

1 **REBUTTAL TESTIMONY OF MICK DURHAM**

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3 **Q1. Please state your name.**

4 Response: My name is Mick Durham.

5 **Q2. Are you the same Mick Durham who has filed direct testimony in this case?**

6 Response: Yes.

7 **Q3. Please explain the purpose of your rebuttal testimony.**

8 Response: The purpose of my testimony is to rebut the implication in Thoroughbred 's  
9 application and in the testimony of Diane Tickner that the facility will not have negative  
10 economic impacts.

11 **Q4. In addition to Big Rivers Wilson station, what other facilities might be impacted by  
12 Thoroughbred 's emissions?**

13 Response: In its Title V Permit application, Thoroughbred listed 15 facilities in 5  
14 Kentucky counties and 2 Indiana facilities that are considered PSD sources that must be  
15 included in the Class I impact analysis, i.e., that are in Counties within 100 kilometers of  
16 Mammoth Cave. (MD-Ex. 1).

17 **Q5. How will these facilities be affected by Thoroughbred 's emissions?**

18 Response: Thoroughbred could have a significant impact. As stated in my direct  
19 testimony, based on emissions from these 17 facilities, and applying its 24 hour average  
20 permit limit of .41 lb/MMBtu sulfur dioxide, Thoroughbred 's modeling showed a maximum  
21 impact (high second-high) of 4.97 out of 5 ug/m<sup>3</sup> for the 24 hour Class I increment. See  
22 letter from Dianne Tickner of Thoroughbred dated July 25, 2002. (MD-Ex. 2) This leaves  
23 only .03 ug/m<sup>3</sup> that is available for use by any other new source, including any applicable  
24 expansions at one of the 15 Kentucky sources included in the Thoroughbred analysis.

25 Although the National Park Service (NPS) withdrew its objections to the  
26 Thoroughbred permit based upon the .41 lb/MMBtu emission limit, the agency stated in a  
27

1 letter dated August 23, 2002 that it still found modeled visibility impacts at the Park at that  
2 level. (MD-Ex 3). Therefore, NPS requested a study to be performed and the permit limit  
3 revised downward to a level of .23 lb/MMBtu after the plant is in operation for two years.  
4 Thoroughbred agreed to such a study. It is believed that a downward revision in the  
5 permitted 24-hour emissions from the plant will provide some level of protection against  
6 total consumption of increment by Thoroughbred. Without this reduction, major new  
7 sources or major modifications locating within 100 kilometers of Mammoth Cave would  
8 likely require NPS approval prior to construction and operation.

9 **Q6. Is the potential impact on Big Rivers and other sources in the Class I area speculative?**

10 Response: No, it is not. Actually, the likelihood of an impact on future development in  
11 the counties surrounding Mammoth Cave is quite substantial. For example, including Big  
12 Rivers, the fifteen PSD facilities modeled in Thoroughbred 's Class I area impact analysis  
13 cumulatively employ over *four thousand four hundred*. This information may be found on  
14 the web site of the Kentucky Economic Development Cabinet,  
15 <http://www.thinkkentucky.com>. It is not highly speculative to think that one or more of these  
16 15 facilities would have plans to expand.

17 Furthermore, in the thirty-four counties in the Class I Area, there are currently at least  
18 31 significant industrial sites or parks that are actively recruiting industrial tenants into  
19 Kentucky. This information is available on the web site of the Kentucky Economic  
20 Development Cabinet, <http://www.thinkkentucky.com>. Included in this area are the four  
21 largest, and six of the ten largest, industrial sites being promoted by the Kentucky Cabinet for  
22 Economic Development, such as the Glendale site in Hardin County, the Bluegrass Crossing  
23 Regional Business Center in Ohio County, and the Kentucky Trimodal Transpark in Warren  
24 County. As recently as September, 2002, Japanese automaker Hyundai was seriously  
25 considering Hardin County Glendale site for location of a new \$1 billion automotive plant.

