ 287,600
1.9	DUCT SUPPORT STEEL - FOUNDATIONS		$ -	$ 30,400	$ 54,700	$ 85,100
1.10	ID FAN FOUNDATIONS INCLUDING ID FAN AUX EQUIPMENT		$ -	$ 328,600	$ 537,200	$ 865,800
1.11	ID FAN IAQCS CONTROL ROOM - FOUNDATIONS		$ -	$ 270,100	$ 491,200	$ 761,300
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

Sargent & Lundy, LLC	AEP BIG SANDY UNIT 2 FGD PROJECT - IAQCS BASE (ESP)-1A - 4.5 LB/MM BTU - NON PHASED COST ESTIMATE SUMMARY	Estimate No.: Project No.: Date: Preparer: Reviewer: Approver:	30716B 12721-000 9/12/2010 MNO JMK PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
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	$ 1,025,700	$ 1,386,700
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	$ 140,800	$ 202,700
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
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 11,277,000	$ 8,450,000	$ 18,921,100	$ 38,648,100
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 563,900	$ 2,154,800	$ 6,866,700	$ 9,585,300
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	ID FANS	$ 11,840,900	$ 10,604,800	$ 25,787,800	$ 48,233,400
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

Sargent & Lundy, LLC	AEP BIG SANDY UNIT 2 FGD PROJECT - IAQCS BASE (ESP)-1A - 4.5 LB/MM BTU - NON PHASED COST ESTIMATE SUMMARY	Estimate No.: Project No.: Date: Preparer: Reviewer: Approver:	30716B 12721-000 9/12/2010 MNO JMK PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
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	$ 973,600	$ 1,524,300
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	LIGHT FIXTURE		$ -	$ 16,500	$ 10,000	$ 26,500
2.10	GROUNDING		$ 7,300	$ -	$ 17,500	$ 24,800
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 21,830,400	$ 3,019,600	$ 17,184,900	$ 42,034,900
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 1,091,500	$ 770,000	$ 6,384,800	$ 8,246,300
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FABRIC FILTERS	$ 22,921,900	$ 3,789,600	$ 23,569,700	$ 50,281,200
3.0	NEW STACK					
3.1	CONCRETE STACK (WET)	PROVIDED BY AEP	$ 780,000	$ 15,000,000	$ 15,700,000	$ 31,480,000
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	$ -	$ 286,200	$ 636,200
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

Sargent & Lundy, LLC	AEP BIG SANDY UNIT 2 FGD PROJECT - IAQCS BASE (ESP)-1A - 4.5 LB/MM BTU - NON PHASED COST ESTIMATE SUMMARY	Estimate No.: Project No.: Date: Preparer: Reviewer: Approver:	30716B 12721-000 9/12/2010 MNO JMK PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
4.6	RAIL CAR UNLOADING AREA - FOUNDATIONS	20 X 60 - NO SIDING	$ -	$ 22,600	$ 42,600	$ 65,200
4.7	LIME UNLOADING BLOWER / ELECTRICAL BUILDING - FOUNDATIONS		$ -	$ 80,600	$ 132,200	$ 212,800
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	$ 132,900	$ 208,000
4.11	LIME STORAGE SILO ACCESS STAIR TOWER - FOUNDATIONS		$ -	$ 10,700	$ 20,300	$ 31,000
4.12	PIPE RACK - FOUNDATIONS		$ -	$ 94,200	$ 208,200	$ 302,400
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	$ -	$ 99,300	$ 423,500	$ 522,800
4.24	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 93,000	$ 143,200	$ 236,200
4.25	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	$ -	$ 57,600	$ 161,600	$ 219,200
4.26	DUCT BANK	6-5" & 6-3" CONDUITS	$ -	$ 26,600	$ 52,500	$ 79,100
4.27	FOUNDATIONS FOR TRANSFORMERS		$ -	$ 5,300	$ 10,300	$ 15,600
4.28	FIREWALL FOR TRANSFORMERS		$ -	$ -	$ -	$ -
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 2,227,600	$ 2,294,700	$ 4,811,000	$ 9,333,300
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 111,400	$ 585,100	$ 1,733,000	$ 2,429,500
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME HANDLING SYSTEM	$ 2,339,000	$ 2,879,800	$ 6,544,000	$ 11,762,800
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.	$ 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	$ 278,300	$ 444,700
5.6	LIME SLAKER BUILDING - FOUNDATIONS		$ -	$ 119,200	$ 194,200	$ 313,400
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	$ 4,422,100	$ 8,483,700
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 143,100	$ 306,100	$ 1,651,100	$ 2,100,200
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME SLAKER BUILDING	$ 3,004,400	$ 1,506,400	$ 6,073,200	$ 10,583,900
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		$ 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

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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
6.6	BYPRODUCT WASTE SILO	4" CS, SCHEDULE 40, WELDED	$ 87,500	$ 40,600	$ 117,700	$ 245,800
6.7	SDA RECYCLE BYPRODUCT SILO	STEEL SILO 20' DIA X 19' H - 88 TONS	$ -	$ -	$ -	$ -
6.8	FLY ASH SILO		$ 45,000	$ 14,500	$ 55,600	$ 115,100
6.9	BYPRODUCT WASTE SILO - FOUNDATIONS	PIN MIXERS INCLUDED WITH FLY ASH HANDLING EQUIPMENT	$ -	$ 23,200	$ 45,800	$ 69,000
6.10	FLY ASH SILO - FOUNDATIONS		$ -	$ 4,300	$ 10,200	$ 14,500
6.11	FLY ASH BLOWER AND ELECTRICAL BUILDING - FOUNDATIONS		$ -	$ 49,600	$ 93,200	$ 142,800
6.12	FLY ASH BLOWER AND ELECTRICAL BUILDING		$ 75,000	$ 276,500	$ 24,400	$ 375,900
6.13	RECYCLE ASH BUILDING - FOUNDATIONS	SUBCONTRACT PRICE, INCLUDES LABOR	$ -	$ 234,300	$ 373,100	$ 607,400
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	GROUNDING	INCLUDING SUPPORT & FITTINGS	$ -	$ 4,500	$ 10,900	$ 15,400
6.20	MEDIUM VOLTAGE POWER CABLE & TERMINATION	3/4" - 20' LONG EACH	$ -	$ 25,700	$ 109,800	$ 135,500
6.21	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 73,600	$ 91,600	$ 165,200
6.22	CONTROL & INSTRUMENT CABLE		$ -	$ 54,400	$ 444,400	$ 498,800
6.23	DUCT BANK		$ -	$ 109,700	$ 268,900	$ 378,600
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 4,695,400	$ 2,574,200	$ 6,487,900	$ 13,757,500
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 234,800	$ 656,400	$ 2,396,000	$ 3,287,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS	$ 4,930,200	$ 3,230,600	$ 8,883,900	$ 17,044,600
7.0	SPRAY DRYER ABSORBER ISLAND					

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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
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	$ 15,736,600	$ 21,911,600
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	$ 2,975,600	$ 4,654,200
7.16	FOUNDATIONS FOR SUPPORT STEEL		$ -	$ 69,000	$ 126,000	$ 195,000
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	$ -	$ -	$ -	$ -
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 42,006,800	$ 14,956,800	$ 53,920,100	$ 110,883,700

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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		$ 2,910,300	$ 3,814,000	$ 21,233,800	$ 27,958,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SPRAY DRYER ABSORBER ISLAND	$ 44,917,100	$ 18,770,800	$ 75,153,900	$ 138,841,800
8.0	ACTIVATED CARBON INJECTION SYSTEM					
8.1	ACI MECHANICAL EQUIPMENT:		$ 2,805,900	$ -	$ 888,300	$ 3,694,200
8.2	PIPING - MECHANICAL		$ 29,800	$ 149,800	$ 377,100	$ 556,700
8.3	ACI SYSTEM - FOUNDATIONS		$ -	$ 41,500	$ 79,200	$ 120,700
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		$ -	$ 84,600	$ 276,700	$ 361,300
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		$ 2,929,000	$ 321,300	$ 1,726,800	$ 4,977,100
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 146,500	$ 81,900	$ 634,600	$ 863,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	ACTIVATED CARBON INJECTION SYSTEM	$ 3,075,500	$ 403,200	$ 2,361,400	$ 5,840,100
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	$ 174,000	$ 270,100
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	$ 56,700	$ 76,600

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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		$ 1,390,600	$ 1,359,100	$ 2,588,700	$ 5,338,400
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 69,500	$ 346,600	$ 946,400	$ 1,362,500
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	COMPRESSED AIR SYSTEM	$ 1,460,100	$ 1,705,700	$ 3,535,100	$ 6,700,900
10.0	SERVICE WATER SYSTEM					
10.1	PUMPS		$ 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	$ 736,800	$ 1,094,300
11.3	TANKS		$ -	$ 17,000	$ -	$ 17,000
11.4	POTABLE WATER TANK & PUMP - FOUNDATIONS	TOTAL FOR TWO TANKS	$ -	$ 10,100	$ 17,700	$ 27,800
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	$ 755,200	$ 1,142,700

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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		$ 6,500	$ 65,800	$ 275,500	$ 347,700
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	POTABLE WATER SYSTEM	$ 136,000	$ 323,800	$ 1,030,700	$ 1,490,400
12.0	FGD SUBSTATION					
12.1	TRANSFORMERS		$ 1,560,500	$ -	$ 273,100	$ 1,833,600
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	$ 131,700	$ 204,900
12.4	138KV MAIN FEEDER & TERMINATIONS		$ 264,000	$ -	$ 254,000	$ 518,000
12.5	SWITCHGEAR		$ 714,200	$ -	$ 121,600	$ 835,800
12.6	MCC	480V MCC, PER LINE UP	$ 120,000	$ -	$ 7,300	$ 127,300
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	$ 183,600	$ 253,800
12.20	FIREWALL FOR TRANSFORMERS		$ -	$ 3,000	$ 5,200	$ 8,200
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 3,342,400	$ 924,500	$ 4,212,100	$ 8,479,000
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 167,100	$ 235,700	$ 1,519,624	$ 1,922,500
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FGD SUBSTATION	$ 3,509,500	$ 1,160,200	$ 5,731,700	$ 10,401,500

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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
13.0	FGD DCS SYSTEM	DRY AND WET FGD COMBINED				
13.1	DCS		$ 5,250,000	$ -	$ 1,779,700	$ 7,029,700
13.2	DCS - VENDOR FIELD SUPPORT		$ 450,000	$ -	$ -	$ 450,000
13.3	LOCALLY MOUNTED INSTRUMENTS		$ -	$ 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
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	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
15.6	NEW CONCRETE ENCASEMENT	OVER AND AROUND DUCT BANK CONNECTING THE PLANT TO SWITCHYARD. THIS IS UNDER THE NEW TRACKWORK EXTENSION	$ -	$ 33,200	$ 67,700	$ 100,900
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 212,500	$ 2,044,200	$ 2,080,400	$ 4,337,100

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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		$ 10,600	$ 521,300	$ 777,500	$ 1,309,400
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	TRUCK & RAIL INFRASTRUCTURE	$ 223,100	$ 2,565,500	$ 2,857,900	$ 5,646,500
16.0	SITE IMPROVEMENTS - CIVIL WORK (DFGD + WFGD AREAS)					
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	$ 262,700	$ 407,000
16.5	TRUCK WASH AREA - CONCRETE PAD		$ -	$ 41,900	$ 70,400	$ 112,300
16.6	TRUCK WASH AREA - ENCLOSURE		$ -	$ 67,400	$ 95,300	$ 162,700
16.7	TRUCK SCALE & CONCRETE APPROACH		$ 170,000	$ 27,300	$ 92,000	$ 289,300
16.8	PROCESS WATER STORAGE BASIN		$ 60,000	$ 110,400	$ 312,600	$ 483,000
16.9	PROCESS WATER STORAGE BASIN PUMP STRUCTURE - CONCRETE		$ -	$ 47,000	$ 105,400	$ 152,400
16.10	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
16.11	STORMWATER RUNOFF POND		$ -	$ 15,000	$ 122,600	$ 137,600
16.12	STORM WATER POND PUMP STRUCTURE - CONCRETE		$ 90,000	$ 42,300	$ 182,200	$ 314,500
16.13	OILY WATER SEWER		$ 7,500	$ 128,100	$ 261,600	$ 397,200
16.14	OIL SEPARATOR	500 GPM W/ INTEGRAL LIFT STATION	$ 100,000	$ -	$ 116,100	$ 216,100
16.15	SANITARY SEWER		$ -	$ 37,100	$ 118,900	$ 156,000
16.16	SANITARY LIFT STATION	PACKAGED TYPE COMPLETE WITH PUMPS, 100,000 GPD	$ 150,000	$ -	$ 49,200	$ 199,200
16.17	CONSTRUCTION LAYDOWN AREA	ALLOWANCE FOR 15 ACRES, DOES NOT INCLUDE LAND ACQUISITION, IF REQUIRED	$ -	$ 1,050,000	$ 1,242,000	$ 2,292,000

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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
16.18	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
16.19	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
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 577,500	$ 4,573,300	$ 7,627,500	$ 12,778,300
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 28,900	$ 1,166,200	$ 2,709,400	$ 3,904,500
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SITE IMPROVEMENTS - CIVIL WORK (DFGD + WFGD AREAS)	$ 606,400	$ 5,739,500	$ 10,336,900	$ 16,682,800
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		$ 9,600	$ 3,400	$ 26,400	$ 39,400
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	$ 1,330,800	$ 1,872,800
17.6	CONVEYOR SUPPORT STEEL - FOUNDATIONS		$ -	$ 16,000	$ 45,500	$ 61,500

Sargent & Lundy, LLC

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

Estimate No.: 30716B
Project No.: 12721-000
Date: 9/12/2010
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
17.7	LIMESTONE TRANSFER TOWER - FOUNDATIONS		$ -	$ 15,400	$ 28,200	$ 43,600
17.8	LIMESTONE TRANSFER CONVEYOR - FOUNDATIONS		$ -	$ 62,000	$ 116,600	$ 178,600
17.9	LIMESTONE RECLAIM HOPPER, CONVEYOR TUNNEL AND ESCAPE TUNNEL - FOUNDATIONS		$ -	$ 542,000	$ 1,330,800	$ 1,872,800
17.10	LIMESTONE UNLOADING PDC - FOUNDATIONS		$ -	$ 24,100	$ 42,000	$ 66,100
17.11	LIMESTONE UNLOADING PDC - CONCRETE PIERS	10 PIERS	$ -	$ 6,900	$ 20,600	$ 27,500
17.12	LIMESTONE RECLAIM PDC - FOUNDATIONS		$ -	$ 16,800	$ 30,100	$ 46,900
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
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" CONDUIT	$ -	$ 26,600	$ 240,500	$ 267,100
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 6,413,600	$ 3,570,500	$ 12,066,600	$ 22,050,700
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 320,700	$ 910,500	$ 4,624,800	$ 5,856,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIMESTONE HANDLING SYSTEM	$ 6,734,300	$ 4,481,000	$ 16,691,400	$ 27,906,700
18.0	REAGENT (LIMESTONE) PREPARATION ISLAND					

Sargent & Lundy, LLC	AEP BIG SANDY UNIT 2 FGD PROJECT - IAQCS BASE (ESP)-1A - 4.5 LB/MM BTU - NON PHASED COST ESTIMATE SUMMARY	Estimate No.: Project No.: Date: Preparer: Reviewer: Approver:	30716B 12721-000 9/12/2010 MNO JMK PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
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	PIPING - MECHANICAL		$ 278,900	$ 205,000	$ 587,300	$ 1,071,200
18.3	LIMESTONE SLURRY TANKS - FOUNDATIONS		$ -	$ 166,400	$ 278,300	$ 444,700
18.4	REAGENT PREPARATION BUILDING - FOUNDATIONS		$ -	$ 682,000	$ 1,072,100	$ 1,754,100
18.5	REAGENT PREPARATION BUILDING	120' L X 130' W X 130' H	$ 269,400	$ 4,865,000	$ 4,251,600	$ 9,386,000
18.6	PIPE SUPPORT PAD - REAGENT PREP BUILDING		$ -	$ 13,800	$ 25,100	$ 38,900
18.7	LIGHTING/ TRANSFORMERS & PANELS		$ 52,000	$ 135,000	$ 104,500	$ 291,500
18.8	GROUNDING		$ 5,100	$ -	$ 13,400	$ 18,500
18.9	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE ARE INCLUDED IN SECTION 20.0 - ABSORBER ISLAND	$ -	$ -	$ -	$ -
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 15,772,400	$ 6,067,200	$ 18,599,100	$ 40,438,700
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 788,600	$ 1,547,100	$ 7,128,700	$ 9,464,400
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	REAGENT (LIMESTONE) PREPARATION ISLAND	$ 16,561,000	$ 7,614,300	$ 25,727,800	$ 49,903,100
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

Sargent & Lundy, LLC	AEP BIG SANDY UNIT 2 FGD PROJECT - IAQCS BASE (ESP)-1A - 4.5 LB/MM BTU - NON PHASED COST ESTIMATE SUMMARY	Estimate No.: Project No.: Date: Preparer: Reviewer: Approver:	30716B 12721-000 9/12/2010 MNO JMK PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
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	$ 47,600	$ 73,600
19.10	MAINTENANCE STORAGE TANK & PUMPS - FOUNDATIONS		$ -	$ 100,000	$ 163,900	$ 263,900
19.11	LANDFILL SERVICE WATER TANKS & PUMP - FOUNDATIONS		$ -	$ 80,900	$ 141,700	$ 222,600
19.12	LANDFILL RECLAIM WATER TANKS & PUMPS - FOUNDATIONS		$ -	$ 26,000	$ 47,600	$ 73,600
19.13	HYDROCLONE FEED TANKS & BLEED TANKS - FOUNDATIONS	TOTAL FOR HYDROCLONE AND BLEED TANKS	$ -	$ 340,200	$ 577,200	$ 917,400
19.14	BYPRODUCT STACKOUT CONVEYOR & TRANSFER TOWER - FOUNDATIONS		$ -	$ 16,100	$ 31,700	$ 47,800
19.15	BYPRODUCT STACKOUT PILE - FOUNDATIONS	INCLUDES CONTAINMENT AREA SLAB	$ -	$ 891,700	$ 1,364,300	$ 2,256,000
19.16	PIPE RACK	SUPPORTS AT 15' C/C	$ -	$ 60,800	$ 125,100	$ 185,900
19.17	BYPRODUCT CONTAINMENT WALLS		$ -	$ 137,300	$ 224,400	$ 361,700
19.18	INSTALL WIND SCREEN		$ -	$ 525,000	$ 192,300	$ 717,300
19.19	BYPRODUCT DEWATERING BUILDING - FOUNDATIONS		$ -	$ 291,400	$ 456,200	$ 747,600
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	$ 34,000	$ 52,300
19.22	AUXILIARY PUMPHOUSE BUILDING WITH ELECTRICAL ROOM - FOUNDATIONS		$ -	$ 32,300	$ 56,300	$ 88,600
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

Sargent & Lundy, LLC	AEP BIG SANDY UNIT 2 FGD PROJECT - IAQCS BASE (ESP)-1A - 4.5 LB/MM BTU - NON PHASED COST ESTIMATE SUMMARY	Estimate No.: Project No.: Date: Preparer: Reviewer: Approver:	30716B 12721-000 9/12/2010 MNO JMK PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
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		$ -	$ 6,300	$ 10,300	$ 16,600
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
19.52	HIGH VOLTAGE POWER CABLE & TERMINATION		$ -	$ 88,400	$ 256,600	$ 345,000

Sargent & Lundy, LLC	AEP BIG SANDY UNIT 2 FGD PROJECT - IAQCS BASE (ESP)-1A - 4.5 LB/MM BTU - NON PHASED COST ESTIMATE SUMMARY	Estimate No.: Project No.: Date: Preparer: Reviewer: Approver:	30716B 12721-000 9/12/2010 MNO JMK PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
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	$ 183,600	$ 253,800
19.57	FIREWALL FOR TRANSFORMERS		$ -	$ 3,200	$ 8,300	$ 11,500
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 12,728,800	$ 16,074,800	$ 31,462,800	$ 60,266,400
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 636,400	$ 4,099,100	$ 12,059,700	$ 16,795,200
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 13,365,200	$ 20,173,900	$ 43,522,500	$ 77,061,600
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	LABOR COST REFLECTS DIFFICULTY FACTOR WORKING WITH C276 VS. A2205	$ -	$ 14,940,000	$ 7,636,100	$ 22,576,100
20.3	EMERGENCY DIESEL DRIVEN QUENCH PUMP	WITH FUEL DAY TANK. FOUNDATIONS INCLUDED WITH ABSORBER BUILDING FOUNDATIONS	$ 150,000	$ -	$ 30,700	$ 180,700
20.4	PIPING - MECHANICAL	ALL PIPING INCLUDED IN OEM EQUIPMENT COST. NO BOP PIPING	$ -	$ -	$ -	$ -
20.5	ABSORBER VESSEL - FOUNDATIONS		$ -	$ 366,900	$ 609,400	$ 976,300
20.6	ABSORBER BUILDING - FOUNDATIONS		$ -	$ 579,500	$ 908,200	$ 1,487,700

Sargent & Lundy, LLC	AEP BIG SANDY UNIT 2 FGD PROJECT - IAQCS BASE (ESP)-1A - 4.5 LB/MM BTU - NON PHASED COST ESTIMATE SUMMARY	Estimate No.: Project No.: Date: Preparer: Reviewer: Approver:	30716B 12721-000 9/12/2010 MNO JMK PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
20.7	ABSORBER BUILDING	150' L X 90' W X 60' H	$ 164,500	$ 2,622,800	$ 2,402,700	$ 5,190,000
20.8	PIPE SUPPORT PAD - ABSORBER BUILDING		$ -	$ 7,700	$ 14,100	$ 21,800
20.9	OXIDATION AIR BLOWER BUILDING - FOUNDATIONS		$ -	$ 37,000	$ 63,200	$ 100,200
20.10	OXIDATION AIR BLOWER BUILDING	30' L X 30' W X 25' H	$ 33,800	$ 191,000	$ 201,400	$ 426,200
20.11	PIPE SUPPORT PAD - OXIDATION BUILDING		$ -	$ 7,700	$ 13,100	$ 20,800
20.12	DUCTWORK	INCLUDES INTERNAL BRACING AND TURNING VANES	$ -	$ 373,800	$ 856,700	$ 1,230,500
20.13	DUCT SUPPORT STEEL	THREE-COAT SHOP PAINT	$ -	$ 168,200	$ 169,200	$ 337,400
20.14	DUCTWORK INSULATION & LAGGING		$ -	$ 132,000	$ 258,500	$ 390,500
20.15	FOUNDATIONS FOR DUCT SUPPORT STEEL		$ -	$ 17,700	$ 32,100	$ 49,800
20.16	TRANSFORMERS		$ 981,000	$ -	$ 209,300	$ 1,190,300
20.17	SWITCHGEAR		$ 1,162,800	$ -	$ 673,700	$ 1,836,500
20.18	CABLE BUS & TERMINATIONS		$ 867,100	$ 46,600	$ 1,634,100	$ 2,547,800
20.19	MCC		$ 216,300	$ -	$ 11,100	$ 227,400
20.20	MIMIC PANELS		$ 35,000	$ -	$ 7,900	$ 42,900
20.21	GROUNDING		$ 16,000	$ -	$ 46,100	$ 62,100
20.22	LIGHTING/ TRANSFORMERS & PANELS		$ 164,500	$ 165,000	$ 171,300	$ 500,800
20.23	EMERGENCY POWER SYSTEM		$ 108,300	$ -	$ 24,400	$ 132,700
20.24	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 1,388,600	$ 5,513,200	$ 6,901,800
20.25	HIGH VOLTAGE POWER CABLE & TERMINATION		$ -	$ 41,700	$ 117,600	$ 159,300
20.26	MEDIUM VOLTAGE POWER CABLE & TERMINATION		$ -	$ 92,100	$ 302,400	$ 394,500
20.27	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 566,000	$ 810,600	$ 1,376,600
20.28	CONTROL & INSTRUMENT CABLE		$ -	$ 512,000	$ 1,436,700	$ 1,948,700
20.29	FOUNDATION FOR TRANSFORMERS		$ -	$ 59,000	$ 173,700	$ 232,700
20.30	TRANSFORMER FIRE WALLS		$ -	$ 3,500	$ 9,600	$ 13,100
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 45,262,300	$ 22,318,800	$ 65,226,500	$ 132,807,600
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 2,938,100	$ 5,691,300	$ 25,783,100	$ 34,412,500
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 48,200,400	$ 28,010,100	$ 91,009,600	$ 167,220,100
21.0	COMPRESSED AIR SYSTEM (BYPRODUCT DEWATERING AREA)					
21.1	AIR COMPRESSOR & AUXILIARIES		$ 205,200	$ -	$ 53,200	$ 258,400
21.2	PIPING - MECHANICAL		$ 241,100	$ 166,200	$ 633,100	$ 1,040,400

Sargent & Lundy, LLC	AEP BIG SANDY UNIT 2 FGD PROJECT - IAQCS BASE (ESP)-1A - 4.5 LB/MM BTU - NON PHASED COST ESTIMATE SUMMARY	Estimate No.: Project No.: Date: Preparer: Reviewer: Approver:	30716B 12721-000 9/12/2010 MNO JMK PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
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				
23.0	FGD SUBSTATION					
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	$ 121,300	$ 184,800
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 1,376,000	$ 223,700	$ 727,200	$ 2,326,900
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 68,800	$ 57,000	$ 278,499	$ 404,300
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 1,444,800	$ 280,700	$ 1,005,700	$ 2,731,200
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	$ 56,900	$ 88,900
26.7	EYE WASH STATIONS		$ 60,000	$ 10,000	$ 61,300	$ 131,300

Sargent & Lundy, LLC	AEP BIG SANDY UNIT 2 FGD PROJECT - IAQCS BASE (ESP)-1A - 4.5 LB/MM BTU - NON PHASED COST ESTIMATE SUMMARY	Estimate No.: Project No.: Date: Preparer: Reviewer: Approver:	30716B 12721-000 9/12/2010 MNO JMK PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
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	$ 4,287,900	$ 6,919,900
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 19,500	$ 571,710	$ 1,643,680	$ 2,234,890
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BOP ITEMS	$ 409,500	$ 2,813,700	$ 5,931,600	$ 9,154,800
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	EROSION & SEDIMENT CONTROL		$ -	$ 30,600	$ 48,900	$ 79,500
27.5	REROUTED 138KV LINE .	TWO NEW TOWERS, NEW FOUNDATIONS, NEW OH LINES, LINE & TOWER ACCESSORIES INCLUDING INSULATORS	$ 500,000	$ -	$ 255,700	$ 755,700
27.6	OUTAGE TIE-IN DUCTWORK	ALLOWANCE FOR 85 TON DUCTWORK	$ -	$ 276,300	$ 738,700	$ 1,015,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 500,000	$ 509,600	$ 1,451,200	$ 2,460,800
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 25,000	$ 129,900	$ 514,700	$ 669,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	CAPITAL REPLACEMENTS - REMOVAL AND RELOCATION OF EXISTING EQUIPMENT AND INFRASTRUCTURE	$ 525,000	$ 639,500	$ 1,965,900	$ 3,130,400
28.0	ARSENIC, ASBESTOS , LEAD ABATEMENT					
28.1	ARSENIC, ASBESTOS , LEAD ABATEMENT	ALLOWANCE PROVIDED BY AEP	$ -	$ -	$ -	$ 750,000
99.0	OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 185,308,600	$ 112,674,500	$ 283,670,400	$ 582,403,500
	OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 10,648,400	$ 24,769,300	$ 102,525,500	$ 137,943,200
	OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 195,957,000	$ 137,443,800	$ 386,195,900	$ 720,346,700

Sargent & Lundy, LLC	AEP BIG SANDY UNIT 2 FGD PROJECT - IAQCS BASE (ESP)-1A - 4.5 LB/MM BTU - NON PHASED COST ESTIMATE SUMMARY	Estimate No.: Project No.: Date: Preparer: Reviewer: Approver:	30716B 12721-000 9/12/2010 MNO JMK PEF

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					$ 21,610,400
	S-U / COMMISSIONING					$ 7,203,500
	CRAFT START-UP SUPPORT					$ 3,343,200
	INITIAL FILLS					$ 2,161,000
	OPERATOR & TRAINING MANUALS					$ 600,000
	SUBCONTRACTORS (NOISE & DUCTWORK CONSULTANT,					$ 500,000
	OWNERS COST - % of ACCT NOS. 92, 93.1, 93.2, 93.3, 93.4					$ -
	TOTAL DIRECT AND INDIRECT COSTS					$ 800,764,800
	SPARE PARTS FOR THE OEM & THE BOP EQUIPMENT					$ 2,547,400
	SPARE PARTS FOR THE OEM EQUIPMENT	0.80				$ 1,579,388
	SPARE PARTS FOR THE BOP EQUIPMENT	0.50				$ 968,012
	CONTINGENCY	13.7				$ 110,207,000
	ESCALATION					$ 72,434,500
	EQUIPMENT					$ 20,449,900
	MATERIAL					$ 9,864,000
	LABOR					$ 34,861,400
	INDIRECTS					$ 7,259,200
	INTEREST DURING CONSTRUCTION (AFUDC)					$ -
	TOTAL PROJECT COST					$ 985,953,700

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.:	30720B
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED	Date:	9/12/2010
	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	$ -	$ 260,000	$ 595,900	$ 855,900
1.6	DUCT SUPPORT STEEL	THREE COAT SHOP PAINT	$ -	$ 116,000	$ 116,700	$ 232,700
1.7	ID FAN INSULATION & LAGGING	TOTAL FOR TWO FANS. PRICING REFLECTS 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	$ -	$ 97,200	$ 190,400	$ 287,600
1.9	DUCT SUPPORT STEEL - FOUNDATIONS		$ -	$ 30,400	$ 54,700	$ 85,100
1.10	ID FAN FOUNDATIONS INCLUDING ID FAN AUX EQUIPMENT		$ -	$ 328,600	$ 537,200	$ 865,800
1.11	ID FAN IAQCS CONTROL ROOM - FOUNDATIONS		$ -	$ 270,100	$ 491,200	$ 761,300
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.:	30720B
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED	Date:	9/12/2010
	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
1.21	LOW VOLTAGE POWER CABLE & TERMINATIONS		$ -	$ 229,800	$ 732,100	$ 961,900
1.22	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	$ -	$ 361,000	$ 1,025,700	$ 1,386,700
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	$ 140,800	$ 202,700
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
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 12,045,000	$ 8,450,000	$ 18,984,500	$ 39,479,500
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 602,300	$ 2,154,800	$ 6,891,100	$ 9,648,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	ID FANS	$ 12,647,300	$ 10,604,800	$ 25,875,600	$ 49,127,600
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	$ 973,600	$ 1,524,300
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	LIGHT FIXTURE		$ -	$ 16,500	$ 10,000	$ 26,500

Sargent & Lundy, LLC	AEP	Estimate No.:	30720B
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED	Date:	9/12/2010
	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
2.10	GROUNDING		$ 7,300	$ -	$ 17,500	$ 24,800
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 22,359,400	$ 3,019,600	$ 17,368,900	$ 42,747,900
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 1,118,000	$ 770,000	$ 6,453,300	$ 8,341,300
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FABRIC FILTERS	$ 23,477,400	$ 3,789,600	$ 23,822,200	$ 51,089,200
3.0	NEW STACK					
3.1	CONCRETE STACK (WET)	PROVIDED BY AEP	$ 780,000	$ 15,000,000	$ 15,700,000	$ 31,480,000
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	$ -	$ 286,200	$ 636,200
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	$ 42,600	$ 65,200
4.7	LIME UNLOADING BLOWER / ELECTRICAL BUILDING - FOUNDATIONS		$ -	$ 80,600	$ 132,200	$ 212,800
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	$ 132,900	$ 208,000
4.11	LIME STORAGE SILO ACCESS STAIR TOWER - FOUNDATIONS		$ -	$ 10,700	$ 20,300	$ 31,000
4.12	PIPE RACK - FOUNDATIONS		$ -	$ 94,200	$ 208,200	$ 302,400
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

Sargent & Lundy, LLC	AEP	Estimate No.:	30720B
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED	Date:	9/12/2010
	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
4.21	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	$ -	$ 99,300	$ 423,500	$ 522,800
4.24	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 93,000	$ 143,200	$ 236,200
4.25	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	$ -	$ 57,600	$ 161,600	$ 219,200
4.26	DUCT BANK	6-5" & 6-3" CONDUITS	$ -	$ 26,600	$ 52,500	$ 79,100
4.27	FOUNDATIONS FOR TRANSFORMERS		$ -	$ 5,300	$ 10,300	$ 15,600
4.28	FIREWALL FOR TRANSFORMERS		$ -	$ -	$ -	$ -
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 2,227,600	$ 2,294,700	$ 4,811,000	$ 9,333,300
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 111,400	$ 585,100	$ 1,733,000	$ 2,429,500
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME HANDLING SYSTEM	$ 2,339,000	$ 2,879,800	$ 6,544,000	$ 11,762,800
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	$ 278,300	$ 444,700
5.6	LIME SLAKER BUILDING - FOUNDATIONS		$ -	$ 119,200	$ 194,200	$ 313,400
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	$ 4,422,100	$ 8,483,700
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 143,100	$ 306,100	$ 1,651,100	$ 2,100,200
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME SLAKER BUILDING	$ 3,004,400	$ 1,506,400	$ 6,073,200	$ 10,583,900
6.0	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS					

Sargent & Lundy, LLC	AEP	Estimate No.:	30720B
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED	Date:	9/12/2010
	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
6.1	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	$ 450,000	$ -	$ 327,100	$ 777,100
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	CONCRETE SILO 35' DIA X 46' H - 782 TONS -SUBCONTRACT COST INCLUDES LABOR	$ 625,500	$ -	$ -	$ 625,500
6.7	SDA RECYCLE BYPRODUCT 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	$ 107,700	$ 167,900
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	$ 373,100	$ 607,400
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	MEDIUM VOLTAGE POWER CABLE & TERMINATION	1/C # 350KCMIL-5KV	$ -	$ 25,700	$ 109,800	$ 135,500
6.21	LOW VOLTAGE POWER CABLE & TERMINATION	#4/0 - #12 AWG-600V	$ -	$ 73,600	$ 91,600	$ 165,200
6.22	CONTROL & INSTRUMENT CABLE		$ -	$ 54,400	$ 444,400	$ 498,800
6.23	DUCT BANK		$ -	$ 109,700	$ 268,900	$ 378,600

Sargent & Lundy, LLC

AEP

BIG SANDY UNIT 2

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

COST ESTIMATE SUMMARY

Estimate No.: 30720B
Project No.: 12721-000
Date: 9/12/2010

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
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 3,278,400	$ 2,225,700	$ 5,144,700	$ 10,648,800
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 163,900	$ 567,600	$ 1,895,700	$ 2,627,200
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS	$ 3,442,300	$ 2,793,300	$ 7,040,400	$ 13,276,000
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	$ 12,578,100	$ 17,375,100
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	$ 2,975,600	$ 4,654,200
7.16	FOUNDATIONS FOR SUPPORT STEEL		$ -	$ 69,000	$ 126,000	$ 195,000
7.17	GROUNDING		$ -	$ 16,000	$ 46,100	$ 62,100
7.18	LIGHTING/ TRANSFORMERS & PANELS		$ 156,000	$ 150,000	$ 159,100	$ 465,100

Sargent & Lundy, LLC	AEP	Estimate No.:	30720B
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED	Date:	9/12/2010
	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
7.19	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE INCLUDED IN SECTION 1.0 - ID FANS	$ -	$ -	$ -	$ -
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 42,006,800	$ 12,556,000	$ 49,344,000	$ 103,906,800
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 2,910,300	$ 3,201,800	$ 19,627,500	$ 25,739,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SPRAY DRYER ABSORBER ISLAND	$ 44,917,100	$ 15,757,800	$ 68,971,500	$ 129,646,400
8.0	ACTIVATED CARBON INJECTION SYSTEM					
8.1	ACI MECHANICAL EQUIPMENT:		$ 2,805,900	$ -	$ 888,300	$ 3,694,200
8.2	PIPING - MECHANICAL		$ 29,800	$ 149,800	$ 377,100	$ 556,700
8.3	ACI SYSTEM - FOUNDATIONS		$ -	$ 41,500	$ 79,200	$ 120,700
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		$ -	$ 84,600	$ 276,700	$ 361,300
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		$ 2,929,000	$ 321,300	$ 1,726,800	$ 4,977,100
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 146,500	$ 81,900	$ 634,600	$ 863,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	ACTIVATED CARBON INJECTION SYSTEM	$ 3,075,500	$ 403,200	$ 2,361,400	$ 5,840,100
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	$ 174,000	$ 270,100
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		$ -	$ 19,900	$ 56,700	$ 76,600

Sargent & Lundy, LLC	AEP	Estimate No.:	30720B
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED	Date:	9/12/2010
	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		$ 1,390,600	$ 1,359,100	$ 2,588,700	$ 5,338,400
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 69,500	$ 346,600	$ 946,400	$ 1,362,500
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	COMPRESSED AIR SYSTEM	$ 1,460,100	$ 1,705,700	$ 3,535,100	$ 6,700,900
10.0	SERVICE WATER SYSTEM					
10.1	PUMPS		$ 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	$ 736,800	$ 1,094,300
11.3	TANKS		$ -	$ 17,000	$ -	$ 17,000
11.4	POTABLE WATER TANK & PUMP - FOUNDATIONS		$ -	$ 10,100	$ 17,700	$ 27,800
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	$ 755,200	$ 1,142,700
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 6,500	$ 65,800	$ 275,500	$ 347,700
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	POTABLE WATER SYSTEM	$ 136,000	$ 323,800	$ 1,030,700	$ 1,490,400

Sargent & Lundy, LLC

AEP

BIG SANDY UNIT 2

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

COST ESTIMATE SUMMARY

Estimate No.: 30720B
Project No.: 12721-000
Date: 9/12/2010

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
12.0	FGD SUBSTATION					
12.1	TRANSFORMERS		$ 1,560,500	$ -	$ 273,100	$ 1,833,600
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	$ 131,700	$ 204,900
12.4	138KV MAIN FEEDER & TERMINATIONS		$ 264,000	$ -	$ 254,000	$ 518,000
12.5	SWITCHGEAR		$ 714,200	$ -	$ 121,600	$ 835,800
12.6	MCC	480V MCC, PER LINE UP	$ 120,000	$ -	$ 7,300	$ 127,300
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	$ 183,600	$ 253,800
12.20	FIREWALL FOR TRANSFORMERS		$ -	$ 3,000	$ 5,200	$ 8,200
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 3,342,400	$ 924,500	$ 4,212,100	$ 8,479,000
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 167,100	$ 235,700	$ 1,519,624	$ 1,922,500
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FGD SUBSTATION	$ 3,509,500	$ 1,160,200	$ 5,731,700	$ 10,401,500
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

Sargent & Lundy, LLC	AEP	Estimate No.:	30720B
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED	Date:	9/12/2010
	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
	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
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	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
15.6	NEW CONCRETE ENCASEMENT	OVER AND AROUND DUCT BANK CONNECTING THE PLANT TO SWITCHYARD. THIS IS UNDER THE NEW TRACKWORK EXTENSION	$ -	$ 33,200	$ 67,700	$ 100,900
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 212,500	$ 2,044,200	$ 2,080,400	$ 4,337,100
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 10,600	$ 521,300	$ 777,500	$ 1,309,400
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	TRUCK & RAIL INFRASTRUCTURE	$ 223,100	$ 2,565,500	$ 2,857,900	$ 5,646,500
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

Sargent & Lundy, LLC	AEP	Estimate No.:	30720B
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED	Date:	9/12/2010
	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
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	$ 262,700	$ 407,000
16.5	TRUCK WASH AREA - CONCRETE PAD		$ -	$ 41,900	$ 70,400	$ 112,300
16.6	TRUCK WASH AREA - ENCLOSURE		$ -	$ 67,400	$ 95,300	$ 162,700
16.7	TRUCK SCALE & CONCRETE APPROACH		$ 170,000	$ 27,300	$ 92,000	$ 289,300
16.8	PROCESS WATER STORAGE BASIN		$ 60,000	$ 110,400	$ 312,600	$ 483,000
16.9	PROCESS WATER STORAGE BASIN PUMP STRUCTURE - CONCRETE		$ -	$ 47,000	$ 105,400	$ 152,400
16.1	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
16.11	STORMWATER RUNOFF POND		$ -	$ 15,000	$ 122,600	$ 137,600
16.12	STORM WATER POND PUMP STRUCTURE - CONCRETE		$ 90,000	$ 42,300	$ 182,200	$ 314,500
16.13	OILY WATER SEWER		$ 7,500	$ 128,100	$ 261,600	$ 397,200
16.14	OIL SEPARATOR	500 GPM W/ INTEGRAL LIFT STATION	$ 100,000	$ -	$ 116,100	$ 216,100
16.15	SANITARY SEWER		$ -	$ 37,100	$ 118,900	$ 156,000
16.16	SANITARY LIFT STATION	PACKAGED TYPE COMPLETE WITH PUMPS, 100,000 GPD	$ 150,000	$ -	$ 49,200	$ 199,200
16.17	CONSTRUCTION LAYDOWN AREA	ALLOWANCE FOR 15 ACRES, DOES NOT INCLUDE LAND ACQUISITION, IF REQUIRED	$ -	$ 1,050,000	$ 1,242,000	$ 2,292,000
16.18	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

Sargent & Lundy, LLC	AEP	Estimate No.:	30720B
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	FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED	Date:	9/12/2010
	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
16.19	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
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 577,500	$ 4,573,300	$ 7,627,500	$ 12,778,300
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 28,900	$ 1,166,200	$ 2,709,400	$ 3,904,500
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SITE IMPROVEMENTS - CIVIL WORK	$ 606,400	$ 5,739,500	$ 10,336,900	$ 16,682,800
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		$ 9,600	$ 3,400	$ 26,400	$ 39,400
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	$ 1,330,800	$ 1,872,800
17.6	CONVEYOR SUPPORT STEEL - FOUNDATIONS		$ -	$ 16,000	$ 45,500	$ 61,500
17.7	LIMESTONE TRANSFER TOWER - FOUNDATIONS		$ -	$ 15,400	$ 28,200	$ 43,600
17.8	LIMESTONE TRANSFER CONVEYOR - FOUNDATIONS		$ -	$ 62,000	$ 116,600	$ 178,600
17.9	LIMESTONE RECLAIM HOPPER, CONVEYOR TUNNEL AND ESCAPE TUNNEL - FOUNDATIONS		$ -	$ 542,000	$ 1,330,800	$ 1,872,800
17.10	LIMESTONE UNLOADING PDC - FOUNDATIONS		$ -	$ 24,100	$ 42,000	$ 66,100
17.11	LIMESTONE UNLOADING PDC - CONCRETE PIERS	10 PIERS	$ -	$ 6,900	$ 20,600	$ 27,500
17.12	LIMESTONE RECLAIM PDC - FOUNDATIONS		$ -	$ 16,800	$ 30,100	$ 46,900
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

