

**8.3 Scenic Evaluation
SB 257 Section 5(3)(b)**

**8.4 Potential for Change in Property
Valuation
SB 257 Section 5(3)(c)**

**8.5 Noise Evaluation
SB 257 Section 5(3)(a)8,d**

**8.6 Traffic Evaluation
SB 257 Section 5(3)(e)**

**8.7 Mitigation Measures
SB 257 Section 5(4)**

8.3 Scenic Evaluation - SB257 5(3)(b)

A report detailing scenic compatibility of the proposed power plant and its surrounding area is included. This report, prepared by John Carman and Associates, Inc., assessed the location of the proposed plant in relation to existing neighbors and communities and determined that construction of the plant will not affect any scenic view.

8.4 Potential for Change in Property Value - SB257 5(3)

A study of the potential for changes in property values of landowners adjacent to the proposed Thoroughbred Generating Station was completed by G. Herbert Pritchett & Associates, Inc. of Madisonville, Ky. The Pritchett report, which is attached, found that most likely there would be no change in value of nearby properties specifically due to the location of the proposed Thoroughbred plant. The basis of this conclusion was a comparison and analysis of properties surrounding three existing power plants – West Kentucky Energy Coleman Station, LG&E's Trimble County Plant, and the AEP Indiana- Michigan Plant in nearby Rockport, IN. The report provides the details of how the analysis was prepared.

8.5 Noise Evaluation - SB257 5(3)(a)8(d)

Thoroughbred Generating Company, LLC contracted with Burns & McDonnell Engineering Company to conduct a baseline noise assessment and to project the noise levels of the proposed Thoroughbred Generating Plant. Results of the study indicate that none of the sensitive noise receptors will have a noticeable increase in noise levels from the current background levels. The complete Burns & McDonnell study is included in this application.

8.6 Traffic Evaluation - SB 257 5(3)(e)

Access to the Thoroughbred Generating Station will be primarily via U.S. Highway 62. Traffic peak is expected during construction with an estimated 2,200 vehicles entering the site on a weekday basis. Based on highway design, it appears that U.S. Highway 62 is designed for approximately 34,000 cars per day. When evaluating existing traffic and adding in peak construction traffic, daily volume is predicted to be well below design capacity. Details of car and railroad traffic, as well as maps showing entrance road, plant roads, and rail layout are included later in this section.

8.3 Scenic Evaluation

SB 257 Section 5(3)(b)

7. 15. 03 Scenic Compatibility Assessment of the Thoroughbred Generating Station

Central City – Muhlenberg County, Kentucky

Introduction

Pursuant to KRS 278, determination of scenic compatibility of a new power plant is to be assessed prior to the construction of any new power plant. The presumption of the assessment is to determine any negative visual or contextual impact to adjacent environments being used by inhabitants or visitors of those adjacent areas. The primary focus of this portion of the site assessment will be to ascertain visual qualities of the existing environment/land uses and any negative impacts created by the power plant construction.

While the statutes do not recommend a specific methodology, the basis of this assessment will incorporate practical and pragmatic applications of visual analysis' to the extent of determining visual impacts. To this end, this visual, scenic assessment will determine if the power plant;

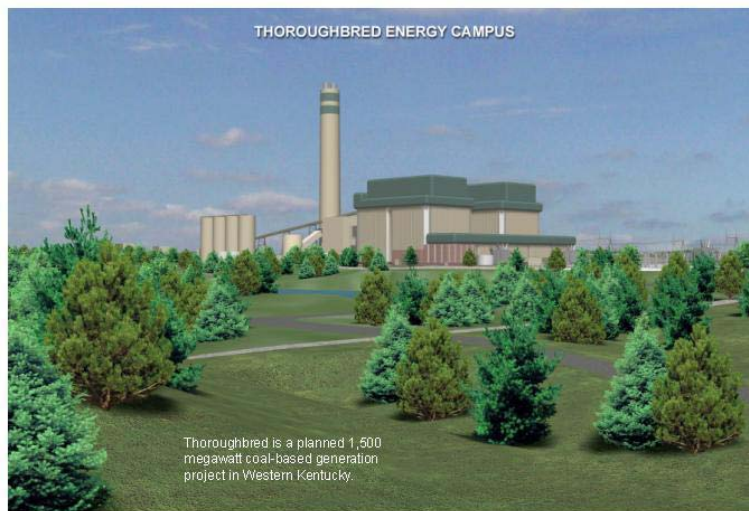
- Can be seen from critical locations or views
- Has any negative impact to the existing viewshed
- Has created any contextual compromises to the surrounding environment under existing conditions
- Has or will create improvements to the quality of the existing viewshed or surrounding environment

This determination will be made through a series of viewshed profiling assessments from areas having the most potential for negative visual impacts of the proposed power plant. In addition, an analysis of other “landscape” elements in the surrounding viewshed will be made to determine relative impact of the proposed power plant to the existing visual environment. A study of area land uses has been made to determine potential negative views to the power plant. For the basis of this assessment, the scenic viewshed analysis will include visual units that have been selected as being typical for the area. Persons visiting the area, via transportation routes, inhabitants of the area and sensitive environments of the area have been selected as visual units to be assessed for negative impacts of the power plant or as base for assessment comparison.

Project Description

The proposed power plant has been sited in an old mine site east of Central City, Kentucky in Muhlenberg County along the Green River. This siting works well for the contextual setting of the power plant in close proximity to the Green River, Paducah-Louisville Railroad, and the Western Kentucky Parkway. The power plant is located on a previously strip mine site and lies approximately 2 miles to the east of Central City. The site is located between Highway 66 and Kentucky 227. There are no major roadways that are oriented towards the power plant. The plant will occupy approximately 88 acres and

88 acres and will be located for ease of access and site specific uses for auxiliary needs of the operation of the power plant. In profile, the power plant will occupy an area that is approximately 1725 feet in length. The tallest portion of the power plant is the stack that will be approximately 650 feet in height. In addition to the power plant, a special waste landfill area will be created over the life of the plant on an adjacent area of the site. The proposed landfill area will be contoured to the land. The landfill area will be reclaimed with natural ground cover.



The power plant will be located at an approximate elevation of 440 mean sea level (msl). The surrounding terrain ranges from an elevation of 400 to 550 msl. The stack will be 650 feet in height and with a base elevation of approximately 440 feet msl the top of the stack will be 1,090 feet msl. This will be the critical benchmark elevation for the visual/scenic assessment.

The power plant and its auxiliary operations are being developed on an old strip/surface mine site and are adjacent to an active mining operation, agricultural areas and reclaimed mine areas. The active mine operations create extensive disturbance in a visual context to the surrounding landscape with the spoil piles and excavated areas. Subsequent sections of this site assessment further describe the specific nature of the facility and the surrounding environments.



Existing Mine Site

Scenic Assessment

The scenic assessment will be developed utilizing models for adjacent land uses that potentially could be impacted the greatest in addition to assessing intrinsic values of the landscape environment around the power plant. For the purpose of this assessment it will be assumed that the power plant will not have any negative impact to the immediately adjacent mining land use. In relative terms, the mining operation can be considered as a landscape disruption in itself and is potentially far less visually acceptable than the proposed power plant. To this end, the value of improvements will be assessed in proportion to existing conditions of the environment. Additionally, other environmental factors and conditions such as topographic features, vegetation/tree massing and climatic conditions will be assessed

Having assessed the area, there are three land use areas (visual units) that will potentially be negatively impacted by the visibility of the power plant;

- Western Kentucky Parkway (WKP) lies to the south of the power plant site and is a primary east-west transportation corridor of the region. WKP is selected as a modeling unit because travelers using WKP may be impacted by any negative visibility of the power plant. WKP is approximately 1.4 miles in a straight visual line of site to the power plant. Reclaimed mine sites exist on the south side of the Parkway coupled with agricultural uses. Three points on WKP will be assessed for visual impact.
- The Green River to the north of the proposed power plant and is a south to north flowing river, which empties into the Ohio River. The normal pool for this river is 363 feet msl. This water corridor is used for mostly commercial purposes as well as recreational. The Gibraltar Slip is just north of the site and serves as part of the overall Thoroughbred property. The north side of the river across from the site is largely agricultural. Three points along the river will be assessed for visual impact.
- The residential community of Central City lies over one and one-half miles to the south and west of the power plant site. Compatibility issues of a power plant and residential land uses led to the selection of this area as a visual unit to be assessed. Three line-of-sight assessments will be made in this area.

The current mining operations continue to the northeast of the proposed power plant site with forested areas toward the far eastern edge of the property. Residential properties are scattered throughout the forested areas but no line-of-sight assessments are included due to the forested vegetative cover.

These three land use areas surround the power plant and represent a radial viewshed from the proposed power plant. As a conservative approach to this assessment, it is assumed there are no environmental obstructions between the referenced visual units and the proposed power plant other than topographic and elevational changes. Thus the initial

assessment will rely solely on a topographic model for determining negative impact. A topographic obstruction to a line-of-sight between the visual unit and the proposed power plant will negate visibility, thus eliminating a negative impact. For the purpose of this assessment, the highest elevation of the proposed power plant stack has been used for the line-of-sight profile.

A straight line “profile” was simulated between the power plant and the critical land use/visual unit. This profile reflects the visual obstructions in the form of topographic land features. A line-of-sight profile has been projected on each topographic profile that will reflect obstructions to the line-of-sight.

Existing vegetation or newly installed vegetation may also provide visual obstructions depending on the placement in relation to the viewer. The closer the tree line is to the viewer, the more restricted the view. The further away the tree line is from the viewer, the greater the view into the distance. Additionally, the elevation from which the viewer is exposed to the view, the height of the tree line and its distance from the viewer, coupled with the horizontal distance to the base of the stack and their height, affects the visibility of the stack from any given point of observation. Therefore, an analysis of the elevation needed for vegetation to effectively screen the top of the stack from each visual unit was conducted.

Exhibit A illustrates the regional Land Use/Viewshed Environment context of the power plant to the selected visual units assessed for scenic incompatibility. The assessment extends within a two-mile radius from the proposed power plant site. These selected visual units are well representative of areas that could be visually impacted from a scenic context by the power plant. The proposed Thoroughbred Station is represented as 'A' on the illustration. Locations B, C, and D represent the sight line origins from the Green River toward the proposed plant. Central City sight lines toward the plant are represented as E, F, and G. Sight lines from the Western Kentucky Parkway toward the proposed plant are shown as H, J, and K.

Exhibits B, C, and D illustrate the line-of-sight/topographic profiles between each selected visual unit and the proposed power plant. An intersection of the line-of-sight line and a topographic profile line represent a visual obstruction between the power plant and the visual unit. Exhibit B illustrates three representative profiles originating along the Green River corridor looking south toward the proposed power plant location. Exhibit C illustrates three representative profiles originating at residential areas within Central City looking eastward toward the proposed power plant location. Exhibit D illustrates three representative profiles originating along the Western Kentucky Parkway corridor looking north toward the proposed power plant location.



West Kentucky Parkway Sight Line to Thoroughbred Generating Station

Exhibits B, C, and D each illustrate the landforms between the selected viewpoints and the proposed power plant location. These landforms, however, do not reveal the variety of vegetative covers, including open ground with grass cover, water bodies, wetland areas, forested wetland areas, evergreen-forested areas, and Peabody Wildlife Management areas with a variety of vegetation. The various vegetative covers represent varying heights of potential visual obstruction such as: grass cover 0 -18", water bodies - level surface, wetland areas 0-48", forested wetland areas 0-20', evergreen forested areas 20-40', Peabody Wildlife Management areas 0-40' and tree lined corridors 10-70'. Trees ranging in height from 10 to 70 feet flank the Western Kentucky Parkway corridor and also the Green River corridor. Central city is flanked to the east by an urban forest mass that has historically separated the community from surface mining operations. This mass of vegetation provides vertical "variety" to the skyline and creates a visual "tunnel" with little to no visibility outside the right-of-way or river corridor. Within the proposed site itself, vegetation is predominately grassland. The heights of any vegetative cover are in addition to the heights represented on the topographic profiles. The profiles were taken in areas where no building structure was directly in the line-of-sight.



Central City Sight Lines to the proposed Thoroughbred Generating Station

Contextual Elements

Central City lies to the west of the proposed power plant site and has a population of approximately 5,800. Its average elevation is 473 mean sea level with a high point of 509 and a low point of 420. Access into the city from the Western Kentucky Parkway is southwest of the proposed site. Access into the proposed power plant site would be gained by way of a gated entry 2 miles east of Central City along Highway 62. Highway 62 runs north of and generally parallel to the Western Kentucky Parkway.

While the terrain within the region is gently rolling, the topographical range is between an elevation of 400 feet to 550 feet +/- . The majority of the surrounding land use is agricultural with forested areas scattered throughout. The transportation corridor of the WKP is flanked on either side by native tree stands and agricultural fields. Part of the old mining operation lies south of the Parkway and has been reclaimed with a variety of vegetation.

The Green River Correctional Facility lies west of the proposed power plant facility in a low, relatively level area. There is no forested vegetative cover around this facility. The Peabody Coal Company employed experimental practices to reclaim three coal slurry impoundments on the western side of the proposed plant location between the water impoundment area and the correctional facility. These outstanding wetland habitats were recognized by the Department of Interior in July 1997.

The rail lines of the Paducah-Louisville Railroad bisect the proposed power plant site from southwest to northeast. Trees partially enclose the railroad corridor. This rail line provides commercial service only with no passenger service at the present time.

Two radio stations are just west of Central City along the Western Kentucky Parkway, WMTA AND WNES. Both stations have transmission towers.

There are six cell towers in and around Central City. These towers range in height from 275 to 420 feet and when coupled with the base elevation at each location, the overall heights reach from 710 to 912 feet msl. Two such towers are just west of the proposed plant site and are adjacent to the Paducah-Louisville Railroad lines. These two towers are also at the edge of residential areas of Central City. The overall heights of these towers are 710 feet and 868 feet msl. Another cell tower is west of the proposed plant entrance just south of the Western Kentucky Parkway with an overall height of 912 feet msl. These cell towers are represented on Exhibit E.

Surface mining at the proposed power plant location has been conducted since 1915. The community of Central City is accustomed to the disturbance of the agricultural character of the area within the plant property boundaries.

Other contextual elements that should be noted are the presence of three additional power plants. The D. B. Wilson Plant is approximately 9 miles to the north along the Green River in Ohio County. The Kentucky Utilities Green River Power Station is along the

river southeast of the community of Moorman, Muhlenberg County and is approximately 4 miles north of Central City. The TVA Paradise Powerplant is approximately 7 miles to the south along the Green River in Muhlenberg County.

D.B. Wilson, Centertown, Kentucky

This plant occupies a 926-acre site along the Green River approximately 9 miles due north of the proposed Thoroughbred Plant. This operation began in 1986 and has one generating unit with one stack at a height of 570 feet. The base elevation at the stack is approximately 400 feet with the overall height of the stack to be roughly 970 feet msl. The plant employs 105. Visually it is seen from the Green River and surrounding areas. It receives its coal by truck, rail and barge.

The Green River Power Station, Moorman, Kentucky

The Green River Power Station is Kentucky Utilities third largest plant occupying 407 acres and employing 80 people. It has four units with four stacks. The base elevation of the stacks is approximately 390 feet providing an overall height of the stacks of 797 feet msl. It also, is located immediately adjacent to the Green River. There is no substantial vegetative screening in any direction associated with the plant.

TVA Paradise Powerplant, Drakesboro, Kentucky

The TVA Paradise Fossil Plant was begun in 1959. Additional units were added between 1963 and 1970. Housing three units with stack heights of 600 feet, 600 feet, and 800 feet, it uses some 20,000 tons of coal per day. The base elevation of the stacks is approximately 433 feet, making the overall height of the stacks at either 1033 feet msl or 1233 feet msl. Located in Muhlenberg County, it is also immediately adjacent to the Green River on an old mining site. Little appreciable vegetation is on the property.

Prior to 1978, old strip/surface mine sites were left in a manner that complied with the current laws at the time. Sites were reclaimed consistent with mining operations across the country. The Surface Mining Control and Reclamation Act of 1977 brought extensive new regulations to mine reclamation. Before the Reclamation Act, previous regulations were minimal. The sites surrounding the TVA Plant and the proposed location of the Thoroughbred Station were mined prior to this Act and reflect the mining operations at that time. The proposed Thoroughbred site is typical with grasslands, numerous water bodies, and a few trees. Active coal processing equipment can be seen on the site and creates an appearance of significant vertical proportion to the visual context of the site. Development on the proposed site will certainly enhance the environment through the addition of vegetative cover and facility management with an orderly site development.



Current Mining Operations

Climatic Conditions

According to the National Oceanic and Atmospheric Administration and the National Climatic Data Center in Asheville, North Carolina, one could expect in the range of 110 to 124 rainy days a year in the central region of western Kentucky. Additionally, between 167 and 171 cloudy days a year have been reported in the area. It could be construed that rainy and cloudy days prevent long distance viewing of the countryside during those periods. Snow, ice and sleet events create additional climatic interruption in the atmosphere within the area. Because the proposed power plant is situated in a fairly remote area, with a significant distance to any populated areas, climatic conditions can create visual obstructions to landscape objects in the distance.

Conclusions

This assessment will conclude negative scenic impact only if the power plant becomes a dominate visual part of the landscape within the surrounding area of the power plant or if it is determined that the power plant will compromise the existing landscape qualities from a visual context. Should visual obstructions occur between selected and representative land uses of the area, it will be concluded that no negative scenic or visual impact occurs; or if it is determined that the proposed power plant compromises other landscape elements or is a unique landscape element that draws negative attention, then potential negativity could be assessed.

The line-of-sight profiles of the selected model points (Exhibit B) along the Green River illustrate marginal obstruction, due to landforms, of the power plant. In these profiles, because of no conclusive evidence from the profiling, other environmental factors were considered. Other environmental factors included density of land cover such as significant tree growth, atmospheric conditions that would impact range of visibility and the scale of the power plant in the context of the entire environment. Considering that the river is tree lined along its banks, there are over 110 days of precipitation in the area

creating atmospheric obstructions and the vertical inclusion of the power plant stack within a largely disturbed, commercial/industrial area, the potential for other environmental obstructions and minimization of visual impacts is high. Additionally, analysis of the sight line reveals that a vegetation height of 50 feet within a distance of 400 to 550 feet from the selected viewpoints would effectively block views of the top of the stack. With trees lining the river corridor, visibility of the proposed stack would be blocked. It is the conclusion of this assessment that there will be no negative scenic impact of the power plant to the Green River Corridor.

Profiles illustrating the topographic conditions between the proposed power plant and Central City residential properties (Exhibit C) reveal minimal to no landform obstructions in the line of sight. The analysis of the sight line vertical vegetation height of 50 feet within 550 to 803 feet of the selected viewpoints would obstruct the view of the top of the stack. Vegetation of sufficient height was observed at each line of sight location within the prescribed distances and would therefore, effectively block views of the proposed station. It is the conclusion that there will be no adverse scenic impact of the power plant on Central City.

The line-of-sight/topographic profiles between WKP and the Thoroughbred Generating Station (Exhibit D) illustrate topographic obstructions at each origin location. The forested tree cover adjacent to the roadway provides an additional visual barrier to distant views. The analysis of the 50' height of vegetative cover reveals that within a distance of 700 to 915 feet from the selected viewpoint, the top of the stack is effectively blocked. It is concluded that the power plant cannot be seen between these selected model points and thus there will be no negative scenic impact to the south of the power plant.

The existing landscape within the proposed plant boundary is covered with grasses. The mine site on the north side of the WKP has remained in its post-mining state. The site is currently being mined only on the northeastern edge of the property. The majority of the existing site is covered with grass with a variety of native trees dotting the landscape. Water bodies have formed in the depressions from the old mining operations. Suffice it to say, this existing landscape is a non-descript visual environment. The addition of a power plant with associated landscape development and facilities management will be an improvement over the existing conditions. The accompanying rendering of the proposed plant reflects the intended character of the proposed power plant.

Due to the overall height of the stack, it may be visible at some time from some locations, but views into the site and of the stack will be predominately screened by existing vegetation and/or other vertical elements.