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27 Rebuttal Testimony of Mick Durham  
Case No. 2002-00150

28

1 In Kentucky, major sources of sulfur dioxide emissions include standard industrial  
2 classifications 4911 (electric services), 3711 (motor vehicles and bodies) 2911 (petroleum  
3 refineries), 3334 (primary aluminum production), 3312 (steel works, blast furnaces, rolling  
4 mills), 2821 (plastics materials and resins), 2819 (industrial inorganic chemicals), 2621  
5 (paper mills), 2822 (synthetic rubber), 3634 (electric housewares), 2869 (industrial organic  
6 chemicals), 2075 (soybean oil mills), 2085 (distilleries), and 4922 (natural gas transmission).  
7 (This information may be found at <http://oaspub.epa.gov/pls/airdata/>). It is prudent to  
8 assume that the owners and developers of the 31 industrial sites described above would hope  
9 to attract a facility in one of the listed SIC codes to the site, among others. The  
10 Thoroughbred plant would very likely have a significant impact on plans for locating a plant  
11 in one of the listed SIC codes at one of these 31 industrial sites.

12 If any of the 15 Kentucky facilities modeled in Thoroughbred 's Class I area impact  
13 analysis now wish to modify their facility in a way that would increase emissions, their  
14 ability to do so will be significantly affected due to Thoroughbred=s impact on the Class I  
15 increment. Unlike Thoroughbred, if one of these 15 facilities now wish to undertake a  
16 significant modification of their plant, and the modification will have an impact upon  
17 Mammoth Cave National Park, the modifying facility will likely have great difficulty  
18 minimizing its emissions in a manner to satisfy the NPS.

19 **Q7. Will the Thoroughbred Plant cause growth in the Muhlenberg County area?**

20 Response: Thoroughbred has created some doubt that this will be the case. Despite the  
21 touted positive economic impacts and spending benefits noted in the economic analysis,  
22 Thoroughbred does not think the plant will cause growth in the area. In response to  
23 comments on its Title V air permit, Thoroughbred stated as follows:

24 "The additional impacts associated with the proposed facility have been presented  
25 in Volume I, Section 7.5 of the application. While there may be a temporary  
26 increase in workers due to the construction of the facility, no significant growth  
27 impact is expected in the area. . ."

1 (MD - Ex. 4). So, although Thoroughbred says the plant will have tremendous economic  
2 impacts on the region, its permit application indicates otherwise.

3 **Q8. Does this conclude your rebuttal testimony?**


4 Response: Yes it does.

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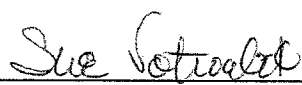
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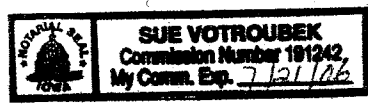
I verify, state, and affirm that the foregoing rebuttal testimony is true and correct to the best of my knowledge and belief.

  
Mick Durham

STATE OF IOWA  
COUNTY OF MUSCATINE *Johnson*

Subscribed and sworn to before me by Mick Durham on this the 10 day of October, 2003.

  
Notary Public, \_\_\_\_\_  
My Commission Expires 7/21/06



### 6.3.2 Class I Emission Inventory Data

The emission inventory developed for the Class I area represents an analysis of all counties within a 100-kilometer radius of Mammoth Cave National Park. Kentuckiana Engineering Company, Inc. requested from the KYDAQ, a listing of all NOx and SO2 PSD sources located within those counties. A listing of these counties is below in Table 6.3.2-1.

*TABLE 6.3.2-1: COUNTIES WITHIN 100 KM OF MAMMOTH CAVE*

ADAIR	LOGAN
ALLEN	MARION
BARREN	MCCLEAN
BRECKINRIDGE	MEADE
BULLITT	MERCER
BUTLER	METCALFE
CASEY	MONROE
CLINTON	MUHLENBURG
CUMBERLAND	NELSON
DAVISS	OHIO
EDMONSON	RUSSELL
GRAYSON	SIMPSON
GREEN	SPENCER
HANCOCK	TAYLOR
HARDIN	TODD
HART	WARREN
LARUE	WASHINGTON

In addition to the above counties, information was requested from the state of Indiana for the county of Perry and from the state of Tennessee. The sources included for the county of Perry in Indiana are included in Table 6.3.2-3. The state of Indiana provided KEC with an excel spreadsheet of PSD increment consuming sources containing the required modeling input. The state of Tennessee responded that there were no NOx and SO2 increment consuming sources within the 100 KM radius of Mammoth Cave.