Sargent & Lundy, LLC	AEP	Estimate No.:	30720B
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED	Date:	9/12/2010
	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
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
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	$ 240,500	$ 267,100
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 6,413,600	$ 3,570,500	$ 12,066,600	$ 22,050,700
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 320,700	$ 910,500	$ 4,624,800	$ 5,856,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIMESTONE HANDLING SYSTEM	$ 6,734,300	$ 4,481,000	$ 16,691,400	$ 27,906,700
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	PIPING - MECHANICAL		$ 278,900	$ 205,000	$ 587,300	$ 1,071,200
18.3	LIMESTONE SLURRY TANKS - FOUNDATIONS		$ -	$ 166,400	$ 278,300	$ 444,700
18.4	REAGENT PREPARATION BUILDING - FOUNDATIONS		$ -	$ 682,000	$ 1,072,100	$ 1,754,100
18.5	REAGENT PREPARATION BUILDING	120' L X 130' W X 130' H	$ 269,400	$ 4,865,000	$ 4,251,600	$ 9,386,000
18.6	PIPE SUPPORT PAD - REAGENT PREP BUILDING		$ -	$ 13,800	$ 25,100	$ 38,900
18.7	LIGHTING/ TRANSFORMERS & PANELS		$ 52,000	$ 135,000	$ 104,500	$ 291,500
18.8	GROUNDING		$ 5,100	$ -	$ 13,400	$ 18,500
18.9	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE ARE INCLUDED IN SECTION 20.0 - ABSORBER ISLAND	$ -	$ -	$ -	$ -
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 15,772,400	$ 6,067,200	$ 18,599,100	$ 40,438,700
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 788,600	$ 1,547,100	$ 7,128,700	$ 9,464,400

Sargent & Lundy, LLC	AEP	Estimate No.:	30720B
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED	Date:	9/12/2010
	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	REAGENT (LIMESTONE) PREPARATION ISLAND	$ 16,561,000	$ 7,614,300	$ 25,727,800	$ 49,903,100
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	$ 47,600	$ 73,600
19.10	MAINTENANCE STORAGE TANK & PUMPS - FOUNDATIONS		$ -	$ 100,000	$ 163,900	$ 263,900
19.11	LANDFILL SERVICE WATER TANKS & PUMP - FOUNDATIONS		$ -	$ 80,900	$ 141,700	$ 222,600
19.12	LANDFILL RECLAIM WATER TANKS & PUMPS - FOUNDATIONS		$ -	$ 26,000	$ 47,600	$ 73,600
19.13	HYDROCLONE FEED TANKS & BLEED TANKS - FOUNDATIONS	TOTAL FOR HYDROCLONE AND BLEED TANKS	$ -	$ 340,200	$ 577,200	$ 917,400
19.14	BYPRODUCT STACKOUT CONVEYOR & TRANSFER TOWER - FOUNDATIONS		$ -	$ 16,100	$ 31,700	$ 47,800
19.15	BYPRODUCT STACKOUT PILE - FOUNDATIONS	INCLUDES CONTAINMENT AREA SLAB	$ -	$ 891,700	$ 1,364,300	$ 2,256,000
19.16	PIPE RACK	SUPPORTS AT 15' C/C	$ -	$ 60,800	$ 125,100	$ 185,900
19.17	BYPRODUCT CONTAINMENT WALLS		$ -	$ 137,300	$ 224,400	$ 361,700
19.18	INSTALL WIND SCREEN		$ -	$ 525,000	$ 192,300	$ 717,300
19.19	BYPRODUCT DEWATERING BUILDING - FOUNDATIONS		$ -	$ 291,400	$ 456,200	$ 747,600

Sargent & Lundy, LLC	AEP	Estimate No.:	30720B
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED	Date:	9/12/2010
	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
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	$ 34,000	$ 52,300
19.22	AUXILIARY PUMPHOUSE BUILDING WITH ELECTRICAL ROOM - FOUNDATIONS		$ -	$ 32,300	$ 56,300	$ 88,600
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		$ -	$ 6,300	$ 10,300	$ 16,600
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

Sargent & Lundy, LLC	AEP	Estimate No.:	30720B
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED	Date:	9/12/2010
	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
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	$ 183,600	$ 253,800
19.57	FIREWALL FOR TRANSFORMERS		$ -	$ 3,200	$ 8,300	$ 11,500
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 12,728,800	$ 16,074,800	$ 31,462,800	$ 60,266,400
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 636,400	$ 4,099,100	$ 12,059,700	$ 16,795,200
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 13,365,200	$ 20,173,900	$ 43,522,500	$ 77,061,600
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		$ -	$ 14,940,000	$ 7,636,100	$ 22,576,100
20.3	EMERGENCY DIESEL DRIVEN QUENCH PUMP		$ 150,000	$ -	$ 30,700	$ 180,700
20.4	PIPING - MECHANICAL		$ -	$ -	$ -	$ -
20.5	ABSORBER VESSEL - FOUNDATIONS		$ -	$ 366,900	$ 609,400	$ 976,300
20.6	ABSORBER BUILDING - FOUNDATIONS		$ -	$ 579,500	$ 908,200	$ 1,487,700
20.7	ABSORBER BUILDING		$ 164,500	$ 2,622,800	$ 2,402,700	$ 5,190,000
20.8	PIPE SUPPORT PAD - ABSORBER BUILDING		$ -	$ 7,700	$ 14,100	$ 21,800
20.9	OXIDATION AIR BLOWER BUILDING - FOUNDATIONS		$ -	$ 37,000	$ 63,200	$ 100,200
20.10	OXIDATION AIR BLOWER BUILDING		$ 33,800	$ 191,000	$ 201,400	$ 426,200
20.11	PIPE SUPPORT PAD - OXIDATION BUILDING		$ -	$ 7,700	$ 13,100	$ 20,800
20.12	DUCTWORK		$ -	$ 373,800	$ 856,700	$ 1,230,500
20.13	DUCT SUPPORT STEEL		$ -	$ 168,200	$ 169,200	$ 337,400
20.14	DUCTWORK INSULATION & LAGGING		$ -	$ 132,000	$ 258,500	$ 390,500
20.15	FOUNDATIONS FOR DUCT SUPPORT STEEL		$ -	$ 17,700	$ 32,100	$ 49,800
20.16	TRANSFORMERS		$ 981,000	$ -	$ 209,300	$ 1,190,300
20.17	SWITCHGEAR	13.8KV-4160V, 2 WINDING XFMR	$ 1,162,800	$ -	$ 673,700	$ 1,836,500
20.18	CABLE BUS & TERMINATIONS	PRICE PER SECTION	$ 867,100	$ 46,600	$ 1,634,100	$ 2,547,800
20.19	MCC	CABLE BUS	$ 216,300	$ -	$ 11,100	$ 227,400
20.20	MIMIC PANELS	PER MCC LINE UP	$ 35,000	$ -	$ 7,900	$ 42,900
20.21	GROUNDING	0.00	$ 16,000	$ -	$ 46,100	$ 62,100
20.22	LIGHTING/ TRANSFORMERS & PANELS	3/4" - 20' LONG	$ 164,500	$ 165,000	$ 171,300	$ 500,800
20.23	EMERGENCY POWER SYSTEM		$ 108,300	$ -	$ 24,400	$ 132,700

Sargent & Lundy, LLC	AEP	Estimate No.:	30720B
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED	Date:	9/12/2010
	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
20.24	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 1,388,600	$ 5,513,200	$ 6,901,800
20.25	HIGH VOLTAGE POWER CABLE & TERMINATION	INCLUDING SUPPORT & FITTINGS	$ -	$ 41,700	$ 117,600	$ 159,300
20.26	MEDIUM VOLTAGE POWER CABLE & TERMINATION		$ -	$ 92,100	$ 302,400	$ 394,500
20.27	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 566,000	$ 810,600	$ 1,376,600
20.28	CONTROL & INSTRUMENT CABLE		$ -	$ 512,000	$ 1,436,700	$ 1,948,700
20.29	FOUNDATION FOR TRANSFORMERS		$ -	$ 59,000	$ 173,700	$ 232,700
20.30	TRANSFORMER FIRE WALLS	WITH OIL PIT	$ -	$ 3,500	$ 9,600	$ 13,100
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 45,262,300	$ 22,318,800	$ 65,226,500	$ 132,807,600
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 2,938,100	$ 5,691,300	$ 25,783,100	$ 34,412,500
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 48,200,400	$ 28,010,100	$ 91,009,600	$ 167,220,100
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				
23.0	FGD SUBSTATION					
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	$ 121,300	$ 184,800
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 1,376,000	$ 223,700	$ 727,200	$ 2,326,900
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 68,800	$ 57,000	$ 278,499	$ 404,300
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 1,444,800	$ 280,700	$ 1,005,700	$ 2,731,200
24.0	FGD DCS SYSTEM	INCLUDED WITH ACCOUNT 13.0				
25.0	SITE IMPROVEMENTS - CIVIL WORK	INCLUDED WITH ACCOUNT 16.0				

Sargent & Lundy, LLC	AEP	Estimate No.:	30720B
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED	Date:	9/12/2010
	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
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	$ 56,900	$ 88,900
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	$ 4,287,900	$ 6,919,900
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 19,500	$ 571,710	$ 1,643,680	$ 2,234,890
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BOP ITEMS	$ 409,500	$ 2,813,700	$ 5,931,600	$ 9,154,800
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	EROSION & SEDIMENT CONTROL		$ -	$ 30,600	$ 48,900	$ 79,500
27.5	REROUTED 138KV LINE .	TWO NEW TOWERS, NEW	$ 500,000	$ -	$ 255,700	$ 755,700
27.6	OUTAGE TIE-IN DUCTWORK	ALLOWANCE FOR 85 TON	$ -	$ 276,300	$ 738,700	$ 1,015,000
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 500,000	$ 509,600	$ 1,451,200	$ 2,460,800
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 25,000	$ 129,900	$ 514,700	$ 669,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 525,000	$ 639,500	$ 1,965,900	$ 3,130,400
28.0	ARSENIC, ASBESTOS , LEAD ABATEMENT					
28.1	ARSENIC, ASBESTOS , LEAD ABATEMENT	ALLOWANCE PROVIDED BY AEP	$ -	$ -	$ -	$ 750,000
99.0	OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 185,188,600	$ 109,925,200	$ 277,998,500	$ 573,862,300
	OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 10,642,400	$ 24,068,200	$ 100,511,900	$ 135,222,600
	OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 195,831,000	$ 133,993,400	$ 378,510,400	$ 709,084,900

Sargent & Lundy, LLC	AEP	Estimate No.:	30720B
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS BASE (N/ESP)-1B - 4.5 LB/MM BTU - NON PHASED	Date:	9/12/2010
	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
	INDIRECT COSTS					
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES					$ 45,000,000
	CONSTRUCTION MANAGEMENT					$ 21,272,500
	S-U / COMMISSIONING					$ 7,090,800
	CRAFT START-UP SUPPORT					$ 3,276,300
	INITIAL FILLS					$ 2,127,300
	OPERATOR & TRAINING MANUALS					$ 600,000
	SUBCONTRACTORS (NOISE & DUCTWORK CONSULTANT,					$ 750,000
	OWNERS COST - % of ACCT NOS. 92, 93.1, 93.2, 93.3, 93.4					$ -
	TOTAL DIRECT AND INDIRECT COSTS					$ 789,201,800
	SPARE PARTS FOR THE OEM & THE BOP EQUIPMENT					$ 2,545,800
	SPARE PARTS FOR THE OEM EQUIPMENT	0.80				$ 1,578,396
	SPARE PARTS FOR THE BOP EQUIPMENT	0.50				$ 967,404
	CONTINGENCY	13.7				$ 108,308,600
	ESCALATION					$ 71,452,800
	EQUIPMENT					$ 20,436,800
	MATERIAL					$ 9,616,400
	LABOR					$ 34,167,600
	INDIRECTS					$ 7,232,000
	INTEREST DURING CONSTRUCTION (AFUDC)					$ -
	TOTAL PROJECT COST					$ 971,509,000
	REFERENCE COSTS:					
A	ESP DEMOLITION	ALLOWANCE FOR 1000T STRUCTURE	$ -	$ -	$ 832,300	$ 832,300
B	REMOVE BOOSTER AIR FANS	0.0	$ -	$ -	$ 111,000	$ 111,000

ATTACHMENT 4-16
IAQCS Summary Capital Cost Estimate No. 30714 Est-2A ESP in Service (1.7 lb SO_2/MMbtu)

Sargent & Lundy, LLC

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

Estimate No.: 30714B
Project No.: 12721-000
Date: 9/10/2010
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
1.0	ID FANS					
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	$ 973,600	$ 1,524,300
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	LIGHT FIXTURE		$ -	$ 16,500	$ 10,000	$ 26,500
2.10	GROUNDING		$ 7,300	$ -	$ 17,500	$ 24,800
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 22,007,400	$ 3,019,600	$ 17,236,000	$ 42,263,000
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 1,100,400	$ 770,000	$ 6,403,700	$ 8,274,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FABRIC FILTERS	$ 23,107,800	$ 3,789,600	$ 23,639,700	$ 50,537,000

Sargent & Lundy, LLC	AEP BIG SANDY UNIT 2 FGD PROJECT - IAQCS (ESP)-2A - 1.7 LB/MM BTU - PHASED COST ESTIMATE SUMMARY	Estimate No.: Project No.: Date: Preparer: Reviewer: Approver:	30714B 12721-000 9/10/2010 MNO JMK PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
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	$ 158,400	$ 243,700
4.7	LIME UNLOADING BLOWER / ELECTRICAL BUILDING - FOUNDATIONS		$ -	$ 160,700	$ 281,500	$ 442,200
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	$ 306,000	$ 488,500
4.11	LIME STORAGE SILO ACCESS STAIR TOWER - FOUNDATIONS		$ -	$ 14,200	$ 26,200	$ 40,400
4.12	PIPE RACK - FOUNDATIONS		$ -	$ 94,200	$ 208,200	$ 302,400
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
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		$ -	$ 296,400	$ 1,429,900	$ 1,726,300
4.22	HIGH VOLTAGE POWER CABLE & TERMINATION	1/C # 500KCMIL-15KV, 12000' UNIT 2 + 3600' LIME UNLOAD	$ -	$ 144,600	$ 407,800	$ 552,400

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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
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 4,261,600	$ 2,671,100	$ 5,302,300	$ 12,235,000
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 213,100	$ 681,100	$ 1,925,700	$ 2,820,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME HANDLING SYSTEM	$ 4,474,700	$ 3,352,200	$ 7,228,000	$ 15,055,000
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	$ 278,300	$ 444,700
5.6	LIME SLAKER BUILDING - FOUNDATIONS		$ -	$ 119,200	$ 194,200	$ 313,400
5.7	LIME SLAKER BUILDING	135' L X 30' W X 50' H	$ 40,500	$ 776,800	$ 721,000	$ 1,538,300
5.8	ELECTRICAL	INCLUDED WITH LIME HANDLING SYSTEM, ACCOUNT 4.0	$ -	$ -	$ -	$ -
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 6,112,300	$ 1,173,800	$ 5,721,300	$ 13,007,400
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 305,600	$ 299,300	$ 2,136,100	$ 2,741,000

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	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME SLAKER BUILDING	$ 6,417,900	$ 1,473,100	$ 7,857,400	$ 15,748,400
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
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	SDA FLY ASH SILO	46T STEEL -STORAGE SILO, 15' DIA X 19' H	$ 25,000	$ 20,300	$ 61,400	$ 106,700
6.9	WASTE ASH STORAGE SILO - FOUNDATIONS		$ -	$ 92,200	$ 159,700	$ 251,900
6.10	FLY ASH SILO - FOUNDATIONS		$ -	$ 10,800	$ 21,000	$ 31,800

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6.11	FLY ASH BLOWER AND ELECTRICAL BUILDING - FOUNDATIONS		$ -	$ 49,600	$ 93,200	$ 142,800
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	$ 373,100	$ 607,400
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		$ -	$ 32,800	$ 177,400	$ 210,200
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	$ 313,700	$ 352,100
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
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 6,325,300	$ 2,542,400	$ 6,401,500	$ 15,269,200
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 316,300	$ 648,300	$ 2,381,100	$ 3,345,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS	$ 6,641,600	$ 3,190,700	$ 8,782,600	$ 18,614,800
7.0	SPRAY DRYER ABSORBER ISLAND					
8.0	ACTIVATED CARBON INJECTION SYSTEM					
9.0	COMPRESSED AIR SYSTEM					
10.0	SERVICE WATER SYSTEM					
11.0	POTABLE WATER SYSTEM					
11.1	PUMPS	0.0	$ 30,000	$ -	$ 18,400	$ 48,400
11.2	PIPING - MECHANICAL	0.0	$ 99,500	$ 235,600	$ 672,800	$ 1,007,900

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11.3	TANKS	0.0	$ -	$ 8,500	$ -	$ 8,500
11.4	POTABLE WATER TANK & PUMP - FOUNDATIONS	0.0	$ -	$ 5,200	$ 8,800	$ 14,000
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	$ 691,200	$ 1,056,300
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 6,500	$ 60,100	$ 252,000	$ 318,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	POTABLE WATER SYSTEM	$ 135,975	$ 295,678	$ 943,238	$ 1,374,891
12.0	FGD SUBSTATION					
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
13.3	LOCALLY MOUNTED INSTRUMENTS		$ -	$ 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					
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

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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	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
15.6	NEW CONCRETE ENCASEMENT	OVER AND AROUND DUCT BANK CONNECTING THE PLANT TO SWITCHYARD. THIS IS UNDER THE NEW TRACKWORK EXTENSION	$ -	$ 33,200	$ 67,700	$ 100,900
15.7	RAILCAR LIMESTONE UNLOADING HOPPER, CONVEYOR TUNNEL AND ESCAPE TUNNEL - FOUNDATIONS	FOR PHASE II INSTALLED IN PHASE I (FOR CONSTRUCTIBILITY)	$ -	$ 542,000	$ 1,330,800	$ 1,872,800
15.8	MECHANICAL EQUIPMENT FOR LIMESTONE UNLOAIDING 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	$ 3,533,800	$ 6,554,000
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 21,600	$ 659,900	$ 1,327,600	$ 2,009,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	TRUCK & RAIL INFRASTRUCTURE	$ 453,900	$ 3,247,800	$ 4,861,400	$ 8,563,100
16.0	SITE IMPROVEMENTS - CIVIL WORK					
16.1	SITE GRADING		$ -	$ -	$ 627,000	$ 627,000

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16.2	ROADS & SURFACING		$ -	$ 996,600	$ 1,358,800	$ 2,355,400
16.3	NEW CONCRETE ENCASEMENT	16' X 4' X 40' - FOR EXISTING ASH PIPE HAUL ROAD CROSSING	$ -	$ 144,300	$ 262,700	$ 407,000
16.4	TRUCK WASH AREA - CONCRETE PAD		$ -	$ 41,900	$ 70,400	$ 112,300
16.5	TRUCK WASH AREA - ENCLOSURE		$ -	$ 67,400	$ 95,300	$ 162,700
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
16.16	CONSTRUCTION LAYDOWN AREA - (TO BE USED FOR PHASE I AND PHASE II)		$ -	$ 700,000	$ 828,000	$ 1,528,000
16.17	CRAFT PARKING (TO BE USED FOR PHASE I AND PHASE II)		$ -	$ 180,000	$ 414,200	$ 594,200
16.18	CONTRACTOR OFFICES (AREA) - (TO BE USED FOR PHASE I AND		$ -	$ 45,000	$ 103,600	$ 148,600
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 574,500	$ 2,968,000	$ 5,486,600	$ 9,029,100
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 28,700	$ 756,800	$ 1,967,100	$ 2,752,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SITE IMPROVEMENTS - CIVIL WORK	$ 603,200	$ 3,724,800	$ 7,453,700	$ 11,781,700

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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	$ 19,600	$ 30,100
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	$ 1,969,900	$ 3,231,700
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 10,500	$ 268,209	$ 750,035	$ 1,028,744
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BOP ITEMS	$ 220,500	$ 1,320,000	$ 2,719,900	$ 4,260,400
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	EROSION & SEDIMENT CONTROL		$ -	$ 30,600	$ 48,900	$ 79,500
18.5	REROUTED 138KV LINE .	TWO NEW TOWERS, NEW FOUNDATIONS, NEW OH LINES, LINE & TOWER ACCESSORIES INCLUDING INSULATORS	$ 500,000	$ -	$ 255,700	$ 755,700
18.6	OUTAGE TIE-IN DUCTWORK	ALLOWANCE FOR 85 TON DUCTWORK	$ -	$ 276,300	$ 738,700	$ 1,015,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 500,000	$ 509,600	$ 1,451,200	$ 2,460,800

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	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 25,000	$ 129,900	$ 514,700	$ 669,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	CAPITAL REPLACEMENTS - REMOVAL AND RELOCATION OF EXISTING EQUIPMENT AND INFRASTRUCTURE	$ 525,000	$ 639,500	$ 1,965,900	$ 3,130,400
19.0	ARSENIC, ASBESTOS , LEAD ABATEMENT					
19.1	ARSENIC, ASBESTOS , LEAD ABATEMENT	ALLOWANCE PROVIDED BY AEP	$ -	$ -	$ -	$ 750,000
99.0	PHASE I - OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 107,437,900	$ 62,828,100	$ 154,126,300	$ 325,142,300
	PHASE I - OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 6,079,900	$ 12,058,500	$ 52,113,000	$ 70,251,300
	PHASE I - OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 113,517,800	$ 74,886,600	$ 206,239,300	$ 395,393,600
	INDIRECT COSTS - PHASE I					
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES					$ 28,000,000
	CONSTRUCTION MANAGEMENT					$ 11,861,800
	S-U / COMMISSIONING					$ 3,953,900
	CRAFT START-UP SUPPORT					$ 1,816,100
	INITIAL FILLS					$ 1,186,200
	OPERATOR & TRAINING MANUALS					$ 300,000
	SUBCONTRACTORS (NOISE & DUCTWORK CONSULTANT,					$ 400,000
	OWNERS COST - % of ACCT NOS. 92, 93.1, 93.2, 93.3, 93.4					$ -
	TOTAL PHASE I DIRECT AND INDIRECT COSTS					$ 442,911,600

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	SPARE PARTS FOR THE OEM & THE BOP EQUIPMENT - PHASE I					$ 1,475,700
	SPARE PARTS FOR THE OEM EQUIPMENT	0.80				$ 914,934
	SPARE PARTS FOR THE BOP EQUIPMENT	0.50				$ 560,766
	CONTINGENCY - PHASE I	14.9				$ 66,365,600
	ESCALATION - PHASE I					$ 40,127,300
	EQUIPMENT					$ 11,846,600
	MATERIAL					$ 5,374,400
	LABOR					$ 18,616,900
	INDIRECTS					$ 4,289,400
	INTEREST DURING CONSTRUCTION (AFUDC)	BY AEP				$ -
	PHASE I - TOTAL PROJECT COST					$ 550,880,200
	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,	$ 660,000	$ -	$ -	$ 660,000
20.3	PIPING - MECHANICAL		$ 4,800	$ 1,700	$ 13,200	$ 19,700
20.4	CONVEYOR STRUCTURE SUPPORT STEEL	THREE-COAT SHOP PAINT	$ -	$ 290,000	$ 291,800	$ 581,800
20.5	CONVEYOR SUPPORT STEEL - FOUNDATIONS		$ -	$ 16,000	$ 45,500	$ 61,500
20.6	LIMESTONE TRANSFER TOWER - FOUNDATIONS		$ -	$ 15,400	$ 28,200	$ 43,600
20.7	LIMESTONE TRANSFER CONVEYOR - FOUNDATIONS		$ -	$ 62,000	$ 116,600	$ 178,600
20.8	LIMESTONE RECLAIM HOPPER, CONVEYOR TUNNEL AND ESCAPE TUNNEL - FOUNDATIONS		$ -	$ 542,000	$ 1,330,800	$ 1,872,800
20.9	LIMESTONE UNLOADING PDC - FOUNDATIONS		$ -	$ 24,100	$ 42,000	$ 66,100
20.10	LIMESTONE UNLOADING PDC - CONCRETE PIERS	10 PIERS	$ -	$ 6,900	$ 20,600	$ 27,500
20.11	LIMESTONE RECLAIM PDC - FOUNDATIONS		$ -	$ 16,800	$ 30,100	$ 46,900
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

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Project No.: 12721-000
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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
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	$ 3,586,500	$ 4,387,600
20.20	HIGH VOLTAGE POWER CABLE & TERMINATION	1/C # 500KCMIL-15KV	$ -	$ 33,400	$ 94,100	$ 127,500
20.21	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 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	$ 240,500	$ 267,100
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 6,283,800	$ 3,026,800	$ 10,636,900	$ 19,947,500
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 314,200	$ 771,800	$ 4,077,100	$ 5,163,200
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIMESTONE HANDLING SYSTEM	$ 6,598,000	$ 3,798,600	$ 14,714,000	$ 25,110,700
21.0	REAGENT (LIMESTONE) PREPARATION ISLAND					
21.1	MECHANICAL EQUIPMENT	INCLUDES LIMESTONE FEEDERS,	$ 11,425,000	$ -	$ 10,349,100	$ 21,774,100
21.2	PIPING - MECHANICAL		$ 278,900	$ 205,000	$ 587,300	$ 1,071,200
21.3	LIMESTONE SLURRY TANKS - FOUNDATIONS		$ -	$ 166,400	$ 278,300	$ 444,700
21.4	REAGENT PREPARATION BUILDING - FOUNDATIONS		$ -	$ 649,100	$ 1,020,200	$ 1,669,300
21.5	REAGENT PREPARATION BUILDING	120' L X 125' W X 130' H	$ 269,400	$ 4,684,200	$ 4,106,700	$ 9,060,300
21.6	PIPE SUPPORT PAD - REAGENT PREP BUILDING		$ -	$ 13,800	$ 24,800	$ 38,600
21.7	LIGHTING/ TRANSFORMERS & PANELS		$ 52,000	$ 135,000	$ 104,500	$ 291,500
21.8	GROUNDING		$ 5,100	$ -	$ 13,400	$ 18,500
21.9	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE ARE INCLUDED IN SECTION 23.0 - ABSORBER ISLAND	$ -	$ -	$ -	$ -
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 12,030,400	$ 5,853,500	$ 16,484,300	$ 34,368,200
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 601,500	$ 1,492,600	$ 6,318,000	$ 8,412,100

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	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	REAGENT (LIMESTONE) PREPARATION ISLAND	$ 12,631,900	$ 7,346,100	$ 22,802,300	$ 42,780,300
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
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	$ 47,600	$ 73,600
22.10	MAINTENANCE STORAGE TANK & PUMPS - FOUNDATIONS		$ -	$ 100,000	$ 163,900	$ 263,900
22.11	LANDFILL SERVICE WATER TANKS & PUMP - FOUNDATIONS		$ -	$ 80,900	$ 141,700	$ 222,600
22.12	LANDFILL RECLAIM WATER TANKS & PUMPS - FOUNDATIONS		$ -	$ 26,000	$ 47,600	$ 73,600
22.13	HYDROCLONE FEED TANKS & BLEED TANKS - FOUNDATIONS	TOTAL FOR HYDROCLONE AND BLEED TANKS	$ -	$ 340,200	$ 577,200	$ 917,400
22.14	BYPRODUCT STACKOUT CONVEYOR & TRANSFER TOWER -		$ -	$ 16,100	$ 31,700	$ 47,800
22.15	BYPRODUCT STACKOUT PILE - FOUNDATIONS	INCLUDES CONTAINMENT AREA SLAB	$ -	$ 891,700	$ 1,364,300	$ 2,256,000
22.16	PIPE RACK	SUPPORTS AT 15' C/C	$ -	$ 60,800	$ 125,100	$ 185,900
22.17	BYPRODUCT CONTAINMENT WALLS		$ -	$ 137,300	$ 224,400	$ 361,700

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22.18	INSTALL WIND SCREEN		$ -	$ 525,000	$ 192,300	$ 717,300
22.19	BYPRODUCT DEWATERING BUILDING - FOUNDATIONS		$ -	$ 275,500	$ 432,400	$ 707,900
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	$ 24,700	$ 38,500
22.22	AUXILIARY PUMPHOUSE BUILDING WITH ELECTRICAL ROOM -		$ -	$ 32,300	$ 56,300	$ 88,600
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		$ -	$ 6,300	$ 10,300	$ 16,600
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

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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
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	$ 183,600	$ 253,800
22.57	FIREWALL FOR TRANSFORMERS		$ -	$ 3,200	$ 8,300	$ 11,500
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 9,715,800	$ 15,995,100	$ 29,884,100	$ 55,595,000
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 485,800	$ 4,078,800	$ 11,454,900	$ 16,019,400
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)	$ 10,201,600	$ 20,073,900	$ 41,339,000	$ 71,614,400
23.0	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

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23.2	ADDITIONAL COST FOR C276 ABSORBER SHELL MATERIAL ABOVE THE PRICE OF A2205 ABSORBER SHELL	LABOR COST REFLECTS DIFFICULTY FACTOR WORKING WITH C276 VS. A2205	$ -	$ 14,940,000	$ 7,636,100	$ 22,576,100
23.3	EMERGENCY DIESEL DRIVEN QUENCH PUMP	WITH FUEL DAY TANK. FOUNDATIONS INCLUDED WITH ABSORBER BUILDING FOUNDATIONS	$ 150,000	$ -	$ 30,700	$ 180,700
23.4	PIPING - MECHANICAL	ALL PIPING INCLUDED IN OEM EQUIPMENT COST. NO BOP PIPING	$ -	$ -	$ -	$ -
23.5	ABSORBER VESSEL - FOUNDATIONS	0.0	$ -	$ 366,900	$ 609,400	$ 976,300
23.6	ABSORBER BUILDING - FOUNDATIONS	0.0	$ -	$ 544,300	$ 852,800	$ 1,397,100
23.7	ABSORBER BUILDING	150' L X 85' W X 60' H	$ 164,500	$ 2,501,100	$ 2,297,900	$ 4,963,500
23.8	PIPE SUPPORT PAD - ABSORBER BUILDING		$ -	$ 7,700	$ 14,100	$ 21,800
23.9	OXIDATION AIR BLOWER BUILDING - FOUNDATIONS		$ -	$ 37,000	$ 63,200	$ 100,200
23.10	OXIDATION AIR BLOWER BUILDING	30' L X 30' W X 25' H	$ 33,800	$ 191,000	$ 201,400	$ 426,200
23.11	PIPE SUPPORT PAD - OXIDATION BUILDING		$ -	$ 7,700	$ 13,100	$ 20,800
23.12	DUCTWORK	INCLUDES INTERNAL BRACING	$ -	$ 520,000	$ 1,191,900	$ 1,711,900
23.13	DUCT SUPPORT STEEL	THREE-COAT SHOP PAINT	$ -	$ 232,000	$ 233,400	$ 465,400
23.14	DUCTWORK INSULATION & LAGGING		$ -	$ 147,000	$ 287,900	$ 434,900
23.15	FOUNDATIONS FOR DUCT SUPPORT STEEL		$ -	$ 27,800	$ 49,300	$ 77,100
23.16	TRANSFORMERS		$ 981,000	$ -	$ 209,300	$ 1,190,300
23.17	SWITCHGEAR		$ 1,162,800	$ -	$ 673,700	$ 1,836,500
23.18	CABLE BUS & TERMINATIONS		$ 867,100	$ 46,600	$ 1,634,100	$ 2,547,800
23.19	MCC		$ 216,300	$ -	$ 11,100	$ 227,400
23.20	MIMIC PANELS		$ 35,000	$ -	$ 7,900	$ 42,900
23.21	GROUNDING		$ 16,000	$ -	$ 46,100	$ 62,100
23.22	LIGHTING/ TRANSFORMERS & PANELS		$ 164,500	$ 165,000	$ 171,300	$ 500,800
23.23	EMERGENCY POWER SYSTEM		$ 108,300	$ -	$ 24,400	$ 132,700
23.24	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 1,388,600	$ 5,513,200	$ 6,901,800
23.25	HIGH VOLTAGE POWER CABLE & TERMINATION		$ -	$ 41,700	$ 117,600	$ 159,300

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23.26	MEDIUM VOLTAGE POWER CABLE & TERMINATION		$ -	$ 92,100	$ 302,400	$ 394,500
23.27	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 566,000	$ 810,600	$ 1,376,600
23.28	CONTROL & INSTRUMENT CABLE		$ -	$ 512,000	$ 1,436,700	$ 1,948,700
23.29	FOUNDATION FOR TRANSFORMERS		$ -	$ 59,000	$ 173,700	$ 232,700
23.30	TRANSFORMER FIRE WALLS		$ -	$ 3,500	$ 9,600	$ 13,100
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 44,488,300	$ 22,397,000	$ 65,052,300	$ 131,937,600
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 2,899,400	$ 5,711,200	$ 25,716,500	$ 34,327,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 47,387,700	$ 28,108,200	$ 90,768,800	$ 166,264,700
24.0	COMPRESSED AIR SYSTEM (BYPRODUCT DEWATERING AREA)					
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	$ 8,800	$ 14,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 21,300	$ 16,700	$ 47,500	$ 85,500
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 1,100	$ 4,300	$ 18,100	$ 23,400
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	POTABLE WATER SYSTEM	$ 22,400	$ 21,000	$ 65,600	$ 108,900
26.0	FGD SUBSTATION					
27.0	FGD DCS SYSTEM					
27.1	DCS	4000 I/O POINTS	$ -	$ 3,000,000	$ 1,016,900	$ 4,016,900
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

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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 TRACKS - CUSTOM BUILT	$ -	$ 120,000	$ 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	$ -	$ 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
28.8	EROSION & SEDIMENT CONTROL		$ -	$ 1,200	$ 1,700	$ 2,900
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 3,000	$ 966,500	$ 1,307,400	$ 2,276,900
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 200	$ 246,500	$ 501,400	$ 748,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SITE IMPROVEMENTS - CIVIL WORK	$ 3,200	$ 1,213,000	$ 1,808,800	$ 3,024,900
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)		$ -	$ 165,100	$ 633,300	$ 798,400
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	$ 16,700	$ 25,300
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
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 180,000	$ 1,150,300	$ 2,238,700	$ 3,569,000
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 9,000	$ 293,327	$ 858,418	$ 1,160,745
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BOP ITEMS	$ 189,000	$ 1,443,600	$ 3,097,100	$ 4,729,700

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99.0	PHASE II - OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 74,844,900	$ 53,623,600	$ 129,167,200	$ 257,635,700
	PHASE II - OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 4,417,200	$ 13,674,000	$ 50,292,400	$ 68,383,600
	PHASE II - OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 79,262,100	$ 67,297,600	$ 179,459,600	$ 326,019,300
	INDIRECT COSTS - PHASE II					
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES					$ 23,000,000
	CONSTRUCTION MANAGEMENT					$ 9,780,600
	S-U / COMMISSIONING					$ 3,260,200
	CRAFT START-UP SUPPORT					$ 1,522,600
	INITIAL FILLS					$ 978,100
	OPERATOR & TRAINING MANUALS					$ 300,000
	SUBCONTRACTORS (NOISE CONSULTANT)					$ 100,000
	OWNERS COST - % of ACCT NOS. 92, 93.1, 93.2, 93.3, 93.4					$ -
	TOTAL PHASE II DIRECT AND INDIRECT COSTS					$ 364,960,800
	SPARE PARTS FOR THE OEM & THE BOP EQUIPMENT - PHASE II					$ 1,030,400
	SPARE PARTS FOR THE OEM EQUIPMENT	0.80				$ 638,848
	SPARE PARTS FOR THE BOP EQUIPMENT	0.50				$ 391,552
	CONTINGENCY - PHASE II.	15.8				$ 57,877,600
	ESCALATION - PHASE II					$ 83,269,500
	EQUIPMENT					$ 19,927,400
	MATERIAL					$ 12,336,900
	LABOR					$ 41,910,800
	INDIRECTS					$ 9,094,400
	INTEREST DURING CONSTRUCTION (AFUDC)					$ -

Sargent & Lundy, LLC

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

Estimate No.: 30714B
Project No.: 12721-000
Date: 9/10/2010
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
	PHASE II - TOTAL PROJECT COST					$ 507,138,300
	OVERALL PROJECT INDIRECT COSTS (PHASE I + PHASE II)					
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES					$ 51,000,000
	CONSTRUCTION MANAGEMENT					$ 21,642,400
	S-U / COMMISSIONING					$ 7,214,100
	CRAFT START-UP SUPPORT					$ 3,338,700
	INITIAL FILLS					$ 2,164,300
	OPERATOR & TRAINING MANUALS					$ 600,000
	SUBCONTRACTORS (PHASE I - NOISE & DUCTWORK CONSULTANT, GEOTECHNICAL INVESTIGATION, PHASE II - NOISE CONSULTANT ONLY)					$ 500,000
	OWNERS COST	BY AEP				$ -
	OVERALL PROJECT DIRECT AND INDIRECT COSTS (PHASE I + PHASE II)					$ 807,872,400
	SPARE PARTS FOR THE OEM & THE BOP EQUIPMENT (PHASE I + PHASE II)					$ 2,506,100
	SPARE PARTS FOR THE OEM EQUIPMENT					$ 1,553,782
	SPARE PARTS FOR THE BOP EQUIPMENT					$ 952,318
	CONTINGENCY (PHASE I + PHASE II)					$ 124,243,200
	ESCALATION (PHASE I + PHASE II)					$ 123,396,800
	EQUIPMENT					$ 31,774,000
	MATERIAL					$ 17,711,300
	LABOR					$ 60,527,700
	INDIRECTS					$ 13,383,800
	INTEREST DURING CONSTRUCTION (AFUDC) (PHASE I + PHASE II)	BY AEP				

Sargent & Lundy, LLC

AEP
BIG SANDY UNIT 2
FGD PROJECT - IAQCS (ESP)-2A - 1.7 LB/MM BTU - PHASED
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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 (PHASE I + PHASE II)					$ 1,058,018,500

ATTACHMENT 4-17
IAQCS Summary Capital Cost Estimate No. 30718 Est-2B ESP not in Service (1.7 lb SO_2/MMbtu)

Sargent & Lundy, LLC	AEP	Estimate No.:	30718B
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS (N/ESP)-2B - 1.7 LB/MM BTU - PHASED	Date:	9/12/2010
	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
1.0	ID FANS					
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	$ 19,980,000	$ -	$ 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	$ 973,600	$ 1,524,300
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	LIGHT FIXTURE		$ -	$ 16,500	$ 10,000	$ 26,500
2.10	GROUNDING		$ 7,300	$ -	$ 17,500	$ 24,800
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 22,578,400	$ 3,019,600	$ 17,450,600	$ 43,048,600
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 1,128,900	$ 770,000	$ 6,483,100	$ 8,382,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FABRIC FILTERS	$ 23,707,300	$ 3,789,600	$ 23,933,700	$ 51,430,600
3.0	NEW STACK					

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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
4.0	LIME HANDLING SYSTEM					
4.1	LIME STORAGE SILO	0	$ 2,680,000	$ -	$ -	$ 2,680,000
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	$ 158,400	$ 243,700
4.7	LIME UNLOADING BLOWER / ELECTRICAL BUILDING - FOUNDATIONS		$ -	$ 160,700	$ 281,500	$ 442,200
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	$ 288,500	$ 460,800
4.11	LIME STORAGE SILO ACCESS STAIR TOWER - FOUNDATIONS		$ -	$ 14,200	$ 26,200	$ 40,400
4.12	PIPE RACK - FOUNDATIONS		$ -	$ 94,200	$ 208,200	$ 302,400
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		$ -	$ 296,400	$ 1,429,900	$ 1,726,300
4.22	HIGH VOLTAGE POWER CABLE & TERMINATION	1/C # 500KCMIL-15KV, 12000' UNIT	$ -	$ 144,600	$ 407,800	$ 552,400

Sargent & Lundy, LLC	AEP	Estimate No.:	30718B
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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
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
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 3,887,600	$ 2,660,900	$ 5,284,800	$ 11,833,300
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 194,400	$ 678,500	$ 1,919,500	$ 2,792,400
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME HANDLING SYSTEM	$ 4,082,000	$ 3,339,400	$ 7,204,300	$ 14,625,700
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	$ 278,300	$ 444,700
5.6	LIME SLAKER BUILDING - FOUNDATIONS		$ -	$ 119,200	$ 194,200	$ 313,400
5.7	LIME SLAKER BUILDING	135' L X 30' W X 50' H	$ 40,500	$ 776,800	$ 721,000	$ 1,538,300
5.8	ELECTRICAL	INCLUDED WITH LIME HANDLING SYSTEM, ACCOUNT 4.0	$ -	$ -	$ -	$ -
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 5,758,300	$ 1,173,800	$ 5,568,000	$ 12,500,100
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 287,900	$ 299,300	$ 2,078,500	$ 2,665,800

Sargent & Lundy, LLC	AEP	Estimate No.:	30718B
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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
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME SLAKER BUILDING	$ 6,046,200	$ 1,473,100	$ 7,646,500	$ 15,165,900
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	$ 50,000	$ 327,100	$ 777,100
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
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	SDA FLY ASH SILO	NOT REQUIRED - ECONOMIZER FLY ASH SLUICED TO BOTTOM ASH POND	$ -	$ -	$ -	$ -
6.9	WASTE ASH STORAGE SILO - FOUNDATIONS		$ -	$ 132,100	$ 223,900	$ 356,000
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	$ 373,100	$ 607,400
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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	FGD PROJECT - IAQCS (N/ESP)-2B - 1.7 LB/MM BTU - PHASED	Date:	9/12/2010
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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
6.15	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		$ -	$ 32,800	$ 177,400	$ 210,200
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	$ 313,700	$ 352,100
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
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 4,812,300	$ 2,307,100	$ 5,161,700	$ 12,281,100
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 240,600	$ 588,300	$ 1,919,400	$ 2,748,400
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS	$ 5,052,900	$ 2,895,400	$ 7,081,100	$ 15,029,500
7.0	SPRAY DRYER ABSORBER ISLAND					
8.0	ACTIVATED CARBON INJECTION SYSTEM					
9.0	COMPRESSED AIR SYSTEM					
10.0	SERVICE WATER SYSTEM					
11.0	POTABLE WATER SYSTEM					
11.1	PUMPS		$ 30,000	$ -	$ 18,400	$ 48,400
11.2	PIPING - MECHANICAL		$ 99,500	$ 235,600	$ 672,800	$ 1,007,900
11.3	TANKS		$ -	$ 8,500	$ -	$ 8,500
11.4	POTABLE WATER TANK & PUMP - FOUNDATIONS		$ -	$ 5,200	$ 8,800	$ 14,000
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	$ 691,200	$ 1,056,300

Sargent & Lundy, LLC	AEP	Estimate No.:	30718B
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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		$ 6,500	$ 60,100	$ 252,000	$ 318,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	POTABLE WATER SYSTEM	$ 135,975	$ 295,678	$ 943,238	$ 1,374,891
12.0	FGD SUBSTATION					
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
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					
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