The existing viewshed has numerous man-made vertical elements in the skyline throughout the Central City area such that any view of the stack will not be unique. Coupled with the stacks from other power plants, cell towers, transmission lines and radio towers, the skyline reflects the commercial enterprises in operation in the area. In this context, the new power plant fits into the existing environment without compromising its physical attributes.

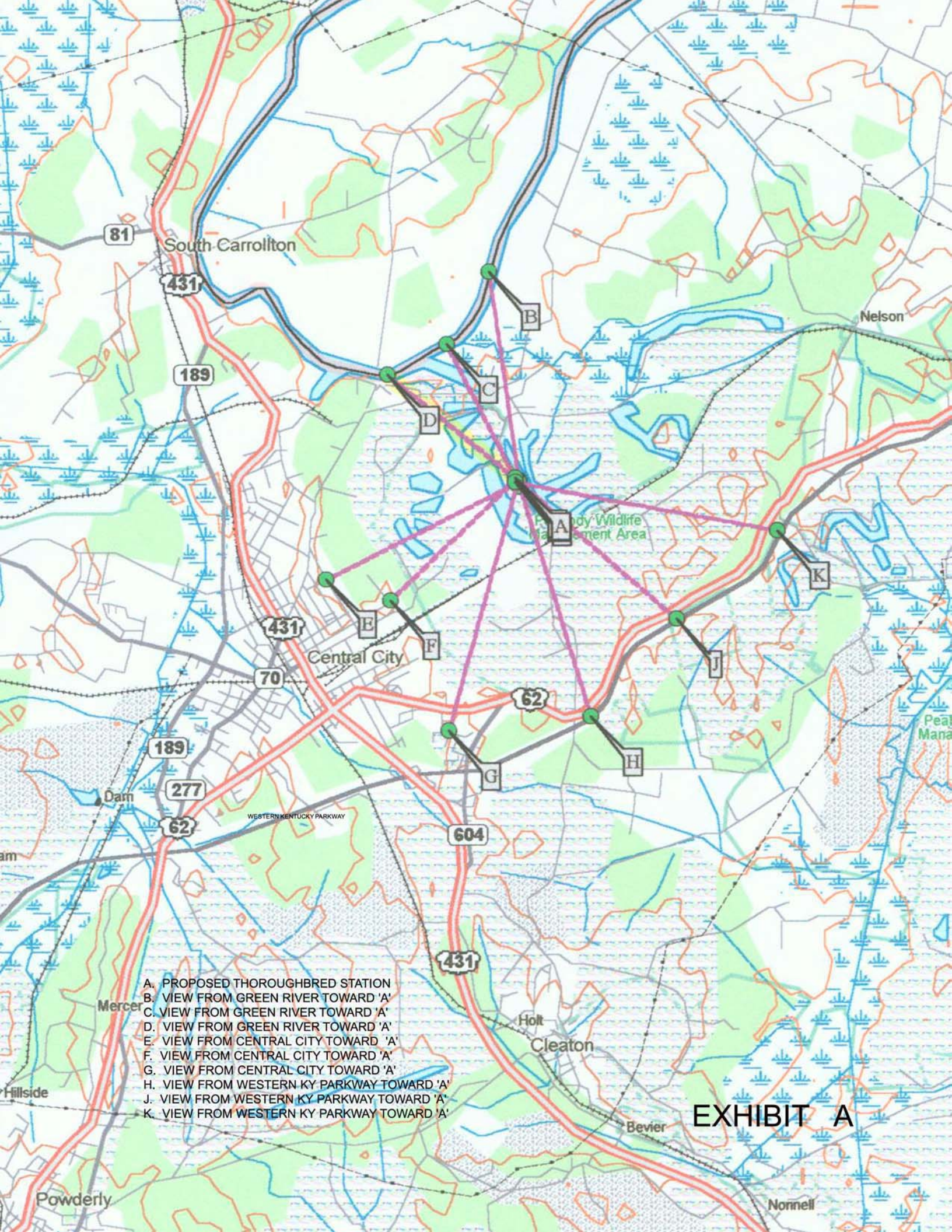
Having assessed a representative sampling of visual units within the area of the power plant and determining no negative visual impacts, it is the conclusion of the Site Assessment that the scenic qualities of the area will not be compromised because of the development of the proposed power plant.

In summary, the overriding determinants in this conclusion are:

- The power plant is obstructed by various landscape and environmental elements either partially or totally from various critical baseline points of scenic reference.
- There are no direct lines of sight that will be dominated by the power plant thus affecting the scenic experience and various peripheral lines of sight to the plant are minimal.
- The power plant's vertical profile is not a unique feature to the area landscape due to the presence of other "built" elements in the viewshed such as other power plants, cell towers, etc.
- The power plant development will improve the previously disturbed environment of pre-law strip mines.

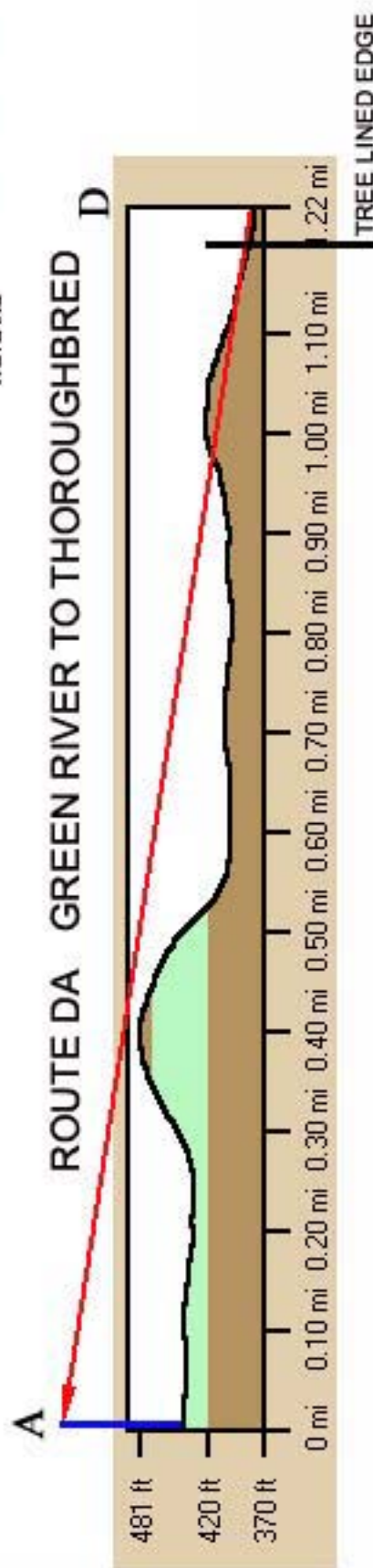
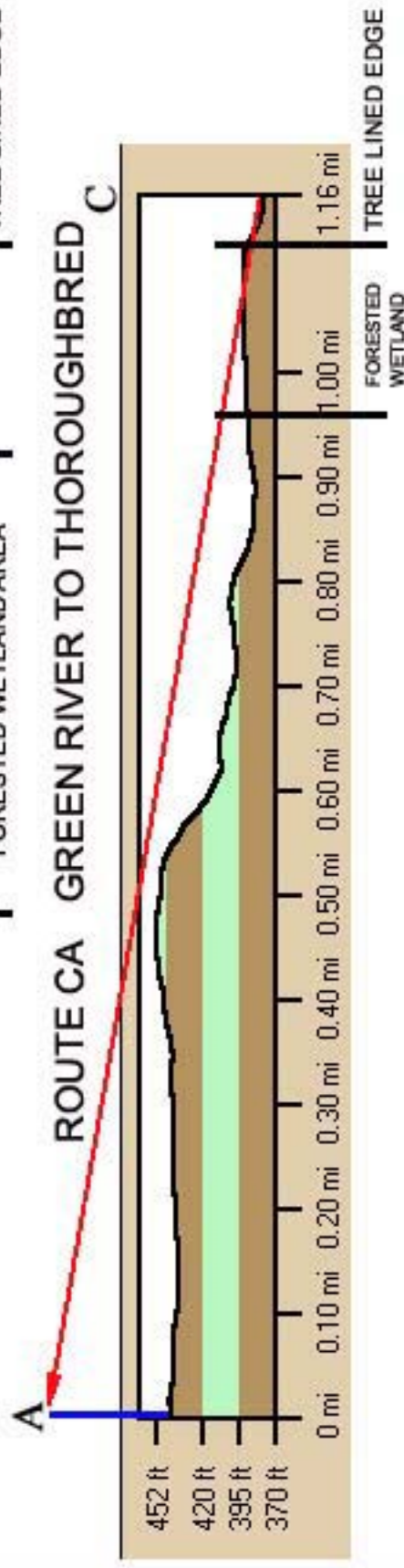
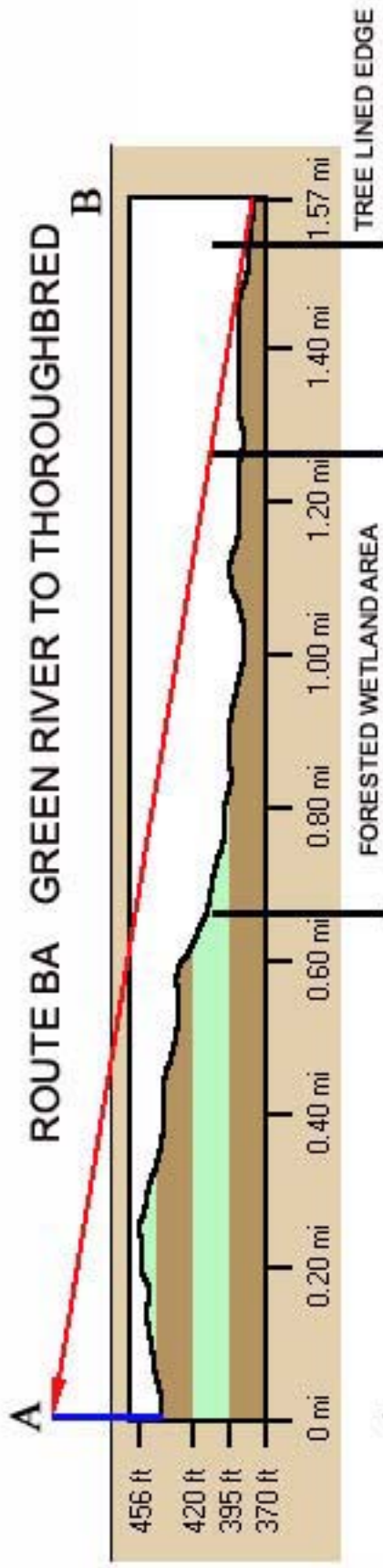
Scenic Assessment Prepared By:

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Lexington, Kentucky 40507



- A. PROPOSED THOROUGHbred STATION
- B. VIEW FROM GREEN RIVER TOWARD 'A'
- C. VIEW FROM GREEN RIVER TOWARD 'A'
- D. VIEW FROM GREEN RIVER TOWARD 'A'
- E. VIEW FROM CENTRAL CITY TOWARD 'A'
- F. VIEW FROM CENTRAL CITY TOWARD 'A'
- G. VIEW FROM CENTRAL CITY TOWARD 'A'
- H. VIEW FROM WESTERN KY PARKWAY TOWARD 'A'
- J. VIEW FROM WESTERN KY PARKWAY TOWARD 'A'
- K. VIEW FROM WESTERN KY PARKWAY TOWARD 'A'

EXHIBIT A



 SIGHT LINE
 THOROUGHGBRED GEN. STATION

**EXHIBIT B
SIGHT LINE PROFILE**

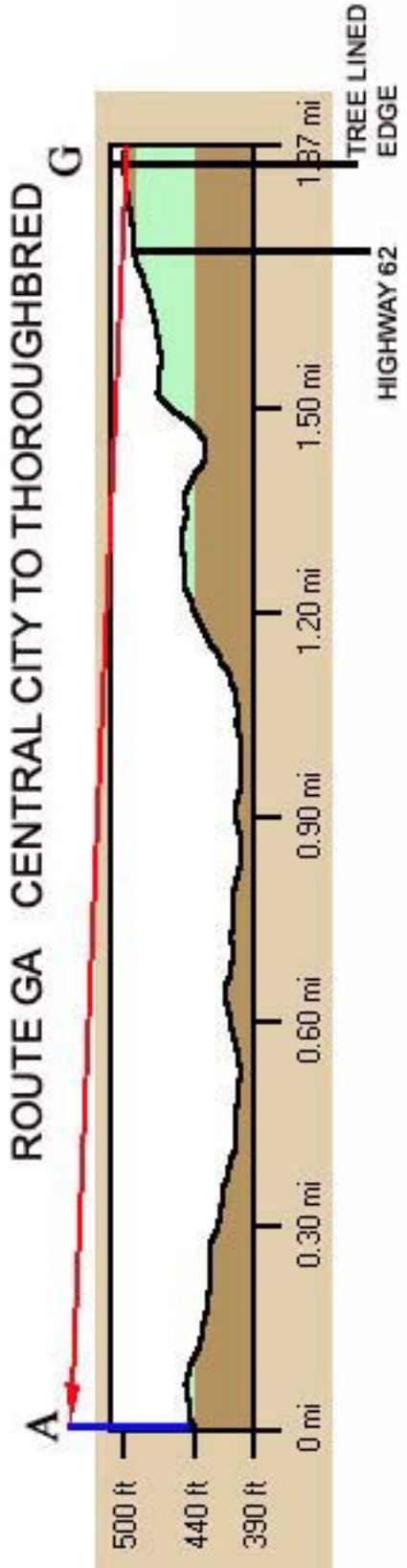
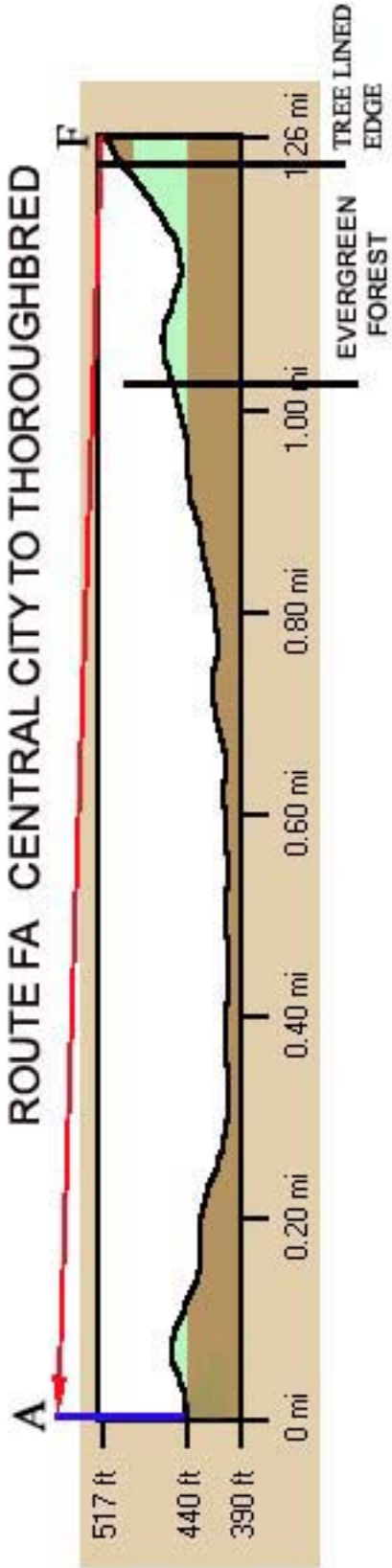
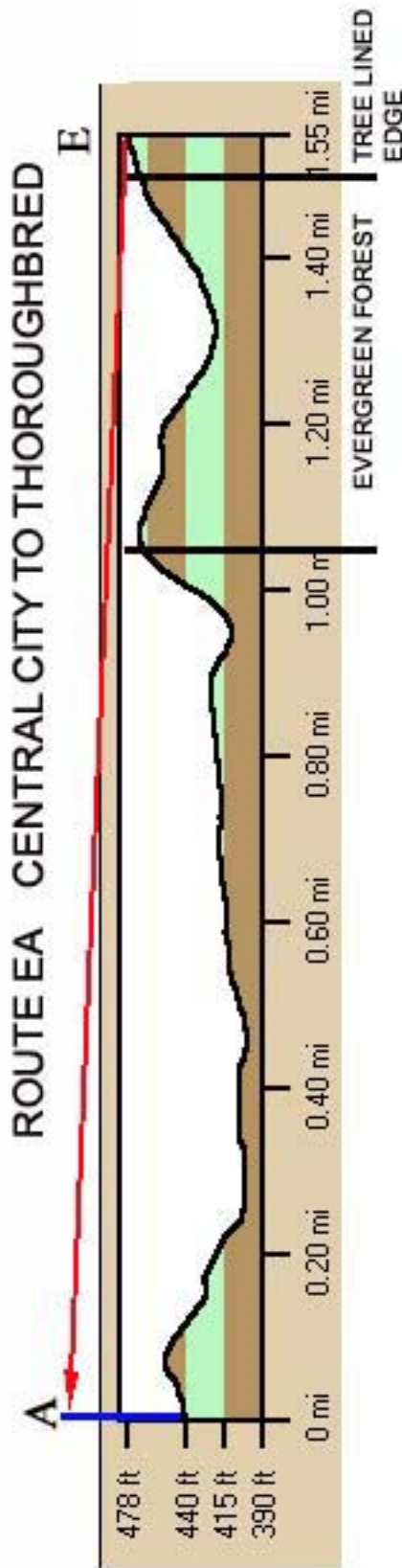
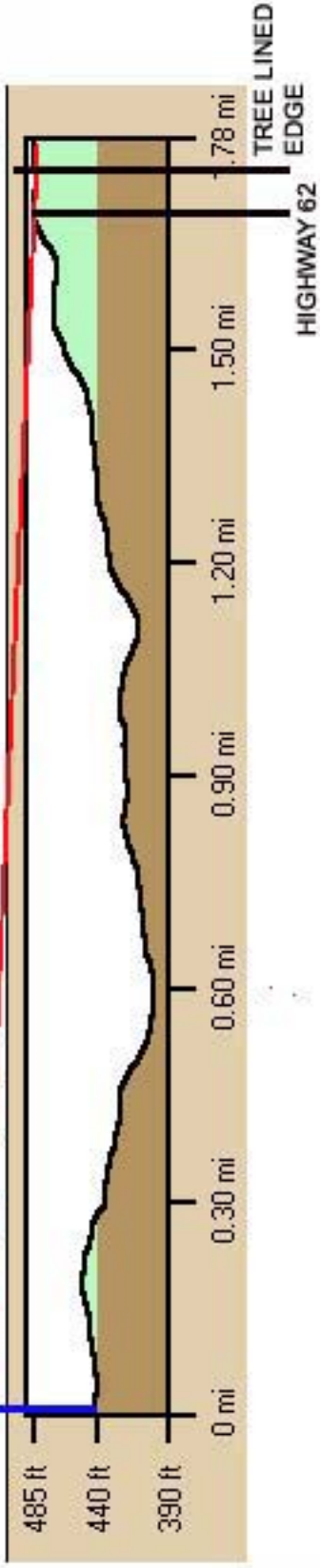
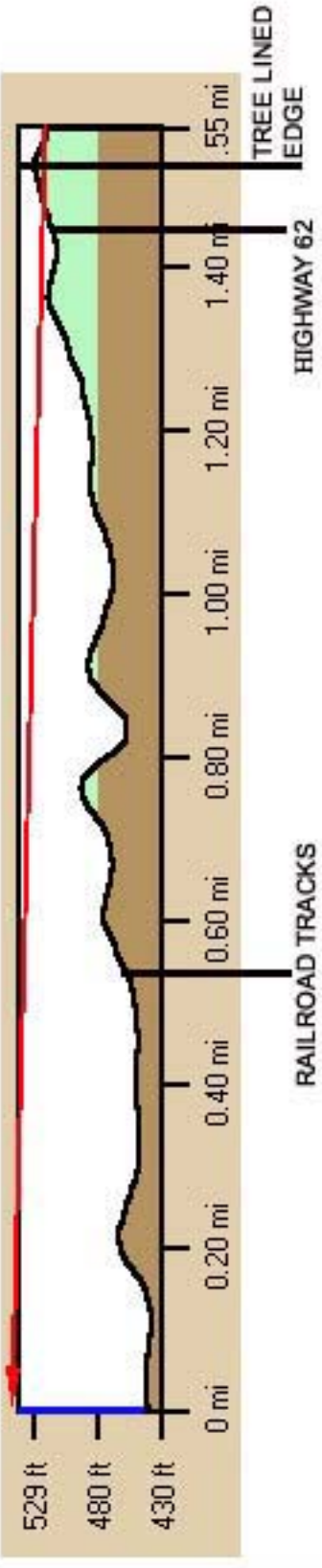


