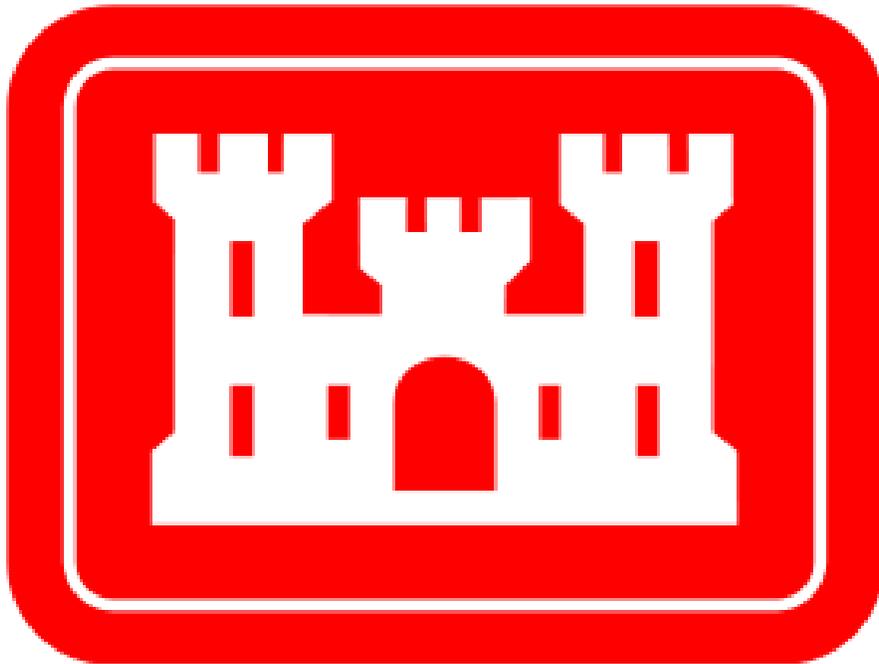


Draft Environmental Assessment
Section 531 Ball Creek Wastewater Treatment Plant
Knott County, Kentucky



U.S. Army Corps of Engineers
Huntington District
Huntington, West Virginia

May 2011



DRAFT FINDING OF NO SIGNIFICANT IMPACT
SECTION 531 BALL CREEK
WASTEWATER TREATMENT PROJECT
KNOTT COUNTY, KENTUCKY

1. Members of my staff have conducted an environmental assessment, in the overall public interest, concerning the implementation of the Ball Creek Wastewater Treatment Project Section 531 Project. The purpose of this project is to replace an inadequate wastewater treatment plant to service areas that are not currently served by the PSD. This action will improve water quality and the health and safety of the community for years to come. The proposed project is authorized under Section 531 of the Water Resources Development Act (WRDA) of 1999 (PL 106-53).
2. The possible consequences of the project have been studied for environmental, cultural and social well-being impacts. Another factor bearing on the investigation was the capacity of the action to meet the needs of the public for whom it was proposed.
3. The Proposed Action Alternative (PAA) and the No Action Alternative (NAA) were the only alternatives carried forward for detailed evaluation. The PAA is the most cost effective and is both environmentally and socially acceptable. The NAA would not be in the public's best interest and would have continued negative impact on the natural resources of the area.
4. An evaluation of the PAA and the NAA produced the following pertinent conclusions:
 - a. Environmental Considerations. The Huntington District has taken reasonable measures to assemble and present the known or foreseeable environmental impacts of the project in the Environmental Assessment (EA). All adverse effects of the project implementation are considered insignificant and should last only a few months longer than the construction period.
 - b. Social Well-Being Considerations. The proposed project will ensure safe conveyance and treatment of wastewater for Ball Creek and its residential area. No significant economic or social well-being impacts that are both adverse and/or unavoidable are foreseen as a result of the proposed action. The project will not have any impact on sites of known significant archeological or historic importance. Hazardous, Toxic, and Radioactive Waste (HTRW) will not be impacted on the site.
 - c. Coordination with Resource Agencies. Pursuant to the Fish and Wildlife Coordination Act (FWCA) of 1958, coordination with the U.S. Fish and Wildlife Service (USFWS), Natural Resource Conservation Service (NRCS), the Kentucky State Historic Preservation Office



(SHPO), and the Kentucky Department of Fish and Wildlife has been maintained throughout the study. Appropriate measures and best management practices will be identified and incorporated into the PAA. Also, in accordance with the Endangered Species Act, as amended, the recommended plan should not impact listed species.

d. Other Pertinent Compliance. No prime or unique farmland under the Farmland Protection Policy Act (FPPA) will be involved. The PAA is also in compliance with the National Historic Preservation Act (NHPA Section 106, 36 CFR 800), Executive Order (EO) 11988 (Floodplain Management), and EO 11990 (Protection of Wetlands).

e. Other Public Interest Considerations. There has been no significant opposition to the PAA. Comments received during the public review period are included in this EA.

f. Section 176(c) Clean Air Act. The PAA has been analyzed for conformity and applicability pursuant to regulations implementing Section 176(c) of the Clean Air Act (CAA). The PAA will not exceed *de minimis* levels or direct emissions of a criteria pollutant or its precursors and is exempted by 40 CFR Part 93.153. Any later indirect emissions are generally not within the District's continuing program responsibility and generally cannot be practicably controlled by the District. For these reasons a conformity determination is not required for the action.

5. I find the Ball Creek Section 531 Wastewater Treatment Project has been planned in accordance with current authorization as described in the EA. The PAA is consistent with national policy, statutes and administrative directives. This determination is based on thorough analysis and evaluation of the PAA and alternative courses of action. In conclusion, I find the proposed Ball Creek Section 531 Wastewater Treatment Project will have No Significant Adverse Impact on the quality of the human environment.

Date

Robert D. Peterson
Colonel, Corps of Engineers
District Engineer



DRAFT ENVIRONMENTAL ASSESSMENT
SECTION 531 BALL CREEK
WASTEWATER TREATMENT PROJECT
KNOTT COUNTY, KENTUCKY

RESPONSIBLE AGENCY: U.S. Army Corps of Engineers, Huntington District, West Virginia

ABSTRACT: In accordance with the National Environmental Policy Act, the U.S. Army Corps of Engineers (USACE) Huntington District has prepared this Draft Environmental Assessment (EA) to document evaluation of potential environmental impacts of a wastewater treatment plant (WWTP) in Ball Creek located in Knott County, Kentucky. The proposed action is for USACE to provide approximately \$500,000 funding for the project. The Huntington District's review and analyses of economic, human and natural environments, and engineering designs have determined that the Proposed Action Alternative (PAA) would address the purpose and need for the project and would have minimal adverse impact on the human environment.

The PAA is the most economical and environmentally sound project that meets the purpose and need. The work effort for the PAA includes the construction of a 100,000 gallon per day package WWTP. No property is to be purchased for the construction of the WWTP. The Draft EA also presents the results of the evaluation of the Proposed Action's potential impacts, positive and negative. Positive impacts are associated with improved sewage collection for the Ball Creek area which will enhance the socioeconomic setting, as well as improve the overall water quality of Ball Creek and Troublesome Creek by eliminating some direct discharges of wastewater. Adverse impacts include those associated with construction of the project, but are expected to be minor and temporary.

The proposed project is authorized under Section 531 of the Water Resources Development Act (WRDA) of 1999 (PL 106-53).

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SECTION 531 BALL CREEK
WASTEWATER TREATMENT PROJECT
KNOTT COUNTY, KENTUCKY

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Summary

The proposed sanitary sewer system Project Area is in the Ball Creek area of Knott County, Kentucky. Information gathered for the preparation of the Draft Environmental Assessment (EA) was derived from Federal, state, and local agencies and databases. Areas of concern, including aquatic and terrestrial ecosystems, wetlands, socioeconomic conditions, Hazardous, Toxic, and Radioactive Waste (HTRW), and underground storage tanks (USTs), were evaluated for potential adverse impacts. Impacts associated with the Project Area are anticipated to be minimal due to the installation location within a previously disturbed area. Minimal negative impacts will be realized throughout the Project Area as a result of installation of the new waste water treatment plant (WWTP).

1.0 PROJECT DESCRIPTION

1.1 Project Background

The P.R.I.D.E. (Personal Responsibility in a Desirable Environment) initiative was created in an attempt to alleviate pollution problems in Southern and Eastern Kentucky that negatively affect regional streams, rivers and lakes. The initiative is aimed at eliminating straight-pipe sewer discharge (untreated sewage), failing septic systems, and illegal trash dumping. The U.S. Army Corps of Engineers (USACE) Section 531 program provides funds to communities, counties and other public entities for wastewater treatment and wastewater collection improvements. Such is the case in the Ball Creek and the surrounding area which experiences issues related with undersized and failing septic tanks, which have polluted the local ground water, causing a decline in the standard of living in the community and creating a potentially serious health problem. Constructing a new sewage collection system and WWTP in the Ball Creek area would help to eliminate the current problem.

See Appendix A for all maps of the area. The Project Area is located in the Ball Creek area of the Troublesome Creek Watershed, which covers the central portion of Knott County, Kentucky. Ball Creek, along with Lost Creek and Buckhorn Creek, discharge into Troublesome Creek eventually flowing into the North Fork of the Kentucky River. The communities most affected by the Ball Creek Watershed are Soft Shell, Kentucky and Vest, Kentucky. A large proposed residential/commercial development site, Chestnut Ridge Development, is located at the headwaters of Ball Creek. Currently there are 40 point-source contaminations (straight-pipe discharge or failing septic system) located within the Ball Creek Watershed that cause approximately 33 pounds of solids per day to enter into Ball Creek.

1.2 Purpose, Need and Authorization

The purpose of the project is to provide an adequate and reliable sanitary sewer service for the Ball Creek Watershed and portions of Knott County, Kentucky. The need for a wastewater collection system in the proposed Project Area is primarily a health and safety issue. The project



has been designed to eliminate point-source contamination, thereby minimizing ground water and stream pollution within the Ball Creek Watershed.

The proposed project is a partnership agreement between the Troublesome Creek Environmental Authority (TEA) and the USACE, established under the authority of Section 531 of the Water Resources Development Act of 1999 (PL 106-53). This is a program for providing environmental assistance to non-Federal interests in southern and eastern Kentucky. Assistance under this program may be in the form of design and construction assistance for water-related environmental infrastructure and resource protection and development, including projects for wastewater treatment and related facilities, water supply and related facilities, and surface water resource protection and development. No other cooperating Federal agencies are involved on this project funding. As established under Section 531, the project costs shall be shared 75% Federal and 25% Non-Federal (State and Local).

This Draft EA is prepared pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) Regulations (40 CFR 1500-1517), and USACE implementing regulation, ER 200-2-2, 1988.

2.0 PROPOSED ACTIONS AND ALTERNATIVES

2.1 Proposed Action Alternative

The Proposed Action Alternative (PAA) would be to install a regional 100,000 gallon per day (GPD) WWTP for the Ball Creek area of Knott County, Kentucky. The WWTP would enable use of 34,000 linear feet of new force main and gravity sewer line and 40 residential grinder stations. Currently there is no active regional WWTP within the Ball Creek area of Knott County. There are only two WWTPs presently within the boundary of Knott County. Both plants are currently at capacity and experience high volumes of infiltration and inflow (I/I) during storm events. The new WWTP would serve the Ball Creek area and the proposed Chestnut Ridge Development site.

2.2 No Action Alternative

The No Action Alternative (NAA) would be to deny Federal funding for the project through the Section 531 program.

3.0 ENVIRONMENTAL SETTING AND CONSEQUENCES

3.1 Location

The project site is typical of development in the Cumberland Plateau physiographic province. Steep, rugged mountains with narrow, winding valleys characterize this region. Most development occurs along the relatively level stream terraces while the mountainsides are left to second growth hardwood forests (predominately tulip poplar, oak, and maple). The project area is centered near latitude 37.23'46 N and longitude 82.59'22 W. The area of this project is near a



large reclaimed mountaintop removal mining location northeast of Vest, Kentucky along County Route (CR) 1087. The area that would benefit from the proposed project is primarily commercial and/or residential including apartment complexes, fueling stations, local businesses, and private residences.



Figure 1. Location of WWTP

3.2 Terrestrial Habitat

The Project Area is a cleared field that was utilized as garden plot in the past. The area is characterized as previously disturbed and has been free of trees for some time. The field is currently vacant and no longer utilized for any agricultural activity. Considering the Project Area size, location, and scope, impacts to land use would be minor from the PAA. The NAA would have no affect on land use.



Fish and Wildlife Coordination Act (FWCA) requires Federal agencies to take action to prevent loss or damage to wildlife resources, and provide for the measures taken to mitigate such impacts. Wildlife and wildlife resources are defined by the FWCA to include: birds, fish, mammals and all other classes of wild animals and all types of aquatic and land vegetation upon which wildlife is dependent. The U.S Fish and Wildlife Service (FWS) was contacted to determine if the PAA would impact wildlife resources. The FWS found that the PAA is in accordance with provisions of the FWCA. The proposed project site currently is a cleared vacant field with limited habitat value. Conversion of the vacant lot to an industrial use would minimally impact any wildlife that could be assumed to be found within the Project Area. No impacts to fish and wildlife are anticipated to occur from the NAA or the PAA, due to the previously disturbed nature of the proposed Project Area.

Executive Order 11988 requires federal agencies to consider the potential effects of their proposed actions to floodplains. In order to determine the PAA's potential floodplain impact, the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) was reviewed by the USACE Louisville District, Operations Division Regulatory Branch. The proposed WWTP will be located outside of the 100 year floodplain; therefore no impacts to floodplains are anticipated to occur from the PAA. No impacts to floodplains are anticipated to occur from the NAA.

The proposed WWTP would be constructed on approximately 1.22 acres of previously disturbed area; therefore potential impacts to vegetation would be minimal and temporary. The area would be stabilized and reseeded with grasses as soon as possible upon work completion. Only short-term impacts during construction with no long-term adverse impacts are anticipated to occur from the PAA. No impacts to vegetation are anticipated to occur from the NAA.

The Farmland Protection Policy Act (FPPA) requires federal agencies to minimize the conversion of prime and unique farmland to non-agricultural uses. The Natural Resource Conservation Service (NRCS) was contacted to determine if the PAA would impact prime or unique farmland potentially located within the project area. The NRCS found that there are no prime or unique farmlands in the project area; therefore, neither the PAA nor NAA would result in impacts to prime or unique farmlands.

3.3 Aquatic Habitat

The Federal Water Pollution Control Amendments of 1972 and the Clean Water Act of 1977 collectively set regulatory standards on the discharge of various pollutants into surface water resources. The disposal of untreated or partially treated wastewater into streams and rivers can contribute to poor water quality which can degrade aquatic resources in a variety of ways. For example, untreated or partially treated wastewater can increase the amount of toxic metals and chemicals present in a water body which can deposit in silts and sediments creating a perennial problem that is not easy to clean up or eliminate. Raw or partially treated domestic sewage can result in high levels of fecal coliform bacteria which can lead to increased biological oxygen demand (BOD) that can rapidly deplete oxygen levels within the water, can result in poor aquatic diversity, and in extreme cases can result in the death of fish and other aquatic life.



The proposed project would eliminate approximately forty straight-pipes or failing septic tanks which are discharging or leeching directly into Ball Creek. Positive impacts would occur long-term with the elimination of the discharge and leeching material. Elimination of sewage entering ground water from septic systems would provide some cumulative water quality improvements to area streams. In doing so, the number of health and safety problems associated with contaminated streams would be decreased. Potential localized and short-term impacts to water quality could occur with construction of the PAA. However, with the implementation of Best Management Practices (BMPs), such as erosion control and timely reseeding of disturbed area, impacts would be minimal and temporary. The NAA would allow for continued releases of untreated effluent from failing individual septic systems and straight-pipe sewer discharges negatively impacting water quality in the Project Area.

Section 404 of the Clean Water Act (CWA) regulates discharges into special aquatic sites including wetlands, and Executive Order 11990 requires federal agencies to take action to minimize the destruction, loss, or degradation of wetlands, and to preserve, enhance the natural and beneficial values of wetlands in carrying out their respective responsibilities. Several site assessments for presence of wetlands at the WWTP proposed location were performed by Steve Harris, PE and Environmental Engineer for RM Johnson Engineering throughout 2008. No wetlands were found to be present within the proposed Project Area. National Wetland Inventory (NWI) quadrangle for Kentucky and concurrence from NRCS confirms this conclusion. No impacts to wetlands are anticipated to occur from the NAA or the PAA.

No designated State Wild or Scenic Rivers are present within the Project Area. Since no State Wild or Scenic Rivers are located within the Project Area, no impacts to these resources are anticipated from the PAA or NAA.

3.4 Hazardous, Toxic, and Radioactive Waste (HTRW)

A limited Phase I HTRW Environmental Site Assessment was conducted by R.M. Johnson Engineering, Inc for Ball Creek WWTP and Sanitary Sewer Collection Project, to identify environmental conditions and to identify the potential presence of HTRW contamination located in the project's construction work limits. The investigation was performed in accordance with ASTM E-1527-05 and 1528-06 Standards, USACE HTRW policies and Corps of Engineers Huntington District ISO 9001 requirements. This assessment (Appendix D) has recognized that natural gas and potable water transmission lines exist in the project area and adjacent properties, and that caution must be exercised during construction to prevent breakage and contact with these utilities. However, no known contamination is present in the project area.

3.5 Cultural Resources

Section 106 of the National Historic Preservation Act (NHPA) requires federal agencies to take into account the effects federal undertakings will have on districts, sites, buildings, structures, or objects (Cultural Resources) listed in or eligible for inclusion in the National Register of Historic Places (Historic Properties). A Phase I Cultural Resource Survey of the Proposed Balls Creek Wastewater Treatment Plant was conducted in March 2009 by Cultural Resource Analysts, Inc.



No archaeological sites were recorded as a result of this survey. A records review was conducted at the Office of State Archaeology that showed no previously recorded sites were located within the project area. The PAA is not anticipated to affect religious sites or ceremonial rites of Native Americans, any property listed or eligible for listing on the National Register of Historic Places, any property listed as a National Historic Landmark, or any archeological resource. The Kentucky State Historic Preservation Officer (SHPO) was contacted regarding this determination and concurred that there are 'No Historic Properties Present' within the Project Area; therefore no impacts to cultural resources are anticipated to occur from the PAA. The SHPO issued a concurrence letter is dated April 8, 2009, which can be found in Appendix E.

No impacts to cultural resources or historic properties are anticipated to occur from the NAA.

3.6 Threatened and Endangered Species

The Endangered Species Act of 1973 requires federal agencies to consider the effects of actions on federally listed endangered, threatened, and/or candidate species. The FWS published list of endangered and threatened species in Kentucky was reviewed for the project. Knott County, Kentucky potentially has suitable winter habitat for the Federally listed endangered Indiana Bat (*Myotis sodalis*). As recommended by the FWS, a field investigation at the proposed WWTP site was made in September of 2009. It was determined that no caves, rock shelters, or underground mines were detected on site within the CWL or its nearby vicinities; therefore no impact to the Indiana Bat is anticipated to occur from the PAA due to lack of suitable winter habitat. No trees are anticipated to need removal for construction of the WWTP; therefore no impact to the Indiana Bat would occur from the PAA during roosting season or summer habitat.

No impacts to threatened or endangered species are anticipated to occur from the NAA.

3.7 Air Quality

The Clean Air Act (CAA) allows the U.S. Environmental Protection Agency (USEPA) to set air quality standards for pollutants considered harmful to public health and welfare. The National Ambient Air Quality Standards (NAAQS) set limits to protect public health, including the health of sensitive populations such as asthmatics, children, and the elderly. These standards have been established for six criteria pollutants including Carbon monoxide (CO), Lead (Pb), Nitrogen dioxide (NO₂), Ozone (O₃), Particulate matter (PM₁₀ and PM_{2.5}), and Sulfur dioxide (SO₂), and each state is required to develop implementation plans for each pollutant. Areas are generally in "attainment" of the standards for the pollutants listed above or in "nonattainment".

Nonattainment areas are required by the CAA to comply with the NAAQS standards through the evaluation and development of a maintenance plan. The USEPA make a conformity determination to assure that the actions within the maintenance plan would conform to the respective state's implementation plan for each nonattainment pollutant.

According to the USEPA 2008 Region 4 Status, Knott County, KY is classified as "attainment" for NAAQS pollutants. The operation of the PAA would not result in significant impacts to air quality; however, construction of the PAA would have the potential to cause localized and



temporary, nuisance air quality impacts. Potential sources of these impacts include emissions from heavy equipment operation which include diesel fuel fumes and exhaust. The PAA would not require around the clock construction; therefore, equipment downtime would allow for dispersion of the nuisance fumes generated during operation. The proposed action is therefore exempt from making a conformity determination, since estimated emissions from construction equipment would be far below the *de minimis* standards of 100 tons/year, which are the minimum threshold for which a conformity determination must be performed.

The NAA would not generate construction related air emissions; however, the NAA could result in the continuation of localized foul odors originating from partially treated or untreated wastewater discharges into surface water conveyances including roadside ditches, streams, and Ball Creek.

3.8 Noise

3.8.1 Background

Noise is measured as Day Night average noise levels (DNL) in "A-weighted" decibels that the human ear is most sensitive to (dBA). There is no federal standard for allowable noise levels; however, the USACE and other federal agencies have adopted provide guidance for evaluating noise level impacts.

The USACE Safety and Health Requirements Manual (September 2008) provides criteria for permissible noise exposure levels, as well as thresholds for the consideration of hearing protection and/or the implementation of sound reduction controls. Table 1 presents the minimum duration and noise level thresholds outlined in the USACE Safety and Health Requirements Manual.

Table 1
Permissible Non-Department of Defense Noise Exposures

Duration/day (hours)	Noise level (dBA)
8	90
6	92
4	95
3	97
2	100
1.5	102
1	105

Source: USACE Safety and Health Requirements Manual, 2008

The Department of Housing and Urban Development (HUD) Guidelines denote DNLs below 65 dBA as normally acceptable levels of exterior noise in residential areas. Several other agencies, including the Federal Energy Regulatory Commission, use a DNL criterion of 55 dBA as the threshold for defining noise impacts in sparse suburban and rural residential areas (Schomer et al



2001). According to Dr. Paul Schomer in his 2001 Whitepaper, while there are numerous thresholds for acceptable noise in residential areas, research suggests that an area's current noise environment, which has experienced noise in the past may reasonably expect to tolerate a level of noise about 5 dBA higher than the general guidelines. Down and Stock (1978) conducted a study to determine the human reaction to progressive sound increases. The results of the study indicate that increases in ambient noise levels below 5 dB go unnoticed while every 5 dB increase above that level becomes increasing noticeable and increases over 20 dB are intolerable (Table 2).

Table 2
Human Reaction to Increases in Sound Pressure Level

Increase in Sound Pressure (dB)	Human Reaction
Under 5	Unnoticed to tolerable
5 – 10	Intrusive
10 – 15	Very noticeable
15 – 20	Objectionable
Over 20	Very objectionable to intolerable

Source: Down and Stocks, 1978

3.8.2 Analysis

Construction noise would be similar to that of farm equipment and other small machinery used in the local area. A large crane, excavator, dozer, and dump truck are the equipment to be used during installation of the WWTP, that each emits noise levels around 85 dBA at 45 feet.

Construction machinery would be operated for approximately eight hours, generating noise during the daytime (8am-5pm) when many residents are at work. Therefore, a reasonable exposure time of two hours would be expected during times which residents may be home during the day. Elevated noise levels are anticipated for three to four months for the duration of the construction of the WWTP. While the construction noise generated would be considered unacceptable according to HUD standards, these limited exposures and time intervals are still within allowable Corps safety levels (USACE 2003). Further, they are similar to typical neighborhood noise generated by gas powered lawnmowers in the local area, which could range from 90-95 dBA at three feet and 70-75 dBA at 100 feet. There could be an increase in noise levels during the construction period. However, the impact would be localized, temporary and should not approach nuisance levels. Due to daytime construction and the short and limited duration of elevated noise levels associated with the PAA, impacts from noise should be minor and temporary.

No impacts to noise would be anticipated to occur from the NAA.



3.9 Socioeconomic Conditions

Under Executive Order 12898 “Federal Action to Address Environmental Justice in Minority Populations and Low Income Populations,” federal agencies are directed to identify, address, and avoid disproportionately high and adverse human health or environmental effects on minority and low income populations.

According to the U.S. Census Bureau, the 2009 population estimate for Knott County, Kentucky was 17,126 and does not contain significant minority populations. The 2009 census indicates that Knott County, Kentucky is 97.7% white and has a median family income of \$28,321 compared with \$41,197 for the state of Kentucky. Individuals residing in the county below the poverty level is 25.2% compared to 17.4% statewide.

Water service provided by the Ball Creek WWTP will be readily available to all of the homes and commercial buildings in the Project Area. Presence of public sewers would increase local property values. The most immediate environmental impact would be an increase in the standard of living for residents in the Project Area. Over time, the positive effects of the project would spread into surrounding communities. No homes or buildings would be impacted by the proposed project. The proposed WWTP would equally serve all residents within the sewage collection system. Further, project cost via user rates would be spread evenly to all customers of the sewer system. Therefore, the project meets the directive of EO 12898 by avoiding any disproportionately high adverse human health or environmental effects on minority or low income populations.

No impacts to minority and low income populations are anticipated to occur from the NAA.

3.10 Aesthetics

Temporary disturbance of the local aesthetics is anticipated during construction of the PAA; however after the WWTP is complete, the contractor would be required to fill, re-grade, and re-vegetate excavated sites to original conditions. The WWTP proposed location is set back from CR 1087 with the view of the plant obstructed by forested habitat on three sides.

Under the NAA, the untreated sewage effluent from defective septic systems and straight-pipe discharges would continue to cause eutrophication of the local streams that could result in unsightly algal blooms negatively affecting aesthetic resources.

3.11 Transportation and Traffic

Traffic will be affected by the project during the delivery of construction equipment and WWTP equipment along CR 1098 and CR 1087. County Routes 1098 and 1087 are two-lane rural roadways. It is not anticipated that any delivery will cause a traffic stoppage in excess of 15 minutes. All traffic control, flagging, and signage will be in accordance with the Manual on Uniform Traffic Control Devices regulated by the Federal Highway Administration. The anticipated duration of construction that will affect traffic flow is approximately three to four



months for no longer than 15 minutes at a time. Impacts anticipated to occur from the PAA would be minimal and temporary.

No impacts to transportation and traffic are anticipated to occur from the NAA.

3.12 Health and Safety

The PAA has been designed to eliminate failing septic systems, thereby minimizing ground water and stream pollution within the Ball Creek Watershed. Discharge of partially treated or untreated wastewater into a stream depletes the oxygen in the stream and seriously affects or even eliminates aquatic life in the stream. In addition, untreated wastewater promotes the spread of diseases caused by waterborne bacteria and viruses. The minimization or elimination of these discharges of untreated sewage is necessary to prevent health and safety problems associated with the area streams.

Under the NAA current straight-pipe sewer discharge (untreated sewage), failing septic systems, and illegal trash dumping into Ball Creek would continue, causing health and safety concerns.

3.13 Cumulative Effects

The Corps of Engineers must consider the cumulative effects of the proposed project on the environment as stipulated in the National Environmental Policy Act (NEPA). Cumulative effects are "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such actions". Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR Part 1508.7 Council on Environmental Quality [CEQ] Regulations).

The cumulative effects analysis is based on the potential effects of the proposed project when added to similar impacts from other projects in the region. An inherent part of the cumulative effects analysis is the uncertainty surrounding actions that have not yet been fully developed. The CEQ regulations provide for the inclusion of uncertainties in the analysis and states that "when an agency is evaluating reasonably foreseeable significant adverse effects on the human environment. ...and there is incomplete or unavailable information, the agency shall always make clear that such information is lacking" (40 CFR 1502.22).

In conjunction with the installation of the proposed WWTP, TEA plans to install approximately 34,000 linear feet of force main and gravity sewer, construct a regional lift station, and construct approximately forty grinder stations throughout the Ball Creek area of Knott County, Kentucky. The purpose of the above mentioned plans is to construct a comprehensive sewer system that is capable of processing the present-day sewer flows. The installation of a new WWTP is the portion of the comprehensive plans partially funded by USACE and detailed in this Draft EA. Under CEQ regulations for cumulative impacts, the entire comprehensive sewer system for Ball Creek must be considered for each resource potentially impacted.



The installation of approximately 34,000 linear feet of force main and gravity sewer lines, a regional lift station, and approximately forty grinder stations will take place along previously disturbed areas of Kentucky Department of Transportation (KYDOT) right-of-way along CR 80, 1098, and 1087. A highway encroachment permit was allocated before any construction began along KYDOT property. All traffic control, flagging, and signage used during the installation of the sewer lines will be in accordance with the Manual on Uniform Traffic Control Devices regulated by the Federal Highway Administration to reduce any impacts to transportation and traffic along CR 80, 1098, and 1087. Impacts to terrestrial habitat and aesthetics would be minimal due to use of BMPs to reduce runoff and sediment deposits, including erosion control features and re-vegetating land to its previous appearance. No impacts to the Federally listed endangered Indiana Bat are anticipated from installation of the sewer lines, lift station and grinder stations because no trees will be removed along KYDOT property. A small portion of the sewer line will be located within the 100-year floodplain and require several stream crossings. All stream crossings will be directionally bored in order to reduce any impacts to aquatic habitat. A floodplain permit was required by the Kentucky Division of Water for the minimal impacts anticipated to the floodplain due to the portion of the sewer line that will be located within the 100-year floodplain. Due to daytime construction and the short and limited duration of elevated noise levels associated with construction of the sewer lines, regional lift station and grinder stations, impacts from noise should be minor and temporary.

The construction of the comprehensive sanitary sewer system, including the construction of the PAA WWTP, 34,000 linear feet of force main and gravity sewer lines, regional lift station and forty grinder stations throughout Ball Creek has little potential for any permanent long-term adverse impacts. Cumulative effects from the comprehensive sanitary sewer system include noise, aesthetics, floodplain and transportation and traffic but would be minor or temporary. In conclusion, the comprehensive sanitary sewer system is not anticipated to incrementally contribute to cumulative effects on any resource.

Under the NAA, without the installation of the WWTP, the comprehensive sanitary sewer system would not be operational. Any potential resource effects from the installation of 34,000 linear feet of force main and gravity sewer lines, regional lift station and forty grinder stations throughout Ball Creek would be unnecessary without the WWTP. Continued expansion of the Chestnut Ridge Development Complex could potentially add more septic tanks to the current overburdened sanitary system, increasing the probability of more failed septic tanks. The additional failed septic tanks would increase the amount of untreated sewer effluent in Ball Creek. The NAA therefore could have potential negative cumulative effects because of continued poor water quality from current untreated sewage and septic effluent and the potential increase of septic system failures from the expansion of the Chestnut Ridge Development Complex and surrounding area.



4.0 REQUIRED COORDINATION

4.1 Public Involvement

This Draft EA, along with the Draft Finding of No Significant Impact (FONSI), will be circulated to the local community and local, state and federal governmental agencies with jurisdiction by law or special expertise for a 30-day review/comment period. A copy will be made available at the local Knott County Public Library and a notice published in the Troublesome Creek Times. A mailing list of parties that will receive notice of this Draft EA has been included in Appendix C.

TEA is an organization that was founded in August of 2006 with the primary goal of effecting and maintaining high water quality throughout its founding counties, Knott, Perry and Breathitt Counties in Kentucky. TEA has held two public meetings to discuss topics relative to the project. The agenda included an overview of the project, presentation of a tentative schedule of completion, and a short question and answer period. No opposition to the PAA was voiced at either meeting.

4.2 Required Agency Coordination

Coordination with federal, state, county, and local agencies has been conducted throughout the preparation of this report. All correspondence letters can be found in Appendix B. The USFWS, KDFWR, Kentucky Department of Environmental Protection, NRCS, Kentucky Heritage Council (State Historic Preservation Officer), Knott County Courthouse, and the Governor's Office for Local Development have all been asked to review the project for potential negative resource impacts. This Draft EA will be sent to interested agencies for review and comment.

5.0 CONCLUSION

No significant adverse impacts have been identified with implementation and operation of the proposed WWTP. The construction would take place on previously disturbed land and the contractor would be required to fill, re-grade, and re-vegetate excavated sites to original conditions. Health and safety as well as water quality benefits, would be realized immediately and cumulatively with project implementation.

Short term impacts associated with construction of the WWTP would be localized and minor with the use of BMPs. Some possible temporary negative impacts on the human environment could include noise, short term road closure, and aesthetics. However, these impacts would be temporary and insignificant when compared to the positive permanent impact the project would have on the local community's increased standard of living.



6.0 ACRONYM GLOSSARY

BMP – Best Management Practices

CR – County Route

dB – Decibel

dba – “A-weighted” decibel

DNL – Day Night average noise Levels

EA – Environmental Assessment

EO – Executive Order

EPA – United States Environmental Protection
Agency

FEMA – Federal Emergency Management
Agency

FIRM – Flood Insurance Rate Map

FPPA – Farmland Protection Policy Act

FWCA – Fish and Wildlife Coordination Act

FWS – United States Fish and Wildlife Service

GPD – Gallons Per Day

HTRW – Hazardous, Toxic and Radioactive
Waste

KYDOT – Kentucky Department of
Transportation

NAA – No Action Alternative

NAAQS – National Ambient Air Quality
Standards

NHPA – National Historic Preservation Act

NRCS – Natural Resource Conservation Service

NRHP – National Register of Historic Places

NWI – National Wetlands Inventory

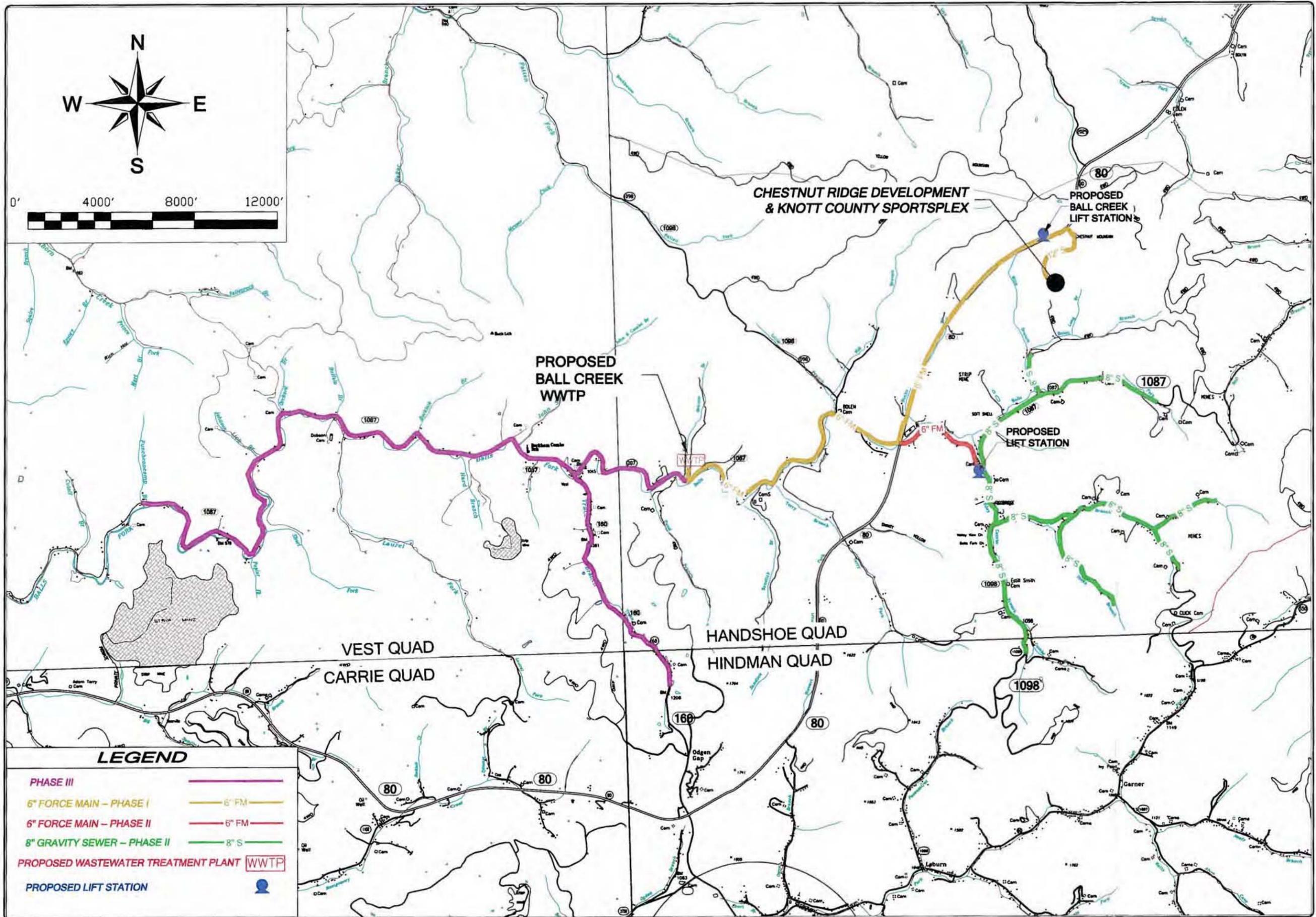
PAA – Proposed Action Alternative

PRIDE - Personal Responsibility in a Desirable
Environment

USACE – United States Army Corps of
Engineers

Appendix A

Exhibits



RMJE
R.L. JOHNSON ENGINEERING, INC.

P.O. BOX 444
HINDMAN, KY 41822
PH. (606)785-5926 FAX. (606)785-0244
E-MAIL: info@rmje.net

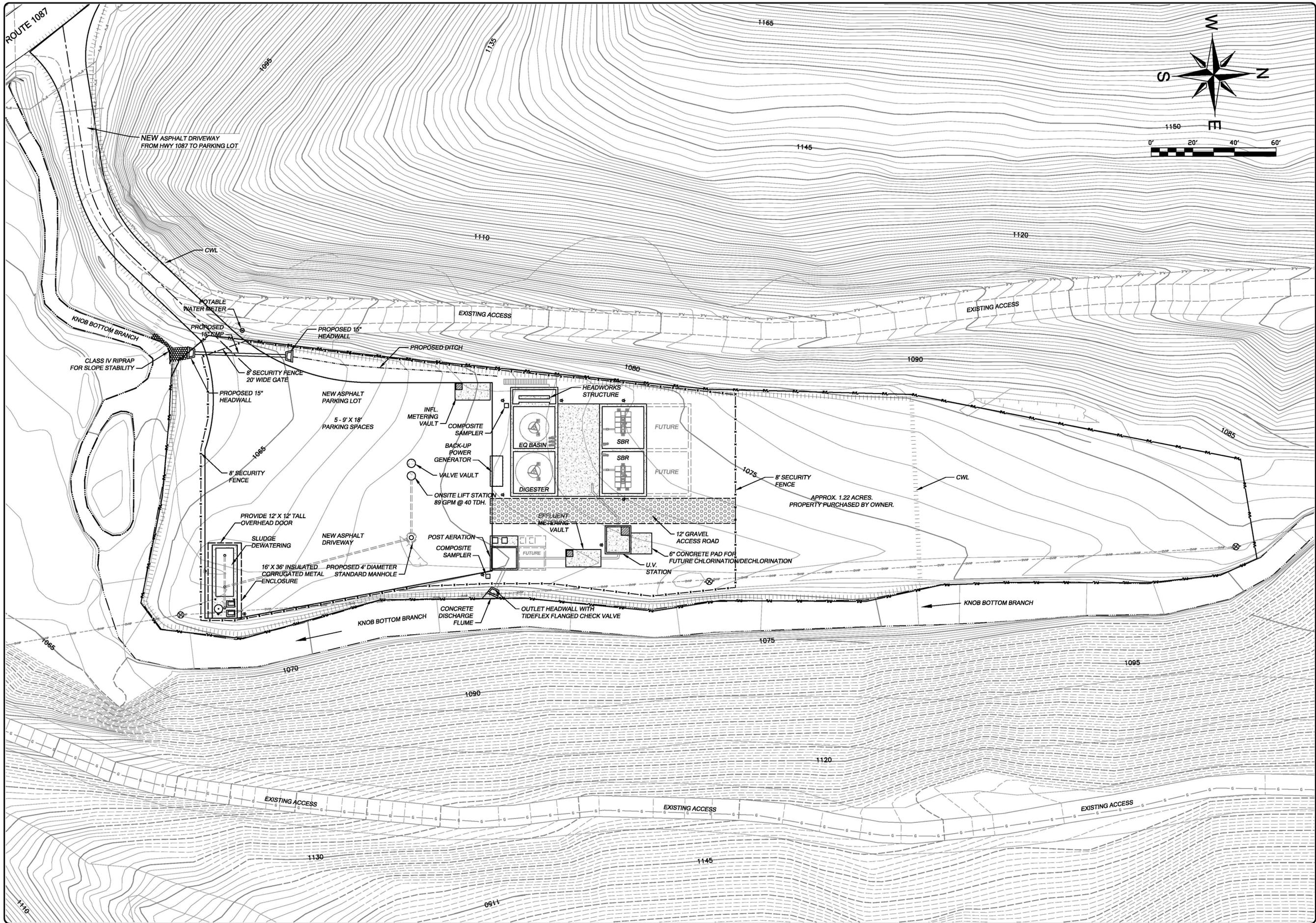
TroublesomeCreek
ENVIRONMENTAL AUTHORITY

BALL CREEK WWTP & SANITARY
SEWER COLLECTION PROJECT

REVISIONS

JOB No.	SRH
DESIGNED BY:	NS
DETAILED BY:	SRH
CHECKED BY:	
DATE:	01-13-2010
COPYRIGHT © 2009	
R.L. JOHNSON ENGINEERING, INC.	