Based on the above request, the KYDAQ advised KEC there were eleven (11) sources in five (5) counties coded as PSD sources for NOx and SO2. Those counties and the respective pollutant baseline dates are as follows:

*TABLE 6.3.2-2: PSD COUNTIES AND BASELINE DATES*

COUNTY	POLLUTANT	BASELINE DATE
Daviess County -	SO2	8/01/81
Hancock County	SO2	3/31/81
	NOx	1/22/98
Mercer County	SO2	7/12/91
	NOx	7/12/91
Ohio County	SO2	6/24/80
Taylor County	SO2	5/31/84

The KYDAQ provided KEC with an emission inventory listing of all the PSD sources within the counties listed above. This analysis involved looking for all PSD sources in those counties within the 100 KM radius of Mammoth Cave. In those counties where a PSD source was located, the baseline date was determined from the date the permit application was logged complete. Once this date was established for that county, KEC requested from the KYDAQ, a listing of all modifications involving NOx and SO2 after the respective baseline dates to account for increment consuming sources. Table 6.3.2-3 lists all PSD increment consuming sources (KY and IN) included in the Class I analysis discussed in Section 8 below.

TABLE 6.3.2-3: PSD INCREMENT CONSUMING SOURCES





MODELED POINT NO.	STATE	COUNTY	SOURCE	EIS POINT ID	FACILITY	PM10 TPY	PM10 G/S	NOX TPY	NOX G/S	SO2 TPY
	KY	MUHLENBERG	TGS	01	UNIT 1	586.8057727	16.8956	3260.034	93.8645	9592.199
	KY	MUHLENBERG	TGS	01	UNIT 2	586.8057727	16.8956	3260.034	93.8645	95.99
	IN	PERRY	WAUPACA FOUNDRY	S01	GREY IRON FOUNDRY	141.5299559	4.075	17.50456	0.504	17.50456
	IN	PERRY	WAUPACA FOUNDRY	S04	GREY IRON FOUNDRY	1.354519824	0.039	1.667101	0.048	18.75489
	IN	PERRY	WAUPACA FOUNDRY	S09A/B	GREY IRON FOUNDRY	64.94748899	1.87	307.8928	8.865	87.52282
	IN	PERRY	WAUPACA FOUNDRY	S15	GREY IRON FOUNDRY	139.9670485	4.03	19.90102	0.573	199.3575
	IN	PERRY	WILLAMETTE IND	PULP MILL	PULP MILL	301.467489	8.68	1688.287	48.61	944.3434
	KY	DAVISS	OWENSBORO GRAIN	32	BOILER	2.81323348	0.081	383.7806	11.05	769.9924
	KY	HANCOCK	WILLAMETTE CMM	11	WOOD WASTE BOILER	1.111400881	0.032	1585.483	45.65	1028.046
1	KY	HANCOCK	NATIONAL SOUTHWIRE	P5	POTLINE 5	125.7272247	3.62			144.2737
2	KY	HANCOCK	NATIONAL SOUTHWIRE	09	GREEN ANODE OVENS	581.4015859	16.74	150	1.999	482.7648
3	KY	HANCOCK	WILLAMETTE BPM	08	LIME KILN #2	98.28951542	2.83	68.49008	1.972	9.759489
4	KY	HANCOCK	WILLAMETTE BPM	17	RECOVERY FURNACE #3	151.42837	4.36	206.3385	5.941	440.2537
5	KY	HANCOCK	WILLAMETTE BPM	18	SMELT DISSOLVING TANK #3	3.820440529	0.11			14.23
6	KY	HANCOCK	WILLAMETTE BPM	19	MULTIPLE EFFECT EVAP #3					99.7135
7	KY	MERCER	KU BROWN FACILITY	06	8 SIMPLE CYCLE TURBINES	535.9036123	15.43	2667.848	76.814	2878.667
8	KY	OHIO	WKE WILSON STATION	01	COAL FIRED BOILER	2123.470308	61.14	10176.61	293.01	12070.16
9	KY	TAYLOR	UNION UNDERWEAR	05	COAL FIRED BOILER	14.96918062	0.431	349.3967	10.06	218.807
10	IN	PERRY	WAUPACA FOUNDRY	S07	GREY IRON FOUNDRY	34.14084581	0.983			
11	IN	PERRY	WAUPACA FOUNDRY	S08A/B	GREY IRON FOUNDRY	7.501955947	0.216			