EXHIBIT C SIGHT LINE PROFILES

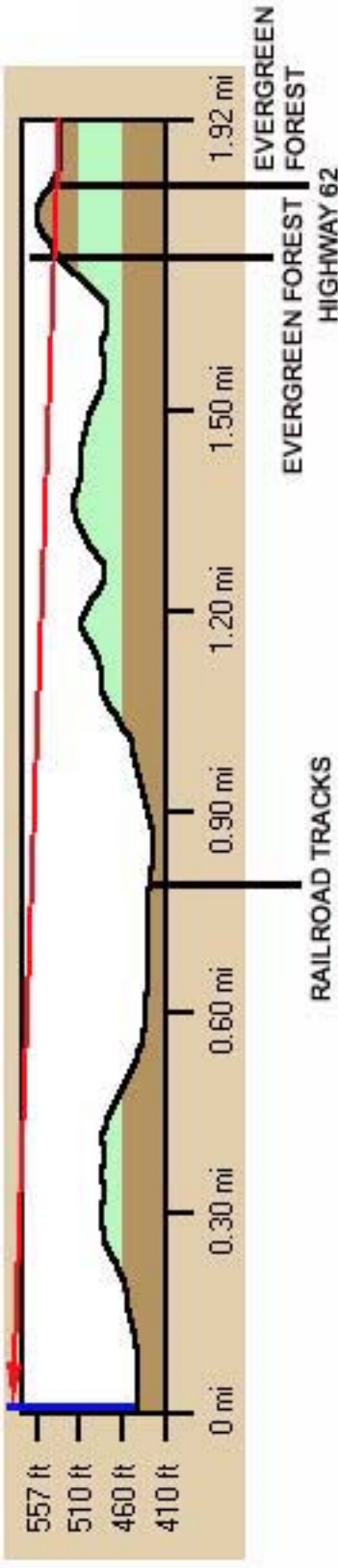
A ROUTE HA WESTERN KY PARKWAY TO THOROUGHBRED **H**



A ROUTE JA WESTERN KY PARKWAY TO THOROUGHBRED **J**



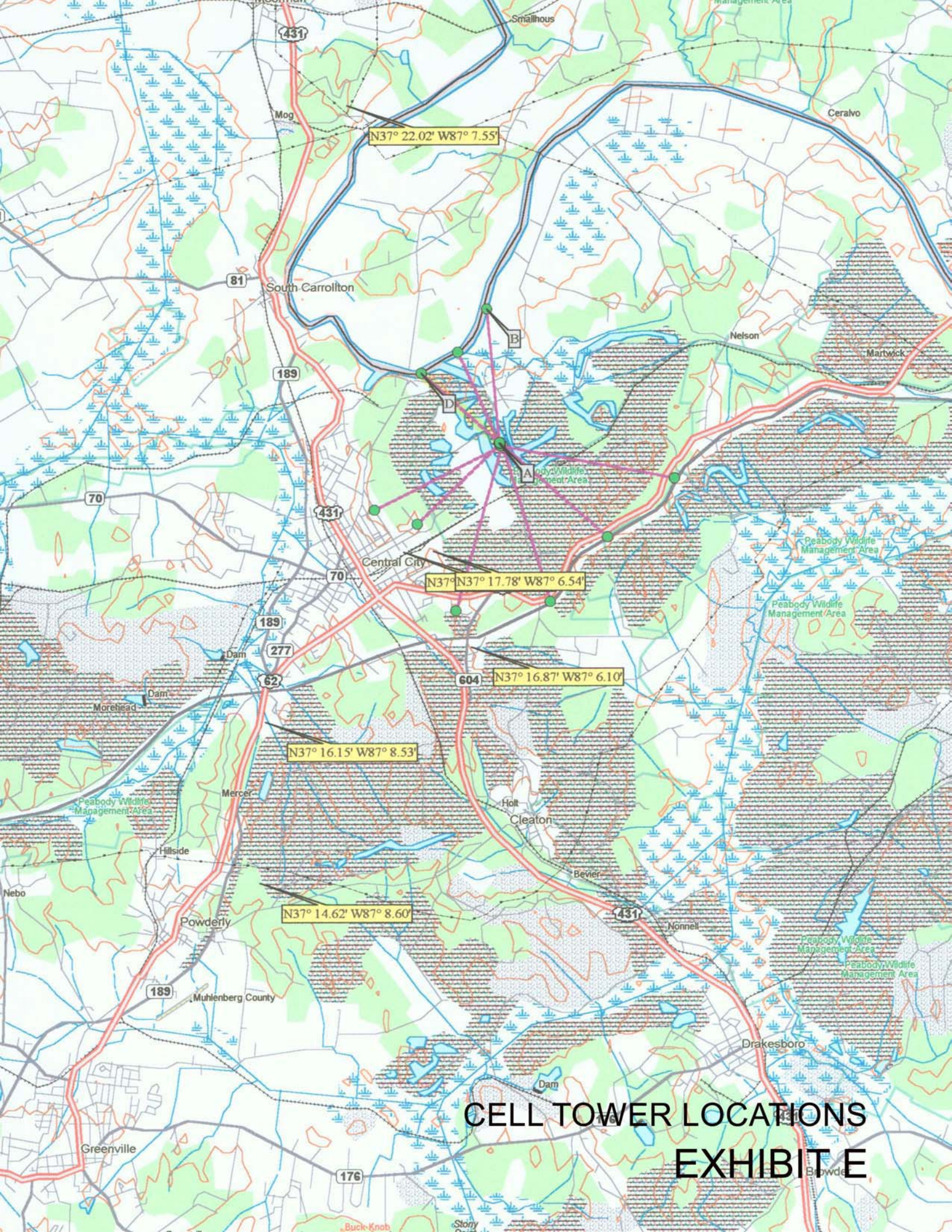
A ROUTE KA WESTERN KY PARKWAY TO THOROUGHBRED **K**



SIGHT LINE

THOROUGHBRED
GEN. STATION

EXHIBIT D
SIGHT LINE PROFILE



N37° 22.02' W87° 7.55'

N37° 17.78' W87° 6.54'

N37° 16.87' W87° 6.10'

N37° 16.15' W87° 8.53'

N37° 14.62' W87° 8.60'

CELL TOWER LOCATIONS EXHIBIT E

8.4 Potential for Change in Property Valuation

SB 257 Section 5(3)(c)

**EVALUATION AND ANALYSIS
OF
POTENTIAL FOR
CHANGES IN PROPERTY VALUES
OF ADJACENT PROPERTY OWNERS

RESULTING FROM THE
SITING, CONSTRUCTION & OPERATION
OF
PROPOSED THOROUGHbred MERCHANT PLANT FACILITY

MUHLENBERG COUNTY, KENTUCKY**

PREPARED BY:

**G. HERBERT PRITCHETT & ASSOC. INC.
222 UNION STREET
MADISONVILLE, KENTUCKY 42431**

Date of Report:

July 9, 2003

OVERVIEW OF THIS REPORT SECTION

Kentucky Revised Statutes (KRS) Chapter 278, SB 257, Section 5, subsection (3), (b) mandates that an applicant, in the site assessment report, study the “potential changes in property values resulting from the siting, construction, and operation of the proposed facility for property owners adjacent to the facility.” This section will address this requirement. *This section of the report was prepared by G. Herbert Pritchett & Associates, Inc., 222 Union Street, Madisonville, KY.*

There are 3 potential scenarios relating to the change in property values to adjacent properties. The property values can either:

- Decrease in value
- Increase in value, or
- Show no change.

Property values change due to a number of factors occurring both on and off a property. As we understand the requirements of the site assessment report, this study is to ignore all other factors relating to the property value changes and *focus solely* on the factors relating to the siting, construction, and operation of the proposed facility and their effect on the value of adjacent properties.

SUMMARY OF FINDINGS

After performing the scope of work and analyzing the data presented in this section, we believe that the likelihoods relating to the potential for changes in property value due to the siting, construction, and operation of the proposed merchant electric generating facility to property owners adjacent to the facility area are as follows:

- *No change* in value specifically due to the plant – **Most likely scenario**
- *Increase* in value – **Second most likely scenario** due to:
 - a) possibility of industrial site locations desiring close proximity to power generating facilities, and
 - b) increased employment brought on by the plant itself and the jobs in coal related enterprises supplying coal to the plant.
- *Decrease* in value – **Least likely of the 3 scenarios**

We base this ranking on our studies and resulting analyses of the properties surrounding 3 power plants – the West Ky. Energy Coleman Plant, Hancock Co., KY, the LG&E Trimble Co., KY Plant, and the Indiana-Michigan Rockport, IN Plant. Our investigations found the following:

1. At the West Ky. Energy Coleman Plant, Hancock Co. (an agricultural neighborhood), agricultural properties located adjacent to the plant sold for more per acre than similar agricultural properties located away from the plant.
2. At the LG&E Trimble Co. Plant (a mixed use neighborhood) there was no difference in the prices paid for homes in the hamlet of Wises Landing (located just south of the plant) when compared to similar properties located in other but similar sections of Trimble County. Sales of rural agricultural lands in the neighborhood also showed no difference in per acre prices when compared to similar properties in similar neighborhoods. Our findings were further confirmed by appraisers who routinely appraise properties in Trimble County, Kentucky.
3. At the Indiana-Michigan Plant, Rockport, IN, we found no change in the desirability of properties located in the shadow of the plant versus other properties. Local sources interviewed also indicated that there was no loss in the desirability of the properties located adjoining the neighborhood. Indeed they said that the location of the plant led AK Steel to locate in Rockport.

SCOPE OF WORK

In performing the studies necessary to complete this report, the following steps were taken:

1. We researched power generation data to ascertain the construction and operation dates of power plants in the immediate area. We also reviewed the data for the proposed Thoroughbred Plant.
2. We reviewed a summary of the siting, construction, and operation parameters of the proposed Thoroughbred Plant.
3. We reviewed a timely aerial photograph (supplied by the owner of the property selected for the proposed plant), entitled Thoroughbred Generating Company, LLC, Application for Construction Certificate Site Map. That photograph served as a base map upon which we the proposed facility was outlined. We took that photograph with us to the

Muhlenberg County Property Valuation Administrator's (PVA) office and further outlined the property lines of properties that are adjacent to the site. The PVA records were compared and reconciled where possible with maps supplied by the owner of the proposed facility. We also had print-outs from the PVA's computer data base for the adjacent properties.

4. We then took this information and inspected the site of the proposed facility as well as viewed the properties adjacent to the facility.
5. After performing the tasks in the preceding items 3 and 4, we submitted data to the owner of the property selected for the proposed site, which resulted in the creation of the Application for Construction Certificate Adjacent Property Owners Site Map, which is a part of this report.
6. After reviewing the data thus far collected we then decided upon which of the neighborhoods around existing plants to view and further study.
7. We then personally inspected those selected neighborhoods around the existing power plant sites selected.
8. We went to the Property Valuation Administrator's (PVA) office in the selected power plant counties in Kentucky (Hancock & Trimble Counties) and the assessor's office in Spencer County, Indiana, to obtain tax information on the adjacent properties of that particular power plant. We then looked at the sales that took place during the period of study of that particular power plant.
9. We contacted various appraisers and realtors in those counties in which the plants were being studied. These contacts discussed general trends in power plant neighborhoods. We also used these local sources to identify sales of similar properties located in similar neighborhoods, but outside power plant neighborhoods.. This gave us additional objective sales data to compare the power plant adjacent property sale prices with prices paid for similar properties located outside power plant neighborhoods.
10. We then analyzed and applied all the data collected to arrive at the conclusions reported in this section.

SUMMARY OF THE PROPOSED FACILITY

The Thoroughbred Energy project involves a 1,500 megawatt (MW) coal-fueled merchant electricity generation plant, to be located on a campus of approximately 2,982 acres. The generating plant will use two 750-megawatt units fueled by up to 6 million tons of coal per year produced from an adjacent underground mine. The estimated mining direct employment is projected to be around 350 people. Building the plant will employ another 2,500 people over a 4 year period.

The plant will consist of a complex of structures with a base elevation of 440 feet MSL. The tallest building will be the boiler house of 260 feet in height (top of boiler building 700 feet MSL). The tallest stack will be some 650 feet high (top of stack 1,090 MSL).

The project is slated for completion in the 2006 to 2007 time frame and has the capacity to supply power for some 1.5 million families and businesses. The project will meet or exceed all pollution requirements.

The Site Map of the proposed facility is attached hereto.

IDENTIFICATION OF ADJACENT LAND USES

As noted in the preceding section, we mapped and identified the lands adjacent to the proposed facility and noted their land use. The Adjacent Property Owner Site Map is attached hereto with the adjacent property owners listed thereupon.

Potential for Change in Property Values (KRS 278, SB 257, Sec 5 (3), (b)), Page 5

Map Index No.	PVA Map No.	Owner	Land Size (acres)	Land Use	Assessed Value	Last Sales Price	Last Sales Date
2937	141-04-07-012.001	P&L Railway Inc.	55	Industrial/Railroad	\$20,000	N/A	
2939	141-00-00-001	Peabody Energy	N/A	Industrial/Mining	N/A	N/A	
1973	141-00-00-003.002	Commonwealth of KY.	17	Spec. Purp./Corr. Fac.	N/A	N/A	
1849	140-00-00-030	Peabody Energy	65	Industrial/Mining	N/A	N/A	
2938	140-00-00-043	Peabody Energy	N/A	Industrial/Mining	N/A	N/A	
1872	140-00-00-051	River Road Cemetery	N/A	Spec. Purp./Cemetery	\$2,000	N/A	
1889	140-00-00-064	Mrs. Edwin E. Doss	5	Vacant/Residential	\$3,500	N/A	
1885	140-00-00-062	Connie King	4	Residential	\$69,000	N/A	
1892	140-00-00-066	Peabody Energy	N/A	Industrial/Mining	N/A	N/A	
1893	140-00-00-067	Jonathan Bowles	1	Residential	\$38,000	\$38,000	
2936	140-00-00-068	Peabody Energy	N/A	Industrial/Mining	N/A	N/A	
2941	158-00-00-005	Peabody Energy	N/A	Industrial/Vacant/Mining	N/A	N/A	
2218	158-00-00-004.000	Peabody Energy	N/A	Agricultural/Mining	\$158,000	\$158,000	7-98
2940	158-00-00-002	Peabody Energy	N/A	Industrial/Vacant/Mining	N/A	N/A	
2942	158-00-00-008	Peabody Energy	N/A	Industrial/Vacant/Mining	N/A	N/A	
2943	158-00-00-009	Peabody Energy	N/A	Industrial/Vacant/Mining	N/A	N/A	
2944	158-00-00-016	Peabody Energy	N/A	Industrial/Vacant/Mining	N/A	N/A	
2945	158-00-00-017	Peabody Energy	N/A	Industrial/Vacant/Mining	N/A	N/A	
3115	173-00-00-064	Peabody Energy	N/A	Industrial/Mining	N/A	N/A	
3034	173-00-00-028	Harold Dean Huff	N/A	Residential	\$36,000	\$36,000	
3113	173-00-00-022	Peabody Energy	N/A	Industrial/Mining	N/A	N/A	
3065	173-00-00-055	Ray Foster	Lot	Vacant/Residential	\$1,800	N/A	
3114	173-00-00-057	Peabody Energy	N/A	Industrial/Mining	N/A	N/A	
3074	173-00-00-063	Sam Ray Stone	13	Residential	\$50,000	N/A	
3092	174-00-00-004.001	Edward Ray & Jamie Lynn Austin	7	Residential	\$38,500	\$38,500	4-95
3092	174-00-00-004.001M	Edward Ray & Jamie Lynn Austin	N/A	Residential	\$11,500	N/A	
3098	174-00-00-009	L.E. & B.A. Summers	1	Vacant/Residential	\$800	\$800	4-87
3099	174-00-00-009.001	Ronnie & Carolyn McDonald	0	Vacant/Residential	\$1,500	\$1,500	1-95
3097	174-00-00-008	Ronnie McDonald	N/A	Residential	\$39,000	N/A	
3096	174-00-00-007	Nelson Creek Baptist Church	N/A	Spec. Purp./Church/Cemetery	\$116,000	N/A	
3116	174-00-00-002	Peabody Energy	N/A	Industrial/Mining	N/A	N/A	
2958	159-00-00-001	Rogers Coal	140	Industrial/Mining	N/A	N/A	
2935	159-00-00-006	Peabody Energy	N/A	Industrial/Mining	N/A	N/A	
3091	174-00-00-04.00	William C. Peveler	Lot	Vacant/Residential	N/A	N/A	
3117	159-00-00-001.001	Peabody Energy	N/A	Industrial/Mining	N/A	N/A	

SUMMARY OF THE PROPOSED FACILITY NEIGHBORHOOD

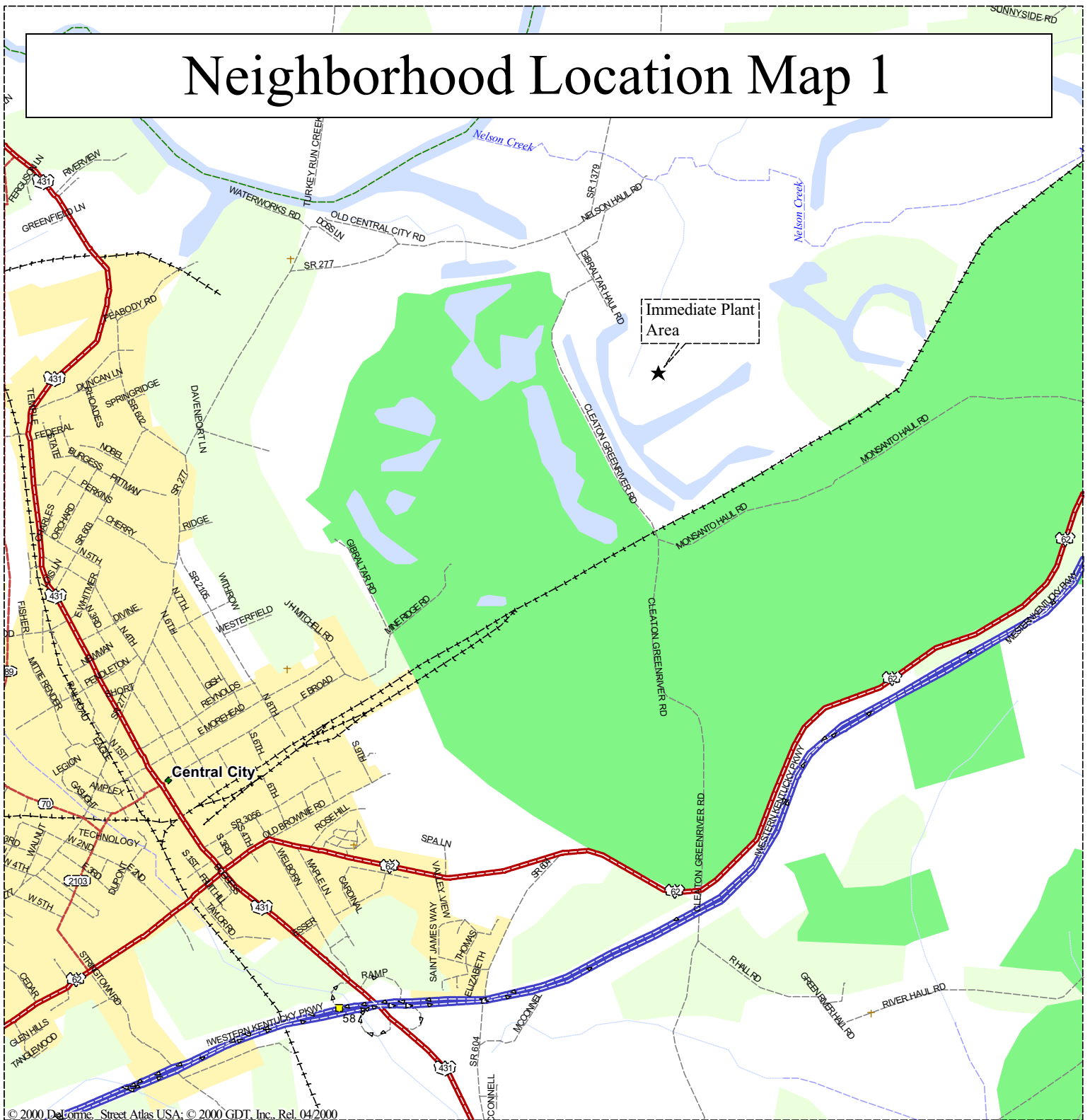
The subject neighborhood is located just east of Central City as shown on the attached neighborhood location map. It is generally a rural neighborhood that has had minimal new residential development occurring in it over the last 10 to 15 years. Overall, the neighborhood is thought to be in the latter stages of the stability stage of the neighborhood life cycle. The only major new land use in the neighborhood has been the building and installation of a State Correctional Facility, located at the western edge of the neighborhood and adjoining the proposed plant facility grounds on the west.