SHEET:



R.M. JOHNSON ENGINEERING, INC.
 P.O. BOX 444
 HINDMAN, KY 41822
 PH: (606) 785-3926 FAX: (606) 785-0244
 E-MAIL: info@rmje.net

TroublesomeCreek ENVIRONMENTAL AUTHORITY

BALL CREEK WWTP & SANITARY SEWER COLLECTION PROJECT

SCALE:	1" = 20'	REVISIONS
JOB No.:	SRH	
DESIGNED BY:	SRH	
DETAILED BY:	SRH	
CHECKED BY:	SRH	
DATE:	12-30-2009	
COPYRIGHT:	© 2009	
	R.M. JOHNSON ENGINEERING, INC.	

SHEET:
P-1.1

BALL CREEK WWTP SITE LAYOUT

Appendix B
Agency Correspondence



**OFFICE OF THE GOVERNOR
DEPARTMENT FOR LOCAL GOVERNMENT**

Steven L. Beshear
Governor

1024 Capital Center Drive, Suite 340
Frankfort, Kentucky 40601
Phone (502) 573-2382
Fax (502) 573-2939
Toll Free (800) 346-5606
www.dlg.ky.gov

Tony Wilder
Commissioner

September 22, 2008

Ms. Jennifer McIntosh
Kentucky River ADD
917 Perry Park Road
Hazard, KY 41701

K.R.A.D.D.
DATE RECEIVED

SEP 26 2008

TO: Jenn. Fug

RE: (TEA)- Ball Creek Sewer Plant and Collection Lines
SX21119810
SAI# KY20080825-0892
CFDA# 11.300,23.002 & 10.770

Dear Ms. McIntosh:

The Kentucky State Clearinghouse, which has been officially designated as the Commonwealth's Single Point of Contact (SPOC) pursuant to Presidential Executive Order 12372, has completed its evaluation of your proposal. The clearinghouse review of this proposal indicates there are no identifiable conflicts with any state or local plan, goal, or objective. Therefore, the State Clearinghouse recommends this project be approved for assistance by the cognizant federal agency.

Although the primary function of the State Single Point of Contact is to coordinate the state and local evaluation of your proposal, the Kentucky State Clearinghouse also utilizes this process to apprise the applicant of statutory and regulatory requirements or other types of information which could prove to be useful in the event the project is approved for assistance. Information of this nature, if any, concerning this particular proposal will be attached to this correspondence.

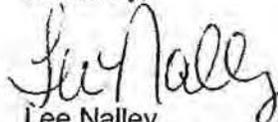
You should now continue with the application process prescribed by the appropriate funding agency. This process may include a detailed review by state agencies that have authority over specific types of projects.

This letter signifies only that the project has been processed through the State Single Point of Contact. It is neither a commitment of funds from this agency or any other state or federal agency.

The results of this review are valid for one year from the date of this letter.
Continuation or renewal applications must be submitted to the State Clearinghouse annually. An application not submitted to the funding agency, or not approved within one year after completion of this review, must be re-submitted to receive a valid intergovernmental review.

If you have any questions regarding this letter, please feel free to contact my office at 502-573-2382.

Sincerely,



Lee Nalley
Kentucky State Clearinghouse

Attachments

Cc: KIA
ARC
Rural Development

The Labor Cabinet has made the following advisory comment pertaining to State Application Identifier Number KY200808250892

Prevailing Wage Rates are applicable please contact the Kentucky Labor Cabinet at 502-564-1523 to obtain the proper rates

The Fish & Wildlife has made the following advisory comment pertaining to State Application Identifier Number KY200808250892

To minimize impacts to the aquatic environment the Kentucky Dept. of Fish & Wildlife Resources recommends that erosion control measures be developed and implemented prior to construction to reduce siltation into waterways located within the project area. Such erosion control measures may include, but are not limited to silt fences, staked straw bales, brush barriers, sediment basins, and diversion ditches. Erosion control measures will need to be installed prior to construction and should be inspected and repaired regularly as needed.

Additionally, KDFWR recommends the following for the portions of the project that crosses intermittent or perennial streams: Development/excavation in streams should be done during low flow periods to minimize disturbances. When crossing a stream, the pipe should be laid perpendicular to the stream bank to minimize the direct impacts to the streambed. We recommend that all instream disturbances be returned to a stable condition upon completion of stream pipeline crossing.

The Housing, Building, Construction has made the following advisory comment pertaining to State Application Identifier Number KY200808250892
no comment

The Office of State Budget Director has made the following advisory comment pertaining to State Application Identifier Number KY200808250892
no comments

The Health and Family Services has made the following advisory comment pertaining to State Application Identifier Number KY200808250892

The Cabinet for Health and Family Services supports projects that improve the lives of Kentuckians, this project should be coordinated with the Department of Public Health, Division of Public Health Protection & Safety to ensure that activities and funding are not duplicative.

The Natural Resources has made the following advisory comment pertaining to State Application Identifier Number KY200808250892

This review was based upon the information that was provided by the applicant through the Clearinghouse for this project. An endorsement of this project does not satisfy, or imply, the acceptance or issuance of any permits, certifications or approvals that may be required from this agency under Kentucky Revised Statutes or Kentucky Administrative Regulations. Such endorsement means this agency has found no major concerns from the review of the proposed project as presented other than those stated as conditions or comments.

All solid waste generated by this project must be disposed at a permitted facility. If underground storage tanks are encountered they must be properly addressed. If asbestos, lead paint, and/or other contaminants are encountered during this project, they must be properly addressed.

The proposed project is subject to Division of Water (DOW) jurisdiction because the following are or appear to be involved: sewer lines and appurtenances and wastewater treatment plant. Prior approval must be obtained from the DOW before construction can begin. The applicant must cite the State Application Identifier (SAI #KY200808250892) when submitting plans and specifications.

This project will construction of a new wastewater treatment plant (WWTP) with collection lines initially running to 85 of 430 potential customers, 2 businesses, 18 apartments and a car wash. Construction will be completed in two phases. The initial project would provide service to a sports complex where there is potential for a huge amount of growth of business and residents. Service would also impact 18 apartments, a car wash and another business located in the vicinity. This project to construct a new WWTP is not located within any facility planning area, however the Applicant is NOT a Regional Planning Agency under 401 KAR 5:006. Therefore the Facilities Construction Branch of DOW endorses the proposed project.

From the application data, DOW ascertains that a stream construction permit application will need to be submitted to our office for further review of this project.

If the construction area disturbed is equal to or greater than 1 acre, the applicant will need to apply for a Kentucky Pollutant Discharge Elimination System (KPDES) storm water discharge permit.

Utility line projects that cross a stream will require a Section 404 permit from the US Army Corps of Engineers and a 401 Water Quality Certification from DOW.

The Heritage Council has made the following advisory comment pertaining to State Application Identifier Number KY200808250892

The applicant must ensure compliance with the Advisory Council on Historic Preservation's Rules and Regulations for the Protection of Historic and Cultural Properties (36CRF, Part 800) pursuant to the National Historic Preservation Act of 1966, the National Environmental Policy Act of 1969, and Executive Order 11593.

Those proposed wastewater lines in the existing right-of-way do not require an archaeological survey, however, the lines not in the right-of-way and the location of the new wastewater treatment plant must be surveyed by a professional archaeologist to determine if sites eligible for listing in the National Register of Historic Places will be affected by the undertaking. Where a given project area or portions thereof have been disturbed by prior construction, the applicant may file documentation of that disturbance with the State Historic Preservation Officer and may request an opinion concerning the need of an archaeological survey. The State Historic Preservation Officer must review and approve the survey report.

The Kentucky River ADD has made the following advisory comment pertaining to State Application Identifier Number KY200808250892
no comments

The Kentucky Housing Corporation has made the following advisory comment pertaining to State Application Identifier Number KY200808250892
no comments

The Transportation has made the following advisory comment pertaining to State Application Identifier Number KY200808250892

Damron (D12), Keith: This project appears to affect KYTC Right of Way. IF so, then an encroachment permit will be needed. Please contact Gene Layne at 606-433-7791.

Steve Harris

From: Cornett, Jeffrey D (LHD-Kentucky River Dist) [JeffreyD.Cornett@ky.gov]
Sent: Friday, December 19, 2008 12:04 PM
To: Steve Harris
Subject: Ball Creek Sewer Project

Mr. Harris, Having reviewed the proposed treatment plant for the Ball Creek area of Knott County, I feel that this would greatly benefit the environment of the area. This project would provide a means of wastewater disposal for a number of households and businesses that are currently using ageing septic systems and a number that are using unapproved septic systems or no septic system at all. The removal of this waste load from the creeks and streams would be a great benefit not only to this area but those downstream. Health departments are encountering increasing difficulties in designing septic systems, both residential and commercial, due to expanding populations and decreasing available land for these applications. Please keep me advised of the status of this project. If I can assist you in any way please contact me.

*Jeff Cornett, Environmental Director
Kentucky River District Health Department
441 Gorman Hollow Road
Hazard, KY 41701
phone: 606-439-2361
fax: 606-439-0870*

NOTICE OF CONFIDENTIALITY: This e-mail, including any attachments, is intended only for the use of the individual or entity to which it is addressed and may contain confidential information that is legally privileged and exempt from disclosure under applicable law. If the reader of this message is not the intended recipient, you are notified that any review, use, disclosure, distribution, or copying of this communication is strictly prohibited. If you have received this communication in error, please contact the sender by reply e-mail and destroy all copies of the original message.



STEVEN L. BESHEAR
GOVERNOR

**TOURISM, ARTS AND HERITAGE CABINET
KENTUCKY HERITAGE COUNCIL**

MARCHETA SPARROW
SECRETARY

THE STATE HISTORIC PRESERVATION OFFICE
300 WASHINGTON STREET
FRANKFORT, KENTUCKY 40601
PHONE (502) 564-7005
FAX (502) 564-5820
www.heritage.ky.gov

MARK DENNEN
ACTING EXECUTIVE DIRECTOR AND
STATE HISTORIC PRESERVATION OFFICER

April 8, 2009

Mr. Stephen R. Harris
Project Engineer
R.M. Johnson Engineering, Inc.
PO Box 444
Hindman, KY 41822

Re: *A Cultural Resources Survey of the Proposed Balls Creek Wastewater Treatment Plant in Knott County, Kentucky*, by David J. Stephenson (Cultural Resource Analysts, Inc.)

Dear Mr. Harris:

Thank you for your letter concerning the above referenced project. The survey documented no new prehistoric or historic archaeological sites at the location of the proposed Balls Creek Wastewater Treatment Plant in Knott County, Kentucky. As a result, the author concludes that no additional archaeological work will be necessary. Since the construction of the wastewater treatment plant will have no adverse effect on cultural resources that are potentially eligible for listing on the National Register of Historic Places, I concur with the author's findings. In accordance with 36CFR Part 800.4(d) of the Advisory Council's revised regulations our finding is that there are **No Historic Properties Present** within the undertaking's area of potential impact. Therefore, we have no further comments with regard to this portion of the proposed project, and responsibility to consult with the Kentucky State Historic Preservation Officer under the Section 106 review process for archaeology on this portion of the proposed project is fulfilled.

Should you have any questions feel free to contact Philip Mink of my staff at 502-564-7005, ext. 122.

Sincerely,

Mark Dennen,
Acting Executive Director and
State Historic Preservation Officer

MD: pbm
cc: George Crothers
Charles M. Niquette



DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, LOUISVILLE
CORPS OF ENGINEERS
P.O. BOX 59
LOUISVILLE KY 40201-0059
FAX; (502) 315-6677
<http://www.lrl.usace.army.mil/>

August 26, 2009

Operations Division
Regulatory Branch (South)
ID No. LRL-2009-00887-jea

K.R.A.D.D.
DATE RECEIVED

AUG 27 2009

TO: *Jennifer*

Ms. Jennifer McIntosh
Kentucky River Area Development District
917 Perry Park Road
Hazard, Kentucky 41701

Dear Ms. McIntosh:

This is in regard to your letter dated August 12, 2009, for an environmental review for "waters of the U.S." of the Ball Creek Waste Water Treatment Plant and Collection Lines Project in Knott County, Kentucky. It would appear from the map submitted along with your letter that the proposed improvement may impact several waterways under our jurisdiction including Trace Fork, Quicksand Creek, Mine Branch, Bucks Branch, Little Branch, Balls Fork, Wiley Combs Branch, Possumtrot Branch, Terry Branch, Stewart Fork, Ogden Branch and Trace Branch. To our knowledge, no wetlands mapping of your proposed project site has been done. However, this does not mean wetlands do not exist on the proposed project site. A jurisdictional determination must be completed if a proposed project would impact "waters of the U.S." including wetlands. Also, a portion of the proposed project is within the 100-year floodplain.

The U.S. Corps of Engineers exercises regulatory authority under Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403) and Section 404 of the Clean Water Act (33 U.S.C. 1344) for certain activities in "waters of the U.S.", including wetlands. These waters include all waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce.

If the project would necessitate the discharge of dredged or fill material into "waters of the U.S.", including wetlands, then you should submit a Department of the Army (DA) permit application for our review by this office.

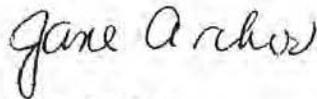
Enclosed for your information is an application packet containing the forms necessary to apply for a Department of the Army permit, as well as information pertaining to the Corps of Engineers Regulatory Program.

Our comments on this project are limited to only those effects which may fall within our area of jurisdiction and thus does not obviate the need to obtain other permits from state or local agencies. Lack of

comments on other environmental aspects should not be construed as either concurrence or nonconcurrence with stated environmental effects.

If you have any questions concerning this matter, please contact this office at the above address, ATTN: CELRL-OP-FS or call me at (502- 315-6682. Any correspondence on this matter should refer to our ID Number LRL-2009-00887-jea.

Sincerely,

A handwritten signature in cursive script that reads "Jane Archer".

Jane Archer
Project Manager, South
Regulatory Branch

Enclosures



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Kentucky Ecological Services Field Office
330 West Broadway, Suite 265
Frankfort, Kentucky 40601
(502) 695-0468

September 2, 2009

K.E.A.D.D.
DATE RECEIVED

SEP 10 2009

TO: Jennifer

Ms. Jennifer McIntosh
Community Resources Planner
Kentucky River Area Development District
917 Perry Park Road
Hazard, Kentucky 41701

Re: FWS 2009-B-1022; Troublesome Creek Environmental Authority, Ball Creek WWTP and Collection Lines, located in Knott County, Kentucky

Dear Ms. McIntosh:

Thank you for the correspondence dated August 12, 2009 regarding the above-referenced project. The U.S. Fish and Wildlife Service (Service) has reviewed this proposed project and offers the following comments in accordance with the Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*).

According to your correspondence, the proposed project consists of the construction of a 100,000 gallon-per-day wastewater treatment plant, a lift station, and collection lines to serve 85 homes and the Knott County Sports Complex. Recent aerial imagery of the project area indicates that the proposed rights-of-way are surrounded by forested habitat. Based on a September 2, 2009 phone conversation between Johnson Engineering and Jim Gruhala of my staff, the project is not anticipated to involve tree removal; however, some tree removal may be required. Additionally, the proposed collection lines would span Troublesome Creek in two areas. These two stream crossings would implement horizontal directional boring to minimize the impacts to Troublesome Creek.

In accordance with provisions of the Fish and Wildlife Coordination Act, the Service has reviewed the project with regards to the effects the proposed actions may have on wetlands and/or other jurisdictional waters. We recommend that project plans be developed to avoid impacting wetland areas and/or streams, and reserve the right to review any required federal or state permits at the time of public notice issuance. The U.S. Army Corps of Engineers should be contacted to assist you in determining if wetlands or other jurisdictional waters are present or if a permit is required.

In order to assist you in determining if the proposed project has the potential to impact protected species we have searched our records for occurrences of listed species within the vicinity of the proposed project. Based upon the information provided to us and according to our databases, we

believe that one federally listed species has the potential to occur within the project vicinity. The listed species is:

<u>Common Name</u>	<u>Scientific Name</u>	<u>Federal Status</u>
Indiana bat	<i>Myotis sodalis</i>	endangered

We must advise you that collection records available to the Service may not be all-inclusive. Our database is a compilation of collection records made available by various individuals and resource agencies. This information is seldom based on comprehensive surveys of all potential habitats and thus does not necessarily provide conclusive evidence that protected species are present or absent at a specific locality.

Indiana bat

Summer roost and/or winter habitat for the endangered Indiana bat may exist within the proposed project site. Based on this information, we believe that: (1) forested areas in the vicinity of and on the project area may provide potentially suitable summer roosting and foraging habitat for the Indiana bat; and (2) caves, rockshelters, and abandoned underground mines in the vicinity of and on the project area may provide potentially suitable wintering habitat for the Indiana bat. Our belief that potentially suitable habitat may be present is based on the information provided in your correspondence, the fact that much of the project site and/or surrounding areas contain forested habitats that are within the natural range of this species, and our knowledge of the life history characteristics of the species.

The Indiana bat utilizes a wide array of forested habitats, including riparian forests, bottomlands, and uplands for both summer foraging and roosting habitat. Indiana bats typically roost under exfoliating bark, in cavities of dead and live trees, and in snags (i.e., dead trees or dead portions of live trees). Trees in excess of 16 inches diameter at breast height (DBH) are considered optimal for maternity colony roosts, but trees in excess of 9 inches DBH appear to provide suitable maternity roosting habitat. Male Indiana bats have been observed roosting in trees as small as 5 inches DBH.

Prior to hibernation, Indiana bats utilize the forest habitat around the hibernacula, where they feed and roost until temperatures drop to a point that forces them into hibernation. This "swarming" period is dependent upon weather conditions and may last from about September 15 to about November 15. This is a critical time for Indiana bats, since they are acquiring additional fat reserves and mating prior to hibernation. Research has shown that bats exhibiting this "swarming" behavior will range up to five miles from chosen hibernacula during this time. For hibernation, the Indiana bat prefers limestone caves, sandstone rockshelters, and abandoned underground mines with stable temperatures of 39 to 46 degrees F and humidity above 74 percent but below saturation.

Because we have concerns relating to the Indiana bat on this project and due to the lack of occurrence information available on this species relative to the proposed project area, we would have the following recommendations relative to Indiana bats.

1. Based on the presence of numerous caves, rock shelters, and underground mines in Kentucky, we believe that it is reasonable to assume that other caves, rock shelters, and/or abandoned underground mines may occur within the project area, and, if they occur, they could provide winter habitat for Indiana bats. Therefore, we would

recommend that the project proponent survey the project area for caves, rock shelters, and underground mines, identify any such habitats that may exist on-site, and avoid impacts to those sites pending an analysis of their suitability as Indiana bat habitat by this office.

2. We would also recommend that the project proponent only remove trees within the project area between October 15 and March 31 in order to avoid impacting summer roosting Indiana bats. However, if any Indiana bat hibernacula are identified on the project area, we recommend the project proponent only remove trees between November 15 and March 31 in order to avoid impacting Indiana bat "swarming" behavior.

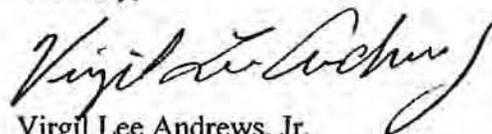
However, if these recommendations cannot be incorporated as project conditions, then the project area may be surveyed to determine the presence or absence of this species within the project area in an effort to determine if potential impacts to the Indiana bat are likely. A qualified biologist who holds the appropriate collection permits for the Indiana bat must undertake such surveys, and we would appreciate the opportunity to approve the biologist's survey plan prior to the survey being undertaken and to review all survey results, both positive and negative. If any Indiana bats are identified, we would request written notification of such occurrence(s) and further coordination and consultation.

If your project schedule requires the clearing of potential Indiana bat habitat (i.e., trees) during the period of April 1 to October 14, you have two primary options for addressing impacts to Indiana bats. First, you can survey the project site as described previously, or you can enter into a Conservation Memorandum of Agreement (MOA) with the Service. By entering into a Conservation MOA with the Service, Cooperators gain flexibility in project timing with regard to the removal of suitable Indiana bat habitat. In exchange for this flexibility, the Cooperator provides recovery-focused conservation benefits to the Indiana bat through the implementation of minimization and mitigation measures as set forth in the Indiana Bat Mitigation Guidance for the Commonwealth of Kentucky. For additional information about this option, please notify our office.

Surveys for the Indiana bat would not be necessary if sufficient site-specific information was available that showed that: (1) there is no potentially suitable habitat within the project area or its vicinity or (2) the species would not be present within the project area or its vicinity due to site-specific factors. A survey for Indiana bats would also not be necessary if trees were removed from the site between October 15 and March 31, and/or the project proponent enters into a Conservation MOA with the Service.

Thank you again for your request. Your concern for the protection of endangered and threatened species is greatly appreciated. If you have any questions regarding the information that we have provided, please contact James Gruhala at (502) 695-0468 extension 116.

Sincerely,



Virgil Lee Andrews, Jr.
Field Supervisor



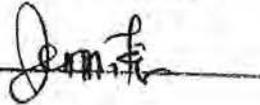
DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, LOUISVILLE
CORPS OF ENGINEERS
P.O. BOX 59
LOUISVILLE KY 40201-0059
FAX: (502) 315-6677
<http://www.lrl.usace.army.mil/>

September 3, 2009

K.R.A.D.D.
DATE RECEIVED

SEP 08 2009

Operations Division
Regulatory Branch (South)
ID No. LRL-2009-929-jct

TO: 

Mr. Lewis Warrix
Troublesome Creek Environmental Authority
917 Perry Park
Hazard, Kentucky 41701

Dear Mr. Warrix:

This is in regard to an email dated September 1, 2009 sent on your behalf by Steve Harris of R.M. Johnson Engineering, concerning a proposal to construct two stream crossings using directional boring methods, under Ball Creek near Yellow Mountain in Knott County, Kentucky.

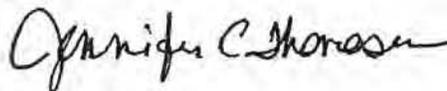
This decision is approved based on the information provided on your behalf. It does not appear that a Department of the Army permit will be needed since the proposed project referenced above does not propose impacts to any "waters of the United States (U.S.)." "Waters of the U.S." include all waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce. This jurisdictional determination is valid for a period of five years from the date of this letter unless new information warrants revision of the determination before the expiration date.

If the project would necessitate the discharge of dredged or fill material into "waters of the U.S.," including wetlands, plans should be submitted for our review.

Our comments on this project are limited to only those effects which may fall within our area of jurisdiction and thus does not obviate the need to obtain other permits from state or local agencies. Lack of comments on other environmental aspects should not be construed as either concurrence or nonconcurrence with stated environmental effects.

If we can be of any further assistance, please contact us by writing to the above address, ATTN: CELRL-OP-FS, or call me at 502-315-6679. Any correspondence on this matter should refer to our ID Number LRL-2009-929-jct

Sincerely,



Jennifer Thomason
Project Manager, South
Regulatory Branch

COORDINATING ADDRESS

Mr. Steve Harris
R.M. Johnson Engineering, Inc.
P.O. Box 444
Hindman, Kentucky 41822

K.R.A.D.D.
DATE RECEIVED

SEP 17 2009

TO: Jennifer

September 15, 2009

K R A D D

917 Perry Park Road

Hazard, Kentucky 41701

RE: Troublesome Creek Environmental Authority
Ball Creek WWTP and Collection Lines Project

Dear Ms.

The proposed project should have no adverse environmental impact on Prime Farmland Soils, Soils of Statewide Importance or Wetlands.

Sincerely,

Don Hurst

NRCS



STEVEN L. BESHEAR
GOVERNOR

**TOURISM, ARTS AND HERITAGE CABINET
KENTUCKY HERITAGE COUNCIL**

MARCHETA SPARROW
SECRETARY

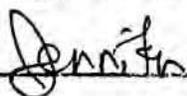
THE STATE HISTORIC PRESERVATION OFFICE
300 WASHINGTON STREET
FRANKFORT, KENTUCKY 40601
PHONE (502) 564-7005
FAX (502) 564-5820
www.heritage.ky.gov

September 21, 2009

MARK DENNEN
EXECUTIVE DIRECTOR AND
STATE HISTORIC PRESERVATION OFFICER

K.R.A.D.D.
DATE RECEIVED

SEP 28 2009

TO: 

Ms. Jennifer McIntosh
Kentucky River Area Development District
917 Perry Park Road
Hazard, KY 41701

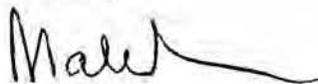
Re: Troublesome Creek Environmental Authority Ball Creek WWTP and Collection Line Project

Dear Ms. McIntosh:

A review of our files indicates that the proposed project likely will not impact any previously recorded archaeological sites. However, most of the area of potential effect has never been investigated by a professional archaeologist to determine if any properties eligible for listing in the National Register of Historic Places are present. Investigations of projects in similar environmental contexts have resulted in the identification of archaeological sites, some of which have been determined eligible for listing in the National Register. Given the project area's environmental setting, in my opinion, it has a high potential for impacting archaeological sites. Therefore, I recommend that all undisturbed portions of the project area outside of existing state right-of-way be surveyed by a professional archaeologist. A report documenting the results of this investigation must be submitted to the State Historic Preservation Officer for review, comment, and approval. Where a given project area or portions thereof have been disturbed by prior construction, the applicant may file documentation of that disturbance with the State Historic Preservation Officer and request an opinion concerning the need of an archaeological survey.

Should you have any questions, feel free to contact Philip Mink of my staff at 564-7005, ext. 122.

Sincerely,



Mark Dennen,
Executive Director and
State Historic Preservation Officer

MD:pbm



STEVEN L. BESHEAR
GOVERNOR

DEPARTMENT FOR LOCAL GOVERNMENT
OFFICE OF THE GOVERNOR
1024 CAPITAL CENTER DRIVE, SUITE 340
FRANKFORT, KENTUCKY 40601-8204
PHONE (502) 573-2382 FAX (502) 573-2939
TOLL FREE (800) 346-5606
WWW.DLG.KY.GOV

TONY WILDER
COMMISSIONER

December 8, 2009

Ms. Anshu Singh
Division of Water
200 Fair Oaks Lane
Frankfort, KY 40601

RE: Ball Creek Wastewater Treatment Plant and Collection Lines Project
SAI# KY20091103-1852

Dear Ms. Singh:

The Kentucky State Clearinghouse, which has been officially designated as the Commonwealth's Single Point of Contact (SPOC) pursuant to Presidential Executive Order 12372, has completed its evaluation of your proposal. The clearinghouse review of this proposal indicates there are no identifiable conflicts with any state or local plan, goal, or objective. Therefore, the State Clearinghouse recommends this project be approved for assistance by the cognizant federal agency.

Although the primary function of the State Single Point of Contact is to coordinate the state and local evaluation of your proposal, the Kentucky State Clearinghouse also utilizes this process to apprise the applicant of statutory and regulatory requirements or other types of information which could prove to be useful in the event the project is approved for assistance. Information of this nature, if any, concerning this particular proposal will be attached to this correspondence.

You should now continue with the application process prescribed by the appropriate funding agency. This process may include a detailed review by state agencies that have authority over specific types of projects.

This letter signifies only that the project has been processed through the State Single Point of Contact. It is neither a commitment of funds from this agency or any other state or federal agency.

The Health and Family Services has made the following advisory comment pertaining to State Application Identifier Number KY200911031852

The Cabinet for Health and Family Services supports this grant application project, and would encourage the project coordinators, to the extent possible or necessary, to coordinate their local-regional project activities with the public health resources in the region.

The Office of State Budget Director has made the following advisory comment pertaining to State Application Identifier Number KY200911031852
No comments

The Housing, Building, Construction has made the following advisory comment pertaining to State Application Identifier Number KY200911031852
no comment

The Kentucky River ADD has made the following advisory comment pertaining to State Application Identifier Number KY200911031852
No comments

The Natural Resources has made the following advisory comment pertaining to State Application Identifier Number KY200911031852
No comments

The Heritage Council has made the following advisory comment pertaining to State Application Identifier Number KY200911031852

The applicant must ensure compliance with the Advisory Council on Historic Preservation's Rules and Regulations for the Protection of Historic and Cultural Properties (36CRF, Part 800) pursuant to the National Historic Preservation Act of 1966, the National Environmental Policy Act of 1969, and Executive Order 11593.

The project area must be surveyed by a professional archaeologist to determine if sites eligible for listing in the National Register of Historic Places will be affected by the undertaking. The State Historic Preservation Officer must review and approve the survey report. Where a given project area or portions thereof have been disturbed by prior construction, the applicant may file documentation of that disturbance with the State Historic Preservation Officer and request an opinion concerning the need of an archaeological survey (note: farming does not constitute disturbance). If you have any questions, please contact Philip Mink at 502-564-7005, extension 122.

The Transportation has made the following advisory comment pertaining to State Application Identifier Number KY200911031852

Cuzzort (D12), Willard: no comments

The Labor Cabinet has made the following advisory comment pertaining to State Application Identifier Number KY200911031852

PW RATES DO NOT APPLY

Steven L. Beshear
Governor



Leonard K. Peters
Secretary

Energy and Environment Cabinet
Department for Environmental Protection
Division of Water
200 Fair Oaks Lane, 4th Floor
Frankfort, Kentucky 40601
Phone: (502) 564-3410
www.water.ky.gov

December 11, 2009

A handwritten signature in black ink that reads "Jennifer".

Lewis H. Warrix, Chairman
Troublesome Creek Environmental Authority
917 Perry Park Road
Hazard, Kentucky 41701

Re: Regional Facilities Plan for
Ball Creek Sewer Plant and Collection Lines Phase I
Troublesome Creek Environmental Authority
Knott County, Kentucky
AI ID: 101248; PLN20100001

Dear Mr. Warrix:

The environmental information document titled *Ball Creek Sewer Plant and Collection Lines Phase I* dated September 13, 2009, has been reviewed by this Division and found to conform with the requirements contained in administrative regulation 401 KAR 5:006.

Approval of the plan is hereby given based on the attached State Planning and Environmental Assessment Report (SPEAR) issued by this Department on October 29, 2009, which has undergone review by the Kentucky State Clearinghouse (State Application Identifier #KY20091103-1852). This approval is subject to any conditions and mitigative measures in Section F of the SPEAR and in the State Clearinghouse review comments.

The Department for Environmental Protection offers free regulatory assistance through its Division of Compliance Assistance. If you have questions related to compliance with any environmental requirements, please contact the division by calling 1-800-926-8111.

If you have any questions, please contact me at (502) 564-3410, extension 4805

Sincerely,

A handwritten signature in black ink that reads "Anshu Singh".

Anshu Singh, Ph.D., Supervisor
Wastewater Planning Section
Water Infrastructure Branch

AS
Attachments

cc: Jennifer McIntosh, Project Administrator, Kentucky River ADD (by e-mail)

Appendix C
Mailing List

**Section 531 Ball Creek Wastewater Treatment Project
Draft Environmental Assessment
Mailing List**

Federal Agencies and Officials

Honorable Mitch McConnell
United States Senator
601 W. Broadway
Room 630
Louisville, KY 40202

Honorable Rand Paul
United States Senator
Gorman Education Center
601 Main Street, Ste 2
Hazard, KY 41701

Honorable Harold Rogers
Representative In Congress
601 Main Street
Hazard, KY 41701

U.S. Environmental Protection Agency
Region IV, Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, Georgia 30303-3104

USDA Natural Resources Conservation Service
Kentucky State Office
771 Corporate Drive, Suite 210
Lexington, Kentucky 40503

Mr. Virgil Andrews, Jr., Field Supervisor
United States Fish and Wildlife Service
330 West Broadway, Suite 265
Frankfort, KY 40601

State Agencies and Officials

Honorable Steve Beshear
Governor of Kentucky
700 Capitol Avenue, Suite 100
Frankfort, Kentucky 40601

Lee Nailey
Kentucky State Clearing House
1024 Capitol Center Drive, Suite 340
Frankfort, KY 40601

Mark Dennen, Executive Director
State Historic Preservation Office
300 Washington Street
Frankfort, KY 40601
Kentucky Department of Fish and Wildlife Service

Jeff Cornett, Environmental Director
Kentucky River District Health Department
441 Gorman Hollow Road
Hazard, KY 41701

Kentucky Department of Environmental Protection
Division of Water
200 Fair Oaks Lane
Frankfort, KY 40601

Dr. Jonathon Gassett, Commissioner
KY Department of Fish and Wildlife
Resources
#1 Sportsman's Lane
Frankfort, KY 40601

County Agencies and Officials

Knott County Public Library
P.O. Box 667
Hindman, KY 41822

Municipal Agencies and Officers

Honorable Janice Jarrell
Mayor of Hindman
10 Professor Clarke Circle
Hindman, KY 41822

Civil and Environmental Engineering Consultants

Steve Harris
R.M. Johnson Engineering, Inc.
P.O. Box 444
Hindman, KY 41822

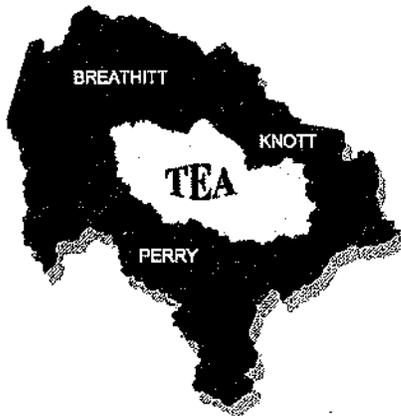
Appendix D

Hazardous, Toxic and Radioactive Wastes (HTRW) Assessment

**LIMITED PHASE I
HAZARDOUS, TOXIC, RADIOACTIVE
WASTE (HTRW) INVESTIGATION**

FOR

**Ball Creek WWTP & Sanitary Sewer
Collection Project, Phase I**



TroublesomeCreek
ENVIRONMENTAL AUTHORITY

Prepared By:
R.M. JOHNSON ENGINEERING, INC.
P.O. Box 444
Hindman, KY 41822



March 2011

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- I. Purpose
- II. Location & Legal Descriptions
- III. Site & Vicinity Characteristics
- IV. Topography & Drainage
- V. Geology & Soils
- VI. Wetlands
- VII. Title Review
- VIII. Federal & State Records Database Search
- IX. Site Visits
- X. Property User Report of Environmental Liens
- XI. Hazardous Substances in Connection with Identified Uses
- XII. Unidentified Substances, Containers, Staining, or Stressed Vegetation
- XIII. Aboveground Storage Tanks (ASTs)
- XIV. Flooding Potential
- XV. Interviews
- XVI. Findings & Conclusions

Appendix 'A' – Current Photographs

Appendix 'B' – Federal & State Records Search

Appendix 'C' – Historical Aerial Photos & Topographical Maps

Appendix 'D' – Environmental Liens

Appendix 'E' – Other Supporting Documents

STATEMENT OF CAPABILITY

We at R.M. Johnson Engineering, Inc. have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. We have development and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

I. Purpose

A Limited Phase I Site Assessment has been conducted for the Troublesome Creek Environmental Authority (TEA) on properties located along Balls Fork of Knott County near Vest, Kentucky. One of these properties is the proposed site of the Ball Creek Wastewater Treatment Plant (WWTP) which consists of the construction of a 0.10 MGD Sequential Batch Reactor (SBR) WWTP. The property has been secured and purchased, fee simple, by TEA from a CONSOL Energy.

II. Location & Legal Descriptions

The proposed site of the new SBR WWTP is located at Knob Bottom Branch along Route 1087 in the Vest area of Knott County, Kentucky. The property has been purchased by TEA and is located completely out of the floodplain according to FEMA Flood Maps. See the attached General Location Map for further information.

III. Site & Vicinity Characteristics

The Knob Bottom WWTP property is approximately 2.0 acres of flat bottom lying at the confluence of Knob Bottom Branch and Balls Fork. The property is easily accessed from KY Route 1087 in the Vest area of Knott County. The site is isolated and secluded with the nearest resident residing about 300 feet from the WWTP site.

IV. Topography & Drainage

The Knob Bottom site lies directly adjacent to Knob Bottom Branch and drains well by direct runoff. The property is located outside of the 100-Year Floodplain as determined by the FEMA Flood Insurance Program.

V. Geology & Soils

A geotechnical exploration was conducted at the Knob Bottom property to determine the structural properties of the soil. The geotechnical report found no evidence of fill material from mining activities. A copy of the geotechnical report is attached to this HTRW (**See Appendix 'E'**).

VI. Wetlands

There are no wetlands located within the construction limits or nearby vicinity.

VII. Title Review

The Knob Bottom property is the only property that has been purchased by TEA for the direct purpose of this project. A Title Opinion was performed by Mr. Calvin Randall Tackett and is attached to this report (**See Appendix 'E'**).

VIII. Federal & State Records Database Search

A search of federal and state environmental record databases was conducted for R.M. Johnson Engineering, Inc. (RMJE) by Environmental Data Resources, Inc. (EDR) of Southport, Connecticut. The Orphan Summary of these reports state locations in which physical addresses were not immediately available to EDR. RMJE has reviewed the Orphan Summary listings and found that all are at least 3.0 miles (most are further) away from the project site. Therefore, none of these listings will be affected by the construction activities. Additional information not appearing on the databases was obtained during the site visits and field investigations. See Section IX.

IX. Site Visits

The site visits and investigations were conducted of the project site and neighboring sites by Mr. Steve Harris, a Professional Engineer with R.M. Johnson Engineering, Inc., in August of 2009. Natural gas and potable water transmission lines are present on the project area and adjacent properties. No underground storage tanks have been located within the project area or adjacent sites. No above ground storage tanks were observed. Pole-mounted transformers were observed to be in use on and near the subject property of Knob Bottom and adjacent sites. No evidence of leakage or damage was observed to be associated with the units at the time of the site visits. All transformers were in use, none abandoned. The study area is covered by a mandatory solid waste pick-up program operated by Knott County. Since demolition of existing buildings is not part of the scope of the project, no asbestos will be encountered. According to FEMA Flood Maps the site is not located within the 100-Yr floodplain and will not impact current flooding conditions. Interviews were conducted with neighbors to the subject property (**See Appendix 'E'**). The site has been used in the past for small corn

farming. All interviewed stated that the lot had been vacant "for some time." The adjacent properties are mostly made up of mountain terrain and contain minimal residential developments with virtually no commercial developments.

X. Property User Report of Environmental Liens

A search for environmental liens was conducted for the site and is included in this report.