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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
15.3	NEW RAILROAD TRACK	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
15.6	NEW CONCRETE ENCASEMENT	OVER AND AROUND DUCT BANK CONNECTING THE PLANT TO SWITCHYARD. THIS IS UNDER THE NEW TRACKWORK EXTENSION	$ -	$ 33,200	$ 67,700	$ 100,900
15.7	RAILCAR LIMESTONE UNLOADING HOPPER, CONVEYOR TUNNEL AND ESCAPE TUNNEL - FOUNDATIONS	FOR PHASE II INSTALLED IN PHASE I (FOR CONSTRUCTIBILITY)	$ -	$ 542,000	$ 1,330,800	$ 1,872,800
15.8	MECHANICAL EQUIPMENT FOR LIMESTONE UNLOAIDING 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	$ 3,533,800	$ 6,554,000
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 21,600	$ 659,900	$ 1,327,600	$ 2,009,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	TRUCK & RAIL INFRASTRUCTURE	$ 453,900	$ 3,247,800	$ 4,861,400	$ 8,563,100
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

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16.3	NEW CONCRETE ENCASEMENT	16' X 4' X 40' - FOR EXISTING ASH	$ -	$ 144,300	$ 262,700	$ 407,000
16.4	TRUCK WASH AREA - CONCRETE PAD		$ -	$ 41,900	$ 70,400	$ 112,300
16.5	TRUCK WASH AREA - ENCLOSURE		$ -	$ 67,400	$ 95,300	$ 162,700
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
16.10	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	$ 150,000	$ -	$ 49,200	$ 199,200
16.16	CONSTRUCTION LAYDOWN AREA - (TO BE USED FOR PHASE I	ALLOWANCE FOR 10 ACRES,	$ -	$ 700,000	$ 828,000	$ 1,528,000
16.17	CRAFT PARKING (TO BE USED FOR PHASE I AND PHASE II)	DOES NOT INCLUDE LAND	$ -	$ 180,000	$ 414,200	$ 594,200
16.18	CONTRACTOR OFFICES (AREA) - (TO BE USED FOR PHASE I AND	DOES NOT INCLUDE LAND	$ -	$ 45,000	$ 103,600	$ 148,600
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 574,500	$ 2,968,000	$ 5,486,600	$ 9,029,100
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 28,700	$ 756,800	$ 1,967,100	$ 2,752,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SITE IMPROVEMENTS - CIVIL WORK	$ 603,200	$ 3,724,800	$ 7,453,700	$ 11,781,700
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	$ 19,600	$ 30,100

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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	$ 1,969,900	$ 3,231,700
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 10,500	$ 268,209	$ 750,035	$ 1,028,744
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BOP ITEMS	$ 220,500	$ 1,320,000	$ 2,719,900	$ 4,260,400
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	EROSION & SEDIMENT CONTROL		$ -	$ 30,600	$ 48,900	$ 79,500
18.5	REROUTED 138KV LINE .	TWO NEW TOWERS, NEW FOUNDATIONS, NEW OH LINES, LINE & TOWER ACCESSORIES INCLUDING INSULATORS	$ 500,000	$ -	$ 255,700	$ 755,700
18.6	OUTAGE TIE-IN DUCTWORK	ALLOWANCE FOR 85 TON DUCTWORK	$ -	$ 276,300	$ 738,700	$ 1,015,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 500,000	$ 509,600	$ 1,451,200	$ 2,460,800
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 25,000	$ 129,900	$ 514,700	$ 669,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	CAPITAL REPLACEMENTS - REMOVAL AND RELOCATION OF EXISTING EQUIPMENT AND INFRASTRUCTURE	$ 525,000	$ 639,500	$ 1,965,900	$ 3,130,400
19.0	ARSENIC, ASBESTOS , LEAD ABATEMENT					

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19.1	ARSENIC, ASBESTOS , LEAD ABATEMENT	ALLOWANCE PROVIDED BY AEP	$ -	$ -	$ -	$ 750,000
99.0	PHASE I - OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 106,535,900	$ 60,181,800	$ 148,417,600	$ 315,885,300
	PHASE I - OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 6,034,800	$ 11,383,700	$ 50,084,000	$ 67,502,500
	PHASE I - OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 112,570,700	$ 71,565,500	$ 198,501,600	$ 383,387,800
	INDIRECT COSTS - PHASE I					
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES					$ 28,000,000
	CONSTRUCTION MANAGEMENT					$ 11,501,600
	S-U / COMMISSIONING					$ 3,833,900
	CRAFT START-UP SUPPORT					$ 1,748,800
	INITIAL FILLS					$ 1,150,200
	OPERATOR & TRAINING MANUALS					$ 300,000
	SUBCONTRACTORS (NOISE & DUCTWORK CONSULTANT,					$ 400,000
	OWNERS COST - % of ACCT NOS. 92, 93.1, 93.2, 93.3, 93.4					$ -
	TOTAL PHASE I DIRECT AND INDIRECT COSTS					$ 430,322,300
	SPARE PARTS FOR THE OEM & THE BOP EQUIPMENT - PHASE I					$ 1,463,400
	SPARE PARTS FOR THE OEM EQUIPMENT	0.80				$ 907,308
	SPARE PARTS FOR THE BOP EQUIPMENT	0.50				$ 556,092
	CONTINGENCY - PHASE I	14.8				$ 63,958,300
	ESCALATION - PHASE I					$ 39,039,100
	EQUIPMENT					$ 11,747,800
	MATERIAL					$ 5,136,100
	LABOR					$ 17,918,500
	INDIRECTS					$ 4,236,700

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	INTEREST DURING CONSTRUCTION (AFUDC)	BY AEP				$ -
	PHASE I - TOTAL PROJECT COST					$ 534,783,100
	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		$ 4,800	$ 1,700	$ 13,200	$ 19,700
20.4	CONVEYOR STRUCTURE SUPPORT STEEL	THREE-COAT SHOP PAINT	$ -	$ 290,000	$ 291,800	$ 581,800
50.5	CONVEYOR SUPPORT STEEL - FOUNDATIONS		$ -	$ 16,000	$ 45,500	$ 61,500
20.6	LIMESTONE TRANSFER TOWER - FOUNDATIONS		$ -	$ 15,400	$ 28,200	$ 43,600
20.7	LIMESTONE TRANSFER CONVEYOR - FOUNDATIONS		$ -	$ 62,000	$ 116,600	$ 178,600
20.8	LIMESTONE RECLAIM HOPPER, CONVEYOR TUNNEL AND ESCAPE TUNNEL - FOUNDATIONS		$ -	$ 542,000	$ 1,330,800	$ 1,872,800
20.9	LIMESTONE UNLOADING PDC - FOUNDATIONS		$ -	$ 24,100	$ 42,000	$ 66,100
20.10	LIMESTONE UNLOADING PDC - CONCRETE PIERS	10 PIERS	$ -	$ 6,900	$ 20,600	$ 27,500
20.11	LIMESTONE RECLAIM PDC - FOUNDATIONS		$ -	$ 16,800	$ 30,100	$ 46,900
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

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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		$ -	$ 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	$ 240,500	$ 267,100
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 6,283,800	$ 3,026,800	$ 10,647,800	$ 19,958,400
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 314,200	$ 771,800	$ 4,081,400	$ 5,167,400
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIMESTONE HANDLING SYSTEM	$ 6,598,000	$ 3,798,600	$ 14,729,200	$ 25,125,800
21.0	REAGENT (LIMESTONE) PREPARATION ISLAND					
21.1	MECHANICAL EQUIPMENT	INCLUDES LIMESTONE FEEDERS,	$ 11,425,000	$ -	$ 10,349,100	$ 21,774,100
21.2	PIPING - MECHANICAL		$ 278,900	$ 205,000	$ 587,300	$ 1,071,200
21.3	LIMESTONE SLURRY TANKS - FOUNDATIONS		$ -	$ 166,400	$ 278,300	$ 444,700
21.4	REAGENT PREPARATION BUILDING - FOUNDATIONS		$ -	$ 649,100	$ 1,020,200	$ 1,669,300
21.5	REAGENT PREPARATION BUILDING	120' L X 125' W X 130' H	$ 269,400	$ 4,684,200	$ 4,106,700	$ 9,060,300
21.6	PIPE SUPPORT PAD - REAGENT PREP BUILDING		$ -	$ 13,800	$ 24,800	$ 38,600
21.7	LIGHTING/ TRANSFORMERS & PANELS		$ 52,000	$ 135,000	$ 104,500	$ 291,500
21.8	GROUNDING		$ 5,100	$ -	$ 13,400	$ 18,500
21.9	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE ARE INCLUDED IN SECTION 28.0 - ABSORBER ISLAND	$ -	$ -	$ -	$ -
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 12,030,400	$ 5,853,500	$ 16,484,300	$ 34,368,200
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 601,500	$ 1,492,600	$ 6,318,000	$ 8,412,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	REAGENT (LIMESTONE) PREPARATION ISLAND	$ 12,631,900	$ 7,346,100	$ 22,802,300	$ 42,780,300
22.0	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE					

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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	$ 47,600	$ 73,600
22.10	MAINTENANCE STORAGE TANK & PUMPS - FOUNDATIONS		$ -	$ 100,000	$ 163,900	$ 263,900
22.11	LANDFILL SERVICE WATER TANKS & PUMP - FOUNDATIONS		$ -	$ 80,900	$ 141,700	$ 222,600
22.12	LANDFILL RECLAIM WATER TANKS & PUMPS - FOUNDATIONS		$ -	$ 26,000	$ 47,600	$ 73,600
22.13	HYDROCLONE FEED TANKS & BLEED TANKS - FOUNDATIONS	TOTAL FOR HYDROCLONE AND BLEED TANKS	$ -	$ 340,200	$ 577,200	$ 917,400
22.14	BYPRODUCT STACKOUT CONVEYOR & TRANSFER TOWER -		$ -	$ 16,100	$ 31,700	$ 47,800
22.15	BYPRODUCT STACKOUT PILE - FOUNDATIONS	INCLUDES CONTAINMENT AREA SLAB	$ -	$ 891,700	$ 1,364,300	$ 2,256,000
22.16	PIPE RACK	SUPPORTS AT 15' C/C	$ -	$ 60,800	$ 125,100	$ 185,900
22.17	BYPRODUCT CONTAINMENT WALLS		$ -	$ 137,300	$ 224,400	$ 361,700
22.18	INSTALL WIND SCREEN		$ -	$ 525,000	$ 192,300	$ 717,300
22.19	BYPRODUCT DEWATERING BUILDING - FOUNDATIONS		$ -	$ 275,500	$ 432,400	$ 707,900
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	$ 24,700	$ 38,500
22.22	AUXILIARY PUMPHOUSE BUILDING WITH ELECTRICAL ROOM -		$ -	$ 32,300	$ 56,300	$ 88,600

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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		$ -	$ 6,300	$ 10,300	$ 16,600
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

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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	$ 183,600	$ 253,800
22.57	FIREWALL FOR TRANSFORMERS		$ -	$ 3,200	$ 8,300	$ 11,500
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 9,715,800	$ 15,995,100	$ 29,884,100	$ 55,595,000
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 485,800	$ 4,078,800	$ 11,454,900	$ 16,019,400
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)	$ 10,201,600	$ 20,073,900	$ 41,339,000	$ 71,614,400
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	LABOR COST REFLECTS DIFFICULTY FACTOR WORKING WITH C276 VS. A2205	$ -	$ 14,940,000	$ 7,636,100	$ 22,576,100

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23.3	EMERGENCY DIESEL DRIVEN QUENCH PUMP	WITH FUEL DAY TANK. FOUNDATIONS INCLUDED WITH ABSORBER BUILDING FOUNDATIONS	$ 150,000	$ -	$ 30,700	$ 180,700
23.4	PIPING - MECHANICAL	ALL PIPING INCLUDED IN OEM EQUIPMENT COST. NO BOP PIPING	$ -	$ -	$ -	$ -
23.5	ABSORBER VESSEL - FOUNDATIONS		$ -	$ 366,900	$ 609,400	$ 976,300
23.6	ABSORBER BUILDING - FOUNDATIONS		$ -	$ 544,300	$ 852,800	$ 1,397,100
23.7	ABSORBER BUILDING	150' L X 85' W X 60' H	$ 164,500	$ 2,501,100	$ 2,297,900	$ 4,963,500
23.8	PIPE SUPPORT PAD - ABSORBER BUILDING		$ -	$ 7,700	$ 14,100	$ 21,800
23.9	OXIDATION AIR BLOWER BUILDING - FOUNDATIONS		$ -	$ 37,000	$ 63,200	$ 100,200
23.10	OXIDATION AIR BLOWER BUILDING	30' L X 30' W X 25' H	$ 33,800	$ 191,000	$ 201,400	$ 426,200
23.11	PIPE SUPPORT PAD - OXIDATION BUILDING		$ -	$ 7,700	$ 13,100	$ 20,800
23.12	DUCTWORK	INCLUDES INTERNAL BRACING AND TURNING VANES	$ -	$ 520,000	$ 1,191,900	$ 1,711,900
23.13	DUCT SUPPORT STEEL	THREE-COAT SHOP PAINT	$ -	$ 232,000	$ 233,400	$ 465,400
23.14	DUCTWORK INSULATION & LAGGING		$ -	$ 147,000	$ 287,900	$ 434,900
23.15	FOUNDATIONS FOR DUCT SUPPORT STEEL		$ -	$ 27,800	$ 49,300	$ 77,100
23.16	TRANSFORMERS		$ 981,000	$ -	$ 209,300	$ 1,190,300
23.17	SWITCHGEAR		$ 1,162,800	$ -	$ 673,700	$ 1,836,500
23.18	CABLE BUS & TERMINATIONS		$ 867,100	$ 46,600	$ 1,634,100	$ 2,547,800
23.19	MCC		$ 216,300	$ -	$ 11,100	$ 227,400
23.20	MIMIC PANELS		$ 35,000	$ -	$ 7,900	$ 42,900
23.21	GROUNDING		$ 16,000	$ -	$ 46,100	$ 62,100
23.22	LIGHTING/ TRANSFORMERS & PANELS		$ 164,500	$ 165,000	$ 171,300	$ 500,800
23.23	EMERGENCY POWER SYSTEM		$ 108,300	$ -	$ 24,400	$ 132,700
23.24	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 1,388,600	$ 5,513,200	$ 6,901,800
23.25	HIGH VOLTAGE POWER CABLE & TERMINATION		$ -	$ 41,700	$ 117,600	$ 159,300
23.26	MEDIUM VOLTAGE POWER CABLE & TERMINATION		$ -	$ 92,100	$ 302,400	$ 394,500
23.27	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 566,000	$ 810,600	$ 1,376,600
23.28	CONTROL & INSTRUMENT CABLE		$ -	$ 512,000	$ 1,436,700	$ 1,948,700
23.29	FOUNDATION FOR TRANSFORMERS		$ -	$ 59,000	$ 173,700	$ 232,700
23.30	TRANSFORMER FIRE WALLS		$ -	$ 3,500	$ 9,600	$ 13,100

Sargent & Lundy, LLC	AEP	Estimate No.:	30718B
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS (N/ESP)-2B - 1.7 LB/MM BTU - PHASED	Date:	9/12/2010
	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		$ 44,488,300	$ 22,397,000	$ 65,052,300	$ 131,937,600
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 2,899,400	$ 5,711,200	$ 25,716,500	$ 34,327,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 47,387,700	$ 28,108,200	$ 90,768,800	$ 166,264,700
24.0	COMPRESSED AIR SYSTEM (BYPRODUCT DEWATERING AREA)					
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	$ 8,800	$ 14,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 21,300	$ 16,700	$ 47,500	$ 85,500
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 1,100	$ 4,300	$ 18,100	$ 23,400
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	POTABLE WATER SYSTEM	$ 22,400	$ 21,000	$ 65,600	$ 108,900
26.0	FGD SUBSTATION					
27.0	FGD DCS SYSTEM					
27.1	DCS	4000 I/O POINTS	$ -	$ 3,000,000	$ 1,016,900	$ 4,016,900
27.2	DCS - VENDOR FIELD SUPPORT	200 MANDAYS @ $1500/DAY - SHOWN AS SUBCONTRACT COST	$ 300,000	$ -	$ -	$ 300,000
27.3	LOCALLY MOUNTED INSTRUMENTS	0.0	$ -	$ 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 TRACKS - CUSTOM BUILT	$ -	$ 120,000	$ 152,200	$ 272,200

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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
28.5	STORMWATER DRAINAGE TRENCH	2' W X 3' DEEP CAST-IN-PLACE CONCRETE TRENCH W/REINFORCING & HS-20 RATED GRATE COVERS	$ -	$ 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
28.8	EROSION & SEDIMENT CONTROL		$ -	$ 1,200	$ 1,700	$ 2,900
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 3,000	$ 966,500	$ 1,307,400	$ 2,276,900
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 200	$ 246,500	$ 501,400	$ 748,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SITE IMPROVEMENTS - CIVIL WORK	$ 3,200	$ 1,213,000	$ 1,808,800	$ 3,024,900
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)		$ -	$ 165,100	$ 633,300	$ 798,400
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	$ 16,700	$ 25,300
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
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 180,000	$ 1,150,300	$ 2,238,700	$ 3,569,000
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 9,000	$ 293,327	$ 858,418	$ 1,160,745
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BOP ITEMS	$ 189,000	$ 1,443,600	$ 3,097,100	$ 4,729,700
99.0	PHASE II - OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 74,844,900	$ 53,623,600	$ 129,178,100	$ 257,646,600
	PHASE II - OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 4,417,200	$ 13,674,000	$ 50,296,600	$ 68,387,900
	PHASE II - OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 79,262,100	$ 67,297,600	$ 179,474,700	$ 326,034,500

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	INDIRECT COSTS - PHASE II					
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES					$ 23,000,000
	CONSTRUCTION MANAGEMENT					$ 9,781,000
	S-U / COMMISSIONING					$ 3,260,300
	CRAFT START-UP SUPPORT					$ 1,522,700
	INITIAL FILLS					$ 978,100
	OPERATOR & TRAINING MANUALS					$ 300,000
	SUBCONTRACTORS (NOISE CONSULTANT)					$ 100,000
	OWNERS COST - % of ACCT NOS. 92, 93.1, 93.2, 93.3, 93.4					$ -
	TOTAL PHASE II DIRECT AND INDIRECT COSTS					$ 364,976,600
	SPARE PARTS FOR THE OEM & THE BOP EQUIPMENT - PHASE II					$ 1,030,400
	SPARE PARTS FOR THE OEM EQUIPMENT	0.80				$ 618,240
	SPARE PARTS FOR THE BOP EQUIPMENT	0.50				$ 412,160
	CONTINGENCY - PHASE II.	15.9				$ 58,140,300
	ESCALATION - PHASE II					$ 83,273,100
	EQUIPMENT					$ 19,927,400
	MATERIAL					$ 12,336,900
	LABOR					$ 41,914,300
	INDIRECTS					$ 9,094,500
	INTEREST DURING CONSTRUCTION (AFUDC)					$ -
	PHASE II - TOTAL PROJECT COST					$ 507,420,400
	OVERALL PROJECT INDIRECT COSTS (PHASE I + PHASE II)					
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES					$ 51,000,000

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	CONSTRUCTION MANAGEMENT					$ 21,282,700
	S-U / COMMISSIONING					$ 7,094,200
	CRAFT START-UP SUPPORT					$ 3,271,500
	INITIAL FILLS					$ 2,128,300
	OPERATOR & TRAINING MANUALS					$ 600,000
	SUBCONTRACTORS (PHASE I - NOISE & DUCTWORK CONSULTANT, GEOTECHNICAL INVESTIGATION, PHASE II - NOISE CONSULTANT ONLY)					$ 500,000
	OWNERS COST	BY AEP				$ -
	OVERALL PROJECT DIRECT AND INDIRECT COSTS (PHASE I + PHASE II)					$ 795,299,000
	SPARE PARTS FOR THE OEM & THE BOP EQUIPMENT (PHASE I + PHASE II)					$ 2,493,800
	SPARE PARTS FOR THE OEM EQUIPMENT					$ 1,525,548
	SPARE PARTS FOR THE BOP EQUIPMENT					$ 968,252
	CONTINGENCY (PHASE I + PHASE II)					$ 122,098,600
	ESCALATION (PHASE I + PHASE II)					$ 122,312,200
	EQUIPMENT					$ 31,675,200
	MATERIAL					$ 17,473,000
	LABOR					$ 59,832,800
	INDIRECTS					$ 13,331,200
	INTEREST DURING CONSTRUCTION (AFUDC) (PHASE I + PHASE II)	BY AEP				
	TOTAL PROJECT COST (PHASE I + PHASE II)					$ 1,042,203,600
	REFERENCE COSTS:					
A	ESP DEMOLITION	ALLOWANCE FOR 1000T STRUCTURE	$ -	$ -	$ 832,300	$ 832,300

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B	REMOVE BOOSTER AIR FANS		$ -	$ -	$ 111,000	$ 111,000

ATTACHMENT 4-18
IAQCS Summary Capital Cost Estimate No. 30715 Est-3A ESP in Service (3.0 lb SO_2/MMbtu)

Sargent & Lundy, LLC	AEP BIG SANDY UNIT 2 FGD PROJECT -IAQCS (ESP)-3A - 3.0 LB/MM BTU - PHASED COST ESTIMATE SUMMARY	Estimate No.: Project No.: Date: Preparer: Reviewer: Approver:	30715B 12721-000 9/12/2010 MNO JMK PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
1.0	ID FANS					
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	$ 973,600	$ 1,524,300
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	LIGHT FIXTURE		$ -	$ 16,500	$ 10,000	$ 26,500
2.10	GROUNDING		$ 7,300	$ -	$ 17,500	$ 24,800
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 21,874,400	$ 3,019,600	$ 17,184,900	$ 42,078,900
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 1,093,700	$ 770,000	$ 6,384,800	$ 8,248,500
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FABRIC FILTERS	$ 22,968,100	$ 3,789,600	$ 23,569,700	$ 50,327,400
3.0	NEW STACK					

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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		$ 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	$ 158,400	$ 243,700
4.7	LIME UNLOADING BLOWER / ELECTRICAL BUILDING - FOUNDATIONS		$ -	$ 160,700	$ 281,500	$ 442,200
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	$ 929,500	$ 1,493,200
4.11	LIME STORAGE SILO ACCESS STAIR TOWER - FOUNDATIONS		$ -	$ 14,200	$ 26,200	$ 40,400
4.12	PIPE RACK - FOUNDATIONS		$ -	$ 94,200	$ 208,200	$ 302,400
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
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

Sargent & Lundy, LLC

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

Estimate No.: 30715B
Project No.: 12721-000
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4.20	LIGHTING/ TRANSFORMERS & PANELS		$ 52,000	$ 135,000	$ 104,500	$ 291,500
4.21	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 296,400	$ 1,429,900	$ 1,726,300
4.22	HIGH VOLTAGE POWER CABLE & TERMINATION	1/C # 500KCMIL-15KV, 12000' UNIT 2 + 3600' LIME UNLOAD	$ -	$ 144,600	$ 407,800	$ 552,400
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
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 8,267,600	$ 3,052,300	$ 6,053,600	$ 17,373,500
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 413,400	$ 778,300	$ 2,216,800	$ 3,408,500
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME HANDLING SYSTEM	$ 8,681,000	$ 3,830,600	$ 8,270,400	$ 20,782,000
5.0	LIME SLAKER BUILDING					
5.1	MECHANICAL EQUIPMENT	INCLUDES:CHAIN CONVEYOR, SLAKERS THROUGH THE LIME SLURRY PUMPS, PIPING, AND LIME SLURRY STORAGE TANKS.	$ 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	$ 278,300	$ 444,700
5.6	LIME SLAKER BUILDING - FOUNDATIONS		$ -	$ 119,200	$ 194,200	$ 313,400
5.7	LIME SLAKER BUILDING	135' L X 30' W X 50' H	$ 40,500	$ 776,800	$ 721,000	$ 1,538,300
5.8	ELECTRICAL	INCLUDED WITH LIME HANDLING SYSTEM, ACCOUNT 4.0	$ -	$ -	$ -	$ -

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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		$ 8,814,300	$ 1,173,800	$ 6,762,400	$ 16,750,500
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 440,700	$ 299,300	$ 2,523,800	$ 3,263,900
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME SLAKER BUILDING	$ 9,255,000	$ 1,473,100	$ 9,286,200	$ 20,014,400
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
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	SDA 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	$ 237,800	$ 381,900
6.10	FLY ASH SILO - FOUNDATIONS		$ -	$ 10,800	$ 21,000	$ 31,800
6.11	FLY ASH BLOWER AND ELECTRICAL BUILDING - FOUNDATIONS		$ -	$ 49,600	$ 93,200	$ 142,800
6.12	FLY ASH BLOWER AND ELECTRICAL BUILDING		$ 28,000	$ 244,500	$ 16,200	$ 288,700
6.13	RECYCLE ASH BUILDING - FOUNDATIONS	SUBCONTRACT PRICE, INCLUDES LABOR	$ -	$ 234,300	$ 373,100	$ 607,400

Sargent & Lundy, LLC

AEP
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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
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		$ -	$ 32,800	$ 177,400	$ 210,200
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	$ 313,700	$ 352,100
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
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 6,855,300	$ 2,597,200	$ 6,474,300	$ 15,926,800
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 342,800	$ 662,300	$ 2,410,000	$ 3,415,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS	$ 7,198,100	$ 3,259,500	$ 8,884,300	$ 19,341,800
7.0	SPRAY DRYER ABSORBER ISLAND					
8.0	ACTIVATED CARBON INJECTION SYSTEM					
9.0	COMPRESSED AIR SYSTEM					
10.0	SERVICE WATER SYSTEM					
11.0	POTABLE WATER SYSTEM					
11.1	PUMPS		$ 30,000	$ -	$ 18,400	$ 48,400
11.2	PIPING - MECHANICAL		$ 99,500	$ 235,600	$ 672,800	$ 1,007,900
11.3	TANKS		$ -	$ 8,500	$ -	$ 8,500
11.4	POTABLE WATER TANK & PUMP - FOUNDATIONS		$ -	$ 5,200	$ 8,800	$ 14,000

Sargent & Lundy, LLC	AEP BIG SANDY UNIT 2 FGD PROJECT -IAQCS (ESP)-3A - 3.0 LB/MM BTU - PHASED COST ESTIMATE SUMMARY	Estimate No.: Project No.: Date: Preparer: Reviewer: Approver:	30715B 12721-000 9/12/2010 MNO JMK PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
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	$ 691,200	$ 1,056,300
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 6,500	$ 60,100	$ 252,000	$ 318,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	POTABLE WATER SYSTEM	$ 135,975	$ 295,678	$ 943,238	$ 1,374,891
12.0	FGD SUBSTATION					
12.1	TRANSFORMERS		$ 1,560,500	$ -	$ 273,100	$ 1,833,600
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	$ 131,700	$ 204,900
12.4	138KV MAIN FEEDER & TERMINATIONS		$ 264,000	$ -	$ 254,000	$ 518,000
12.5	SWITCHGEAR		$ 714,200	$ -	$ 121,600	$ 835,800
12.6	MCC	480V MCC, PER LINE UP	$ 120,000	$ -	$ 7,300	$ 127,300
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	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	$ 183,600	$ 253,800
12.20	FIREWALL FOR TRANSFORMERS		$ -	$ 3,000	$ 5,200	$ 8,200

Sargent & Lundy, LLC	AEP BIG SANDY UNIT 2 FGD PROJECT -IAQCS (ESP)-3A - 3.0 LB/MM BTU - PHASED COST ESTIMATE SUMMARY	Estimate No.: Project No.: Date: Preparer: Reviewer: Approver:	30715B 12721-000 9/12/2010 MNO JMK 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		$ 3,342,400	$ 924,500	$ 4,212,100	$ 8,479,000
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 167,100	$ 235,700	$ 1,519,624	$ 1,922,500
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FGD SUBSTATION	$ 3,509,500	$ 1,160,200	$ 5,731,700	$ 10,401,500
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
13.3	LOCALLY MOUNTED INSTRUMENTS		$ -	$ 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					
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

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15.3	NEW RAILROAD TRACK	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
15.6	NEW CONCRETE ENCASEMENT	OVER AND AROUND DUCT BANK CONNECTING THE PLANT TO SWITCHYARD. THIS IS UNDER THE NEW TRACKWORK EXTENSION	$ -	$ 33,200	$ 67,700	$ 100,900
15.7	RAILCAR LIMESTONE UNLOADING HOPPER, CONVEYOR TUNNEL AND ESCAPE TUNNEL - FOUNDATIONS	FOR PHASE II INSTALLED IN PHASE I (FOR CONSTRUCTIBILITY)	$ -	$ 542,000	$ 1,330,800	$ 1,872,800
15.8	MECHANICAL EQUIPMENT FOR LIMESTONE UNLOAIDING 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	$ 3,533,800	$ 6,554,000
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 21,600	$ 659,900	$ 1,327,600	$ 2,009,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	TRUCK & RAIL INFRASTRUCTURE	$ 453,900	$ 3,247,800	$ 4,861,400	$ 8,563,100
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

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16.3	NEW CONCRETE ENCASEMENT	16' X 4' X 40' - FOR EXISTING ASH PIPE HAUL ROAD CROSSING	$ -	$ 144,300	$ 262,700	$ 407,000
16.4	TRUCK WASH AREA - CONCRETE PAD		$ -	$ 41,900	$ 70,400	$ 112,300
16.5	TRUCK WASH AREA - ENCLOSURE		$ -	$ 67,400	$ 95,300	$ 162,700
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
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 574,500	$ 2,968,000	$ 5,486,600	$ 9,029,100
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 28,700	$ 756,800	$ 1,967,100	$ 2,752,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SITE IMPROVEMENTS - CIVIL WORK	$ 603,200	$ 3,724,800	$ 7,453,700	$ 11,781,700
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	$ 19,600	$ 30,100
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	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS	$ 210,000	$ 1,051,800	$ 1,969,900	$ 3,231,700
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 10,500	$ 268,209	$ 750,035	$ 1,028,744
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BOP ITEMS	$ 220,500	$ 1,320,000	$ 2,719,900	$ 4,260,400

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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	EROSION & SEDIMENT CONTROL		$ -	$ 30,600	$ 48,900	$ 79,500
18.5	REROUTED 138KV LINE .	TWO NEW TOWERS, NEW FOUNDATIONS, NEW OH LINES, LINE & TOWER ACCESSORIES INCLUDING INSULATORS	$ 500,000	$ -	$ 255,700	$ 755,700
18.6	OUTAGE TIE-IN DUCTWORK	ALLOWANCE FOR 85 TON DUCTWORK	$ -	$ 276,300	$ 738,700	$ 1,015,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 500,000	$ 509,600	$ 1,451,200	$ 2,460,800
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 25,000	$ 129,900	$ 514,700	$ 669,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	CAPITAL REPLACEMENTS - REMOVAL AND RELOCATION OF EXISTING EQUIPMENT AND INFRASTRUCTURE	$ 525,000	$ 639,500	$ 1,965,900	$ 3,130,400
19.0	ARSENIC, ASBESTOS , LEAD ABATEMENT					
19.1	ARSENIC, ASBESTOS , LEAD ABATEMENT	ALLOWANCE PROVIDED BY AEP				750,000
99.0	PHASE I - OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 114,542,900	$ 63,264,100	$ 155,940,400	$ 334,497,400
	PHASE I - OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 6,435,100	$ 12,169,600	$ 52,801,800	$ 71,406,600

Sargent & Lundy, LLC

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

Estimate No.: 30715B
Project No.: 12721-000
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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
	PHASE I - OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 120,978,000	$ 75,433,700	$ 208,742,200	$ 405,904,000
	INDIRECT COSTS - PHASE I					$ -
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES					$ 28,000,000
	CONSTRUCTION MANAGEMENT					$ 12,177,100
	S-U / COMMISSIONING					$ 4,059,000
	CRAFT START-UP SUPPORT					$ 1,837,400
	INITIAL FILLS					$ 1,217,700
	OPERATOR & TRAINING MANUALS					$ 300,000
	SUBCONTRACTORS (NOISE & DUCTWORK CONSULTANT,					$ 400,000
	OWNERS COST - % of ACCT NOS. 92, 93.1, 93.2, 93.3, 93.4					$ -
	TOTAL PHASE I DIRECT AND INDIRECT COSTS					$ 453,895,200
	SPARE PARTS FOR THE OEM & THE BOP EQUIPMENT - PHASE I					$ 1,572,700
	SPARE PARTS FOR THE OEM EQUIPMENT	0.8				$ 975,074
	SPARE PARTS FOR THE BOP EQUIPMENT	0.5				$ 597,626
	CONTINGENCY - PHASE I	14.8				$ 67,481,600
	ESCALATION - PHASE I					$ 41,213,900
	EQUIPMENT					$ 12,625,200
	MATERIAL					$ 5,413,700
	LABOR					$ 18,842,900
	INDIRECTS					$ 4,332,100
	INTEREST DURING CONSTRUCTION (AFUDC)	BY AEP				$ -
	PHASE I - TOTAL PROJECT COST					$ 564,163,400
	PHASE II - WET FGD					

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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		$ 4,800	$ 1,700	$ 13,200	$ 19,700
20.4	CONVEYOR STRUCTURE SUPPORT STEEL	THREE-COAT SHOP PAINT	$ -	$ 290,000	$ 291,800	$ 581,800
20.5	CONVEYOR SUPPORT STEEL - FOUNDATIONS		$ -	$ 16,000	$ 45,500	$ 61,500
20.6	LIMESTONE TRANSFER TOWER - FOUNDATIONS		$ -	$ 15,400	$ 28,200	$ 43,600
20.7	LIMESTONE TRANSFER CONVEYOR - FOUNDATIONS		$ -	$ 62,000	$ 116,600	$ 178,600
20.8	LIMESTONE RECLAIM HOPPER, CONVEYOR TUNNEL AND ESCAPE TUNNEL - FOUNDATIONS		$ -	$ 542,000	$ 1,330,800	$ 1,872,800
20.9	LIMESTONE UNLOADING PDC - FOUNDATIONS		$ -	$ 24,100	$ 42,000	$ 66,100
20.10	LIMESTONE UNLOADING PDC - CONCRETE PIERS	10 PIERS	$ -	$ 6,900	$ 20,600	$ 27,500
20.11	LIMESTONE RECLAIM PDC - FOUNDATIONS		$ -	$ 16,800	$ 30,100	$ 46,900
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		$ -	$ 130,600	$ 715,400	$ 846,000
20.22	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	$ -	$ 140,800	$ 395,100	$ 535,900

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20.23	DUCT BANK	DUCT BANK WITH 6-5" & 6-3" CONDUIT	$ -	$ 26,600	$ 240,500	$ 267,100
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 6,283,800	$ 3,026,800	$ 10,647,800	$ 19,958,400
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 314,200	$ 771,800	$ 4,081,400	$ 5,167,400
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIMESTONE HANDLING SYSTEM	$ 6,598,000	$ 3,798,600	$ 14,729,200	$ 25,125,800
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	PIPING - MECHANICAL		$ 278,900	$ 205,000	$ 587,300	$ 1,071,200
21.3	LIMESTONE SLURRY TANKS - FOUNDATIONS		$ -	$ 166,400	$ 278,300	$ 444,700
21.4	REAGENT PREPARATION BUILDING - FOUNDATIONS		$ -	$ 674,900	$ 1,060,900	$ 1,735,800
21.5	REAGENT PREPARATION BUILDING	120' L X 129' W X 130' H	$ 269,400	$ 4,812,500	$ 4,210,100	$ 9,292,000
21.6	PIPE SUPPORT PAD - REAGENT PREP BUILDING		$ -	$ 13,800	$ 24,900	$ 38,700
21.7	LIGHTING/ TRANSFORMERS & PANELS		$ 52,000	$ 135,000	$ 104,500	$ 291,500
21.8	GROUNDING		$ 5,100	$ -	$ 13,400	$ 18,500
21.9	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE ARE INCLUDED IN SECTION 28.0 - ABSORBER ISLAND	$ -	$ -	$ -	$ -
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 14,035,400	$ 6,007,600	$ 17,687,500	$ 37,730,500
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 701,800	$ 1,531,900	$ 6,779,500	$ 9,013,200
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	REAGENT (LIMESTONE) PREPARATION ISLAND	$ 14,737,200	$ 7,539,500	$ 24,467,000	$ 46,743,700
22.0	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE					

Sargent & Lundy, LLC	AEP BIG SANDY UNIT 2 FGD PROJECT -IAQCS (ESP)-3A - 3.0 LB/MM BTU - PHASED COST ESTIMATE SUMMARY	Estimate No.: Project No.: Date: Preparer: Reviewer: Approver:	30715B 12721-000 9/12/2010 MNO JMK PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
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	$ 47,600	$ 73,600
22.10	MAINTENANCE STORAGE TANK & PUMPS - FOUNDATIONS		$ -	$ 100,000	$ 163,900	$ 263,900
22.11	LANDFILL SERVICE WATER TANKS & PUMP - FOUNDATIONS		$ -	$ 80,900	$ 141,700	$ 222,600
22.12	LANDFILL RECLAIM WATER TANKS & PUMPS - FOUNDATIONS		$ -	$ 26,000	$ 47,600	$ 73,600
22.13	HYDROCLONE FEED TANKS & BLEED TANKS - FOUNDATIONS	TOTAL FOR HYDROCLONE AND BLEED TANKS	$ -	$ 340,200	$ 577,200	$ 917,400
22.14	BYPRODUCT STACKOUT CONVEYOR & TRANSFER TOWER - FOUNDATIONS		$ -	$ 16,100	$ 31,700	$ 47,800
22.15	BYPRODUCT STACKOUT PILE - FOUNDATIONS	INCLUDES CONTAINMENT AREA SLAB	$ -	$ 891,700	$ 1,364,300	$ 2,256,000
22.16	PIPE RACK	SUPPORTS AT 15' C/C	$ -	$ 60,800	$ 125,100	$ 185,900
22.17	BYPRODUCT CONTAINMENT WALLS		$ -	$ 137,300	$ 224,400	$ 361,700

Sargent & Lundy, LLC	AEP BIG SANDY UNIT 2 FGD PROJECT -IAQCS (ESP)-3A - 3.0 LB/MM BTU - PHASED COST ESTIMATE SUMMARY	Estimate No.: Project No.: Date: Preparer: Reviewer: Approver:	30715B 12721-000 9/12/2010 MNO JMK PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
22.18	INSTALL WIND SCREEN		$ -	$ 525,000	$ 192,300	$ 717,300
22.19	BYPRODUCT DEWATERING BUILDING - FOUNDATIONS		$ -	$ 288,700	$ 451,900	$ 740,600
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	$ 34,000	$ 52,300
22.22	AUXILIARY PUMPHOUSE BUILDING WITH ELECTRICAL ROOM - FOUNDATIONS		$ -	$ 32,300	$ 56,300	$ 88,600
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		$ -	$ 6,300	$ 10,300	$ 16,600
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

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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
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
22.56	FOUNDATIONS FOR TRANSFORMERS		$ -	$ 70,200	$ 183,600	$ 253,800
22.57	FIREWALL FOR TRANSFORMERS		$ -	$ 3,200	$ 8,300	$ 11,500
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 11,277,800	$ 16,063,200	$ 30,765,700	$ 58,106,700
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 563,900	$ 4,096,100	$ 11,792,100	$ 16,452,100

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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)	$ 11,841,700	$ 20,159,300	$ 42,557,800	$ 74,558,800
23.0	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	LABOR COST REFLECTS DIFFICULTY FACTOR WORKING WITH C276 VS. A2205	$ -	$ 14,940,000	$ 7,636,100	$ 22,576,100
23.3	EMERGENCY DIESEL DRIVEN QUENCH PUMP	WITH FUEL DAY TANK. FOUNDATIONS INCLUDED WITH ABSORBER BUILDING FOUNDATIONS	$ 150,000	$ -	$ 30,700	$ 180,700
23.4	PIPING - MECHANICAL	ALL PIPING INCLUDED IN OEM EQUIPMENT COST. NO BOP PIPING	$ -	$ -	$ -	$ -
23.5	ABSORBER VESSEL - FOUNDATIONS		$ -	$ 366,900	$ 609,400	$ 976,300
23.6	ABSORBER BUILDING - FOUNDATIONS		$ -	$ 564,200	$ 884,300	$ 1,448,500
23.7	ABSORBER BUILDING	150' L X 89' W X 60' H	$ 164,500	$ 2,583,100	$ 2,368,200	$ 5,115,800
23.8	PIPE SUPPORT PAD - ABSORBER BUILDING		$ -	$ 7,700	$ 14,100	$ 21,800
23.9	OXIDATION AIR BLOWER BUILDING - FOUNDATIONS		$ -	$ 37,000	$ 63,200	$ 100,200

Sargent & Lundy, LLC	AEP BIG SANDY UNIT 2 FGD PROJECT -IAQCS (ESP)-3A - 3.0 LB/MM BTU - PHASED COST ESTIMATE SUMMARY	Estimate No.: Project No.: Date: Preparer: Reviewer: Approver:	30715B 12721-000 9/12/2010 MNO JMK PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
23.10	OXIDATION AIR BLOWER BUILDING	30' L X 30' W X 25' H	$ 33,800	$ 191,000	$ 201,400	$ 426,200
23.11	PIPE SUPPORT PAD - OXIDATION BUILDING		$ -	$ 7,700	$ 13,100	$ 20,800
23.12	DUCTWORK	INCLUDES INTERNAL BRACING AND TURNING VANES	$ -	$ 520,000	$ 1,191,900	$ 1,711,900
23.13	DUCT SUPPORT STEEL	THREE-COAT SHOP PAINT	$ -	$ 232,000	$ 233,400	$ 465,400
23.14	DUCTWORK INSULATION & LAGGING		$ -	$ 147,000	$ 287,900	$ 434,900
23.15	FOUNDATIONS FOR DUCT SUPPORT STEEL		$ -	$ 27,800	$ 49,300	$ 77,100
23.16	TRANSFORMERS		$ 981,000	$ -	$ 209,300	$ 1,190,300
23.17	SWITCHGEAR		$ 1,162,800	$ -	$ 673,700	$ 1,836,500
23.18	CABLE BUS & TERMINATIONS		$ 867,100	$ 46,600	$ 1,634,100	$ 2,547,800
23.19	MCC		$ 216,300	$ -	$ 11,100	$ 227,400
23.20	MIMIC PANELS		$ 35,000	$ -	$ 7,900	$ 42,900
23.21	GROUNDING		$ 16,000	$ -	$ 46,100	$ 62,100
23.22	LIGHTING/ TRANSFORMERS & PANELS		$ 164,500	$ 165,000	$ 171,300	$ 500,800
23.23	EMERGENCY POWER SYSTEM		$ 108,300	$ -	$ 24,400	$ 132,700
23.24	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 1,388,600	$ 5,513,200	$ 6,901,800
23.25	HIGH VOLTAGE POWER CABLE & TERMINATION		$ -	$ 41,700	$ 117,600	$ 159,300
23.26	MEDIUM VOLTAGE POWER CABLE & TERMINATION		$ -	$ 92,100	$ 302,400	$ 394,500
23.27	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 566,000	$ 810,600	$ 1,376,600
23.28	CONTROL & INSTRUMENT CABLE		$ -	$ 512,000	$ 1,436,700	$ 1,948,700
23.29	FOUNDATION FOR TRANSFORMERS		$ -	$ 59,000	$ 173,700	$ 232,700
23.30	TRANSFORMER FIRE WALLS		$ -	$ 3,500	$ 9,600	$ 13,100
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 44,928,300	$ 22,498,900	$ 65,419,900	$ 132,847,100
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 2,921,400	$ 5,737,200	$ 25,857,400	$ 34,516,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 47,849,700	$ 28,236,100	$ 91,277,300	$ 167,363,200
24.0	COMPRESSED AIR SYSTEM (BYPRODUCT DEWATERING AREA)					
25.0	POTABLE WATER SYSTEM					
25.1	PIPING - MECHANICAL		$ 21,300	$ 3,000	$ 38,700	$ 63,000
25.2	TANKS		$ -	$ 8,500	$ -	$ 8,500