The prevailing land use (in terms of acres) in the immediate neighborhood consists of previously surface mined land. Excluding the incorporated area of Central City from the initial consideration of the neighborhood boundaries, we estimate that the previously surface mined area accounts for over 95% of the land in the immediate neighborhood. Basically, the majority of the land in the neighborhood was used by the Gibraltar Surface Mine in its surface mine. Portions of the land in the neighborhood are still being surface mined.

The lands consist of either pre-law surface mine spoil, or post-law surface reclamation. Those areas that were surface mined before the enactment of the Surface Mining Control and Reclamation Act did not have to be reclaimed to their original contours and consist of surface mine spoil interspersed with surface mine pits that have filled with water. Post-law surface mining land (generally in the northern edge of the neighborhood) has been reclaimed to the original contours. Where the land was being farmed, the top soil has been replaced. The southern portion of the previously surface mined land is being used as a wildlife refuge.

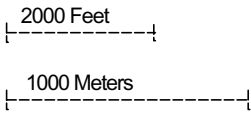
Looking at the immediate subject neighborhood, the 2000 census showed a population of some 922 people in only 25 households (all of which are in single family dwellings, except for the correctional facility). This population is not expected to significantly increase over the next 5 years. The preceding population figure of 922 included the inmate population of the Green River Correctional facility (one of the adjacent properties). The average daily population for the correctional facility in FY 2000-2001 was 914.

Neighborhood Location Map 1



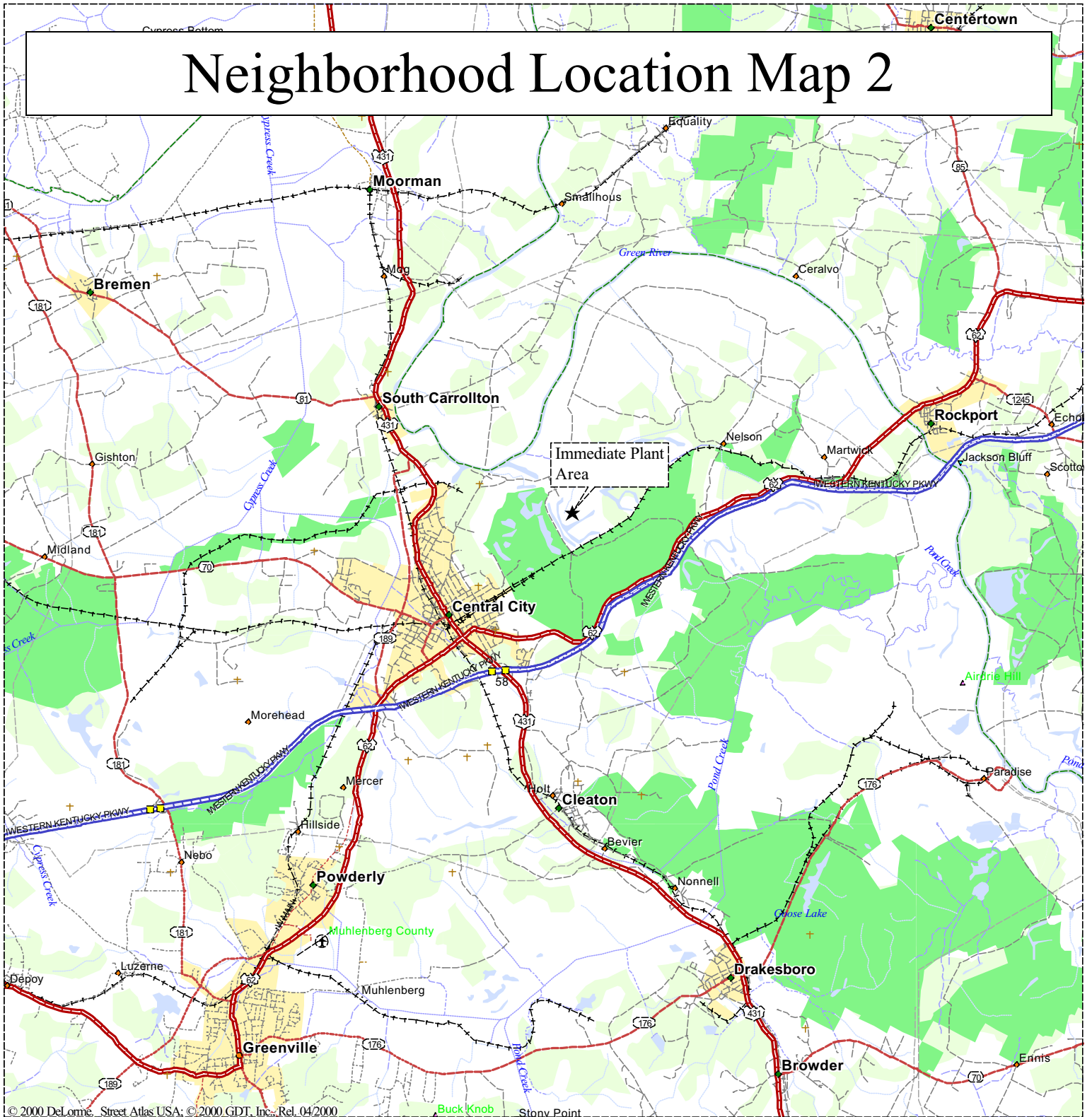
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 Wed Jul 09 13:02 2003
 Scale 1:31,250 (at center)



- | | | | |
|--|---------------------------|--|--------------------|
| | Local Road | | Cemetery |
| | State Route | | County Boundary |
| | Interstate/Limited Access | | Population Center |
| | US Highway | | Water |
| | Exit | | State Park/Forest |
| | Utility/Pipe | | Woodland |
| | Railroad | | River/Canal |
| | Small Town | | Intermittent River |

Neighborhood Location Map 2



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2 Miles

2 KM

- | | |
|---------------------------|--------------------|
| Local Road | Railroad |
| Major Connector | County Seat |
| State Route | Small Town |
| Trail | Airfield |
| Interstate/Limited Access | Summit |
| US Highway | Geographic Feature |
| Exit | Locale |
| Utility/Pipe | Public Airport |



Demographic and Income Profile

Thoroughbred Plant site

Latitude: 37.325
 Longitude: -87.0977
 Radius: 1.0 miles

Site Type: Circle

Summary	2000	2003	2008
Population	19	19	19
Households	10	10	10
Families	7	7	7
Average Household Size	1.9	1.9	1.9
Owner Occupied HUs	9	9	9
Renter Occupied HUs	1	1	1
Median Age	40.0	40.0	42.5

Trends: 2003-2008 Annual Rate	Area	State	National
Population	0.0%	0.0%	1.18%
Households	0.0%	0.0%	1.37%
Families	0.0%	0.0%	1.31%
Owner HHs	0.0%	0.0%	1.53%
Median Household Income	0.8%	0.0%	3.11%

Households by Income	2000		2003		2008	
	Number	Percent	Number	Percent	Number	Percent
< \$15,000	3	37.5%	3	33.3%	2	28.6%
\$15,000 - \$24,999	0	0.0%	0	0.0%	0	0.0%
\$25,000 - \$34,999	3	37.5%	3	33.3%	2	28.6%
\$35,000 - \$49,999	1	12.5%	1	11.1%	1	14.3%
\$50,000 - \$74,999	1	12.5%	1	11.1%	1	14.3%
\$75,000 - \$99,999	0	0.0%	0	0.0%	0	0.0%
\$100,000 - \$149,999	0	0.0%	1	11.1%	1	14.3%
\$150,000 - \$199,000	0	0.0%	0	0.0%	0	0.0%
\$200,000+	0	0.0%	0	0.0%	0	0.0%
Median Household Income	\$30,000		\$30,969		\$32,225	
Average Household Income	\$71,619		\$90,290		\$181,853	
Per Capita Income	\$22,550		\$32,044		\$50,198	

Population by Age	2000		2003		2008	
	Number	Percent	Number	Percent	Number	Percent
0 - 4	1	6.3%	1	6.3%	1	5.9%
5 - 14	2	12.5%	2	12.5%	2	11.8%
15 - 19	1	6.3%	1	6.3%	1	5.9%
20 - 24	1	6.3%	1	6.3%	1	5.9%
25 - 34	2	12.5%	2	12.5%	2	11.8%
35 - 44	2	12.5%	2	12.5%	2	11.8%
45 - 54	3	18.8%	2	12.5%	2	11.8%
55 - 64	2	12.5%	3	18.8%	3	17.6%
65 - 74	2	12.5%	2	12.5%	2	11.8%
75 - 84	0	0.0%	0	0.0%	1	5.9%
85+	0	0.0%	0	0.0%	0	0.0%

Race and Ethnicity	2000		2003		2008	
	Number	Percent	Number	Percent	Number	Percent
White Alone	19	100.0%	18	100.0%	18	100.0%
Black Alone	0	0.0%	0	0.0%	0	0.0%
American Indian Alone	0	0.0%	0	0.0%	0	0.0%
Asian Alone	0	0.0%	0	0.0%	0	0.0%
Pacific Islander Alone	0	0.0%	0	0.0%	0	0.0%
Some Other Race Alone	0	0.0%	0	0.0%	0	0.0%
Two or More Races	0	0.0%	0	0.0%	0	0.0%
Hispanic Origin (Any Race)	0	0.0%	0	0.0%	0	0.0%

Data Note: Income is expressed in current dollars.

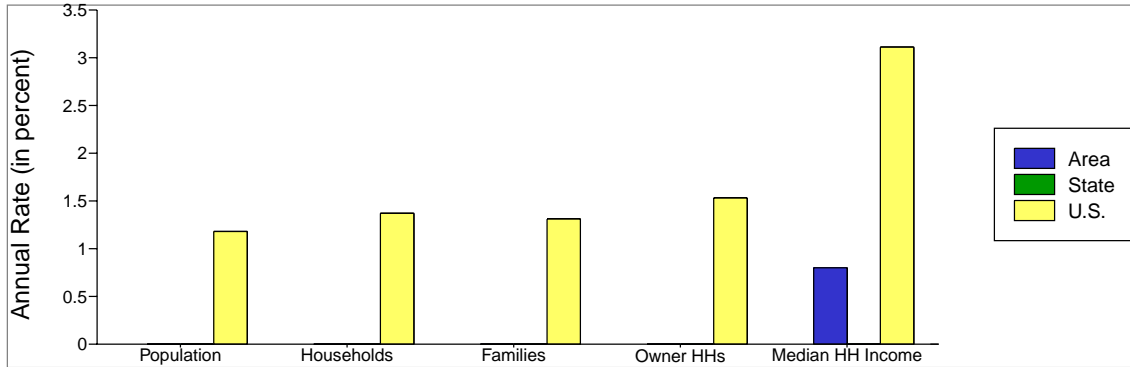
Source: U.S. Bureau of the Census, 2000 Census of Population and Housing. ESRI BIS forecasts for 2003 and 2008.

Thoroughbred Plant site

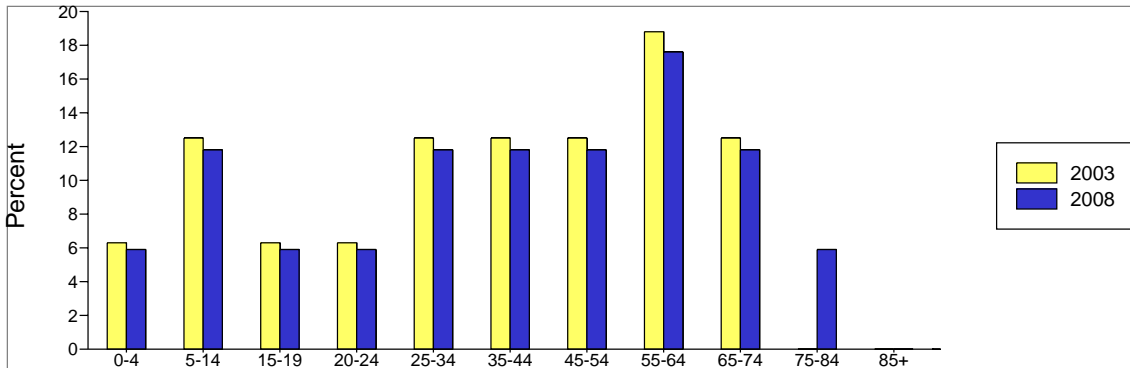
Latitude: 37.325
Longitude: -87.0977
Radius: 1.0 miles

Site Type: Circle

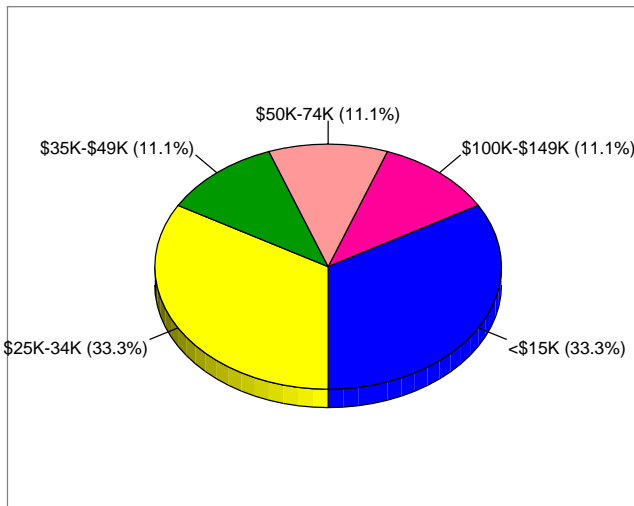
Trends 2003-2008



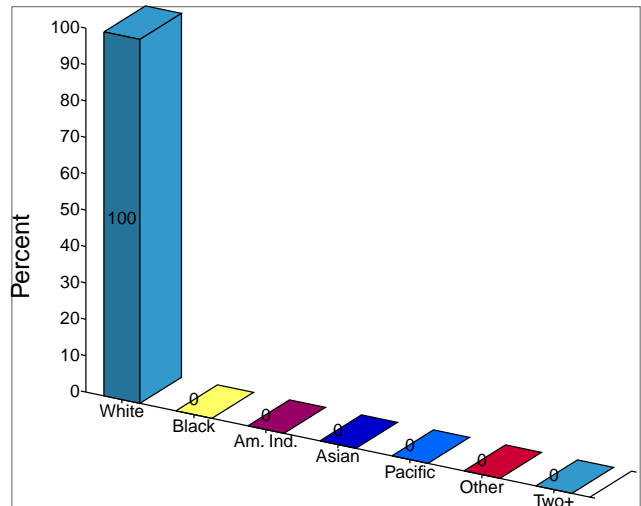
Population by Age



2003 Household Income



2003 Population by Race



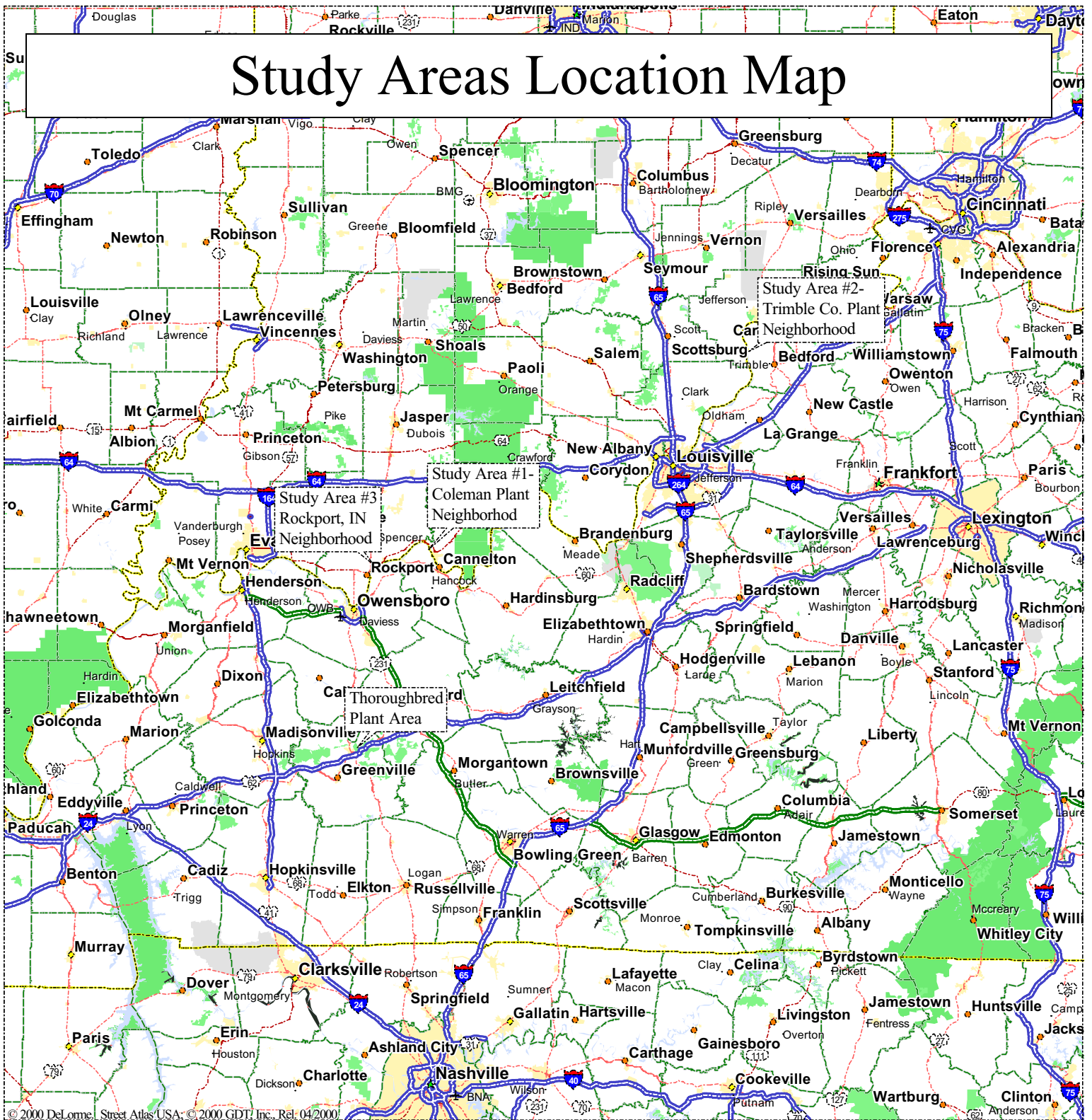
2003 Percent Hispanic Origin: 0.0%

CRITERIA FOR CHOSING STUDY AREAS

The neighborhoods we ultimately chose to research and study were similar to the Thoroughbred Plant neighborhood, adjacent properties, and plant in the following significant areas:

1. All 3 neighborhoods were basically agricultural in nature, much like the Thoroughbred Plant neighborhood.
2. All the plants, except the Trimble County Plant, were located fairly close to small towns (Rockport, and Coleman to Hawesville). The Trimble County Plant was located fairly close to a smaller community, Wisers Landing.
3. Two of the plants (Rockport and Coleman) were located in the same general region as the Thoroughbred Plant neighborhood. (See attached map). The Trimble County area was located outside the region and was studied due to high similarities in other areas).
4. All 3 of the plants could be said to be highly visible from surrounding properties, much like the proposed Thoroughbred Plant.
5. All 3 plants use coal to fuel their boilers.
6. The Rockport and Trimble county plants were among the last plants built in the region - 1977 and 1985, respectively.
7. All 3 plants were base load generating (as opposed to peaking) plants and would be in operation year round, except for periodic maintenance.