XI. Hazardous Substances in Connection with Identified Uses

There are no underground storage tanks within one mile of the project site and adjacent properties. The Knob Bottom project site is located in the valley of a hollow. There are currently no mining activities taking place within or near the project site and adjacent properties.

XII. Unidentified Substances, Containers, Staining, or Stressed Vegetation

None noted.

XIII. Aboveground Storage Tanks (ASTs)

No ASTs were observed during the site visit.

XIV. Flooding Potential

The site is shown to be outside the limits of the 100 Year Floodplain as determined by FEME Flood Insurance Rate Maps.

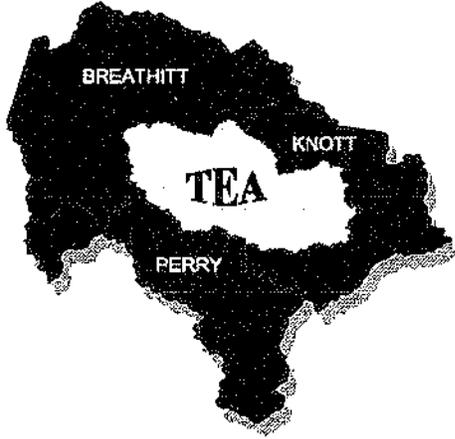
XV. Interviews

See interview logs in Appendix 'E'.

XVI. Findings & Conclusions

We have performed a Limited Phase I Site Assessment in conformance with the scope and limitations of ASTM Practice E 1527 for the Ball Creek WWTP Project located in the Vest community of Knott County, Kentucky. The assessment has revealed evidence of recognized environmental conditions in connection with the property as follows:

A) Natural gas and potable water transmission lines do exist on the project site and adjacent properties. Contractor must exercise caution while conducting construction activities.



TroublesomeCreek

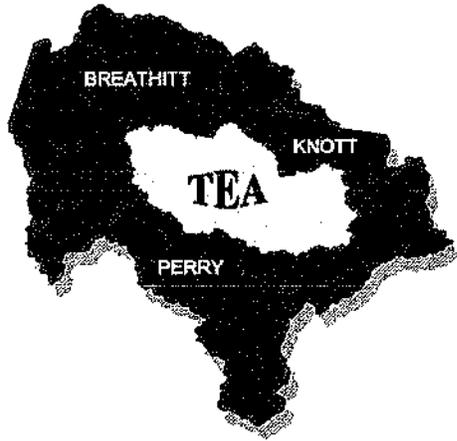
ENVIRONMENTAL AUTHORITY

APPENDIX 'A'

Current Photographs



PHOTO #1: Photo of Knob Bottom (WWTP Site) facing south.



TroublesomeCreek

ENVIRONMENTAL AUTHORITY

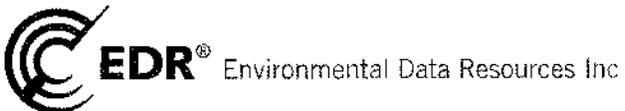
APPENDIX 'B'

Federal & State Records Search

Ball Creek WWTP Site
2606 West Highway 1087
Leburn, KY 41831

Inquiry Number: 2699089.2s
February 15, 2010

The EDR Radius Map™ Report with GeoCheck®



440 Wheelers Farms Road
Milford, CT 06461
Toll Free: 800.352.0050
www.edrnet.com

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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. **NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OF DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT.** Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-05) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

2606 WEST HIGHWAY 1087
LEBURN, KY 41831

COORDINATES

Latitude (North): 37.396100 - 37° 23' 46.0"
Longitude (West): 82.989700 - 82° 59' 22.9"
Universal Transverse Mercator: Zone 17
UTM X (Meters): 323873.2
UTM Y (Meters): 4140468.0
Elevation: 1082 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map: 37082-D8 HANDSHOE, KY
Most Recent Revision: 1992

West Map: 37083-D1 VEST, KY
Most Recent Revision: 1992

AERIAL PHOTOGRAPHY IN THIS REPORT

Photo Year: No Photo Available
Source: USDA

TARGET PROPERTY SEARCH RESULTS

The target property was identified in the following records. For more information on this property see page 7 of the attached EDR Radius Map report:

<u>Site</u>	<u>Database(s)</u>	<u>EPA ID</u>
BALL CREEK WWTP KY 1087 VEST, KY 41772	NPDES	N/A

EXECUTIVE SUMMARY

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL..... National Priority List
Proposed NPL..... Proposed National Priority List Sites
NPL LIENS..... Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL..... National Priority List Deletions

Federal CERCLIS list

CERCLIS..... Comprehensive Environmental Response, Compensation, and Liability Information System
FEDERAL FACILITY..... Federal Facility Site Information listing

Federal CERCLIS NFRAP site List

CERC-NFRAP..... CERCLIS No Further Remedial Action Planned

Federal RCRA CORRACTS facilities list

CORRACTS..... Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF..... RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG..... RCRA - Large Quantity Generators
RCRA-SQG..... RCRA - Small Quantity Generators
RCRA-CESQG..... RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

US ENG CONTROLS..... Engineering Controls Sites List
US INST CONTROL..... Sites with Institutional Controls

Federal ERNS list

ERNS..... Emergency Response Notification System

State- and tribal - equivalent CERCLIS

SHWS..... State Leads List

EXECUTIVE SUMMARY

State and tribal landfill and/or solid waste disposal site lists

SWF/LF..... Solid Waste Facilities List

State and tribal leaking storage tank lists

SB193..... SB193 Branch Site Inventory List
PSTEAF..... Facility Ranking List
INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land

State and tribal registered storage tank lists

UST..... Underground Storage Tank Database
INDIAN UST..... Underground Storage Tanks on Indian Land
FEMA UST..... Underground Storage Tank Listing

State and tribal institutional control / engineering control registries

ENG CONTROLS..... Engineering Controls Site Listing
INST CONTROL..... State Superfund Database

State and tribal voluntary cleanup sites

VCP..... Voluntary Cleanup Program Sites
INDIAN VCP..... Voluntary Cleanup Priority Listing

State and tribal Brownfields sites

BROWNFIELDS..... Kentucky Brownfield Inventory

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS..... A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

ODI..... Open Dump Inventory
DEBRIS REGION 9..... Torres Martinez Reservation Illegal Dump Site Locations
HIST LF..... Historical Landfills
SWRCY..... Recycling Facilities
INDIAN ODI..... Report on the Status of Open Dumps on Indian Lands

Local Lists of Hazardous waste / Contaminated Sites

US CDL..... Clandestine Drug Labs
CDL..... Clandestine Drug Lab Location Listing
US HIST CDL..... National Clandestine Laboratory Register

Local Land Records

LIENS 2..... CERCLA Lien Information

EXECUTIVE SUMMARY

LUCIS..... Land Use Control Information System

Records of Emergency Release Reports

HMIRS..... Hazardous Materials Information Reporting System

Other Ascertainable Records

RCRA-NonGen..... RCRA - Non Generators
DOT OPS..... Incident and Accident Data
DOD..... Department of Defense Sites
FUDS..... Formerly Used Defense Sites
CONSENT..... Superfund (CERCLA) Consent Decrees
ROD..... Records Of Decision
UMTRA..... Uranium Mill Tailings Sites
TRIS..... Toxic Chemical Release Inventory System
TSCA..... Toxic Substances Control Act
FTTS..... FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
HIST FTTS..... FIFRA/TSCA Tracking System Administrative Case Listing
SSTS..... Section 7 Tracking Systems
ICIS..... Integrated Compliance Information System
PADS..... PCB Activity Database System
MLTS..... Material Licensing Tracking System
RADINFO..... Radiation Information Database
FINDS..... Facility Index System/Facility Registry System
RAATS..... RCRA Administrative Action Tracking System
DRYCLEANERS..... Drycleaner Listing
AIRS..... Permitted Airs Facility Listing
LEAD..... Environmental Lead Program Report Tracking Database
INDIAN RESERV..... Indian Reservations
SCRD DRYCLEANERS..... State Coalition for Remediation of Drycleaners Listing
PCB TRANSFORMER..... PCB Transformer Registration Database
COAL ASH EPA..... Coal Combustion Residues Surface Impoundments List
COAL ASH DOE..... Sleam-Electric Plan Operation Data

EDR PROPRIETARY RECORDS

EDR Proprietary Records

Manufactured Gas Plants..... EDR Proprietary Manufactured Gas Plants

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property. Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

EXECUTIVE SUMMARY

ADDITIONAL ENVIRONMENTAL RECORDS

Other Ascertainable Records

MINES: Mines Master Index File. The source of this database is the Dept. of Labor, Mine Safety and Health Administration.

A review of the MINES list, as provided by EDR, and dated 11/17/2009 has revealed that there is 1 MINES site within approximately 0.75 miles of the target property.

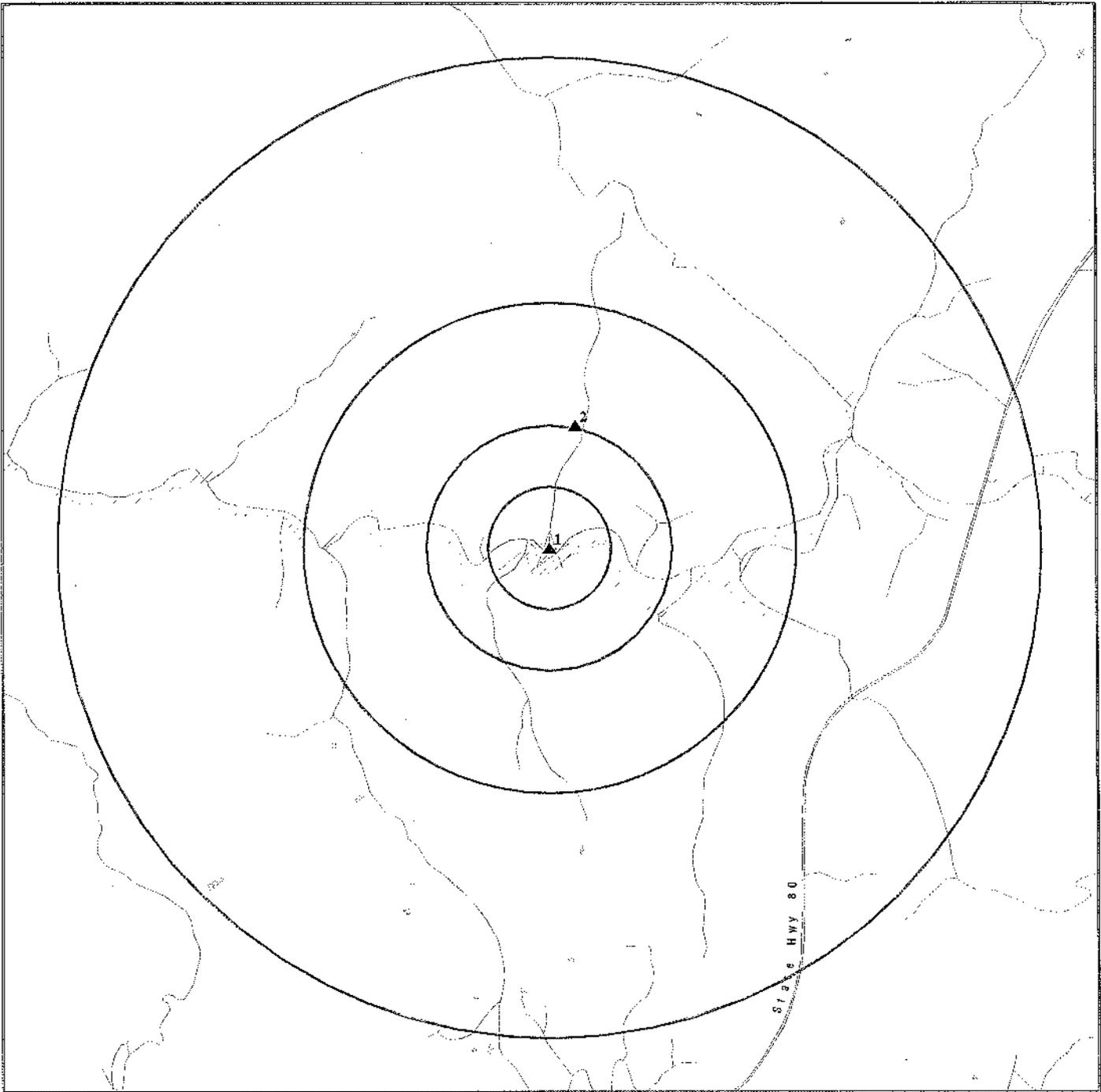
<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
JOHNNY EARL POTTER		NNE 1/2 - 1 (0.510 mi.)	2	7

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped:

<u>Site Name</u>	<u>Database(s)</u>
APPALACHIAN MINING - PLOOF TRUCKIN	SHWS
NAPIERS ASHLAND STA	UST, PSTEAF
5839 KY HWY 476	RCRA-NonGen, FINDS, SB193, UST, PSTEAF
WM THACKER GROCERY	UST, PSTEAF
KY MOUNTAIN POWER LLC	AIRS
NAPIER'S ASHLAND	SB193
THACKER GROG	SB193
TRUS JOIST MACMILLAN	SWF/LF
KY MOUNTAIN POWER LLC	SWF/LF
DON'S EXCAVATING	SWF/LF
TRUMBO PETROLEUM LLC	UST
WICKERS GULF	UST
RICES ASHLAND	UST
LITTLES SERVICE STATION	UST
MOUSIE GAS & MORE	UST
HWY 550 WILLFARM DR	RCRA-NonGen, FINDS
HWY 80 ON 1146	RCRA-CESQG, FINDS
TRUMBO PETROLEUM HOLDINGS LLC	NPDES
CONSOL OF KY INC	NPDES
CONSOL OF KY INC JONES FORK	NPDES
JONES FORK ELEM SCHOOL	NPDES
CONSOL OF KY INC	NPDES
CONSOL OF KY INC	NPDES
KY MOUNTAIN POWER LLC	NPDES
KY MOUNTAIN POWER US FILTER	NPDES

OVERVIEW MAP - 2699089.2s



- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ▲ Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites

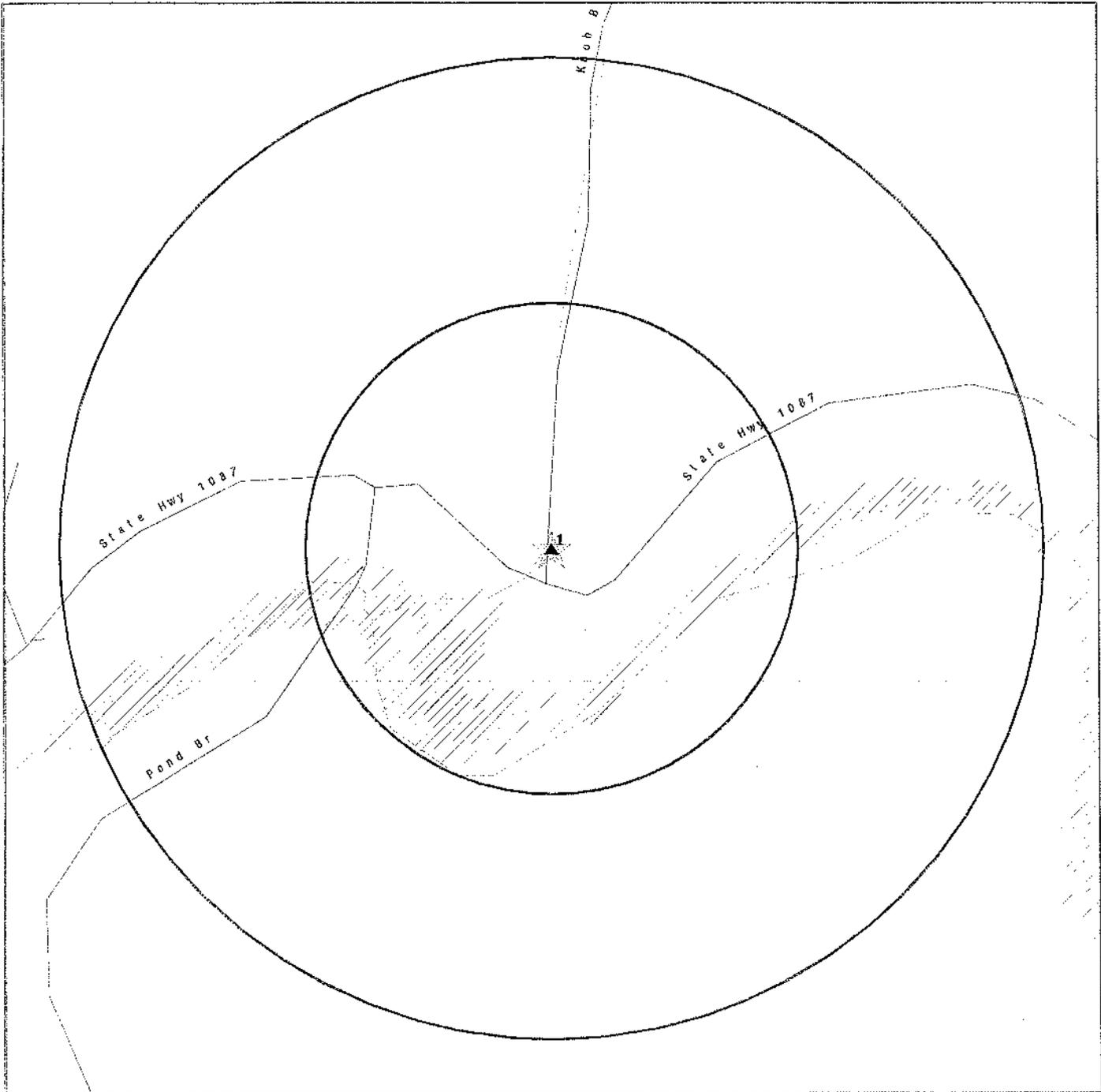
- ▲ Indian Reservations BIA
- ▲ Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Ball Creek WWTP Site
 ADDRESS: 2606 West Highway 1087
 Leburn KY 41831
 LAT/LONG: 37.3961 / 82.9897

CLIENT: R.M. Johnson Engineering, Inc.
 CONTACT: Stephen R. Harris, P
 INQUIRY #: 2699089.2s
 DATE: February 15, 2010 9:12 am

DETAIL MAP - 2699089.2s



- ✱ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ▲ Manufactured Gas Plants
- ⚡ Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

<p>SITE NAME: Ball Creek WWTP Site ADDRESS: 2606 West Highway 1087 Leburn KY 41831 LAT/LONG: 37.3961 / 82.9897</p>	<p>CLIENT: R.M. Johnson Engineering, Inc. CONTACT: Stephen R. Harris, P INQUIRY #: 2699089.2s DATE: February 15, 2010 9:12 am</p>
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MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
<i>Federal NPL site list</i>								
NPL		1.500	0	0	0	0	0	0
Proposed NPL		1.500	0	0	0	0	0	0
NPL LIENS		0.500	0	0	0	NR	NR	0
<i>Federal Delisted NPL site list</i>								
Delisted NPL		1.500	0	0	0	0	0	0
<i>Federal CERCLIS list</i>								
CERCLIS		1.000	0	0	0	0	NR	0
FEDERAL FACILITY		1.500	0	0	0	0	0	0
<i>Federal CERCLIS NFRAP site List</i>								
CERC-NFRAP		1.000	0	0	0	0	NR	0
<i>Federal RCRA CORRACTS facilities list</i>								
CORRACTS		1.500	0	0	0	0	0	0
<i>Federal RCRA non-CORRACTS TSD facilities list</i>								
RCRA-TSDF		1.000	0	0	0	0	NR	0
<i>Federal RCRA generators list</i>								
RCRA-LQG		0.750	0	0	0	0	NR	0
RCRA-SQG		0.750	0	0	0	0	NR	0
RCRA-CESQG		0.750	0	0	0	0	NR	0
<i>Federal institutional controls / engineering controls registries</i>								
US ENG CONTROLS		1.000	0	0	0	0	NR	0
US INST CONTROL		1.000	0	0	0	0	NR	0
<i>Federal ERNS list</i>								
ERNS		0.500	0	0	0	NR	NR	0
<i>State- and tribal - equivalent CERCLIS</i>								
SHWS		1.500	0	0	0	0	0	0
<i>State and tribal landfill and/or solid waste disposal site lists</i>								
SWF/LF		1.000	0	0	0	0	NR	0
<i>State and tribal leaking storage tank lists</i>								
SB193		1.000	0	0	0	0	NR	0
PSTEAF		1.000	0	0	0	0	NR	0
INDIAN LUST		1.000	0	0	0	0	NR	0
<i>State and tribal registered storage tank lists</i>								
UST		0.750	0	0	0	0	NR	0

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
INDIAN UST		0.750	0	0	0	0	NR	0
FEMA UST		0.750	0	0	0	0	NR	0
State and tribal institutional control / engineering control registries								
ENG CONTROLS		0.500	0	0	0	NR	NR	0
INST CONTROL		1.000	0	0	0	0	NR	0
State and tribal voluntary cleanup sites								
VCP		1.000	0	0	0	0	NR	0
INDIAN VCP		1.000	0	0	0	0	NR	0
State and tribal Brownfields sites								
BROWNFIELDS		1.000	0	0	0	0	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS		1.000	0	0	0	0	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
ODI		1.000	0	0	0	0	NR	0
DEBRIS REGION 9		1.000	0	0	0	0	NR	0
HIST LF		1.000	0	0	0	0	NR	0
SWRCY		1.000	0	0	0	0	NR	0
INDIAN ODI		1.000	0	0	0	0	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US CDL		0.500	0	0	0	NR	NR	0
CDL		0.500	0	0	0	NR	NR	0
US HIST CDL		0.500	0	0	0	NR	NR	0
Local Land Records								
LIENS 2		0.500	0	0	0	NR	NR	0
LUCIS		1.000	0	0	0	0	NR	0
Records of Emergency Release Reports								
HMIRS		0.500	0	0	0	NR	NR	0
Other Ascertainable Records								
RCRA-NonGen		0.750	0	0	0	0	NR	0
DOT OPS		0.500	0	0	0	NR	NR	0
DOD		1.500	0	0	0	0	0	0
FUDS		1.500	0	0	0	0	0	0
CONSENT		1.500	0	0	0	0	0	0
ROD		1.500	0	0	0	0	0	0
UMTRA		1.000	0	0	0	0	NR	0
MINES		0.750	0	0	0	1	NR	1

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
TRIS		0.500	0	0	0	NR	NR	0
TSCA		0.500	0	0	0	NR	NR	0
FTTS		0.500	0	0	0	NR	NR	0
HIST FTTS		0.500	0	0	0	NR	NR	0
SSTS		0.500	0	0	0	NR	NR	0
ICIS		0.500	0	0	0	NR	NR	0
PADS		0.500	0	0	0	NR	NR	0
MLTS		0.500	0	0	0	NR	NR	0
RADINFO		0.500	0	0	0	NR	NR	0
FINDS		0.500	0	0	0	NR	NR	0
RAATS		0.500	0	0	0	NR	NR	0
DRYCLEANERS		0.750	0	0	0	0	NR	0
NPDES	X	0.500	0	0	0	NR	NR	0
AIRS		0.500	0	0	0	NR	NR	0
LEAD		0.500	0	0	0	NR	NR	0
INDIAN RESERV		1.500	0	0	0	0	0	0
SCRD DRYCLEANERS		1.000	0	0	0	0	NR	0
PCB TRANSFORMER		0.500	0	0	0	NR	NR	0
COAL ASH EPA		1.000	0	0	0	0	NR	0
COAL ASH DOE		0.500	0	0	0	NR	NR	0

EDR PROPRIETARY RECORDS

EDR Proprietary Records

Manufactured Gas Plants		1.500	0	0	0	0	0	0
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NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
TRIS		0.500	0	0	0	NR	NR	0
TSCA		0.500	0	0	0	NR	NR	0
FTTS		0.500	0	0	0	NR	NR	0
HIST FTTS		0.500	0	0	0	NR	NR	0
SSTS		0.500	0	0	0	NR	NR	0
ICIS		0.500	0	0	0	NR	NR	0
PADS		0.500	0	0	0	NR	NR	0
MLTS		0.500	0	0	0	NR	NR	0
RADINFO		0.500	0	0	0	NR	NR	0
FINDS		0.500	0	0	0	NR	NR	0
RAATS		0.500	0	0	0	NR	NR	0
DRYCLEANERS		0.750	0	0	0	0	NR	0
NPDES	X	0.500	0	0	0	NR	NR	0
AIRS		0.500	0	0	0	NR	NR	0
LEAD		0.500	0	0	0	NR	NR	0
INDIAN RESERV		1.500	0	0	0	0	0	0
SCRD DRYCLEANERS		1.000	0	0	0	0	NR	0
PCB TRANSFORMER		0.500	0	0	0	NR	NR	0
COAL ASH EPA		1.000	0	0	0	0	NR	0
COAL ASH DOE		0.500	0	0	0	NR	NR	0

EDR PROPRIETARY RECORDS

EDR Proprietary Records

Manufactured Gas Plants		1.500	0	0	0	0	0	0
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NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

MAP FINDINGS

Map ID
Direction
Distance
Elevation

Site

Database(s) EDR ID Number
EPA ID Number

1 **BALL CREEK WWTP**
Target **KY 1087**
Property **VEST, KY 41772**

NPDES **S110072725**
 N/A

Actual:
1082 ft.

KY NPDES:

KY DES #:	KY0107956
Facility Addr 2:	Not reported
Facility Status:	ACTIVE
Inactive Date:	Not reported
Design Capacity:	Not reported
Fee Category:	PUB
SIC Code:	4941
Lat/Long:	Not reported
Lat/Long Method:	Not reported
USGS Hydrologic Basin Code:	Not reported
Facility Stream Segment:	Not reported
Facility Mileage Indicator:	Not reported
Basin Code:	514
Basin Code Description:	OR/KENTUCKY R.
DMR Contact:	LEWIS WARRIX
Mailing Address:	917 PERRY PARK RD
Mailing Address 2:	Not reported
Mailing City,St,Zip:	HARZARD, KY 41701
Permit Issued:	Not reported
Permit Expires:	Not reported
SIC Code Description:	WATER SUPPLY
Reveiving Waters:	KNOB BOTTOM RANCH
Major/Minor:	MINOR

2 **JOHNNY EARL POTTER**
NNE
1/2-1 **PIKE (County), KY**
0.510 mi.
2693 ft.

MINES **1011166638**
 N/A

Relative:
Higher

Actual:
1162 ft.

MINES:

Mine ID:	1515976
SIC code(s):	12110 00000 00000 00000 00000 00000
Entity name:	NO. 1 SURFACE
Company:	JOHNNY EARL POTTER
State FIPS code:	21
County FIPS code:	195
Status:	D
Status date:	19870529
Operation Class:	Coal Mining
Number of shops:	0
Number of plants:	0
Latitude:	37 24 12
Longitude:	082 59 16

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Databases(s)
BULAN	S107867473	TRUMBO PETROLEUM HOLDINGS LLC	5801 HWY 476	41722	NPDES
BULAN	U003132260	NAPIERS ASHLAND STA	HWY 476	41722	UST, PSTEAF
BULAN	S105701783	NAPIER'S ASHLAND	HWY 476	41722	SB193
BULAN	1004508757		HWY 80 ON 1146	41722	RCRA-CESQG, FINDS
BULAN	U004109011	TRUMBO PETROLEUM LLC	5801 KY HWY 476	41722	UST
BULAN	1001817187		5839 KY HWY 476	41722	RCRA-NonGen, FINDS, SB193, UST, PSTEAF
BULAN	S107603162	TRUS JOIST MACMILLAN	STRIP MINE 1	41722	SWF/LF
LEBURN	U003201446	WM THACKER GROCERY	HWY 550	41831	UST, PSTEAF
LEBURN	S105701643	THACKER GROC	HWY 550	41831	SB193
LEBURN	1001219585		HWY 550 WILL FARM DR	41831	RCRA-NonGen, FINDS
MOUSIE	U001182739	WICKERS GULF	HWY 550	41839	UST
MOUSIE	U003132119	RICES ASHLAND	HWY 550	41839	UST
MOUSIE	U003201343	LITTLES SERVICE STATION	RT 550	41839	UST
MOUSIE	U003415506	MOUSIE GAS & MORE	9875 E HWY 550	41839	NPDES
MOUSIE	S108760481	CONSOL OF KY INC	KY HWY 550 JCT	41839	NPDES
MOUSIE	S108909783	CONSOL OF KY INC JONES FORK	KY HWY 550	41839	NPDES
MOUSIE	S108491071	JONES FORK ELEM SCHOOL	9795 KY HWY 550 E	41839	NPDES
MOUSIE	S108760656	CONSOL OF KY INC	07 MI NW OF KY HWY 550 JCT	41831	NPDES
SOFT SHELL	S108760499	CONSOL OF KY INC	RT 80 & RT 2029	41831	NPDES
TALCUM	S108089794	KY MOUNTAIN POWER LLC	6626 KY HWY 80 W	41722	AIRS
TALCUM	S107865850	KY MOUNTAIN POWER LLC	6626 W HWY 80	41722	NPDES
TALCUM	S107865851	KY MOUNTAIN POWER US FILTER	6626 W HWY 80	41722	NPDES
TALCUM	S107467045	APPALACHIAN MINING - PLOOF TRUCKIN	KY HWY 80	41722	SHWS
TALCUM	S107602600	KY MOUNTAIN POWER LLC	6626 W KY HWY 80	41722	SWF/LF
TALCUM	S107602303	DON'S EXCAVATING	97 SHEEPSHEAD RD	41722	SWF/LF

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 11/01/2009	Source: EPA
Date Data Arrived at EDR: 11/13/2009	Telephone: N/A
Date Made Active in Reports: 01/11/2010	Last EDR Contact: 01/14/2010
Number of Days to Update: 59	Next Scheduled EDR Contact: 04/26/2010
	Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 11/01/2009	Source: EPA
Date Data Arrived at EDR: 11/13/2009	Telephone: N/A
Date Made Active in Reports: 01/11/2010	Last EDR Contact: 01/14/2010
Number of Days to Update: 59	Next Scheduled EDR Contact: 04/26/2010
	Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991	Source: EPA
Date Data Arrived at EDR: 02/02/1994	Telephone: 202-564-4267
Date Made Active in Reports: 03/30/1994	Last EDR Contact: 08/17/2009
Number of Days to Update: 56	Next Scheduled EDR Contact: 11/16/2009
	Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal Delisted NPL site list

DELISTED NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 11/01/2009	Source: EPA
Date Data Arrived at EDR: 11/13/2009	Telephone: N/A
Date Made Active in Reports: 01/11/2010	Last EDR Contact: 01/14/2010
Number of Days to Update: 59	Next Scheduled EDR Contact: 04/26/2010
	Data Release Frequency: Quarterly

Federal CERCLIS list

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 06/30/2009	Source: EPA
Date Data Arrived at EDR: 08/11/2009	Telephone: 703-412-9810
Date Made Active in Reports: 09/21/2009	Last EDR Contact: 02/09/2010
Number of Days to Update: 41	Next Scheduled EDR Contact: 04/12/2010
	Data Release Frequency: Quarterly

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of NPL and Base Realignment & Closure sites found in the CERCLIS database where FERRO is involved in cleanup projects.

Date of Government Version: 06/23/2009	Source: Environmental Protection Agency
Date Data Arrived at EDR: 01/15/2010	Telephone: 703-603-8704
Date Made Active in Reports: 02/10/2010	Last EDR Contact: 01/15/2010
Number of Days to Update: 26	Next Scheduled EDR Contact: 04/26/2010
	Data Release Frequency: Varies

Federal CERCLIS NFRAP site List

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 06/23/2009	Source: EPA
Date Data Arrived at EDR: 09/02/2009	Telephone: 703-412-9810
Date Made Active in Reports: 09/21/2009	Last EDR Contact: 11/24/2009
Number of Days to Update: 19	Next Scheduled EDR Contact: 03/15/2010
	Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 12/11/2009	Source: EPA
Date Data Arrived at EDR: 12/29/2009	Telephone: 800-424-9346
Date Made Active in Reports: 02/10/2010	Last EDR Contact: 11/16/2009
Number of Days to Update: 43	Next Scheduled EDR Contact: 03/01/2010
	Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 12/11/2009	Source: Environmental Protection Agency
Date Data Arrived at EDR: 12/17/2009	Telephone: (404) 562-8651
Date Made Active in Reports: 01/11/2010	Last EDR Contact: 01/15/2010
Number of Days to Update: 25	Next Scheduled EDR Contact: 04/19/2010
	Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/11/2009	Source: Environmental Protection Agency
Date Data Arrived at EDR: 12/17/2009	Telephone: (404) 562-8651
Date Made Active in Reports: 01/11/2010	Last EDR Contact: 01/15/2010
Number of Days to Update: 25	Next Scheduled EDR Contact: 04/19/2010
	Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 12/11/2009	Source: Environmental Protection Agency
Date Data Arrived at EDR: 12/17/2009	Telephone: (404) 562-8651
Date Made Active in Reports: 01/11/2010	Last EDR Contact: 01/15/2010
Number of Days to Update: 25	Next Scheduled EDR Contact: 04/19/2010
	Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/11/2009	Source: Environmental Protection Agency
Date Data Arrived at EDR: 12/17/2009	Telephone: (404) 562-8651
Date Made Active in Reports: 01/11/2010	Last EDR Contact: 01/15/2010
Number of Days to Update: 25	Next Scheduled EDR Contact: 04/19/2010
	Data Release Frequency: Varies

Federal Institutional controls / engineering controls registries

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 10/01/2009	Source: Environmental Protection Agency
Date Data Arrived at EDR: 10/09/2009	Telephone: 703-603-0695
Date Made Active in Reports: 11/09/2009	Last EDR Contact: 12/10/2009
Number of Days to Update: 31	Next Scheduled EDR Contact: 03/29/2010
	Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 10/01/2009	Source: Environmental Protection Agency
Date Data Arrived at EDR: 10/09/2009	Telephone: 703-603-0695
Date Made Active in Reports: 11/09/2009	Last EDR Contact: 12/10/2009
Number of Days to Update: 31	Next Scheduled EDR Contact: 03/29/2010
	Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/2009	Source: National Response Center, United States Coast Guard
Date Data Arrived at EDR: 01/22/2010	Telephone: 202-267-2180
Date Made Active in Reports: 02/11/2010	Last EDR Contact: 01/15/2010
Number of Days to Update: 20	Next Scheduled EDR Contact: 04/19/2010
	Data Release Frequency: Annually

State- and tribal - equivalent CERCLIS

SHWS: State Leads List

State Hazardous Waste Sites. State hazardous waste site records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. Available information varies by state.

Date of Government Version: 01/04/2010	Source: Department of Environmental Protection
Date Data Arrived at EDR: 01/05/2010	Telephone: 502-564-6716
Date Made Active in Reports: 01/19/2010	Last EDR Contact: 12/04/2009
Number of Days to Update: 14	Next Scheduled EDR Contact: 03/22/2010
	Data Release Frequency: Quarterly

State and tribal landfill and/or solid waste disposal site lists

SWF/LF: Solid Waste Facilities List

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 01/14/2010	Source: Department of Environmental Protection
Date Data Arrived at EDR: 01/15/2010	Telephone: 502-564-6716
Date Made Active in Reports: 02/01/2010	Last EDR Contact: 02/08/2010
Number of Days to Update: 17	Next Scheduled EDR Contact: 05/24/2010
	Data Release Frequency: Semi-Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

State and tribal leaking storage tank lists

SB193: SB193 Branch Site Inventory List

The inventory indicates facilities that have performed permanent closure activities at a regulated underground storage tank facility and have known soil and/or groundwater contamination.

Date of Government Version: 09/05/2006	Source: Department of Environmental Protection
Date Data Arrived at EDR: 09/13/2006	Telephone: 502-564-5981
Date Made Active in Reports: 10/18/2006	Last EDR Contact: 01/18/2010
Number of Days to Update: 35	Next Scheduled EDR Contact: 05/03/2010
	Data Release Frequency: No Update Planned

PSTEAF: Facility Ranking List

The Underground Storage Tank Branch (USTB) has ranked all PSTEAF reimbursable facilities requiring corrective action, in accordance with 401 KAR 42:290. Directive letters will be issued on the basis of facility ranking and available PSTEAF funding in sequential order as ranked. For example, Rank 2 facilities will be issued directives before Rank 3 facilities.

Date of Government Version: 01/01/2010	Source: Department of Environmental Protection
Date Data Arrived at EDR: 01/19/2010	Telephone: 502-564-5981
Date Made Active in Reports: 02/01/2010	Last EDR Contact: 01/19/2010
Number of Days to Update: 13	Next Scheduled EDR Contact: 05/03/2010
	Data Release Frequency: Quarterly

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land

A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 02/19/2009	Source: EPA Region 1
Date Data Arrived at EDR: 02/19/2009	Telephone: 617-918-1313
Date Made Active in Reports: 03/16/2009	Last EDR Contact: 02/01/2010
Number of Days to Update: 25	Next Scheduled EDR Contact: 05/17/2010
	Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 03/24/2009	Source: EPA Region 7
Date Data Arrived at EDR: 05/20/2009	Telephone: 913-551-7003
Date Made Active in Reports: 06/17/2009	Last EDR Contact: 02/01/2010
Number of Days to Update: 28	Next Scheduled EDR Contact: 05/17/2010
	Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 11/24/2009	Source: Environmental Protection Agency
Date Data Arrived at EDR: 11/25/2009	Telephone: 415-972-3372
Date Made Active in Reports: 12/16/2009	Last EDR Contact: 02/01/2010
Number of Days to Update: 21	Next Scheduled EDR Contact: 05/17/2010
	Data Release Frequency: Quarterly

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 12/07/2009	Source: EPA Region 4
Date Data Arrived at EDR: 12/09/2009	Telephone: 404-562-8677
Date Made Active in Reports: 12/16/2009	Last EDR Contact: 02/01/2010
Number of Days to Update: 7	Next Scheduled EDR Contact: 05/17/2010
	Data Release Frequency: Semi-Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 11/12/2009	Source: EPA Region 6
Date Data Arrived at EDR: 11/12/2009	Telephone: 214-665-6597
Date Made Active in Reports: 12/16/2009	Last EDR Contact: 02/01/2010
Number of Days to Update: 34	Next Scheduled EDR Contact: 05/17/2010
	Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 12/01/2009	Source: EPA Region 8
Date Data Arrived at EDR: 12/01/2009	Telephone: 303-312-6271
Date Made Active in Reports: 12/16/2009	Last EDR Contact: 02/01/2010
Number of Days to Update: 15	Next Scheduled EDR Contact: 05/17/2010
	Data Release Frequency: Quarterly

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 11/10/2009	Source: EPA Region 10
Date Data Arrived at EDR: 11/12/2009	Telephone: 206-553-2857
Date Made Active in Reports: 12/16/2009	Last EDR Contact: 02/01/2010
Number of Days to Update: 34	Next Scheduled EDR Contact: 05/17/2010
	Data Release Frequency: Quarterly

State and tribal registered storage tank lists

UST: Underground Storage Tank Database

Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 12/28/2009	Source: Department of Environmental Protection
Date Data Arrived at EDR: 12/31/2009	Telephone: 502-564-5981
Date Made Active in Reports: 01/18/2010	Last EDR Contact: 12/07/2009
Number of Days to Update: 18	Next Scheduled EDR Contact: 03/22/2010
	Data Release Frequency: Quarterly

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 11/12/2009	Source: EPA Region 9
Date Data Arrived at EDR: 11/20/2009	Telephone: 415-972-3368
Date Made Active in Reports: 12/16/2009	Last EDR Contact: 02/01/2010
Number of Days to Update: 26	Next Scheduled EDR Contact: 05/17/2010
	Data Release Frequency: Quarterly

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 12/01/2009	Source: EPA Region 8
Date Data Arrived at EDR: 12/01/2009	Telephone: 303-312-6137
Date Made Active in Reports: 12/16/2009	Last EDR Contact: 02/01/2010
Number of Days to Update: 15	Next Scheduled EDR Contact: 05/17/2010
	Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 02/19/2009	Source: EPA, Region 1
Date Data Arrived at EDR: 02/19/2009	Telephone: 617-918-1313
Date Made Active in Reports: 03/16/2009	Last EDR Contact: 02/01/2010
Number of Days to Update: 25	Next Scheduled EDR Contact: 05/17/2010
	Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 12/07/2009	Source: EPA Region 4
Date Data Arrived at EDR: 12/09/2009	Telephone: 404-562-9424
Date Made Active in Reports: 12/16/2009	Last EDR Contact: 02/01/2010
Number of Days to Update: 7	Next Scheduled EDR Contact: 05/17/2010
	Data Release Frequency: Semi-Annually

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 11/05/2009	Source: EPA Region 5
Date Data Arrived at EDR: 11/05/2009	Telephone: 312-886-6136
Date Made Active in Reports: 12/16/2009	Last EDR Contact: 02/01/2010
Number of Days to Update: 41	Next Scheduled EDR Contact: 05/17/2010
	Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 11/12/2009	Source: EPA Region 6
Date Data Arrived at EDR: 11/12/2009	Telephone: 214-665-7591
Date Made Active in Reports: 12/16/2009	Last EDR Contact: 02/01/2010
Number of Days to Update: 34	Next Scheduled EDR Contact: 05/17/2010
	Data Release Frequency: Semi-Annually

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 04/01/2008	Source: EPA Region 7
Date Data Arrived at EDR: 12/30/2008	Telephone: 913-551-7003
Date Made Active in Reports: 03/16/2009	Last EDR Contact: 02/01/2010
Number of Days to Update: 76	Next Scheduled EDR Contact: 05/17/2010
	Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 11/10/2009	Source: EPA Region 10
Date Data Arrived at EDR: 11/12/2009	Telephone: 206-553-2857
Date Made Active in Reports: 12/16/2009	Last EDR Contact: 02/17/2010
Number of Days to Update: 34	Next Scheduled EDR Contact: 05/17/2010
	Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

FEMA UST: Underground Storage Tank Listing

A listing of all FEMA owned underground storage tanks.