MODELED POINT NO.	STATE	COUNTY	SOURCE	EIS POINT ID	FACILITY	PM10 TPY	PM10 G/S	NOX TPY	NOX G/S	SO2 TPY
1	IN	PERRY	WAUPACA FOUNDRY	S16	GREY IRON FOUNDRY	78.84	2.27			
2	IN	PERRY	WAUPACA FOUNDRY		GREY IRON FOUNDRY	4.376140969	0.126			
3	IN	PERRY	TELL CITY CHAIR	NEW		1.041938326	0.03			
4	IN	PERRY	WAUPACA FOUNDRY	S12	GREY IRON FOUNDRY			7.363031	0.212	
5	IN	PERRY	WAUPACA FOUNDRY	S13	GREY IRON FOUNDRY			12.08648	0.348	
6	KY	DAVISS	DART CONTAINER	08	BOILER	2.500651982	0.072	69.80987	2.01	98.98414
7	KY	DAVISS	DART CONTAINER	25	BOILER	18.06026432	0.52	12.15595	0.35	93.07982
8	KY	DAVISS	DART CONTAINER	35	BOILER	7.988193833	0.23	3.820441	0.11	20.14414
9	KY	DAVISS	DART CONTAINER	36	BOILER	7.988193833	0.23	3.820441	0.11	20.14414
10	KY	DAVISS	DART CONTAINER	51	BOILER	28.82696035	0.83	7.640881	0.22	150.0391
11	KY	HANCOCK	CMI KY CASTING	01	MELT FURNACE	5.168	0.1488	3.5	0.100774	0.021
12	KY	HANCOCK	CMI KY CASTING	05	DIE PREHEAT OVEN			3.713	0.106907	0.024
13	KY	HANCOCK	CMI KY CASTING	06	PRE HEAT OVEN	1.199	0.034522	12.25	0.352708	0.053
14	KY	HANCOCK	CMI KY CASTING	07	PRE HEAT FURNACE	0.603	0.017362	6.16	0.177362	0.027
15	KY	HANCOCK	CMI KY CASTING	08	HEAT TREAT OVEN	0.156	0.004492	1.3	0.03743	0.008
16	KY	HANCOCK	CMI KY CASTING	09	AGE FURNACE	0.156	0.004492	1.3	0.03743	0.008
17	KY	HANCOCK	ALCOA	06	AL MELT FURNACE	27	0.777397	9.8	0.282166	0.042
18	KY	HANCOCK	ALCOA	07	AL MELT FURNACE	27	0.777397	9.8	0.282166	0.042
19	KY	HANCOCK	SOUTHWIRE	13	HOLDING FURNACE	49	1.410832	3.78	0.108836	0.016
20	KY	HANCOCK	SOUTHWIRE	14	AL MELT FURNACE	73	2.101852	7.42	0.21364	0.032
21	KY	HANCOCK	SOUTHWIRE	21	MELT/HOLD FURNACE	58	1.669964	14.7	0.42325	0.063
22	KY	HANCOCK	WILLAMETTE BPM	17	RECOVERY FURNACE #3	21.57142857	0.621095	45.71429	1.316228	62.71429
23	KY	HANCOCK	WILLAMETTE BPM	18	SMELT DISSOLVING TANK #3	0.571428571	0.016453			1.571429
24	KY	HANCOCK	WILLAMETTE BPM	19	MULTIPLE EFFECT EVAP #3					14.42857