Study Areas Location Map



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 Scale 1:2,000,000 (at center)

20 Miles

50 KM

- | | |
|-----------------------------|-----------------------|
| Major Road | Large City |
| Local Road | City |
| Major Highway | Sched Service Airport |
| Interstate/Limited Access | Public Airport |
| Interstate/Unlimited Access | County Boundary |
| Toll Highway | State Boundary |
| County Seat | Population Center |
| State Capital | Land |

STUDY AREA #1

W. KY ENERGY COLEMAN PLANT, HANCOCK CO. KY

The West Ky. Energy Coleman Plant, Hancock County is a 521 MW base load generating plant located on the Ohio River just west of Hawesville, KY.

GENERAL NEIGHBORHOOD DESCRIPTION

The neighborhood around the plant is overwhelmingly agricultural. Over 80% of the land use around the plant is either in row crop or pasture agricultural use. Most of the sales in and around this area have been consummated with an agricultural use in mind.

SALES DATA

In 1999, four tracts located just north of this plant were auctioned. The auctioneer was Kurtz Auction and Realty, a very competent, professional firm with over 20 years experience. Tract 740C was adjacent to the Coleman Plant to the north. Tracts A, B, and D were adjacent to Tract C.

Ultimately, these four tracts sold as one unit to Louisville Gas and Electric Company. However, during the auction, these tracts were auctioned separately and purchased by separate buyers. The summary on the next page makes a comparison between the prices paid for these



Looking across Sale 740-D to the Coleman plant

tracts and other tracts located in Hancock County.

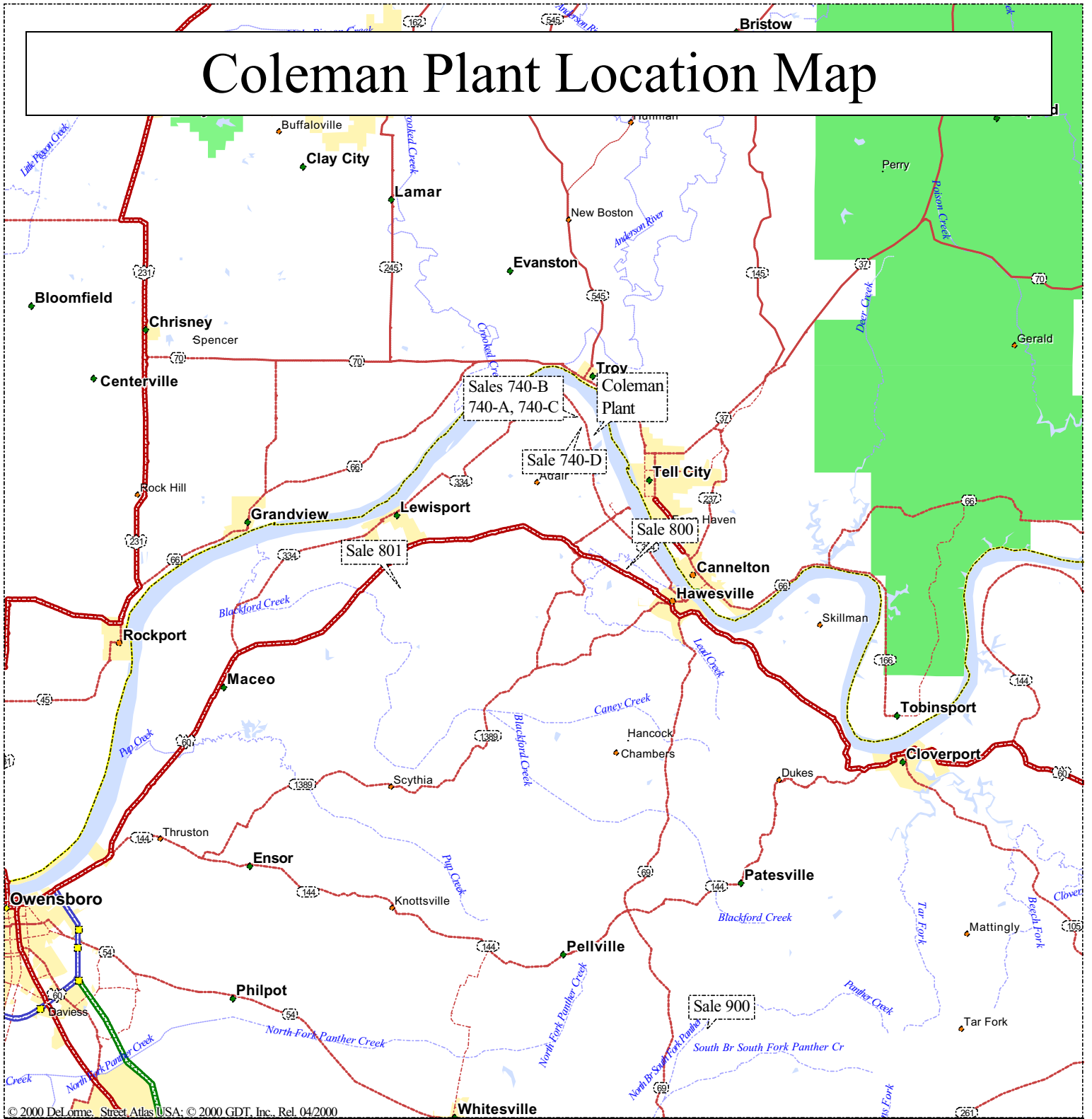
As one can see, the sale located adjacent and closest to the Coleman Plant sold for some \$1,200 per acre more than the other three sales. Tract A, which was located on the river, sold for more per acre than Tract B and D.

The data from this auction appears to show that properties located adjacent to power plants tend to sell for more per acre than those that are not adjacent to power plants.

**Hancock Co. Study
Land Allocation Grid**

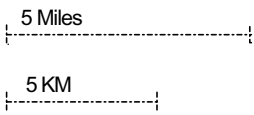
	← LG & E SALE →							
<i>Map Sale No.</i>	<i>740-A</i>	<i>740-C</i>	<i>740-B</i>	<i>740-D</i>	<i>800</i>	<i>801</i>	<i>900</i>	<i>Averages</i>
<i>Sale File No.</i>	<i>Riverfront</i>	<i>Riverfront</i>						
Sale Date	4-99	4-99	4-99	4-99	9-98	12-98	4-99	
Time Adjustment	0%	0%	0%	0%	0%	0%	0%	
Sale Price	\$130,000	\$360,000	\$46,000	\$120,000	\$75,000	\$117,500	\$55,497	
Adjusted Sale Price	\$130,000	\$360,000	\$46,000	\$120,000	\$75,000	\$117,500	\$55,497	
Land Size	91	137	66	151	42.32	30.42	42.69	80
Price per Acre	\$1,429	\$2,628	\$697	\$795	\$1,772	\$3,863	\$1,300	
Adjusted Price/Ac	\$1,429	\$2,628	\$697	\$795	\$1,772	\$3,863	\$1,300	\$1,783
CONTRIBUTORY VALUES								
Class II Acres	78.5	128.1	30.6	125.2	32	24	42.69	51
\$ per acre	\$1,625	\$2,800	\$1,300	\$940	\$1,400	\$1,400	\$1,300	\$1,268
Class III Acres								
\$ per acre								
Pasture Acres								
\$ per acre								
Woods	12.5	8.9	34.4	25.8	10.32	4.92		19
\$ per acre	\$200	\$200	\$180	\$100	\$215	\$200		\$174
Improvements					3	4		
\$ per acre					\$662	\$2,728		
Land Class Composite	0.88	0.94	0.54	0.85	0.79	0.81	1.00	
Overall Price/acre (land Only)	\$1,429	\$2,628	\$697	\$795	\$1,110	\$1,134	\$1,300	
Checks:								
Sums	\$130,063	\$360,460	\$45,972	\$120,268	\$75,035	\$117,584	\$55,497	
Adjusted Sales Price	\$130,000	\$360,000	\$46,000	\$120,000	\$75,000	\$117,500	\$55,497	
Farm Acres	91	137	66	151	42.32	30.42	42.69	
Acres Summed	91	137	65	151	42.32	28.92	42.69	

Coleman Plant Location Map



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 Scale 1:250,000 (at center)



- | | | | |
|--|---------------------------|--|-------------------|
| | Local Road | | Small Town |
| | Major Connector | | Large City |
| | State Route | | Park/Reservation |
| | Interstate/Limited Access | | Locale |
| | Toll Highway | | State Boundary |
| | US Highway | | Population Center |
| | Exit | | Land |
| | County Seat | | Water |

STUDY AREA #2 TRIMBLE COUNTY LG&E (et al) PLANT

The Trimble County Louisville Gas and Electric Plant is a base load 566.1 MW generating plant. Construction was started in approximately 1985 and the plant is operating today.

GENERAL NEIGHBORHOOD DESCRIPTION

Located to the south of the plant is a small rural hamlet called Wisest Landing. This hamlet is generally made up of 1,200 to 1,900 sq. ft. homes generally 30 to 50 years old. Most of the homes are older frame residences. Prices paid in the 1990's for homes in the area have ranged from a low of \$25,000 up to a high of \$140,000. There are two homes, more modern



brick veneer, that were listed as of July 24, 2002. As shown in the photograph the generating plant can be clearly seen from the hamlet. Land in the hamlet is somewhat off the Ohio River above the Ohio River flood plane. However the river can be seen from the residences.

View of Trimble Co. Plant from Wisest Landing

covered with medium to higher growth hardwoods.

Located to the south and the east of the plant are slightly rolling rural lands. These lands are generally being utilized for either pasture or for the growing of timber. The timber land is generally

Located to the north of the plant the land is somewhat more intensively used for agriculture. There are some pasture and woodland farms, such as on the east side, as well as row crop farms that farm the ground that is level. The area is generally sparsely populated and generally made up of farms and lots above ten acres in size.

Located on the top of the ridges the east of the generating plant the land is more conducive to row crop agriculture. Generally, the lands on the south side of Mount Pleasant Church Road are Class 2 and 3 lands that are being row cropped. There are some rural residential uses that are sprinkled between these agriculture uses. On Wentworth Road, LG&E has purchased most of the land that front on this road and are apparently renting out the leveled

cleared land for row crop agricultural use and allowing the rest of the land to continue to grow timber.

On Conners Ridge Road, the land and buildings look extremely well maintained. The Log House Farm is a superb farm with excellent woven wire fencing and very clean pastures.



View of Plant from east adjacent properties

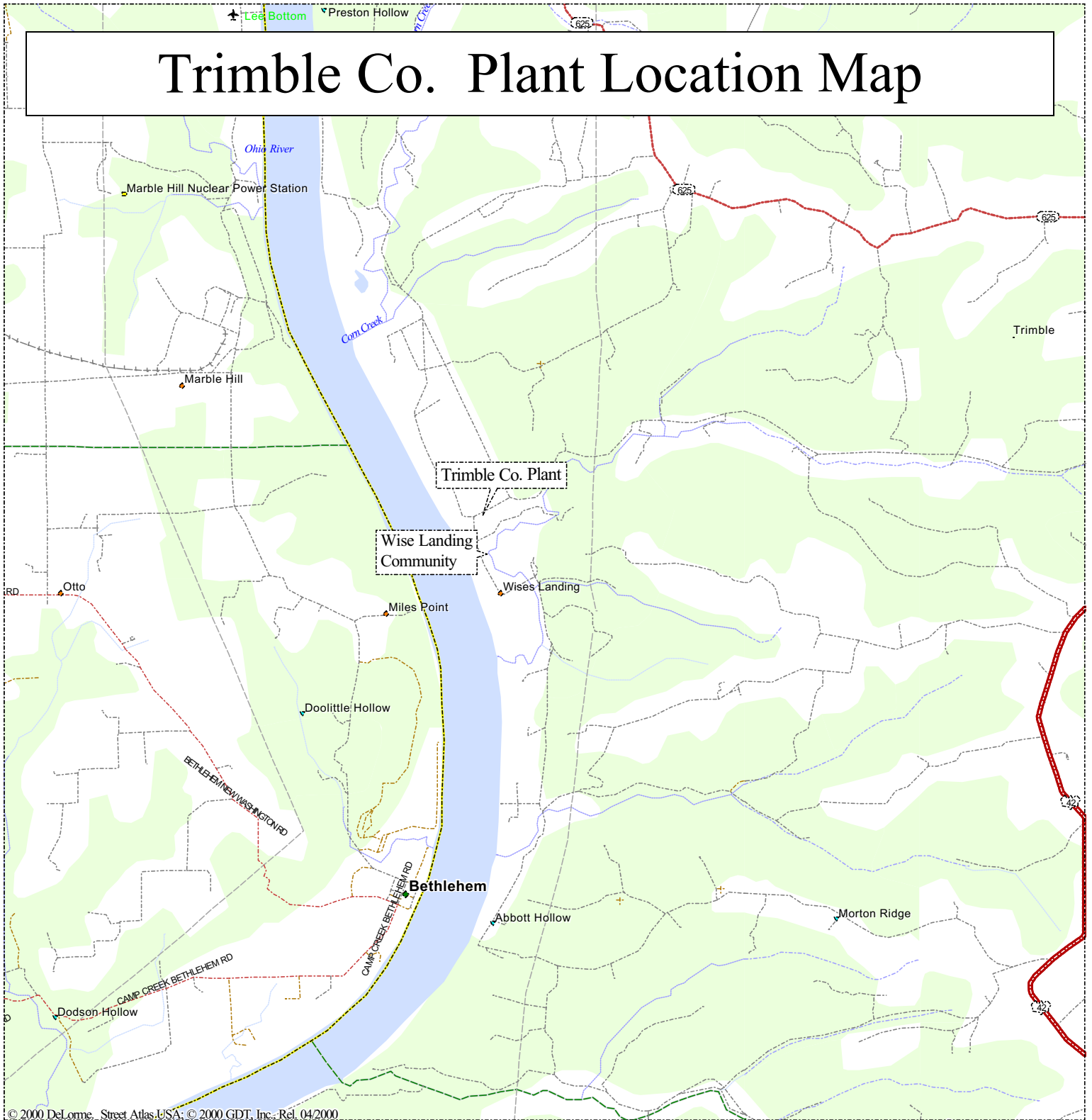
The houses along Conners Ridge Road are extremely well maintained and generally range in size from 1,200 to 1,800 sq. ft. The smoke stack and cooling tower from the plant as well as the towers from the old Marble Hill generating plant can all be seen from on the western third of Conners Ridge Road. Although the county maps show Conners Ridge Road going west all the way highway 1838, in actuality it dead ends at the top of the ridge.

RESULT OF INTERVIEWS & SALES DATA ANALYSIS

From July 1992 through the present we were able to find 7 sales of adjoining properties and 15 sales of adjacent properties. Those sales are summarized in the following table. In analyzing those sales, we found that the prices paid for those properties were in line with prices paid for similar properties in similar neighborhoods.

Interviews with personnel in the Trimble county assessor's office and appraisers further buttressed this finding. Area appraisers noted that they do not apply a negative location factor (external obsolescence) when appraising properties in the Trimble County Plant neighborhood. Neither does the assessor assess those properties located in the Trimble County Plant neighborhood for less than similar properties in other similar neighborhoods.

Trimble Co. Plant Location Map



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 Scale 1:62,500 (at center)



- | | | | |
|--|-------------------|--|--------------------|
| | Local Road | | Geographic Feature |
| | Major Connector | | Locale |
| | State Route | | Private Airport |
| | Trail | | Railroad Abandoned |
| | US Highway | | Cemetery |
| | Utility/Pipe | | County Boundary |
| | Point of Interest | | State Boundary |
| | Small Town | | Water |

STUDY AREA #3

ROCKPORT, IN, INDIANA-MICHIGAN PLANT

The Rockport Plant is a base load generating plant that was constructed by Indiana Michigan Electric Corporation, a subsidiary of American Electric Power. Construction began in approximately October, 1977 and the plant has continued in operation since that time. It is a main line generating plant that contains 2 boilers rated at 1,300 MW each. It is located in Spencer County Indiana, which is located just north of Owensboro (Davies County) Kentucky.

GENERAL NEIGHBORHOOD DESCRIPTION-

The neighborhood surrounding the Spencer County, Indiana power plant consists of farmland, interspersed with some rural residential uses. There are also some steep hillsides that consist of small to medium size hardwoods. The plant itself sits just off the banks of the Ohio River. The land in the general neighborhood is located on a flood plain. The power plant can be seen from a distance at all angles in the general neighborhood. AK Steel owns approximately 1,700 acres north of the plant. The main access artery that runs through the area is U.S. Highway 231. The plant is located just over 1 mile from the city of Rockport, IN (zip code population of approximately 4,900 persons).



View of Plant from Fulkerson east line

family residences interspersed within the agricultural uses.

In many instances, the neighborhood surrounding this plant has similarities with the Thoroughbred Energy Plant that is the purpose of this study. Both are located within sight of small towns and both have a multiplicity of differing land uses adjoining them.

The neighborhood surrounding the Spencer County Indiana Power Plant consists of larger acreages of vacant land to its east and north. To its south and southwest, toward Rockport, there are some small single

One notable aspect of this neighborhood is the presence of the A. K. Steel Plant. A. K. Steel owns approximately 1,700 acres just north of the generating plant.

With the exception of A.K. Steel site, the rest of the cleared vacant land is generally being utilized for row crop agriculture.

RESULT OF INTERVIEWS & SALES DATA ANALYSIS

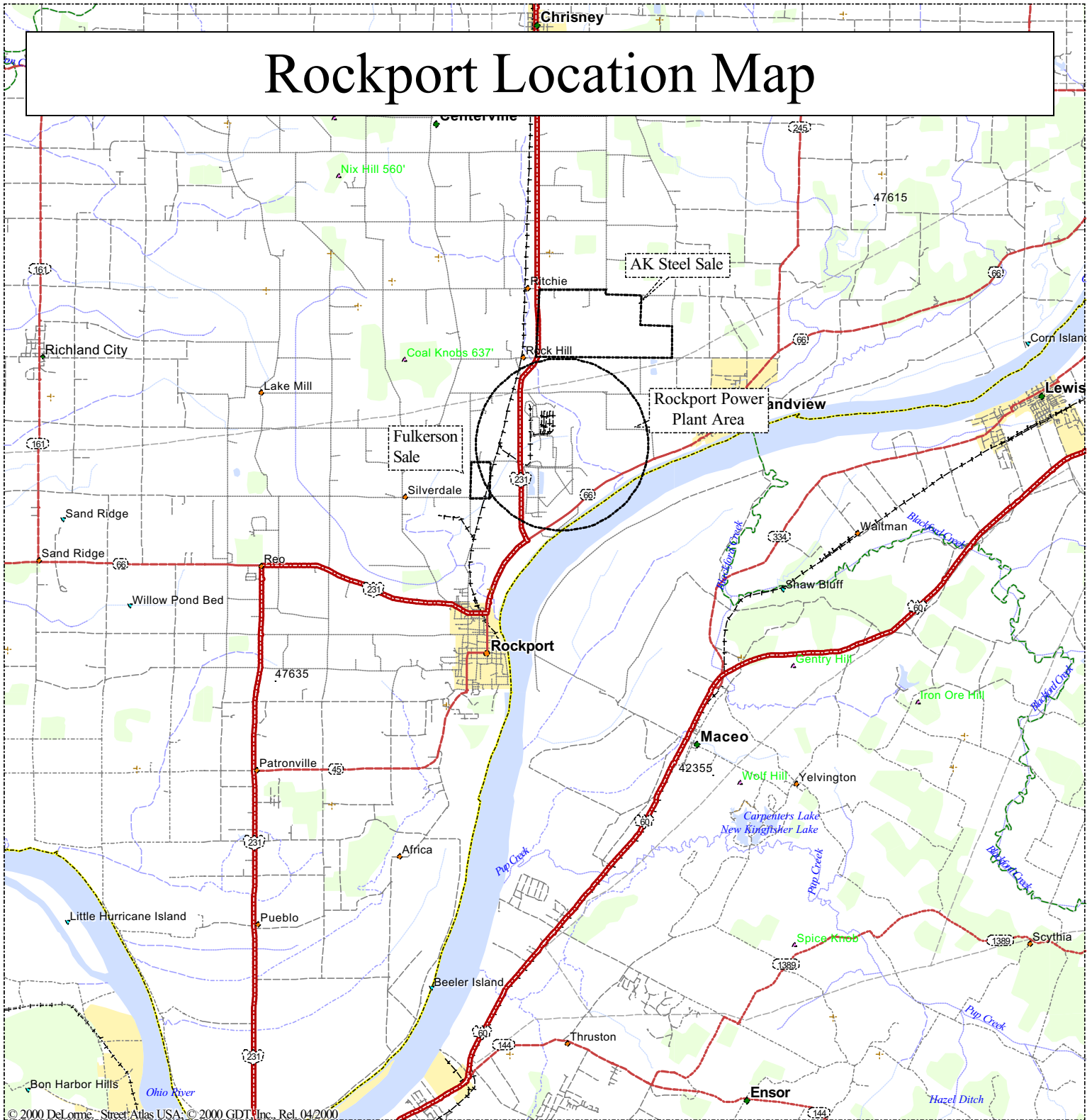
Interviews with the personnel in the Spencer county assessor's office, surveyor's office, and Mr. Dan Schulte from Key Associates Rockport, Indiana Inc., gave insight to the sales activity going on in the area of the power plant as well as the highest and best use in the general area. Mr. Dan Schulte, when asked about the effects the power plant had on land values, stated that land values in the area were not affected as a result of the power plant. Indeed the presence of the power plant helped make the immediate neighborhood trend toward industrial, rather than agricultural. The recent sales lend credence to this observation.