Date of Government Version: 10/01/2009	Source: FEMA
Date Data Arrived at EDR: 10/29/2009	Telephone: 202-646-5797
Date Made Active in Reports: 12/16/2009	Last EDR Contact: 01/18/2010
Number of Days to Update: 48	Next Scheduled EDR Contact: 05/03/2010
	Data Release Frequency: Varies

State and tribal institutional control / engineering control registries

ENG CONTROLS: Engineering Controls Site Listing

A listing of sites that use engineering controls.

Date of Government Version: 01/04/2010	Source: Department of Environmental Protection
Date Data Arrived at EDR: 01/15/2010	Telephone: 502-564-6716
Date Made Active in Reports: 02/01/2010	Last EDR Contact: 12/04/2009
Number of Days to Update: 17	Next Scheduled EDR Contact: 03/22/2010
	Data Release Frequency: Varies

INST CONTROL: State Superfund Database

A list of closed sites in the State Superfund Database. Institutional controls would be in place at any site that uses Contained or Managed as a Closure Option.

Date of Government Version: 12/30/2009	Source: Department of Environmental Protection
Date Data Arrived at EDR: 12/31/2009	Telephone: 502-564-6716
Date Made Active in Reports: 01/19/2010	Last EDR Contact: 12/04/2009
Number of Days to Update: 19	Next Scheduled EDR Contact: 03/22/2010
	Data Release Frequency: Varies

State and tribal voluntary cleanup sites

VCP: Voluntary Cleanup Program Sites

Sites that have been accepted into the Voluntary Cleanup Program or have submitted an application.

Date of Government Version: 12/30/2009	Source: Department of Environmental Protection
Date Data Arrived at EDR: 12/31/2009	Telephone: 502-564-6716
Date Made Active in Reports: 01/19/2010	Last EDR Contact: 12/04/2009
Number of Days to Update: 19	Next Scheduled EDR Contact: 03/22/2010
	Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008	Source: EPA, Region 7
Date Data Arrived at EDR: 04/22/2008	Telephone: 913-551-7365
Date Made Active in Reports: 05/19/2008	Last EDR Contact: 04/20/2009
Number of Days to Update: 27	Next Scheduled EDR Contact: 07/20/2009
	Data Release Frequency: Varies

INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 04/02/2008	Source: EPA, Region 1
Date Data Arrived at EDR: 04/22/2008	Telephone: 617-918-1102
Date Made Active in Reports: 05/19/2008	Last EDR Contact: 01/05/2010
Number of Days to Update: 27	Next Scheduled EDR Contact: 04/19/2010
	Data Release Frequency: Varies

State and tribal Brownfields sites

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

BROWNFIELDS: Kentucky Brownfield Inventory

The Kentucky Brownfield Program has created an inventory of brownfield sites in order to market the properties to those interested in brownfield redevelopment. The Kentucky Brownfield Program is working to promote the redevelopment of these sites by helping to remove barriers that prevent reuse, providing useful information to communities, developers and the public and encouraging a climate that fosters redevelopment of contaminated sites.

Date of Government Version: 11/20/2009	Source: Division of Compliance Assistance
Date Data Arrived at EDR: 11/20/2009	Telephone: 502-564-0323
Date Made Active in Reports: 12/01/2009	Last EDR Contact: 01/27/2010
Number of Days to Update: 11	Next Scheduled EDR Contact: 05/10/2010
	Data Release Frequency: Varies

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites

Included in the listing are brownfields properties addresses by Cooperative Agreement Recipients and brownfields properties addressed by Targeted Brownfields Assessments. Targeted Brownfields Assessments-EPA's Targeted Brownfields Assessments (TBA) program is designed to help states, tribes, and municipalities--especially those without EPA Brownfields Assessment Demonstration Pilots--minimize the uncertainties of contamination often associated with brownfields. Under the TBA program, EPA provides funding and/or technical assistance for environmental assessments at brownfields sites throughout the country. Targeted Brownfields Assessments supplement and work with other efforts under EPA's Brownfields Initiative to promote cleanup and redevelopment of brownfields. Cooperative Agreement Recipients-States, political subdivisions, territories, and Indian tribes become Brownfields Cleanup Revolving Loan Fund (BCRLF) cooperative agreement recipients when they enter into BCRLF cooperative agreements with the U.S. EPA. EPA selects BCRLF cooperative agreement recipients based on a proposal and application process. BCRLF cooperative agreement recipients must use EPA funds provided through BCRLF cooperative agreement for specified brownfields-related cleanup activities.

Date of Government Version: 10/01/2009	Source: Environmental Protection Agency
Date Data Arrived at EDR: 11/04/2009	Telephone: 202-566-2777
Date Made Active in Reports: 12/16/2009	Last EDR Contact: 01/07/2010
Number of Days to Update: 42	Next Scheduled EDR Contact: 04/12/2010
	Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985	Source: Environmental Protection Agency
Date Data Arrived at EDR: 08/09/2004	Telephone: 800-424-9346
Date Made Active in Reports: 09/17/2004	Last EDR Contact: 06/09/2004
Number of Days to Update: 39	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009	Source: EPA, Region 9
Date Data Arrived at EDR: 05/07/2009	Telephone: 415-972-3336
Date Made Active in Reports: 09/21/2009	Last EDR Contact: 01/07/2010
Number of Days to Update: 137	Next Scheduled EDR Contact: 03/22/2010
	Data Release Frequency: Varies

SWRCY: Recycling Facilities

A listing of recycling facilities located in the state of Kentucky.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Local Land Records

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 11/03/2009	Source: Environmental Protection Agency
Date Data Arrived at EDR: 11/05/2009	Telephone: 202-564-6023
Date Made Active in Reports: 12/16/2009	Last EDR Contact: 02/01/2010
Number of Days to Update: 41	Next Scheduled EDR Contact: 05/17/2010
	Data Release Frequency: Varies

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 12/09/2005	Source: Department of the Navy
Date Data Arrived at EDR: 12/11/2006	Telephone: 843-820-7326
Date Made Active in Reports: 01/11/2007	Last EDR Contact: 11/20/2009
Number of Days to Update: 31	Next Scheduled EDR Contact: 03/08/2010
	Data Release Frequency: Varies

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 12/31/2009	Source: U.S. Department of Transportation
Date Data Arrived at EDR: 01/06/2010	Telephone: 202-366-4555
Date Made Active in Reports: 02/10/2010	Last EDR Contact: 01/06/2010
Number of Days to Update: 35	Next Scheduled EDR Contact: 04/12/2010
	Data Release Frequency: Annually

Other Ascertainable Records

RCRA-NonGen: RCRA - Non Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 12/11/2009	Source: Environmental Protection Agency
Date Data Arrived at EDR: 12/17/2009	Telephone: (404) 562-8651
Date Made Active in Reports: 01/11/2010	Last EDR Contact: 01/15/2010
Number of Days to Update: 25	Next Scheduled EDR Contact: 04/19/2010
	Data Release Frequency: Varies

DOT OPS: Incident and Accident Data

Department of Transportation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 10/13/2009	Source: Department of Transportation, Office of Pipeline Safety
Date Data Arrived at EDR: 11/10/2009	Telephone: 202-366-4595
Date Made Active in Reports: 12/16/2009	Last EDR Contact: 02/09/2010
Number of Days to Update: 36	Next Scheduled EDR Contact: 05/24/2010
	Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 703-692-8801
Last EDR Contact: 01/19/2010
Next Scheduled EDR Contact: 05/03/2010
Data Release Frequency: Semi-Annually

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 12/31/2008
Date Data Arrived at EDR: 09/30/2009
Date Made Active in Reports: 12/01/2009
Number of Days to Update: 62

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 12/18/2009
Next Scheduled EDR Contact: 03/29/2010
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 08/03/2009
Date Data Arrived at EDR: 10/27/2009
Date Made Active in Reports: 11/09/2009
Number of Days to Update: 13

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 01/05/2010
Next Scheduled EDR Contact: 04/19/2010
Data Release Frequency: Varies

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 12/01/2009
Date Data Arrived at EDR: 12/15/2009
Date Made Active in Reports: 01/19/2010
Number of Days to Update: 35

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 12/15/2009
Next Scheduled EDR Contact: 03/29/2010
Data Release Frequency: Annually

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 01/05/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 05/08/2009
Number of Days to Update: 1

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 12/23/2009
Next Scheduled EDR Contact: 03/15/2010
Data Release Frequency: Varies

MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 11/17/2009
Date Data Arrived at EDR: 12/08/2009
Date Made Active in Reports: 01/19/2010
Number of Days to Update: 42

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 12/08/2009
Next Scheduled EDR Contact: 03/22/2010
Data Release Frequency: Semi-Annually

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/31/2007
Date Data Arrived at EDR: 04/09/2009
Date Made Active in Reports: 06/17/2009
Number of Days to Update: 69

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 01/13/2010
Next Scheduled EDR Contact: 03/15/2010
Data Release Frequency: Annually

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2002
Date Data Arrived at EDR: 04/14/2006
Date Made Active in Reports: 05/30/2006
Number of Days to Update: 46

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 01/20/2010
Next Scheduled EDR Contact: 04/12/2010
Data Release Frequency: Every 4 Years

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 12/14/2009
Next Scheduled EDR Contact: 03/15/2010
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 12/14/2009
Next Scheduled EDR Contact: 03/15/2010
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2008
Date Data Arrived at EDR: 01/06/2010
Date Made Active in Reports: 02/10/2010
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 02/01/2010
Next Scheduled EDR Contact: 05/17/2010
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/10/2009
Date Data Arrived at EDR: 11/18/2009
Date Made Active in Reports: 01/19/2010
Number of Days to Update: 62

Source: Environmental Protection Agency
Telephone: 202-564-5086
Last EDR Contact: 12/23/2009
Next Scheduled EDR Contact: 04/12/2010
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 09/01/2009
Date Data Arrived at EDR: 10/21/2009
Date Made Active in Reports: 12/01/2009
Number of Days to Update: 41

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 01/22/2010
Next Scheduled EDR Contact: 05/03/2010
Data Release Frequency: Annually

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 12/24/2009
Date Data Arrived at EDR: 12/31/2009
Date Made Active in Reports: 02/10/2010
Number of Days to Update: 41

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 12/14/2009
Next Scheduled EDR Contact: 03/29/2010
Data Release Frequency: Quarterly

RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 01/12/2010
Date Data Arrived at EDR: 01/13/2010
Date Made Active in Reports: 02/10/2010
Number of Days to Update: 28

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 01/13/2010
Next Scheduled EDR Contact: 04/26/2010
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 10/19/2009	Source: EPA
Date Data Arrived at EDR: 10/22/2009	Telephone: (404) 562-9900
Date Made Active in Reports: 12/01/2009	Last EDR Contact: 12/10/2009
Number of Days to Update: 40	Next Scheduled EDR Contact: 03/29/2010
	Data Release Frequency: Quarterly

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995	Source: EPA
Date Data Arrived at EDR: 07/03/1995	Telephone: 202-564-4104
Date Made Active in Reports: 08/07/1995	Last EDR Contact: 06/02/2008
Number of Days to Update: 35	Next Scheduled EDR Contact: 09/01/2008
	Data Release Frequency: No Update Planned

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2007	Source: EPA/NTIS
Date Data Arrived at EDR: 02/19/2009	Telephone: 800-424-9346
Date Made Active in Reports: 05/22/2009	Last EDR Contact: 11/20/2009
Number of Days to Update: 92	Next Scheduled EDR Contact: 03/05/2010
	Data Release Frequency: Biennially

DRYCLEANERS: Drycleaner Listing

A listing of drycleaner facility locations.

Date of Government Version: 12/07/2009	Source: Department of Environmental Protection
Date Data Arrived at EDR: 12/21/2009	Telephone: 502-573-3382
Date Made Active in Reports: 01/19/2010	Last EDR Contact: 12/07/2009
Number of Days to Update: 29	Next Scheduled EDR Contact: 03/22/2010
	Data Release Frequency: Varies

NPDES: Permitted Facility Listing

A listing of permitted wastewater facilities.

Date of Government Version: 12/01/2009	Source: Department of Environmental Protection
Date Data Arrived at EDR: 12/09/2009	Telephone: 502-564-3410
Date Made Active in Reports: 01/19/2010	Last EDR Contact: 11/16/2009
Number of Days to Update: 41	Next Scheduled EDR Contact: 03/01/2010
	Data Release Frequency: Varies

AIRS: Permitted Airs Facility Listing

A listing of permitted Airs facilities.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/07/2009
Date Data Arrived at EDR: 12/09/2009
Date Made Active in Reports: 01/19/2010
Number of Days to Update: 41

Source: Department of Environmental Protection
Telephone: 502-573-3382
Last EDR Contact: 12/07/2009
Next Scheduled EDR Contact: 03/22/2010
Data Release Frequency: Varies

LEAD: Environmental Lead Program Report Tracking Database Lead Report Tracking Database

Date of Government Version: 12/12/2008
Date Data Arrived at EDR: 02/27/2009
Date Made Active in Reports: 04/22/2009
Number of Days to Update: 54

Source: Department of Public Health
Telephone: 502-564-4537
Last EDR Contact: 11/30/2009
Next Scheduled EDR Contact: 03/01/2010
Data Release Frequency: Varies

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 12/08/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 34

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 01/19/2010
Next Scheduled EDR Contact: 05/03/2010
Data Release Frequency: Semi-Annually

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 11/16/2009
Date Data Arrived at EDR: 11/16/2009
Date Made Active in Reports: 01/19/2010
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 02/08/2010
Next Scheduled EDR Contact: 05/10/2010
Data Release Frequency: Varies

FEDLAND: Federal and Indian Lands

Federally and Indian administered lands of the United States. Lands included are administered by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 01/19/2010
Next Scheduled EDR Contact: 05/03/2010
Data Release Frequency: N/A

PCB TRANSFORMER: PCB Transformer Registration Database

The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 01/01/2008
Date Data Arrived at EDR: 02/18/2009
Date Made Active in Reports: 05/29/2009
Number of Days to Update: 100

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 11/13/2009
Next Scheduled EDR Contact: 02/15/2010
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 11/09/2009	Source: Environmental Protection Agency
Date Data Arrived at EDR: 12/18/2009	Telephone: N/A
Date Made Active in Reports: 02/10/2010	Last EDR Contact: 12/15/2009
Number of Days to Update: 54	Next Scheduled EDR Contact: 03/29/2010
	Data Release Frequency: Varies

COAL ASH DOE: Steam-Electric Plan Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005	Source: Department of Energy
Date Data Arrived at EDR: 08/07/2009	Telephone: 202-586-8719
Date Made Active in Reports: 10/22/2009	Last EDR Contact: 01/27/2010
Number of Days to Update: 76	Next Scheduled EDR Contact: 05/03/2010
	Data Release Frequency: Varies

EDR PROPRIETARY RECORDS

EDR Proprietary Records

Manufactured Gas Plants: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A	Source: EDR, Inc.
Date Data Arrived at EDR: N/A	Telephone: N/A
Date Made Active in Reports: N/A	Last EDR Contact: N/A
Number of Days to Update: N/A	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data

Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 12/31/2007	Source: Department of Environmental Protection
Date Data Arrived at EDR: 08/26/2009	Telephone: 860-424-3375
Date Made Active in Reports: 09/11/2009	Last EDR Contact: 11/24/2009
Number of Days to Update: 16	Next Scheduled EDR Contact: 03/08/2010
	Data Release Frequency: Annually

NJ MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2009	Source: Department of Environmental Protection
Date Data Arrived at EDR: 01/20/2010	Telephone: N/A
Date Made Active in Reports: 02/05/2010	Last EDR Contact: 01/20/2010
Number of Days to Update: 16	Next Scheduled EDR Contact: 05/03/2010
	Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

NY MANIFEST: Facility and Manifest Data

Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 10/27/2009
Date Data Arrived at EDR: 11/10/2009
Date Made Active in Reports: 12/09/2009
Number of Days to Update: 29

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 02/11/2010
Next Scheduled EDR Contact: 05/24/2010
Data Release Frequency: Annually

PA MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2008
Date Data Arrived at EDR: 12/01/2009
Date Made Active in Reports: 12/14/2009
Number of Days to Update: 13

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 11/23/2009
Next Scheduled EDR Contact: 03/08/2010
Data Release Frequency: Annually

RI MANIFEST: Manifest information

Hazardous waste manifest information

Date of Government Version: 06/01/2009
Date Data Arrived at EDR: 06/12/2009
Date Made Active in Reports: 06/29/2009
Number of Days to Update: 17

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 02/01/2010
Next Scheduled EDR Contact: 03/15/2010
Data Release Frequency: Annually

WI MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2008
Date Data Arrived at EDR: 07/17/2009
Date Made Active in Reports: 08/10/2009
Number of Days to Update: 24

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 12/21/2009
Next Scheduled EDR Contact: 04/05/2010
Data Release Frequency: Annually

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Electric Power Transmission Line Data

Source: PennWell Corporation
Telephone: (800) 823-6277

This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:

Source: American Hospital Association, Inc.
Telephone: 312-260-5991

The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing

Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000

A listing of hospitals with Medicare provider number, produced by Centers for Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Nursing Homes

Source: National Institutes of Health

Telephone: 301-594-6248

Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools

Source: National Center for Education Statistics

Telephone: 202-502-7300

The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools

Source: National Center for Education Statistics

Telephone: 202-502-7300

The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Certified Child Care Homes

Source: Cabinet for Families & Children

Telephone: 502-564-7130

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2009 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Polygon Features

Source: Environmental Protection & Public Protection Cabinet

Telephone: 502-564-5174

Scanned Digital USGS 7.5' Topographic Map (DRG)

Source: United States Geologic Survey

A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

STREET AND ADDRESS INFORMATION

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GEOCHECK® - PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

BALL CREEK WWTP SITE
2606 WEST HIGHWAY 1087
LEBURN, KY 41831

TARGET PROPERTY COORDINATES

Latitude (North):	37.39610 - 37° 23' 46.0"
Longitude (West):	82.9897 - 82° 59' 22.9"
Universal Transverse Mercator:	Zone 17
UTM X (Meters):	323873.2
UTM Y (Meters):	4140468.0
Elevation:	1082 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	37082-D8 HANDSHOE, KY
Most Recent Revision:	1992
West Map:	37083-D1 VEST, KY
Most Recent Revision:	1992

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

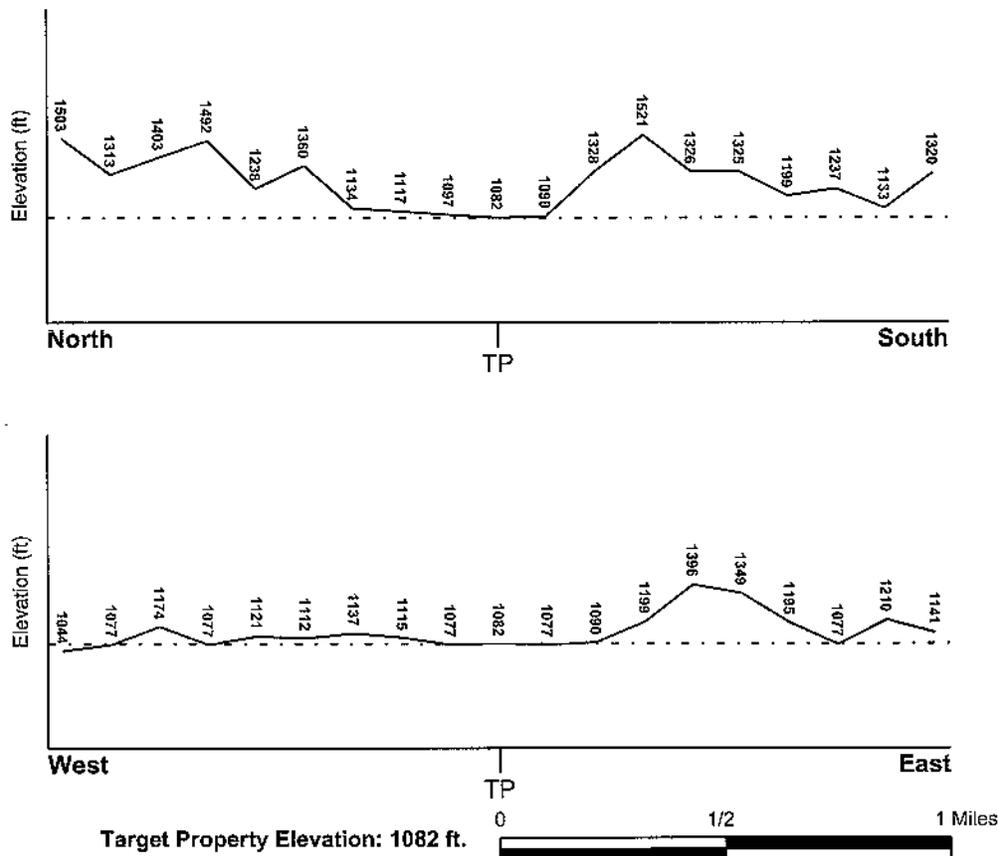
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General NNE

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Target Property County
KNOTT, KY

FEMA Flood Electronic Data
YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property:

21119C - FEMA DFIRM Flood data

Additional Panels in search area:

Not Reported

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property
HANDSHOE

NWI Electronic Data Coverage
YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

<u>MAP ID</u>	<u>LOCATION FROM TP</u>	<u>GENERAL DIRECTION GROUNDWATER FLOW</u>
Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

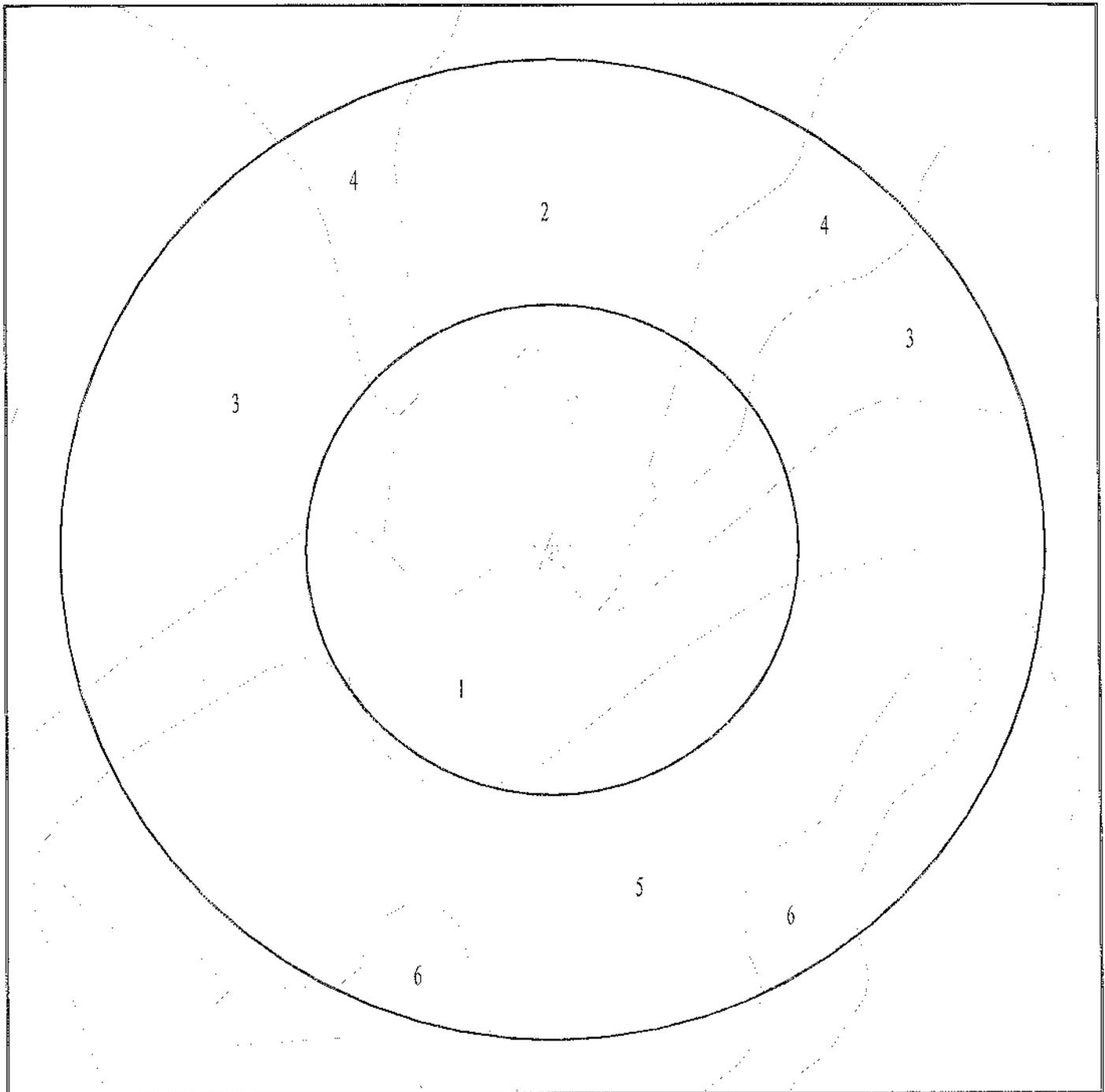
ROCK STRATIGRAPHIC UNIT

GEOLOGIC AGE IDENTIFICATION

Era:	Paleozoic	Category:	Stratified Sequence
System:	Pennsylvanian		
Series:	Atokan and Morrowan Series		
Code:	PP1 (<i>decoded above as Era, System & Series</i>)		

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 2699089.2s



- ☆ Target Property
- SSURGO Soil
- Water



SITE NAME: Ball Creek WWTP Site
ADDRESS: 2606 West Highway 1087
Leburn KY 41831
LAT/LONG: 37.3961 / 82.9897

CLIENT: R.M. Johnson Engineering, Inc.
CONTACT: Stephen R. Harris, P
INQUIRY #: 2699089.2s
DATE: February 15, 2010 9:12 am

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: Grigsby

Soil Surface Texture: sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 145 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	9 inches	sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 7.3 Min: 5.6
2	9 inches	51 inches	sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 7.3 Min: 5.6
3	51 inches	79 inches	loamy sand	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 7.3 Min: 5.6

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Map ID: 2

Soil Component Name: Handshoe

Soil Surface Texture: very channery loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 94 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	7 inches	very channery loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 5.5 Min: 3.6
2	7 inches	66 inches	very channery sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 5.5 Min: 3.6
3	66 inches	79 inches	very channery sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 5.5 Min: 3.6

Soil Map ID: 3

Soil Component Name: Sheiocta

Soil Surface Texture: silt loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	3 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: Min:	Max: Min:
2	3 inches	27 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: Min:	Max: Min:
3	27 inches	55 inches	very channery silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: Min:	Max: Min:
4	55 inches	66 inches	weathered bedrock	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: Min:	Max: Min:

Soil Map ID: 4

Soil Component Name: Dekalb

Soil Surface Texture: channery sandy loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 64 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	1 inches	channery sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: Min:	Max: Min:
2	1 inches	25 inches	very channery sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: Min:	Max: Min:
3	25 inches	29 inches	unweathered bedrock	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: Min:	Max: Min:

Soil Map ID: 5

Soil Component Name: Kimper

Soil Surface Texture: silt loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	5 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 14 Min: 4	Max: 6 Min: 4.5
2	5 inches	61 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 14 Min: 4	Max: 6 Min: 4.5
3	61 inches	79 inches	very channery loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 14 Min: 4	Max: 6 Min: 4.5

Soil Map ID: 6

Soil Component Name: Dekalb

Soil Surface Texture: channery sandy loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 64 inches

Depth to Watertable Min: > 0 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	1 inches	channery sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: Min:	Max: Min:
2	1 inches	25 inches	very channery sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: Min:	Max: Min:
3	25 inches	29 inches	unweathered bedrock	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: Min:	Max: Min:

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

<u>DATABASE</u>	<u>SEARCH DISTANCE (miles)</u>
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
A7	USGS2305827	1/2 - 1 Mile West

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
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GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	KY3000000034494	1/4 - 1/2 Mile ESE
2	KY3000000034543	1/4 - 1/2 Mile East
3	KY3000000034393	1/2 - 1 Mile SE
4	KY3000000034500	1/2 - 1 Mile East
A5	KY3000000034491	1/2 - 1 Mile West
A6	KY3000000034490	1/2 - 1 Mile West
8	KY3000000034451	1/2 - 1 Mile West
9	KY3000000034562	1/2 - 1 Mile West

OTHER STATE DATABASE INFORMATION

STATE OIL/GAS WELL INFORMATION

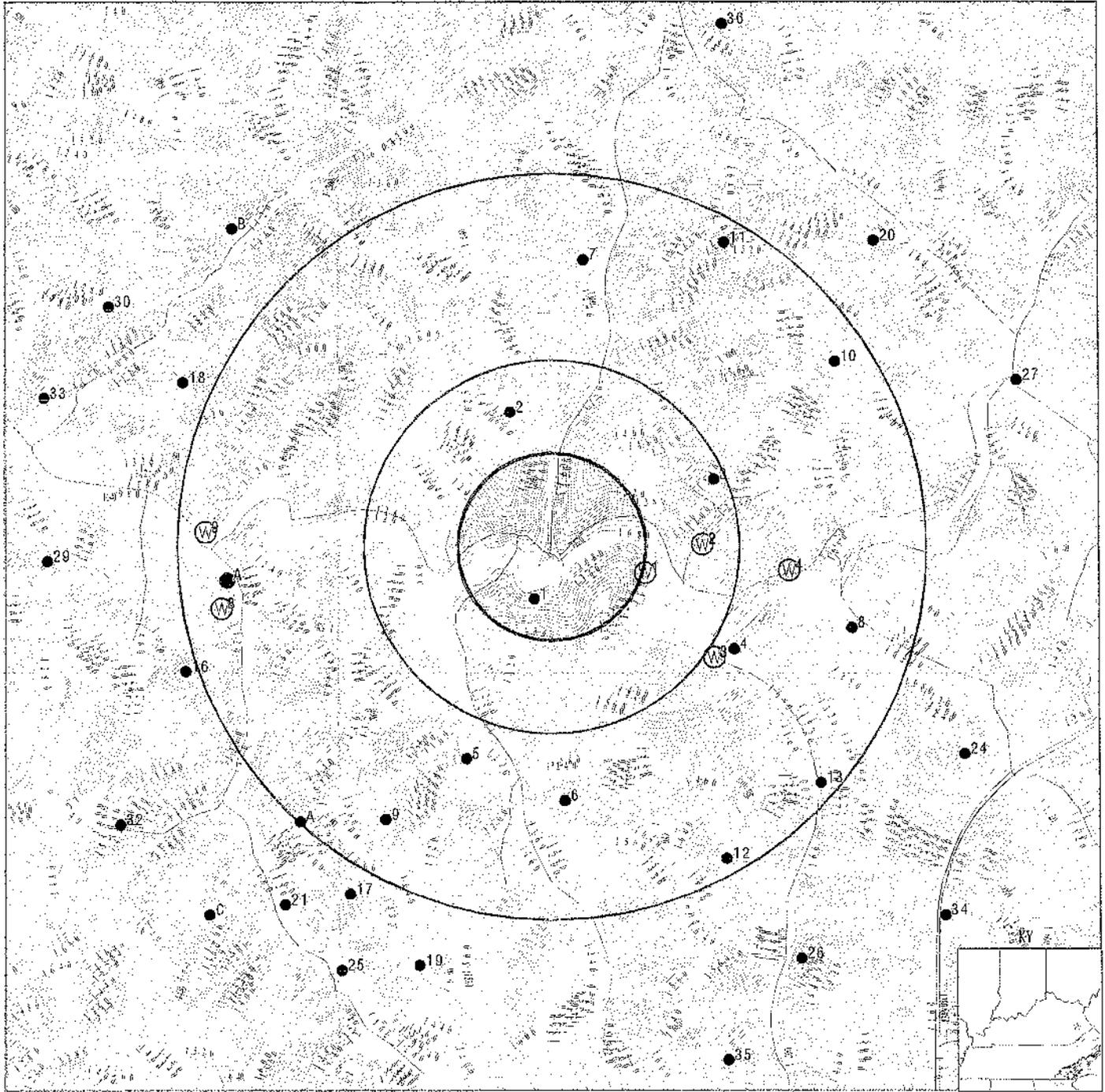
MAP ID	WELL ID	LOCATION FROM TP
1	KYOG60000071603	1/8 - 1/4 Mile SSW
2	KYOG60000072017	1/4 - 1/2 Mile NNW
3	KYOG60000071879	1/4 - 1/2 Mile ENE
4	KYOG60000071473	1/2 - 1 Mile ESE
5	KYOG60000071209	1/2 - 1 Mile SSW
6	KYOG60000071116	1/2 - 1 Mile South
7	KYOG60000072351	1/2 - 1 Mile North
8	KYOG60000071534	1/2 - 1 Mile ESE
9	KYOG60000071079	1/2 - 1 Mile SSW
10	KYOG60000072126	1/2 - 1 Mile ENE
11	KYOG60000072381	1/2 - 1 Mile NNE
12	KYOG60000070988	1/2 - 1 Mile SSE
13	KYOG60000071151	1/2 - 1 Mile SE
A14	KYOG60000071074	1/2 - 1 Mile SW
A15	KYOG60000071071	1/2 - 1 Mile SW
16	KYOG60000071417	1 - 2 Miles WSW
17	KYOG60000070911	1 - 2 Miles SSW
18	KYOG60000072076	1 - 2 Miles WNW
19	KYOG60000070764	1 - 2 Miles SSW
20	KYOG60000072382	1 - 2 Miles NE
21	KYOG60000070887	1 - 2 Miles SW
B23	KYOG60000072396	1 - 2 Miles NW
B22	KYOG60000072395	1 - 2 Miles NW
24	KYOG60000071221	1 - 2 Miles ESE
25	KYOG60000070753	1 - 2 Miles SSW
26	KYOG60000070783	1 - 2 Miles SSE
27	KYOG60000072081	1 - 2 Miles ENE
C28	KYOG60000070873	1 - 2 Miles SW
29	KYOG60000071693	1 - 2 Miles West
30	KYOG60000072249	1 - 2 Miles WNW

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE OIL/GAS WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
C31	KYOG60000070871	1 - 2 Miles SW
32	KYOG60000071061	1 - 2 Miles WSW
33	KYOG60000072037	1 - 2 Miles WNW
34	KYOG60000070867	1 - 2 Miles SE
35	KYOG60000070570	1 - 2 Miles SSE
36	KYOG60000072865	1 - 2 Miles NNE

PHYSICAL SETTING SOURCE MAP - 2699089.2s



County Boundary

Major Roads

Contour Lines

Earthquake epicenter, Richter 5 or greater

Water Wells

Public Water Supply Wells

Cluster of Multiple Icons

Groundwater Flow Direction

Indeterminate Groundwater Flow at Location

Groundwater Flow Varies at Location

Oil, gas or related wells



SITE NAME: Ball Creek WWTP Site
 ADDRESS: 2606 West Highway 1087
 Leburn KY 41831
 LAT/LONG: 37.3961 / 82.9897

CLIENT: R.M. Johnson Engineering, Inc.
 CONTACT: Stephen R. Harris, P
 INQUIRY #: 2699089.2s
 DATE: February 15, 2010 9:12 am

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
 Direction
 Distance
 Elevation

Database EDR ID Number

1
ESE
1/4 - 1/2 Mile
Higher **KY WELLS** **KY3000000034494**

Location i:	264909	Site type:	Water Well
North lati:	37.3951	Constructi:	05/06/2002
West longi:	-82.98516		
Akgwa numb:	00058518		
Primary us:	Domestic		
Site id:	KY3000000034494		

2
East
1/4 - 1/2 Mile
Higher **KY WELLS** **KY3000000034543**

Location i:	264910	Site type:	Water Well
North lati:	37.39621	Constructi:	05/07/2002
West longi:	-82.98239		
Akgwa numb:	00058519		
Primary us:	Domestic		
Site id:	KY3000000034543		

3
SE
1/2 - 1 Mile
Lower **KY WELLS** **KY3000000034393**

Location i:	258551	Site type:	Water Well
North lati:	37.39182	Constructi:	09/15/1998
West longi:	-82.98183		
Akgwa numb:	00049211		
Primary us:	Domestic		
Site id:	KY3000000034393		

4
East
1/2 - 1 Mile
Higher **KY WELLS** **KY3000000034500**

Location i:	63291	Site type:	Water Well
North lati:	37.3952	Constructi:	12/08/2000
West longi:	-82.97819		
Akgwa numb:	Not Reported		
Primary us:	Domestic		
Site id:	KY3000000034500		

A5
West
1/2 - 1 Mile
Lower **KY WELLS** **KY3000000034491**

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Location i:	316834	Site type:	Water Well
North lati:	37.39482	Constructi:	05/28/1986
West longi:	-83.00544		
Akgwa numb:	Not Reported		
Primary us:	Unknown		
Site id:	KY300000034491		

A6

West
1/2 - 1 Mile
Lower

KY WELLS KY300000034490

Location i:	72787	Site type:	Water Well
North lati:	37.39482	Constructi:	05/28/1986
West longi:	-83.00544		
Akgwa numb:	Not Reported		
Primary us:	Domestic		
Site id:	KY300000034490		

A7

West
1/2 - 1 Mile
Lower

FED USGS USGS2305827

Agency cd:	USGS	Site no:	372341083002001
Site name:	H27B0008	EDR Site id:	USGS2305827
Latitude:	372341	Dec lat:	37.39481952
Longitude:	0830020	Coor meth:	M
Dec lon:	-83.00544302	Latlong datum:	NAD27
Coor accr:	S	District:	21
Dec latlong datum:	NAD83	County:	119
State:	21	Land net:	Not Reported
Country:	US	Map scale:	24000
Location map:	H27BSE		
Altitude:	1050.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	10		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	North Fork Kentucky, Kentucky. Area = 1310 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19500101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	BREATHITT FORMATION		
Well depth:	34.0	Hole depth:	34.0
Source of depth data:	owner		
Project number:	Not Reported		
Real time data flag:	0		
Daily flow data end date:	0000-00-00	Daily flow data begin date:	0000-00-00
Daily flow data count:	0		
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0		
Water quality data begin date:	1954-12-02	Water quality data end date:	1954-12-02
Water quality data count:	1		
Ground water data begin date:	1954-12-02	Ground water data end date:	1954-12-02
Ground water data count:	1		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1954-12-02	4.73	