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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
25.3	POTABLE WATER TANK & PUMP - FOUNDATIONS		$ -	$ 5,200	$ 8,800	$ 14,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 21,300	$ 16,700	$ 47,500	$ 85,500
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 1,100	$ 4,300	$ 18,100	$ 23,400
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	POTABLE WATER SYSTEM	$ 22,400	$ 21,000	$ 65,600	$ 108,900
26.0	FGD SUBSTATION					
27.0	FGD DCS SYSTEM					
27.1	DCS	4000 I/O POINTS	$ -	$ 3,000,000	$ 1,016,900	$ 4,016,900
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
28.8	EROSION & SEDIMENT CONTROL		$ -	$ 1,200	$ 1,700	$ 2,900
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 3,000	$ 966,500	$ 1,307,400	$ 2,276,900
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 200	$ 246,500	$ 501,400	$ 748,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SITE IMPROVEMENTS - CIVIL WORK	$ 3,200	$ 1,213,000	$ 1,808,800	$ 3,024,900
29.0	BOP ITEMS					

Sargent & Lundy, LLC

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

Estimate No.: 30715B
Project No.: 12721-000
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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
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)		$ -	$ 165,100	$ 633,300	$ 798,400
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	$ 16,700	$ 25,300
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
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 180,000	$ 1,150,300	$ 2,238,700	$ 3,569,000
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 9,000	$ 293,327	$ 858,418	$ 1,160,745
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BOP ITEMS	$ 189,000	$ 1,443,600	$ 3,097,100	$ 4,729,700
0.0	0.0					
0.0	0.0	0.0	$ -	$ -	$ -	$ -
99.0	PHASE II - OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 78,851,900	$ 53,947,700	$ 131,630,500	$ 264,430,100
	PHASE II - OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 4,617,600	$ 13,756,700	$ 51,236,300	$ 69,610,600
	PHASE II - OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 83,469,500	$ 67,704,400	$ 182,866,800	$ 334,040,700
	INDIRECT COSTS - PHASE II					
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES					$ 23,000,000
	CONSTRUCTION MANAGEMENT					$ 10,021,200
	S-U / COMMISSIONING					$ 3,340,400
	CRAFT START-UP SUPPORT					$ 1,551,600
	INITIAL FILLS					$ 1,002,100
	OPERATOR & TRAINING MANUALS					$ 300,000
	SUBCONTRACTORS (NOISE CONSULTANT)					$ 100,000
	OWNERS COST - % of ACCT NOS. 92, 93.1, 93.2, 93.3, 93.4					$ -

Sargent & Lundy, LLC

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

Estimate No.: 30715B
Project No.: 12721-000
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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
	TOTAL PHASE II DIRECT AND INDIRECT COSTS					$ 373,356,000
	SPARE PARTS FOR THE OEM & THE BOP EQUIPMENT - PHASE II					$ 1,085,100
	SPARE PARTS FOR THE OEM EQUIPMENT	0.80				$ 542,550
	SPARE PARTS FOR THE BOP EQUIPMENT	0.50				$ 542,550
	CONTINGENCY - PHASE II.	15.7				$ 58,901,500
	ESCALATION - PHASE II					$ 85,284,800
	EQUIPMENT					$ 20,985,200
	MATERIAL					$ 12,411,400
	LABOR					$ 42,706,500
	INDIRECTS					$ 9,181,700
	INTEREST DURING CONSTRUCTION (AFUDC)					$ -
	PHASE II - TOTAL PROJECT COST					$ 518,627,400
	OVERALL PROJECT INDIRECT COSTS (PHASE I + PHASE II)					
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES					$ 51,000,000
	CONSTRUCTION MANAGEMENT					$ 22,198,300
	S-U / COMMISSIONING					$ 7,399,400
	CRAFT START-UP SUPPORT					$ 3,389,000
	INITIAL FILLS					$ 2,219,800
	OPERATOR & TRAINING MANUALS					$ 600,000
	SUBCONTRACTORS (PHASE I - NOISE & DUCTWORK CONSULTANT, GEOTECHNICAL INVESTIGATION, PHASE II - NOISE CONSULTANT ONLY)					$ 500,000
	OWNERS COST	BY AEP				$ -
	OVERALL PROJECT DIRECT AND INDIRECT COSTS (PHASE I + PHASE II)					$ 827,251,200

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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
	SPARE PARTS FOR THE OEM & THE BOP EQUIPMENT (PHASE I + PHASE II)					$ 2,657,800
	SPARE PARTS FOR THE OEM EQUIPMENT					$ 1,328,900
	SPARE PARTS FOR THE BOP EQUIPMENT					$ 1,328,900
	CONTINGENCY (PHASE I + PHASE II)					$ 126,383,100
	ESCALATION (PHASE I + PHASE II)					$ 126,498,700
	EQUIPMENT					$ 33,610,400
	MATERIAL					$ 17,825,100
	LABOR					$ 61,549,400
	INDIRECTS					$ 13,513,800
	INTEREST DURING CONSTRUCTION (AFUDC) (PHASE I + PHASE II)	BY AEP				
	TOTAL PROJECT COST (PHASE I + PHASE II)					$ 1,082,790,800

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

Estimate No.: 30719B
Project No.: 12721-000
Date: 9/12/2010
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
1.0	ID FANS					
2.0	FABRIC FILTERS					
3.0	NEW STACK					
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	$ 158,400	$ 243,700
4.7	LIME UNLOADING BLOWER / ELECTRICAL BUILDING - FOUNDATIONS		$ -	$ 160,700	$ 281,500	$ 442,200
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	$ 774,300	$ 1,243,900
4.11	LIME STORAGE SILO ACCESS STAIR TOWER - FOUNDATIONS	0	$ -	$ 14,200	$ 26,200	$ 40,400
4.12	PIPE RACK - FOUNDATIONS		$ -	$ 94,200	$ 208,200	$ 302,400
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

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4.20	LIGHTING/ TRANSFORMERS & PANELS		$ 52,000	$ 135,000	$ 104,500	$ 291,500
4.21	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 296,400	$ 1,429,900	$ 1,726,300
4.22	HIGH VOLTAGE POWER CABLE & TERMINATION	1/C # 500KCMIL-15KV, 12000' UNIT 2 + 3600' LIME UNLOAD	$ -	$ 144,600	$ 407,800	$ 552,400
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
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 7,259,600	$ 2,958,200	$ 5,898,400	$ 16,116,200
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 363,000	$ 754,300	$ 2,156,300	$ 3,273,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME HANDLING SYSTEM	$ 7,622,600	$ 3,712,500	$ 8,054,700	$ 19,389,800
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	$ 278,300	$ 444,700
5.6	LIME SLAKER BUILDING - FOUNDATIONS		$ -	$ 119,200	$ 194,200	$ 313,400
5.7	LIME SLAKER BUILDING	135' L X 30' W X 50' H	$ 40,500	$ 776,800	$ 721,000	$ 1,538,300

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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	$ 1,173,800	$ 6,534,000	$ 15,891,100
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 409,200	$ 299,300	$ 2,438,400	$ 3,146,900
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME SLAKER BUILDING	$ 8,592,500	$ 1,473,100	$ 8,972,400	$ 19,038,000
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	$ 50,000	$ 327,100	$ 777,100
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
6.6	BYPRODUCT WASTE SILO	CONCRETE SILO 65' DIA X 111' H - 4700 TONS -SUBCONTRACT COST INCLUDES LABOR	$ 2,630,000	$ -	$ -	$ 2,630,000
6.7	SDA RECYCLE SILO	INCLUDED WITH OEM EQUIPMENT	$ -	$ -	$ -	$ -

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6.8	SDA FLY ASH SILO	NOT REQUIRED - ECONOMIZER FLY ASH SLUICED TO BOTTOM ASH POND	$ -	$ -	$ -	$ -
6.9	WASTE ASH STORAGE SILO - FOUNDATIONS		$ -	$ 186,400	$ 311,300	$ 497,700
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	$ 373,100	$ 607,400
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		$ -	$ 32,800	$ 177,400	$ 210,200
6.19	LOW VOLTAGE POWER CABLE & TERMINATION	#4/0 - #12 AWG-600V	$ -	$ 80,900	$ 100,600	$ 181,500
6.20	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	$ -	$ 38,400	$ 313,700	$ 352,100
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
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 5,642,300	$ 2,361,400	$ 5,249,100	$ 13,252,800
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 282,100	$ 602,200	$ 1,953,700	$ 2,838,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS	$ 5,924,400	$ 2,963,600	$ 7,202,800	$ 16,090,800
7.0	SPRAY DRYER ABSORBER ISLAND					

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8.0	ACTIVATED CARBON INJECTION SYSTEM					
9.0	COMPRESSED AIR SYSTEM					
10.0	SERVICE WATER SYSTEM					
11.0	POTABLE WATER SYSTEM					
11.1	PUMPS		$ 30,000	$ -	$ 18,400	$ 48,400
11.2	PIPING - MECHANICAL		$ 99,500	$ 235,600	$ 672,800	$ 1,007,900
11.3	TANKS		$ -	$ 8,500	$ -	$ 8,500
11.4	POTABLE WATER TANK & PUMP - FOUNDATIONS		$ -	$ 5,200	$ 8,800	$ 14,000
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	$ 691,200	$ 1,056,300
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 6,500	$ 60,100	$ 252,000	$ 318,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	POTABLE WATER SYSTEM	$ 135,975	$ 295,678	$ 943,238	$ 1,374,891
12.0	FGD SUBSTATION					
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
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

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	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
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	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
15.6	NEW CONCRETE ENCASEMENT	OVER AND AROUND DUCT BANK CONNECTING THE PLANT TO SWITCHYARD. THIS IS UNDER THE NEW TRACKWORK EXTENSION	$ -	$ 33,200	$ 67,700	$ 100,900
15.7	RAILCAR LIMESTONE UNLOADING HOPPER, CONVEYOR TUNNEL AND ESCAPE TUNNEL - FOUNDATIONS	FOR PHASE II INSTALLED IN PHASE I (FOR CONSTRUCTIBILITY)	$ -	$ 542,000	$ 1,330,800	$ 1,872,800
15.8	MECHANICAL EQUIPMENT FOR LIMESTONE UNLOAIDING 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

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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	$ 3,533,800	$ 6,554,000
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 21,600	$ 659,900	$ 1,327,600	$ 2,009,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	TRUCK & RAIL INFRASTRUCTURE	$ 453,900	$ 3,247,800	$ 4,861,400	$ 8,563,100
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	NEW CONCRETE ENCASEMENT	16' X 4' X 40' - FOR EXISTING ASH	$ -	$ 144,300	$ 262,700	$ 407,000
16.4	TRUCK WASH AREA - CONCRETE PAD		$ -	$ 41,900	$ 70,400	$ 112,300
16.5	TRUCK WASH AREA - ENCLOSURE		$ -	$ 67,400	$ 95,300	$ 162,700
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
16.10	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

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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
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 574,500	$ 2,968,000	$ 5,486,600	$ 9,029,100
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 28,700	$ 756,800	$ 1,967,100	$ 2,752,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SITE IMPROVEMENTS - CIVIL WORK	$ 603,200	$ 3,724,800	$ 7,453,700	$ 11,781,700
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	$ 19,600	$ 30,100
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

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90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 210,000	$ 1,051,800	$ 1,969,900	$ 3,231,700
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 10,500	$ 268,209	$ 750,035	$ 1,028,744
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BOP ITEMS	$ 220,500	$ 1,320,000	$ 2,719,900	$ 4,260,400
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	EROSION & SEDIMENT CONTROL		$ -	$ 30,600	$ 48,900	$ 79,500
18.5	REROUTED 138KV LINE .	TWO NEW TOWERS, NEW FOUNDATIONS, NEW OH LINES, LINE & TOWER ACCESSORIES INCLUDING INSULATORS	$ 500,000	$ -	$ 255,700	$ 755,700
18.6	OUTAGE TIE-IN DUCTWORK	ALLOWANCE FOR 85 TON DUCTWORK	$ -	$ 276,300	$ 738,700	$ 1,015,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 500,000	$ 509,600	$ 1,451,200	$ 2,460,800
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 25,000	$ 129,900	$ 514,700	$ 669,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	CAPITAL REPLACEMENTS - REMOVAL AND RELOCATION OF EXISTING EQUIPMENT AND INFRASTRUCTURE	$ 525,000	$ 639,500	$ 1,965,900	$ 3,130,400

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19.0	ARSENIC, ASBESTOS , LEAD ABATEMENT					
19.1	ARSENIC, ASBESTOS , LEAD ABATEMENT	ALLOWANCE PROVIDED BY AEP	$ -	$ -	$ -	$ 750,000
99.0	PHASE I - OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 112,943,900	$ 60,533,400	$ 150,002,900	$ 324,230,200
	PHASE I - OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 6,355,200	$ 11,473,300	$ 50,685,200	$ 68,513,700
	PHASE I - OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 119,299,100	$ 72,006,700	$ 200,688,100	$ 392,743,900
	INDIRECT COSTS - PHASE I					
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES					$ 28,000,000
	CONSTRUCTION MANAGEMENT					$ 11,782,300
	S-U / COMMISSIONING					$ 3,927,400
	CRAFT START-UP SUPPORT					$ 1,767,500
	INITIAL FILLS					$ 1,178,200
	OPERATOR & TRAINING MANUALS					$ 300,000
	SUBCONTRACTORS (NOISE & DUCTWORK CONSULTANT,					$ 400,000
	OWNERS COST - % of ACCT NOS. 92, 93.1, 93.2, 93.3, 93.4					$ -
	TOTAL PHASE I DIRECT AND INDIRECT COSTS					$ 440,099,300
	SPARE PARTS FOR THE OEM & THE BOP EQUIPMENT - PHASE I					$ 1,550,900
	SPARE PARTS FOR THE OEM EQUIPMENT	0.80				$ 961,558
	SPARE PARTS FOR THE BOP EQUIPMENT	0.50				$ 589,342
	CONTINGENCY - PHASE I	14.7				$ 65,044,900
	ESCALATION - PHASE I					$ 40,008,200
	EQUIPMENT					$ 12,450,000
	MATERIAL					$ 5,167,700

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	LABOR					$ 18,115,800
	INDIRECTS					$ 4,274,700
	INTEREST DURING CONSTRUCTION (AFUDC)	BY AEP				$ -
	PHASE I - TOTAL PROJECT COST					$ 546,703,300
	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		$ 4,800	$ 1,700	$ 13,200	$ 19,700
20.4	CONVEYOR STRUCTURE SUPPORT STEEL	THREE-COAT SHOP PAINT	$ -	$ 290,000	$ 291,800	$ 581,800
20.5	CONVEYOR SUPPORT STEEL - FOUNDATIONS		$ -	$ 16,000	$ 45,500	$ 61,500
20.6	LIMESTONE TRANSFER TOWER - FOUNDATIONS		$ -	$ 15,400	$ 28,200	$ 43,600
20.7	LIMESTONE TRANSFER CONVEYOR - FOUNDATIONS		$ -	$ 62,000	$ 116,600	$ 178,600
20.8	LIMESTONE RECLAIM HOPPER, CONVEYOR TUNNEL AND ESCAPE TUNNEL - FOUNDATIONS		$ -	$ 542,000	$ 1,330,800	$ 1,872,800
20.9	LIMESTONE UNLOADING PDC - FOUNDATIONS		$ -	$ 24,100	$ 42,000	$ 66,100
20.10	LIMESTONE UNLOADING PDC - CONCRETE PIERS	10 PIERS	$ -	$ 6,900	$ 20,600	$ 27,500
20.11	LIMESTONE RECLAIM PDC - FOUNDATIONS		$ -	$ 16,800	$ 30,100	$ 46,900
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

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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	$ 240,500	$ 267,100
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 6,283,800	$ 3,026,800	$ 10,647,800	$ 19,958,400
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 314,200	$ 771,800	$ 4,081,400	$ 5,167,400
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIMESTONE HANDLING SYSTEM	$ 6,598,000	$ 3,798,600	$ 14,729,200	$ 25,125,800
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	PIPING - MECHANICAL		$ 278,900	$ 205,000	$ 587,300	$ 1,071,200
21.3	LIMESTONE SLURRY TANKS - FOUNDATIONS		$ -	$ 166,400	$ 278,300	$ 444,700
21.4	REAGENT PREPARATION BUILDING - FOUNDATIONS		$ -	$ 674,900	$ 1,060,900	$ 1,735,800
21.5	REAGENT PREPARATION BUILDING	120' L X 129' W X 130' H	$ 269,400	$ 4,812,500	$ 4,210,100	$ 9,292,000
21.6	PIPE SUPPORT PAD - REAGENT PREP BUILDING		$ -	$ 13,800	$ 24,900	$ 38,700
21.7	LIGHTING/ TRANSFORMERS & PANELS		$ 52,000	$ 135,000	$ 104,500	$ 291,500
21.8	GROUNDING		$ 5,100	$ -	$ 13,400	$ 18,500
21.9	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE ARE INCLUDED IN SECTION 28.0 - ABSORBER ISLAND	$ -	$ -	$ -	$ -
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 14,035,400	$ 6,007,600	$ 17,687,500	$ 37,730,500
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 701,800	$ 1,531,900	$ 6,779,500	$ 9,013,200

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	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	REAGENT (LIMESTONE) PREPARATION ISLAND	$ 14,737,200	$ 7,539,500	$ 24,467,000	$ 46,743,700
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	$ 47,600	$ 73,600
22.10	MAINTENANCE STORAGE TANK & PUMPS - FOUNDATIONS		$ -	$ 100,000	$ 163,900	$ 263,900
22.11	LANDFILL SERVICE WATER TANKS & PUMP - FOUNDATIONS		$ -	$ 80,900	$ 141,700	$ 222,600
22.12	LANDFILL RECLAIM WATER TANKS & PUMPS - FOUNDATIONS		$ -	$ 26,000	$ 47,600	$ 73,600
22.13	HYDROCLONE FEED TANKS & BLEED TANKS - FOUNDATIONS	TOTAL FOR HYDROCLONE AND BLEED TANKS	$ -	$ 340,200	$ 577,200	$ 917,400
22.14	BYPRODUCT STACKOUT CONVEYOR & TRANSFER TOWER -		$ -	$ 16,100	$ 31,700	$ 47,800
22.15	BYPRODUCT STACKOUT PILE - FOUNDATIONS	INCLUDES CONTAINMENT AREA SLAB	$ -	$ 891,700	$ 1,364,300	$ 2,256,000
22.16	PIPE RACK	SUPPORTS AT 15' C/C	$ -	$ 60,800	$ 125,100	$ 185,900
22.17	BYPRODUCT CONTAINMENT WALLS		$ -	$ 137,300	$ 224,400	$ 361,700
22.18	INSTALL WIND SCREEN		$ -	$ 525,000	$ 192,300	$ 717,300

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22.19	BYPRODUCT DEWATERING BUILDING - FOUNDATIONS		$ -	$ 288,700	$ 451,900	$ 740,600
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	$ 34,000	$ 52,300
22.22	AUXILIARY PUMPHOUSE BUILDING WITH ELECTRICAL ROOM		$ -	$ 32,300	$ 56,300	$ 88,600
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		$ -	$ 6,300	$ 10,300	$ 16,600
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	$ 183,600	$ 253,800
22.57	FIREWALL FOR TRANSFORMERS		$ -	$ 3,200	$ 8,300	$ 11,500
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 11,277,800	$ 16,063,200	$ 30,765,700	$ 58,106,700
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 563,900	$ 4,096,100	$ 11,792,100	$ 16,452,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT DEWATERING ISLAND (INCLUDES REMOTE GYPSUM HANDLING AREA)	$ 11,841,700	$ 20,159,300	$ 42,557,800	$ 74,558,800
23.0	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

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23.2	ADDITIONAL COST FOR C276 ABSORBER SHELL MATERIAL ABOVE THE PRICE OF A2205 ABSORBER SHELL	LABOR COST REFLECTS DIFFICULTY FACTOR WORKING WITH C276 VS. A2205	$ -	$ 14,940,000	$ 7,636,100	$ 22,576,100
23.3	EMERGENCY DIESEL DRIVEN QUENCH PUMP	WITH FUEL DAY TANK.	$ 150,000	$ -	$ 30,700	$ 180,700
23.4	PIPING - MECHANICAL	ALL PIPING INCLUDED IN OEM EQUIPMENT COST. NO BOP PIPING	$ -	$ -	$ -	$ -
23.5	ABSORBER VESSEL - FOUNDATIONS		$ -	$ 366,900	$ 609,400	$ 976,300
23.6	ABSORBER BUILDING - FOUNDATIONS		$ -	$ 564,200	$ 884,300	$ 1,448,500
23.7	ABSORBER BUILDING	150' L X 89' W X 60' H	$ 164,500	$ 2,583,100	$ 2,368,200	$ 5,115,800
23.8	PIPE SUPPORT PAD - ABSORBER BUILDING		$ -	$ 7,700	$ 14,100	$ 21,800
23.9	OXIDATION AIR BLOWER BUILDING - FOUNDATIONS		$ -	$ 37,000	$ 63,200	$ 100,200
23.10	OXIDATION AIR BLOWER BUILDING	30' L X 30' W X 25' H	$ 33,800	$ 191,000	$ 201,400	$ 426,200
23.11	PIPE SUPPORT PAD - OXIDATION BUILDING		$ -	$ 7,700	$ 13,100	$ 20,800
23.12	DUCTWORK	INCLUDES INTERNAL BRACING AND TURNING VANES	$ -	$ 520,000	$ 1,191,900	$ 1,711,900
23.13	DUCT SUPPORT STEEL	THREE-COAT SHOP PAINT	$ -	$ 232,000	$ 233,400	$ 465,400
23.14	DUCTWORK INSULATION & LAGGING		$ -	$ 147,000	$ 287,900	$ 434,900
23.15	FOUNDATIONS FOR DUCT SUPPORT STEEL		$ -	$ 27,800	$ 49,300	$ 77,100
23.16	TRANSFORMERS		$ 981,000	$ -	$ 209,300	$ 1,190,300
23.17	SWITCHGEAR		$ 1,162,800	$ -	$ 673,700	$ 1,836,500
23.18	CABLE BUS & TERMINATIONS		$ 867,100	$ 46,600	$ 1,634,100	$ 2,547,800
23.19	MCC		$ 216,300	$ -	$ 11,100	$ 227,400
23.20	MIMIC PANELS		$ 35,000	$ -	$ 7,900	$ 42,900
23.21	GROUNDING		$ 16,000	$ -	$ 46,100	$ 62,100
23.22	LIGHTING/ TRANSFORMERS & PANELS		$ 164,500	$ 165,000	$ 171,300	$ 500,800
23.23	EMERGENCY POWER SYSTEM		$ 108,300	$ -	$ 24,400	$ 132,700
23.24	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 1,388,600	$ 5,513,200	$ 6,901,800
23.25	HIGH VOLTAGE POWER CABLE & TERMINATION		$ -	$ 41,700	$ 117,600	$ 159,300
23.26	MEDIUM VOLTAGE POWER CABLE & TERMINATION		$ -	$ 92,100	$ 302,400	$ 394,500
23.27	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 566,000	$ 810,600	$ 1,376,600
23.28	CONTROL & INSTRUMENT CABLE		$ -	$ 512,000	$ 1,436,700	$ 1,948,700
23.29	FOUNDATION FOR TRANSFORMERS		$ -	$ 59,000	$ 173,700	$ 232,700

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23.30	TRANSFORMER FIRE WALLS		$ -	$ 3,500	$ 9,600	$ 13,100
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 44,928,300	$ 22,498,900	$ 65,419,900	$ 132,847,100
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 2,921,400	$ 5,737,200	$ 25,857,400	$ 34,516,100
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 47,849,700	$ 28,236,100	$ 91,277,300	$ 167,363,200
24.0	COMPRESSED AIR SYSTEM (BYPRODUCT DEWATERING					
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	$ 8,800	$ 14,000
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 21,300	$ 16,700	$ 47,500	$ 85,500
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT		$ 1,100	$ 4,300	$ 18,100	$ 23,400
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	POTABLE WATER SYSTEM	$ 22,400	$ 21,000	$ 65,600	$ 108,900
26.0	FGD SUBSTATION					
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	$ 121,300	$ 184,800
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 1,376,000	$ 223,700	$ 727,200	$ 2,326,900
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 68,800	$ 57,000	$ 278,499	$ 404,300
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 1,444,800	$ 280,700	$ 1,005,700	$ 2,731,200
27.0	FGD DCS SYSTEM					
27.1	DCS	4000 I/O POINTS	$ -	$ 3,000,000	$ 1,016,900	$ 4,016,900
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

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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		$ 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
28.8	EROSION & SEDIMENT CONTROL		$ -	$ 1,200	$ 1,700	$ 2,900
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 3,000	$ 966,500	$ 1,307,400	$ 2,276,900
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 200	$ 246,500	$ 501,400	$ 748,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	SITE IMPROVEMENTS - CIVIL WORK	$ 3,200	$ 1,213,000	$ 1,808,800	$ 3,024,900
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)		$ -	$ 165,100	$ 633,300	$ 798,400
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	$ 16,700	$ 25,300
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
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 180,000	$ 1,150,300	$ 2,238,700	$ 3,569,000
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 9,000	$ 293,327	$ 858,418	$ 1,160,745
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BOP ITEMS	$ 189,000	$ 1,443,600	$ 3,097,100	$ 4,729,700
0.0	0.0					

Sargent & Lundy, LLC

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

Estimate No.: 30719B
Project No.: 12721-000
Date: 9/12/2010
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
0.0	0.0	0.0	$ -	$ -	$ -	$ -
99.0	PHASE II - OVERALL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 78,851,900	$ 53,947,700	$ 131,630,500	$ 264,430,100
	PHASE II - OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 4,617,600	$ 13,756,700	$ 51,236,300	$ 69,610,600
	PHASE II - OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 83,469,500	$ 67,704,400	$ 182,866,800	$ 334,040,700
	INDIRECT COSTS - PHASE II					
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES					$ 23,000,000
	CONSTRUCTION MANAGEMENT					$ 10,021,200
	S-U / COMMISSIONING					$ 3,340,400
	CRAFT START-UP SUPPORT					$ 1,551,600
	INITIAL FILLS					$ 1,002,100
	OPERATOR & TRAINING MANUALS					$ 300,000
	SUBCONTRACTORS (NOISE CONSULTANT)					$ 100,000
	OWNERS COST - % of ACCT NOS. 92, 93.1, 93.2, 93.3, 93.4					$ -
	TOTAL PHASE II DIRECT AND INDIRECT COSTS					$ 373,356,000
	SPARE PARTS FOR THE OEM & THE BOP EQUIPMENT -					$ 1,085,100
	SPARE PARTS FOR THE OEM EQUIPMENT	0.80				$ 672,762
	SPARE PARTS FOR THE BOP EQUIPMENT	0.50				$ 412,338
	CONTINGENCY - PHASE II.	15.8				$ 59,275,700
	ESCALATION - PHASE II					$ 85,284,800
	EQUIPMENT					$ 20,985,200
	MATERIAL					$ 12,411,400
	LABOR					$ 42,706,500
	INDIRECTS					$ 9,181,700

Sargent & Lundy, LLC

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

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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
	INTEREST DURING CONSTRUCTION (AFUDC)					$ -
	PHASE II - TOTAL PROJECT COST					$ 519,001,600
	OVERALL PROJECT INDIRECT COSTS (PHASE I + PHASE II)					
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES					$ 51,000,000
	CONSTRUCTION MANAGEMENT					$ 21,803,500
	S-U / COMMISSIONING					$ 7,267,800
	CRAFT START-UP SUPPORT					$ 3,319,100
	INITIAL FILLS					$ 2,180,300
	OPERATOR & TRAINING MANUALS					$ 600,000
	SUBCONTRACTORS (PHASE I - NOISE & DUCTWORK CONSULTANT, GEOTECHNICAL INVESTIGATION, PHASE II - NOISE CONSULTANT ONLY)					$ 500,000
	OWNERS COST	BY AEP				$ -
	OVERALL PROJECT DIRECT AND INDIRECT COSTS (PHASE I + PHASE II)					$ 813,455,300
	SPARE PARTS FOR THE OEM & THE BOP EQUIPMENT (PHASE I + PHASE II)					$ 2,636,000
	SPARE PARTS FOR THE OEM EQUIPMENT					$ 1,634,320
	SPARE PARTS FOR THE BOP EQUIPMENT					$ 1,001,680
	CONTINGENCY (PHASE I + PHASE II)					$ 124,320,600
	ESCALATION (PHASE I + PHASE II)					$ 125,293,000
	EQUIPMENT					$ 33,435,200
	MATERIAL					$ 17,579,100
	LABOR					$ 60,822,300

Sargent & Lundy, LLC

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

Estimate No.: 30719B
Project No.: 12721-000
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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
	INDIRECTS					$ 13,456,400
	INTEREST DURING CONSTRUCTION (AFUDC) (PHASE I + PHASE II)	BY AEP				
	TOTAL PROJECT COST (PHASE I + PHASE II)					$ 1,065,704,900
	REFERENCE COSTS:					
A	ESP DEMOLITION	ALLOWANCE FOR 1000T STRUCTURE	$ -	$ -	$ 832,300	$ 832,300
B	REMOVE BOOSTER AIR FANS		$ -	$ -	$ 111,000	$ 111,000

ATTACHMENT 4-20
IAQCS Summary Capital Cost Estimate No. 30717 Est-4A ESP in Service (7.5 lb SO_2/MMbtu)

Sargent & Lundy, LLC	AEP BIG SANDY UNIT 2 FGD PROJECT - IAQCS (ESP)-4A - 7.5 LB/MM BTU - NON PHASED COST ESTIMATE SUMMARY	Estimate No.: Project No.: Date: Preparer: Reviewer: Approver:	30717B 12721-000 9/12/2010 MNO JMK PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
1.0	ID FANS					
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	$ 973,600	$ 1,524,300
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	LIGHT FIXTURE		$ -	$ 16,500	$ 10,000	$ 26,500
2.10	GROUNDING		$ 7,300	$ -	$ 17,500	$ 24,800
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 21,697,400	$ 3,019,600	$ 17,133,700	$ 41,850,700
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 1,084,900	$ 770,000	$ 6,364,900	$ 8,219,800
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FABRIC FILTERS	$ 22,782,300	$ 3,789,600	$ 23,498,600	$ 50,070,500
3.0	NEW STACK					
4.0	LIME HANDLING SYSTEM					

Sargent & Lundy, LLC

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

Estimate No.: 30717B
Project No.: 12721-000
Date: 9/12/2010
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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
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	$ -	$ 286,200	$ 636,200
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	$ 42,600	$ 65,200
4.7	LIME UNLOADING BLOWER / ELECTRICAL BUILDING - FOUNDATIONS		$ -	$ 80,600	$ 132,200	$ 212,800
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	$ 151,600	$ 238,700
4.11	LIME STORAGE SILO ACCESS STAIR TOWER - FOUNDATIONS		$ -	$ 10,700	$ 20,300	$ 31,000
4.12	PIPE RACK - FOUNDATIONS		$ -	$ 94,200	$ 208,200	$ 302,400
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	$ -	$ 99,300	$ 423,500	$ 522,800
4.24	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 93,000	$ 143,200	$ 236,200
4.25	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	$ -	$ 57,600	$ 161,600	$ 219,200
4.26	DUCT BANK	6-5" & 6-3" CONDUITS	$ -	$ 26,600	$ 52,500	$ 79,100

Sargent & Lundy, LLC	AEP BIG SANDY UNIT 2 FGD PROJECT - IAQCS (ESP)-4A - 7.5 LB/MM BTU - NON PHASED COST ESTIMATE SUMMARY	Estimate No.: Project No.: Date: Preparer: Reviewer: Approver:	30717B 12721-000 9/12/2010 MNO JMK 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	$ 10,300	$ 15,600
4.28	FIREWALL FOR TRANSFORMERS		$ -	$ -	$ -	$ -
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 2,597,600	$ 2,306,700	$ 4,829,700	$ 9,734,000
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 129,900	$ 588,200	$ 1,740,600	$ 2,458,700
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME HANDLING SYSTEM	$ 2,727,500	$ 2,894,900	$ 6,570,300	$ 12,192,700
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	$ 278,300	$ 444,700
5.6	LIME SLAKER BUILDING - FOUNDATIONS		$ -	$ 119,200	$ 194,200	$ 313,400
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	$ 4,933,300	$ 9,529,900
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 169,800	$ 306,100	$ 1,841,700	$ 2,317,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME SLAKER BUILDING	$ 3,566,100	$ 1,506,400	$ 6,775,000	$ 11,847,500

Sargent & Lundy, LLC	AEP BIG SANDY UNIT 2 FGD PROJECT - IAQCS (ESP)-4A - 7.5 LB/MM BTU - NON PHASED COST ESTIMATE SUMMARY	Estimate No.: Project No.: Date: Preparer: Reviewer: Approver:	30717B 12721-000 9/12/2010 MNO JMK PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
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 BYPRODUCT SILO	INCLUDED WITH OEM EQUIPMENT	$ -	$ -	$ -	$ -
6.8	FLY ASH SILO	6T STEEL -STORAGE SILO, 10' DIA X 12' H	$ 55,000	$ 17,400	$ 66,200	$ 138,600
6.9	BYPRODUCT WASTE SILO - FOUNDATIONS		$ -	$ 23,200	$ 45,800	$ 69,000
6.10	FLY ASH SILO - FOUNDATIONS		$ -	$ 4,300	$ 10,200	$ 14,500
6.11	FLY ASH BLOWER AND ELECTRICAL BUILDING - FOUNDATIONS		$ -	$ 49,600	$ 93,200	$ 142,800
6.12	FLY ASH BLOWER AND ELECTRICAL BUILDING	90' L X 30' W X 25' H	$ 75,000	$ 276,500	$ 24,400	$ 375,900
6.13	RECYCLE ASH BUILDING - FOUNDATIONS		$ -	$ 234,300	$ 373,100	$ 607,400
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

Sargent & Lundy, LLC

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

Estimate No.: 30717B
Project No.: 12721-000
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Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
6.19	GROUNDING		$ -	$ 4,500	$ 10,900	$ 15,400
6.20	MEDIUM VOLTAGE POWER CABLE & TERMINATION	1/C # 350KCMIL-5KV	$ -	$ 25,700	$ 109,800	$ 135,500
6.21	LOW VOLTAGE POWER CABLE & TERMINATION	#4/0 - #12 AWG-600V	$ -	$ 73,600	$ 91,600	$ 165,200
6.22	CONTROL & INSTRUMENT CABLE		$ -	$ 54,400	$ 444,400	$ 498,800
6.23	DUCT BANK		$ -	$ 109,700	$ 268,900	$ 378,600
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 4,724,300	$ 2,588,700	$ 6,525,600	$ 13,838,600
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 236,200	$ 660,100	$ 2,409,700	$ 3,306,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS	$ 4,960,500	$ 3,248,800	$ 8,935,300	$ 17,144,600
7.0	SPRAY DRYER ABSORBER ISLAND					
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					
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					

Sargent & Lundy, LLC	AEP BIG SANDY UNIT 2 FGD PROJECT - IAQCS (ESP)-4A - 7.5 LB/MM BTU - NON PHASED COST ESTIMATE SUMMARY	Estimate No.: Project No.: Date: Preparer: Reviewer: Approver:	30717B 12721-000 9/12/2010 MNO JMK PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
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		$ 9,600	$ 3,400	$ 26,400	$ 39,400
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	$ 1,330,800	$ 1,872,800
17.6	CONVEYOR SUPPORT STEEL - FOUNDATIONS		$ -	$ 16,000	$ 45,500	$ 61,500
17.7	LIMESTONE TRANSFER TOWER - FOUNDATIONS		$ -	$ 15,400	$ 28,200	$ 43,600
17.8	LIMESTONE TRANSFER CONVEYOR - FOUNDATIONS		$ -	$ 62,000	$ 116,600	$ 178,600
17.9	LIMESTONE RECLAIM HOPPER, CONVEYOR TUNNEL AND ESCAPE TUNNEL - FOUNDATIONS		$ -	$ 542,000	$ 1,330,800	$ 1,872,800
17.10	LIMESTONE UNLOADING PDC - FOUNDATIONS		$ -	$ 24,100	$ 42,000	$ 66,100
17.11	LIMESTONE UNLOADING PDC - CONCRETE PIERS	10 PIERS	$ -	$ 6,900	$ 20,600	$ 27,500
17.12	LIMESTONE RECLAIM PDC - FOUNDATIONS		$ -	$ 16,800	$ 30,100	$ 46,900
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
17.22	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 130,600	$ 715,400	$ 846,000

Sargent & Lundy, LLC	AEP BIG SANDY UNIT 2 FGD PROJECT - IAQCS (ESP)-4A - 7.5 LB/MM BTU - NON PHASED COST ESTIMATE SUMMARY	Estimate No.: Project No.: Date: Preparer: Reviewer: Approver:	30717B 12721-000 9/12/2010 MNO JMK PEF

Account No.	Item Description	Scope Definition	Total Equipment Cost	Total Material Cost	Total Construction & Erection Cost	Total Projected Cost
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" CONDUIT	$ -	$ 26,600	$ 240,500	$ 267,100
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 6,413,600	$ 3,570,500	$ 12,066,600	$ 22,050,700
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 320,700	$ 910,500	$ 4,624,800	$ 5,856,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIMESTONE HANDLING SYSTEM	$ 6,734,300	$ 4,481,000	$ 16,691,400	$ 27,906,700
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	PIPING - MECHANICAL		$ 278,900	$ 205,000	$ 587,300	$ 1,071,200
18.3	LIMESTONE SLURRY TANKS - FOUNDATIONS		$ -	$ 166,400	$ 278,300	$ 444,700
18.4	REAGENT PREPARATION BUILDING - FOUNDATIONS		$ -	$ 701,800	$ 1,103,100	$ 1,804,900
18.5	REAGENT PREPARATION BUILDING	120' L X 135' W X 130' H	$ 269,400	$ 4,985,000	$ 4,350,000	$ 9,604,400
18.6	PIPE SUPPORT PAD - REAGENT PREP BUILDING		$ -	$ 14,400	$ 26,100	$ 40,500
18.7	LIGHTING/ TRANSFORMERS & PANELS		$ 52,000	$ 135,000	$ 104,500	$ 291,500
18.8	GROUNDING		$ 5,100	$ -	$ 13,400	$ 18,500
18.9	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE ARE INCLUDED IN SECTION 20.0 - ABSORBER ISLAND	$ -	$ -	$ -	$ -
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 17,541,400	$ 6,207,600	$ 19,567,800	$ 43,316,800
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 877,100	$ 1,582,900	$ 7,500,700	$ 9,960,700

Sargent & Lundy, LLC	AEP BIG SANDY UNIT 2 FGD PROJECT - IAQCS (ESP)-4A - 7.5 LB/MM BTU - NON PHASED COST ESTIMATE SUMMARY	Estimate No.: Project No.: Date: Preparer: Reviewer: Approver:	30717B 12721-000 9/12/2010 MNO JMK 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	REAGENT (LIMESTONE) PREPARATION ISLAND	$ 18,418,500	$ 7,790,500	$ 27,068,500	$ 53,277,500
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	$ 47,600	$ 73,600
19.10	MAINTENANCE STORAGE TANK & PUMPS - FOUNDATIONS		$ -	$ 100,000	$ 163,900	$ 263,900
19.11	LANDFILL SERVICE WATER TANKS & PUMP - FOUNDATIONS		$ -	$ 80,900	$ 141,700	$ 222,600
19.12	LANDFILL RECLAIM WATER TANKS & PUMPS - FOUNDATIONS		$ -	$ 26,000	$ 47,600	$ 73,600
19.13	HYDROCLONE FEED TANKS & BLEED TANKS - FOUNDATIONS	TOTAL FOR HYDROCLONE AND BLEED TANKS	$ -	$ 340,200	$ 577,200	$ 917,400
19.14	BYPRODUCT STACKOUT CONVEYOR & TRANSFER TOWER - FOUNDATIONS		$ -	$ 16,100	$ 31,700	$ 47,800
19.15	BYPRODUCT STACKOUT PILE - FOUNDATIONS	INCLUDES CONTAINMENT AREA SLAB	$ -	$ 891,700	$ 1,364,300	$ 2,256,000
19.16	PIPE RACK	SUPPORTS AT 15' C/C	$ -	$ 60,800	$ 125,100	$ 185,900

Sargent & Lundy, LLC

AEP
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19.17	BYPRODUCT CONTAINMENT WALLS		$ -	$ 137,300	$ 224,400	$ 361,700
19.18	INSTALL WIND SCREEN		$ -	$ 525,000	$ 192,300	$ 717,300
19.19	BYPRODUCT DEWATERING BUILDING - FOUNDATIONS		$ -	$ 301,900	$ 473,200	$ 775,100
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	$ 25,000	$ 38,800
19.22	AUXILIARY PUMPHOUSE BUILDING WITH ELECTRICAL ROOM - FOUNDATIONS		$ -	$ 32,300	$ 56,300	$ 88,600
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		$ -	$ 6,300	$ 10,300	$ 16,600
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

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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	$ 183,600	$ 253,800
19.57	FIREWALL FOR TRANSFORMERS		$ -	$ 3,200	$ 8,300	$ 11,500
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 14,294,800	$ 16,136,800	$ 32,216,800	$ 62,648,400
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 714,700	$ 4,114,900	$ 12,348,200	$ 17,177,800
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 15,009,500	$ 20,251,700	$ 44,565,000	$ 79,826,200
20.0	WET FGD ABSORBER ISLAND					

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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	LABOR COST REFLECTS DIFFICULTY FACTOR WORKING WITH C276 VS. A2205	$ -	$ 14,940,000	$ 7,636,100	$ 22,576,100
20.3	EMERGENCY DIESEL DRIVEN QUENCH PUMP	WITH FUEL DAY TANK. FOUNDATIONS INCLUDED WITH ABSORBER BUILDING FOUNDATIONS	$ 150,000	$ -	$ 30,700	$ 180,700
20.4	PIPING - MECHANICAL	ALL PIPING INCLUDED IN OEM EQUIPMENT COST. NO BOP PIPING	$ -	$ -	$ -	$ -
20.5	ABSORBER VESSEL - FOUNDATIONS		$ -	$ 366,900	$ 609,400	$ 976,300
20.6	ABSORBER BUILDING - FOUNDATIONS		$ -	$ 608,300	$ 951,900	$ 1,560,200
20.7	ABSORBER BUILDING	150' L X 95' W X 60' H	$ 164,500	$ 2,746,000	$ 2,500,300	$ 5,410,800
20.8	PIPE SUPPORT PAD - ABSORBER BUILDING		$ -	$ 7,700	$ 14,400	$ 22,100
20.9	OXIDATION AIR BLOWER BUILDING - FOUNDATIONS		$ -	$ 37,000	$ 63,200	$ 100,200
20.10	OXIDATION AIR BLOWER BUILDING	30' L X 30' W X 25' H	$ 33,800	$ 191,000	$ 201,400	$ 426,200
20.11	PIPE SUPPORT PAD - OXIDATION BUILDING		$ -	$ 7,700	$ 13,100	$ 20,800
20.12	DUCTWORK	INCLUDES INTERNAL BRACING AND TURNING VANES	$ -	$ 373,800	$ 856,700	$ 1,230,500