From October 1991 through the present we were able to find 2 sales of adjacent properties in the general area of the power plant. Those sales are summarized in the following table.

<i>Sale Date</i>	<i>Buyer</i>	<i>Land Size (acres)</i>	<i>Sales Price</i>	<i>Price per acre</i>
1996	AK Steel	1,700	\$11,050,000	\$6,500
1997	Fulkerson & Assoc. Inc.	77.89	\$327,138	\$4,200

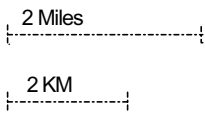
Both of those sales were purchased for industrial purposes and show prices ranging from \$4,200 to \$6,500 per acre, within the range generally seen for larger industrial sites. To compare prices for cleared row crop agricultural lands in the county range from \$2,000 to \$3,000 per acre – or some \$1,200 to \$3,500 *less* than prices paid for the 2 sales of lands adjacent to the Rockport plant.

Rockport Location Map



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 Scale 1:125,000 (at center)



- | | | | |
|--|------------------|--|--------------------|
| | Local Road | | Small Town |
| | State Route | | Airfield |
| | Walkway/Stairway | | Summit |
| | Trail | | Geographic Feature |
| | US Highway | | Locale |
| | Utility/Pipe | | Cemetery |
| | Railroad | | Small Town |
| | County Seat | | County Boundary |

ADDITIONAL CONSIDERATIONS

OVERALL CONCLUSIONS FROM STUDY OF ADDITIONAL CONSIDERATIONS

1. The operation of the plant should positively increase the local economy. The projected increase of 352 households should increase demand for household dwellings (rental and owner-occupied). No new major increases in the housing supply are at present known to be coming on stream. Hence this increase in demand versus minimal increase in supply should positively affect property values of residential properties in the county.
2. The projected increase in purchasing power of just under \$48 million and retail sales of some \$30 million should positively affect properties that contain retail sales uses in the county. Obviously not all merchants will benefit from the increase in retail sales but this increase, representing a “real” increase of just over 8% should at least help maintain if not put some upward value pressure on the value of some selected retail properties.

BASIS FOR CONCLUSIONS

As noted earlier the some 2,500 construction workers will work for 4 years to construct the plant. Additionally, the plant will consume some 6 million tons of coal per year or (at \$22.50/ton) add some \$135 million dollars to the Western Kentucky Coal economy. It will employ some 350 people, in addition to some 100 people involved in the plant itself. This amounts to an increase in total jobs of 450 people – 352 “base” jobs as the firm’s model defines base jobs. This firm routinely tracks economic data in the region and makes projections based upon economic base ratios seen over the recent past.

As a result of our past research we can make some projections about the economic impact (and resulting property values in the region) of the Thoroughbred Plant. The following sections will briefly outline the methodology and ratios used in these projections.

Base Job-Total Job Multiplier: We have seen this multiplier range from 1.752 to 9.97. For this purpose of this study we used a multiplier in the lower part of the range, or 4.0. This means that we project that when the plane is running it will add some 1,408 (352 times 4.0) total jobs to the Muhlenberg county total job base. This would result in a net increase in the total number of jobs in Muhlenberg County of some 16%.

Total Jobs-New Population Multiplier: We have seen this multiplier range from 0.352 to 1.174 – meaning that for every 10 additional jobs created, it increases the population of the county studied 3.5 to 11.72 people. We will again be conservative and use a multiplier of 0.50, or that for every 10 new jobs, there is an increase in population of 5 people.

New Population-New Households Multiplier: We have seen this multiplier range from 0.50 to 0.658 – meaning that for every 10 people that move into the county it creates some 5 to 6.5 new households. We will again be conservative and use a multiplier of 0.50.

Conclusions: Using the multipliers above, the following figures can be projected due to the operation of the plant.

Total New Jobs -	1,408
Total Increase in Population -	704
Total New Households -	352

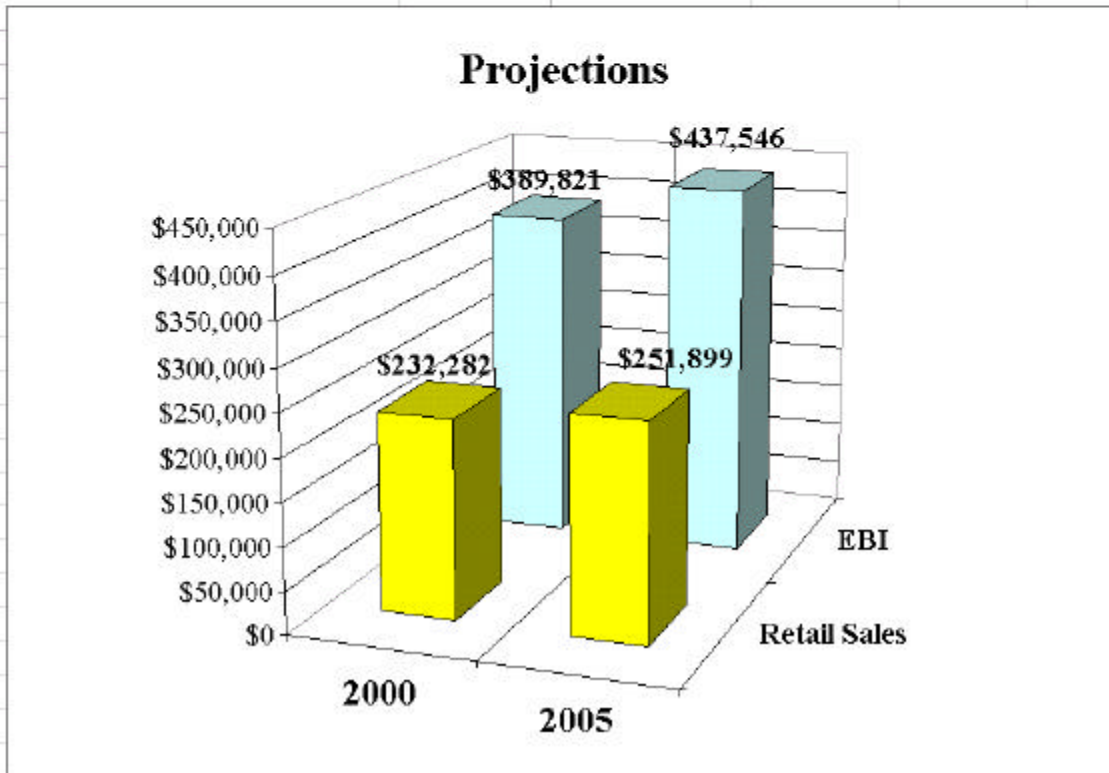
To put this in perspective, there are only 2,361 households within a 3mile radius of the plant and 11,900 in all of Muhlenberg County. The projected household increase is some 19.1% of the 3 mile radius figure and 3.8% of all Muhlenberg County households. Hence we project that this added demand of 352 new households (the total households in Muhlenberg county only increased some 300 in the last 8 years) should positively affect values in the larger area.

The 1,408 jobs should result in an increase of wages of some \$44 million (1,408 jobs x \$600/week x 52 weeks). This would increase the total wages paid in Muhlenberg County some 17%, from \$216 million up to \$260 million.

Finally all this increased economic activity should boost purchasing power and retail sales. Based upon our model we project that the Thoroughbred Energy Plant will increase purchasing power in the county just under \$48 million, and retail sales some \$30 million.

The tables that show that graphically illustrate our projections as well as portray the past economic activity in the county follow.

Economic Impact Table					
Thoroughbred New Jobs					
<i>GHP & Assoc., Inc. Projections, made using Economic Base Modeling</i>					
		<i>2000</i>	<i>2005</i>	<i>Change</i>	<i>% change</i>
Base Jobs		972	1,324	352	
Total Jobs (1)		8,808	10,216	1,408	16.0%
Population (2)		31,900	32,604	704	2.2%
Households (HH) (3)		11,900	12,252	352	3.0%
Per capita EBI		12,220	\$13,420	\$1,200	9.8%
Total Economic Buying Index (\$000)*		\$389,821	\$437,546	\$47,725	12.2%
Retail Sales Projections					
Per capita Retail Sales		\$7,282	\$7,400	\$118	1.6%
Retail Sales projection \$(000) (4)		\$232,282	\$241,270	\$8,988	3.9%
"Capture rate" projection (5)		59.6%	60.0%		
Using "capture rate" projection (\$000)		\$232,282	\$262,527	\$30,245	13.0%
Average of 2 indicators			\$251,899	\$ 19,617	8.4%



Potential for Change in Property Values (KRS 278, SB 257 Sec 5 (3), (b)), Page 24

SUMMARY OF MUHLENBERG CO. ECONOMIC INDICATORS							
	1992	1994	1996	1998	2000	(4) 8 year total change	(4) 8 year % change
Population, Households, etc. (1)							
Population	31,200	31,100	31,700	32,900	31,900	700	2.2%
Households	11,600	11,600	11,800	12,200	11,900	300	2.6%
Population per household	2,690	2,681	2,686	2,697	2,681		
Total Economic Buying Index (\$000)	\$310,601	\$335,842	\$347,774	\$374,438	\$389,821	79,220	25.5%
Median HH EBI	\$19,963	\$21,591	\$21,177	\$21,856	\$23,874	3,911	19.6%
Per capita EBI (4)	\$9,955	\$10,799	\$10,971	\$11,381	\$12,220	2,265	22.8%
Retail Sales (\$000)	\$163,319	\$209,955	\$226,681	\$232,338	\$232,282	68,963	42.2%
Eating & Drinking Sales (\$000)	\$6,313	\$13,699	\$13,574	\$14,282	\$15,776	9,463	149.9%
Per capita Retail Sales (4)	\$5,235	\$6,751	\$7,151	\$7,062	\$7,282	2,047	39.1%
% retail sales to EBI (4)	52.6%	62.5%	65.2%	62.0%	59.6%		
Nationwide (2)							
Consumer Price Index	142.4	150.2	159.2	164.5	174.6		22.6%
						Change 1996-2000	9.7%
						Change 1992-1996	11.8%
	1992	1994	1996	1998	2000	(4) 8 year total change	(4) 8 year % change
Labor Force & Employment (3)							
<i>County Employment (by workplace)</i>							
<i>All Industries</i>	7,354	7,653	8,163	8,576	8,808	1,454	19.8%
Mining & Quarrying	512	377	267	358	331	(181)	-35.4%
Construction	240	171	276	389	565	325	135.4%
Manufacturing	1,002	1,274	1,470	1,483	1,413	411	41.0%
Trans. Comm., & Util.	460	515	505	475	427	(33)	-7.2%
Wholesale/Retail Trade	2,185	2,204	2,131	2,179	2,189	4	0.2%
Finance, insurance, real estate	247	265	284	273	256	9	3.6%
Services	1,332	1,427	1,564	1,682	1,728	396	29.7%
State/Local Government	1,182	1,248	1,493	1,563	1,709	527	44.6%
Other	0	174	174	174	190	190	
<i>Total Wages Paid (\$000)</i>							
<i>All Industries</i>	\$144,936.1	\$150,103.3	\$163,733.0	\$192,036.0	\$216,071.0	\$71,134.9	49.1%
Mining & Quarrying	\$23,740.7	\$17,021.3	\$12,916.6	\$21,049.0	\$17,589.0	(\$6,151.7)	-25.9%
Construction	\$4,932.9	\$4,385.1	\$8,787.4	\$13,012.0	\$26,166.0	\$21,233.1	430.4%
Manufacturing	\$17,706.2	\$23,331.6	\$27,510.3	\$31,001.0	\$33,330.0	\$15,623.8	88.2%
Trans. Comm., & Util.	\$13,653.2	\$14,947.8	\$16,578.2	\$17,187.0	\$17,032.0	\$3,378.8	24.7%
Wholesale/Retail Trade	\$32,502.3	\$32,306.9	\$31,498.6	\$33,633.0	\$34,766.0	\$2,263.7	7.0%
Finance, insurance, real estate	\$4,750.0	\$5,214.5	\$5,687.8	\$6,240.0	\$6,637.0	\$1,887.0	39.7%
Services	\$21,745.5	\$22,959.9	\$26,317.7	\$31,824.0	\$37,724.0	\$15,978.5	73.5%
State/Local Government	\$23,730.2	\$27,301.2	\$32,089.4	\$352,267.0	\$39,511.0	\$15,780.8	66.5%
Other	\$0.0	\$2,635.0	\$2,347.1	\$2,864.0	\$3,316.0	\$3,316.0	
<i>Average Weekly Wage</i>							
County	\$415.94	\$377.19	\$385.73	\$430.62	\$471.75	\$55.81	13.4%
State	\$379.01	\$432.45	\$465.37	\$509.09	\$550.68	\$171.67	45.3%
% county to state (4)	109.7%	87.2%	82.9%	84.6%	85.7%		
Sources:							
(1) "Sales & Marketing Magazine", Surveys of Buying Power for various years							
(2) Appraisal Institute, "The Appraiser" magazine							
(3) Kentucky Department for Employment Services, Unemployment Insurance Report Filings (yearly published summaries)							
(4) Calculated from data provided by above sources							

Potential for Change in Property Values (KRS 278, SB 257 Sec 5 (3), (b)), Page 25

Muhlenberg Co. Economic Base Statistics						
<i>Muhlenberg County</i>	<i>1992</i>	<i>% to total</i>	<i>1991 Location Quotient</i>	<i>2000</i>	<i>% to total</i>	<i>2000 Location Quotient</i>
<i>Population/Employment Ratio</i>	4.243			3.691		
<i>"Basic" Employment Identification</i>						
County Totals						
Total	7,354	100.0%		8,642	100.0%	
Mining & Quarrying	512	7.0%	3.294	331	3.8%	3.422
Construction	240	3.3%	0.679	565	6.5%	1.277
Manufacturing	1,002	13.6%	0.672	1,413	16.4%	0.873
Trans, Comm., & Util.	460	6.3%	1.157	427	4.9%	0.814
Wholesale/Retail Trade	2,185	29.7%	1.173	2,189	25.3%	1.020
Finance, insurance, real estate	247	3.4%	0.774	256	3.0%	0.681
Services	1,332	18.1%	0.818	1,728	20.0%	0.818
State/Local Government	1,182	16.1%	1.094	1,709	19.8%	1.388
Other	0	0.0%	0.000	190	2.2%	1.971

	<i>1992</i>		<i>2000</i>		<i>8 yr. chg.</i>
State Totals	1,402,896	100.0%	1,719,121	100.0%	22.5%
Mining & Quarrying	29,652	2.1%	19,240	1.1%	-35.1%
Construction	67,470	4.8%	88,038	5.1%	30.5%
Manufacturing	284,564	20.3%	321,808	18.7%	13.1%
Trans, Comm., & Util.	75,822	5.4%	104,409	6.1%	37.7%
Wholesale/Retail Trade	355,445	25.3%	426,772	24.8%	20.1%
Finance, insurance, real estate	60,868	4.3%	74,765	4.3%	22.8%
Services	310,499	22.1%	420,051	24.4%	35.3%
State/Local Government	206,032	14.7%	244,860	14.2%	18.8%
Other	12,544	0.9%	19,178	1.1%	52.9%

County "Basic" Employment		<i>1992</i>	<i>2000</i>
Mining & Quarrying		357	234
Construction			122
Manufacturing			
Trans, Comm., & Util.		63	
Wholesale/Retail Trade		322	44
Finance, insurance, real estate			
Services			
State/Local Government		102	478
Other			94
Total Projected "Basic" Employment		843	972
Basic to Total Ratio		8.725	8.891

8 year changes	
In "Basic" Employment	129
In Total Employment	1,288
Ratio of change	9,970
In Population	700
Population/Employment Change	0.54

SURROUNDING LAND USES

PROPOSED THOROUGHBRED MERCHANT PLANT FACILITY

MUHLENBERG COUNTY, KENTUCKY

PREPARED BY:

G. HERBERT PRITCHETT & ASSOC. INC.
222 UNION STREET
MADISONVILLE, KENTUCKY 42431

Date of Report:

July 9, 2003

<i>Map Index No.</i>	<i>PVA Map No.</i>	<i>Owner</i>	<i>Land Size (acres)</i>	<i>Land Use</i>
2937	141-04-07-012.001	P&L Railway Inc.	55	Industrial/Railroad
2939	141-00-00-001	Peabody Energy	N/A	Industrial/Mining
1973	141-00-00-003.002	Commonwealth of KY.	17	Spec. Purp./Corr. Fac.
1849	140-00-00-030	Peabody Energy	65	Industrial/Mining
2938	140-00-00-043	Peabody Energy	N/A	Industrial/Mining
1872	140-00-00-051	River Road Cemetery	N/A	Spec. Purp./Cemetery
1889	140-00-00-064	Mrs. Edwin E. Doss	5	Vacant/Residential
1885	140-00-00-062	Connie King	4	Residential
1892	140-00-00-066	Peabody Energy	N/A	Industrial/Mining
1893	140-00-00-067	Jonathan Bowles	1	Residential
2936	140-00-00-068	Peabody Energy	N/A	Industrial/Mining
2941	158-00-00-005	Peabody Energy	N/A	Industrial/Vacant/Mining
2218	158-00-00-004.000	Peabody Energy	N/A	Agricultural/Mining
2940	158-00-00-002	Peabody Energy	N/A	Industrial/Vacant/Mining
2942	158-00-00-008	Peabody Energy	N/A	Industrial/Vacant/Mining
2943	158-00-00-009	Peabody Energy	N/A	Industrial/Vacant/Mining
2944	158-00-00-016	Peabody Energy	N/A	Industrial/Vacant/Mining
2945	158-00-00-017	Peabody Energy	N/A	Industrial/Vacant/Mining
3115	173-00-00-064	Peabody Energy	N/A	Industrial/Mining
3034	173-00-00-028	Harold Dean Huff	N/A	Residential
3113	173-00-00-022	Peabody Energy	N/A	Industrial/Mining
3065	173-00-00-055	Ray Foster	Lot	Vacant/Residential
3114	173-00-00-057	Peabody Energy	N/A	Industrial/Mining

3074	173-00-00-063	Sam Ray Stone	13	Residential
3092	174-00-00-004.001	Edward Ray & Jamie Lynn Austin	7	Residential
3092	174-00-00-004-001M	Edward Ray & Jamie Lynn Austin	N/A	Residential
3098	174-00-00-009	L.E. & B.A. Summers	1	Vacant/Residential
3099	174-00-00-009.001	Ronnie & Carolyn McDonald	0	Vacant/Residential
3097	174-00-00-008	Ronnie McDonald	N/A	Residential
3096	174-00-00-007	Nelson Creek Baptist Church	N/A	Spec. Purp./Church/Cemetery
3116	174-00-00-002	Peabody Energy	N/A	Industrial/Mining
2958	159-00-00-001	Rogers Coal	140	Industrial/Mining
2935	159-00-00-006	Peabody Energy	N/A	Industrial/Mining
3091	174-00-00-04.00	William C. Peveler	Lot	Residential
3117	159-00-00-001.001	Peabody Energy	N/A	Industrial/Mining

8.4 Prichett Property Evaluation Map

SB 257 5(3)(c)

**CLASSIFIED DOCUMENT
(withheld by Siting Board)**

8.5 Noise Evaluation

SB 257 Section 5(3)(a)8(d)

Noise Assessment Study

**Thoroughbred Generating Station
Thoroughbred Generating Company, LLC
1,500-MW Power Plant
Central City, Kentucky**

July 2002

**Noise Assessment Study
Thoroughbred Generating Station**

Prepared for:

**Thoroughbred Generating Company, LLC
Central City, Kentucky**

July 2002

**BURNS & McDONNELL ENGINEERING COMPANY, INC.
KANSAS CITY, MISSOURI**

Project No. 30906

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APPENDIX A. Results for Flat, A-Weighted and C-Weighted Decibel Scales

APPENDIX B. Photos

1. Introduction

Burns & McDonnell Engineering Company, Inc. (Burns & McDonnell) has been contracted by Thoroughbred Generating Company, LLC (Thoroughbred) to conduct a baseline sound level measurement and assessment. This study is part of the Thoroughbred development activities for proposed construction of a 1,500-MW, baseload, coal-fired power plant at their existing underground coal mining facility (Gibraltar Coal Mine) located near Central City, Kentucky. The available property occupies approximately 4,100 acres. The study was designed to measure and analyze existing noise levels at the coal mine and to project the total sound power levels during construction and operation of the proposed power plant. The coal-fired power plant proposed for this site will consist of two 750-MW pulverized-coal (PC) boilers, two cooling towers, and associated equipment. The vicinity surrounding the site consists of a mixture of rural land, a coal mine, a correctional facility, and scattered residential areas. The nearest residences to the facility are located northwest (approximately 6,600 ft). Other close sensitive noise receptors include a church and a correctional facility, which will also be examined for noise impacts. The new PC boilers will be housed in an enclosure designed with sound abatement features. The cooling towers will also have noise abatement features.