MODELED POINT NO.	STATE	COUNTY	SOURCE	EIS POINT ID	FACILITY	PM10 TPY	PM10 G/S	NOX TPY	NOX G/S	SO2 TPY
43	KY	HANCOCK	WILLAMETTE BPM	28	RECOVERY FURNACE #4	279	8.033105	578	16.64206	1828
44	KY	HANCOCK	WILLAMETTE BPM	29	SMELT TANK #4	59	1.698757			131
45	KY	HANCOCK	WILLAMETTE BPM	30	LIME KILN #3	108	3.109589	200	5.758498	464
46	KY	HANCOCK	WILLAMETTE BPM	33	NCG INC	8	0.23034	40	1.1517	1
47	KY	HANCOCK	WILLAMETTE BPM	34	HOG FUEL BOILER #3	460	13.24455	873.81	25.15917	191
48	KY	HANCOCK	WILLAMETTE BPM	38	CONT DIGESTER ADTUP					1.4
49	KY	HANCOCK	WILLAMETTE BPM		HOG FUEL BOILER #1					
50	KY	HANCOCK	WILLAMETTE BPM		LIME KILN #1					
51	KY	HANCOCK	WILLAMETTE BPM		RECOVERY BOILER #1					
52	KY	HANCOCK	WILLAMETTE BPM		SMELT TANK #1					
53	KY	HANCOCK	WILLAMETTE BPM		RECOVERY BOILER #2					
54	KY	HANCOCK	WILLAMETTE BPM		SMELT TANK #2					
55	KY	HANCOCK	WILLAMETTE BPM		LIME KILN #2					
56	KY	HANCOCK	WILLAMETTE CMM		WOOD WASTE BOILER					39
57	KY	HANCOCK	NSA	36	OXY FUEL IRON FURNACE	14	0.403095	8.877	0.255591	4.349
58	KY	HANCOCK	WORLDSOURCE	08	BOILER	12	0.34551	10.36	0.29829	46
59	KY	HANCOCK	WORLDSOURCE	10	PAINT LINE			63.7	1.834082	
60	KY	OHIO	YOUNG MFG	07	WOOD FIRED BOILER	56	1.61238	6.12	0.17621	1.35
61	KY	OHIO	OHIO COUNTY LANDFILL	01	GAS FLARE	3.931	0.113183	29.471	0.848544	6.654
62	KY	OHIO	PERDUE FARMS	01	HOT WATER GENERATOR #1	42	1.209285	12.25	0.352708	0.053
63	KY	OHIO	PERDUE FARMS	02	HOT WATER GENERATOR #2	42	1.209285	12.25	0.352708	0.053
64	KY	TAYLOR	COX INTERIOR	01	WOOD WASTE BOILER	24	0.69102	1.797	0.05174	0.396
65	KY	TAYLOR	COX INTERIOR	07	WOOD WASTE BOILER	156	4.491629	63.729	1.834917	3.187
66	KY	TAYLOR	COX INTERIOR	08	WOOD WASTE BOILER	50	1.439625	26.775	0.770919	1.339

MODELED POINT NO.	STATE	COUNTY	SOURCE	EIS POINT ID	FACILITY	PM10 TPY	PM10 G/S	NOX TPY	NOX G/S	SO2 TPY
'67	KY	TAYLOR	COX INTERIOR	12	DIESEL BOILER	29	0.834982	7.67	0.220838	2.723
'68	KY	TAYLOR	STATEWIDE ENV SERVICES	01	SOIL THERMAL TREATMENT	40	1.1517	10.01	0.288213	1.422

-  =Missing Data
-  =Negative Emission Rate (Not Allowed in CALPUFF)
-  =Too Much Missing Data to Model the Source
-  =Non-point source emission unit.

Elevations will be obtained using 7.5 minute Digital Elevation Models (DEMs).