8

**West
1/2 - 1 Mile
Higher**

KY WELLS KY3000000034451

Location i: 260038
 North lati: 37.39371
 West longi: -83.00572
 Akgwa numb: 00056778
 Primary us: Domestic
 Site id: KY3000000034451

Site type: Water Well
 Constructi: 04/18/2001

9

**West
1/2 - 1 Mile
Higher**

KY WELLS KY3000000034562

Location i: 311698
 North lati: 37.39668
 West longi: -83.0065
 Akgwa numb: 00042823
 Primary us: Domestic
 Site id: KY3000000034562

Site type: Water Well
 Constructi: 01/01/1900

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance

Database FDR ID Number

1
SSW
1/8 - 1/4 Mile

OIL_GAS KYOG60000071603

Api:	16119001410000	Kgs recno:	89452
Letter 1:	K	Number 1:	79
Section:	6	Fns:	2190
Ns:	N	Few 1:	2125
Ew:	E	Surf elev:	1133
Usgs quad:	HANDSHOE	County:	KNOTT
Org farm:	OWENS, OSCAR B ET AL		
Org oper:	EQUITABLE RESOURCES EXPL, INC		
Org wellno:	KL451	Td:	2899
Tdfm:	344CORN	Deepst pay:	341OHIO
lof ip:	0 MCFGPD	Org wclass:	DEV
Org result:	GAS	Cmpl date:	08/04/1989
Plug date:	07/15/1989	Plug afdvt:	Not Reported
Core:	Not Reported	Cuttings:	0
Elog:	CLPR	Plotsymbol:	GAS
Kgs permit:	77967		
Images:	http://kgsweb.uky.edu/oilgasimages/o_g/R00089452/R00089452.djvu?djvuopts&&thumbnails=yes&menu=yes&zom=page		
Bore type:	V		
Rec lat27:	37.3939854168		
Rec lng27:	-82.9906474288		
Rec lat83:	37.3940829405		
Rec lng83:	-82.9905343919		
Site id:	KYOG60000071603		

2
NNW
1/4 - 1/2 Mile

OIL_GAS KYOG60000072017

Api:	16119000380000	Kgs recno:	30884
Letter 1:	K	Number 1:	79
Section:	5	Fns:	450
Ns:	S	Few 1:	2375
Ew:	W	Surf elev:	1258
Usgs quad:	HANDSHOE	County:	KNOTT
Org farm:	OWENS, OSCAR B ET AL		
Org oper:	KEPCO, INC		
Org wellno:	KL450	Td:	3140
Tdfm:	344CORN	Deepst pay:	341OHIO
lof ip:	103 MCFGPD	Org wclass:	EXT
Org result:	GAS	Cmpl date:	05/10/1983
Plug date:	05/26/1993	Plug afdvt:	Not Reported
Core:	Not Reported	Cuttings:	14616
Elog:	GR	Plotsymbol:	GAS
Kgs permit:	49810		
Images:	http://kgsweb.uky.edu/oilgasimages/o_g/R00030884/R00030884.djvu?djvuopts&&thumbnails=yes&menu=yes&zom=page		
Bore type:	V		
Rec lat27:	37.4012358697		
Rec lng27:	-82.9918236122		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Rec lat83: 37.4013333437
 Rec lng83: -82.9917107181
 Site id: KYOG60000072017

3
ENE
1/4 - 1/2 Mile

OIL_GAS KYOG60000071879

Api:	16119000310000	Kgs recho:	11283
Letter 1:	K	Number 1:	79
Section:	7	Fns:	500
Ns:	N	Few 1:	400
Ew:	W	Surf elev:	1225
Usgs quad:	HANDSHOE	County:	KNOTT
Org farm:	PATRICK, GARDNER ET AL		
Org oper:	KEPCO, INC		
Org wellno:	KL421	Td:	2989
Tdfm:	341OHIO	Deepst pay:	341OHIO
lof ip:	327 MCFGPD	Org wclass:	DEV
Org result:	GAS	Cmpl date:	03/27/1982
Plug date:	04/18/1997	Plug afdvt:	Not Reported
Core:	Not Reported	Cuttings:	0
Elog:	FDC	Plotsymbol:	GAS
Kgs permit:	45940		
Images:	http://kgsweb.uky.edu/oilgasimages/o_g/R00011283/R00011283.djvu?djvuopts&&thumbnails=yes&menu=yes&zom=page		
Bore type:	V		
Rec lat27:	37.3986268075		
Rec lng27:	-82.9819565624		
Rec lat83:	37.3987244395		
Rec lng83:	-82.9818433541		
Site id:	KYOG60000071879		

4
ESE
1/2 - 1 Mile

OIL_GAS KYOG60000071473

Api:	16119000270000	Kgs recho:	11282
Letter 1:	K	Number 1:	79
Section:	7	Fns:	2900
Ns:	N	Few 1:	680
Ew:	W	Surf elev:	1025
Usgs quad:	HANDSHOE	County:	KNOTT
Org farm:	PATRICK, D B		
Org oper:	KEPCO, INC		
Org wellno:	KL393	Td:	2846
Tdfm:	344CORN	Deepst pay:	341OHIO
lof ip:	516 MCFGPD	Org wclass:	DEV
Org result:	GAS	Cmpl date:	09/17/1981
Plug date:	08/29/1988	Plug afdvt:	Not Reported
Core:	Not Reported	Cuttings:	0
Elog:	FDC	Plotsymbol:	GAS
Kgs permit:	44855		
Images:	http://kgsweb.uky.edu/oilgasimages/o_g/R00011282/R00011282.djvu?djvuopts&&thumbnails=yes&menu=yes&zom=page		
Bore type:	V		
Rec lat27:	37.3920354835		
Rec lng27:	-82.9809928228		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Rec lat83: 37.3921331616
 Rec lng83: -82.9808794897
 Site id: KYOG60000071473

5
SSW
1/2 - 1 Mile

OIL_GAS KYOG60000071209

Api:	16119017320000	Kgs recno:	124378
Letter 1:	K	Number 1:	79
Section:	6	Fns:	1618
Ns:	S	Few 1:	1749
Ew:	W	Surf elev:	1289
Usqs quad:	HANDSHOE	County:	KNOTT
Org farm:	CLEMONS, JAMES		
Org oper:	OSBORNE OIL & GAS CO		
Org wellno:	2	Td:	3035
Tdfm:	341OHIO	Deepst pay:	341OHIO
lof ip:	Not Reported	Org wclass:	EXT
Org result:	GAS	Cmpl date:	07/27/2002
Plug date:	03/18/2003	Plug afdvt:	Not Reported
Core:	Not Reported	Cuttings:	0
Elog:	FDC	Plotsymbol:	GAS
Kgs permit:	93612		
Images:	http://kgsweb.uky.edu/oilgasimages/o_g/R00124378/R00124378.djvu?djvuopts&&thumbnails=yes&menu=yes&zom=page		
Bore type:	V		
Rec lat27:	37.3877769843		
Rec lng27:	-82.9939800692		
Rec lat83:	37.3876744847		
Rec lng83:	-82.9938670295		
Site id:	KYOG60000071209		

6
South
1/2 - 1 Mile

OIL_GAS KYOG60000071116

Api:	16119008470000	Kgs recno:	104425
Letter 1:	K	Number 1:	79
Section:	6	Fns:	1020
Ns:	S	Few 1:	1700
Ew:	E	Surf elev:	1276
Usqs quad:	HANDSHOE	County:	KNOTT
Org farm:	OWSLEY, MAGOFFIN & SALLY		
Org oper:	OSBORNE OIL & GAS CO		
Org wellno:	103	Td:	0
Tdfm:	000	Deepst pay:	000
lof ip:	Not Reported	Org wclass:	UNC
Org result:	TRM	Cmpl date:	08/19/1993
Plug date:	10/11/1993	Plug afdvt:	Not Reported
Core:	Not Reported	Cuttings:	0
Elog:	Not Reported	Plotsymbol:	TRM
Kgs permit:	82420		
Images:	http://kgsweb.uky.edu/oilgasimages/o_g/R00104425/R00104425.djvu?djvuopts&&thumbnails=yes&menu=yes&zom=page		
Bore type:	V		
Rec lat27:	37.386134646		
Rec lng27:	-82.9891846097		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Rec lat83: 37.3862322271
 Rec lng83: -82.9890714136
 Site id: KYOG60000071116

7

North
1/2 - 1 Mile

OIL_GAS KYOG60000072351

Api:	16119000470000	Kgs recno:	23293
Letter 1:	K	Number 1:	79
Section:	5	Fns:	2600
Ns:	S	Few 1:	1425
Ew:	E	Surf elev:	1236
Usgs quad:	HANDSHOE	County:	KNOTT
Org farm:	SUTTON, TOM B		
Org oper:	KEPCO, INC		
Org wellno:	KL465	Td:	2898
Tdfm:	344CORN	Deepst pay:	341OHIO
lof ip:	60 MCFGPD	Org wclass:	NPW
Org result:	GAS	Crml date:	06/29/1983
Plug date:	08/27/1983	Plug afdvt:	Not Reported
Core:	Not Reported	Cuttings:	0
Elog:	FDC	Plotsymbol:	GAS
Kgs permit:	53782		
Images:	http://kgsweb.uky.edu/oilgasimages/o_g/R00023293/R00023293.djvu?djuvopts&&thumbnails=yes&menu=yes&zom=page		
Bore type:	V		
Rec lat27:	37.4071405806		
Rec lng27:	-82.988239166		
Rec lat83:	37.4072380806		
Rec lng83:	-82.988126261		
Site id:	KYOG60000072351		

8

ESE
1/2 - 1 Mile

OIL_GAS KYOG60000071534

Api:	16119019190000	Kgs recno:	56066
Letter 1:	K	Number 1:	79
Section:	7	Fns:	2600
Ns:	N	Few 1:	2350
Ew:	W	Surf elev:	1068
Usgs quad:	HANDSHOE	County:	KNOTT
Org farm:	STEWART, JASPER		
Org oper:	KENTUCKY WEST VIRGINIA GAS CO		
Org wellno:	6228	Td:	2791
Tdfm:	341OHIO	Deepst pay:	000
lof ip:	Not Reported	Org wclass:	DEV
Org result:	D&A	Crml date:	11/09/1954
Plug date:	12/13/1954	Plug afdvt:	PA
Core:	Not Reported	Cuttings:	0
Elog:	Not Reported	Plotsymbol:	D&A
Kgs permit:	2218EF		
Images:	http://kgsweb.uky.edu/oilgasimages/o_g/R00056066/R00056066.djvu?djuvopts&&thumbnails=yes&menu=yes&zom=page		
Bore type:	V		
Rec lat27:	37.392859399		
Rec lng27:	-82.9752448042		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Rec lat83: 37.3929571596
 Rec lng83: -82.9751313245
 Site id: KYOG60000071534

9

SSW

1/2 - 1 Mile

OIL_GAS

KYOG60000071079

Api:	16119017330000	Kgs recno:	124379
Letter 1:	K	Number 1:	79
Section:	6	Fns:	758
Ns:	S	Few 1:	612
Ew:	W	Surf elev:	1423
Usgs quad:	HANDSHOE	County:	KNOTT
Org farm:	CLEMONS, JAMES		
Org oper:	OSBORNE OIL & GAS CO		
Org wellno:	1	Td:	3167
Tdfm:	341OHIO	Deepst pay:	341OHIO
lof ip:	Not Reported	Org wclass:	DEV
Org result:	GAS	Cmpl date:	07/19/2002
Plug date:	07/27/2002	Plug afdvt:	Not Reported
Core:	Not Reported	Cuttings:	1892
Elog:	FDC	Plotsymbol:	GAS
Kgs permit:	93611		
Images:	http://kgsweb.uky.edu/oilgasimages/o_g/R00124379/R00124379.djvu?djvuopts&&thumbnails=yes&menu=yes&zom=page		
Bore type:	V		
Rec lat27:	37.3854150932		
Rec lng27:	-82.9978935405		
Rec lat83:	37.3855125436		
Rec lng83:	-82.997780572		
Site id:	KYOG60000071079		

10

ENE

1/2 - 1 Mile

OIL_GAS

KYOG60000072126

Api:	16119001130000	Kgs recno:	88021
Letter 1:	K	Number 1:	79
Section:	4	Fns:	1165
Ns:	S	Few 1:	2115
Ew:	W	Surf elev:	1363
Usgs quad:	HANDSHOE	County:	KNOTT
Org farm:	E K P C (GAYHEART, JOSEPH TRACT)		
Org oper:	EASTERN KENTUCKY PRODUCTION CO		
Org wellno:	KF-941	Td:	3130
Tdfm:	344CORN	Deepst pay:	341HURNL
lof ip:	0 MCFGPD	Org wclass:	DEV
Org result:	GAS	Cmpl date:	12/13/1988
Plug date:	01/03/1958	Plug afdvt:	Not Reported
Core:	Not Reported	Cuttings:	0
Elog:	FDC	Plotsymbol:	GAS
Kgs permit:	77059		
Images:	http://kgsweb.uky.edu/oilgasimages/o_g/R00088021/R00088021.djvu?djvuopts&&thumbnails=yes&menu=yes&zom=page		
Bore type:	V		
Rec lat27:	37.4031995294		
Rec lng27:	-82.9760520448		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Rec lat83: 37.4032972261
 Rec lng83: -82.9759387395
 Site id: KYOG60000072126

11
NNE
1/2 - 1 Mile

OIL_GAS KYOG60000072381

Api:	Not Reported	Kgs recno:	56145
Letter 1:	K	Number 1:	79
Section:	4	Fns:	2850
Ns:	S	Few 1:	550
Ew:	W	Surf elev:	1590
Usgs quad:	HANDSHOE	County:	KNOTT
Org farm:	DAY, K J		
Org oper:	UNITED CARBON CO		
Org wellno:	2	Td:	2843
Tdfm:	341OHIO	Deepst pay:	000
lof ip:	Not Reported	Org wclass:	DEV
Org result:	D&A	Cmpl date:	10/04/1935
Plug date:	11/01/1935	Plug afdvt:	AB
Core:	Not Reported	Cuttings:	0
Elog:	Not Reported	Plotsymbol:	D&A
Kgs permit:	Not Reported		
Images:	http://kgsweb.uky.edu/oilgasimages/o_g/R00056145/R00056145.djvu?djvuopts&&thumbnails=yes&menu=yes&zom=page		
Bore type:	V		
Rec lat27:	37.4078271749		
Rec lng27:	-82.9814398541		
Rec lat83:	37.4079247703		
Rec lng83:	-82.9813267682		
Site id:	KYOG60000072381		

12
SSE
1/2 - 1 Mile

OIL_GAS KYOG60000070988

Api:	16119017660000	Kgs recno:	124880
Letter 1:	K	Number 1:	79
Section:	7	Fns:	202
Ns:	S	Few 1:	565
Ew:	W	Surf elev:	1306
Usgs quad:	HANDSHOE	County:	KNOTT
Org farm:	STRONG, WILLIS ET AL		
Org oper:	KINZER, J W		
Org wellno:	1231	Td:	3080
Tdfm:	341OHIO	Deepst pay:	341OHIO
lof ip:	Not Reported	Org wclass:	DEV
Org result:	GAS	Cmpl date:	11/05/2002
Plug date:	06/27/2003	Plug afdvt:	Not Reported
Core:	Not Reported	Cuttings:	0
Elog:	FDC	Plotsymbol:	GAS
Kgs permit:	94147		
Images:	http://kgsweb.uky.edu/oilgasimages/o_g/R00124880/R00124880.djvu?djvuopts&&thumbnails=yes&menu=yes&zom=page		
Bore type:	V		
Rec lat27:	37.3838881031		
Rec lng27:	-82.9813886444		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Rec lat83: 37.3839858145
 Rec lng83: -82.9812752011
 Site id: KYOG60000070988

13
SE
 1/2 - 1 Mile

OIL_GAS KYOG60000071151

Api:	16119000260000	Kgs recno:	11281
Letter 1:	K	Number 1:	79
Section:	7	Fns:	1275
Ns:	S	Few 1:	1900
Ew:	W	Surf elev:	1120
Usgs quad:	HANDSHOE	County:	KNOTT
Org farm:	CALHOUN, GRACE		
Org oper:	KEPCO, INC		
Org wellno:	KL388	Td:	2933
Tdfm:	344CORN	Deepst pay:	341OHIO
lof ip:	146 MCFGPD	Org wclass:	DEV
Org result:	GAS	Cmpl date:	09/07/1981
Plug date:	04/18/1997	Plug afdvt:	Not Reported
Core:	Not Reported	Cuttings:	0
Elog:	FDC	Plotsymbol:	GAS
Kgs permit:	43746		
Images:	http://kgsweb.uky.edu/oilgasimages/o_g/R00011281/R00011281.djvu?djvuopts&&thumbnails=yes&menu=yes&zom=page		
Bore type:	V		
Rec lat27:	37.3868349742		
Rec lng27:	-82.9767936715		
Rec lat83:	37.3869327417		
Rec lng83:	-82.9766801459		
Site id:	KYOG60000071151		

A14
SW
 1/2 - 1 Mile

OIL_GAS KYOG60000071074

Api:	16119015170000	Kgs recno:	115694
Letter 1:	K	Number 1:	78
Section:	10	Fns:	729
Ns:	S	Few 1:	586
Ew:	E	Surf elev:	1439
Usgs quad:	VEST	County:	KNOTT
Org farm:	BAILEY, WILLIAM T		
Org oper:	OSBORNE OIL & GAS CO		
Org wellno:	2	Td:	3187
Tdfm:	341OHIO	Deepst pay:	341OHIO
lof ip:	320 MCFGPD	Org wclass:	DEV
Org result:	GAS	Cmpl date:	05/05/1998
Plug date:	03/16/1999	Plug afdvt:	Not Reported
Core:	Not Reported	Cuttings:	0
Elog:	FDC	Plotsymbol:	GAS
Kgs permit:	89479		
Images:	http://kgsweb.uky.edu/oilgasimages/o_g/R00115694/R00115694.djvu?djvuopts&&thumbnails=yes&menu=yes&zom=page		
Bore type:	V		
Rec lat27:	37.385335448		
Rec lng27:	-83.0020238533		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Rec lat83: 37.3854328352
 Rec lng83: -83.0019110281
 Site id: KYOG60000071074

**A15
SW**

1/2 - 1 Mile

OIL_GAS

KYOG60000071071

Api:	16119015220000	Kgs recno:	115768
Letter 1:	K	Number 1:	78
Section:	10	Fns:	715
Ns:	S	Few 1:	577
Ew:	E	Surf elev:	1439
Usgs quad:	VEST	County:	KNOTT
Org farm:	BAILY, WM T		
Org oper:	OSBORNE OIL & GAS CO		
Org wellno:	2A	Td:	1918
Tdfm:	332MAXN	Deepst pay:	332MAXN
Iof ip:	890 MCFGPD	Org wclass:	EXT
Org result:	GAS	Cmpl date:	05/11/1998
Plug date:	08/12/1999	Plug afdvt:	Not Reported
Core:	Not Reported	Cuttings:	0
Elog:	Not Reported	Plotsymbol:	GAS
Kgs permit:	89552		
Images:	http://kgsweb.uky.edu/oilgasimages/o_g/R00115768/R00115768.djvu?djvuopts&&thumbnails=yes&menu=yes&zom=page		
Bore type:	V		
Rec lat27:	37.3852969986		
Rec lng27:	-83.0019859921		
Rec lat83:	37.3853943865		
Rec lng83:	-83.0018731647		
Site id:	KYOG60000071071		

16

WSW

1 - 2 Miles

OIL_GAS

KYOG60000071417

Api:	16119013250000	Kgs recno:	57124
Letter 1:	K	Number 1:	78
Section:	10	Fns:	2850
Ns:	S	Few 1:	2200
Ew:	E	Surf elev:	1316
Usgs quad:	VEST	County:	KNOTT
Org farm:	KYCOGA LAND CO		
Org oper:	ASHLAND EXPLORATION, INC		
Org wellno:	23	Td:	0
Tdfm:	000	Deepst pay:	000
Iof ip:	Not Reported	Org wclass:	UNC
Org result:	TRM	Cmpl date:	11/30/1929
Plug date:	07/10/1979	Plug afdvt:	Not Reported
Core:	Not Reported	Cuttings:	0
Elog:	Not Reported	Plotsymbol:	TRM
Kgs permit:	56105		
Images:	http://kgsweb.uky.edu/oilgasimages/o_g/R00057124/R00057124.djvu?djvuopts&&thumbnails=yes&menu=yes&zom=page		
Bore type:	V		
Rec lat27:	37.3911605306		
Rec lng27:	-83.0075722401		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Rec lat83: 37.3912578071
 Rec lng83: -83.0074597401
 Site id: KYOG60000071417

17
SSW
1 - 2 Miles

OIL_GAS KYOG60000070911

Api:	16119016640000	Kgs recno:	121947
Letter 1:	K	Number 1:	79
Section:	15	Fns:	301
Ns:	N	Few 1:	118
Ew:	W	Surf elev:	1461
Usgs quad:	HANDSHOE	County:	KNOTT
Org farm:	BAILEY, WM & FUGATE, JASPER		
Org oper:	OSBORNE OIL & GAS CO		
Org wellno:	FUGATE #3	Td:	3240
Tdfm:	351SALN	Deepst pay:	341OHIO
Iof ip:	267 MCFGPD	Org wclass:	DEV
Org result:	GAS	Cmpl date:	01/17/2000
Plug date:	09/20/2001	Plug afdvt:	Not Reported
Core:	Not Reported	Cuttings:	0
Elog:	AUDI	Plotsymbol:	GAS
Kgs permit:	91861		
Images:	http://kgsweb.uky.edu/oilgasimages/o_g/R00121947/R00121947.djvu?djvuopts&&thumbnails=yes&menu=yes&zom=page		
Bore type:	V		
Rec lat27:	37.3825066691		
Rec lng27:	-82.9995939425		
Rec lat83:	37.3826041054		
Rec lng83:	-82.9994809756		
Site id:	KYOG60000070911		

18
WNW
1 - 2 Miles

OIL_GAS KYOG60000072076

Api:	16119016280000	Kgs recno:	121119
Letter 1:	K	Number 1:	78
Section:	1	Fns:	868
Ns:	S	Few 1:	2240
Ew:	E	Surf elev:	1233
Usgs quad:	VEST	County:	KNOTT
Org farm:	JOHNSON, SHARON ET AL		
Org oper:	KINZER, J W		
Org wellno:	1010	Td:	2894
Tdfm:	341OHIO	Deepst pay:	341OHIO
Iof ip:	Not Reported	Org wclass:	EXT
Org result:	GAS	Cmpl date:	11/03/2000
Plug date:	04/25/2002	Plug afdvt:	Not Reported
Core:	Not Reported	Cuttings:	0
Elog:	AUDI	Plotsymbol:	GAS
Kgs permit:	91142		
Images:	http://kgsweb.uky.edu/oilgasimages/o_g/R00121119/R00121119.djvu?djvuopts&&thumbnails=yes&menu=yes&zom=page		
Bore type:	V		
Rec lat27:	37.4023838554		
Rec lng27:	-83.0077116247		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Rec lat83: 37.4024810816
 Rec lng83: -83.0075992983
 Site id: KYOG60000072076

19
SSW
1 - 2 Miles

OIL_GAS KYOG60000070764

Api:	16119016150000	Kgs recno:	120913
Letter 1:	K	Number 1:	79
Section:	15	Fns:	1309
Ns:	N	Few 1:	1087
Ew:	W	Surf elev:	1420
Usgs quad:	HANDSHOE	County:	KNOTT
Org farm:	FUGATE, JASPER		
Org oper:	OSBORNE OIL & GAS CO		
Org wellno:	2	Td:	3192
Tdfm:	341OHIO	Deepst pay:	341OHIO
lof ip:	392 MCFGPD	Org wclass:	DEV
Org result:	GAS	Cmpl date:	03/05/2000
Plug date:	06/23/2003	Plug afdvt:	Not Reported
Core:	Not Reported	Cuttings:	0
Elog:	FDC	Plotsymbol:	GAS
Kgs permit:	90891		
Images:	http://kgsweb.uky.edu/oilgasimages/o_g/R00120913/R00120913.djvu?djvuopts&&thumbnails=yes&menu=yes&zom=page		
Bore type:	V		
Rec lat27:	37.3797383051		
Rec lng27:	-82.996259453		
Rec lat83:	37.3798358047		
Rec lng83:	-82.9961463525		
Site id:	KYOG60000070764		

20
NE
1 - 2 Miles

OIL_GAS KYOG60000072382

Api:	16119018790000	Kgs recno:	56065
Letter 1:	K	Number 1:	79
Section:	4	Fns:	2875
Ns:	S	Few 1:	2175
Ew:	E	Surf elev:	1367
Usgs quad:	HANDSHOE	County:	KNOTT
Org farm:	HOWELL, J F		
Org oper:	KENTUCKY WEST VIRGINIA GAS CO		
Org wellno:	1553	Td:	3030
Tdfm:	341OHIO	Deepst pay:	000
lof ip:	Not Reported	Org wclass:	DEV
Org result:	D&A	Cmpl date:	04/26/1973
Plug date:	05/16/1973	Plug afdvt:	AB
Core:	Not Reported	Cuttings:	0
Elog:	FDC	Plotsymbol:	D&A
Kgs permit:	26508		
Images:	http://kgsweb.uky.edu/oilgasimages/o_g/R00056065/R00056065.djvu?djvuopts&&thumbnails=yes&menu=yes&zom=page		
Bore type:	V		
Rec lat27:	37.4078958343		
Rec lng27:	-82.9741545165		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Rec lat83: 37.407993535
 Rec lng83: -82.9740412268
 Site id: KYOG60000072382

21
SW
1 - 2 Miles

OIL_GAS **KYOG60000070887**

Api:	16119013190000	Kgs recno:	11271
Letter 1:	K	Number 1:	78
Section:	11	Fns:	450
Ns:	N	Few 1:	800
Ew:	E	Surf elev:	1085
Usgs quad:	VEST	County:	KNOTT
Org farm:	HAYES HEIRS		
Org oper:	EAST KENTUCKY MINERALS CO, INC		
Org wellno:	1	Td:	0
Tdfm:	000	Deepst pay:	000
lof ip:	Not Reported	Org wclass:	UNC
Org result:	TRM	Cmpl date:	11/15/1958
Plug date:	03/08/1982	Plug afdvt:	Not Reported
Core:	Not Reported	Cuttings:	0
Elog:	Not Reported	Plotsymbol:	TRM
Kgs permit:	36377		
Images:	http://kgsweb.uky.edu/oilgasimages/o_g/R00011271/R00011271.djvu?djvuopts&&thumbnails=yes&menu=yes&zom=page		
Bore type:	V		
Rec lat27:	37.3820974566		
Rec lng27:	-83.0027529325		
Rec lat83:	37.3821948459		
Rec lng83:	-83.0026400891		
Site id:	KYOG60000070887		

B23
NW
1 - 2 Miles

OIL_GAS **KYOG60000072396**

Api:	16119000590000	Kgs recno:	30267
Letter 1:	K	Number 1:	78
Section:	1	Fns:	3025
Ns:	N	Few 1:	1550
Ew:	E	Surf elev:	1150
Usgs quad:	VEST	County:	KNOTT
Org farm:	EASTERN KENTUCKY REALTY CO		
Org oper:	ASHLAND EXPLORATION, INC		
Org wellno:	12	Td:	2862
Tdfm:	341OHIO	Deepst pay:	341OHIO
lof ip:	59 MCFGPD	Org wclass:	DEV
Org result:	GAS	Cmpl date:	06/05/1984
Plug date:	06/10/1992	Plug afdvt:	Not Reported
Core:	Not Reported	Cuttings:	0
Elog:	DIL	Plotsymbol:	GAS
Kgs permit:	61287		
Images:	http://kgsweb.uky.edu/oilgasimages/o_g/R00030267/R00030267.djvu?djvuopts&&thumbnails=yes&menu=yes&zom=page		
Bore type:	V		
Rec lat27:	37.4083568758		
Rec lng27:	-83.0053361689		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Rec lat83: 37.4084561145
 Rec lng83: -83.0052238336
 Site id: KYOG60000072396

**B22
NW**

1 - 2 Miles

OIL_GAS

KYOG60000072395

Api:	16119013230000	Kgs recno:	38307
Letter 1:	K	Number 1:	78
Section:	1	Fns:	3025
Ns:	N	Few 1:	1550
Ew:	E	Surf elev:	1150
Usgs quad:	VEST	County:	KNOTT
Org farm:	EASTERN KENTUCKY REALTY CO		
Org oper:	ASHLAND EXPLORATION, INC		
Org wellno:	12	Td:	0
Tdfm:	000	Deepst pay:	000
lof ip:	Not Reported	Org wclass:	UNC
Org result:	TRM	Cmpl date:	05/20/1983
Plug date:	10/03/1984	Plug afdvt:	Not Reported
Core:	Not Reported	Cuttings:	0
Elog:	Not Reported	Plotsymbol:	TRM
Kgs permit:	53631		
Images:	http://kgsweb.uky.edu/oilgasimages/o_g/R00038307/R00038307.djvu?djvuopts&&thumbnails=yes&menu=yes&zom=page		
Bore type:	V		
Rec lat27:	37.4083588758		
Rec lng27:	-83.0053361689		
Rec lat83:	37.4084561145		
Rec lng83:	-83.0052238336		
Site id:	KYOG60000072395		

24

ESE

1 - 2 Miles

OIL_GAS

KYOG60000071221

Api:	16119003430000	Kgs recno:	91779
Letter 1:	K	Number 1:	79
Section:	7	Fns:	1680
Ns:	S	Few 1:	920
Ew:	E	Surf elev:	1315
Usgs quad:	HANDSHOE	County:	KNOTT
Org farm:	EQUITABLE RESOURCES EXPLORATION		
Org oper:	EQUITABLE RESOURCES EXPL, INC		
Org wellno:	KF1248	Td:	3095
Tdfm:	341OHIO	Deepst pay:	341OHIO
lof ip:	0 MCFGPD	Org wclass:	EXT
Org result:	GAS	Cmpl date:	02/01/1990
Plug date:	04/24/1995	Plug afdvt:	Not Reported
Core:	Not Reported	Cuttings:	0
Elog:	AUDI	Plotsymbol:	GAS
Kgs permit:	78662		
Images:	http://kgsweb.uky.edu/oilgasimages/o_g/R00091779/R00091779.djvu?djvuopts&&thumbnails=yes&menu=yes&zom=page		
Bore type:	V		
Rec lat27:	37.3879472601		
Rec lng27:	-82.9696332398		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Rec lat83: 37.3880451284
 Rec lng83: -82.9697195394
 Site id: KYOG60000071221

25
SSW

1 - 2 Miles

OIL_GAS

KYOG60000070753

Api:	16119015160000	Kgs recno:	115693
Letter 1:	K	Number 1:	78
Section:	11	Fns:	1379
Ns:	N	Few 1:	4
Ew:	E	Surf elev:	1128
Usgs quad:	VEST	County:	KNOTT
Org farm:	FUGATE, JASPER		
Org oper:	OSBORNE OIL & GAS CO		
Org wellno:	1	Td:	2870
Tdfm:	341OHIO	Deepst pay:	341OHIO
Iof ip:	0 MCFGPD	Org wclass:	DEV
Org result:	GAS	Cmpl date:	04/27/1998
Plug date:	08/12/1999	Plug afdvt:	Not Reported
Core:	Not Reported	Cuttings:	0
Elog:	FDC	Plotsymbol:	GAS
Kgs permit:	89476		
images:	http://kgsweb.uky.edu/oilgasimages/o_g/R00115693/R00115693.djvu?djvuopts&&thumbnails=yes&menu=yes&zom=page		
Bore type:	V		
Rec lat27:	37.3795460576		
Rec lng27:	-83.0000137647		
Rec lat83:	37.3796434995		
Rec lng83:	-82.9999007637		
Site id:	KYOG60000070753		

26
SSE

1 - 2 Miles

OIL_GAS

KYOG60000070783

Api:	16119017630000	Kgs recno:	124877
Letter 1:	K	Number 1:	79
Section:	14	Fns:	1214
Ns:	N	Few 1:	1615
Ew:	W	Surf elev:	1209
Usgs quad:	HANDSHOE	County:	KNOTT
Org farm:	PATRICK, VIVIAN ET AL		
Org oper:	KINZER, J W		
Org wellno:	1230	Td:	2984
Tdfm:	341OHIO	Deepst pay:	341OHIO
Iof ip:	Not Reported	Org wclass:	DEV
Org result:	GAS	Cmpl date:	11/01/2002
Plug date:	10/23/2002	Plug afdvt:	Not Reported
Core:	Not Reported	Cuttings:	1844
Elog:	FDC	Plotsymbol:	GAS
Kgs permit:	94148		
Images:	http://kgsweb.uky.edu/oilgasimages/o_g/R00124877/R00124877.djvu?djvuopts&&thumbnails=yes&menu=yes&zom=page		
Bore type:	V		
Rec lat27:	37.3799992124		
Rec lng27:	-82.9777758508		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Rec lat83: 37.380098988
 Rec lng83: -82.9776622513
 Site id: KYOG60000070783

27

ENE

1 - 2 Miles

OIL_GAS

KYOG60000072081

Api:	Not Reported	Kgs recno:	86047
Letter 1:	K	Number 1:	79
Section:	4	Fns:	900
Ns:	S	Few 1:	175
Ew:	E	Surf elev:	1091
Usgs quad:	HANDSHOE	County:	KNOTT
Org farm:	UNKNOWN		
Org oper:	UNKNOWN		
Org wellno:	Not Reported	Td:	1650
Tdfm:	327SALT	Deepst pay:	000
lof ip:	Not Reported	Org wclass:	NPW
Org result:	D&A	Cmpl date:	06/18/1988
Plug date:	07/19/1988	Plug afdvt:	Not Reported
Core:	Not Reported	Cuttings:	0
Elog:	Not Reported	Plotsymbol:	D&A
Kgs permit:	Not Reported		
Images:	http://kgsweb.uky.edu/oilgasimages/o_g/R00086047/R00086047.djvu?djvuopts&&thumbnails=yes&menu=yes&zom=page		
Bore type:	V		
Rec lat27:	37.4024717394		
Rec lng27:	-82.9672691373		
Rec lat83:	37.4025695689		
Rec lng83:	-82.9671555758		
Site id:	KYOG60000072081		

C28

SW

1 - 2 Miles

OIL_GAS

KYOG60000070873

Api:	16119013980000	Kgs recno:	113800
Letter 1:	K	Number 1:	78
Section:	11	Fns:	589
Ns:	N	Few 1:	1858
Ew:	E	Surf elev:	1472
Usgs quad:	VEST	County:	KNOTT
Org farm:	BAILEY, WILLIAM T		
Org oper:	OSBORNE OIL & GAS CO		
Org wellno:	1	Td:	3214
Tdfm:	341OLNG	Deepst pay:	341OHIO
lof ip:	0 MCFGPD	Org wclass:	DEV
Org result:	GAS	Cmpl date:	06/23/1996
Plug date:	12/16/2003	Plug afdvt:	Not Reported
Core:	Not Reported	Cuttings:	0
Elog:	FDC	Plotsymbol:	GAS
Kgs permit:	87746		
Images:	http://kgsweb.uky.edu/oilgasimages/o_g/R00113800/R00113800.djvu?djvuopts&&thumbnails=yes&menu=yes&zom=page		
Bore type:	V		
Rec lat27:	37.3817157079		
Rec lng27:	-83.0063936858		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Rec lat83: 37.381813043
 Rec lng83: -83.0062809937
 Site id: KYOG60000070873

29
West
1 - 2 Miles

OIL_GAS KYOG60000071693

Apt:	16119003930000	Kgs recno:	47233
Letter 1:	K	Number 1:	78
Section:	10	Fns:	1660
Ns:	N	Few 1:	700
Ew:	W	Surf elev:	1207
Usgs quad:	VEST	County:	KNOTT
Org farm:	DOBSON, DORA		
Org oper:	KENTUCKY WEST VIRGINIA GAS CO		
Org wellno:	1704	Td:	2937
Tdfm:	344CORN	Deepst pay:	341OHIO
lof ip:	94 MCFGPD	Org wclass:	DEV
Org result:	GAS	Cmpl date:	06/12/1979
Plug date:	09/06/1995	Plug afdvt:	Not Reported
Core:	Not Reported	Cuttings:	2699
Elog:	FDC	Plotsymbol:	GAS
Kgs permit:	34396		
Images:	http://kgsweb.uky.edu/oilgasimages/o_g/R00047233/R00047233.djvu?djvuopts&&thumbnails=yes&menu=yes&zom=page		
Bore type:	V		
Rec lat27:	37.3954410009		
Rec lng27:	-83.0142573176		
Rec lat83:	37.3955381541		
Rec lng83:	-83.0141451637		
Site id:	KYOG60000071693		

30
WNW
1 - 2 Miles

OIL_GAS KYOG60000072249

Apt:	16119016070000	Kgs recno:	120810
Letter 1:	K	Number 1:	78
Section:	1	Fns:	1938
Ns:	S	Few 1:	1555
Ew:	W	Surf elev:	1416
Usgs quad:	VEST	County:	KNOTT
Org farm:	COMBS, VIRGINIA		
Org oper:	CLEAN GAS, INC		
Org wellno:	CHP-1	Td:	3112
Tdfm:	341OHIO	Deepst pay:	341OHIO
lof ip:	170 MCFGPD	Org wclass:	DEV
Org result:	GAS	Cmpl date:	01/14/1999
Plug date:	12/02/2000	Plug afdvt:	Not Reported
Core:	Not Reported	Cuttings:	0
Elog:	FDC	Plotsymbol:	GAS
Kgs permit:	90810		
Images:	http://kgsweb.uky.edu/oilgasimages/o_g/R00120810/R00120810.djvu?djvuopts&&thumbnails=yes&menu=yes&zom=page		
Bore type:	V		
Rec lat27:	37.4053224789		
Rec lng27:	-83.0113132843		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Rec lat83: 37.4054196351
 Rec lng83: -83.0112011514
 Site id: KYOG60000072249

C31

SW

1 - 2 Miles

OIL_GAS

KYOG60000070871

Api:	16119014020000	Kgs recno:	113922
Letter 1:	K	Number 1:	78
Section:	11	Fns:	595
Ns:	N	Few 1:	1890
Ew:	E	Surf elev:	1472
Usqs quad:	VEST	County:	KNOTT
Org farm:	BAILEY, WILLIAM T		
Org oper:	OSBORNE OIL & GAS CO		
Org wellno:	1T	Td:	1944
Tdfm:	332MAXN	Deepst pay:	332MAXN
lof ip:	642 MCFGPD	Org wclass:	DEV
Org result:	GAS	Cmpl date:	10/25/1996
Plug date:	05/05/2000	Plug afdvt:	Not Reported
Core:	Not Reported	Cuttings:	0
Elog:	Not Reported	Plotsymbol:	GAS
Kgs permit:	87858		
Images:	http://kgsweb.uky.edu/oilgasimages/o_g/R00113922/R00113922.djvu?djvuopts&&thumbnails=yes&menu=yes&zoom=page		
Bore type:	V		
Rec lat27:	37.3816992296		
Rec lng27:	-83.0085038031		
Rec lat83:	37.381796563		
Rec lng83:	-83.0063911155		
Site id:	KYOG60000070871		

32

WSW

1 - 2 Miles

OIL_GAS

KYOG60000071061

Api:	16119000410000	Kgs recno:	11270
Letter 1:	K	Number 1:	78
Section:	10	Fns:	680
Ns:	S	Few 1:	1720
Ew:	W	Surf elev:	1430
Usqs quad:	VEST	County:	KNOTT
Org farm:	SUTTON, TOM B		
Org oper:	JIMMY HAMILTON GAS & OIL CO		
Org wellno:	306	Td:	3229
Tdfm:	344CORN	Deepst pay:	341OHIO
lof ip:	0 MCFGPD	Org wclass:	DEV
Org result:	GAS	Cmpl date:	09/02/1982
Plug date:	08/07/1981	Plug afdvt:	Not Reported
Core:	Not Reported	Cuttings:	0
Elog:	CLPR	Plotsymbol:	GAS
Kgs permit:	51167		
Images:	http://kgsweb.uky.edu/oilgasimages/o_g/R00011270/R00011270.djvu?djvuopts&&thumbnails=yes&menu=yes&zoom=page		
Bore type:	V		
Rec lat27:	37.3852008751		
Rec lng27:	-83.0107465517		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Rec lat83: 37.3852981281
 Rec lng83: -83.0106340989
 Site id: KYOG60000071061