The objectives of this study were to identify local noise ordinances, measure ambient existing noise levels, quantify the expected sound emissions from the proposed coal-fired power plant, and examine the potential effects of the projected sound levels on the closest sensitive noise receptors.

2. Applicable Regulations

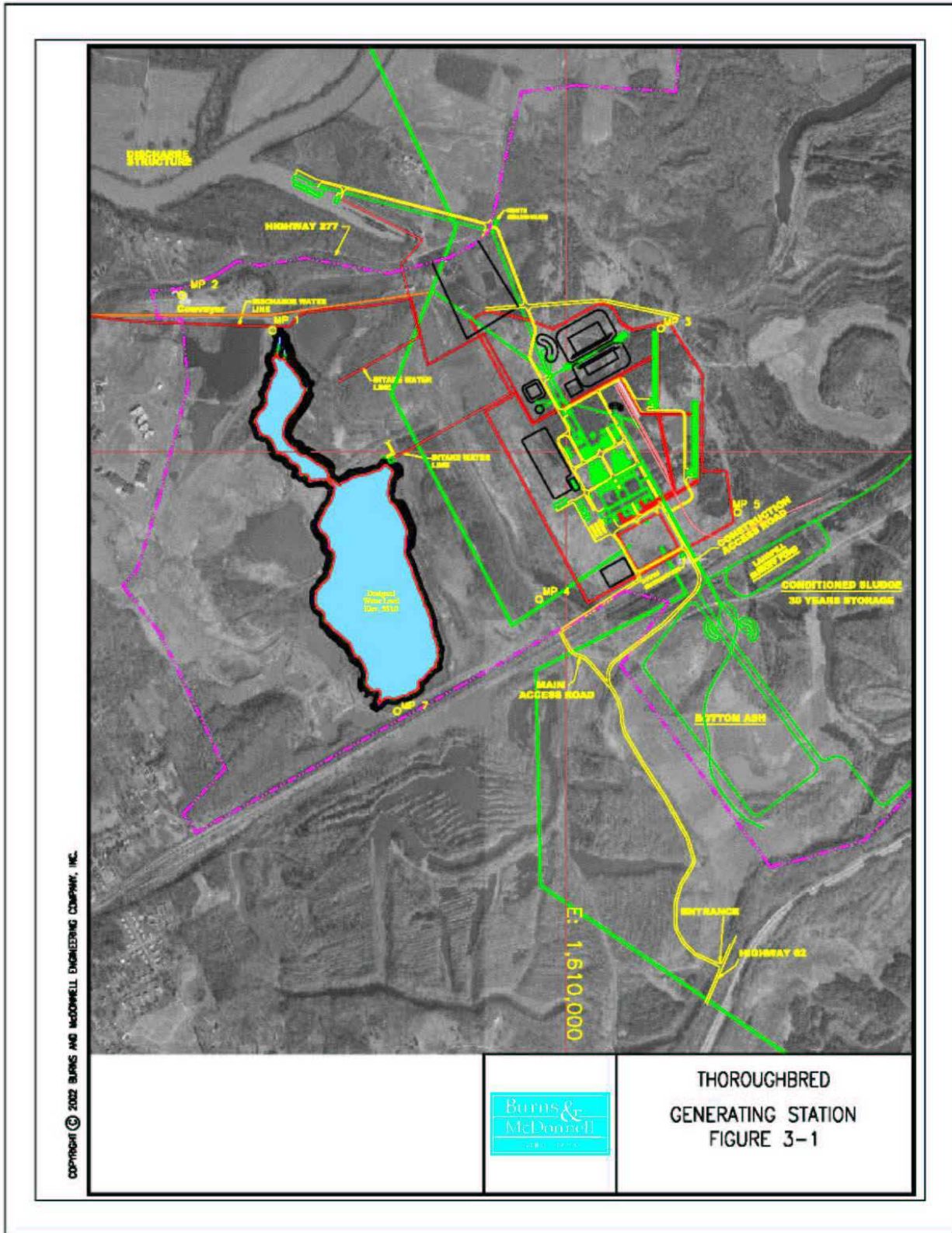
Burns & McDonnell searched for applicable state, county, and local noise regulations for the site. No noise ordinances for the State of Kentucky, Muhlenberg County or city of Central City were found.

3. Noise Assessment Methodology

An existing ambient sound survey was conducted within the site vicinity. On June 26, 2002 at 2:00 PM, and 5:30 PM and on June 27, 2002, at 7:15 AM, Burns & McDonnell personnel made background sound level measurements. Weather conditions were favorable for conducting ambient noise measurements during both days. On both days, skies were clear to partly cloudy, wind was light to calm, and temperatures were between 77 and 97 °F.

Sound level measurements were made at seven locations in and around the available property (Figure 3-1). These locations were selected because they were representative of existing environmental conditions,

accessible, and near sensitive noise receptors. Measurements were made in decibels (dB) at 16, 31.5, 63, 125, 250, 500, 1,000, 2,000, 4,000, and 8,000 Hertz (Hz) using a Larson-Davis model 824 sound analyzer. At each location, sound levels at each frequency band were measured and logged by the analyzer. Measurements were taken and accumulated for five minutes at each point. The average sound level for the sampling period is reported (Leq). When sound level measurements are taken, the contribution of each of the frequency bands to the total sound level is customarily weighted to approximate the frequency sensitivity of human hearing. The resulting dBA scale produces estimates of the sound level people perceive. The dBC scale is another weighting method that enables an estimate of low-frequency noise people might hear or feel. Table 3-1 compares various “A”-weighted sound pressure levels (dBA) to subjective descriptions of human hearing.



Construction noise levels were obtained from an EPA document titled “Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances¹”. These noise levels are generally accepted as typical construction noise at these types of operations. These noise levels were then projected at the distances of the nearest residence and the nearest property boundary to determine the impacts of this noise on the sensitive receivers.

An analysis was also conducted to estimate the anticipated noise resulting from the operation of the proposed power plant given the existing background noise levels. Operational noise levels were obtained from AUZ, the EPC Contractor. The total sound levels, identified for the previously defined measurement locations, resulting from the operation of the plant were projected through the application of a computer-programmed spreadsheet. The spreadsheet calculates facility noise propagation based on the natural reduction of noise with distance. Total plant operation noise at each receiver was calculated by summing the contributions of the individual sources.

¹ Bolt, Beranek, and Newman (Prepared under contract for the U.S. Environmental Protection Agency), Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances, December 31, 1971.

TABLE 3-1
Typical Sound Pressure Levels Associated with Common Noise Sources

Sound Pressure Level (dBA)	Subjective Evaluation	Environment	
		Outdoor	Indoor
140	Deafening	Jet aircraft at 75 ft	
130	Threshold of pain	Jet aircraft during takeoff at a distance of 300 ft	
120	Threshold of feeling	Elevated train	Hard rock band at 16 ft
110		Jet flyover at 1000 ft	Inside propeller plane
100	Very loud	Power mower, motorcycle at 25 ft., auto horn at 10 ft, crowd noise at football game	
90		Propeller plane fly-over at 1000 ft, noisy urban street	Full symphony or band, food blender, noisy factory
80	Moderately loud	Diesel truck (40 mph) at 50 ft	Inside auto at high speed, garbage disposal, dishwasher
70	Loud	B-757 cabin during flight	Close conversation, vacuum cleaner, electric typewriter
60	Moderate	Air-conditioner condenser at 15 ft, near highway traffic	General office
50	Quiet		Private office
40		Farm field with light breeze, birdcalls	Soft stereo music in residence
30	Very quiet	Quiet residential neighborhood	
20		Rustling leaves	
10	Just audible		Human breathing
0	Threshold of hearing		

Source: Adapted from Architectural Acoustics, M. David Egan, 1988 and Architectural Graphic Standards, Ramsey and Sleeper, 1994.

4. Background Noise Levels

The existing ambient A-weighted sound levels in and around the coal mine varied from 49 dBA at MP7 to 63 dBA at MP1 and MP6 (Table 4-1). The variation in sound level appeared to be related to the proximity of the sites to noise sources within the mine and from traffic noise. The highest noise levels were experienced at MP1 and MP6. MP6 noise levels were high because of normal mine traffic (a water truck passed by during one of the noise measurements). MP1 is located along the West Kentucky Highway (Highway 62) where noise levels were elevated because of highway traffic noise. The sensitive noise receptors are represented at MP2, MP1, and MP6 (nearest home, nearest church, and the correctional facility). All other measuring points are located within the property boundary. Sound levels on other weighting scales are given in Appendix A, Table A1.

**Table 4-1
Background Sound Pressure Levels, dBA at Octave Band Frequency**

Receptor	Distance (ft)	Octave Band Frequency (Hz)										Leq (dBA)
		16	31.5	63	125	250	500	1,000	2,000	4,000	8,000	
MP 1	5200	12	28	38	50	50	55	58	58	54	48	63
MP 2	6600	-3	21	33	39	41	46	50	46	42	37	54
MP 3	200	4	23	35	45	44	44	46	43	46	39	53
MP 4	2450	0	14	31	37	40	41	43	43	42	41	50
MP 5	625	4	23	35	45	44	44	46	43	46	39	53
MP 6	8600	5	21	43	51	57	57	57	55	51	47	63
MP 7	4900	-2	11	23	28	27	32	33	44	45	44	49

5. Construction Noise Levels

Construction of the proposed power plant would elevate noise levels in and around the existing mine.

The EPA has identified three main activities that will produce noise during the construction period. The loudest construction activity is expected to be the finishing activities at the site. These activities have an average noise level of 89 dBA at 50 feet. Erection of the proposed equipment will result in noise levels at approximately 84 dBA, while foundation activity has a noise level of 77 dBA. These noise levels are presented in Table 5-1, along with the projected noise levels at the nearest residence and at the nearest property boundary. Please note that these noise levels do not include any noise attenuation or take into account the topography of the area. Noise levels may actually be less than those predicted based on these two factors.

**Table 5-1
Peak Noise Levels Expected from Construction Activities at the Proposed Site**

Construction Activity	Average Sound Level at 50 feet (dBA)	Property Boundary (dBA) ¹	Nearest Residence (dBA) ¹
Foundations	77	40	35
Erection of Major Components	84	47	42
Finishing	89	52	47

¹ Does not include background noise.

Noise levels as a result of construction activities are expected to be near 47 dBA maximum at the nearest residence during these construction activities. This noise level is approximately equivalent to a farm field

with a soft breeze as identified from Table 3-1. Noise levels at the closest property boundary are expected to be about 52 dBA during erection of the major components. This is about the same as the noise levels from an indoor private office.

Noise levels not discussed in Table 4-1 include noise from steam blows. Steam blows usually occur just prior to startup. Steam blows are performed after erection and assemblies of the plant because the tubing and piping that take steam from the boiler to the turbine have accumulated dirt, rust, and other debris during construction. The steam is blown through these pipes and tubes and vented to the atmosphere. This process is usually the loudest noise that occurs during construction. These noise levels occur in short bursts (two to three minutes in duration) throughout a couple of days until the lines are clear of debris. The noise levels associated with these steam blows can reach 130 dBA at a distance of 100 feet. This correlates to a noise level of 94 dBA, unattenuated, at the nearest residence. Silencers are used, typically, during the steam blows that reduce noise levels by 30 dBA. The expected noise from steam blows, therefore, will be closer to 64 dBA. This noise level is equivalent to an air conditioner at 15 ft. This noise level will not be constant and is expected to occur only over a couple of days, during daylight hours.

6. Operational Noise Levels

The completely constructed plant will emit noise from several sources including two boilers, two condensers, two steam turbine generators, two cooling towers, two step-up transformers, and other auxiliary equipment. Standard noise data for individual components of the power plant vary from 36 dBA for the step-up transformer to 73 dBA for the cooling towers (Table 6-1). Total operating sound level at 400 feet is estimated to be 76 dBA. Assuming that all of the equipment listed will be operating at the same time, the total sound pressure levels generated by the plant at the property boundary and the nearest residence are expected to be low (57 dBA and 51 dBA, respectively, Table 6-1).

**Table 6-1
Sound Pressure Levels, dBA, for Boiler Components and Corresponding Sound Pressure Levels at the Nearest Residence and Property Boundary**

Operating Equipment	Average Sound Level (dBA) @ 400 ft.	Property Boundary (dBA) @ 3350 ft.	Nearest Residence (dBA) @ 6600 ft.
Air Quality Control (2)	68		
Boiler (750 MW) (2)	68	50	44
Condenser (800 MW) (2)	63	45	39
Steam Turbine Generator (2)	68	50	44
Boiler Feed Pumps (4)	54	36	30
Step-up Transformer (2)	36	18	12
Vacuum Pumps (4)	56	38	32
Condensate Extraction Pumps (4)	56	38	32
Water Cooling Tower (2)	73	55	49
Cooling Water Pumps (4)	59	41	35
Heaters (5)	47	29	23
Feedwater Tank (2)	43	25	19
Demin Water Production Plant Building	50	32	26
Auxiliary Boiler	47	29	23
Total Operating Noise Level	76	57	51

An analysis was conducted to estimate the anticipated noise resulting from the operation of the proposed power plant given the existing background noise levels. Total plant operation noise at each receiver was calculated by summing the contributions of the individual sources.

Combined sound levels at the measuring points from background sound and the proposed power plant operating were estimated to range from 57 dBA at MP7 to 71 dBA at MP3 (Table 6-2). Because the surface mining activities and highway traffic noise make existing noise levels fairly high, and because the closest residence is over 6,500 feet away, projected noise at the nearest residence is not expected to noticeably increase from existing background noise levels as a result of operating the proposed facility. The largest increase in sound level would be at MP3, which would increase from 56 dBA to 71 dBA, one

of the loudest sites. This site is located within the Thoroughbred property, however, and should not affect the closest residences.

Also listed in Table 6-2 is the noise level measured at MP7 when a train passed by. This noise level is the highest noise level expected in and near the mine. At this measuring point, the sound from the passing train is approximately 30 dB higher than the predicted noise from operation of the power plant. The intermittent noise from the train is expected to affect noise levels at other points, as well. This noise level is the highest background noise level measured at this facility.

**Table 6-2
Noise Analysis Sound Pressure Levels, dBA**

Measurement Points	Background Average Sound Level L_{eq} (dBA)	Operating Equipment Sound Level L_{eq} (dBA)	Total Projected Sound Level L_{eq} (dBA)
MP1 (East of Green River Correctional Facility @ 5,200 ft.)	68	54	68
MP2 (Northwest of property near residences @ 6,600 ft.)	57	52	58
MP3 (North of proposed cooling towers @ 200 ft.)	56	71	71
MP4 (Southwest of proposed site @ 2,450 ft.)	54	60	61
MP5 (Southeast of proposed site @ 625 ft.)	50	61	61
MP6 (Nelson Creek Missionary on Hwy 62, East of site @ 8,600 ft.)	69	49	69
MP7 (Southwest of proposed site @ 4,900 ft.)	54	54	57
Train passing by @ MP7	71	54	71

The mine currently has traffic on the roads, which includes large mine hauling trucks and water sprayers. Road traffic associated with the proposed facility will be limited to operating personnel and supply or maintenance trucks that will enter the site on an infrequent basis. Therefore, the increase in traffic from what is already present from mine activities and associated sound is expected to be minimal.

7. Impacts to Sensitive Noise Receptor

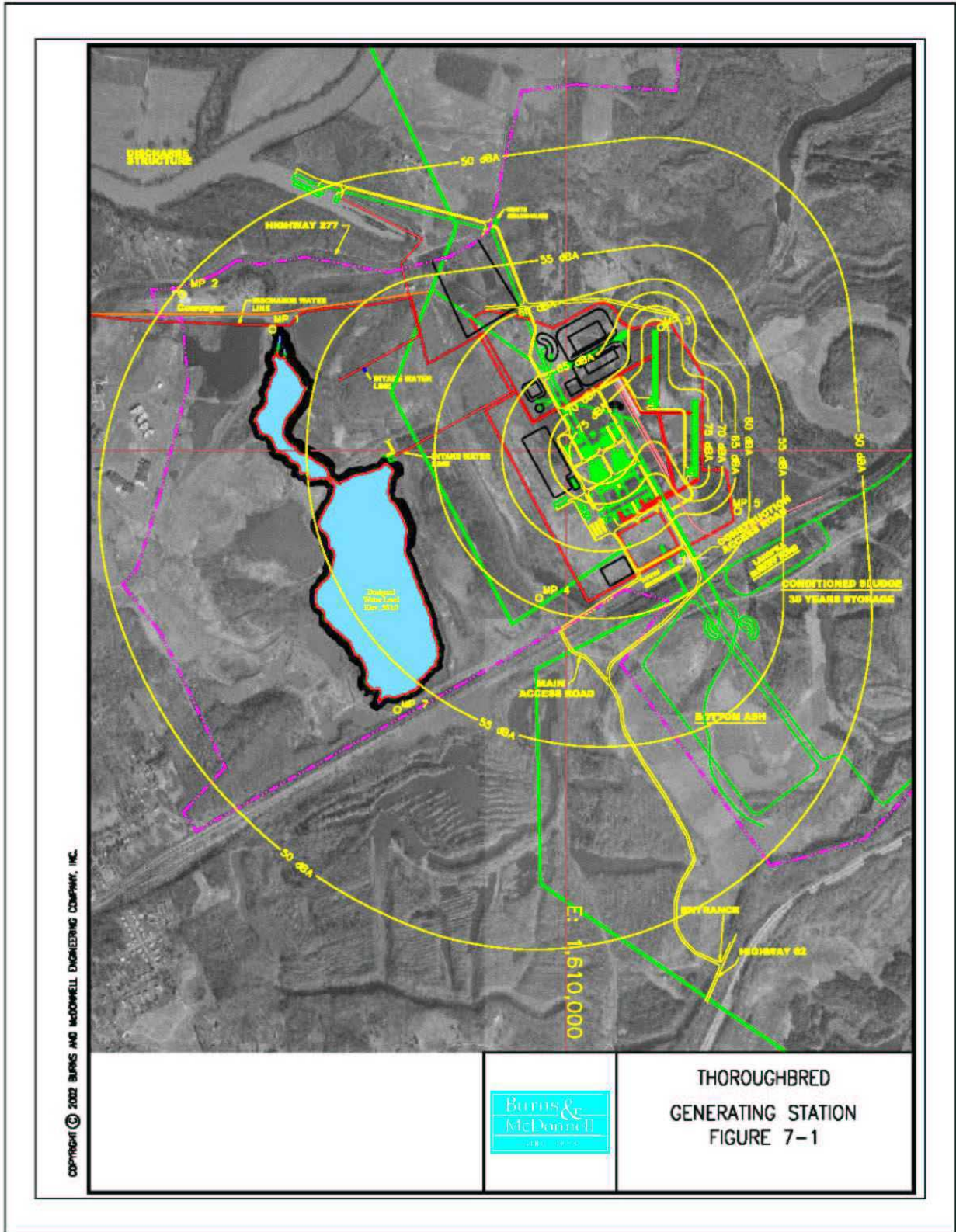
The sensitive noise receptors closest to the proposed Thoroughbred site are residences, churches and a correctional facility. These sources are all located approximately one mile or more from the proposed plant site. Sound levels for each of these measuring points are listed in Table 7-1, below. Sound levels at these points will not increase as a result of the operation of this plant. Background noise levels are the

dominant noise at these points. The noise levels expected from the plant will be significantly less than the background noise; therefore the overall noise levels are not expected to increase from the existing noise levels at these receivers.