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20.13	DUCT SUPPORT STEEL	THREE-COAT SHOP PAINT	$ -	$ 168,200	$ 169,200	$ 337,400
20.14	DUCTWORK INSULATION & LAGGING		$ -	$ 132,000	$ 258,500	$ 390,500
20.15	FOUNDATIONS FOR DUCT SUPPORT STEEL		$ -	$ 17,700	$ 32,100	$ 49,800
20.16	TRANSFORMERS		$ 981,000	$ -	$ 209,300	$ 1,190,300
20.17	SWITCHGEAR		$ 1,162,800	$ -	$ 673,700	$ 1,836,500
20.18	CABLE BUS & TERMINATIONS		$ 867,100	$ 46,600	$ 1,634,100	$ 2,547,800
20.19	MCC		$ 216,300	$ -	$ 11,100	$ 227,400
20.20	MIMIC PANELS		$ 35,000	$ -	$ 7,900	$ 42,900
20.21	GROUNDING		$ 16,000	$ -	$ 46,100	$ 62,100
20.22	LIGHTING/ TRANSFORMERS & PANELS		$ 164,500	$ 165,000	$ 171,300	$ 500,800
20.23	EMERGENCY POWER SYSTEM		$ 108,300	$ -	$ 24,400	$ 132,700
20.24	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 1,388,600	$ 5,513,200	$ 6,901,800
20.25	HIGH VOLTAGE POWER CABLE & TERMINATION		$ -	$ 41,700	$ 117,600	$ 159,300
20.26	MEDIUM VOLTAGE POWER CABLE & TERMINATION		$ -	$ 92,100	$ 302,400	$ 394,500
20.27	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 566,000	$ 810,600	$ 1,376,600
20.28	CONTROL & INSTRUMENT CABLE		$ -	$ 512,000	$ 1,436,700	$ 1,948,700
20.29	FOUNDATION FOR TRANSFORMERS		$ -	$ 59,000	$ 173,700	$ 232,700
20.30	TRANSFORMER FIRE WALLS		$ -	$ 3,500	$ 9,600	$ 13,100
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 45,567,300	$ 22,470,800	$ 65,552,100	$ 133,590,200
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 2,953,400	$ 5,730,100	$ 25,908,500	$ 34,592,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 48,520,700	$ 28,200,900	$ 91,460,600	$ 168,182,200
21.0	COMPRESSED AIR SYSTEM (BYPRODUCT DEWATERING AREA)					
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 COSTS		$ 22,300	$ 42,400	$ 263,400	$ 328,100

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	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				
23.0	FGD SUBSTATION					
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		$ 189,749,500	$ 113,055,400	$ 286,235,100	$ 589,790,000
	OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 10,870,500	$ 24,866,400	$ 103,503,600	$ 139,240,500
	OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 200,620,000	$ 137,921,800	$ 389,738,700	$ 729,030,500
	INDIRECT COSTS					
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES					$ 45,000,000
	CONSTRUCTION MANAGEMENT					$ 21,870,900
	S-U / COMMISSIONING					$ 7,290,300
	CRAFT START-UP SUPPORT					$ 3,373,400
	INITIAL FILLS					$ 2,187,100
	OPERATOR & TRAINING MANUALS					$ 600,000

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	SUBCONTRACTORS (NOISE & DUCTWORK CONSULTANT,					$ 500,000
	OWNERS COST - % of ACCT NOS. 92, 93.1, 93.2, 93.3, 93.4					$ -
	TOTAL DIRECT AND INDIRECT COSTS					$ 809,852,200
	SPARE PARTS FOR THE OEM & THE BOP EQUIPMENT					$ 2,006,200
	SPARE PARTS FOR THE OEM EQUIPMENT	0.80				$ 1,243,844
	SPARE PARTS FOR THE BOP EQUIPMENT	0.50				$ 762,356
	CONTINGENCY	13.8				$ 111,658,500
	ESCALATION					$ 73,249,700
	EQUIPMENT					$ 20,874,500
	MATERIAL					$ 9,898,300
	LABOR					$ 35,181,200
	INDIRECTS					$ 7,295,700
	INTEREST DURING CONSTRUCTION (AFUDC)					$ -
	TOTAL PROJECT COST					$ 996,766,600

ATTACHMENT 4-21
IAQCS Summary Capital Cost Estimate No. 30721 Est-4B ESP not in Service (7.5 lb SO_2/MMbtu)

Sargent & Lundy, LLC	AEP	Estimate No.:	30721B
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS (N/ESP)-4B - 7.5 LB/MM BTU - NON PHASED	Date:	9/12/2010
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1.0	ID FANS					
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	$ 19,585,000	$ -	$ 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	$ 973,600	$ 1,524,300
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	LIGHT FIXTURE		$ -	$ 16,500	$ 10,000	$ 26,500
2.10	GROUNDING		$ 7,300	$ -	$ 17,500	$ 24,800
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 22,183,400	$ 3,019,600	$ 17,317,700	$ 42,520,700
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 1,109,200	$ 770,000	$ 6,433,400	$ 8,312,600
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	FABRIC FILTERS	$ 23,292,600	$ 3,789,600	$ 23,751,100	$ 50,833,300
3.0	NEW STACK					

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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		$ 1,390,000	$ -	$ -	$ 1,390,000
4.2	LIME UNLOADING SYSTEM	INCLUDES PNEUMATIC HANDLING SYSTEM, THREE VACUUM EXHAUSTER, TWO FILTER SEPARATORS	$ 350,000	$ -	$ 286,200	$ 636,200
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	$ 42,600	$ 65,200
4.7	LIME UNLOADING BLOWER / ELECTRICAL BUILDING - FOUNDATIONS		$ -	$ 80,600	$ 132,200	$ 212,800
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	$ 151,600	$ 238,700
4.11	LIME STORAGE SILO ACCESS STAIR TOWER - FOUNDATIONS	0	$ -	$ 10,700	$ 20,300	$ 31,000
4.12	PIPE RACK - FOUNDATIONS		$ -	$ 94,200	$ 208,200	$ 302,400
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	$ -	$ 99,300	$ 423,500	$ 522,800
4.24	LOW VOLTAGE POWER CABLE & TERMINATION	0.00	$ -	$ 93,000	$ 143,200	$ 236,200

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4.25	CONTROL & INSTRUMENT CABLE	#14, #16 & PR # 20 & SHLD WIRE	$ -	$ 57,600	$ 161,600	$ 219,200
4.26	DUCT BANK	6-5" & 6-3" CONDUITS	$ -	$ 26,600	$ 52,500	$ 79,100
4.27	FOUNDATIONS FOR TRANSFORMERS		$ -	$ 5,300	$ 10,300	$ 15,600
4.28	FIREWALL FOR TRANSFORMERS		$ -	$ -	$ -	$ -
90.00	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 2,597,600	$ 2,306,700	$ 4,829,700	$ 9,734,000
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 129,900	$ 588,200	$ 1,740,600	$ 2,458,700
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME HANDLING SYSTEM	$ 2,727,500	$ 2,894,900	$ 6,570,300	$ 12,192,700
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	$ 278,300	$ 444,700
5.6	LIME SLAKER BUILDING - FOUNDATIONS		$ -	$ 119,200	$ 194,200	$ 313,400
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	$ 4,933,300	$ 9,529,900
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 169,800	$ 306,100	$ 1,841,700	$ 2,317,600

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	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	LIME SLAKER BUILDING	$ 3,566,100	$ 1,506,400	$ 6,775,000	$ 11,847,500
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	$ 450,000	$ -	$ 327,100	$ 777,100
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 BYPRODUCT SILO		$ -	$ -	$ -	$ -
6.8	FLY ASH SILO		$ -	$ -	$ -	$ -
6.9	BYPRODUCT WASTE SILO - FOUNDATIONS		$ -	$ 60,200	$ 107,700	$ 167,900
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	$ 373,100	$ 607,400
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	GROUNDING	INCLUDING SUPPORT & FITTINGS	$ -	$ 4,500	$ 10,900	$ 15,400
6.20	MEDIUM VOLTAGE POWER CABLE & TERMINATION	3/4" - 20' LONG EACH	$ -	$ 25,700	$ 109,800	$ 135,500
6.21	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 73,600	$ 91,600	$ 165,200
6.22	CONTROL & INSTRUMENT CABLE		$ -	$ 54,400	$ 444,400	$ 498,800
6.23	DUCT BANK		$ -	$ 109,700	$ 268,900	$ 378,600

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90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 3,302,900	$ 2,225,700	$ 5,144,700	$ 10,673,300
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 165,100	$ 567,600	$ 1,895,700	$ 2,628,400
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	BYPRODUCT WASTE & FLY ASH HANDLING SYSTEMS	$ 3,468,000	$ 2,793,300	$ 7,040,400	$ 13,301,700
7.0	SPRAY DRYER ABSORBER ISLAND					
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					
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					
17.0	LIMESTONE HANDLING SYSTEM					
18.0	REAGENT (LIMESTONE) PREPARATION ISLAND					

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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	PIPING - MECHANICAL		$ 278,900	$ 205,000	$ 587,300	$ 1,071,200
18.3	LIMESTONE SLURRY TANKS - FOUNDATIONS		$ -	$ 166,400	$ 278,300	$ 444,700
18.4	REAGENT PREPARATION BUILDING - FOUNDATIONS		$ -	$ 701,800	$ 1,103,100	$ 1,804,900
18.5	REAGENT PREPARATION BUILDING	120' L X 130' W X 130' H	$ 269,400	$ 4,985,000	$ 4,350,000	$ 9,604,400
18.6	PIPE SUPPORT PAD - REAGENT PREP BUILDING		$ -	$ 14,400	$ 26,100	$ 40,500
18.7	LIGHTING/ TRANSFORMERS & PANELS		$ 52,000	$ 135,000	$ 104,500	$ 291,500
18.8	GROUNDING		$ 5,100	$ -	$ 13,400	$ 18,500
18.9	ELECTRICAL	DISTRIBUTION, RACEWAY & CABLE ARE INCLUDED IN SECTION 20.0 - ABSORBER ISLAND	$ -	$ -	$ -	$ -
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 17,541,400	$ 6,207,600	$ 19,567,800	$ 43,316,800
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 877,100	$ 1,582,900	$ 7,500,700	$ 9,960,700
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	REAGENT (LIMESTONE) PREPARATION ISLAND	$ 18,418,500	$ 7,790,500	$ 27,068,500	$ 53,277,500
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	$ 47,600	$ 73,600
19.10	MAINTENANCE STORAGE TANK & PUMPS - FOUNDATIONS		$ -	$ 100,000	$ 163,900	$ 263,900
19.11	LANDFILL SERVICE WATER TANKS & PUMP - FOUNDATIONS		$ -	$ 80,900	$ 141,700	$ 222,600
19.12	LANDFILL RECLAIM WATER TANKS & PUMPS - FOUNDATIONS		$ -	$ 26,000	$ 47,600	$ 73,600
19.13	HYDROCLONE FEED TANKS & BLEED TANKS - FOUNDATIONS	TOTAL FOR HYDROCLONE AND BLEED TANKS	$ -	$ 340,200	$ 577,200	$ 917,400
19.14	BYPRODUCT STACKOUT CONVEYOR & TRANSFER TOWER - FOUNDATIONS		$ -	$ 16,100	$ 31,700	$ 47,800
19.15	BYPRODUCT STACKOUT PILE - FOUNDATIONS	INCLUDES CONTAINMENT AREA SLAB	$ -	$ 891,700	$ 1,364,300	$ 2,256,000
19.16	PIPE RACK	SUPPORTS AT 15' C/C	$ -	$ 60,800	$ 125,100	$ 185,900
19.17	BYPRODUCT CONTAINMENT WALLS		$ -	$ 137,300	$ 224,400	$ 361,700
19.18	INSTALL WIND SCREEN		$ -	$ 525,000	$ 192,300	$ 717,300
19.19	BYPRODUCT DEWATERING BUILDING - FOUNDATIONS		$ -	$ 301,900	$ 473,200	$ 775,100
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	$ 25,000	$ 38,800
19.22	AUXILIARY PUMPHOUSE BUILDING WITH ELECTRICAL ROOM - FOUNDATIONS		$ -	$ 32,300	$ 56,300	$ 88,600
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

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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		$ -	$ 6,300	$ 10,300	$ 16,600
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

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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	$ 183,600	$ 253,800
19.57	FIREWALL FOR TRANSFORMERS		$ -	$ 3,200	$ 8,300	$ 11,500
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 14,294,800	$ 16,136,800	$ 32,216,800	$ 62,648,400
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 714,700	$ 4,114,900	$ 12,348,200	$ 17,177,800
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 15,009,500	$ 20,251,700	$ 44,565,000	$ 79,826,200
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	$ 41,668,000	$ -	$ 41,073,400	$ 82,741,400
20.2	ADDITIONAL COST FOR C276 ABSORBER SHELL MATERIAL ABOVE THE PRICE OF A2205 ABSORBER SHELL	LABOR COST REFLECTS DIFFICULTY FACTOR WORKING WITH C276 VS. A2205	$ -	$ 14,940,000	$ 7,636,100	$ 22,576,100
20.3	EMERGENCY DIESEL DRIVEN QUENCH PUMP	WITH FUEL DAY TANK. FOUNDATIONS INCLUDED WITH ABSORBER BUILDING FOUNDATIONS	$ 150,000	$ -	$ 30,700	$ 180,700

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20.4	PIPING - MECHANICAL	ALL PIPING INCLUDED IN OEM EQUIPMENT COST. NO BOP PIPING	$ -	$ -	$ -	$ -
20.5	ABSORBER VESSEL - FOUNDATIONS		$ -	$ 366,900	$ 609,400	$ 976,300
20.6	ABSORBER BUILDING - FOUNDATIONS		$ -	$ 608,300	$ 951,900	$ 1,560,200
20.7	ABSORBER BUILDING	150' L X 95' W X 60' H	$ 164,500	$ 2,746,000	$ 2,500,300	$ 5,410,800
20.8	PIPE SUPPORT PAD - ABSORBER BUILDING		$ -	$ 7,700	$ 14,400	$ 22,100
20.9	OXIDATION AIR BLOWER BUILDING - FOUNDATIONS		$ -	$ 37,000	$ 63,200	$ 100,200
20.10	OXIDATION AIR BLOWER BUILDING	30' L X 30' W X 25' H	$ 33,800	$ 191,000	$ 201,400	$ 426,200
20.11	PIPE SUPPORT PAD - OXIDATION BUILDING		$ -	$ 7,700	$ 13,100	$ 20,800
20.12	DUCTWORK	INCLUDES INTERNAL BRACING AND TURNING VANES	$ -	$ 373,800	$ 856,700	$ 1,230,500
20.13	DUCT SUPPORT STEEL	THREE-COAT SHOP PAINT	$ -	$ 168,200	$ 169,200	$ 337,400
20.14	DUCTWORK INSULATION & LAGGING		$ -	$ 132,000	$ 258,500	$ 390,500
20.15	FOUNDATIONS FOR DUCT SUPPORT STEEL		$ -	$ 17,700	$ 32,100	$ 49,800
20.16	TRANSFORMERS		$ 981,000	$ -	$ 209,300	$ 1,190,300
20.17	SWITCHGEAR		$ 1,162,800	$ -	$ 673,700	$ 1,836,500
20.18	CABLE BUS & TERMINATIONS		$ 867,100	$ 46,600	$ 1,634,100	$ 2,547,800
20.19	MCC		$ 216,300	$ -	$ 11,100	$ 227,400
20.20	MIMIC PANELS		$ 35,000	$ -	$ 7,900	$ 42,900
20.21	GROUNDING		$ 16,000	$ -	$ 46,100	$ 62,100
20.22	LIGHTING/ TRANSFORMERS & PANELS		$ 164,500	$ 165,000	$ 171,300	$ 500,800
20.23	EMERGENCY POWER SYSTEM		$ 108,300	$ -	$ 24,400	$ 132,700
20.24	RACEWAY, CABLE TRAY, & CONDUIT		$ -	$ 1,388,600	$ 5,513,200	$ 6,901,800
20.25	HIGH VOLTAGE POWER CABLE & TERMINATION		$ -	$ 41,700	$ 117,600	$ 159,300
20.26	MEDIUM VOLTAGE POWER CABLE & TERMINATION		$ -	$ 92,100	$ 302,400	$ 394,500
20.27	LOW VOLTAGE POWER CABLE & TERMINATION		$ -	$ 566,000	$ 810,600	$ 1,376,600
20.28	CONTROL & INSTRUMENT CABLE		$ -	$ 512,000	$ 1,436,700	$ 1,948,700
20.29	FOUNDATION FOR TRANSFORMERS		$ -	$ 59,000	$ 173,700	$ 232,700
20.30	TRANSFORMER FIRE WALLS		$ -	$ 3,500	$ 9,600	$ 13,100
90.0	SUBTOTAL - EQUIPMENT, MATERIAL AND LABOR COSTS		$ 45,567,300	$ 22,470,800	$ 65,552,100	$ 133,590,200
	SUBTOTAL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 2,953,400	$ 5,730,100	$ 25,908,500	$ 34,592,000
	TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 48,520,700	$ 28,200,900	$ 91,460,600	$ 168,182,200

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.: 30721B
Project No.: 12721-000
Date: 9/12/2010
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
21.0	COMPRESSED AIR SYSTEM (BYPRODUCT DEWATERING AREA)					
22.0	POTABLE WATER SYSTEM	INCLUDED WITH ACCOUNT 11.0				
23.0	FGD SUBSTATION					
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		$ 189,582,100	$ 110,291,600	$ 280,525,500	$ 581,149,200
	OVERALL - OTHER DIRECT & CONSTRUCTION INDIRECT COSTS		$ 10,862,100	$ 24,161,700	$ 101,476,200	$ 136,500,000
	OVERALL TOTAL DIRECT & CONSTRUCTION INDIRECT COST		$ 200,444,200	$ 134,453,300	$ 382,001,700	$ 717,649,200
	INDIRECT COSTS					
	ENGINEERING, PROCUREMENT, & PROJECT SERVICES					$ 45,000,000
	CONSTRUCTION MANAGEMENT					$ 21,529,500
	S-U / COMMISSIONING					$ 7,176,500
	CRAFT START-UP SUPPORT					$ 3,306,100
	INITIAL FILLS					$ 2,152,900

Sargent & Lundy, LLC	AEP	Estimate No.:	30721B
	BIG SANDY UNIT 2	Project No.:	12721-000
	FGD PROJECT - IAQCS (N/ESP)-4B - 7.5 LB/MM BTU - NON PHASED	Date:	9/12/2010
	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
	OPERATOR & TRAINING MANUALS					$ 600,000
	SUBCONTRACTORS (NOISE & DUCTWORK CONSULTANT,					$ 750,000
	OWNERS COST - % of ACCT NOS. 92, 93.1, 93.2, 93.3, 93.4					$ -
	TOTAL DIRECT AND INDIRECT COSTS					$ 798,164,200
	SPARE PARTS FOR THE OEM & THE BOP EQUIPMENT					$ 2,605,800
	SPARE PARTS FOR THE OEM EQUIPMENT	0.80				$ 1,615,596
	SPARE PARTS FOR THE BOP EQUIPMENT	0.50				$ 990,204
	CONTINGENCY	13.8				$ 110,135,400
	ESCALATION					$ 72,318,400
	EQUIPMENT					$ 20,918,200
	MATERIAL					$ 9,649,400
	LABOR					$ 34,482,800
	INDIRECTS					$ 7,268,000
	INTEREST DURING CONSTRUCTION (AFUDC)					$ -
	TOTAL PROJECT COST					$ 983,223,800
	REFERENCE COSTS:					
A	ESP DEMOLITION	ALLOWANCE FOR 1000T STRUCTURE	$ -	$ -	$ 832,300	$ 832,300
B	REMOVE BOOSTER AIR FANS		$ -	$ -	$ 111,000	$ 111,000

ATTACHMENT 4-22
O&M Costs – Fixed and Variable (IAQCS)

IAQCS O&M Costs – Revision B

GENERAL

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.
- 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)

IAQCS O&M Costs – Revision B

FIXED O&M COSTS

The fixed O&M costs include:

- Operating Labor

  The FGD system will require additional staff to operate the equipment. The minimum additional staff used in the estimate was based on:

Operation	Phase One Staff	Phase Two Staff
Absorber Island Operation	1 person per shift for 5 shifts (5 operators total)	2 people per shift for 5 shifts (10 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	16 operations staff

  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.

IAQCS O&M Costs – Revision B

- 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…

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 Rail 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 1 dated June 21, 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 B

Table 2. O&M Costs for Phase One IAQCS 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 (Furnace to Stack)	23	23	NA	NA
IAQCS Draft Only	8	8	NA	NA
FGD Equipment Load	4	5	NA	NA
Existing ESP	0	0	NA	NA
WESP	NA	NA	NA	NA
Total Auxiliary Power at Full Load (MW)	**27**	**28**	**NA**	**NA**

Note: NA = Not Applicable

IAQCS O&M Costs – Revision B

Table 3. O&M Costs for Phase Two IAQCS 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 ($/year)				
Operating Labor	1,664,000	1,664,000	1,664,000	1,664,000
Maintenance Material	4,039,000	4,117,000	4,191,000	4,272,000
Maintenance Labor	2,693,000	2,744,000	2,795,000	2,849,000
Total Fixed O&M ($/year)	**8,396,000**	**8,525,000**	**8,650,000**	**8,785,000**
Variable O&M ($/year)				
Limestone Reagent Cost	2,376,000	4,558,000	6,442,000	9,685,000
Lime Reagent Cost	661,000	1,225,000	1,713,000	2,574,000
Activated Carbon	2,344,000	2,319,000	2,315,000	2,293,000
WFGD Byproduct Disposal Cost	1,215,000	2,425,000	3,472,000	5,227,000
DFGD Byproduct Disposal Cost	2,732,000	2,553,000	2,426,000	2,670,000
Total Makeup Water Cost	746,000	752,000	763,000	780,000
Wastewater Treatment Chemicals	NA	NA	NA	NA
Bags and Cages Replacement	651,000	651,000	651,000	651,000
Total Variable O&M excluding Auxiliary Power ($/year)	**10,725,000**	**14,483,000**	**17,782,000**	**23,880,000**
Auxiliary Power at Full Load (MW)				
Overall Draft (Furnace to Stack)	29	29	29	29
IAQCS Draft Only	14	14	15	16
FGD Equipment Load	11	15	17	24
Existing ESP	0	0	0	0
WESP	NA	NA	NA	NA
Total Auxiliary Power at Full Load (MW)	**40**	**44**	**46**	**53**

Note: NA = Not Applicable

IAQCS O&M Costs – Revision B

Table 4. O&M Costs for Phase One IAQCS 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 (Furnace to Stack)	27	27	NA	NA
IAQCS Draft Only	8	8	NA	NA
FGD Equipment Load	4	5	NA	NA
Existing ESP	4	4	NA	NA
WESP	NA	NA	NA	NA
Total Auxiliary Power at Full Load (MW)	**35**	**36**	**NA**	**NA**

Note: NA = Not Applicable

IAQCS O&M Costs – Revision B

Table 5. O&M Costs for Phase Two IAQCS with the ESP (2010 dollars) (DFGD and WFGD Combined Operation 2020 and Beyond)

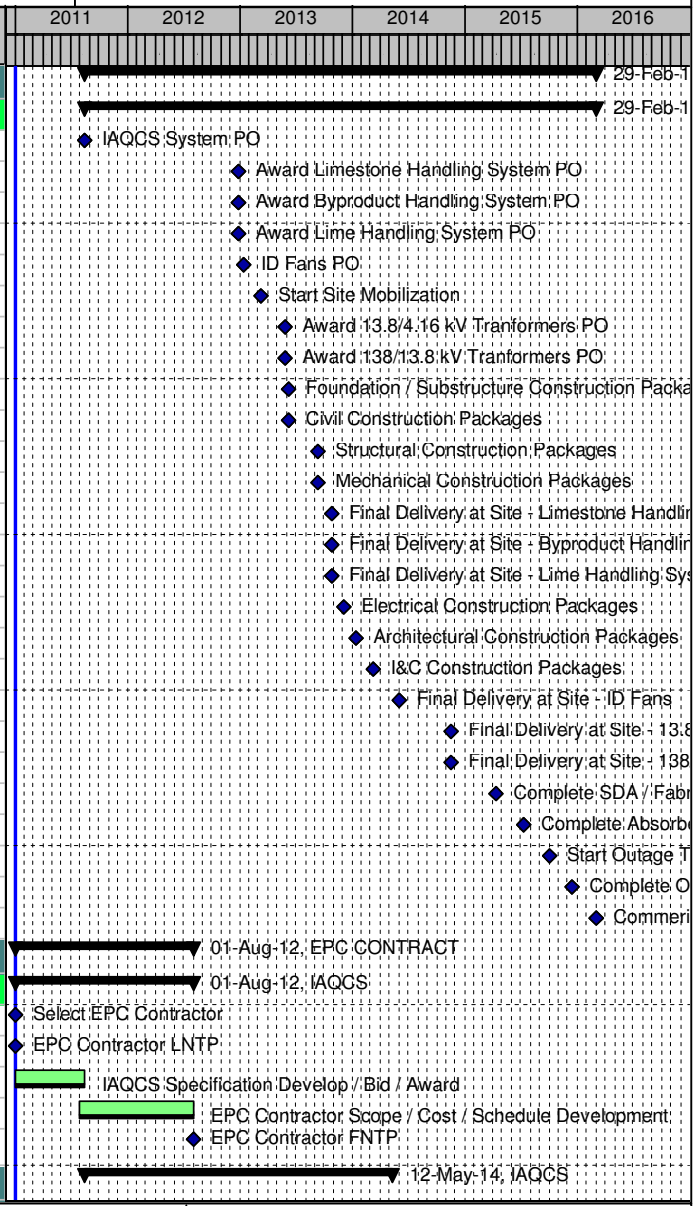
Fuel	**1.7 w/ ESP**	**3.0 w/ ESP**	**4.5 w/ ESP**	**7.5 w/ ESP**
Fixed O&M ($/year)				
Operating Labor	1,664,000	1,664,000	1,664,000	1,664,000
Maintenance Material	4,039,000	4,117,000	4,191,000	4,272,000
Maintenance Labor	2,693,000	2,744,000	2,795,000	2,849,000
Total Fixed O&M ($/year)	**8,396,000**	**8,525,000**	**8,650,000**	**8,785,000**
Variable O&M ($/year)				
Limestone Reagent Cost	2,376,000	4,558,000	6,442,000	9,685,000
Lime Reagent Cost	661,000	1,225,000	1,713,000	2,574,000
Activated Carbon	2,267,000	2,243,000	2,239,000	2,218,000
WFGD Byproduct Disposal Cost	1,216,000	2,426,000	3,472,000	5,228,000
DFGD Byproduct Disposal Cost	182,000	245,000	300,000	420,000
Total Makeup Water Cost	701,000	709,000	721,000	737,000
Wastewater Treatment Chemicals	NA	NA	NA	NA
Bags and Cages Replacement	651,000	651,000	651,000	651,000
Total Variable O&M excluding Auxiliary Power ($/year)	**8,054,000**	**12,057,000**	**15,538,000**	**21,513,000**
Auxiliary Power at Full Load (MW)				
Overall Draft (Furnace to Stack)	34	34	34	34
IAQCS Draft Only	14	14	15	16
FGD Equipment Load	11	15	17	24
Existing ESP	4	4	4	4
WESP	NA	NA	NA	NA
Total Auxiliary Power at Full Load (MW)	**49**	**53**	**55**	**62**

Note: NA = Not Applicable

ATTACHMENT 4-23
Project Schedule (IAQCS – Non-Phased)

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

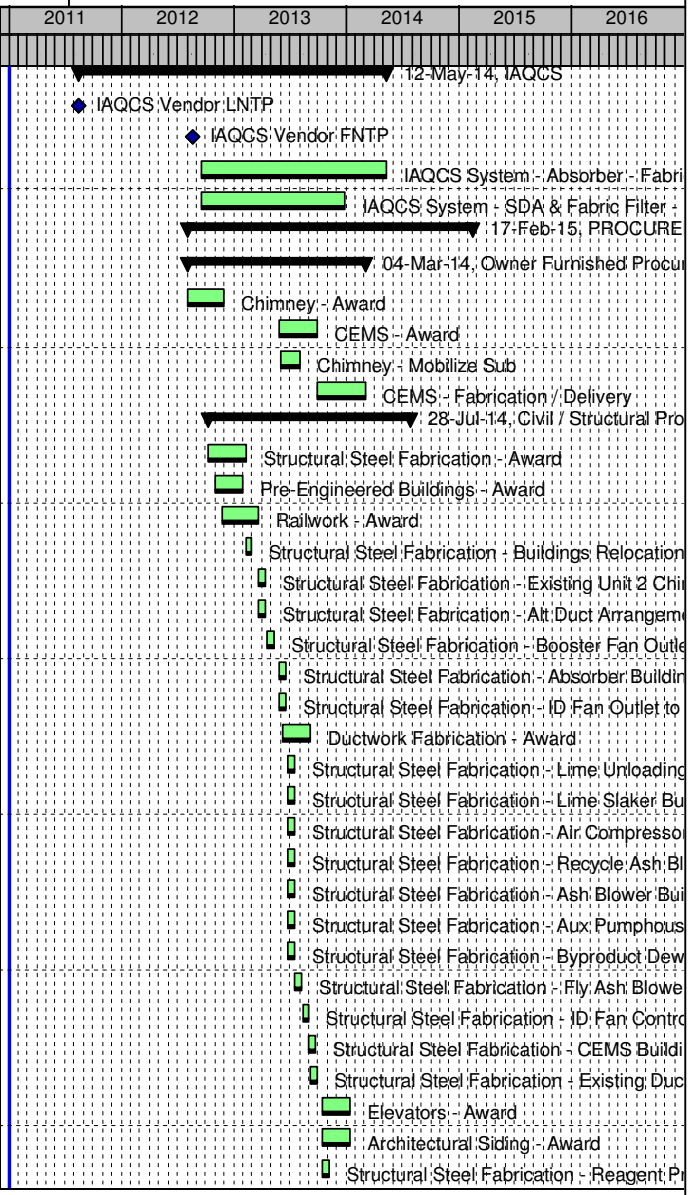


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

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

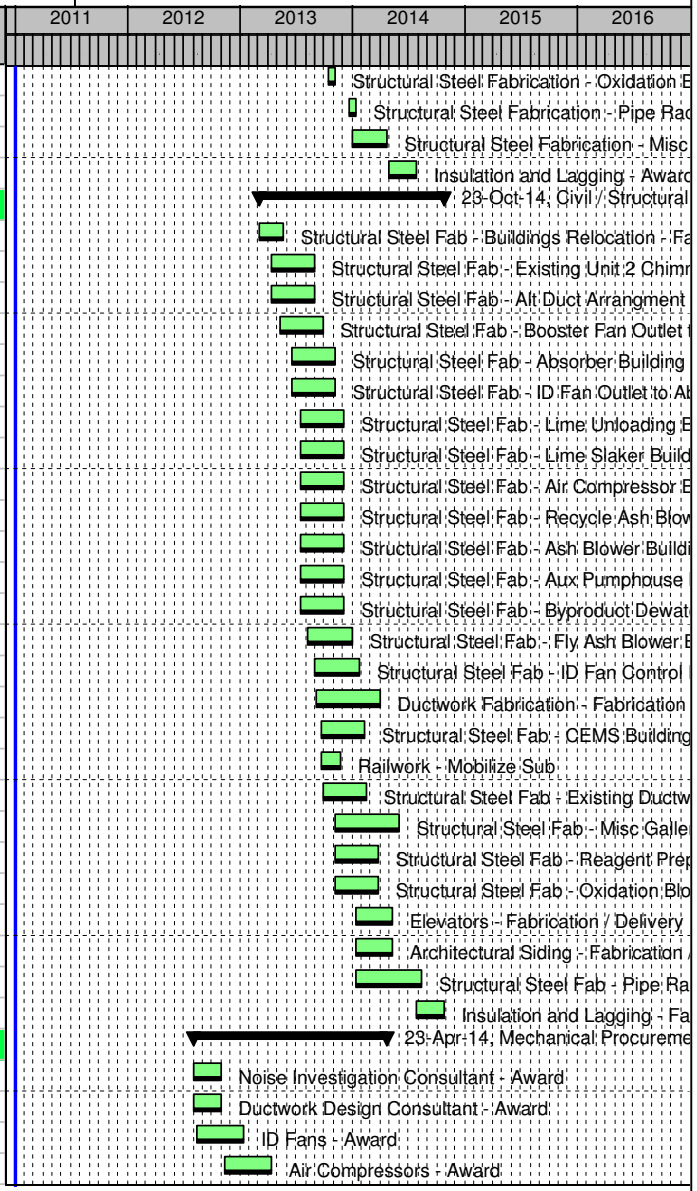


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

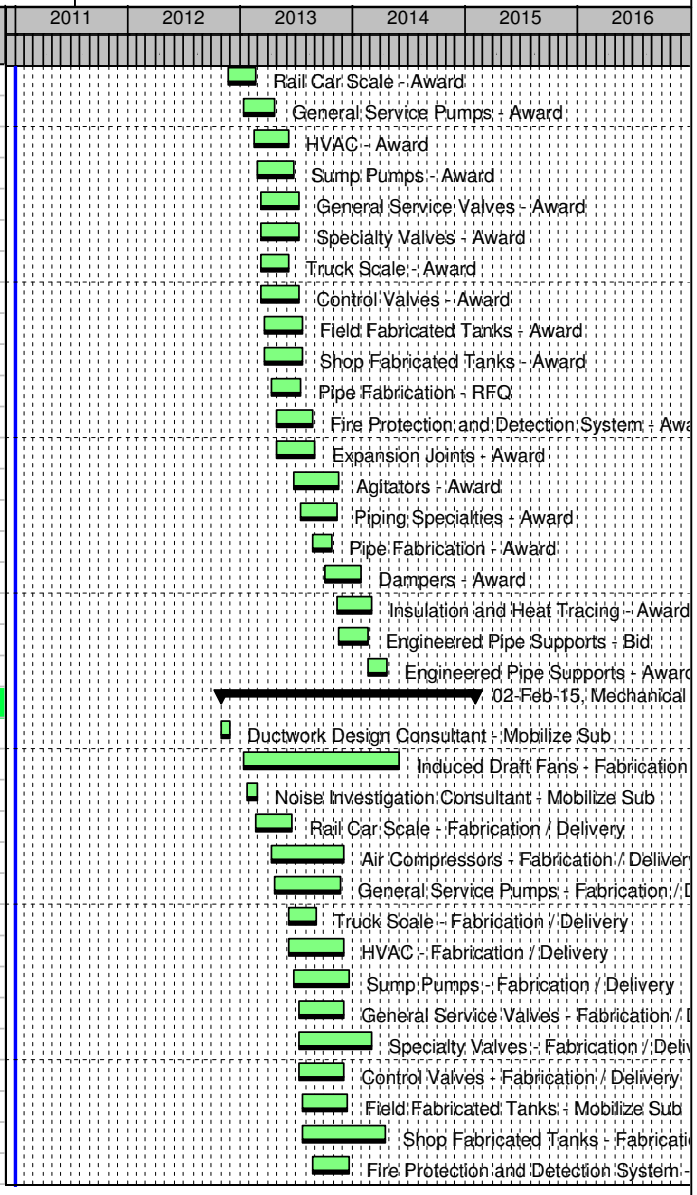
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Activity ID	Activity Name	Dur	Start	Finish
SL.P-6804.5H	Structural Steel Fabrication - Oxidation Blower Building Package	15	14-Oct-13	04-Nov-13
SL.P-6804.5F	Structural Steel Fabrication - Pipe Rack Package	15	23-Dec-13	15-Jan-14
SL.P-6804.5X	Structural 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

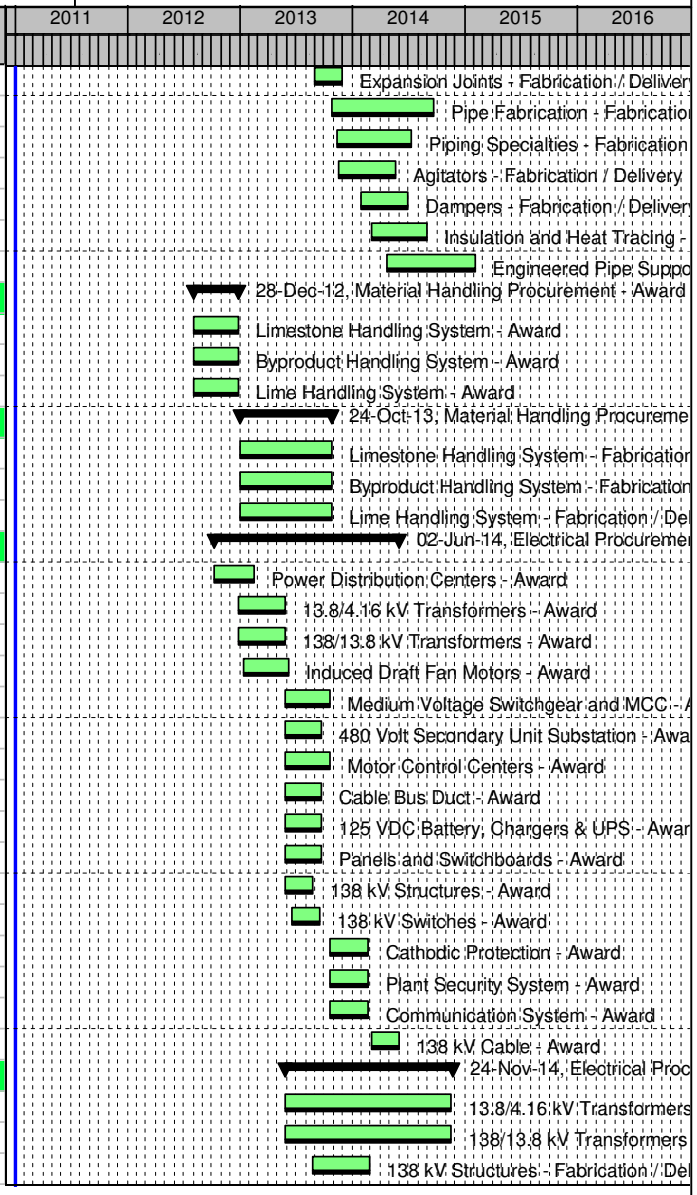


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

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-6868.00	Cathodic Protection - Award	85	23-Oct-13	21-Feb-14
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

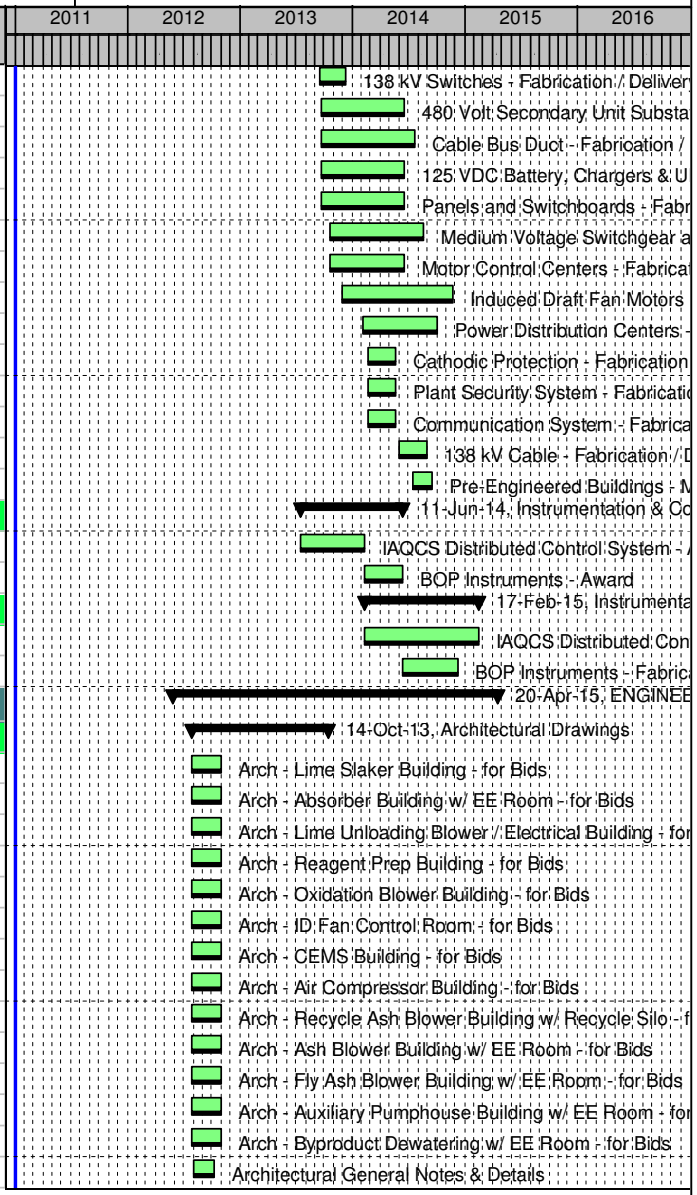


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

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Activity ID	Activity Name	Dur	Start	Finish
SL.P-6876.90	138 kV Switches - Fabrication / Delivery	63	16-Sep-13	12-Dec-13
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-6868.90	Cathodic Protection - Fabrication / Delivery	63	21-Feb-14	21-May-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