33

WNW

1 - 2 Miles

OIL_GAS

KYOG60000072037

Api:	16119000010000	Kgs recno:	47253
Letter 1:	K	Number 1:	78
Section:	1	Fns:	650
Ns:	S	Few 1:	650
Ew:	W	Surf elev:	1123
Usgs quad:	VEST	County:	KNOTT
Org farm:	COMBS, J S HEIRS		
Org oper:	L W D EXPLORATION CO, INC		
Org wellno:	1	Td:	2790
Tdfm:	344CORN	Deepst pay:	341OHIO
lof ip:	0 MCFGPD	Org wclass:	NPW
Org result:	GAS	Cmpl date:	12/08/1971
Plug date:	04/29/2006	Plug afdvt:	PA
Core:	Not Reported	Cuttings:	0
Elog:	GRD	Plotsymbol:	GAS
Kgs permit:	25132		
Images:	http://kgsweb.uky.edu/oilgasimages/o_g/R00047253/R00047253.djvu?djvuopts&&thumbnails=yes&menu=yes&zom=page		
Bore type:	V		
Rec lat27:	37.4017851452		
Rec lng27:	-83.0144289184		
Rec lat83:	37.4018822674		
Rec lng83:	-83.0143168637		
Site id:	KYOG60000072037		

34

SE

1 - 2 Miles

OIL_GAS

KYOG60000070867

Api:	16119005140000	Kgs recno:	56076
Letter 1:	K	Number 1:	79
Section:	14	Fns:	600
Ns:	N	Few 1:	1200
Ew:	E	Surf elev:	1121
Usgs quad:	HANDSHOE	County:	KNOTT
Org farm:	STEWART, JASPER		
Org oper:	KENTUCKY WEST VIRGINIA GAS CO		
Org wellno:	6208	Td:	2842
Tdfm:	341OHIO	Deepst pay:	341OHIO
lof ip:	103 MCFGPD	Org wclass:	DEV
Org result:	GAS	Cmpl date:	07/01/1954
Plug date:	02/08/1954	Plug afdvt:	Not Reported
Core:	Not Reported	Cuttings:	0
Elog:	Not Reported	Plotsymbol:	GAS
Kgs permit:	1974EF		
Images:	http://kgsweb.uky.edu/oilgasimages/o_g/R00056076/R00056076.djvu?djvuopts&&thumbnails=yes&menu=yes&zom=page		
Bore type:	V		
Rec lat27:	37.3816854976		
Rec lng27:	-82.9707960654		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Rec lat83: 37.3817833839
 Rec lng83: -82.9706823005
 Site id: KYOG60000070867

35
SSE
 1 - 2 Miles

OIL_GAS **KYOG60000070570**

Api:	16119006090000	Kgs recno:	56075
Letter 1:	K	Number 1:	79
Section:	14	Fns:	2650
Ns:	N	Few 1:	580
Ew:	W	Surf elev:	1372
Usqs quad:	HANDSHOE	County:	KNOTT
Org farm:	GAYHEART, WILLIAM		
Org oper:	KENTUCKY WEST VIRGINIA GAS CO		
Org wellno:	6683	Td:	3064
Tdfm:	341OHIO	Deepst pay:	341OHIO
lof ip:	73 MCFGPD	Org wclass:	DEV
Org result:	GAS	Cmpl date:	05/24/1962
Plug date:	02/08/1954	Plug afdvt:	Not Reported
Core:	Not Reported	Cuttings:	6462
Elog:	Not Reported	Plotsymbol:	GAS
Kgs permit:	5708		
Images:	http://kgsweb.uky.edu/oilgasimages/o_g/R00056075/R00056075.djvu?djvuopts&&thumbnails=yes&menu=yes&zom=page		
Bore type:	V		
Rec lat27:	37.3760553923		
Rec lng27:	-82.9813374573		
Rec lat83:	37.3761531422		
Rec lng83:	-82.9812238961		
Site id:	KYOG60000070570		

36
NNE
 1 - 2 Miles

OIL_GAS **KYOG60000072865**

Api:	16119022110000	Kgs recno:	132684
Letter 1:	K	Number 1:	79
Section:	4	Fns:	130
Ns:	N	Few 1:	529
Ew:	W	Surf elev:	1605
Usqs quad:	HANDSHOE	County:	KNOTT
Org farm:	EVANS OIL & GAS TRUST		
Org oper:	CHESAPEAKE APPALACHIA, LLC		
Org wellno:	825861	Td:	3396
Tdfm:	344ONDG	Deepst pay:	000
lof ip:	Not Reported	Org wclass:	DEV
Org result:	GAS	Cmpl date:	08/19/2007
Plug date:	05/16/2007	Plug afdvt:	Not Reported
Core:	Not Reported	Cuttings:	0
Elog:	DIL	Plotsymbol:	GAS
Kgs permit:	101198		
Images:	Not Reported		
Bore type:	V		
Rec lat27:	37.4163096376		
Rec lng27:	-82.9815121505		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Rec lat83: 37.4164071912
Rec lng83: -82.9813991929
Site id: KYOG60000072865

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS RADON

AREA RADON INFORMATION

Federal EPA Radon Zone for KNOTT County: 2

Note: Zone 1 indoor average level > 4 pCi/L.
 : Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
 : Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for KNOTT COUNTY, KY

Number of sites tested: 1

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.200 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)

Source: United States Geologic Survey

EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Scanned Digital USGS 7.5' Topographic Map (DRG)

Source: United States Geologic Survey

A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2009 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Polygon Features

Source: Environmental Protection & Public Protection Cabinet

Telephone: 502-564-5174

HYDROGEOLOGIC INFORMATION

AQUIFLOW[®] Information System

Source: EDR proprietary database of groundwater flow information

EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit

Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Services

The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Services (NRCS)

Telephone: 800-672-5559

SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Services, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)

This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Kentucky Water Well Records Database

Source: Kentucky Geological Survey

Telephone: 859-257-5500

Water Wells in Kentucky. Data from the Kentucky Ground Water Data Repository.

OTHER STATE DATABASE INFORMATION

Oil and Gas Well Locations

Source: Kentucky Geological Survey

Telephone: 859-257-5500

Oil and gas well locations in the state of Kentucky

RADON

Area Radon Information

Source: USGS

Telephone: 703-356-4020

The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones

Source: EPA

Telephone: 703-356-4020

Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities

Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater

Source: Department of Commerce, National Oceanic and Atmospheric Administration

PHYSICAL SETTING SOURCE RECORDS SEARCHED

STREET AND ADDRESS INFORMATION

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Ball Creek WWTP Site

2606 West Highway 1087

Leburn, KY 41831

Inquiry Number: 2699089.3

February 12, 2010

Certified Sanborn® Map Report

Certified Sanborn® Map Report

2/12/10

Site Name:

Ball Creek WWTP Site
2606 West Highway 1087
Leburn, KY 41831

Client Name:

R.M. Johnson Engineering, Inc.
P.O. Box 444
Hindman, KY 41822



EDR Inquiry # 2699089.3

Contact: Stephen R. Harris, P

The complete Sanborn Library collection has been searched by EDR, and fire insurance maps covering the target property location provided by R.M. Johnson Engineering, Inc. were identified for the years listed below. The certified Sanborn Library search results in this report can be authenticated by visiting www.edrnet.com/sanborn and entering the certification number. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by Sanborn Library LLC, the copyright holder for the collection.

Certified Sanborn Results:

Site Name: Ball Creek WWTP Site
Address: 2606 West Highway 1087
City, State, Zip: Leburn, KY 41831
Cross Street:
P.O. # NA
Project: Ball Creek WWTP Project
Certification # B621-4939-93F8



Sanborn® Library search results
Certification # B621-4939-93F8

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

The Sanborn Library includes more than 1.2 million Sanborn fire insurance maps, which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ✓ Library of Congress
- ✓ University Publications of America
- ✓ EDR Private Collection

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Ball Creek WWTP Site
2606 West Highway 1087
Leburn, KY 41831

Inquiry Number: 2699089.6
February 15, 2010

The EDR-City Directory Abstract



440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

EDR CITY DIRECTORY ABSTRACT

Environmental Data Resources, Inc.'s (EDR) City Directory Abstract is a screening report designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Abstract includes a search and abstract of available city directory data. For each address, the directory lists the name of the corresponding occupant at five year intervals.

NO COVERAGE

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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Ball Creek WWTP Site

2606 West Highway 1087
Leburn, KY 41831

Inquiry Number: 2699089.8
February 15, 2010

The EDR Property Tax Map Report



440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

EDR Property Tax Map Report

Environmental Data Resources, Inc.'s EDR Property Tax Map Report is designed to assist environmental professionals in evaluating potential environmental conditions on a target property by understanding property boundaries and other characteristics. The report includes a search of available property tax maps, which include information on boundaries for the target property and neighboring properties, addresses, parcel identification numbers, as well as other data typically used in property location and identification.

NO COVERAGE

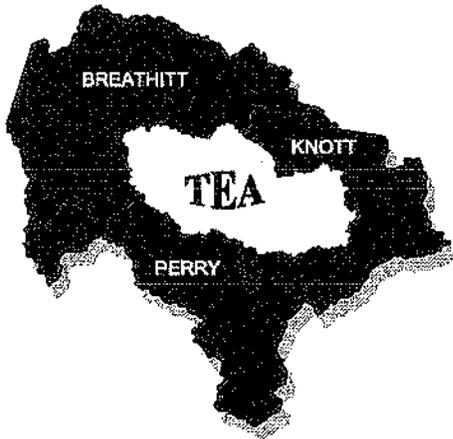
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Please contact EDR at 1-800-352-0050
with any questions or comments.

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TroublesomeCreek

ENVIRONMENTAL AUTHORITY

APPENDIX 'C'

Historical Aerial Photos & Topographical Maps

Ball Creek WWTP Site

2606 West Highway 1087

Leburn, KY 41831

Inquiry Number: 2699089.5

February 19, 2010

The EDR Aerial Photo Database Package



440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDRs professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

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Date EDR Searched Historical Sources:

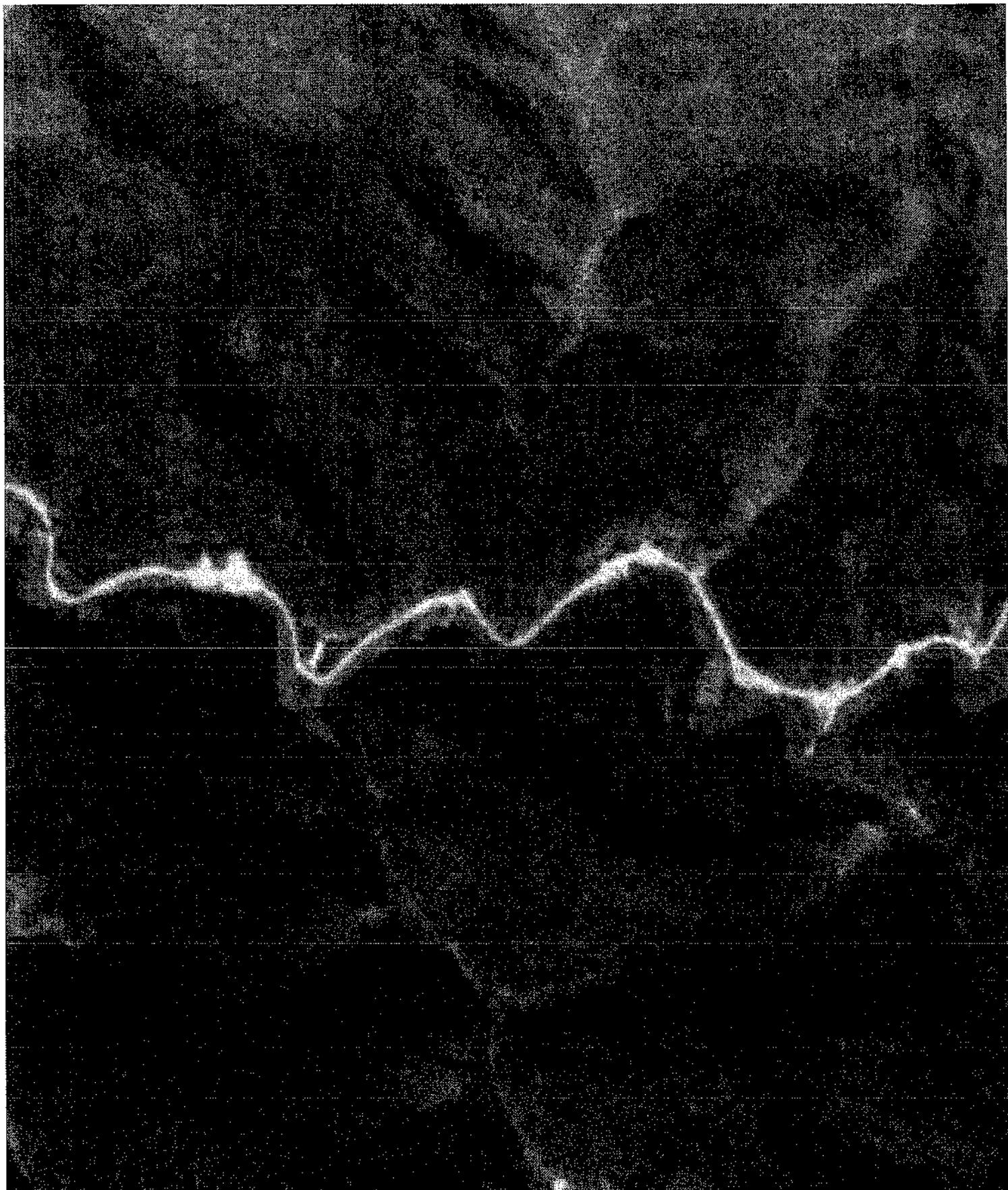
Aerial Photography February 19, 2010

Target Property:

2606 West Highway 1087

Leburn, KY 41831

<u>Year</u>	<u>Scale</u>	<u>Details</u>	<u>Source</u>
1960	Aerial Photograph. Scale: 1"=1000'	Panel #: 2437082-D8/Flight Date: October 12, 1960	EDR
1985	Aerial Photograph. Scale: 1"=1000'	Panel #: 2437082-D8/Flight Date: April 10, 1985	EDR
1991	Aerial Photograph. Scale: 1"=750'	Panel #: 2437082-D8/Flight Date: March 28, 1991	EDR
1995	Aerial Photograph. Scale: 1"=750'	Panel #: 2437082-D8/Flight Date: March 14, 1995	EDR

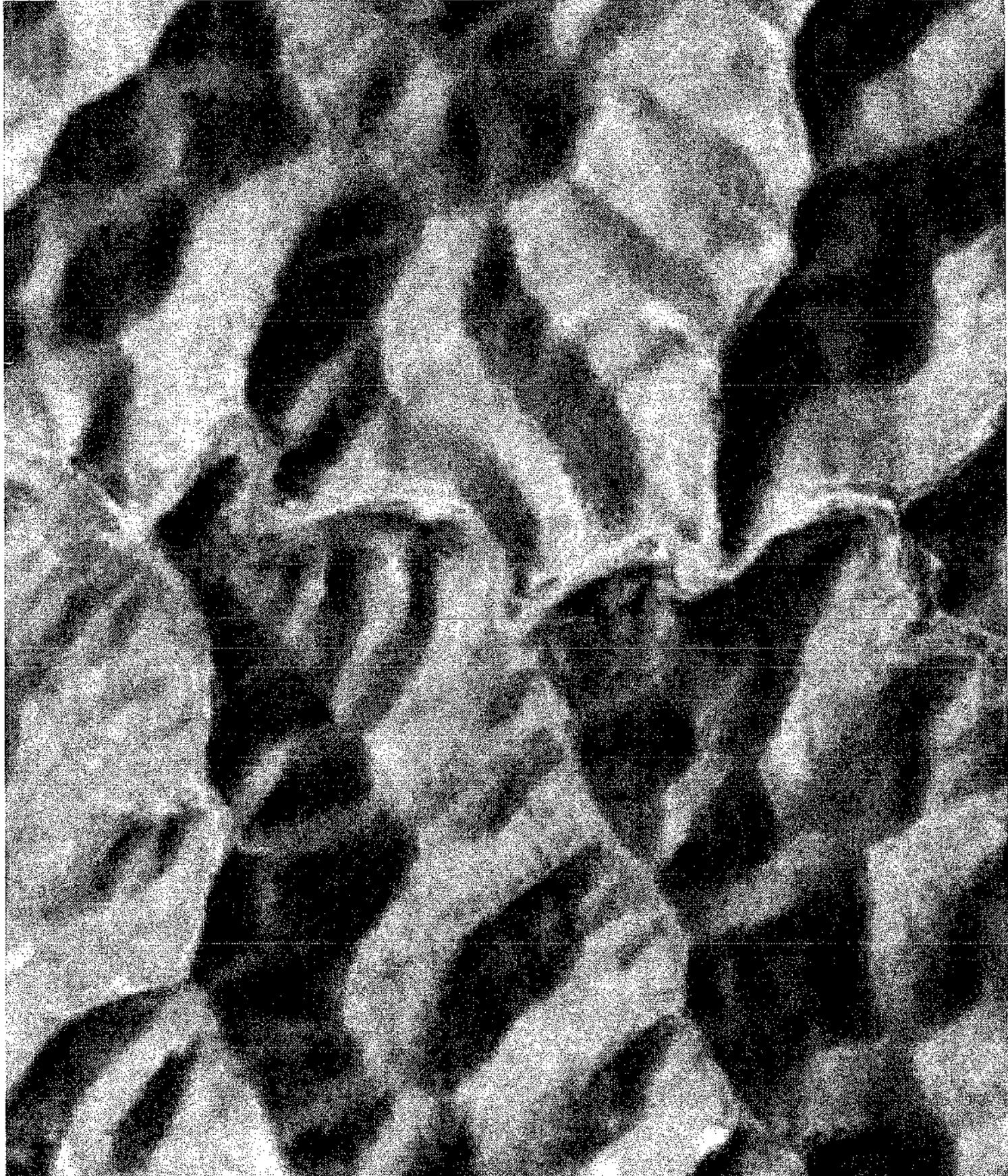


INQUIRY #: 2699089.5

YEAR: 1960

— = 1000'





INQUIRY #: 2699089.5

YEAR: 1985

— = 1000'





INQUIRY #: 2699089.5

YEAR: 1991

— = 750'





INQUIRY #: 2699089.5

YEAR: 1995

| = 750'



Ball Creek WWTP Site

2606 West Highway 1087

Leburn, KY 41831

Inquiry Number: 2699089.4

February 15, 2010

The EDR Historical Topographic Map Report

EDR Historical Topographic Map Report

Environmental Data Resources, Inc.s (EDR) Historical Topographic Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topographic Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the early 1900s.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

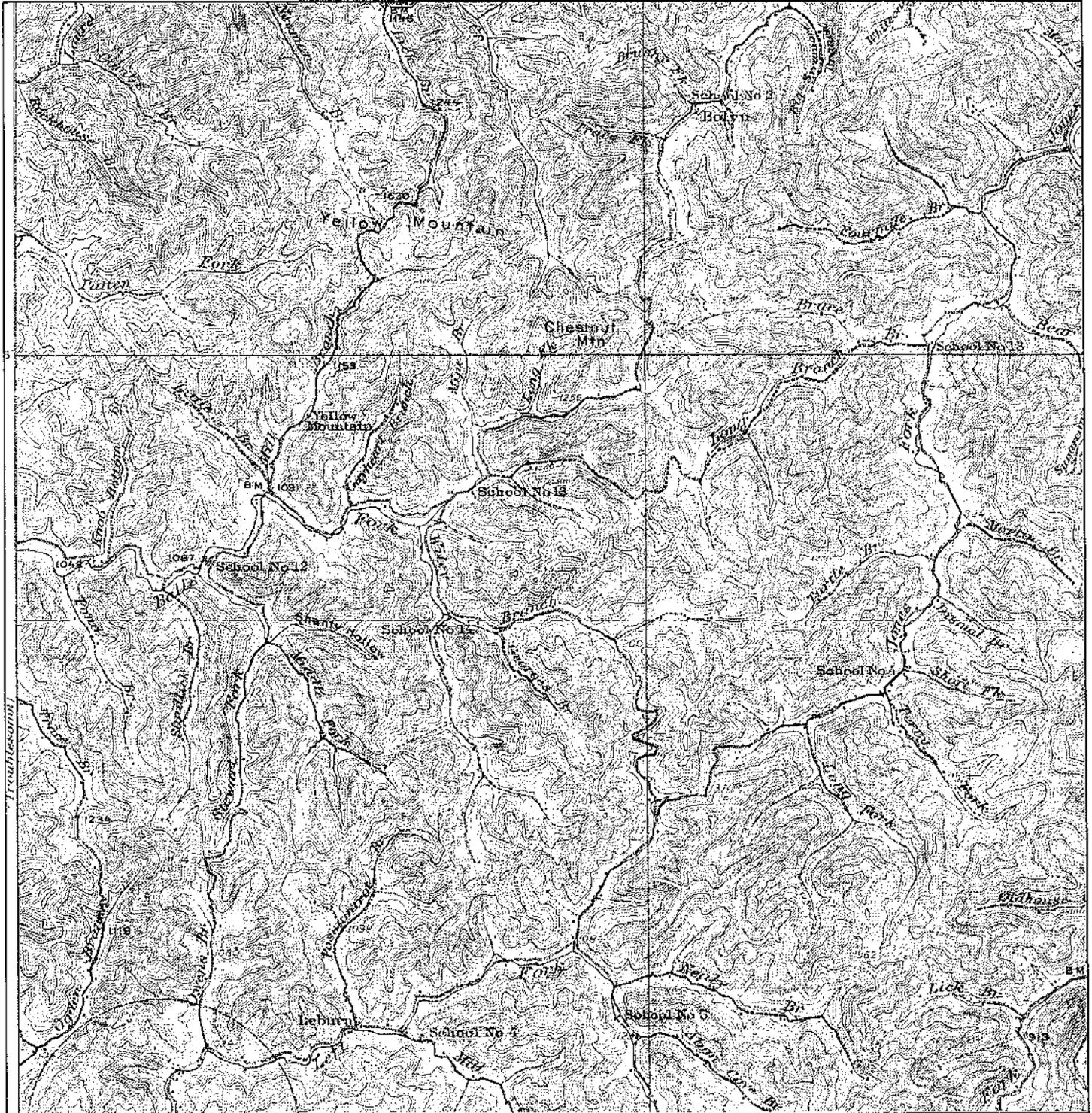
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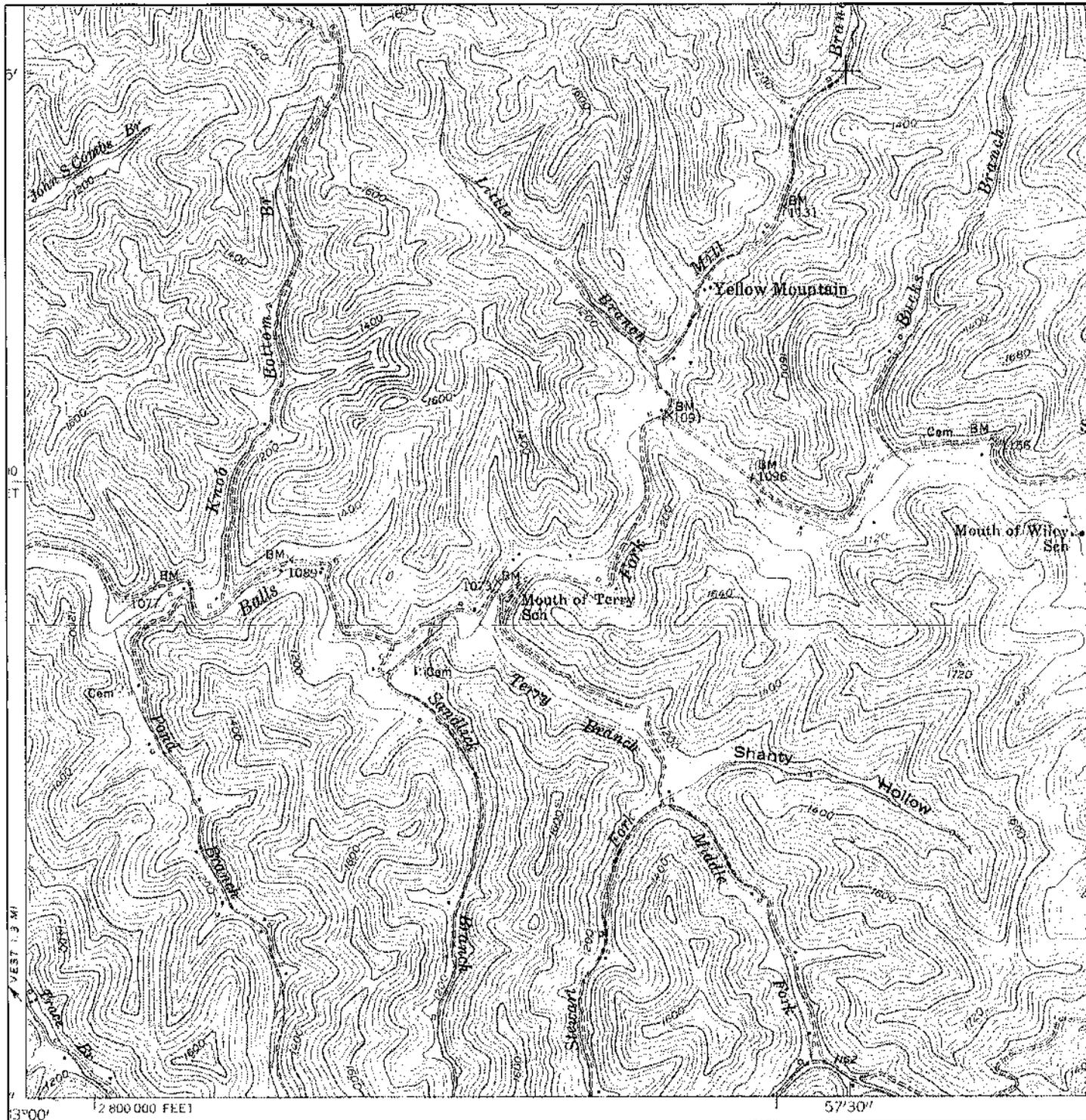
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Historical Topographic Map



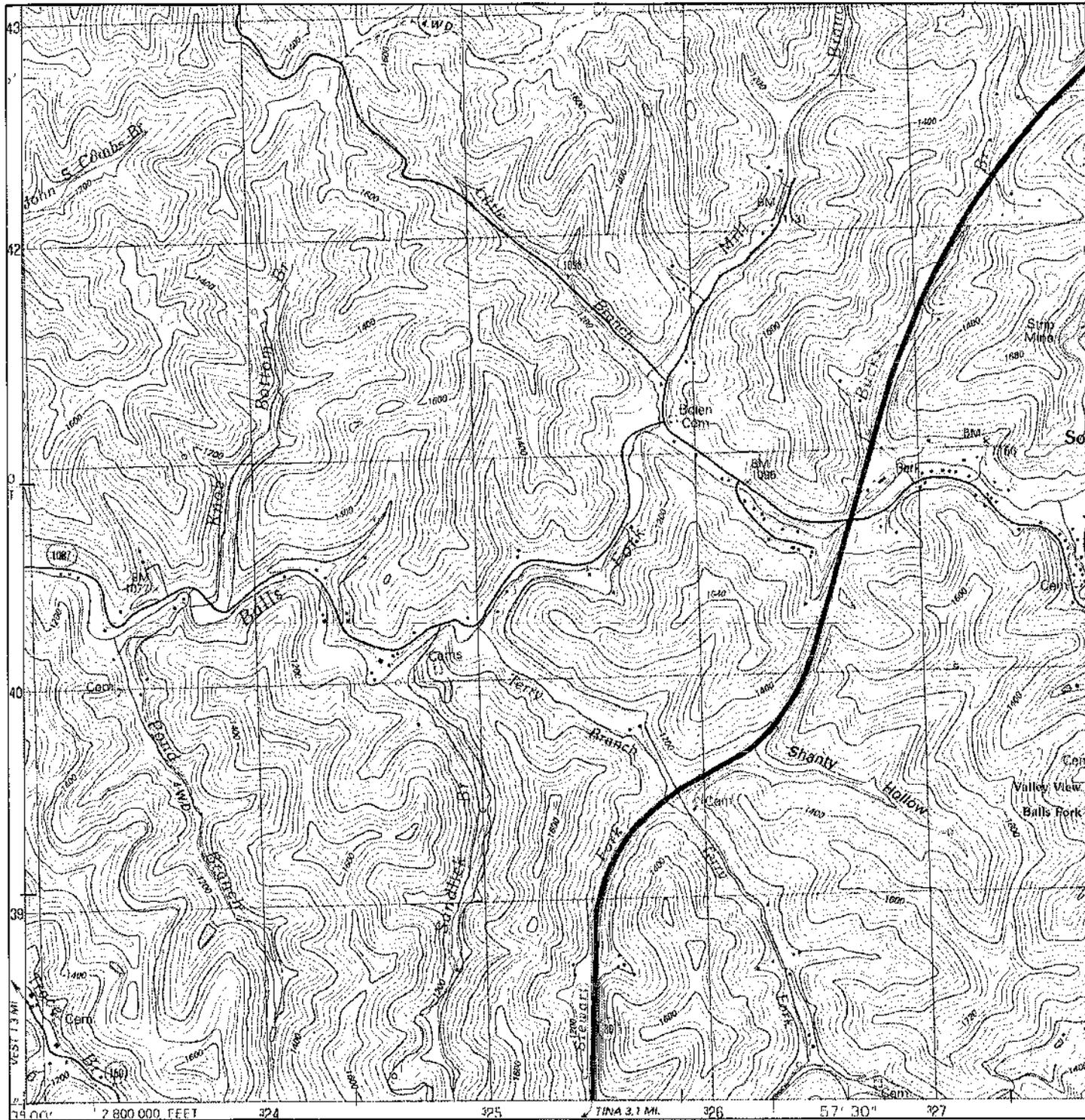
N ↑	TARGET QUAD NAME: HINDMAN MAP YEAR: 1915	SITE NAME: Ball Creek WWTP Site ADDRESS: 2606 West Highway 1087 Leburn, KY 41831 LAT/LONG: 37.3961 / 82.9897	CLIENT: R.M. Johnson Engineering, Inc. CONTACT: Stephen R. Harris, P INQUIRY#: 2699089.4 RESEARCH DATE: 02/15/2010
	SERIES: 15 SCALE: 1:62500		

Historical Topographic Map

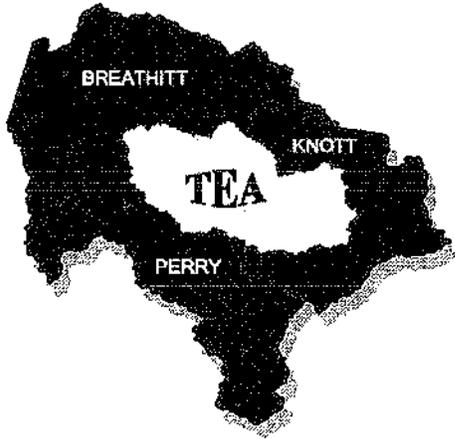


N 	TARGET QUAD	SITE NAME: Ball Creek WWTP Site	CLIENT: R.M. Johnson Engineering, Inc.
	NAME: HANDSHOE	ADDRESS: 2606 West Highway 1087	CONTACT: Stephen R. Harris, P
	MAP YEAR: 1954	LAT/LONG: 37.3961 / 82.9897	INQUIRY#: 2699089.4
	SERIES: 7.5		RESEARCH DATE: 02/15/2010
	SCALE: 1:24000		

Historical Topographic Map



N 	TARGET QUAD NAME: HANDSHOE MAP YEAR: 1992	SITE NAME: Ball Creek WWTP Site ADDRESS: 2606 West Highway 1087 Leburn, KY 41831	CLIENT: R.M. Johnson Engineering, Inc. CONTACT: Stephen R. Harris, P INQUIRY#: 2699089.4
	SERIES: 7.5 SCALE: 1:24000	LAT/LONG: 37.3961 / 82.9897	RESEARCH DATE: 02/15/2010



TroublesomeCreek

ENVIRONMENTAL AUTHORITY

APPENDIX 'D'

Environmental Liens

Ball Creek WWTP Site

2606 West Highway
Leburn, KY 41831

Inquiry 2699089.7
February 12, 2010

The EDR Environmental Lien Search™ Report



110 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

EDR Environmental LienSearch™ Report

The EDR Environmental LienSearch Report provides results from a search of available current land title records for environmental cleanup liens and other activity and use limitations, such as engineering controls and institutional controls.

A network of professional, trained researchers, following established procedures, uses client supplied address information to:

- search for parcel information and/or legal description;
- search for ownership information;
- research official land title documents recorded at jurisdictional agencies such as recorders' offices, registries of deeds, county clerks' offices, etc.;
- access a copy of the deed;
- search for environmental encumbering instrument(s) associated with the deed;
- provide a copy of any environmental encumbrance(s) based upon a review of key words in the instrument(s) (title, parties involved, and description); and
- provide a copy of the deed or cite documents reviewed.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EDR Environmental LienSearch™ Report

TARGET PROPERTY INFORMATION

ADDRESS

BALL CREEK WWTP SITE
2606 West Highway 1087
Leburn, KY 41831

RESEARCH SOURCE

Source 1: Knott County Recorders Office
Source 2: N/A
Examiner's Note: Public records of Knott County, KY were searched from January 1, 1980 to February 10, 2010, and no other deeds vesting title in the subject property were found of record during the period searched.

PROPERTY DESCRIPTION

Current Owner: Paul Smith and Joyce Smith
Legal Description: N/A
Property Identifiers: APN: 036-0000019.00
General Comments: N/A

PROPERTY INFORMATION

Deed 1:
Type of Deed: Deed
Title is vested in: Paul Smith and Joyce Smith
Title received from: Alonza Patrick and Elzora Patrick
Date Executed: March 25, 1974
Date Recorded: March 25, 1974
Book: 97
Page: 242
Volume:
Instrument #:
Docket:

Land Record Comments: N/A

ENVIRONMENTAL LIEN

Environmental Lien: Found Not Found

If found:

1st Party:

EDR Environmental LienSearch™ Report

2nd Party:

Dated:

Recorded:

Book:

Page:

Docket:

Volume:

Instrument:

Comments:

Miscellaneous:

OTHER ACTIVITY AND USE LIMITATIONS (AULs)

Other AUL's: Found Not Found X

If found:

1st Party:

2nd Party:

Dated:

Recorded:

Book:

Page:

Docket:

Volume:

Instrument:

Comments:

Miscellaneous:

EDR Environmental LienSearch™ Report

DEED EXHIBIT

242

TO: DEED

This deed prepared by:

*J. Robert Morgan
Blindman, Ky.*

THIS DEED OF CONVEYANCE made and entered into this 25 day of March 1974
between Alanzo Patrick and Elzora Patrick

of West County of Knott and State
of Kentucky, of the first part, and Faul Smith and Joyce Smith, his wife

of West
County of Knott and State aforesaid, of the second part:

WITNESSETH, that the part ies of the first part for and in consideration of the sum of
Five Hundred (\$500.00) Dollars cash in hand paid

ies the receipt and sufficiency of which is hereby acknowledged, have bargained and sold, and by these presents do bargain, sell and convey unto the said part ies of the second part, a certain tract or parcel of land, lying in Knott County, Kentucky, and described as follows: Lying and being on Balls Fork in Knott Co., Kentucky, BEGINNING at a cross on cliff; thence running up the hill in a straight line to a hickory tree; thence turning left and running around the hill in a straight line to a marked oak tree; thence running in a straight line down the hill to Highway 1087; thence following Highway 1087 right of way back to the beginning. Containing 3 acres more or less.

243

Being the same land conveyed by Otis Patrick and Estie Patrick, his wife

to the grantor s herein by Deed dated 1-18-1947
and recorded in Deed Book No. 69 page 176 records of the Knott
County Court Clerk's Office.

To have and to hold said tract of land, with the appurtenances thereunto belonging unto the part ies
of the second part ies heirs and assigns forever, with covenants of General Warranty.
In testimony whereof, the part ies of the first part ha ve hereunto subscribed their
name s the day and date aforesaid.

Alonzo Patrick
Elzora Patrick

STATE OF KENTUCKY,

KNOTT COUNTY,

Sec.

I, Dillie Cornish the County aforesaid
do certify that the foregoing Deed from Alonzo Patrick and Elzora Patrick, his wife
to Paul Smith and Joyce Smith, his wife

was this day produced to me, and duly
acknowledged before me, in said County, by Alonzo Patrick and Elzora Patrick, his wife

part ies thereto, to be their act and deed.
Given under my hand this 25 day of March, 1947

Dillie Cornish
Notary Public

TAX \$.50

STATE OF KENTUCKY,

KNOTT COUNTY,

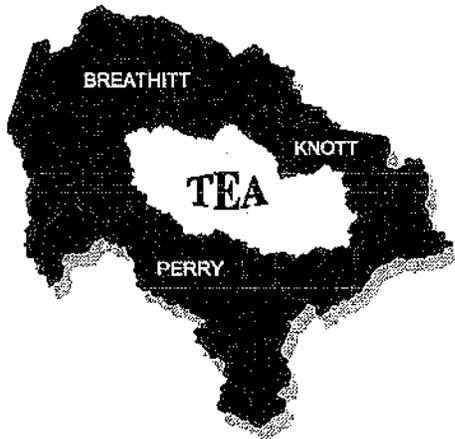
Sec.

I, Dillie Cornish Clerk of the County Court of the County aforesaid,
do certify that the foregoing Deed from Alonzo Patrick + Elzora
to Paul + Joyce Smith
was, on the 25th day of March, 1947

lodged in my office for record, and that it, the foregoing, and this certificate, have been duly recorded in my office
in deed book 97 page 242-243

WITNESS my hand, this 25th day of March, 1947

Dillie Cornish Clerk
By Robert S. Jordan D. C.



TroublesomeCreek

ENVIRONMENTAL AUTHORITY

APPENDIX 'E'

Other Supporting Documents

Stephen R. Harris, P.E., L.S.I.T.

LEED Accredited Professional

Mr. Harris joined R.M. Johnson Engineering, Inc. in May 2007 as an Environmental Engineer and is now a key component of the Civil Engineering Department. He has served as the project engineer for numerous projects with an emphasis on infrastructure, site, and transportation projects. He has gained invaluable experience with utility relocation projects throughout central and eastern Kentucky. Mr. Harris has served as the design engineer on the following projects:

WATER RESOURCES PROJECTS

City of Hindman KY Route 160 Waterline Relocation. Hindman, KY. (Design In Progress). This project consists of the relocation of roughly 1.0 mile of existing waterline located along Route 160 near Knott County Central High School. This project is a portion of the Route 160 Roadway Relocation Project currently being design by the Kentucky Transportation Cabinet. Estimated Project Cost: \$100,000.

Carr Creek Waterline Extension Project, Phase I. Carr Creek, KY (Design In Progress). This project includes the extension of waterline supply lines coming from the newly constructed Carr Creek Water Plant. The project consists of the installation of roughly 15 miles of 16", 12", and 8" ductile and PVC waterlines, a new 600,000 gallon water storage tank, and several pump stations and other appurtenances. This project will interconnect and supply water to the Letcher County Water & Sewer District's customers in the Letcher County area. Estimated Project Cost: \$6,000,000.

Jamestown & Highway 80 Waterline Project; Jamestown, KY (Design Completed 2008). This project includes the installation of roughly 10 miles of 8" ductile and PVC waterlines throughout the western region of Knott County along Highway 80. The success of the project required the construction of a new 150,000 gallon tank and the relocation of several appurtenances throughout the system. Total Project Cost: \$1,500,000.