**Table 7-1
Expected Sound Pressure Levels at Sensitive Noise Receptors**

Receptor	Distance (ft)	Background dBA	Plant Operation dBA	Total dBA
Nearest Residence (MP2)	6,600	57	52	58
Nearest Church (MP6)	8,600	69	49	69
Correctional Facility (MP1)	5,200	68	54	68

Sound from the proposed plant will propagate in approximately circular contours of equal sound pressure (Figure 7-1). The maximum extent of the 65 dBA contours, a level generally considered acceptable for daytime, is approximately 400 ft from the boilers. No sensitive noise receptors are located within this radius.



8. Conclusions

Burns & McDonnell has completed the baseline sound level measurement and assessment for Thoroughbred Generating Company. This study was done as part of the Thoroughbred development activities for proposed construction of a 1,500-MW, baseload, coal-fired power plant at their existing surface coal mining facility located near Central City, Kentucky. Background noise levels were measured and noise levels were predicted for the plant during operation for seven representative noise measurement points. Three representative sensitive noise receptors were examined in this study. The results of this study show that none of these sensitive noise receptors will have a noticeable increase in noise levels from the background levels. Existing background noise levels outside of the mine will not increase as a result of operation of this proposed power plant.

APPENDIX A
Results for Flat, A-Weighted and C-Weighted Decibel Scales

Thoroughbred Generating Project
 Background Noise Level measurements
 Field Engineer: Mary Hauner & Jaafar Fahda
 July 26, 27, 2002

Table A1

Octave Band Background Noise Level

MP1 Octave Band Frequencies			
Hz	dBF	dBA	dBC
16	69	12	61
31.5	67	28	64
63	64	38	61
125	66	50	63
250	59	50	56
500	58	55	55
1K	58	58	55
2K	57	58	54
4K	53	54	50
8K	49	48	46
Total	73	63	69

MP2 Octave Band Frequencies			
Hz	dBF	dBA	dBC
16	54	-3	46
31.5	60	21	57
63	59	33	56
125	55	39	52
250	50	41	47
500	49	46	46
1K	50	50	47
2K	45	46	42
4K	41	42	38
8K	38	37	35
Total	64	54	61

MP3 Octave Band Frequencies			
Hz	dBF	dBA	dBC
16	61	4	53
31.5	62	23	59
63	61	35	58
125	61	45	58
250	53	44	50
500	47	44	44
1K	46	46	43
2K	42	43	39
4K	45	46	42
8K	40	39	37
Total	68	53	64

MP4 Octave Band Frequencies			
Hz	dBF	dBA	dBC
16	57	0	49
31.5	53	14	50
63	57	31	54
125	53	37	50
250	49	40	46
500	44	41	41
1K	43	43	40
2K	42	43	39
4K	41	42	38
8K	42	41	39
Total	62	50	58

MP5 Octave Band Frequencies			
Hz	dBF	dBA	dBC
16	61	4	53
31.5	62	23	59
63	61	35	58
125	61	45	58
250	53	44	50
500	47	44	44
1K	46	46	43
2K	42	43	39
4K	45	46	42
8K	40	39	37
Total	68	53	64

MP6 Octave Band Frequencies			
Hz	dBF	dBA	dBC
16	62	5	54
31.5	60	21	57
63	69	43	66
125	67	51	64
250	66	57	63
500	60	57	57
1K	57	57	54
2K	54	55	51
4K	50	51	47
8K	48	47	45
Total	73	63	70

MP7 Octave Band Frequencies			
Hz	dBF	dBA	dBC
16	55	-2	47
31.5	50	11	47
63	49	23	46
125	44	28	41
250	36	27	33
500	35	32	32
1K	33	33	30
2K	43	44	40
4K	44	45	41
8K	45	44	42
Total	58	49	53

MP1= East of Green River Correctional Facility
 MP2= Northwest of property near residences
 MP3= North of proposed cooling towers
 MP4= Southwest of proposed site
 MP5= Southeast of proposed site
 MP6= Neslon Creek Missionary on Hwy 62, East of site
 MP7= Southwest of proposed site
 dBF= Flat decibel scale
 dBA= A-weighted decibel scale
 dBC= C-weighted decibel scale

APPENDIX B

Photos



MP1 East of Green River Correctional Facility



MP2 Northwest of property near residences



MP3 North of proposed cooling towers



MP4 Southwest of proposed site



MP5 Southeast of proposed site



MP6 Nelson Creek Missionary on Hwy 62, East of Site



MP7 Southwest of proposed site

8.6 Traffic Evaluation

SB 257 Section 5(3)(e)

SBC 257 (I) Site Assessment Report

SBC 257 5(3)(e) Traffic

8.6 Traffic Evaluation

Road

Access to the Thoroughbred Generating Station will be primarily via U.S. Highway 62 just east of Central City, KY (See attached drawing D010433-100C1000). U.S. Highway 62 will provide access to the site from both the east and the west. Highway 62 is a two lane non-divided highway. Most traffic will gain access to Highway 62 from the Western Kentucky Parkway, which is a four lane divided highway. Existing traffic counts on this portion of the highway are approximately 2112 vehicles per day.¹ Highway 62 is designed for approximately 33,600 vehicles per day² according to the Transportation Research Board. An entrance road will be constructed to access the plant between mile marker 20 and 21 on U.S. Highway 62.

The Kentucky Department of Highways has been consulted regarding the design and construction of the new access to the plant site. A preliminary design has been established to upgrade the existing U.S. Highway 62 and construct the new turnout to the plant. Drawing D010433-100C1001 shows the proposed plan view and sections of this design. U.S. Highway 62 will be widened from the existing 22' to 36' wide with 2' shoulders in the vicinity of the entrance. The area of impact will be a length of 1715 feet between mile markers 20 and 21. A 320 foot long, twelve foot wide left-hand turn lane will be constructed for vehicles traveling from the west (Central City). A 320 foot long, twelve foot wide right-hand turn lane will be constructed for vehicles traveling from the east (towards Central City).

The vehicles will access the plant via a new 48' foot wide transition section with 2' shoulders. When leaving the access road from the plant, vehicles exiting will have a 14' wide left or right hand turn lane to gain access to U.S. Highway 62. Vehicles will stop and yield to traffic before entering U.S. Highway 62.

The entrance road and access roads within the site are still under design. Certain components of the Roadway System will be built during the construction phase and will be maintained after commercial operation. Applicable codes and standards that apply include the following:

- Consultant Specifications
- Kentucky Department of Transportation specifications for roads and bridges.
- AASHTO Geometric Design Guide for Local Roads and Streets.

1. Traffic counts provided by the Kentucky Department of Transportation.

2. Capacity obtained from Highway Capacity Manual (Special Report 209) by the Transportation Research Board.

The main access road to the plant complex from US Highway 62 will be constructed three lanes wide using Roadway Type I and a half width of 18 feet. The remainder of the roadways within the site boundary will be constructed using Type II or III. Drawing D010433-100L9000 shows a plan view of the site. The access road will split south of the Paducah and Louisville Rail Line. The west most access road will pass underneath the Paducah and Louisville Rail Line and will be the primary access road during construction and plant operation. The east most access road will be an at-grade crossing and will be primarily used during construction for large equipment deliveries and during operation for access to the coal combustion waste landfill. This road will be used infrequently during plant operation when necessary. Access to this road will be controlled at all times.

Roads have been provided throughout the plant site to allow access to various buildings and equipment. Figure 5-4 shows the plant access roads. All roadways will consist of a crushed rock base placed over a prepared subgrade. The crushed rock base will consist of a subbase course and base course. Materials and gradations for the rock base shall be as specified in the Kentucky Department of Transportation Standard Specifications for Road and Bridge Construction and consultant specifications. Roads within the plant site will be paved, thereby minimizing fugitive dust emissions and degradation. Temporary construction roads will actively control fugitive dust with water and dust palliatives.

The minimum recommended design criteria for the roads are as follows:

<u>Roadway Types</u>			
<u>Design Parameters</u>	<u>Type I</u>	<u>Type II</u>	<u>Type III</u>
Roadway lane width, feet	12	15	10
Shoulder width, feet	10	0	0
Asphaltic concrete surfacing, 4 inches thick minimum	Yes	Yes	As Noted on Design Drawings
Design speed, mph	30	30	15
Maximum grade, percent	6	6	6

<u>Roadway Types (Continued)</u>			
<u>Design Parameters</u>	<u>Design Parameters</u>	<u>Design Parameters</u>	<u>Design Parameters</u>
Design cross slope, percent	2	3	3
Minimum vertical clearance from crown	16'-0"	16'-0"	16'-0"
Minimum horizontal clearance from center line	20'-0"	14'-0"	10'-0"
Minimum radius of horizontal curvature, feet	400	275	100
Intersection center line radius, feet (on-site only)	50	35	30

Construction Traffic

Site labor is projected to peak at approximately 2900 personnel in month 28 of the project. A “rule of thumb” on projects similar to Thoroughbred, is that approximately 70% of the personnel will drive their vehicle to the site and the other 30% will carpool. This results in $(2900 \times .70 = 2,030)$ approximately 2,030 vehicles entering and leaving the site at the peak. Assuming the standard workweek will be 5-10’s, this traffic congestion would occur prior and up to 7:00AM and at 5:30PM in the evening (although actual work shifts may vary slightly by season).

It is worth noting that from time to time during construction of the project, there may be a need to work selected personnel different hours than described above. This may include extended workweeks (6 X 10’s, 7 X 12’s etc), as well as different shifts, to satisfy emerging schedule issues. Normally this will be only a small portion of the total work force.

Also, during Startup and Testing, the Startup Team will be working shifts and extended hours as required in support of plant requirements. This again will be a reduced workforce staffed to meet plant completion requirements.

Truck traffic is expected to be approximately 90 heavy trucks per day at the peak of delivery, excluding concrete sand and aggregate. This peak would be expected to occur approximately 2-4 months prior to the manpower peak (months 24-26). This total effort is likely to reach 7,000-

8,000 loads. It may be possible to deliver up to 30%, or more, of these loads by barge or rail.

Current forecast is that the plant will require close to 200,000CY of concrete. The volume and density of sand & aggregate plus cement to be hauled are assumed to be approximately 300,000CY@2500#/CY. Truck hauling this would result in $(300,000\text{CY} \times 2500\#/\text{CY} = 750,000,000\# / 40,000\#/\text{load})$ 18,750 loads. This would be spread over approximately 18 months resulting in peak load delivery (3 times average) of 142 loads/day in month 11. It is possible that this material could be delivered by rail or barge.

Various service and support vendors will be entering and leaving the project as well. These vendors include port-a-can, telephone, copy machines etc. At the peak manpower we assume 30 per day.

Personnel traffic will have the most significant impact on existing roadways. Efforts will be pursued with major vendors to obtain a better definition on what can be barge or rail delivered, with a goal of minimizing heavy haul congestion. At peak, from the above assumptions, it appears there will be a total of 2100-2200 vehicles entering and leaving the site on a daily basis. Since the existing U.S. Highway 62 that will provide access to the site can handle a significantly larger volume, almost 34,000 vehicles per day, the construction traffic, even with existing cars, will not adversely impact traffic patterns in the area.

Plant Operation Traffic

During plant operation, the main traffic contributors are expected to be plant personnel. A minor traffic contributor will be vendors and/or contractors visiting the plant. The plant will employ approximately 150 people, three quarters of which may be onsite at the same time. Traffic volumes should be approximately 75 to 90 vehicles per day.

The plant uses ammonia in its' Air Quality Control equipment. The plant will consume approximately 5500 tons per year of ammonia. Ammonia will be supplied via truck and/or rail. Ammonia supplied in trucks will be delivered in 20-ton capacity trucks. If all of the ammonia were delivered by truck, this would add 4 to 6 trucks per week.

Rail

The Paducah & Louisville Railroad provides rail access to the site. Figure 5-3 shows the existing location of the rail line (south of the proposed power plant). A rail siding will be constructed into the plant 1-½ miles east of Central City.

The railroad siding will be designed to facilitate limestone and ammonia delivery and transportation of materials and equipment for construction and maintenance. Although the plan is for coal to be delivered via conveyor from the adjacent mine, the plant may deliver coal via rail, if needed, for blending or when the existing coal supplies in the area are exhausted. All delivery will be designed to remain stable, serviceable, and to allow for normal travel of railcars.

Construction Traffic

A portion of the equipment for the plant may be delivered via the rail system. It is possible that 2000 – 2500 loads could be delivered by rail over the 4-year construction period. While delivery schedules for equipment will not be consistent, if rail capacity is used to deliver all of these loads it might add 10 – 15 trains a week on average.

It is also possible that a portion of the sand and aggregate used for concrete could be delivered via rail. This might add 2-3 trains per week during an 18-month period during construction. Based on discussions with the Paducah and Louisville Railroad, access and capacity are not an issue on this rail line. P&L Railway would welcome the increased traffic on their line.

Plant Operation Traffic

During plant operation, the main traffic contributors to the rail system will be due to limestone and ammonia deliveries. The plant uses limestone in its' Air Quality Control equipment. The plant will consume close to 1,000,000 tons per year of limestone. If all the limestone were delivered via rail, this would result in 2 to 4 trains per week depending on the number of cars used for delivery. The source of the limestone has not been determined and therefore may affect the delivery method.

The plant uses Ammonia in its' Air Quality Control equipment. The plant will consume approximately 5500 tons per year of ammonia. Ammonia will be supplied via truck and/or rail. Ammonia will be supplied in 80-ton rail cars and sufficient on-site storage should limit deliveries to less than one train per week.

The existing Paducah and Louisville Rail Line has sufficient surplus capacity to handle this additional volume of 3 to 5 trains per week. Existing traffic volume on the Paducah & Louisville rail line is 2-4 trains per day.³

3. Traffic volumes provided by the Paducah and Louisville Railway, Inc.

Track construction for the Railroads System will follow the applicable design criteria listed below:

Track Design Criteria*	
Rail	136 RE new rail or similar section in relay rail. Relay rail to be American Railway Engineering and Maintenance-of-Way Association (AREMA) Class I relay.
Crossties	New or relay AREMA 7 inch grade or industrial grade 0'- 7" x 0'- 9" x 8'- 6".
Switch Ties	New AREMA 7 inch grade as required by switch plan.
Ballast	12 inch minimum thickness under crossties; AREMA Size No. 4.
Subballast	6-inch minimum thickness under ballast; gradation as specified by AREMA.
Tie Plates	As recommended by the AREMA, new or relay with double shoulder.
Spikes	Two spikes per plate on tangents, 3 spikes on curves.
Rail Anchors	16 anchors per 39-foot rail, 8 to resist movement on each side for bolted rail construction.
Joint Bars	36-inch length, predrilled for six bolts if bolted rail is used.
* Materials are to be new, except as noted.	

Interconnection with the existing railroad mainline will be made at the junction of the spur and the mainline south of the switchyard. The turnouts at the junction will be equipped with dual control power operated switches and interlocked signals. Control of these interlocked turnouts will be by the operating railroad dispatcher. Turnouts from the main spur will be made with switch locks to prevent conflicting switch movements. Bumper posts, wheel stops, and/or derails will be provided where required in order to prevent damage from runaway cars.

Insulated track joints will be used to separate the site spur from the mainline track in order to isolate potential site grounding currents.

Design of industrial railroad trackage must conform to the specifications of the operating railroad. In general, the class of track associated with power plant design will be Class A or Class B:

- Class A - Industrial main lead track and loop track over which Unit trains and freight trains operate at speeds up to 25 mph. Bulk material loop track should be designed as a Class A track unless the operating railroad dictates otherwise.

- Class B - Yard lead tracks and loading, unloading, and storage track over which train speed is restricted to 10 mph or less. Track other than bulk material loop track should be designated as Class B.

The Railroad System will be designed to provide adequate clearances to onsite structures, conveyors, and overhead transmission lines as required by the appropriate codes and standards. Track crossings for onsite roads will also be provided in accordance with the applicable codes and standards. A gate will be provided in the site perimeter fence at the railroad spur to allow entry to the main site. The gate will be operated from the nearby south guardhouse.

Track Grade - Under most service conditions, a maximum grade of 1.5% is preferred. Bulk material delivery loops and associated approach track used by Unit trains should be limited to a maximum grade of 1.0% if possible. Grades on curved track should be reduced to compensate for the increase in resistance caused by the curvature. In areas where cars are spotted or stored, the track should be kept as level as possible and not more than 0.20% grade.

Conclusion

Road

The largest increase in traffic patterns will occur during construction. Traffic volumes will increase by approximately 2200 vehicles per day to a total of approximately 4300 vehicles per day. Traffic volumes during plant operation will increase approximately 100 vehicles per day for a total volume of approximately 2300 vehicles per day. Since the existing U.S. Highway 62 that will provide access to the site can handle a significantly larger volume, almost 34,000 vehicles per day, both the construction traffic and plant operation traffic will not adversely impact traffic patterns in the area.

Conclusion

Rail

The existing traffic volume on the Paducah & Louisville rail line is 2-4 trains per day. The largest increase in traffic patterns will occur during construction. While delivery schedules for equipment will not be consistent, rail capacity could increase by 10 – 15 trains a week on average. During plant operation, traffic patterns will only increase 3 to 5 trains per week. Based on discussions with the Paducah and Louisville Railroad, access and capacity are not an issue on this rail line. P&L Railway would welcome the increased traffic on their line.

**8.6 Highway 62 Turning Lane Addition
Main Plant Entrance
SB 257 5(3)(e)**

**8.6 Highway 62 Turning Lane Addition
Plans & Sections
SB 257 5(3)(e)**

**8.6 Site Layout
SB 257 5(3)(e)**

**8.6 Access Roads & Rail Siding
SB 257 5(3)(e)**

CLASSIFIED DOCUMENTS

(withheld by Siting Board)

8.7 Mitigating Measures – SB257 5(4)

Thoroughbred Generating Company LLC. selected the proposed plant site due to its industrial nature and absence of nearby homes and neighborhoods. The site has been in mining use for over forty years so residents living nearby are accustomed to noise and traffic associated with the mining operations. Based on the studies performed by consultants (and included in this application) noise, traffic, and scenic impacts from the proposed plant would be minimal therefore eliminating the need for mitigation measures.

The Thoroughbred site is bounded on most sides by mature trees. Every effort will be made to save these trees to minimize the public's view of the site, including the Special Waste Landfill. The plant entrance and buildings will be landscaped to improve their appearance from the highway.

A large portion of the existing site was mined prior to the passage of the Surface Mining and Reclamation Control Act in 1978. Prior to that time very little surface reclamation or restoration was required. The construction of the Thoroughbred Generating Station will restore over 1,500 acres to constructive use and better appearance than exists today.