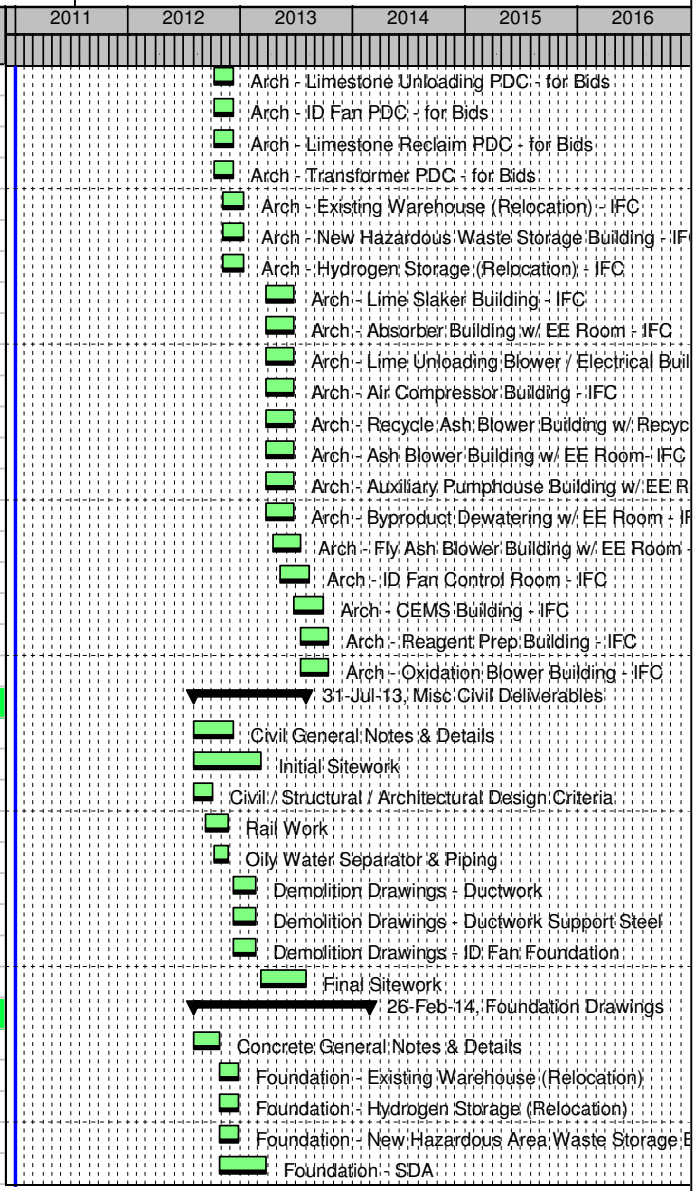


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Activity ID	Activity Name	Dur	Start	Finish
SL.CA3500.00	Arch - Limestone Unloading PDC - for Bids	45	11-Oct-12	12-Dec-12
SL.CA2200.00	Arch - ID Fan PDC - for Bids	45	11-Oct-12	12-Dec-12
SL.CA3600.00	Arch - Limestone Reclaim PDC - for Bids	45	11-Oct-12	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

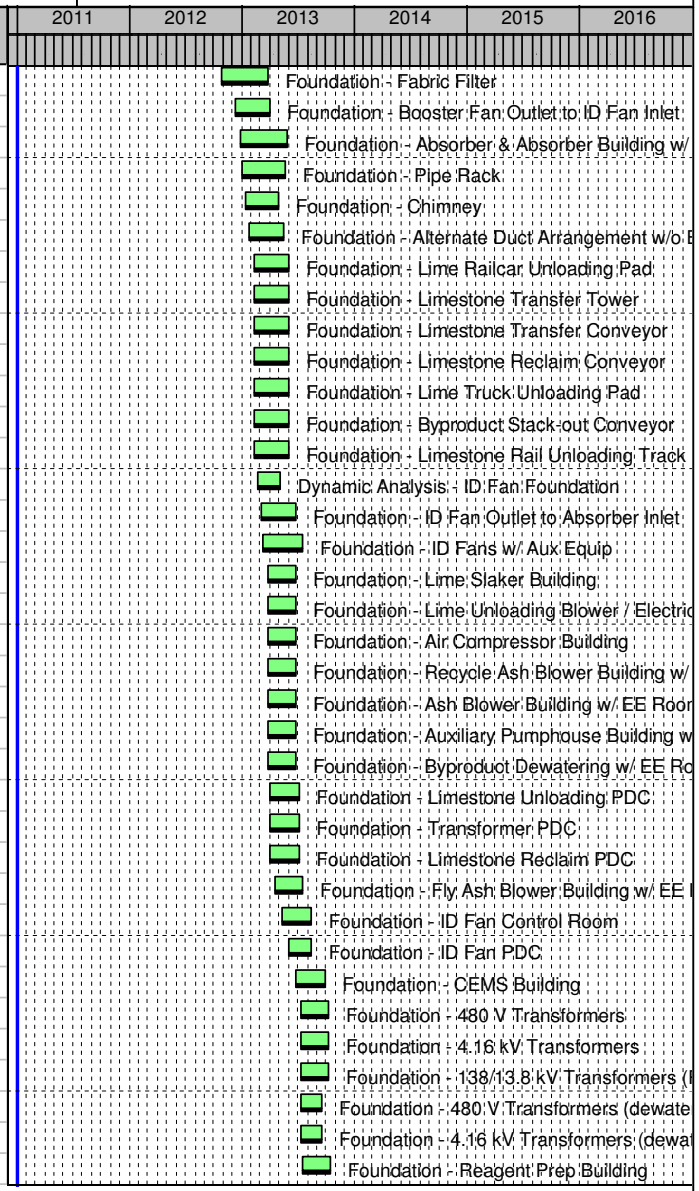


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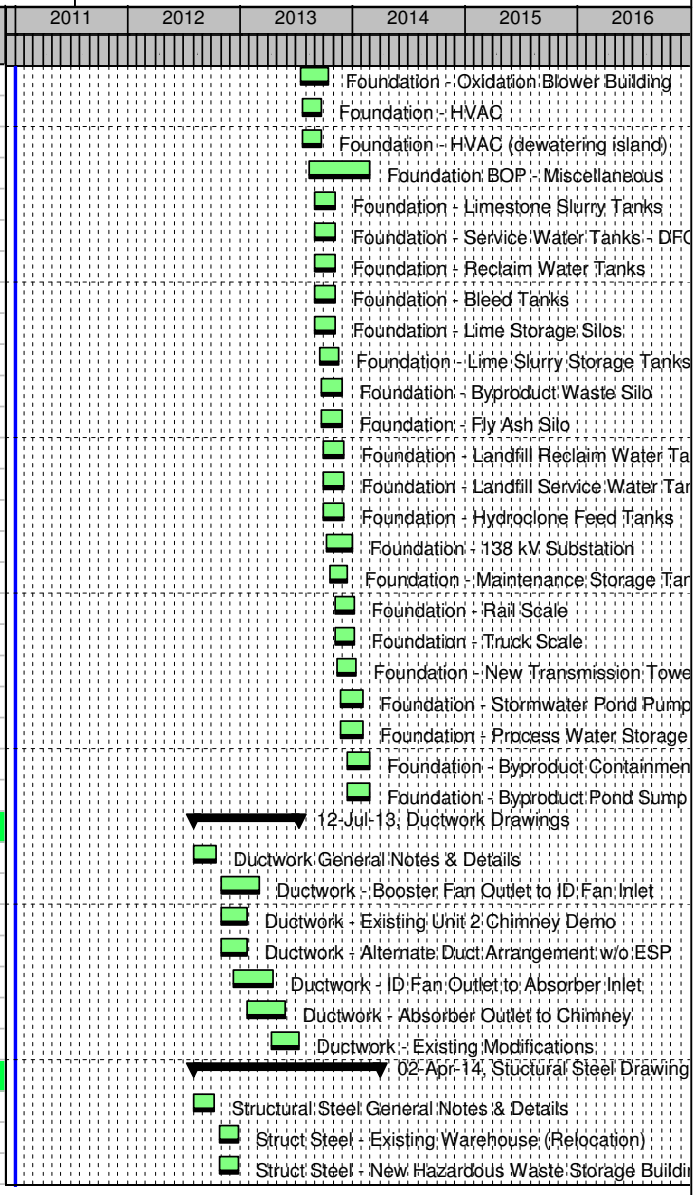
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Activity ID	Activity Name	Dur	Start	Finish
SL.CK3350.00	Foundation - Fabric Filter	110	25-Oct-12	29-Mar-13
SL.CK7100.00	Foundation - Booster Fan Outlet to ID Fan Inlet	80	11-Dec-12	04-Apr-13
SL.CK3200.00	Foundation - Absorber & Absorber Building w/ 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



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Activity ID	Activity Name	Dur	Start	Finish
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
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

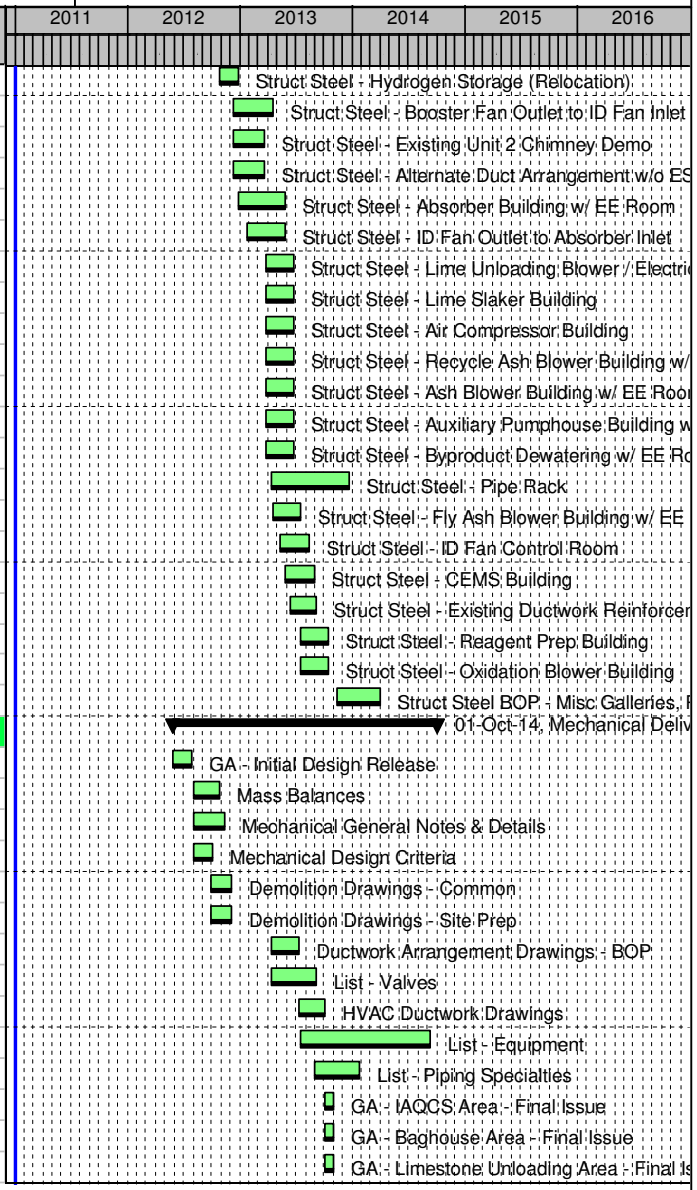


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

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Activity ID	Activity Name	Dur	Start	Finish
SL.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
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

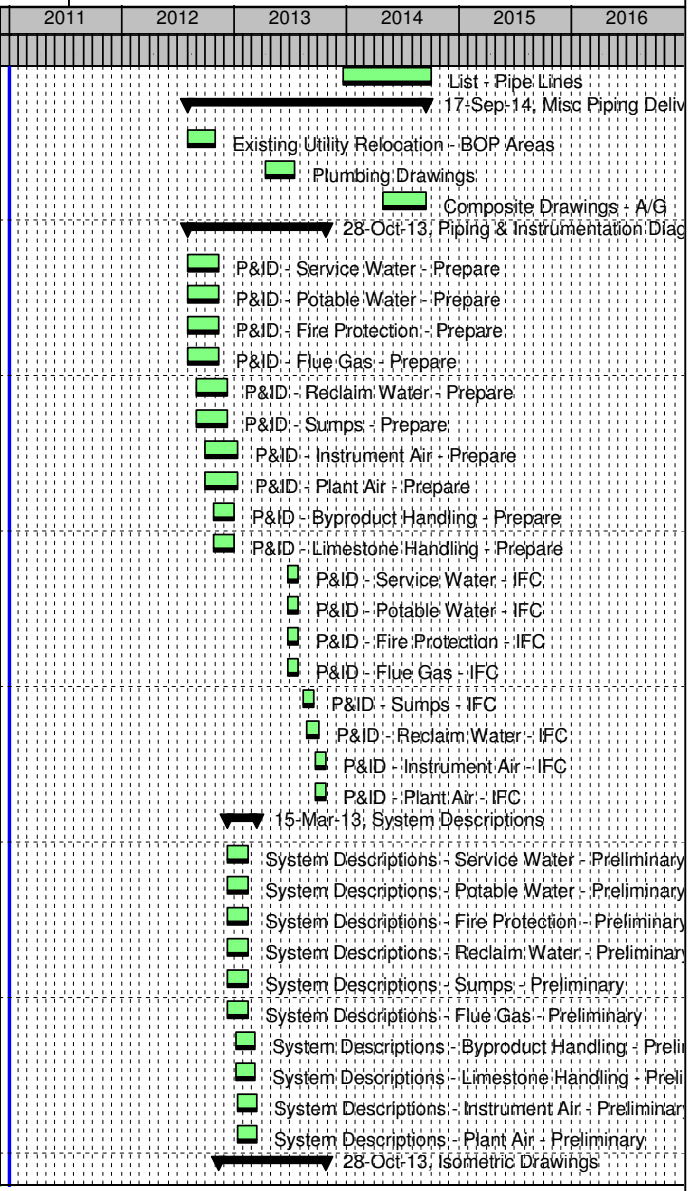


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

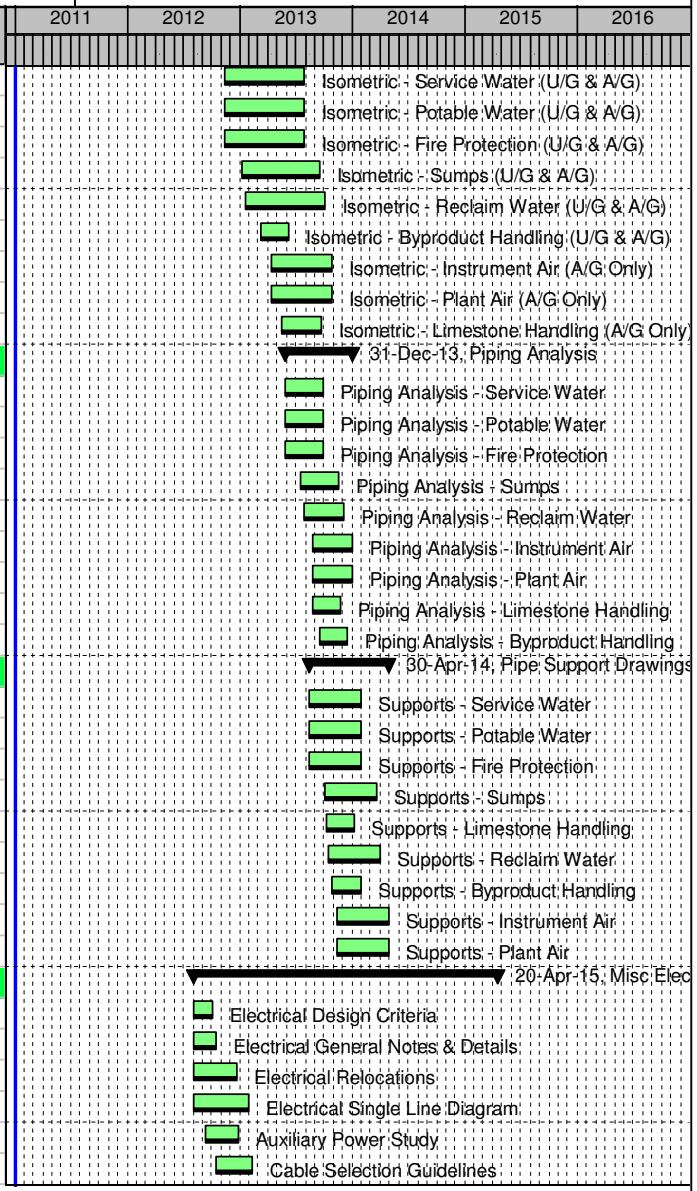
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Activity ID	Activity Name	Dur	Start	Finish
SL.MM5500.00	List - Pipe Lines	200	20-Dec-13	01-Oct-14
Misc Piping Deliverables		548	02-Aug-12	17-Sep-14
SL.MP0700.00	Existing Utility Relocation - BOP Areas	65	02-Aug-12	31-Oct-12
SL.MP7800.00	Plumbing Drawings	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



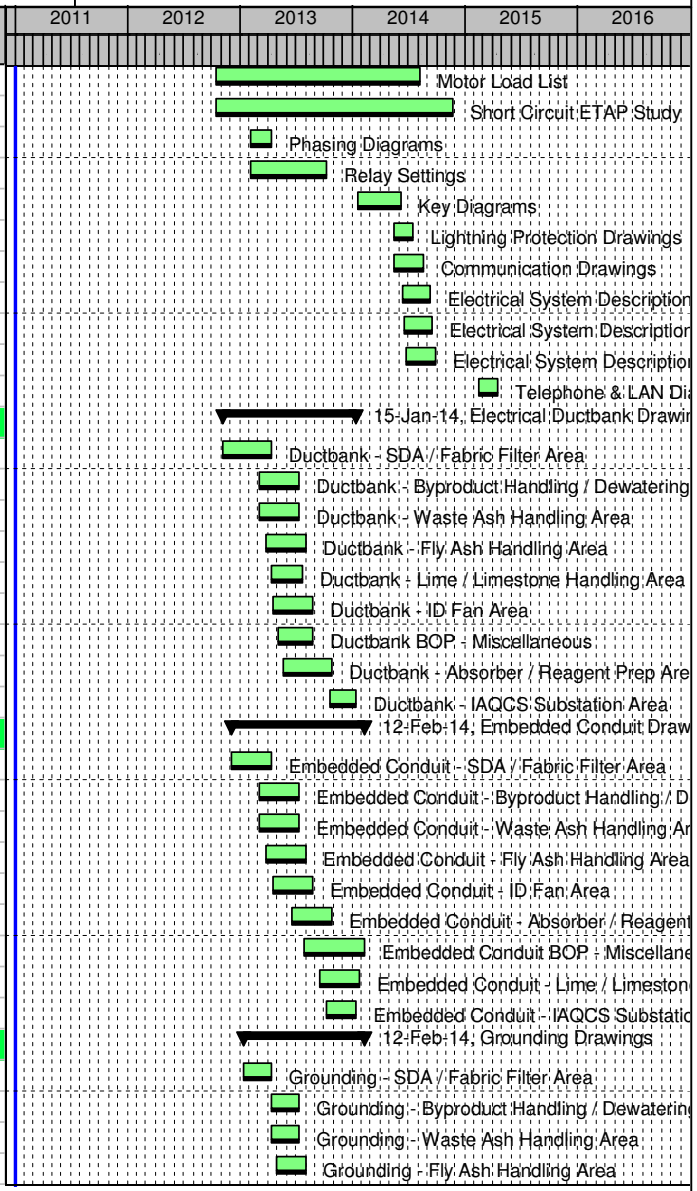
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Activity ID	Activity Name	Dur	Start	Finish
SL.MP1003.00	Isometric - Service Water (U/G & A/G)	180	15-Nov-12	29-Jul-13
SL.MP1004.00	Isometric - Potable Water (U/G & A/G)	180	15-Nov-12	29-Jul-13
SL.MP1007.00	Isometric - Fire Protection (U/G & A/G)	180	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



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Activity ID	Activity Name	Dur	Start	Finish
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
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

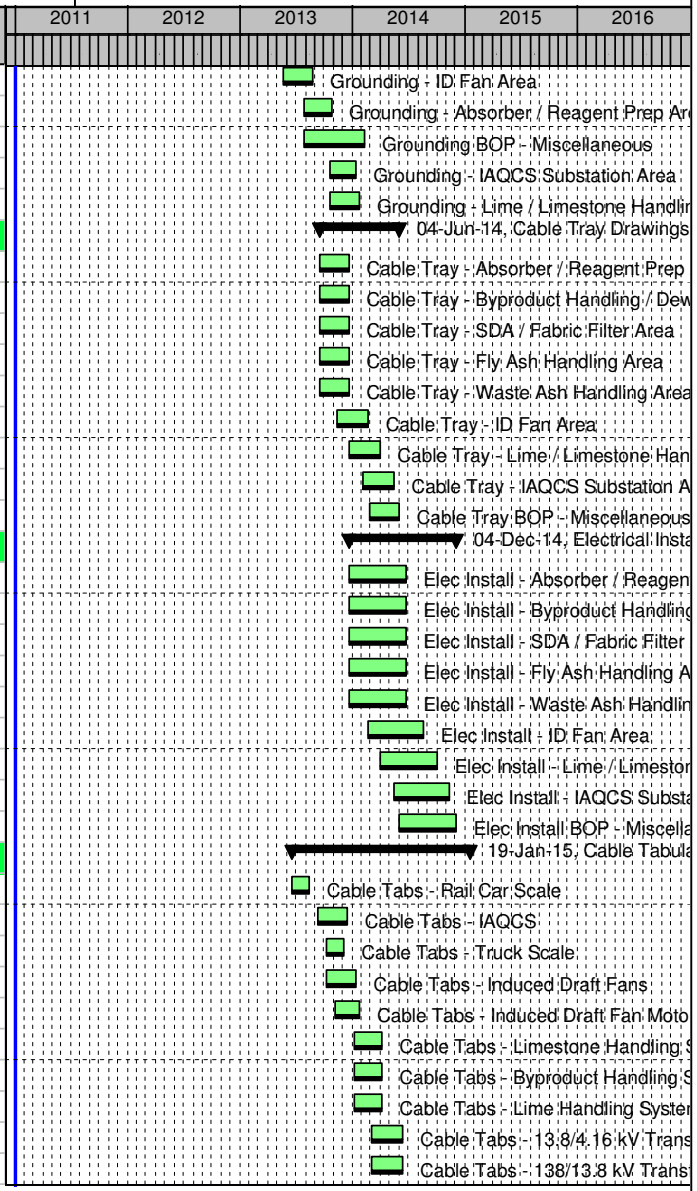


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

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Activity ID	Activity Name	Dur	Start	Finish
SL.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
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

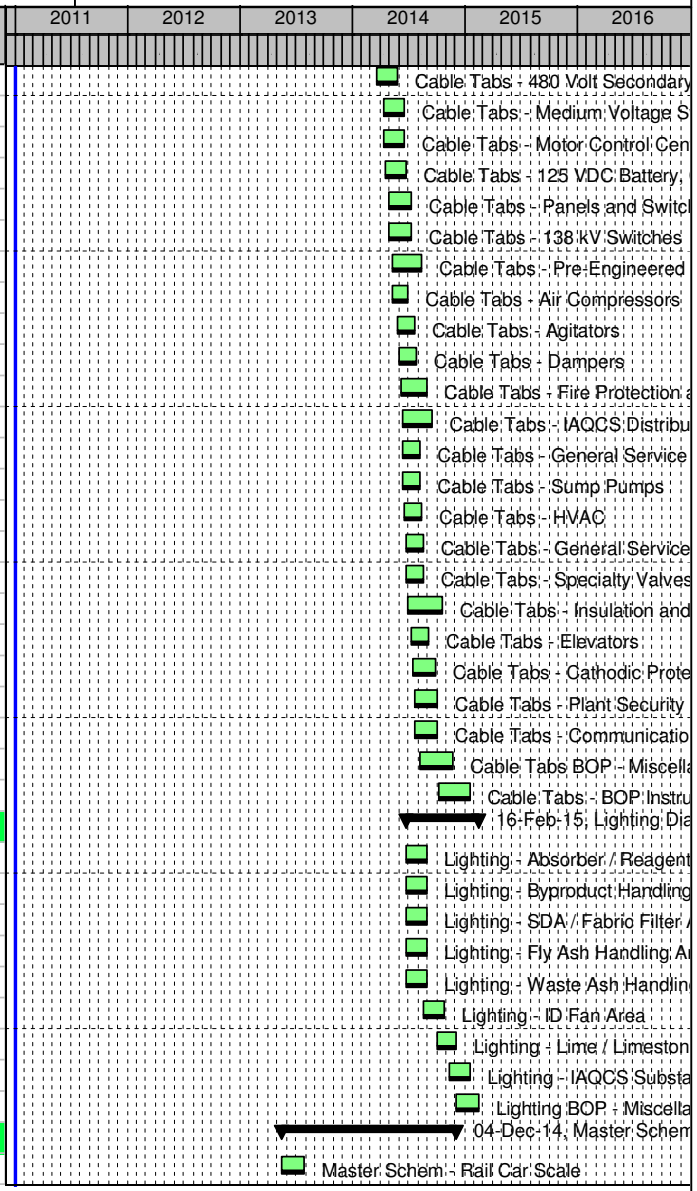


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

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Activity ID	Activity Name	Dur	Start	Finish
SL.E0-6863.00	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
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.E0-6868.00	Cable Tabs - Cathodic Protection	50	18-Jul-14	25-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

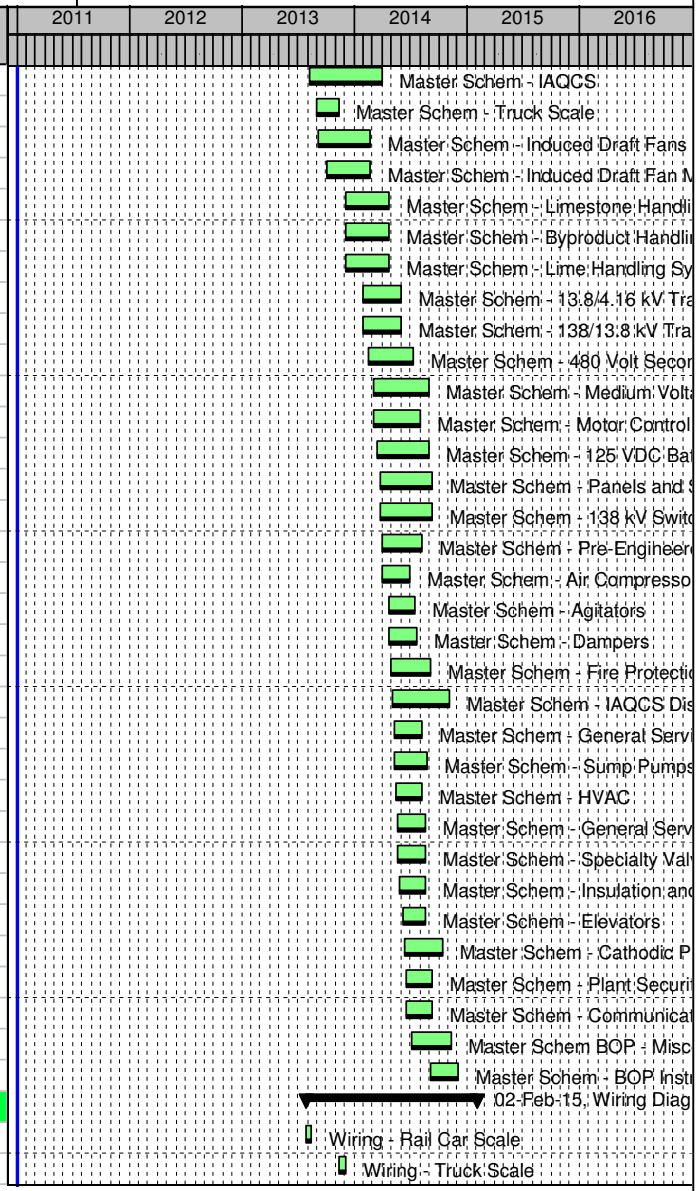


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

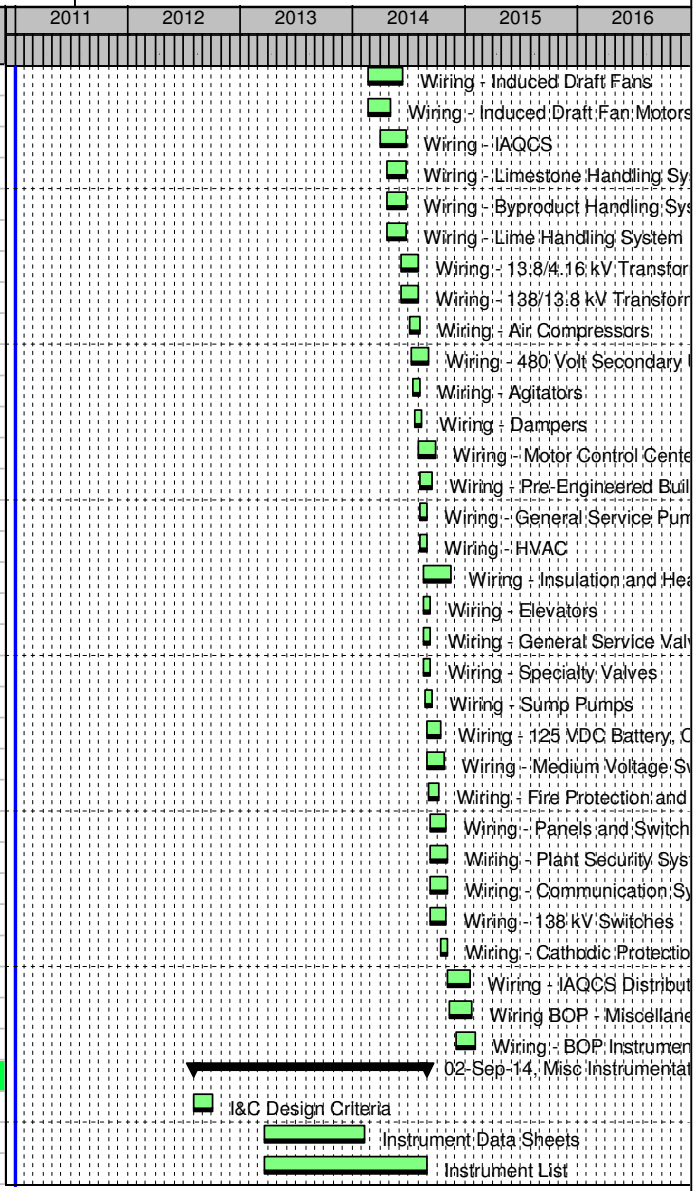
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Activity ID	Activity Name	Dur	Start	Finish
SL.E7-6815.00	Master Schem - IAQCS	170	06-Aug-13	02-Apr-14
SL.E7-6852.00	Master Schem - Truck Scale	50	02-Sep-13	11-Nov-13
SL.E7-6822.00	Master Schem - Induced Draft Fans	120	03-Sep-13	19-Feb-14
SL.E7-6860.00	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.E7-6868.00	Master Schem - Cathodic Protection	89	12-Jun-14	15-Oct-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



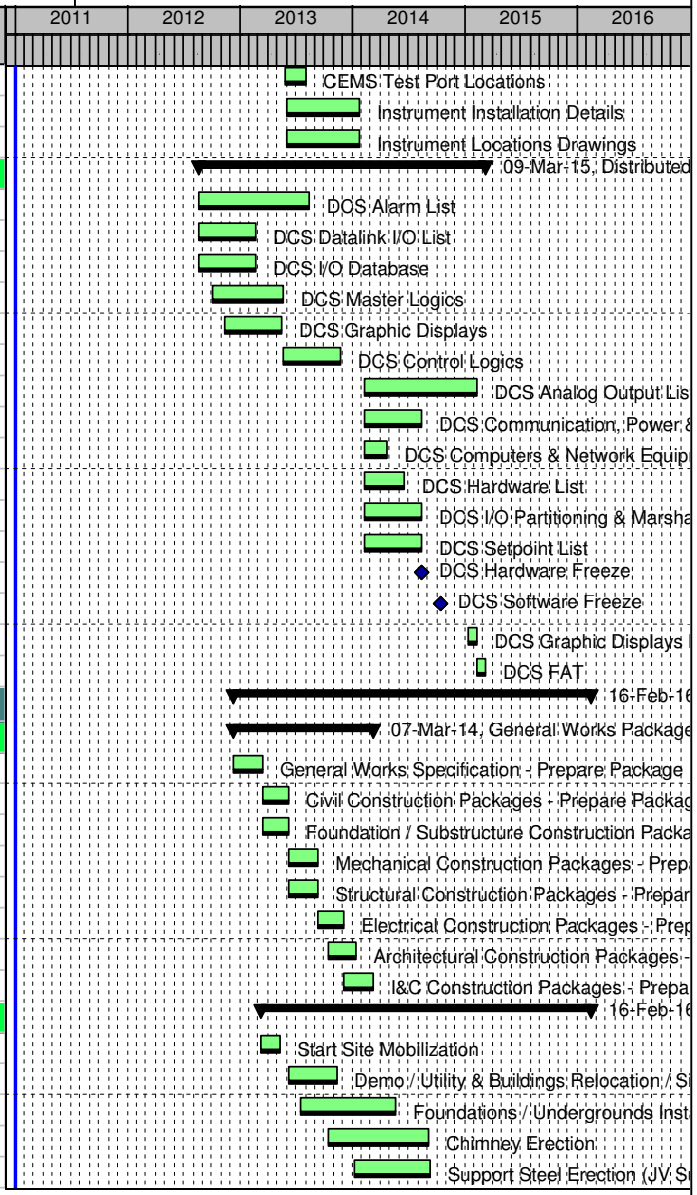
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Activity ID	Activity Name	Dur	Start	Finish
SL.E9-6822.00	Wiring - Induced Draft Fans	80	20-Feb-14	11-Jun-14
SL.E9-6860.00	Wiring - Induced Draft Fan Motors	55	20-Feb-14	07-May-14
SL.E9-6815.00	Wiring - IAQCS	60	03-Apr-14	25-Jun-14
SL.E9-6850.00	Wiring - Limestone Handling System	45	24-Apr-14	25-Jun-14
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.E9-6868.00	Wiring - Cathodic Protection	15	16-Oct-14	05-Nov-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



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Activity ID	Activity Name	Dur	Start	Finish
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
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



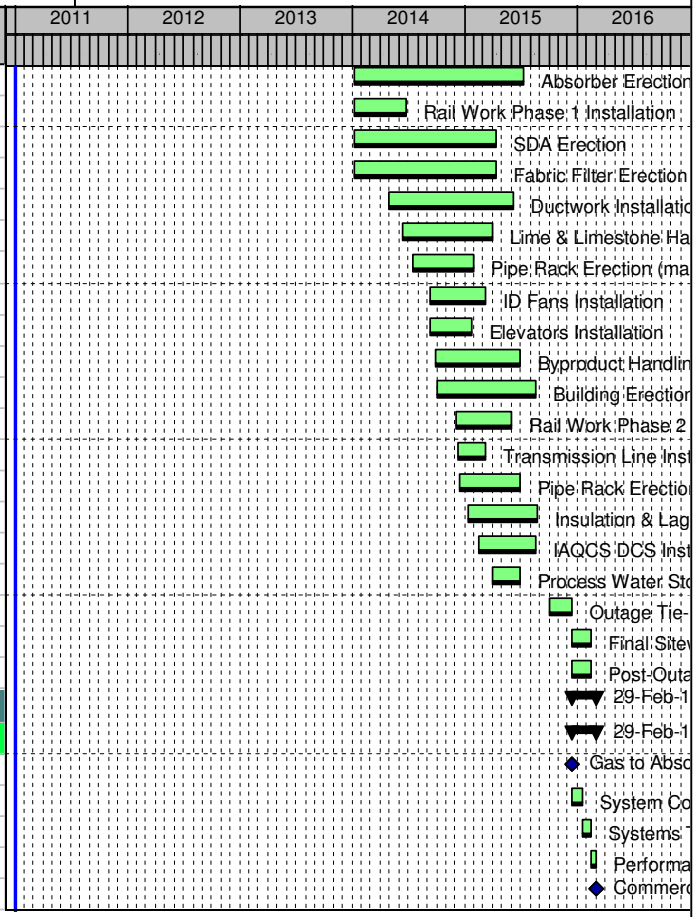
Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

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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
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
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*



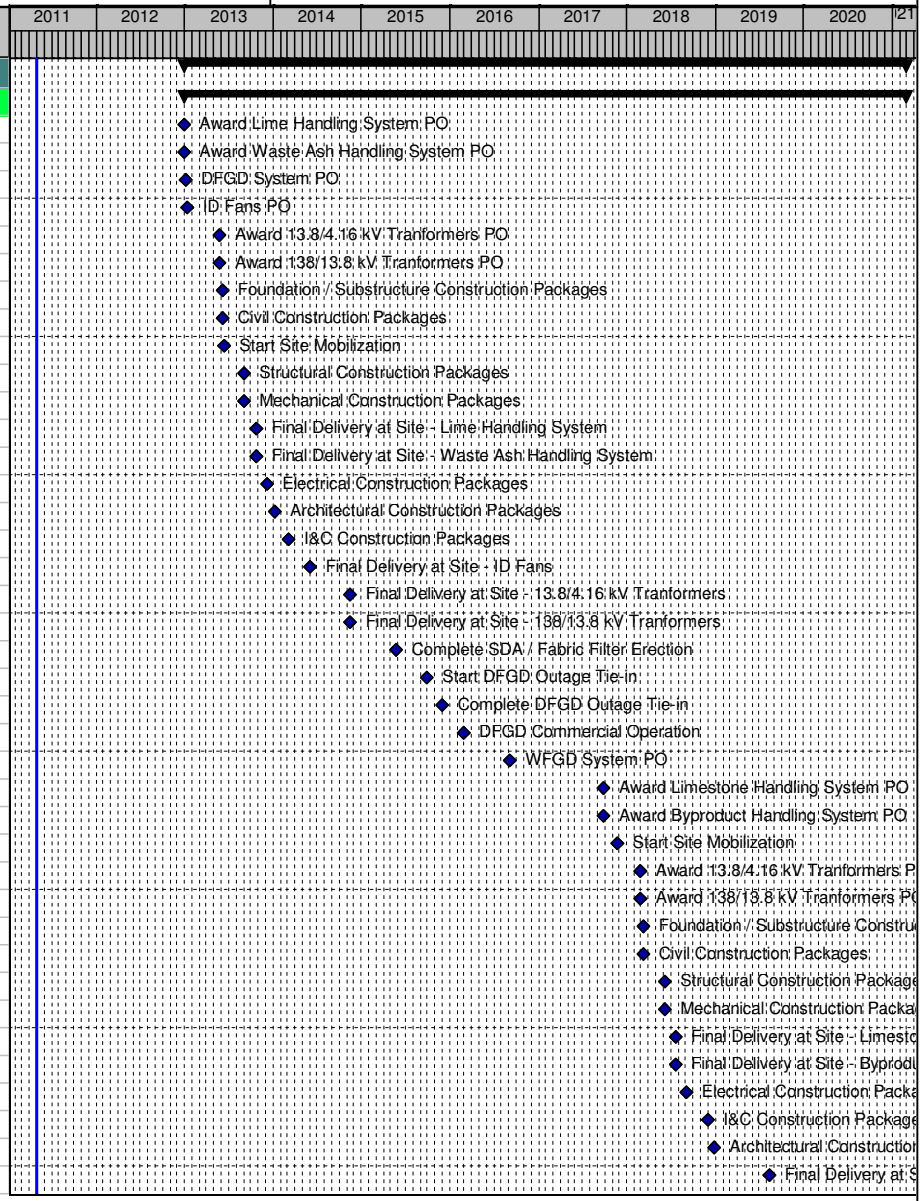
Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

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ATTACHMENT 4-24
Project Schedule (IAQCS - Phased)