ALC Tank Replacement & Pippa Passes Tank Rehabilitation Project; Pippa Passes, KY (Design Completed 2007). This

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Fax: (606) 785-0244

Email: sharris@rmjeng.net

EDUCATION

Marehead State University
(2006-Present)

M.B.A. in Project Management

Kentucky Technical and
Community College
(Spring 2006)

KY Core Supervisory Curriculum

University of Kentucky
B.S. in Civil Engineering (2002)

University of Kentucky
B.S. in Mechanical Engineering
(2002)

project included the demolition and replacement of a 100,000 gallon steel tank and the rehabilitation of a 100,000 gallons glass-lined tank. Both of these tanks feed the entire water supply system for the City of Pippa Passes and Alice Lloyd College. Total Project Cost: \$500,000.

Irishman Creek Waterline Project, Phase III; Carr Creek, KY (Construction Completed 2008). This project includes the design of approximately 6 miles of a 12" water main which will be the first connection to the anticipated Carr Creek Water Treatment Plant. This main will serve as the supply line for approximately 80 customers and a multitude of future branch line connections. Estimated Project Cost: \$1,900,000.

Clear Creek Waterline Expansion – Phase I; Hindman, KY (Construction Completed 2008). Design for approximately 5 miles of 8" PVC and pump station to interconnect Troublesome Creek and Lotts Creek existing lines. Responsibilities for this project includes hydraulic design, DOW Submittal, and KYDOH encroachment permit. Estimated project cost will be around 1.2 million dollars.

Hall & Puncheon Waterline Extension Project; Topmost & Kite, KY (Construction Completed 2008). This project includes the design of approximately 4 miles of mostly 6" PVC branch lines which will serve approximately 100 customers total. Estimated Project Cost: \$ 600,000.

Elk Glen Waterline Extension Project; Hindman, KY (Construction Completed 2007). This project included the design of an 8" waterline and booster pump station that would serve the residential development, Elk Glen and The Meadow, located along Route 80 in Knott County. Total Project Cost: \$ 280,000.

Ball Creek Waterline Project; Knott County, KY (Construction Completed 2008). This project includes the construction of approximately 30 miles of mostly 8" water main that will serve about 600 customers throughout the Ball Creek area of Knott County. This project included the design of several booster pump stations along with the installation of several pressure reducing valves to accommodate the mountainous terrain of eastern Kentucky. Total Project Cost: \$1,800,000.

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EDUCATION

Morehead State University
(2006-Present)

M.B.A. in Project Management

Kentucky Technical and
Community College
(Spring 2006)

KY Core Surveying Examination

University of Kentucky

Professional Registration 2004

Professional Registration 2004

Professional Registration
Professional Engineer

Professional Registration

Professional Registration
Professional Engineer

SEWAGE TREATMENT & COLLECTION PROJECTS

Ball Creek WWTP & Sewer Collection Project, Phase I; Vest, KY (Design In Progress). This project includes the design and construction of a 0.10 MGD WWTP and the installation of approximately 6.5 miles of 6" HDPE force main. The WWTP will be a Sequential Batch Reactor and will be a first in the region. The project will provide public sewer services to approximately 85 potential customers and the Chestnut Ridge Development which is the home of the Knott County Sportsplex. Estimate Project Cost: \$4,200,000.

TRANSPORTATION PROJECTS

Route 699 Roadway Relocation Project; Leatherwood, KY (Design Completed 2007—In Construction). This project is a unique project where a private mining company has partnered with the Kentucky Department of Transportation to relocate approximately 1.0 miles of rural roadway in Perry County. The completed project will transform the existing narrow roadway into a 55 mph highway with two 12' lanes and adequate shoulders. Nearly 2.0 million cubic yards of earth will be moved to construct the roadway in its final location. This project also included the hydraulic design of roadway ditches and culverts.

Route 267 Roadway Relocation Project; Rowdy Gap, KY (Design In Progress). This project includes the relocation of approximately 1,600 linear feet of an existing narrow roadway located in Perry County. This finished product will yield a new 55 mph roadway with 12' lanes and adequate shoulders. The construction of this project will include moving approximately 850,000 cubic yards of earth to bring the site to finished ground. This project also included the hydraulic design of roadway drainage ditches.

Ramey Park Pedestrian Bridge Project; Salyersville, KY (Design Completed 2007). This project includes the emergency replacement of a pedestrian bridge located at Ramey Memorial Park in Salyersville. The existing swinging bridge was condemned by the Magoffin County Fiscal Court under a motion stating the bridge was unsafe to the public. The proposed bridge

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EDUCATION

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(2006-Present)

M.B.A. in Project Management

Kentucky Technical and
Community College
(Spring 2006)

KY Core Surveying Curriculum

University of Kentucky
B.S. in Civil Engineering (2007)

Virginia Polytechnic Institute
B.S. in Civil Engineering
Surveying Curriculum

WORK EXPERIENCE

2007-Present

2006-Present

2005-Present

2004-Present

2003-Present

2002-Present

2001-Present

2000-Present

1999-Present

1998-Present

1997-Present

1996-Present

1995-Present

1994-Present

1993-Present

1992-Present

1991-Present

1990-Present

1989-Present

1988-Present

1987-Present

1986-Present

1985-Present

1984-Present

1983-Present

1982-Present

1981-Present

1980-Present

is a bow truss bridge with two 115' spans. The finished project will provide much more clear flow for the Licking River and provide the citizens of Salyersville with an appealing new bridge structure. Total Project Cost: \$ 330,000. ***

Jane Arnett Branch Bridge Project; Salyersville, KY
(Design Completed 2006—Construction Completed 2006). This project includes the site design and layout for a 50' single span bridge which spans the Licking River. The bridge will replace an existing ford that is heavily used by Magoffin County Officials to access gas wells. ***

Thompson Road Widening Project—Phase 1; Pikeville, KY
(In Progress: 2005-Current). This project includes the reconstruction and widening of approximately one mile of a local roadway, as well as improving drainage and existing intersections along the alignment. Successful construction of the roadway will include mass utility relocations, and the construction of several retaining walls. The finished project will furnish the City of Pikeville with a corridor that enhances capacity, sight distance, and flow conditions. Total Project Cost: \$ 4,410,000. ***

Access Road to Knott County Sportsplex; Hindman, KY
(Design Completed 2006--Construction Completed 2006). The project includes the design of approximately 1.0 mile of roadway, site/storm drainage, and an 8" waterline extension. The anticipated pavement section varies and includes a four-lane, three-lane, and a two-lane road, all with 12' lanes and curb and gutter. The objectives of the project are to provide access to the Knott County Fiscal Court's site located just off Route 80. This site is to be the seat of the highly anticipated Knott County Sports/Athletic Complex. Total Project Cost: \$1,820,000. ***

SITE/CIVIL DESIGN PROJECTS

River of Earth Amphitheater Project; Hindman, KY
(In Construction). This project includes the demolition of a asphalt parking lot, the demolition of an existing stairwell, earthwork, utility relocations, and an existing bridge rehabilitation. When finished, this project will create a 90+ seat amphitheater to be used by the residents and visitors of Knott County. Total Project Cost: \$250,000.

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(Spring 2006)

KY Core Surveying Curriculum

University of Kentucky
B.S. in Civil Engineering (2004)

University of Kentucky
B.S. in Civil Engineering (2001)
Professional Engineer
License # 10000

EMPLOYMENT

2006-Present

2004-2006

2001-2004

2000-2001

1999-2000

1998-1999

1997-1998

1996-1997

1995-1996

1994-1995

1993-1994

1992-1993

1991-1992

1990-1991

1989-1990

1988-1989

1987-1988

1986-1987

1985-1986

1984-1985

1983-1984

1982-1983

1981-1982

1980-1981

1979-1980

1978-1979

1977-1978

1976-1977

Perry County Public Library Project; Hazard, KY

(Design In Progress). This project involves the development of 2.5 acres in Perry County. The new home of the Perry County Public Library will sit along Black Gold Boulevard located in an existing commercial development park. The project includes the design and layout of parking lots, sanitary sewers, storm sewers, water and gas lines, and electric. Estimate Construction Cost: \$6,000,000.

Knott County Recycling Center; Hindman, KY (In Progress).

This project consists of the design and development of a 0.5 acre site that will be the home of the Knott County Recycling Center. Site design includes earthwork, storm sewer design, and providing service utilities to the proposed 5,000 square foot building. A concrete ramp and loading dock will be provided to aid the loading of compacted recyclables into a hauling truck. Estimated Construction Cost: \$115,000.

Writt Station Subdivision Project; Lexington, KY

(Design Completed 2006—In Construction) This project consisted of the design and development of a 10+ acre subdivision dedicated to single family residents. This project required the design for roadways, sanitary sewers, storm sewers, as well as a detention pond. The site contains 46 lots located within ¼ mile from Bryan Station High School. All aspects of design abide by Lexington-Fayette Urban County Government's (L.F.U.C.G's) specifications and regulations. Total Project Cost: \$ 752,000. ***

Magoffin County Administration Building; Salyersville, KY

(Design Completed 2006—In Construction). This project involved the site layout and design of a 15,300 square foot municipal building located in downtown Salyersville, adjacent to the Justice Center. The development of the site included the relocation of utilities, as well as, the construction of a 290 L.F. 4' X 12' single-box culvert, which lies directly underneath the parking lot. Estimated Construction Cost: \$550,000. ***

Knott County Pool & Skateboard Park; Hindman, KY

(Design Completed 2006—Construction Completed 2006). The project included the site layout and design of an unfinished project located in Hindman, Kentucky. The site design included the parking lot layout, storm sewers, and a concrete pad for the skateboard ramps. ***

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EDUCATION

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(2006-Present)
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Kentucky Technical and
Community College
(Spring 2006)
KY Core Surveying Curriculum

University of Kentucky
B.S. in Civil Engineering (2004)

Albany College of Arts and Sciences
P.E. Registration Curriculum
College of Trade Science

University of Kentucky
Professional Engineer

hotel located just off of Route 80 in Knott County. This report will present to the owner the economic criteria for a successful investment.

Bice Property Development; Morehead, KY (Performed 2007)

This was a Specialty Engineering Report that included a pro-forma for a 90-acre potential subdivision development. The report contained a preliminary subdivision and infrastructure design with an economic analysis to determine the feasibility of the concept.

Western Pocahontas Feasibility Report; Hindman, KY

(Performed 2006). This was a Specialty Engineering Report that included a pro-forma for the 300+ acre site located off of Route 80 in Knott County, Kentucky. A preliminary subdivision and infrastructure layout was created to determine if the project could be profitable. ***

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EDUCATION

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(2006-Present)
M.B.A. in Project Management

Kentucky Technical and
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(Spring 2006)

KY Core Surveying Curriculum

University of Kentucky
B.S. in Civil Engineering (2006)

West Virginia University (2003-2004)
B.S. in Mechanical Engineering
Carnegie Mellon University

PROFESSIONAL

Professional Engineer

CONTINUING EDUCATION & RELATED SEMINARS

Residential Green Retrofitting Seminar – 05/09. (Provided by HalfMoon, LLC).

OMNIFLO SBR Wastewater Treatment Training Seminar – 03/09. Plant Tour in Kansas City, Kansas. (Provided by Siemens Water Technologies.)

Kentucky Glass Lined Tank Systems, Inc 2008 Field Day – 05/08 Plant Tour in Chicago, IL. (Provided by Kentucky Glass Lined Tank Systems, Inc.)

KYPIPE Seminar – 06/07 (Provided by the University of Kentucky & the KYPIPE Developers)

Masters of Business Administration – 08/06 to Present (Morehead State University)

KYTC HiDUG Meeting – 11/06 (Provided by Kentucky Transportation Cabinet)

Land Surveyor-In-Training – 10/06 (Kentucky Board of Engineers and Land Surveyors)

Detention Pond Design Seminar – 6/06 (Provided by Quest Engineers, Inc. per Kentucky Engineering Center)

Precast Concrete Products for Civil Engineering Applications – 3/06 (Seminar Provided by Sherman Dixie)

Brown's Boundary Law & Surveying – 1/06 to 5/06 (Kentucky Community of Technical College System)

Surveying Software – 1/06 to 5/06 (Kentucky Community of Technical College System)

MicroStation V8 Software – 8/05 (KYDOT and Kentucky Engineering Center)

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EDUCATION

Morehead State University
(2008-Present)

M.B.A. in Project Management

Kentucky Technical and
Community College
(Spring 2006)

KY Core Surveying Curriculum

University of Kentucky
B.S. in Civil Engineering 2004

Alfred Russel College, 1993-2000
B.S. in Mechanical Engineering
University of Kentucky

REGISTRATION

Professional Engineer

Professional Surveyor

Marketing 101 Web Seminar – 6/05 (Hosted by American Society of Civil Engineers, ASCE)

Erosion & Sediment Control Workshop – 3/05 (Hosted by Water Works Supplies & North American Green)

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Engineering, Inc.**

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EDUCATION

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(2006-Present)

M.B.A. in Project Management

Kentucky Technical and
Community College
(Spring 2006)

KY Core Surveying Curriculum

University of Kentucky

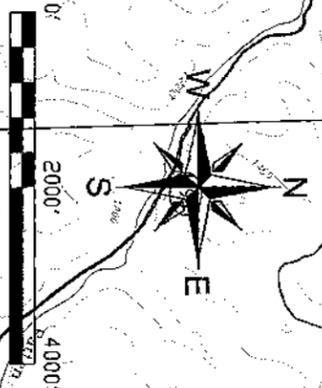
B.S. in Civil Engineering 2004

Morehead State University (2003-2004)

B.S. in Geomatics Engineering Curriculum

KY Core Surveying Curriculum

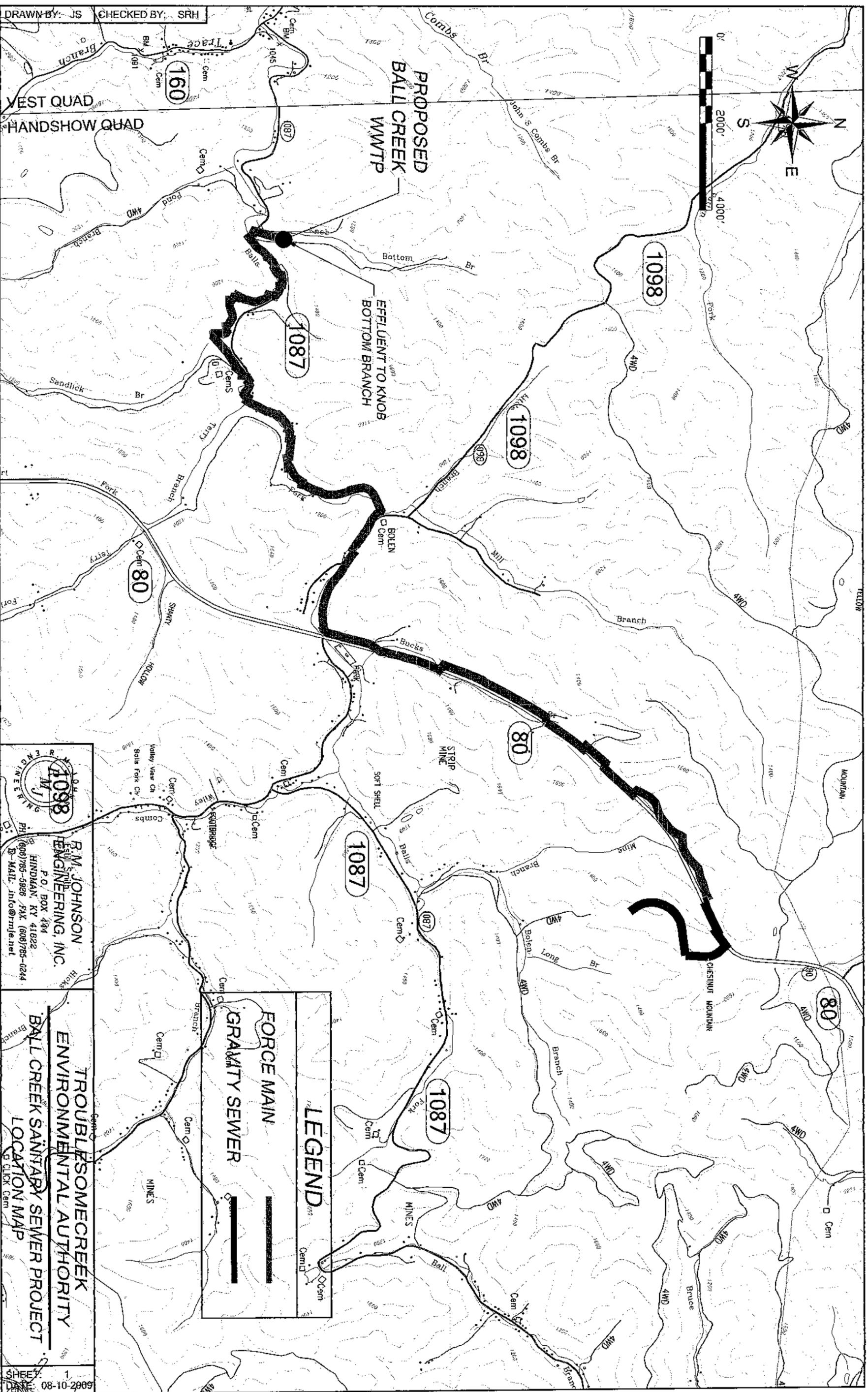
DRAWN BY: JS CHECKED BY: SRH



WEST QUAD
HANDSHOW QUAD

**PROPOSED
BALL CREEK
WWTTP**

**EFFLUENT TO KNOBS
BOTTOM BRANCH**



1098
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ENGINEERING, INC.
P.O. BOX 444
HINDMAN, KY 41622
PH: (606) 785-5828 / FAX: (606) 785-0244
E-MAIL: info@rmje.net

LEGEND

FORCE MAIN

GRAVITY SEWER

**TROUBLESOME CREEK
ENVIRONMENTAL AUTHORITY**

**BALL CREEK SANITARY SEWER PROJECT
LOCATION MAP**

REPORT OF GEOTECHNICAL EXPLORATION

**PROPOSED BALL CREEK WASTER WATER TREATMENT PLANT
VEST, KENTUCKY**

- Prepared For -

**R.M. JOHNSON ENGINEERING, INC.
HINDMAN, KENTUCKY**

- Prepared By -

**MACTEC ENGINEERING AND CONSULTING, INC.
LEXINGTON, KENTUCKY**

MACTEC Project Number 3112-09-0496

March 26, 2009





engineering and constructing a better tomorrow

March 26, 2009

Mr. Stephen R. Harris
R.M. Johnson Engineering, Inc.
3376 Highway 550 East
P.O. Box 444
Hindman, KY 41822

Subject: **Report of Geotechnical Exploration
Proposed Ball Creek Waste Water Treatment Plant
Vest, Knott County, Kentucky
GPS Coordinates: 37.396768, -82.990426
MACTEC Project No. 3112-08-0496**

Dear Mr. Harris:

MACTEC Engineering and Consulting, Inc. (MACTEC) has completed a geotechnical exploration for the above referenced project. Our services were provided in accordance with our Proposal Number Prop08Lexi-269 dated October 21, 2008 which was authorized by you on February 17, 2009.

The attached report provides a review of project information provided to us, a description of site and subsurface conditions, and geotechnical recommendations for use in design and construction of the proposed project. Appendices to the report include site and boring location plans, and results of field and laboratory testing.

We appreciate this opportunity to provide our services and look forward to serving as your geotechnical consultant throughout this and on future projects. Please contact us if you have any questions regarding the information presented.

Sincerely,

MACTEC ENGINEERING AND CONSULTING, INC.

Mickey C. McBrayer, Ph.D. P.E. 25033
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Licensed KY 25033



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1.0 INTRODUCTION

1.1 PURPOSE OF EXPLORATION

MACTEC Engineering and Consulting, Inc. has completed a geotechnical engineering exploration for the proposed Ball Creek Waste Water Treatment Plant located off of Kentucky Route 1087 Road in Vest, Knott County, Kentucky. The purpose of this exploration has been to characterize subsurface conditions affecting the property and to prepare geotechnical recommendations for use in design and construction. Our purpose and scope of services were outlined in MACTEC's Proposal Number Prop08Lexi-269 dated October 21, 2008. This scope included drilling eight soil test borings to auger refusal to obtain subsurface information, as well as excavating test pits to evaluate possible on-site fill materials.

1.2 PROJECT INFORMATION

Project information was provided in Request for Proposal documentation sent to our office dated October 16, 2008. We were provided with a drawing entitled "Ball Creek WWTP Site: Alternate C" dated May 12, 2008. We understand that the Troublesome Creek Environmental Authority (TEA) is planning the construction of the new Ball Creek Wastewater Treatment Plant located on a 2.5-acre site located off of Kentucky Route 1087 near the intersection with Knob Bottom Branch Road in Vest, Kentucky. The proposed construction will be in southern portion of the property with the northern portion being a potential soil borrow site. The construction will include four 50,000 gallon train areas (120 feet by 35 feet each), as well as two "Drying-Bed" areas (90 feet by 25 feet, each). Structural loads were not known at the time of this proposal, but we understand that the train areas and drying beds will rest on large concrete mat foundations.

The topographic relief across the site is approximately 15 feet based on the provided drawing. The site is located at the base of a steep bank on the west side and the Knob Bottom Creek on the east site. The terrain in the development area slopes gently down toward the south.

2.0 EXPLORATION FINDINGS

2.1 SITE SURFACE CONDITIONS

Dr. Mickey McBrayer, P.E. of MACTEC conducted a site reconnaissance on March 2, 2009 to observe and document surface conditions, as well as to direct drilling operations. Information gathered during the reconnaissance was used to aid in this interpretation of subsurface data and to identify conditions which could affect our recommendations.

A dirt/gravel driveway connects KY 1087 to the site interior. The ground surface was covered with short grasses, which were sparse in some areas. Heavily wooded areas border the site to the west (beyond Knob Bottom Branch Road) and east (beyond Knob Bottom Branch). It appeared that

previous dozer work had been operating in the northern portion of the site where a number of felled trees were observed. The ground surface was relatively soft and a dozer was required to tow the drill rig to access boring locations.

2.2 SITE GEOLOGY

Published geologic mapping (USGS Handshoe Geologic Quadrangle dated 1977) indicates the project site is underlain by alluvia deposits adjacent to the creek and the Kendrick Shale of the Breathitt formation beyond the alluvial zone. The alluvium is described as consisting of silt, sand, clay and gravel, generally mixed and locally interbedded. Some areas also exhibit colluvial landslide deposits along valley sides. These deposits usually consist of disintegrated shale, sandstone boulders, and earth with tree remains.

The Kendrick Shale is described as primarily sandy siltstone in the upper part that grades laterally and downward to dark gray to black platy shale. The unit also contains sandstone, shale, underclay and coal. The sandstone is described as light to medium-gray and fine to medium grained.

A number of coal beds are mapped in the vicinity of the site including beds in the Hazard and Francis coal zone. The Hazard No. 7 is mapped at an elevation above the site to the west. An in-depth mining study was beyond the scope of this exploration.

According to the USDA Soil Survey of Knott and Letcher Counties (NRCS website), the soils beneath the subject site consist primarily of the Grigsby sandy loam [Gr] in the central portion of the site and the Handshoe-Feds creek-Marrowbond complex (30-80% [HaF]) along the adjacent banks to the east and west.

The Grigsby silt loam generally consists of well drained, high permeable soils, derived from coarse-loamy alluvium derived from interbedded sedimentary rock. These soils are generally found on flood plains. They are generally classified as SC or SM soils. Generally, 20-70% of the material passes the #200 sieve. The plasticity index generally ranges from non-plastic to 10, with a Liquid Limit of 15 to 30. The depth to bedrock generally is more than 80 inches. The water table is generally found at a depth ranging from 42 to 72 inches, and noted as an area with occasional flooding.

The Handshoe-Feds creek-Marrowbond complex generally consists of well-drained, high permeable soils, derived from loamy skeletal colluvium derived from sandstone. They are generally found on mountain slopes and are generally classified as GC-GM, SC or SM soils with some areas of silty ML soils. Generally, 15 to 60% of the material passes the #200 sieve. The plasticity index generally ranges from non-plastic to 10, with a Liquid Limit of 15 to 30. The depth to bedrock and the depth to the water table are generally greater than 80 inches.

The published data indicates that the primary concerns for building development over the Grigsby soils are flooding and depth to saturated zone (i.e., shallow depth to water). For this reason, they are

rated “Very Limited” for building development. The following map shows the distribution of the two primary soil series found in the project area (NRCS website).

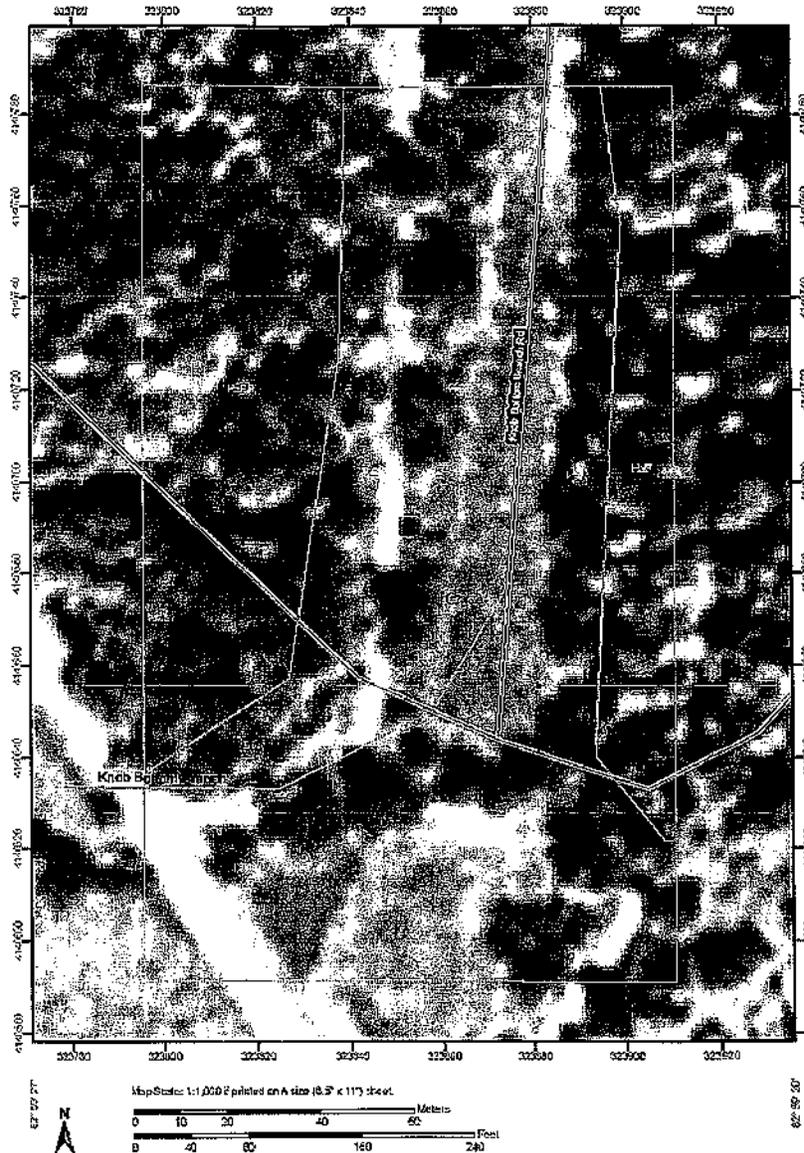


Figure 2. USDA Soil Survey Map of Project Site

2.3 SUBSURFACE CONDITIONS

The subsurface conditions were explored with eight soil test borings, herein referred to as Borings B-1 through B-15, drilled according to procedures presented in Appendix A. We also excavated four test pits designated TP-1 to TP-4. Boring and test pit locations and depths were selected by MACTEC personnel. The actual boring locations were determined by our engineer in the field by a

tape survey from existing site features. Surface elevations for the boring were estimated from the provided topographic map. The boring locations shown in this report should be considered accurate only to the degree implied by the method used.

The subsurface conditions encountered at the boring locations are shown on the Test Boring Records and Test Pit Records in Appendix A. These Records represent our interpretation of the subsurface conditions based on the field logs, visual examination of field samples by an engineer, and tests of the samples collected. The letters in parentheses following the soil descriptions are the soil classifications in accordance with the Unified Soil Classification System (USCS). It should be noted that the stratification lines shown on the soil boring logs represent approximate transitions between material types. In-situ stratum changes could occur gradually or at slightly different depths. Water levels shown on the Test Boring Records represent the conditions only at the time of our exploration.

The general subsurface conditions are summarized in the following sections:

Surface Cover – The borings encountered a surficial layer of topsoil ranging in thickness from 1 to 3 inches.

Old Fill or Colluvium–Boring B-2 and Test Pit TP-3 encountered what appeared to be either fill soils or colluvium to a depth of 5 to 6 feet. Colluvium is a loose deposit of rock debris accumulated through the action of gravity at the base of a cliff or slope. These materials were described as orange brown and gray clayey sand with sandstone rock fragments and small to large root fragments.

Clayey Sands –Below the surface cover in the remaining borings (and below the fill or colluvium in B-2 and TP-3) and extending to depths ranging from 7 to 13 feet, we observed moist to wet, orange brown, brown and gray, silty, clayey sand (SC). The color was typically orange brown and brown in the upper portion transitioning to orange brown and gray in the deeper areas. Standard penetration test (SPT) N-values ranged from 5 to 100+ blows per foot (bpf), with typical values ranging from 6 to 25, indicating relatively loose to very firm consistencies. Laboratory index testing of a representative sample from Borings B-5 revealed that the sample was non-plastic. The natural moisture contents ranged from 10 to 27 percent. The ASTM classification of this soil is SC, clayey sand.

Interbedded in the clayey sands were thin layers of sandy lean clay (CL) where the fines content was estimated to be above 50%. Boring B-6 also encountered a layer of gray sandy fat clay (CH) at a depth of about 7.5 feet just above the bedrock surface which was encounter at a depth of about 9 feet.

Weathered Shale – Below the clayey sands and extending to the boring refusal depth of 9.6 to 13.4 feet, we observed dry to slightly moist, gray to bluish gray weathered shale. Borings B-2 and B-3 also contained thin seams of black coal. Standard penetration test (SPT) N-values were 100+ indicating hard soil consistencies (or soft rock).

The test pits revealed this material to be fairly uniform where exposed. Coring of the shale materials was not performed due to the good exposure of these materials observed in the test pits.

Auger refusal was encountered in all of the borings at depths ranging from 9.6 to 13.4 feet. Three of the test pits (TP-1 to TP-3) were terminated prior to refusal after encountering the weathered shale. Test pit TP-4 was terminated at 3 feet after obtaining a bulk sample for further testing.

For details of subsurface conditions encountered at a particular boring location please refer to the boring logs contained in Appendix A.

2.4 GROUND WATER CONDITIONS

Free ground water was measured in seven of our borings immediately after drilling (all borings except B-7) at depths ranging from 5 to 9.5 feet. Water was observed entering our test pits at a depth of about 5 to 6 feet. Wet soil conditions were noted in many of the borings below these depths. Also, the Soil Survey indicated that many of the site soils are prone to a shallow water table.

Short-term water readings made in clayey soils do not usually give a reliable indication of the actual groundwater level. Thus, groundwater may be encountered at higher elevations depending on weather conditions. When these water bearing strata are exposed in excavations, such as cut slopes, utility, or footing trenches, they can produce widely varying seepage durations and rates depending on recent rainfall activity and other hydro geologic characteristics of the area.

2.5 LABORATORY TESTING

Laboratory testing was performed on select disturbed SPT samples recovered from our borings. The objective of the laboratory testing was to obtain correlative data for estimating soil shear strengths and compressibility. Specifically, we performed the following tests:

- 27 Natural Moisture Content Tests
- 2 Atterberg Limits Tests
- 1 Standard Proctor and CBR

Detailed descriptions of these tests and the results of our testing are included in Appendix B.

3.0 GEOTECHNICAL ANALYSIS

Based on our experience with similar projects and the information gathered by our subsurface exploration, we believe the site is suitable for the proposed development. The primary geotechnical concerns are:

- 1) Soft and Loose Surface Soils
- 2) Shallow Free Water

3) Possible Mining Nearby

These concerns are further described in the following subsections.

3.1 SOFT AND LOOSE SURFACE SOILS

The borings encountered soft and loose soils (as indicated by N-values of 5 to 10) near the foundation bearing level. Based on observed rutting of the drill rig at the site, it is likely that softer soils are present between boring locations. Furthermore, many of these soils were wet and contained varying amounts of organic materials in the upper two feet. Some undercutting of these soft or loose soils or stabilization may be required prior to structural fill placement or mat and pavement construction. Undercut material can be used as fill material provided it conforms to the recommendations of this report. Detailed proofrolling by trained geotechnical personnel can identify soft, unstable subgrade areas prior to structural fill, slab, or pavement construction.

Many of the site surface soils are very clayey with silt. Our previous experience suggests that silty soils will deteriorate from repeated passes of construction equipment, are very sensitive to moisture content, and are difficult to compact when wet. Care must be taken and exercised during the processes of grading and the placement of fill. Surface water should be controlled while the subgrade soils are exposed and use only enough compactive effort to achieve stability and job site requirements for compaction. If problems do arise, the operations in the affected area must be halted and the geotechnical engineer must be contacted to evaluate the condition. Topsoil must be completely removed in areas of any buildings or paved areas.

3.2 SHALLOW FREE WATER

Free groundwater was encountered in seven of the borings and in the test pits. The depth to groundwater ranged from 5 feet to 9.5 feet. However, short-term water readings made in silty and clayey soils may not give a reliable indication of the actual groundwater level. Depending on the time of construction and weather patterns, we believe water may be present at the foundation level in some portions of the site. If the mat excavation is exposed below the groundwater level, the soils may become "quick" and will be loosened, losing their ability to support foundations. Therefore, if possible, groundwater should be lowered and continuously maintained at least 3 feet below the proposed bearing level to permit foundation excavation and construction without disturbance of the foundation soils.

3.3 POSSIBLE MINING NEARBY

Although evidence of mining was not found in our borings, the Geologic Map indicates that several coal beds are mapped in the vicinity of the site. However, the geologic quadrangle indicates that little mining has taken place in the Handshoe Quadrangle. If evidence of mining operations are found during construction, we should be contacted immediately to re-evaluate our recommendations and provide alternative solutions, if required. Again, an in-depth mining study was beyond the scope of this exploration.

4.0 GEOTECHNICAL RECOMMENDATIONS

4.1 FOUNDATIONS

We recommend the proposed 50,000 gallon train beds and drying beds be supported on mat foundations bearing on firm or better clayey sand, encountered about 2 feet below existing grade, or newly placed and properly compacted fill material. Sufficient reinforcement should be provided in the mat so that the foundation acts as a rigid body.

The soil in the upper two feet in the improvement areas consisted of loose clayey sands. We recommend that the upper two feet of loose sands be undercut in the footprints of the new storage beds. Once these materials have been removed, we recommend that the exposed subgrade be compacted in place with a vibratory sheepsfoot roller. After successful proofrolling of the area, newly compacted fill can be placed to grade.

The mat foundations may be designed for a maximum allowable net bearing pressure of 1500 pounds per square foot (psf). The maximum anticipated contact pressures of the mat foundations were calculated to be about 100 psf (assuming tanks are filled with 50,000 gallons of water). The mat foundations should bear at least 36 inches below finished exterior grade, or with turned down edges for a frost curtain, to provide protective embedment and help reduce the potential damage from frost heave or shrinkage or swelling due to moisture fluctuations. As previously indicated, some shallow undercutting or densification by vibratory compaction of loose soils, encountered at the mat foundation bearing level may be required to reach soils suitable for the anticipated design bearing pressure.

Settlement analyses were performed using the maximum anticipated contact pressures and the structure dimensions provided to us. Based on the loading and equipment configurations, the results of our laboratory testing, and empirical correlations for the soil types encountered, and our experience, we have calculated the total post-construction settlement of mat foundations bearing on firm sands encountered about 2 feet below existing grade, or newly placed and properly compacted fill material.

The calculated settlement was less than one inch. Because the mat foundation are essentially are essentially rigid, the settlement at different locations on the mat should be nearly the same. Our experience and published data indicate these settlement magnitudes should be within the tolerable range for these structures. The estimated settlement also assumes the site is prepared in accordance with our recommendations in conjunction with good quality control of the earthwork. The proper removal of unsuitable soils and proper placement and compaction of new fill is particularly important in keeping settlements within the above range. We recommend that MACTEC be retained to observe and test the exposed mat subgrade soils prior to concrete placement.

Finally, a subgrade modulus of 90 psi/in may be used for design of the rigid mat foundations.

4.2 EARTHWORK

The site preparation phase of construction will strongly influence the future performance of project foundations, slabs and pavements. Therefore, adequate earthwork quality control is essential in order to prevent possible costly building and pavement repairs due to excessive settlement or inadequate soil support.

We recommend the following procedures be performed as part of the earthwork and site grading for the proposed project.

4.2.1 Site Preparation

- Strip all topsoil and organic materials from the construction area. These materials should be wasted from the site or used as topsoil in landscape areas;
- After undercutting loose sands to a depth of 2 feet, proof-roll the exposed sub-grade to detect unstable conditions prior to placing fill or after the site has been cut to grade;
- Perform proofrolling after a suitable period of dry weather to avoid degrading the subgrade;
- Use proofrolling equipment consisting of a heavily loaded dump truck or similar equipment judged acceptable by the geotechnical engineer;
- Make several passes with the proofrolling equipment over each section;
- Remove any soft or organic soil which pump or rut during proofrolling and replace them with properly compacted fill;
- Remove any unsuitable materials encountered during proofrolling or identified by either borings or test pits and replace it with properly compacted fill in accordance with Section 4.2.2 below.
- Retain MACTEC to observe the proofrolling operations and make recommendations for any unstable or unsuitable conditions encountered;

Historically, the dryer time of the year and the better time for engaging in earthwork activities is during the period period from late April to November. We recommend initiating and if possible completing the earthwork activities during this time period to potentially avoid additional undercutting due to wet conditions. Additionally, subgrade soils and fill materials may be scarified and dried during this period should these soils become excessively wet due to rainy weather. Drying of the site soils during other portions of the year is typically difficult.

4.2.2 Compacted Fill

A proposed borrow area for new fill has been designated just north of the project area. A test-pit (TP-4) was excavated in this area to obtain a sample for further testing. This material was described as moist, orange brown and brown lean clay (CL). The test results yielded a maximum dry density of 108.5 pcf and an optimum moisture content of 16.9 percent. The material had a Liquid Limit of 38 percent and a Plasticity Index of 18. We believe this material is suitable for use for fill placement and meets the following criteria:

- Use fill materials with a Plasticity Index of less than 30, with a maximum dry density (ASTM D698) greater than 95 pcf;
- Construct compacted fill by spreading suitable soil in maximum 8-inch thick loose lifts;
- Compact the fill lift to at least 98 percent of the soil's maximum dry density (ASTM D 698);
- In general, the moisture content of compacted fill should be maintained at plus 2 percent and minus 2 percent of optimum moisture;
- Perform one in-place density test in every 10,000 square feet for each 8-inch thick fill lift. A minimum of two tests per each lift are recommended;
- Retain a representative of MACTEC to observe and document fill placement and compaction operations.

4.2.3 General

- Maintain positive surface drainage during all earthwork operations to prevent water from ponding on the surface;
- Roll the surface with a rubber-tired or steel-drummed roller to improve surface runoff if precipitation is expected;
- Contact MACTEC if the subgrade soils become excessively wet, dry, or frozen.

4.3 PAVEMENT RECOMMENDATIONS

4.3.1 General

Prevention of water infiltration into the subgrade is essential for the successful performance of pavements. Both the subgrade and the pavement surface should have minimum slopes of one-quarter inch per foot to promote surface drainage. Edges of the pavement should be provided a means of water outlet by extending the aggregate base course through to side ditches or providing

drain pipes and weep holes at catch basin walls. This is especially important to prevent water from ponding on the high plasticity subgrade.