PEABODY ENERGY

RECEIVED

Peabody Energy  
1100 State Route 175 South  
P.O. Box 148  
Graham, Kentucky 42344  
270-338-5701  
Fax 270-338-5355

July 25, 2002

JUL 29 2002

Mr. John S. Lyons  
Director  
Kentucky Division of Air Quality  
803 Schenkel Lane  
Frankfort, KY 40601

PERMIT REVIEW BRANCH  
DIVISION FOR AIR QUALITY



177-00077  
Log # 53619

Dear Mr. Lyons:

As you requested enclosed is the preliminary summary of the modeling results based on the constant year round emissions of 0.41 lbs SO<sub>2</sub>/mmbtu. As you know, this is a conservative assumption since the draft permit for Thoroughbred also requires a 0.167lb.SO<sub>2</sub>/mmbtu limit of 30 day rolling average. We note that the model results show that for 1992 meteorological data no impacts greater than 10% would occur. The highest impact ranges from 7.22% to 8.66% using various assumptions about ammonia as described in the footnotes to Table 2. Using meteorological data for 1990 and 1996, one day in each year showed modeled impacts greater than 10%.

We are still reviewing the post processor information to verify QA/QC and to evaluate the conditions under which the greatest impacts occur. We will forward that information to you as soon as it is available.

Should you or your staff have questions regarding this analysis you can reach me at 314-342-7613 or Bryan Handy at 502-893-4510.

Sincerely,

Dianna Tickner

**SUMMARY OF SHORT-TERM LIMIT RUN**  
**Thoroughbred Project**

Short-term limit test with TGS 0.41 SO<sub>2</sub> lbs/MMBTU 24h. H<sub>2</sub>SO<sub>4</sub> is not scaled like SO<sub>2</sub> is from the original run TGS 0.167 SO<sub>2</sub> lbs/MMBTU 24h.

**Table 1.** Stacks parameters and pollutant emissions.

	UTM-X Zone 17	UTM-Y Zone 17	Stack Height (m)	Base Elevation (m)	Stack Diameter (m)	Exit Velocity (m/s)	Exit Temperature (K)	SO <sub>2</sub> (lb/hr)	SO <sub>x</sub> (lb/hr)	NO <sub>x</sub> (lb/hr)	PM <sub>10</sub> (lb/hr)
Stack 1	492.069	4129.546	198.12	134.0	7.92	21.24	327.04	3054.3	37	595.965	134.09
Stack 2	492.076	4129.551	198.12	134.0	7.92	21.24	327.04	3054.3	37	595.965	134.09

**Table 2.** Results for Class I area (highest concentration) – includes the use of 8 sub-groups for PM<sub>10</sub>, 0.41 SO<sub>2</sub> lbs/MMBTU and original (not scaled) SO<sub>4</sub> emission rates.

Pollutant	Averaging Period	SIL (µg/m <sup>3</sup> )	Year 1990 (µg/m <sup>3</sup> )	Year 1992 (µg/m <sup>3</sup> )	Year 1996 (µg/m <sup>3</sup> )
SO <sub>2</sub>	3-hours	1.0	0.9	1.1	1.2
	24-hours	0.2	2.8	5.8	4.9
	Annual	0.1	0.2	0.2	0.2
NO <sub>x</sub>	Annual	0.1	0.025	0.026	0.027
PM <sub>10</sub>	24-hours	0.3	0.12	0.22	0.16
	Annual	0.2	0.009	0.009	0.008
Visibility 1**	24-hours	5%	13.75% (4, 1)	8.66% (10, 0)	16.04% (7, 1)
Visibility 2**	24-hours	5%	12.24% (4, 1)	7.73% (10, 0)	15.85% (7, 1)
Visibility 3**	24-hours	5%	12.06% (2, 1)	7.22% (9, 0)	15.91% (7, 1)

\*(Number of days > 5%, number of days > 10% ΔBext.)

\*\*Visibility 1: CALPOST is applied directly on CALPUFF run output.