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

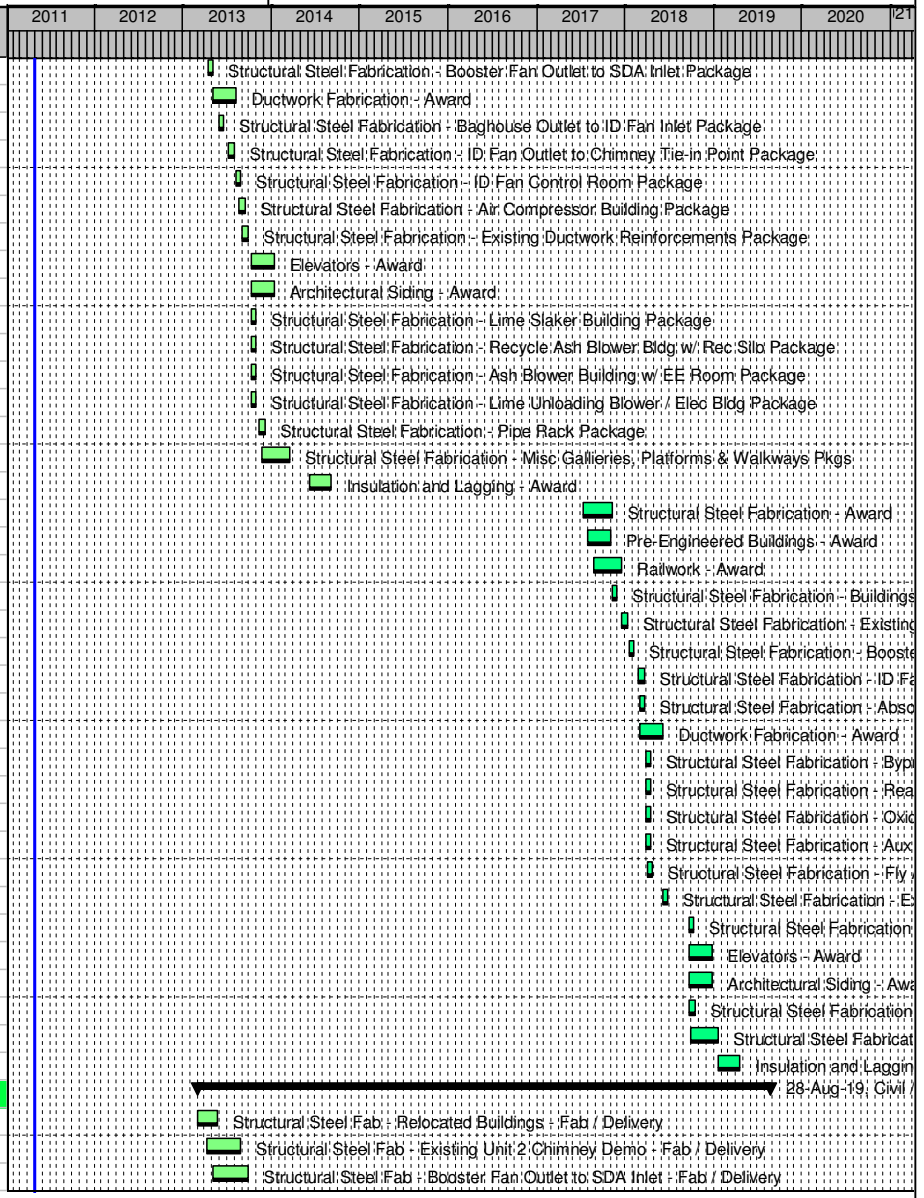


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

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

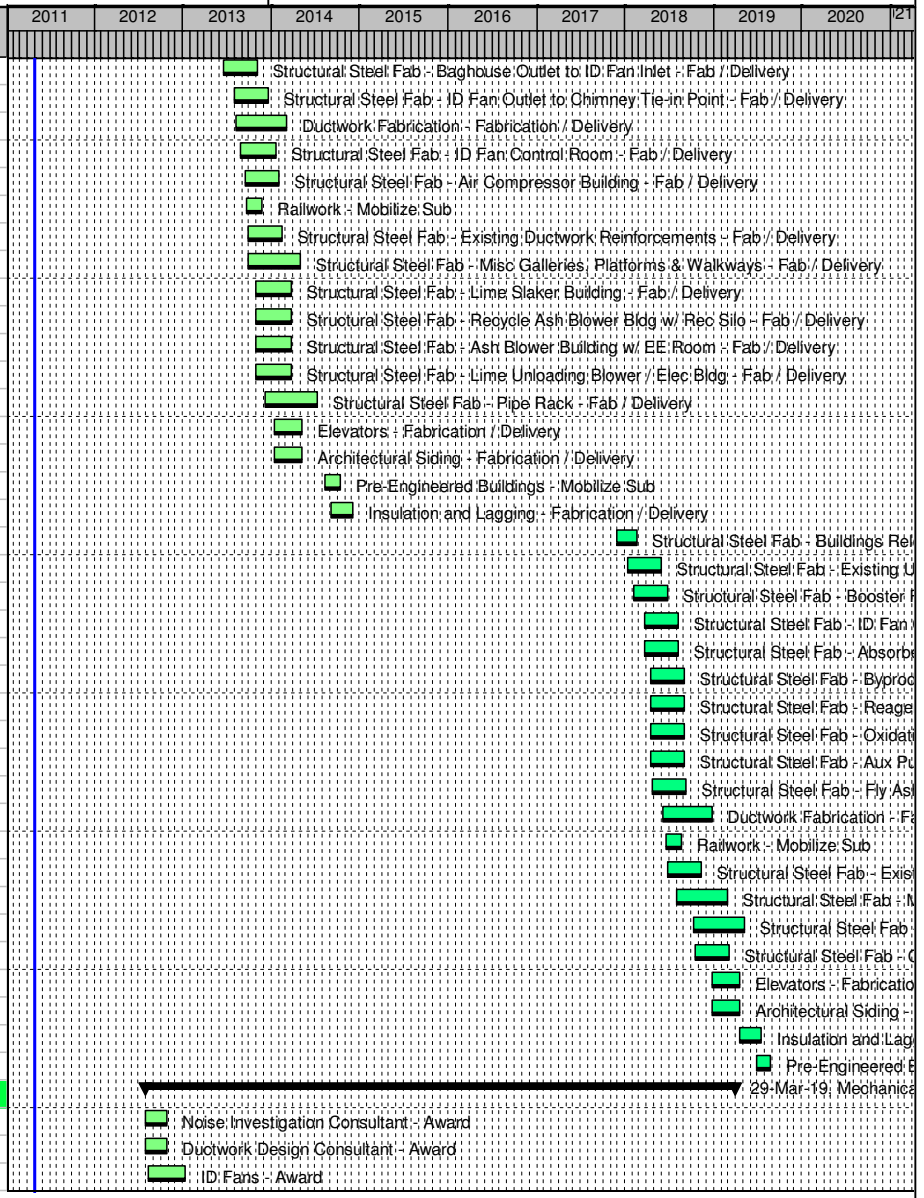


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

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

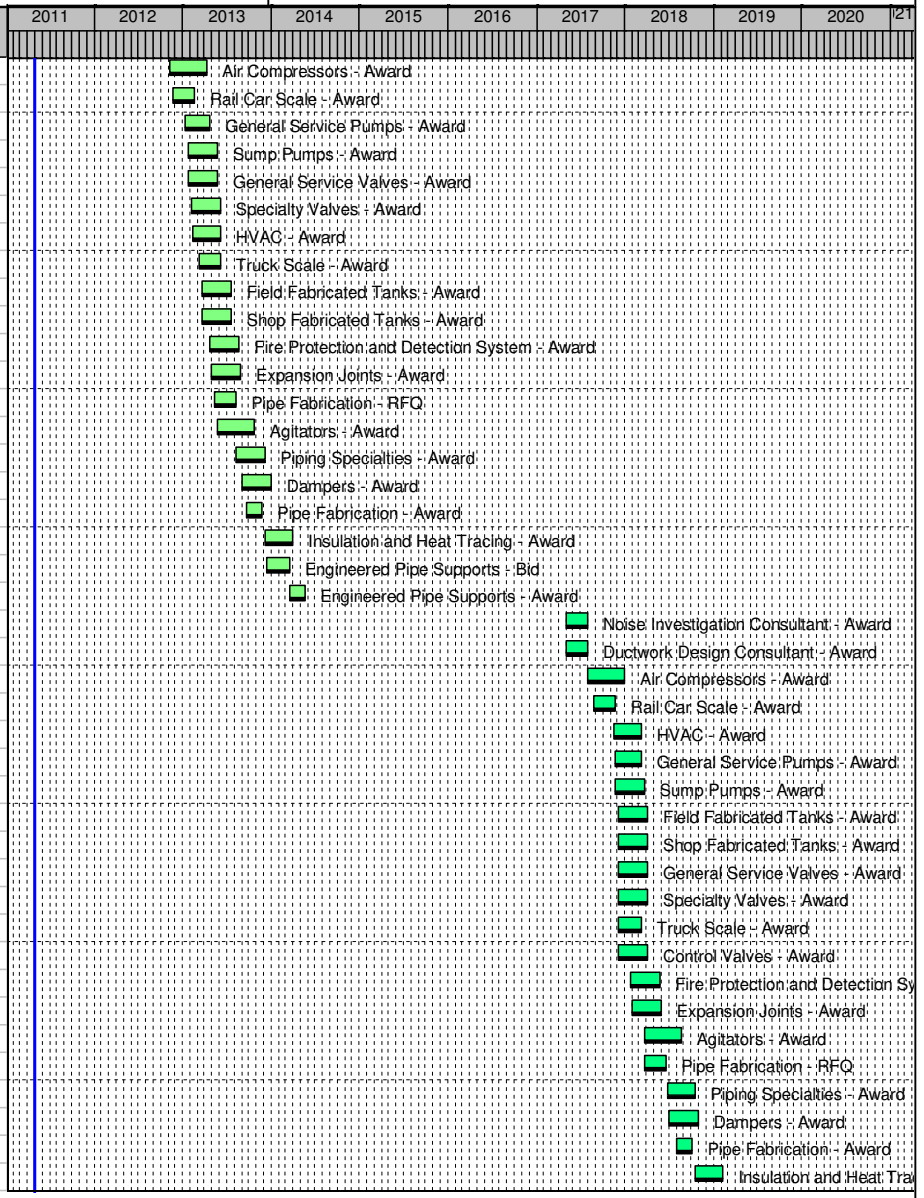


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

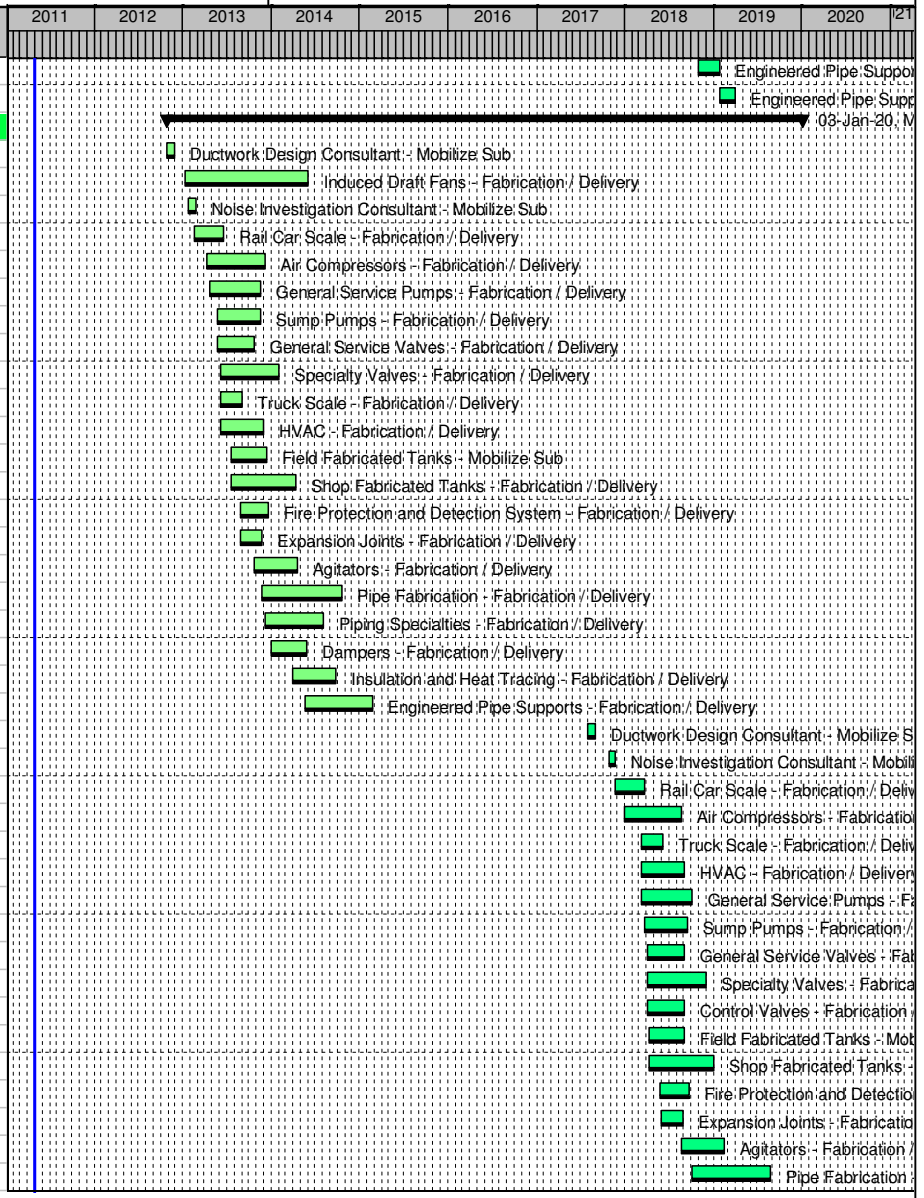
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Activity ID	Activity Name	Dur	Start	Finish
SL.P-6823.10	Air Compressors - Award	106	12-Nov-12	11-Apr-13
SL.P-6853.10	Rail Car Scale - Award	63	21-Nov-12	20-Feb-13
SL.P-6826.10	General Service Pumps - Award	75	10-Jan-13	25-Apr-13
SL.P-6827.10	Sump Pumps - 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

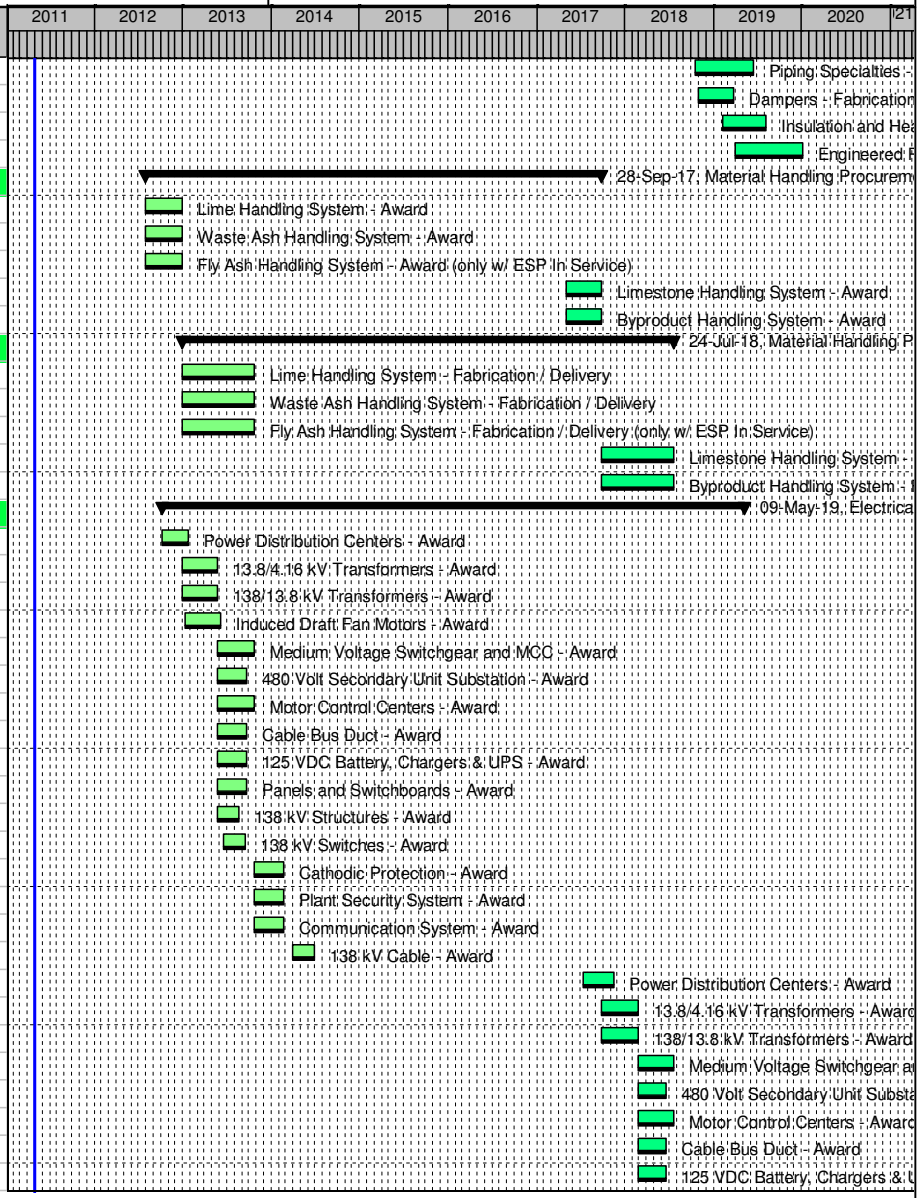


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

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-6868.10	Cathodic Protection - Award	85	22-Oct-13	20-Feb-14
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

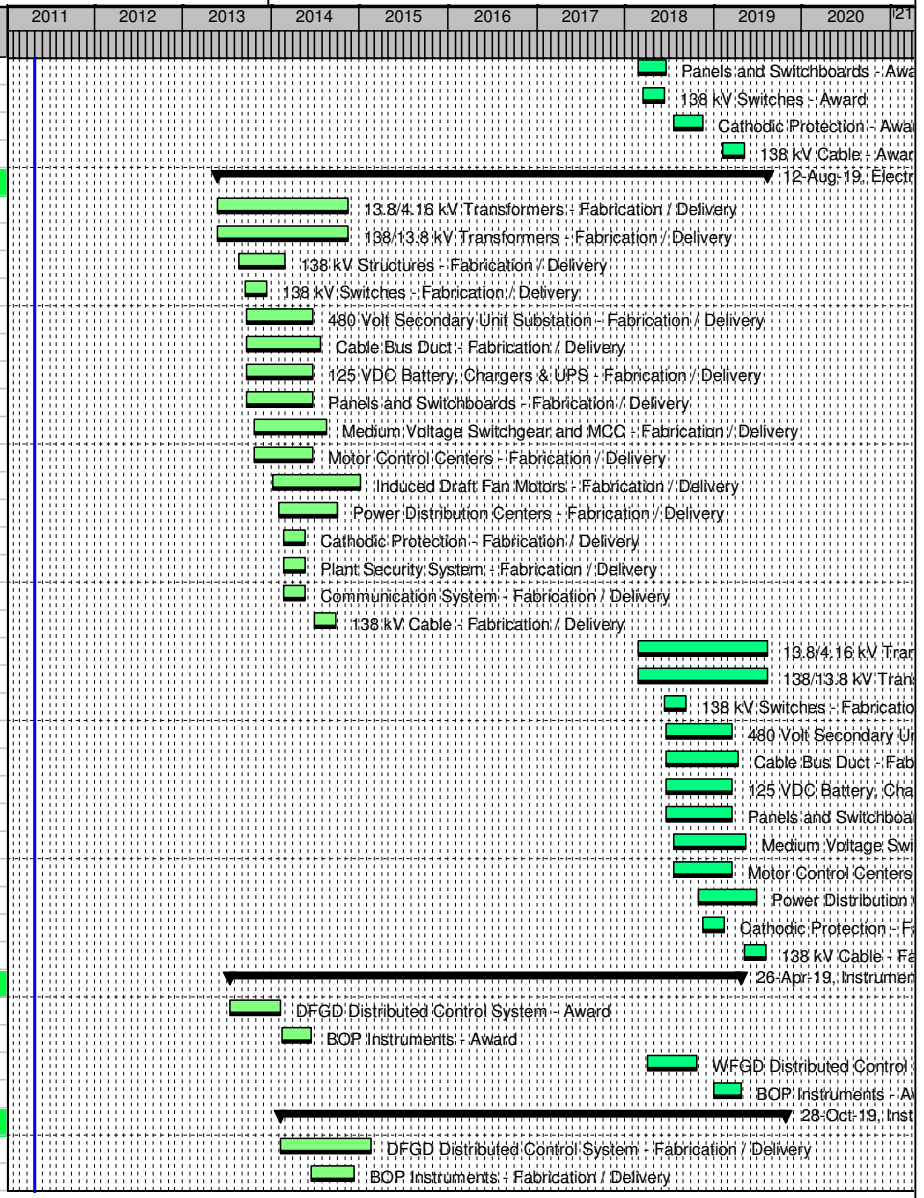


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

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Activity ID	Activity Name	Dur	Start	Finish
SL.P-6867.00	Panels and Switchboards - Award	85	26-Feb-18	22-Jun-18
SL.P-6876.00	138 kV Switches - Award	63	19-Mar-18	14-Jun-18
SL.P-6868.00	Cathodic Protection - Award	85	23-Jul-18	19-Nov-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-6868.100	Cathodic Protection - Fabrication / Delivery	63	20-Feb-14	20-May-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-6868.90	Cathodic Protection - Fabrication / Delivery	63	19-Nov-18	14-Feb-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

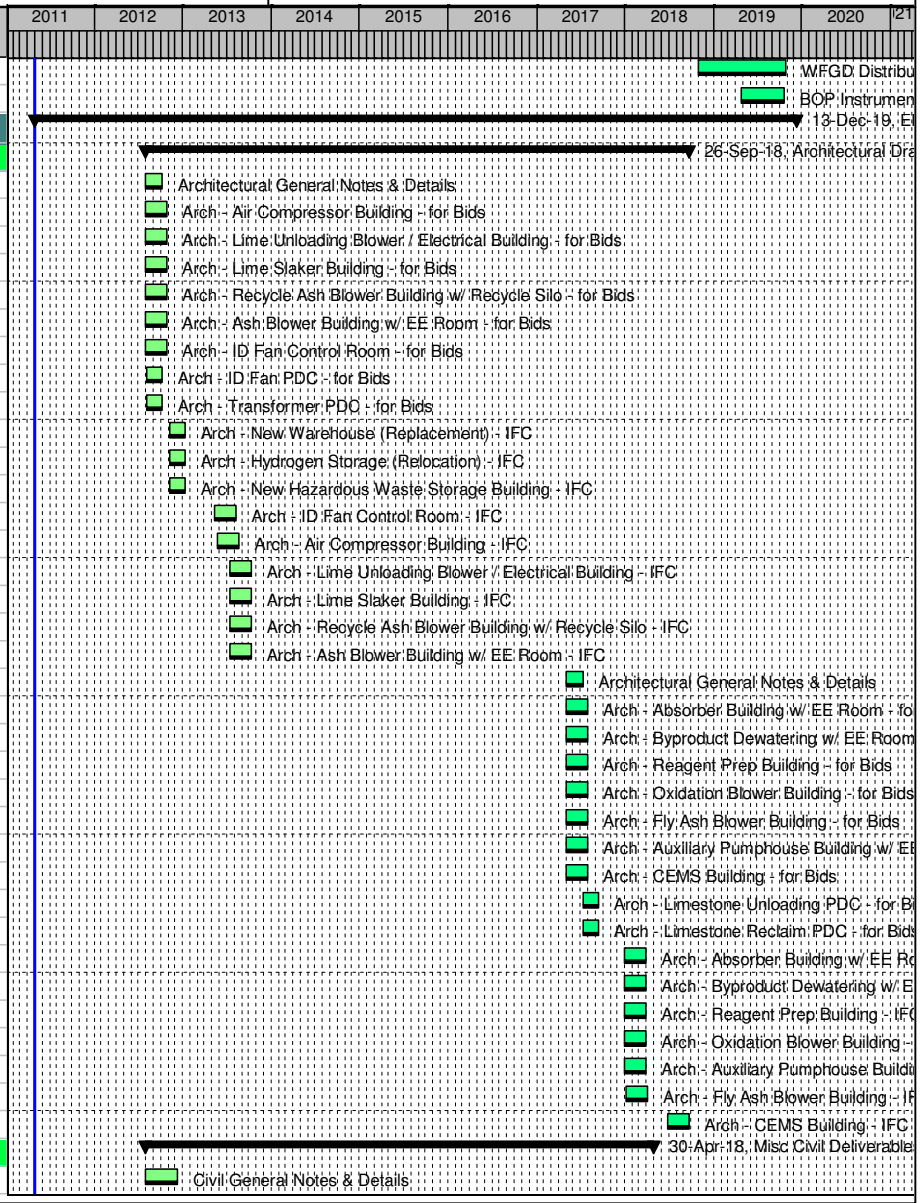


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

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Activity ID	Activity Name	Dur	Start	Finish
SL.P-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
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

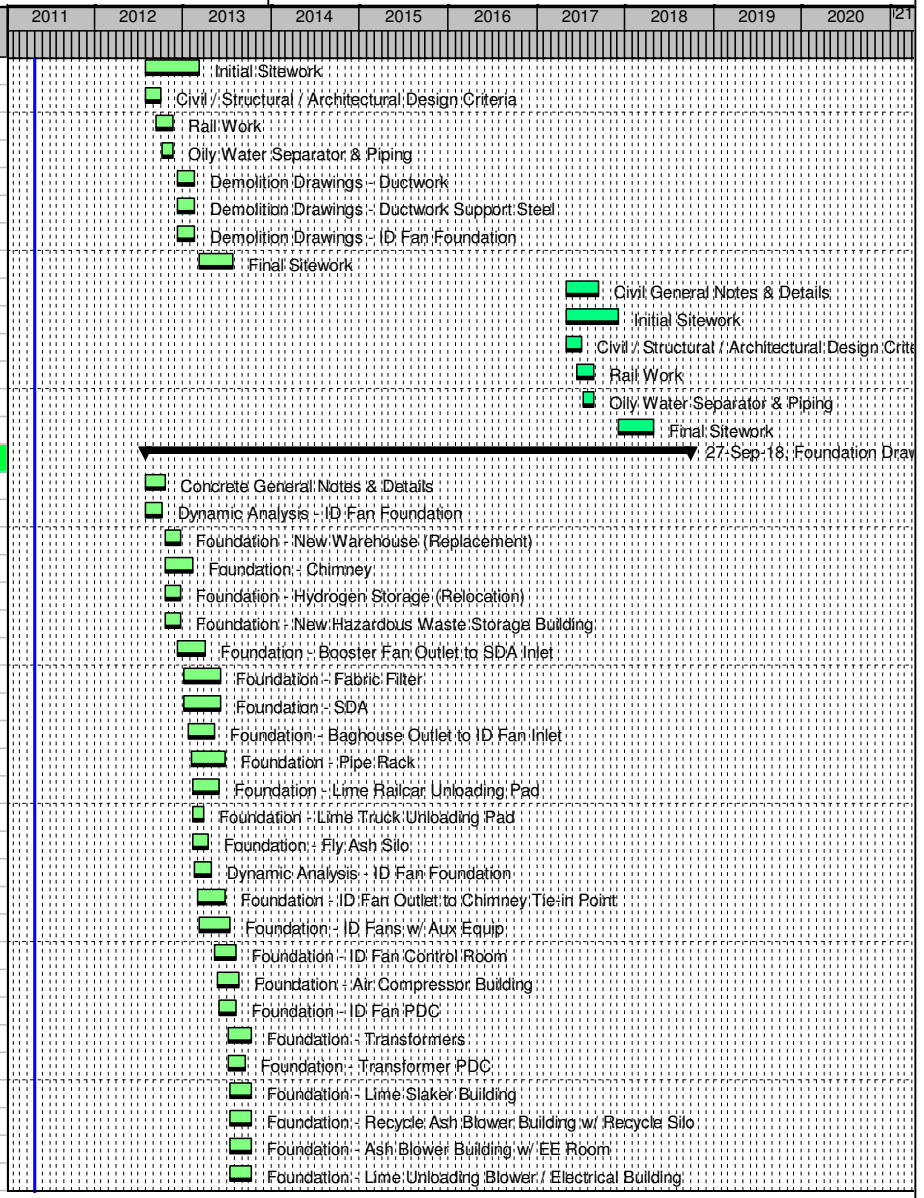


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

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Activity ID	Activity Name	Dur	Start	Finish
SL.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
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

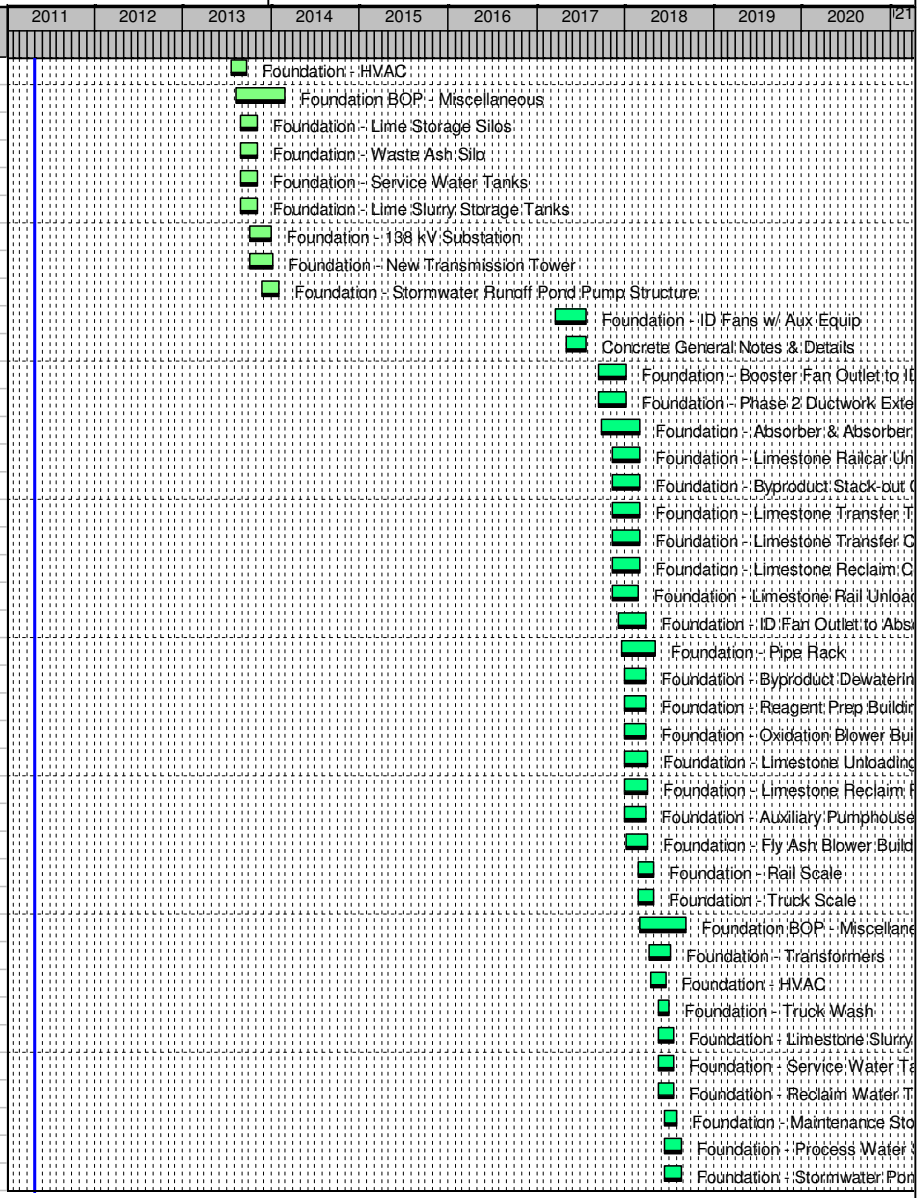


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

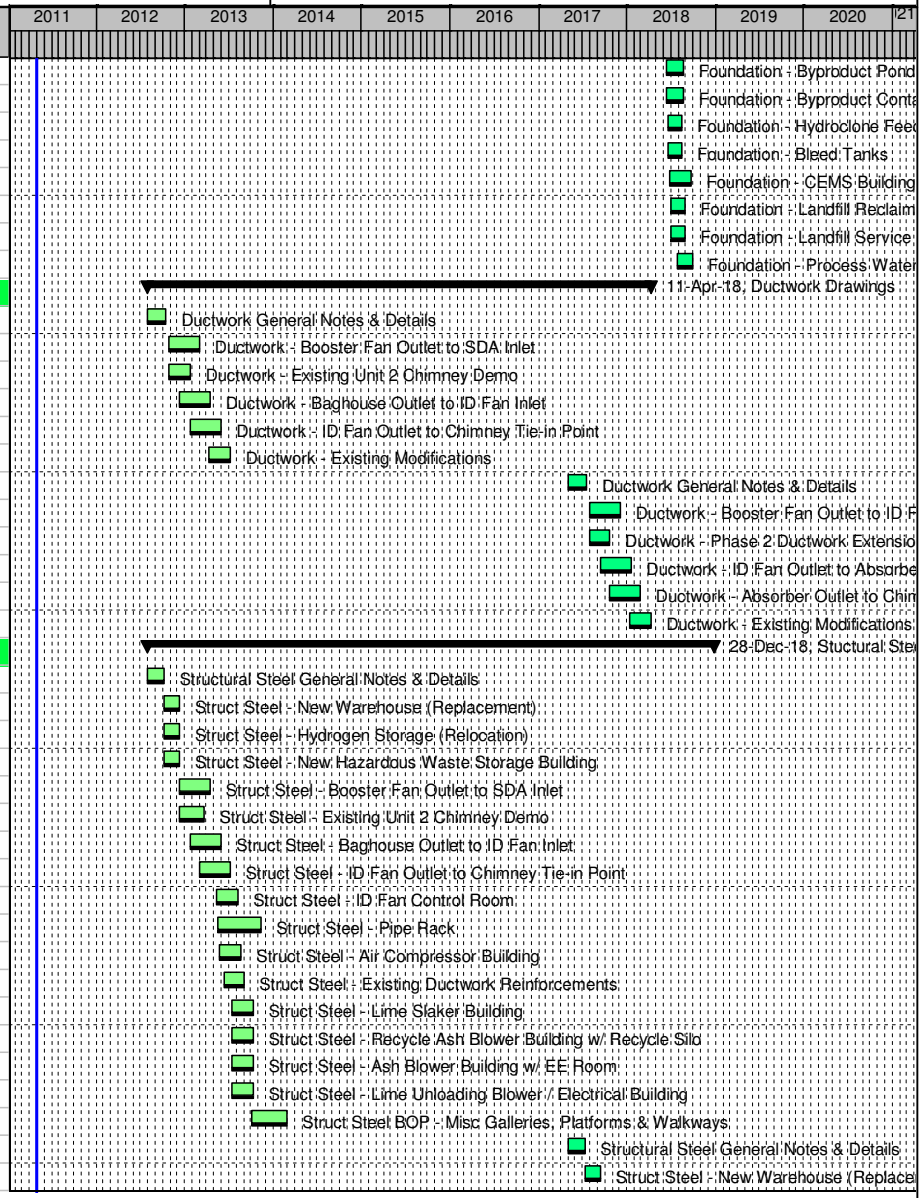
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Activity ID	Activity Name	Dur	Start	Finish
SL.CK3400.10	Foundation - HVAC	46	22-Jul-13	23-Sep-13
SL.CK8000.10	Foundation BOP - Miscellaneous	140	09-Aug-13	25-Feb-14
SL.CK4300.00	Foundation - Lime Storage Silos	46	30-Aug-13	04-Nov-13
SL.CK7200.00	Foundation - Waste Ash Silo	46	30-Aug-13	04-Nov-13
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



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Activity ID	Activity Name	Dur	Start	Finish
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
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

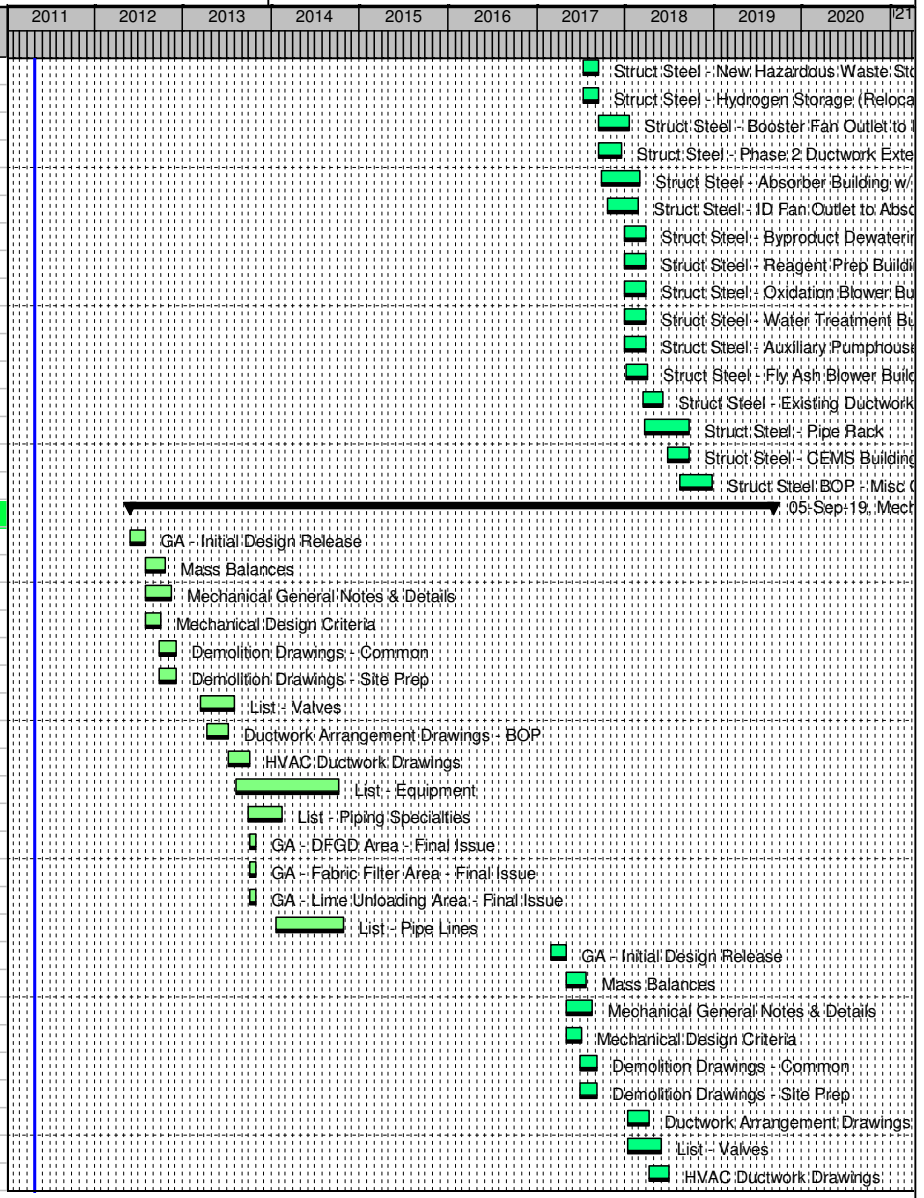


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

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Activity ID	Activity Name	Dur	Start	Finish
SL.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
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

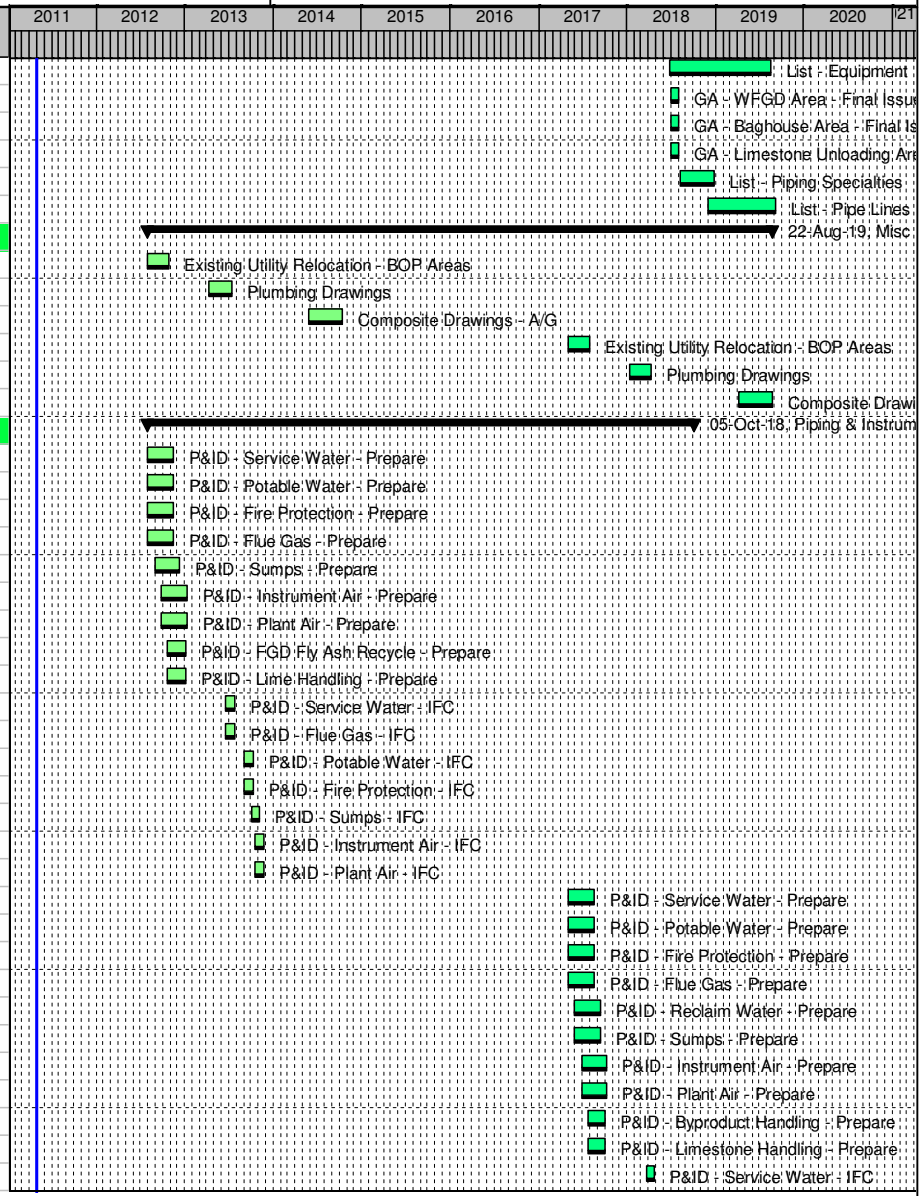


Remaining Level of Effort | Actual Level of Effort | Actual Work
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TASK filter: All Activities

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Activity ID	Activity Name	Dur	Start	Finish
SL.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
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

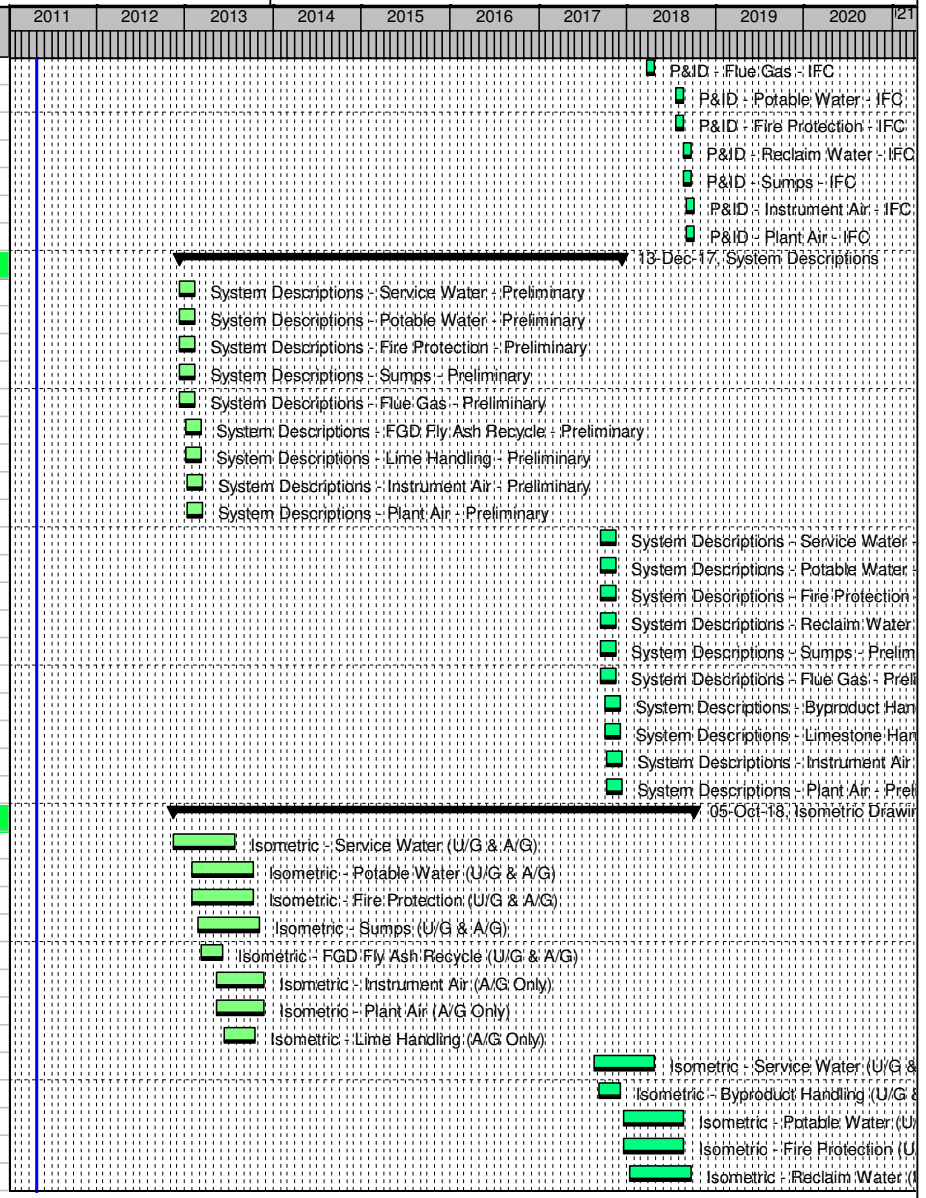


Remaining Level of Effort | Actual Level of Effort | Actual Work
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TASK filter: All Activities

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Activity ID	Activity Name	Dur	Start	Finish
SL.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
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

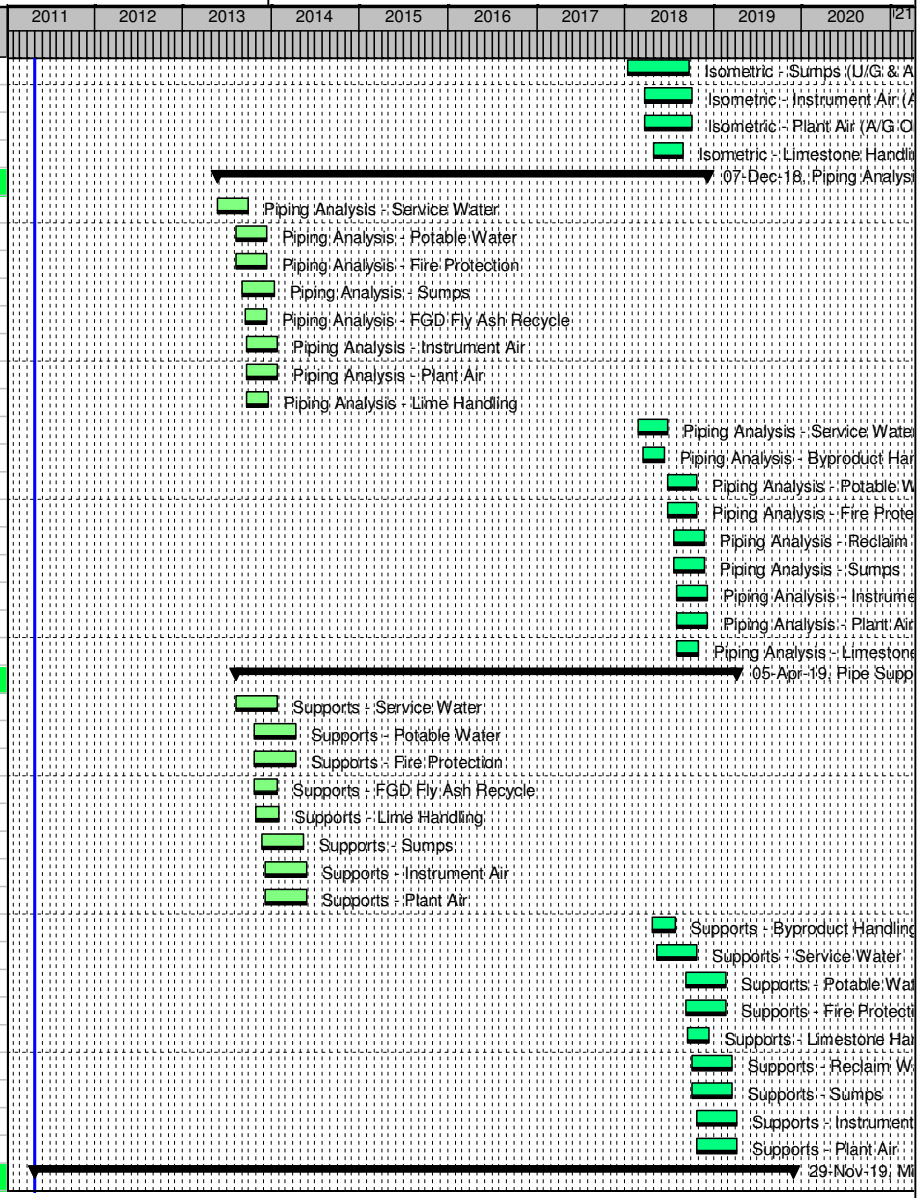


Remaining Level of Effort | Actual Level of Effort | Actual Work
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TASK filter: All Activities

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Activity ID	Activity Name	Dur	Start	Finish
SL.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
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

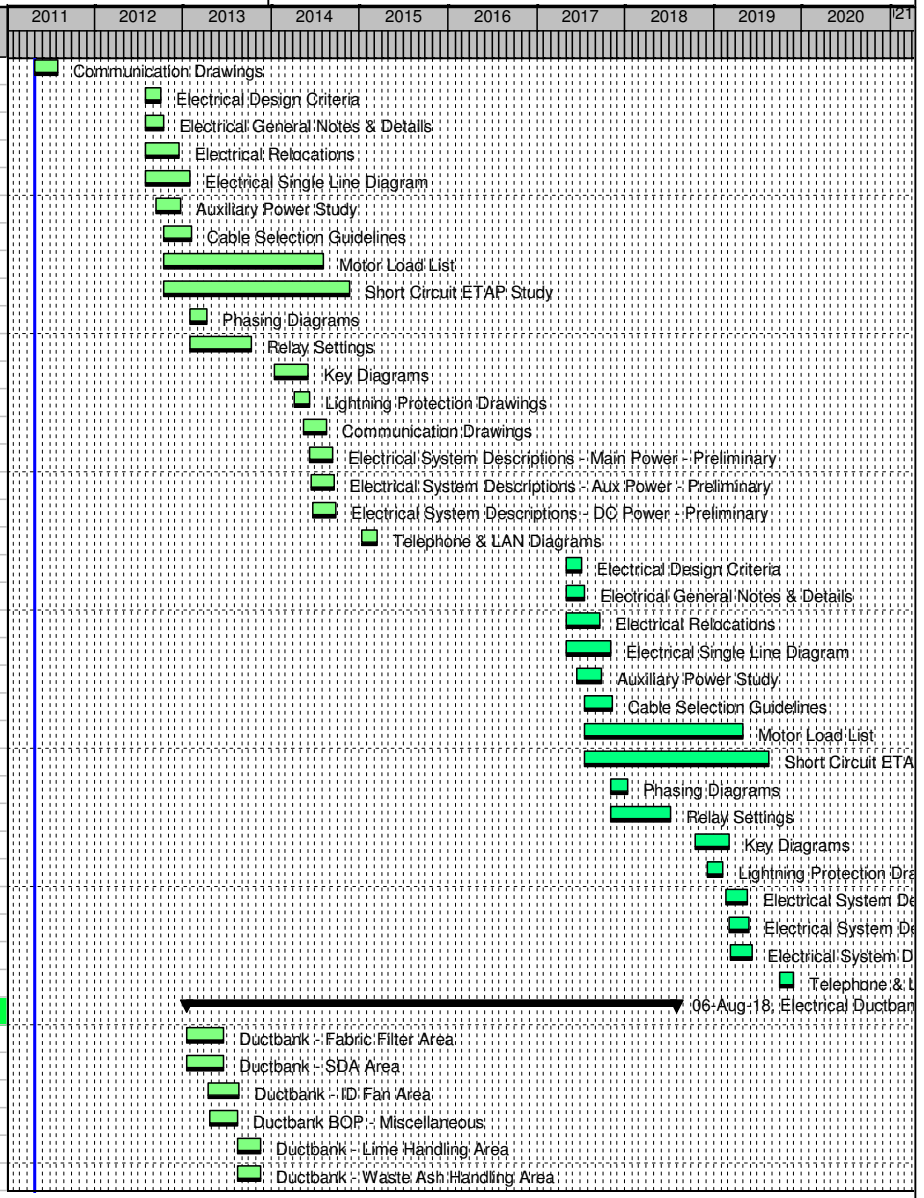


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Activity ID	Activity Name	Dur	Start	Finish
SL.E1300.00	Communication Drawings	65	02-May-11	01-Aug-11
SL.E3100.10	Electrical Design Criteria	45	01-Aug-12	02-Oct-12
SL.E3200.10	Electrical General Notes & Details	53	01-Aug-12	12-Oct-12
SL.E3600.10	Electrical Relocations	100	01-Aug-12	18-Dec-12
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

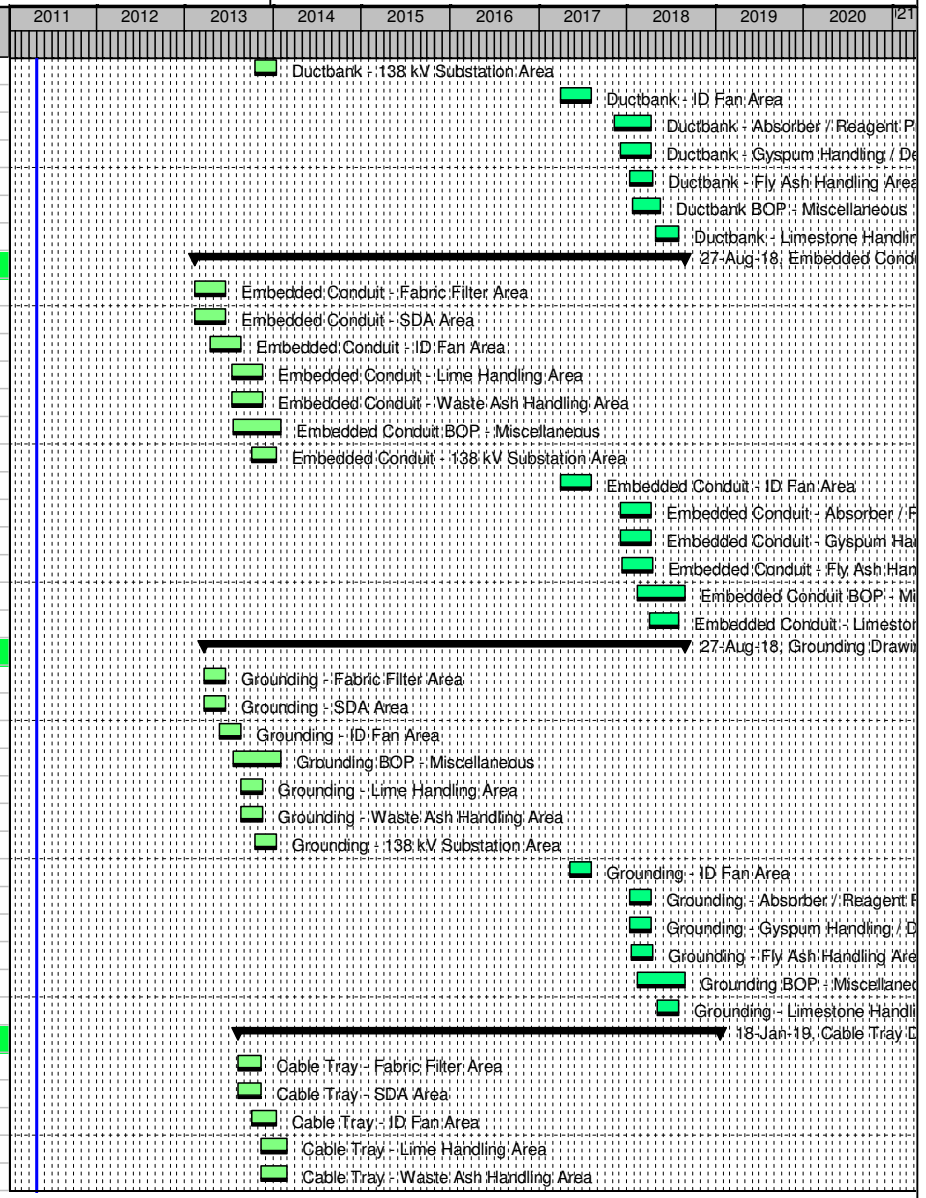


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

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Activity ID	Activity Name	Dur	Start	Finish
SL.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
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

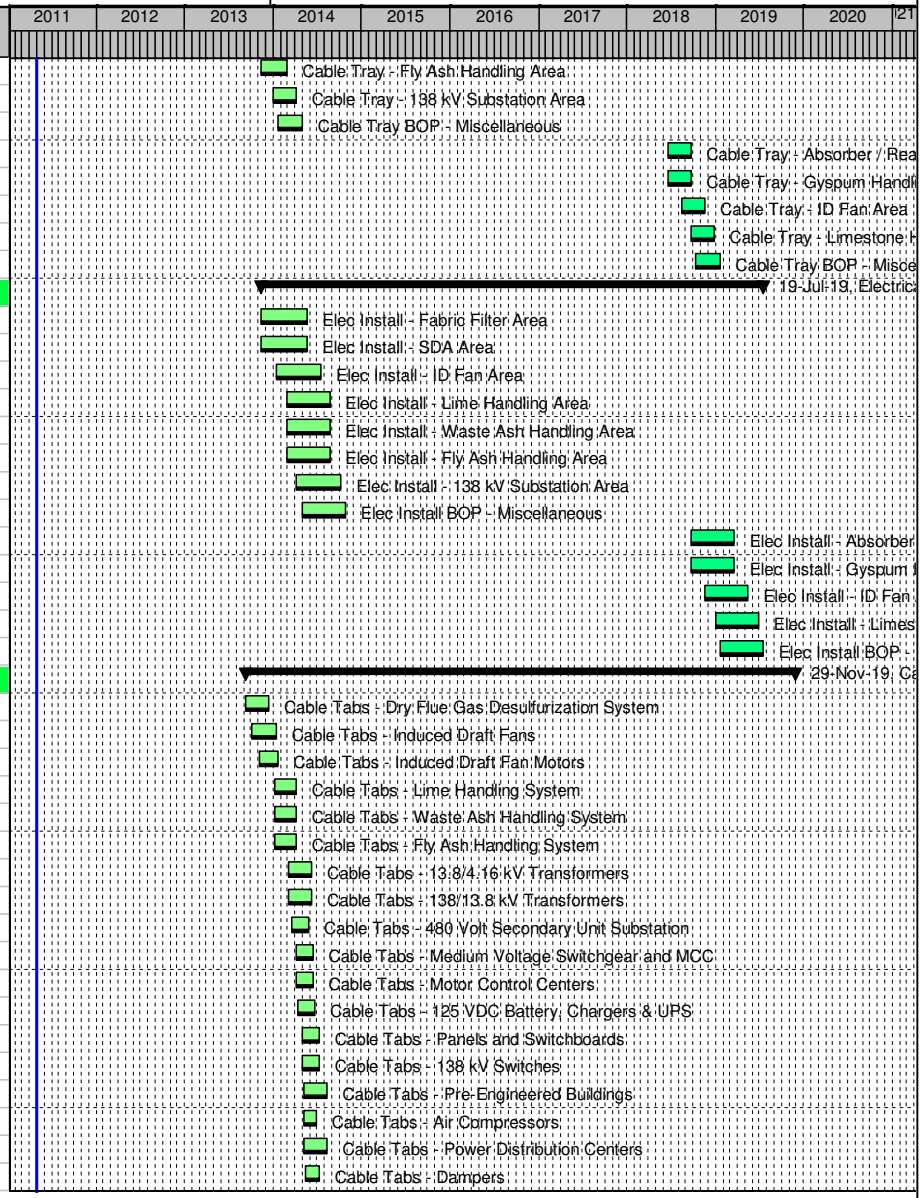


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

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Activity ID	Activity Name	Dur	Start	Finish
SL.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
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

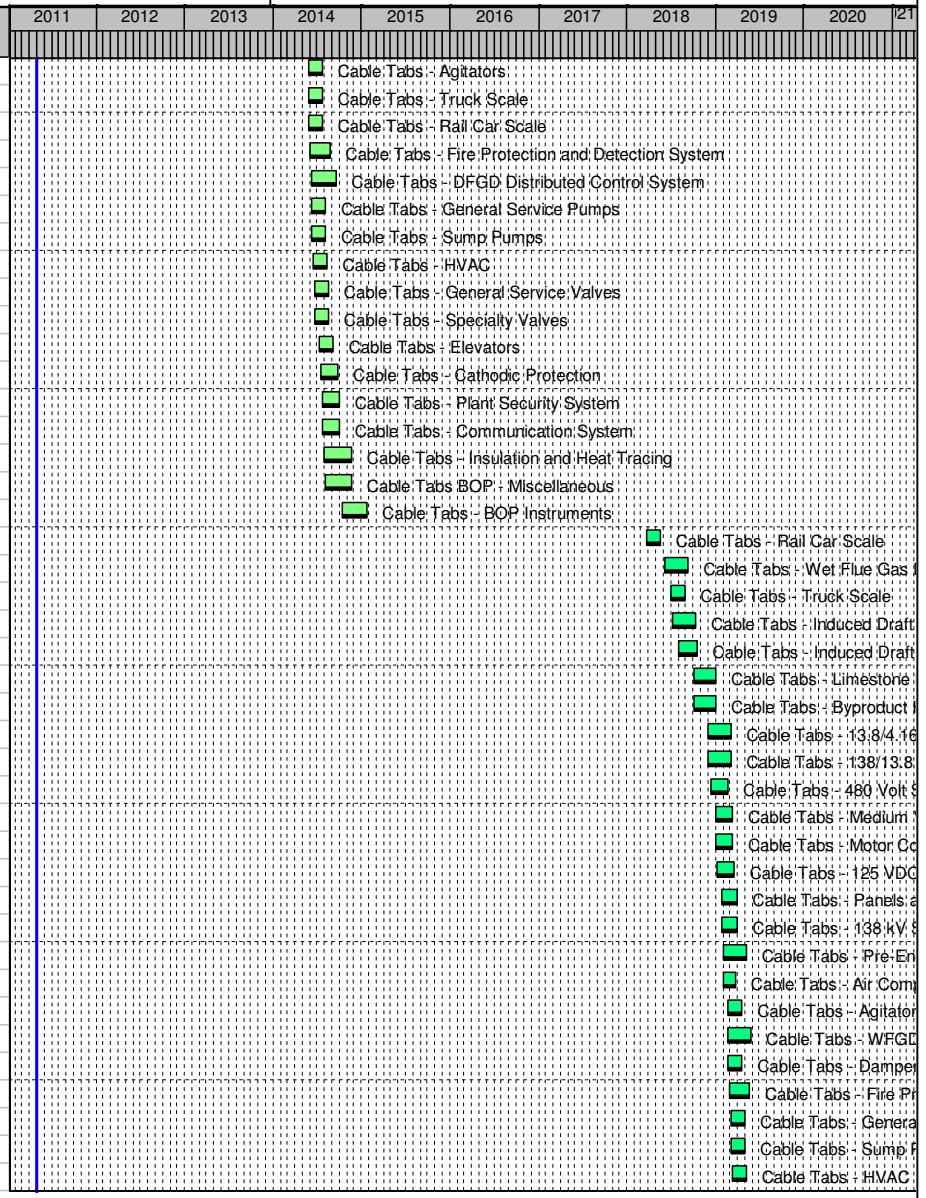


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

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Activity ID	Activity Name	Dur	Start	Finish
SL.E0-6836.10	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
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.E0-6868.10	Cable Tabs - Cathodic Protection	50	17-Jul-14	24-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

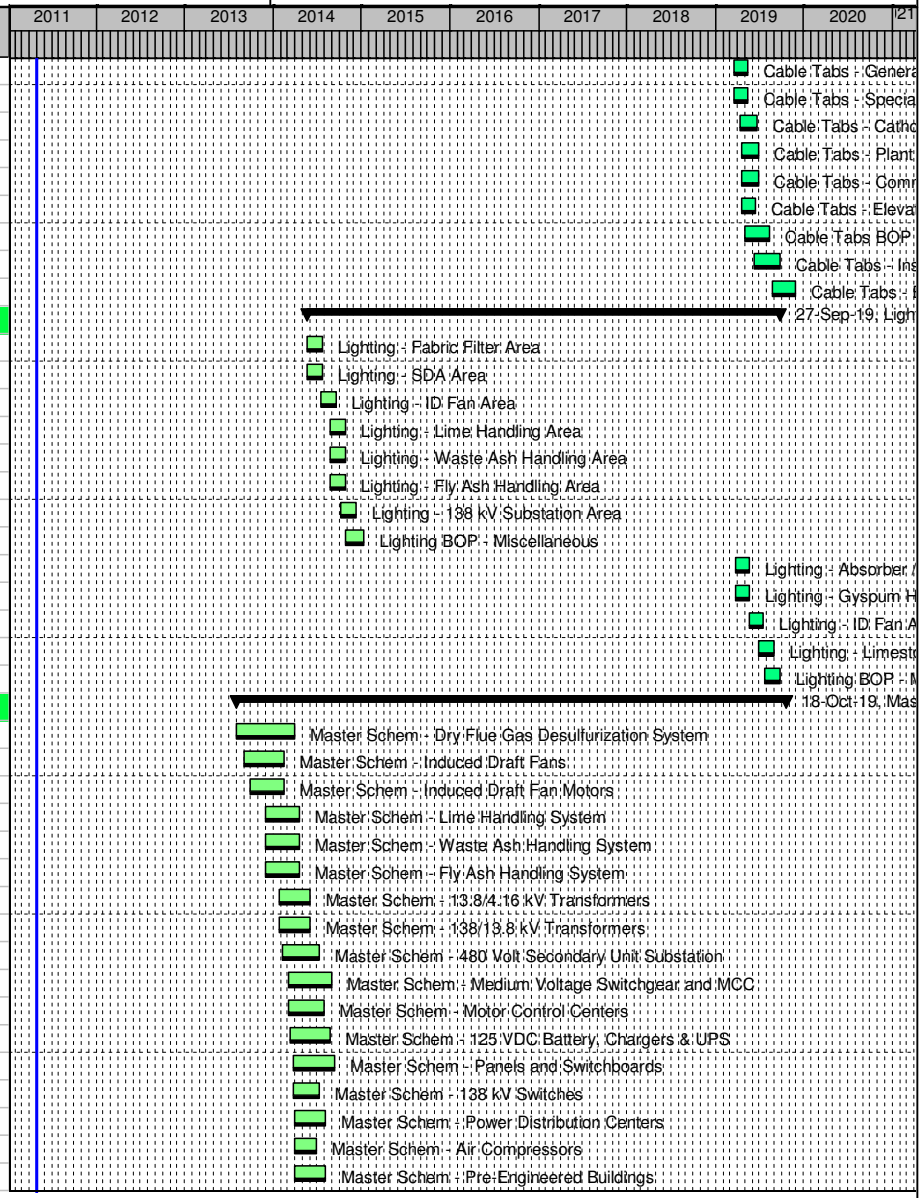


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

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Activity ID	Activity Name	Dur	Start	Finish
SL.E0-6830.00	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.E0-6868.00	Cable Tabs - Cathodic Protection	50	12-Apr-19	20-Jun-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
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

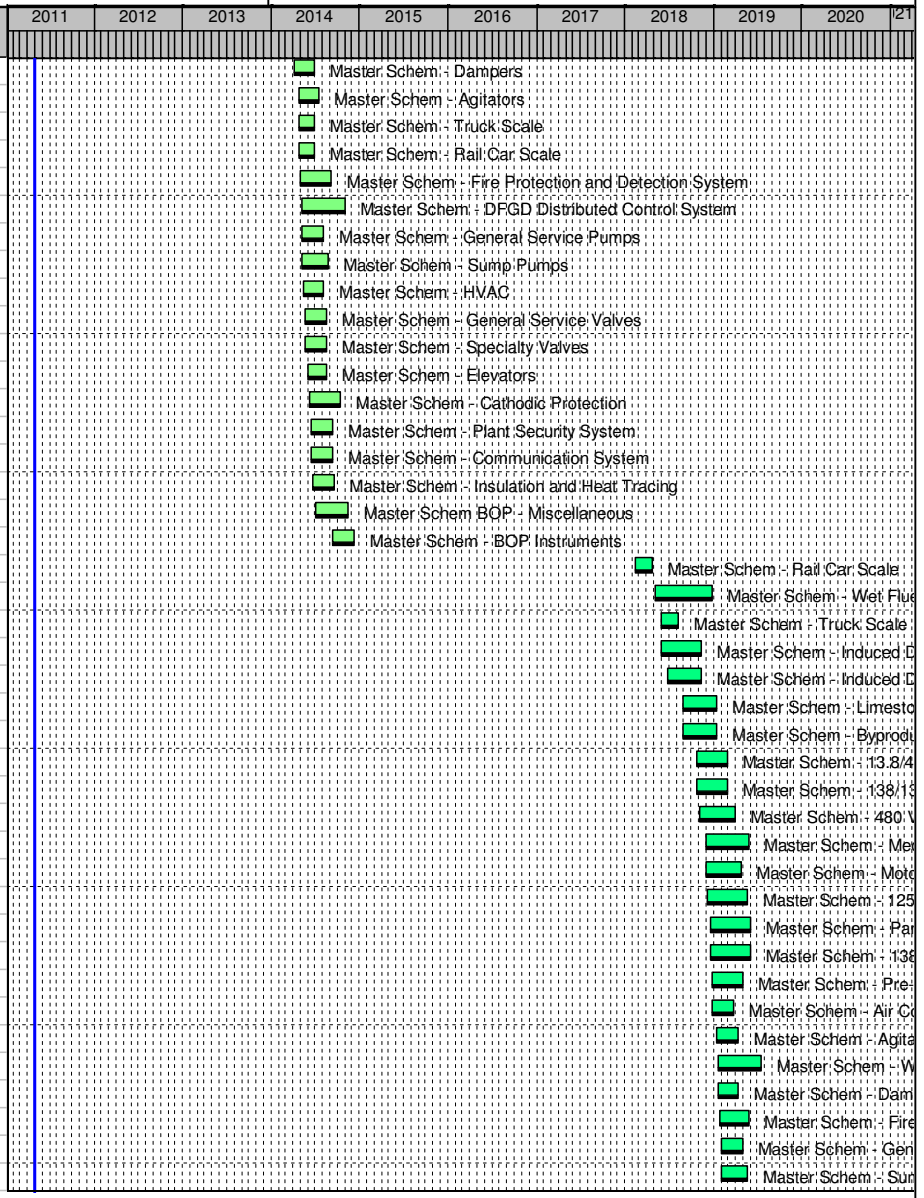


Remaining Level of Effort | Actual Level of Effort | Actual Work
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TASK filter: All Activities

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Activity ID	Activity Name	Dur	Start	Finish
SL.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
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.E7-6868.10	Master Schem - Cathodic Protection	89	11-Jun-14	14-Oct-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

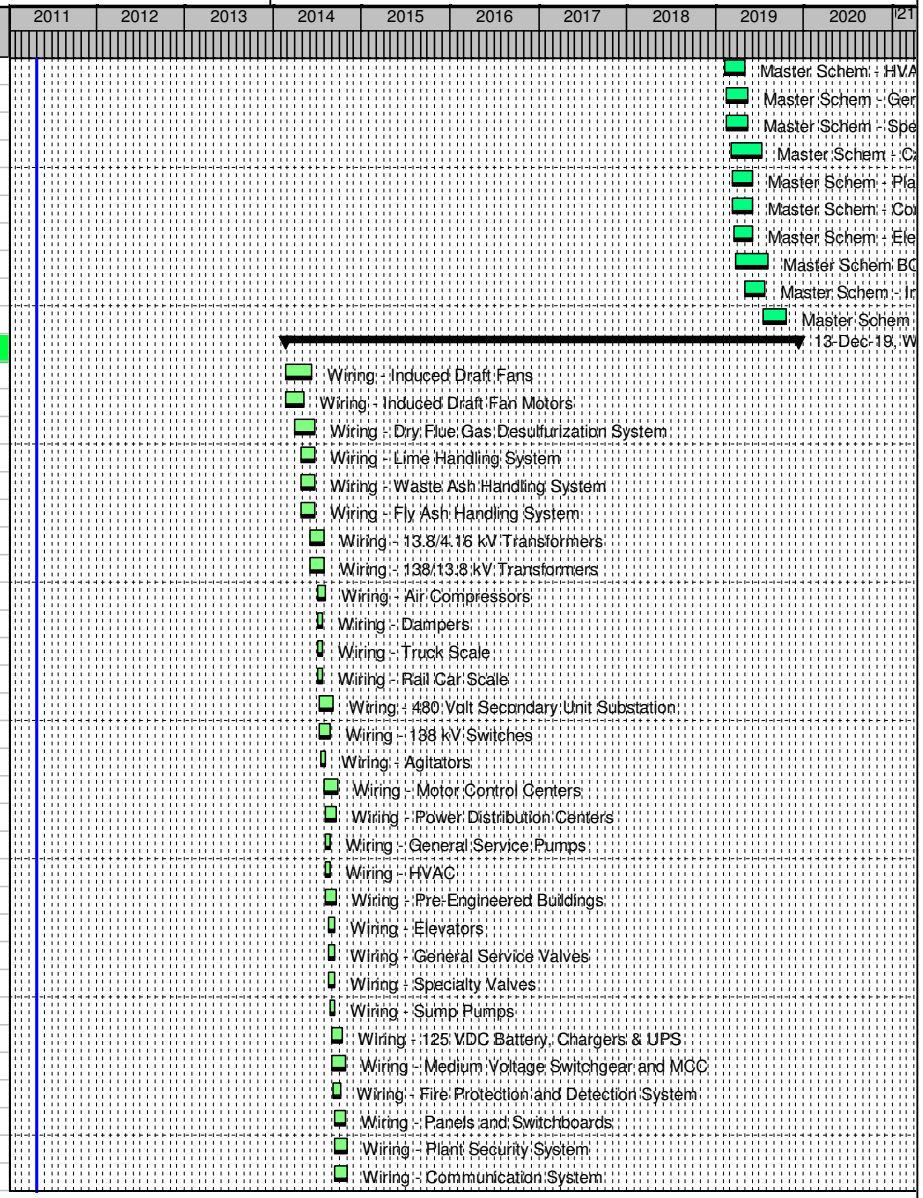


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

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Activity ID	Activity Name	Dur	Start	Finish
SL.E7-6834.00	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.E7-6868.00	Master Schem - Cathodic Protection	89	08-Mar-19	10-Jul-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
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

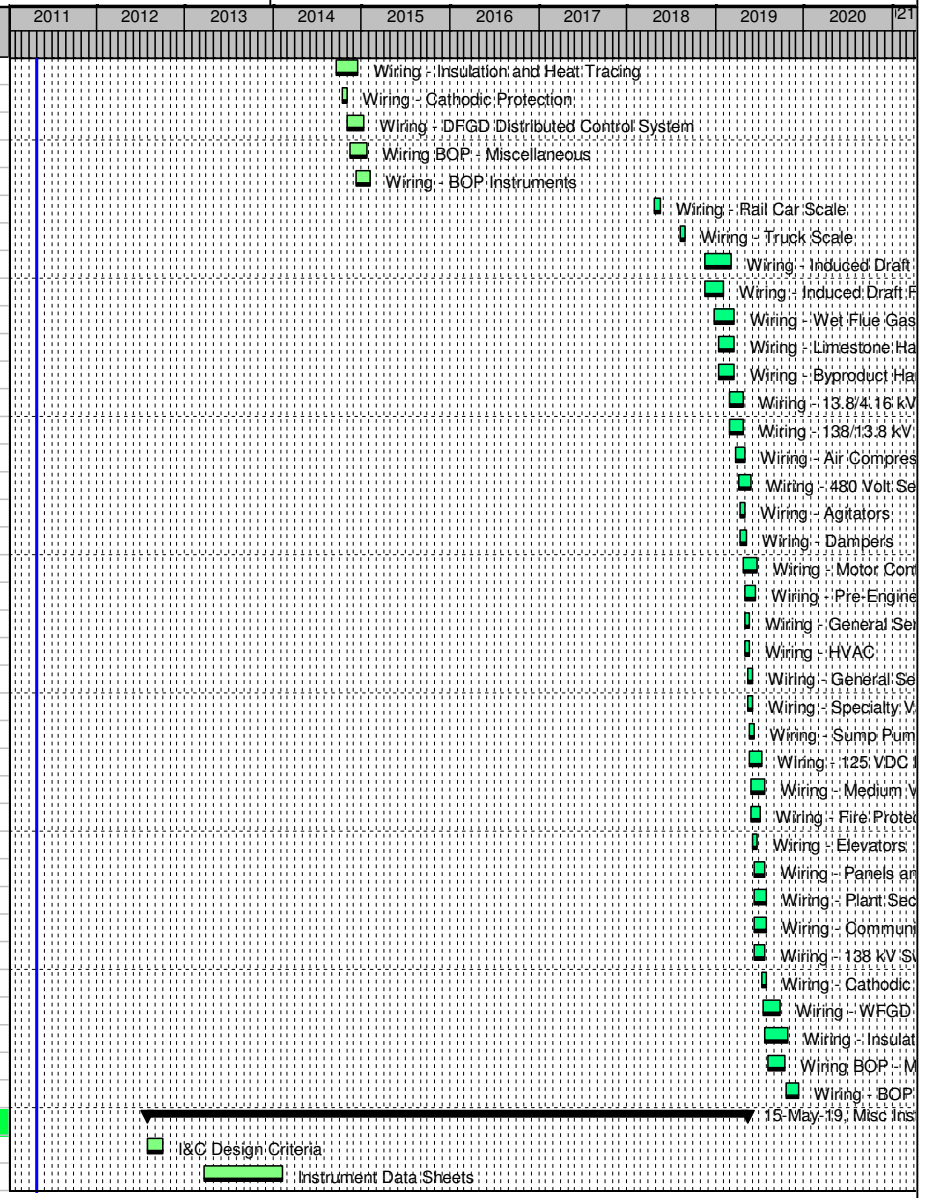


Remaining Level of Effort | Actual Level of Effort | Actual Work
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TASK filter: All Activities

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Activity ID	Activity Name	Dur	Start	Finish
SL.E9-6837.10	Wiring - Insulation and Heat Tracing	65	17-Sep-14	17-Dec-14
SL.E9-6868.10	Wiring - Cathodic Protection	15	15-Oct-14	04-Nov-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
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.E9-6868.00	Wiring - Cathodic Protection	15	11-Jul-19	31-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

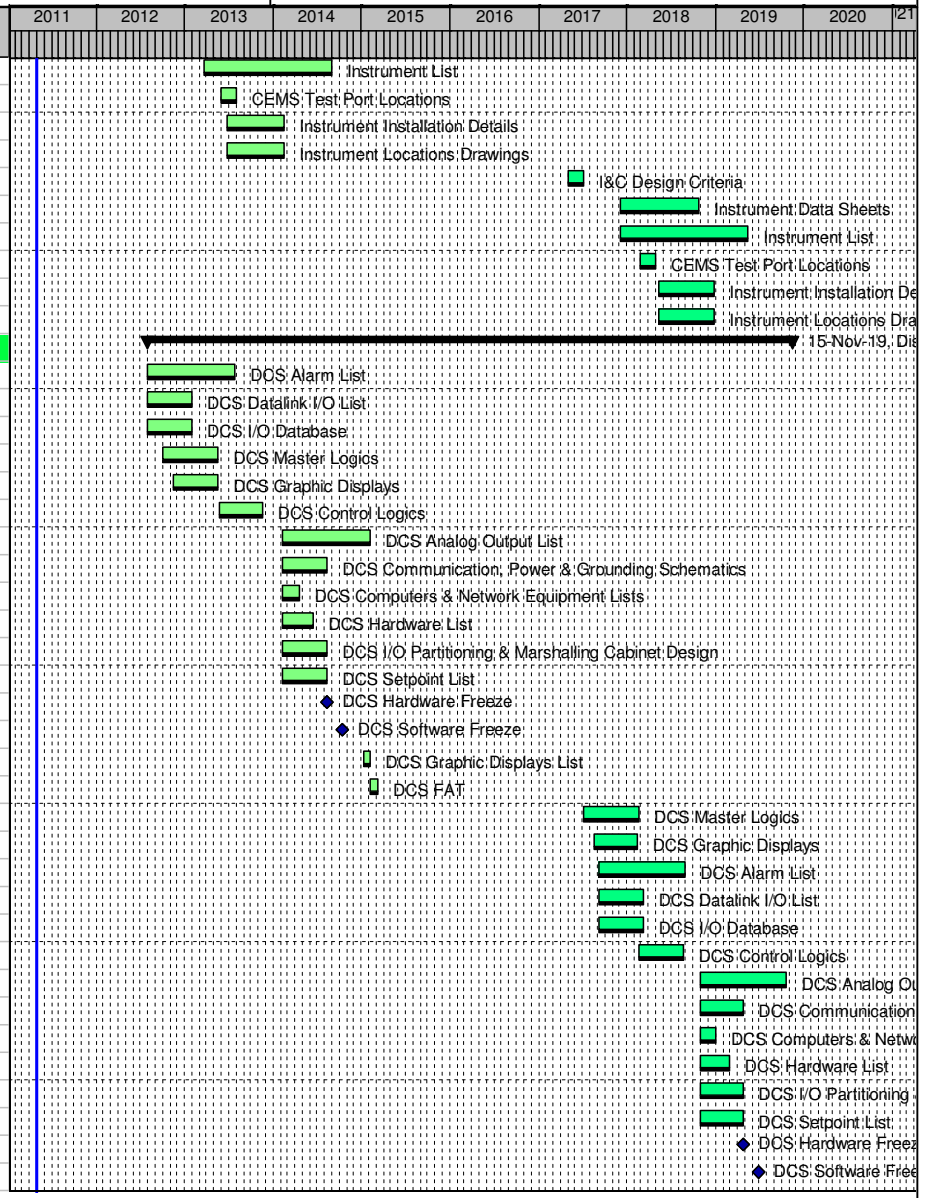


Remaining Level of Effort | Actual Level of Effort | Actual Work
WBS Summary | Primary Baseline | Remaining Work

TASK filter: All Activities

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Activity ID	Activity Name	Dur	Start	Finish
SL.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
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

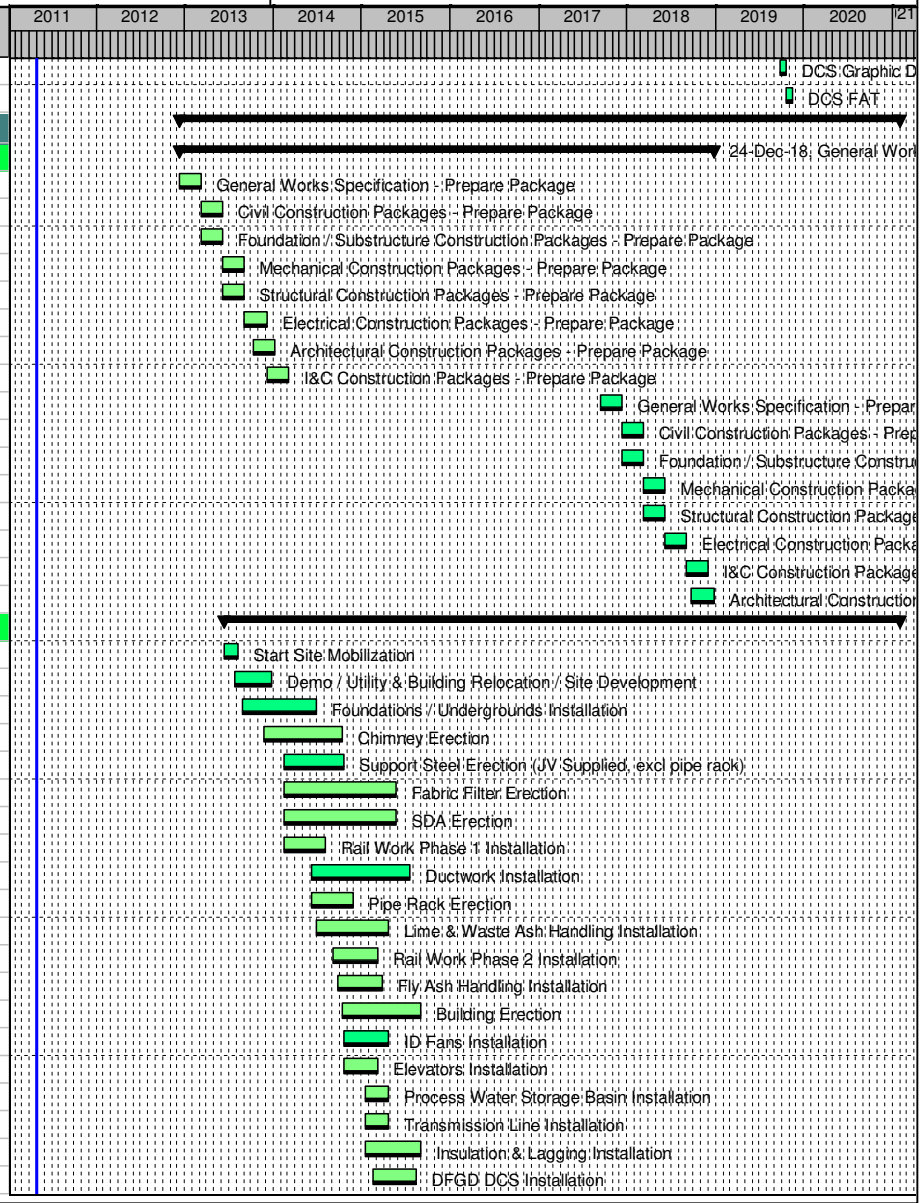


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Activity ID	Activity Name	Dur	Start	Finish
SL.J3200.00	DCS Graphic Displays List	20	23-Sep-19	18-Oct-19
SL.J3000.20	DCS FAT	20	21-Oct-19	15-Nov-19
CONSTRUCTION		2109	11-Dec-12	01-Feb-21
General Works Packages		1558	11-Dec-12	24-Dec-18
SL.P-6896.10	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
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

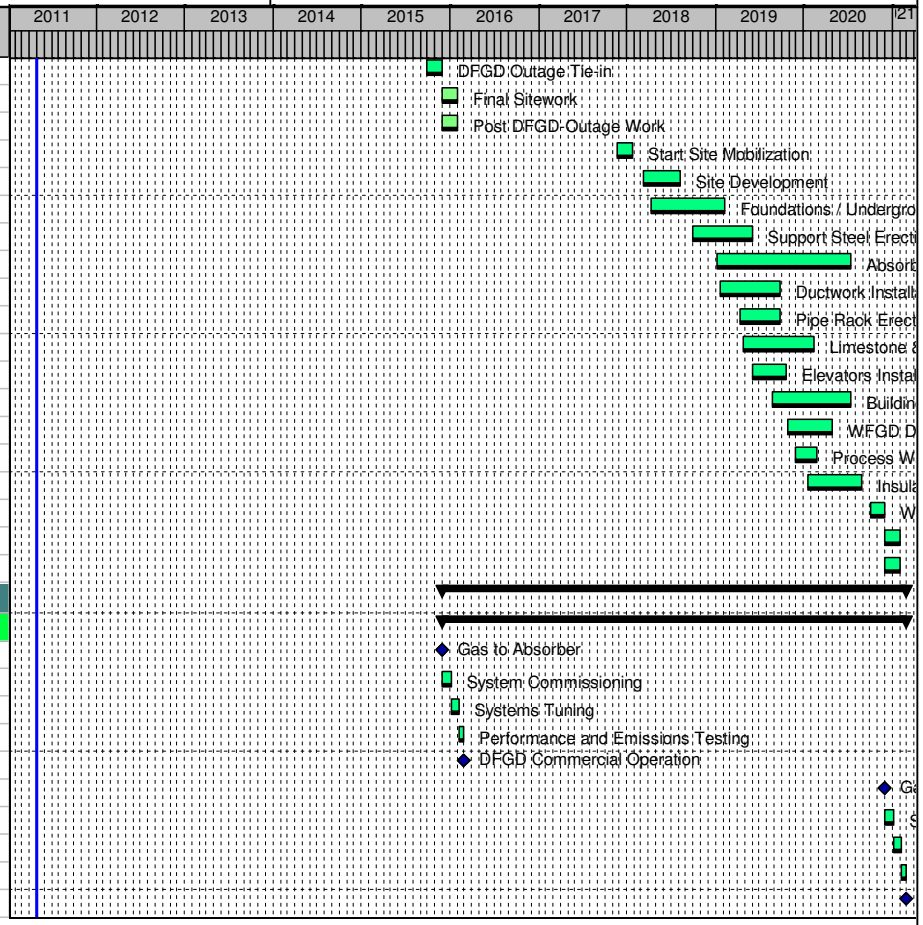


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Activity ID	Activity Name	Dur	Start	Finish
P1EPC7360	DFGD Outage Tie-in	61	01-Oct-15	30-Nov-15
P1EPC7370	Final Sitework	45	01-Dec-15	01-Feb-16
P1EPC7380	Post DFGD-Outage Work	45	01-Dec-15	01-Feb-16
P1EPC7000	Start Site Mobilization	45	23-Nov-17*	25-Jan-18
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
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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