Visibility 2: 58 sources are used as background + NH<sub>3</sub> = 0.5ppb + NH<sub>3</sub> emitted from TGS.

Visibility 3: CASTNET site used as background + NH<sub>3</sub> emitted from TGS.

**Table 3.** Cumulative PSD runs – Highest (H) and second highest (H2H) concentrations for 3 hours and 24 hours averages- Includes the use of 8 sub-groups for PM<sub>10</sub>, 0.41 SO<sub>2</sub> lbs/MMBTU and original (not scaled) SO<sub>4</sub> emission rates.

Pollutant	Averaging Period	Increment ( $\mu\text{g}/\text{m}^3$ )	Year 1990 ( $\mu\text{g}/\text{m}^3$ )	Year 1992 ( $\mu\text{g}/\text{m}^3$ )	Year 1996 ( $\mu\text{g}/\text{m}^3$ )
SO <sub>2</sub>	(H) 3-hours		11.31	11.53	12.16
	(H2H) 3-hours	25.0	10.16	11.05	11.40
	(H) 24-hours		3.54	5.85	5.31
	(H2H) 24-hours	5.0	3.06	4.98	3.78
	Annual	2.0	0.4	0.4	0.4



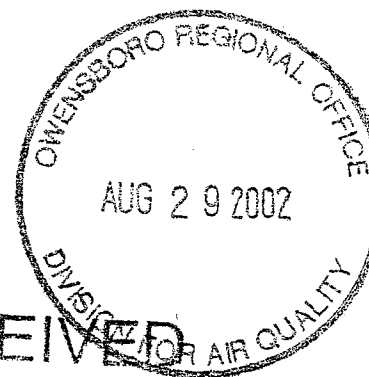


177-00077

## United States Department of the Interior

OFFICE OF THE SECRETARY  
Washington, D.C. 20240

AUG 22 2002



Mr. Allan Elliott  
Department of Environmental Protection  
Division for Air Quality  
803 Schenkel Lane  
Frankfort, Kentucky 40601-1403

AUG 23 2002

PERMIT REVIEW BRANCH  
DIVISION FOR AIR QUALITY

Dear Mr. Elliott:

In our February 14, 2002, letter we informed the Kentucky Division for Air Quality (KDAQ) that emissions from the proposed Thoroughbred Generating Station (TGS) in Muhlenberg County, Kentucky, would adversely impact visibility and potentially affect federally-listed threatened and endangered species at Mammoth Cave National Park. Our adverse impact finding was based on information provided by TGS and reflected in KDAQ's preliminary determination and draft Prevention of Significant Deterioration (PSD) permit for the TGS facility. The National Park Service Air Resources Division subsequently received a new modeling analysis from TGS. The revised analysis identified errors in meteorological data used in TGS's prior analyses, and suggests that there would be no adverse impacts on visibility at Mammoth Cave National Park. Our staff experts have talked to TGS's consultants, carefully reviewed this new information, and verified the validity of the results. Therefore, I hereby withdraw the previous adverse impact finding.

KDAQ's revised preliminary determination and draft PSD permit for the TGS facility now includes a 24-hour sulfur dioxide (SO<sub>2</sub>) limit of 0.45 lbs/MMBtu, in addition to the 30-day rolling average limit of 0.167 lbs/MMBtu. We understand that TGS has agreed to a lower 24-hour SO<sub>2</sub> limit of 0.41 lbs/MMBtu in order to comply with short-term air quality standards and increments. We conducted an air quality modeling analysis of the 0.41 lbs/MMBtu limit and found potential adverse impacts on visibility at Mammoth Cave National Park at that level. We assessed alternative limits and found that at the 0.23 lbs/MMBtu level there would be no adverse impacts on visibility at Mammoth Cave National Park.

We would prefer that KDAQ lower the 24-hour SO<sub>2</sub> limit from 0.41 lbs/MMBtu to 0.23 lbs/MMBtu in the final TGS permit. However, we have reviewed data provided by TGS indicating that it would be very difficult to comply with the 30-day rolling average of 0.167 lbs/MMBtu if they actually operated at the 0.41 lbs/MMBtu rate, thereby subjecting them to enforcement action and penalties. In addition, based on operating data from other coal-fired power plants, we found that they could generally achieve short-term limits that were 25-35% higher than their 30-day rolling average rate. If TGS operates in a similar fashion it would actually emit in the range of 0.23 lbs/MMBtu over a 24-hour period.

Mr. Allan Elliott

We understand TGS is willing to accept permit language that would lower the 24-hour limit based on actual operating data for the facility. In essence, based on two years of operating data, KDAQ would revise the 0.41 lbs/MMBtu permitted limit downward, with a target emission limit of 0.23 lbs/MMBtu or lower, consistent with plant operating experience and a reasonable margin to assure compliance. This good-faith commitment on the part of TGS further confirms our comfort level with the issuance of their permit.

Thank you for working with us to ensure park air quality resources are protected while enabling the proposed TGS project to move forward. If you have any questions regarding this matter, please contact Christine Shaver, Chief, National Park Service Air Resources Division, at (303) 969-2074.

Sincerely,



Assistant Secretary for  
Fish and Wildlife and Parks

cc:

Kay Prince  
Chief, Air Planning Branch  
U.S. EPA, Region IV  
100 Alabama St. SW  
Atlanta, Georgia 30303

Janet G. McCabe  
Assistant Commissioner  
Office of Air Quality  
Indiana Department of Environmental Management  
100 Senate Avenue  
Indianapolis, Indiana 46206-6015



*PREVENTION OF SIGNIFICANT DETERIORATION,  
TITLE V OPERATING PERMIT*

*&*

*PHASE II ACID RAIN  
JOINT APPLICATION*

**THOROUGHbred GENERATING  
STATION**

**MUHLENBERG COUNTY, KY**

**Responses and Supporting Documentation to  
Comments Submitted By KYDAQ, EPA, and NPS**

**December 12, 2001**

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4350 Brownsboro Road  
Louisville, Kentucky 40207**

**502-893-4599**

application. The first shows the predicted impacts when modeling all increment consuming sources and the second shows the impact when Thoroughbred's emissions are added to the actual monitored impacts in the area.

**Comment 9e**

*The CALPUFF Class I analysis only included emissions from the two coal-fired boilers. Although these sources emit the largest emissions from the highest stacks, the application should address the reason the other TGS emission units were eliminated from the Class I impact assessment.*


**Response 9e**

Per a conference call on December 18, 2001, prior to the submission of the modeling protocol and the actual modeling results, the NPS agreed that only the two utility boilers should be included in the Class I modeling assessment. Additionally, the auxiliary boiler will not be in operation when the two utility boilers are operating, and the fire pumps will only operate in case of an emergency.

**Comment 10.**

*Construction and Growth: Substantial construction and commercial growth associated with this project is indicated (page 7-6), but the required growth impact assessment has not been provided.*

**Response 10**

The additional impacts associated with the proposed facility have been presented in Volume I, Section 7.5 of the application. While there may be a temporary increase in workers due to construction of the facility, no significant growth impact is expected in the area. It is predicted that the majority of the workers will come from the existing population due to the fact that Muhlenberg County has the highest unemployment rate in Kentucky (15.4% as of December 4, 2001). A large percentage of these unemployed workers are predicted to be former coalmine operators that possess the skills required for the proposed project. 

**Comment 11**

*Vegetation Impacts: The cumulative ambient concentrations from all emission sources should be used for comparison with Table 7.5.3-1 vegetation sensitivity levels. Only the concentrations associated with TGS emissions were used in this assessment.*

**Response 11**

It is not appropriate to use cumulative concentrations for comparison to the sensitivity levels since the goal is to predict the impacts associated with the facility being proposed. KYDAQ's PSD Regulation 401 KAR 51:017 states that the applicant shall provide the analysis of the impacts on soil and vegetation as a result of the source, not a cumulative analysis of all sources. Additionally, it has been demonstrated that the impacts from the