The following pavement recommendations are based on our experience with similar materials and loading conditions. The recommendations are based on the assumption that the soil subgrade will be compacted according to the recommendations contained in this report.

4.3.2 Asphalt Concrete Pavement

Based on our experience in the region and the results of our laboratory testing, we have assigned the subgrade soils a CBR of 3 for our pavement analysis. We have used the American Association of State Highway and Transportation Officials (AASHTO) Guide for Design of Pavement Structures (1993) for our analysis. We have assumed a 15 year life and an EAL loading of 50,000 for this analysis. If the actual loading conditions are different, please notify us so that we can reevaluate the following design.

Based on the above traffic and design parameters and our experience with similar projects, we recommend using the following pavement sections:

Component	Asphalt
Asphalt Base Course	3 ½
Base Material (DGA)	8

Calculated By: *MCM*

The asphaltic concrete should be mixed, placed, and compacted in accordance with Section 401 and 402 of the Kentucky Department of Highways Standard Specifications for Road and Bridge Construction 2000 edition. The dense graded aggregate (DGA) should be placed and compacted in accordance with Section 302 of the Kentucky Highway Specifications. The aggregate should conform to Section 805 of the same specifications.

4.4 GROUND WATER CONTROL

Typically, ground water encroaching upon construction excavations can be removed by placing a sump near the source of seepage and then pumping from the sump. Should heavy seepage occur, or should there be evidence of soil particle migration such as silting of the sump, then the geotechnical engineer should be contacted. High groundwater levels and the occurrence of significant quantities of seepage water is anticipated within 6 feet of the existing ground surface. It should be noted that groundwater levels may fluctuate depending on climatic conditions.

5.0 BASIS FOR RECOMMENDATIONS

The assessment of site environmental conditions or the presence of contaminants in the soil, rock, surface water or groundwater of the site was beyond the scope of this exploration.

The recommendations provided are based in part on project information provided to us and they only apply to the specific project and site addressed in this report. If the project information section in this report contains incorrect information or if additional information is available, you should convey the correct or additional information to us and retain us to review our recommendations. We can then modify our recommendations if they are inappropriate for the proposed project.

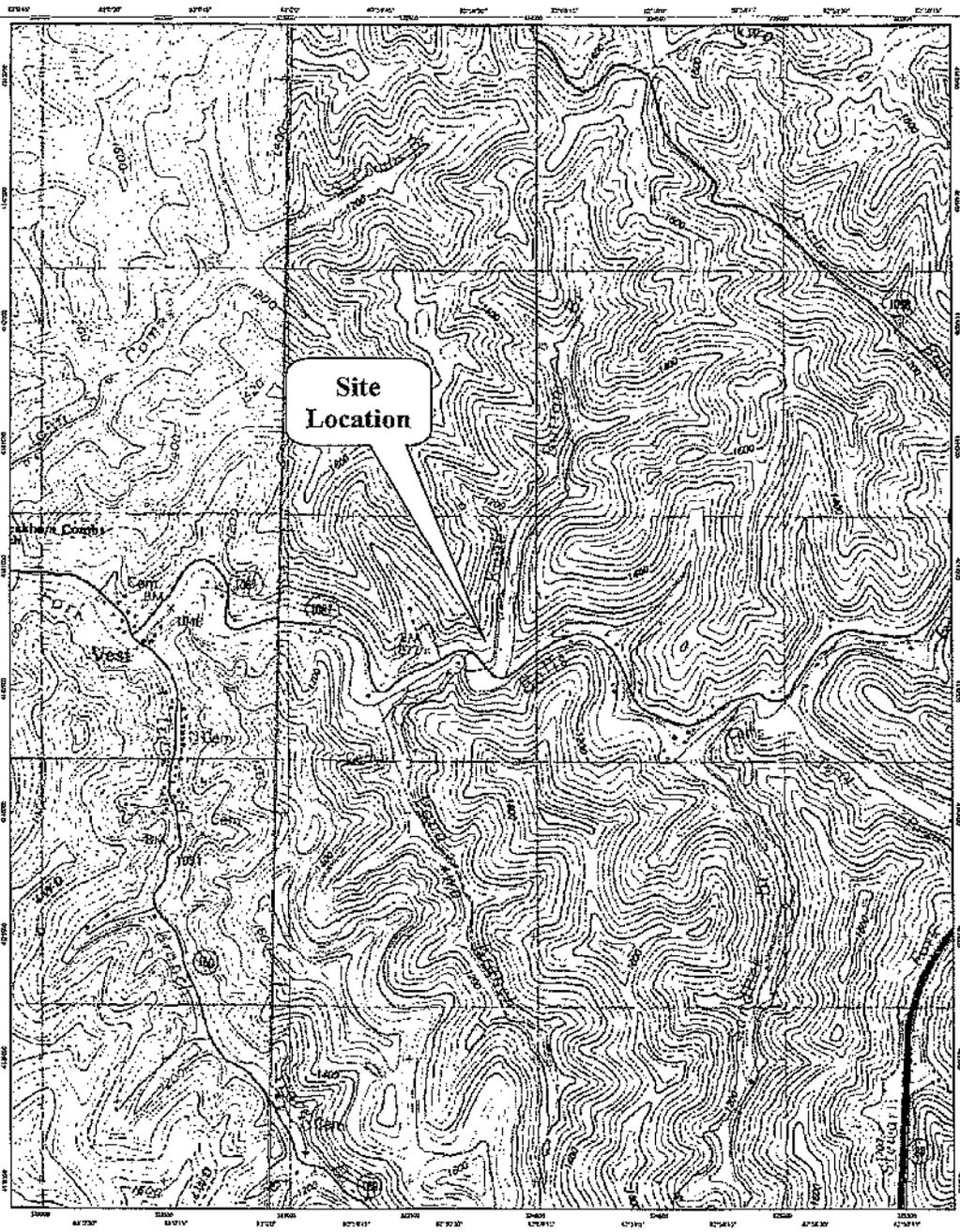
Regardless of the thoroughness of a geotechnical exploration, there is always a possibility that conditions between borings will be different from those at specific boring locations and that conditions will not be as anticipated by the designers or contractors. In addition, the construction process may itself alter soil conditions. Therefore, experienced geotechnical personnel should observe and document the construction procedures used and the conditions encountered. Unanticipated conditions and inadequate procedures should be reported to the design team along with timely recommendations to solve the problems created. We recommend that the owner retain MACTEC to provide this service based upon our familiarity with the project, the subsurface conditions and the intent of the recommendations.

We recommend that this complete report be provided to the various design team members, the contractors and the project owner. Potential contractors should be informed of this report in the "instructions to bidders" section of the bid documents. The report should not be included or referenced in the actual contract documents.

We wish to remind you that our exploration services include storing the samples collected and making them available for inspection for 30 days. The samples are then discarded unless you request otherwise.

APPENDIX A

Site Location Map
Boring Location Plan
Field Testing Procedures
Key to Symbols and Descriptions
Test Boring Records

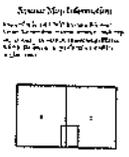


**Site Location Plan
Ball Creek WWTP**

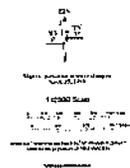
Map No: 201117

March 21, 2011
MACTEC

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MACTEC is a registered provider of environmental
and engineering services. It is not a
government agency.



Source Map Information
The source map is a topographic map
of the area. It is a 1:25,000 scale
map. The source map is a
1:25,000 scale map. The source
map is a 1:25,000 scale map.



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**SITE LOCATION MAP
BALL CREEK WWTP
VEST, KY**

FILE: BALL CREEK
DATE: 3/24/09

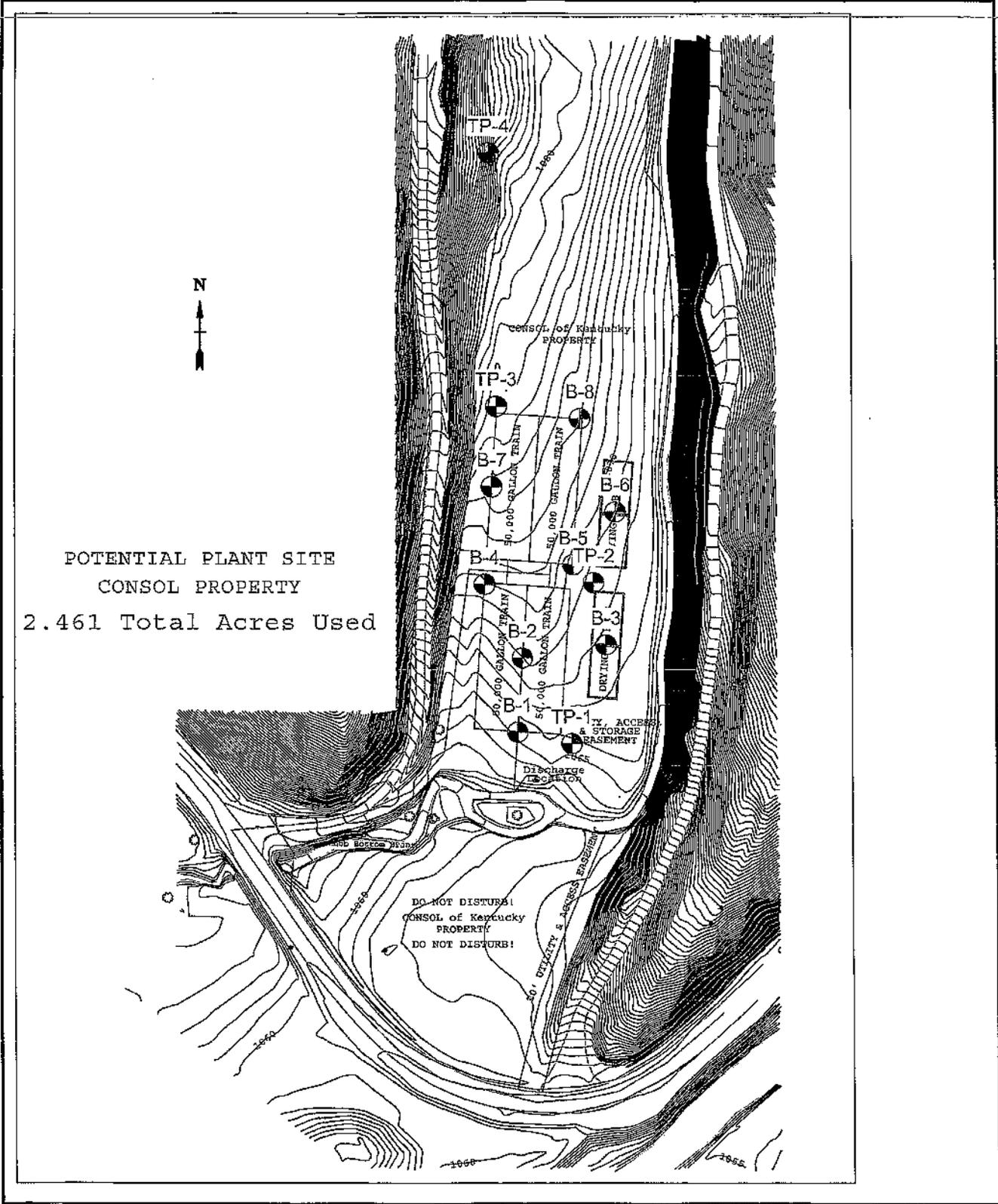
FIGURE 1

PROJECT NO: 3112-09-0496

CHECKED BY: NGS

PREPARED BY: MCM *MCM*

BORING LOCATION PLAN - PORTRAIT 3112090496 BALL CREEK WWTP.GPJ MACTEC DATABASE TEMPLATE 01.GDT 3/25/09



NOTE: Adapted from site observations by MACTEC personnel.

Drawing not to scale

BORING LOCATION PLAN

Project: Ball Creek WWTP
 Project No: 3112-09-0496
 Checked By: *Mh*

Figure 2



FIELD TESTING PROCEDURES

Field Operations: The general field procedures employed by MACTEC Engineering and Consulting, Inc. are summarized in ASTM D 420 which is entitled "Investigating and Sampling Soils and Rocks for Engineering Purposes." This recommended practice lists recognized methods for determining soil and rock distribution and ground water conditions. These methods include geophysical and in situ methods as well as borings.

Borings are drilled to obtain subsurface samples using one of several alternate techniques depending upon the subsurface conditions. These techniques are:

- a. Continuous 2-1/2 or 3-1/4 inch I.D. hollow stem augers;
- b. Wash borings using roller cone or drag bits (mud or water);
- c. Continuous flight augers (ASTM D-1425).

These drilling methods are not capable of penetrating through material designated as "refusal materials." Refusal, thus indicated, may result from hard cemented soil, soft weathered rock, coarse gravel or boulders, thin rock seams, or the upper surface of sound continuous rock. Core drilling procedures are required to determine the character and continuity of refusal materials.

The subsurface conditions encountered during drilling are reported on a field test boring record by the chief driller. The record contains information concerning the boring method, samples attempted and recovered, indications of the presence of various materials such as coarse gravel, cobbles, etc., and observations between samples. Therefore, these boring records contain both factual and interpretive information. The field boring records are on file in our office.

The soil and rock samples plus the field boring records are reviewed by a geotechnical engineer. The engineer classifies the soils in general accordance with the procedures outlined in ASTM D 2488 and prepares the final boring records which are the basis for all evaluations and recommendations.

The final boring records represent our interpretation of the contents of the field records based on the results of the engineering examinations and tests of the field samples. These records depict subsurface conditions at the specific locations and at the particular time when drilled. Soil conditions at other locations may differ from conditions occurring at these boring locations. Also, the passage of time may result in a change in the subsurface soil and ground water conditions at these boring locations. The lines designating the interface between soil or refusal materials on the records and on profiles represent approximate boundaries. The transition between materials may be gradual. The final boring records are included with this report.

The detailed data collection methods used during this study are discussed on the following pages.

Soil Test Borings: Soil test borings were made at the site at locations shown on the attached Boring Plan. Soil sampling and penetration testing were performed in accordance with ASTM D 1586.

The borings were made by mechanically twisting a hollow stem steel auger into the soil. At regular intervals, the drilling tools were removed and soil samples obtained with a standard 1.4 inch I.D., 2 inch O.D., split tube sampler. The sampler was first seated 6 inches to penetrate any loose cuttings, then driven an additional foot with blows of a 140-pound hammer falling 30 inches. The number of hammer blows required to drive the sampler the final foot was recorded and is designated the "penetration resistance". The penetration resistance, when properly evaluated, is an index to the soil strength and foundation supporting capability.

Representative portions of the soil samples, thus obtained, were placed in glass jars and transported to the laboratory. In the laboratory, the samples were examined to verify the driller's field classifications. Test Boring Records are attached which graphically show the soil descriptions and penetration resistances.

Water Level Readings: Water table readings are normally taken in conjunction with borings and are recorded on the "Test Boring Records". These readings indicate the approximate location of the hydrostatic water table at the time of our field investigation. Where impervious soils are encountered (clayey soils) the amount of water seepage into the boring is small, and it is generally not possible to establish the location of the hydrostatic water table through water level readings. The ground water table may also be dependent upon the amount of precipitation at the site during a particular period of time. Fluctuations in the water table should be expected with variations in precipitation, surface run-off, evaporation and other factors.

The time of boring water level reported on the boring records is determined by field crews as the drilling tools are advanced. The time of boring water level is detected by changes in the drilling rate, soil samples obtained, etc. Additional water table readings are generally obtained at least 24 hours after the borings are completed. The time lag of at least 24 hours is used to permit stabilization of the ground water table which has been disrupted by the drilling operations. The readings are taken by dropping a weighted line down the boring or using an electrical probe to detect the water level surface.

Occasionally the borings will cave-in, preventing water level readings from being obtained or trapping drilling water above the caved-in zone. The cave-in depth is also measured and recorded on the boring records.

MACTEC KEY TO SYMBOLS AND DESCRIPTIONS

Group Symbols	Typical Names
	GW Well graded gravels, gravel - sand mixtures, little or no fines.
	GP Poorly graded gravels or gravel - sand mixtures, little or no fines.
	GM Silty gravels, gravel - sand - silt mixtures.
	GC Clayey gravels, gravel - sand - clay mixtures.
	SW Well graded sands, gravelly sands, little or no fines.
	SP Poorly graded sands or gravelly sands, little or no fines.
	SM Silty sands, sand - silt mixtures
	SC Clayey sands, sand - clay mixtures.
	ML Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts and with slight plasticity.
	CL Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
	OL Organic silts and organic silty clays of low plasticity.
	MH Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.
	CH Inorganic clays of high plasticity, fat clays
	CL-CH Inorganic clays ranging from low to high plasticity (combination of CL and CH above)
	OH Organic clays of medium to high plasticity
	PT Peat and other highly organic soils.
	Top-Soil The upper portion of a soil, usually dark colored and rich in organic material.
	FILL Fill soils are materials that have been transported to their present location by man.
	Limestone A sedimentary rock consisting predominantly of calcium carbonate
	Sandstone A sedimentary rock consisting of sand consolidated with some cement (clay or quartz etc.)
	Siltstone A fine-grained rock of consolidated silt.
	Shale A fine-grained sedimentary rock consisting of compacted and hardened clay, silt, or mud.
	PWR Partially Weathered Rock

Boundary Classifications:
Soils possessing characteristics of two groups are designated by combinations of group symbols.

	Undisturbed Sample (UD or SH)		Auger Cuttings (AU)
	Split Spoon Sample (SS or SPT)		Bulk Sample (BK) or Grab Sample (GS)
	Rock Core (RC)		No Recovery (NR)
	Water Table at time of drilling		Water Table after drilling
WOH - Weight of Hammer		C Cave Depth	

Correlation of Penetration Resistance (N) with Relative Density and Consistency

SAND & GRAVEL		SILT & CLAY	
Relative Density	No. of Blows	Consistency	No. of Blows
Very Loose	0 to 4	Very Soft	0 to 1
Loose	5 to 10	Soft	2 to 4
Firm	11 to 20	Firm	5 to 8
Very Firm	21 to 30	Stiff	9 to 15
Dense	31 to 50	Very Stiff	16 to 30
Very Dense	Over 50	Hard	Over 30

Standard Penetration Resistance The Number of Blows of a 140 lb. Hammer Falling 30 in. Required to Drive a 1.4 in. I.D. Split Spoon Sampler 1 Foot. As Specified in ASTM D-1586. Also commonly referred to as an "N" value.

Estimated Relative Moisture Condition

Visual classification relative to assumed optimum moisture content (OMC) of standard proctor

- Dry: Air dry to dusty
- Slightly Moist: Dusty to approximately -2% OMC
- Moist: Approximately between ±2% OMC
- Very Moist: From approximately +2% to nearly saturated
- Wet: Contains free water or nearly saturated

Relative Hardness of Rock

- Very Soft: Can be broken with fingers
- Soft: Can be scratched with fingernail; Only edges can be broken with fingers
- Moderately Hard: Can be easily scratched with knife; Cannot be scratched with fingernail
- Hard: Difficult to scratch with knife; Hard hammer blow to break specimen
- Very Hard: Cannot be scratched with knife; Several hard hammer blows to break specimen

Rock Continuity

Core Recovery	Description
0 - 40%	Incompetent
40 - 70%	Competent
70 - 90%	Fairly Continuous
90 - 100%	Continuous

Rock Quality Designation

RQD	Rock Quality Classification
< 25%	Very Poor
25 - 50%	Poor
50 - 75%	Fair
75 - 90%	Good
90 - 100%	Very Good

REC Recovery - Total Length of Rock Recovered in the Core Barrel Divided by the Total Length of the Core Run Times 100%

RQD Rock Quality Designation - Total Length of Sound Rock Segments Recovered that are Longer Than or Equal to 4" (mechanical breaks excluded) Divided by the Total Length of the Core Run Times 100%.

SILT OR CLAY	SAND			GRAVEL		Cobbles	Boulders
	Fine	Medium	Coarse	Fine	Coarse		
	No.200	No.40	No.10	No.4	3/4"	3"	12"

U.S. STANDARD SIEVE SIZE

Reference: The Unified Soil Classification System, Corps of Engineers, U.S. Army Technical Memorandum No. 3-357, Vol. 1, March, 1953 (Revised April, 1960)

TEST BORING RECORD



Project: Ball Creek WWTP
 Project No: 3112-09-0496
 Checked By: MCM

Boring No.: **B-1**

2456 Fortune Drive, Suite 100
 Lexington, KY 40509
 Phone: (859) 255-3308
 Fax: (859) 254-2327

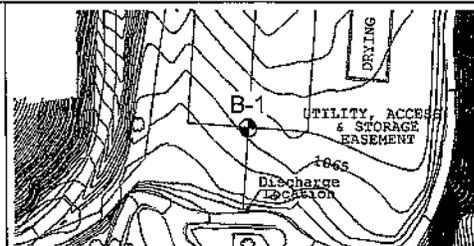
DEPTH (ft)	DESCRIPTION	L I G H T I N G D	E L E V (ft)	S A M P L E S			Moisture Content (%)	Liquid Limit (LL)	Plastic Limit (PL)	Unconfined Compression (psf-soil; psi-rock)	Percent Passing #200 Sieve	REMARKS		
				Sample Number	Sample Type (in.)	N-COUNT								
						1st 6" RQD % REC							2nd 6"	3rd 6"
0	SEE KEY SYMBOL SHEET FOR EXPLANATION OF SYMBOLS AND ABBREVIATIONS BELOW.		1065									Note: No information on the borings should be used without considering the entire content of the main document. Sample had rock plug in bottom of spoon; the blow count is likely elevated		
	TOPSOIL (3") LOOSE, Orange brown and brown, CLAYEY SAND (SC), with trace roots, moist			SPT-1	18	3-3-6 (N = 9)	19.5							
	VERY FIRM to DENSE, Orange brown and gray, CLAYEY SAND (SC), with sandstone rock fragments, very moist to wet			SPT-2	12	6-16-10 (N = 26)	15.1							
5			1060	SPT-3	5	18-30-13 (N = 43)	17.6							
	WEATHERED SHALE, gray, slightly moist, sampled as HARD soil			SPT-4	10	22-50/4" (N = 50/4")	11.6							
10	AUGER REFUSAL AT 9.6 FEET		1055	SPT-5	0	50/3" (N = 50/3")								
15			1050											
20			1045											

MACTEC SOIL-ROCK (BORING PICTURE) 3112090496 BALL CREEK WWTP-GPJ MACTEC DATABASE TEMPLATE 01.GDT 3/24/09

START DATE: 3/2/2009
 CONTRACTOR: Geo-Drill, Inc.
 DRILLER: T. Simpson
 EQUIPMENT: B-24
 METHOD: SFA
 HOLE DIA.: 4" OD
 HAMMER: Manual
 LOGGED BY: MCM
 PREPARED BY: MCM
 REMARKS:



View of B-1 after drilling looking south



TEST BORING RECORD



Project: Ball Creek WWTP
 Project No: 3112-09-0496
 Checked By: MCM

Boring No.: **B-2**

2456 Fortune Drive, Suite 100
 Lexington, KY 40509
 Phone: (859) 255-3308
 Fax: (859) 254-2327

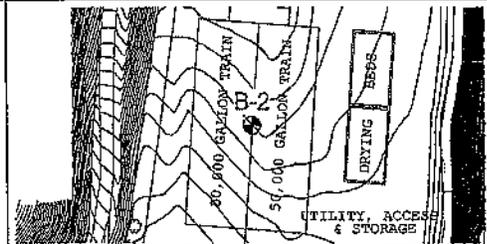
DEPTH (ft)	DESCRIPTION	L C M M D	E L E V (ft)	SAMPLES			Moisture Content (%)	Liquid Limit (LL)	Plastic Limit (PL)	Unconfined Compression (psi-soil; psi-rock)	Percent Passing #200 Sieve	REMARKS
				Sample Number	Sample Type V C C M D (in.)	N-COUNT 1st 6" 2nd 6" 3rd 6"						
0	TOPSOIL (1") FILL or COLLUVIUM sampled as LOOSE to VERY DENSE soil, Orange brown and gray, CLAYEY SAND (SC), with trace roots and small sandstone rock fragments, moist to very moist		1069	SPT-1	18	3-3-4 (N = 7)						Note: No information on the borings should be used without considering the entire content of the main document.
				SPT-2	18	5-5-5 (N = 10)						
5			1064	SPT-3	14	5-18-50/4" (N = 50/4")						
	VERY FIRM, Orange brown and gray, CLAYEY SAND (SC), with sandstone rock fragments, wet			SPT-4	9	25-16-10 (N = 26)						
10	WEATHERED SHALE, gray, with black COAL seams, slightly moist, sampled as HARD soil		1059	SPT-5	10	15-25-50/2" (N = 50/2")						
15	AUGER REFUSAL AT 13.4 FEET		1054									
20			1049									

MACTEC SOIL-ROCK (BORING PICTURE) 3112090496 BALL CREEK WWTP.GPJ MACTEC DATABASE TEMPLATE 01.GDT 3/24/09

START DATE: 3/2/2009
 CONTRACTOR: Geo-Drill, Inc.
 DRILLER: T. Simpson
 EQUIPMENT: B-24
 METHOD: SFA
 HOLE DIA.: 4" OD
 HAMMER: Manual
 LOGGED BY: MCM
 PREPARED BY: MCM
 REMARKS:



View of B-2 after drilling looking west



TEST BORING RECORD



Project: Ball Creek WWTP
 Project No: 3112-09-0496
 Checked By: *MCM*

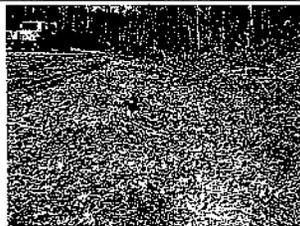
Boring No.: **B-3**

2456 Fortune Drive, Suite 100
 Lexington, KY 40509
 Phone: (859) 255-3308
 Fax: (859) 254-2327

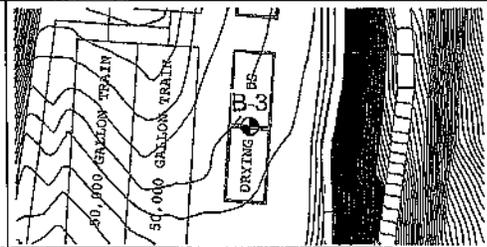
DEPTH (ft)	DESCRIPTION	D I M E N S I O N S	E L E V	SAMPLES			Moisture Content (%)	Liquid Limit (LL)	Plastic Limit (PL)	Unconfined Compression (post-soil; psi-rock)	Percent Passing #200 Sieve	REMARKS		
				Sample Number	Sample Type (Sample Type < O O M R (in.))	N-COUNT								
						1st 6"							2nd 6"	3rd 6"
0	SEE KEY SYMBOL SHEET FOR EXPLANATION OF SYMBOLS AND ABBREVIATIONS BELOW.		1068									Note: No information on the borings should be used without considering the entire content of the main document.		
	TOPSOIL (2") LOOSE, Orange brown and brown, CLAYEY SAND (SC), with trace roots, very moist			SPT-1	18	2-2-3 (N = 5)								
				SPT-2	12	4-4-6 (N = 10)								
5	FIRM, Orange brown and gray, CLAYEY SAND (SC), with sandstone rock fragments, very moist		1063	SPT-3	16	7-5-6 (N = 11)								
				SPT-4	18	4-6-6 (N = 12)								
10	WEATHERED SHALE, gray, slightly moist, with thin black coal seams, sampled as HARD soil		1058	SPT-5	9	12-50/5" (N = 50/5")								
	AUGER REFUSAL AT 11.7 FEET													
15			1053											
20			1048											

MACTEC SOIL-ROCK (BORING PICTURE) 3112090496 BALL CREEK WWTP.GPJ MACTEC DATABASE TEMPLATE 01.GDT 3/24/09

START DATE: 3/2/2009
 CONTRACTOR: Geo-Drill, Inc.
 DRILLER: T. Simpson
 EQUIPMENT: B-24
 METHOD: SFA
 HOLE DIA.: 4" OD
 HAMMER: Manual
 LOGGED BY: MCM
 PREPARED BY: MCM
 REMARKS:



View of B-3 after drilling looking north



TEST BORING RECORD



Project: Ball Creek WWTP
 Project No: 3112-09-0496
 Checked By: MCM

Boring No.: **B-4**

2456 Fortune Drive, Suite 100
 Lexington, KY 40509
 Phone: (859) 255-3308
 Fax: (859) 254-2327

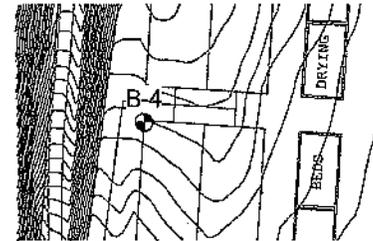
DEPTH (ft)	DESCRIPTION	DEPTH (ft)	ELEV (ft)	SAMPLES			Moisture Content (%)	Liquid Limit (LL)	Plastic Limit (PL)	Unclassified Clay content (per soil, per rock)	Percent Passing #200 Sieve	REMARKS
				Sample Number	Sample Type (in.)	N-COUNT 1st 6" 2nd 6" 3rd 6" RQD % REC						
0	TOPSOIL (2") FIRM, Orange brown and brown, CLAYEY SAND (SC), with trace roots and small sandstone rock fragments, moist		1071	SPT-1	10	3-6-13 (N = 19)	14.6					Note: No information on the borings should be used without considering the entire content of the main document.
				SPT-2	18	10-9-6 (N = 17)	21.3					
5	FIRM to DENSE, Orange brown and gray, CLAYEY SAND (SC), with sandstone rock fragments, very moist		1086	SPT-3	18	5-5-8 (N = 13)	23.6					
				SPT-4	6	14-24-8' (N = 32)	14.0					
10	WEATHERED SHALE, with fine SAND, gray, slightly moist, sampled as HARD soil		1081	SPT-5	11	12-50/5" (N = 50/5")						
	AUGER REFUSAL AT 12.4 FEET											
15			1056									
20			1051									

MACTEC SOIL-ROCK (BORING PICTURE) 3112090496 BALL CREEK WWTP.GPJ MACTEC DATABASE TEMPLATE 01.GDT 3/24/09

START DATE: 3/2/2009
 CONTRACTOR: Geo-Drill, Inc.
 DRILLER: T. Simpson
 EQUIPMENT: B-24
 METHOD: SFA
 HOLE DIA.: 4" OD
 HAMMER: Manual
 LOGGED BY: MCM
 PREPARED BY: MCM
 REMARKS:



View of B-4 after drilling looking north



TEST BORING RECORD



Project: Ball Creek WWTP

Project No: 3112-09-0496

Checked By: MCM

Boring No.: **B-5**

2456 Fortune Drive, Suite 100
Lexington, KY 40509
Phone: (859) 255-3308
Fax: (859) 254-2327

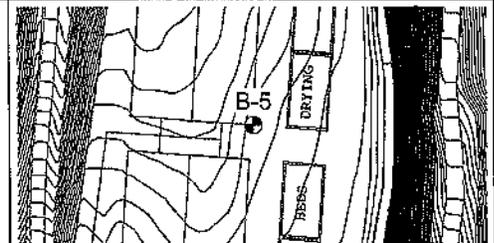
DEPTH (ft)	DESCRIPTION	D I N G M I L	E L E V (ft)	SAMPLES			Moisture Content (%)	Liquid Limit (LL)	Plastic Limit (PL)	Unconfined Compression (psf-soil; psi-rock)	Percent Passing #200 Sieve	REMARKS
				Sample Number	Sample Type (in.)	N-COUNT						
0	SEE KEY SYMBOL SHEET FOR EXPLANATION OF SYMBOLS AND ABBREVIATIONS BELOW.		1070									<p>Note: No information on the borings should be used without considering the entire content of the main document.</p> <p>Atterberg limits test indicated material was non-plastic</p> <p>Bottom of spoon was wet</p>
	TOPSOIL (3") LOOSE, Orange brown and brown, CLAYEY SAND (SC), with roots, moist			SPT-1	14	2-2-4 (N = 6)	15.1					
	FIRM to VERY FIRM, Orange brown and gray, CLAYEY SAND (SC), with sandstone rock fragments, moist to very moist			SPT-2	18	4-14-11 (N = 25)	10.4					
5			1065	SPT-3	10	14-14-10 (N = 24)	13.5					
				SPT-4	16	7-9-8 (N = 17)	13.1					
10			1060	SPT-5	14	19-10-6 (N = 16)	15.8					
	WEATHERED SHALE, gray BORING TERMINATED AT 12.2 FEET											
15			1055									
20			1050									

MACTEC SOIL-ROCK (BORING PICTURE) 3112090496 BALL CREEK WWTP.GPJ MACTEC DATABASE TEMPLATE 01.GDT 3/24/09

START DATE: 3/2/2009
CONTRACTOR: Geo-Drill, Inc.
DRILLER: T. Simpson
EQUIPMENT: B-24
METHOD: SFA
HOLE DIA.: 4" OD
HAMMER: Manual
LOGGED BY: MCM
PREPARED BY: MCM
REMARKS:



View of B-5 after drilling looking east



TEST BORING RECORD



Project: Ball Creek WWTP
 Project No: 3112-09-0496
 Checked By: MCM

Boring No.: **B-6**

2456 Fortune Drive, Suite 100
 Lexington, KY 40509
 Phone: (859) 255-3308
 Fax: (859) 254-2327

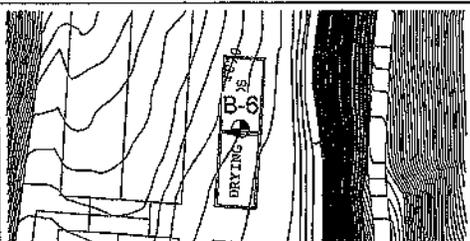
DEPTH (ft)	DESCRIPTION	DZMOMF	ELEV (ft)	SAMPLES			Moisture Content (%)	Liquid Limit (LL)	Plastic Limit (PL)	Uncompacted Compression (psi-soil, psi-rock)	Percent Passing #200 Sieve	REMARKS
				Sample Number	Sample Type (n, v, c, o, m, r)	N-COUNT 1st 6" 2nd 6" 3rd 6"						
0	SEE KEY SYMBOL SHEET FOR EXPLANATION OF SYMBOLS AND ABBREVIATIONS BELOW.		1069									Note: No information on the borings should be used without considering the entire content of the main document.
	TOPSOIL (3") LOOSE, Brown, CLAYEY SAND (SC), with trace roots, moist			SPT-1	18	2-3-4 (N = 7)	19.9					
	DENSE to VERY DENSE, Orange brown and reddish brown, CLAYEY SAND (SC), with sandstone rock fragments, moist			SPT-2	12	6-10-35 (N = 45)	17.3					
5			1064	SPT-3	15	14-16-50/3" (N = 50/3")	16.1					
	VERY STIFF, Gray, fine sandy FAT CLAY (CH), very moist			SPT-4	18	5-3-19 (N = 22)	26.7					
	WEATHERED SHALE, gray, slightly moist, sampled as HARD soil		1059	SPT-5	10	25-50/4" (N = 50/4")						
10	AUGER REFUSAL AT 10.1 FEET		1059									
15			1054									
20			1049									

MACTEC SOIL-ROCK (BORING PICTURE) 3112090496 BALL CREEK WWTP.GPJ MACTEC DATABASE TEMPLATE 01.GDT 3/24/09

START DATE: 3/2/2009
 CONTRACTOR: Geo-Drill, inc.
 DRILLER: T. Simpson
 EQUIPMENT: B-24
 METHOD: SFA
 HOLE DIA.: 4" OD
 HAMMER: Manual
 LOGGED BY: MCM
 PREPARED BY: MCM
 REMARKS:



View of B-6 after drilling looking north



TEST BORING RECORD



Project: Ball Creek WWTP
 Project No: 3112-09-0496
 Checked By: *MCM*

Boring No.: **B-7**

2456 Fortune Drive, Suite 100
 Lexington, KY 40509
 Phone: (859) 255-3308
 Fax: (859) 254-2327

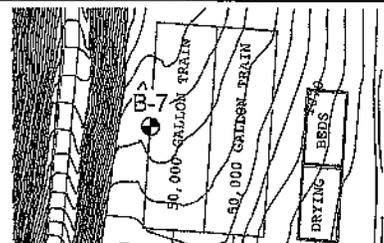
DEPTH (ft)	DESCRIPTION	DEPTH (ft)	SAMPLES			Moisture Content (%)	Liquid Limit (LL)	Plastic Limit (PL)	Unconfined Compression (psi-soil; psi-rock)	Percent Passing #200 Sieve	REMARKS		
			Sample Number	Sample Type (in.)	N-COUNT								
					1st 6"							2nd 6"	3rd 6"
0	SEE KEY SYMBOL SHEET FOR EXPLANATION OF SYMBOLS AND ABBREVIATIONS BELOW.												
	TOPSOIL (2") STIFF, Brown, LEAN CLAY (CL), with trace roots, moist	1074	SPT-1	16	3-5-5 (N = 10)	21.1					Hole dry at time of drilling		
	FIRM, Brown, CLAYEY SAND (SC), moist		SPT-2	18	5-5-9 (N = 14)	17.2							
5	VERY FIRM to DENSE, Orange brown and gray, CLAYEY SAND (SC), with sandstone rock fragments and a few interbedded gray CLAY seams, very moist to wet	1059	SPT-3	18	7-7-5 (N = 12)	19.4							
			SPT-4	14	15-15-10 (N = 25)	24.9							
10		1064	SPT-5	14	6-8-11 (N = 18)	17.2							
	WEATHERED SHALE, gray AUGER REFUSAL AT 13.3 FEET												
15		1059											
20		1054											

MACTEC SOIL-ROCK (BORING PICTURE) 3112090496 BALL CREEK WWTP.GPJ MACTEC DATABASE TEMPLATE 01.GDT 3/24/09

START DATE: 3/2/2009
 CONTRACTOR: Geo-Drill, Inc.
 DRILLER: T. Simpson
 EQUIPMENT: B-24
 METHOD: SFA
 HOLE DIA.: 4" OD
 HAMMER: Manual
 LOGGED BY: MCM
 PREPARED BY: MCM
 REMARKS:



View of B-7 after drilling looking east



TEST BORING RECORD



Project: Ball Creek WWTP
 Project No: 3112-09-0496
 Checked By: MCM

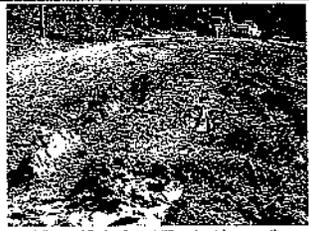
Boring No.: **B-8**

2456 Fortune Drive, Suite 100
 Lexington, KY 40509
 Phone: (859) 255-3308
 Fax: (859) 254-2327

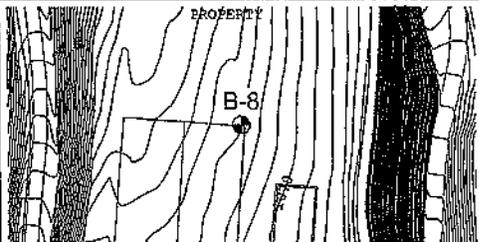
DEPTH (ft)	DESCRIPTION	DEPTH (ft)	SAMPLES			Moisture Content (%)	Liquid Limit (LL)	Plastic Limit (PL)	Unconfined Compression (psf soil; ps-rock)	Percent Passing #200 Sieve	REMARKS
			Sample Number	Sample Type (in.)	N-COUNT						
0	SEE KEY SYMBOL SHEET FOR EXPLANATION OF SYMBOLS AND ABBREVIATIONS BELOW.	1073									Note: No information on the borings should be used without considering the entire content of the main document.
	TOPSOIL (3") LOOSE, Brown, CLAYEY SAND (SC), with trace roots, moist		SPT-1	18	2-2-5 (N = 7)	19.8					
	LOOSE to VERY FIRM, Orange brown and gray, CLAYEY SAND (SC), with sandstone rock fragments, very moist to wet		SPT-2	18	4-4-5 (N = 9)	21.0					
5	VERY FIRM, Gray, CLAYEY SAND (SC), wet	1068	SPT-3	10	6-8-18 (N = 26)	21.3					
			SPT-4	10	9-14-7 (N = 21)	16.6					
10	WEATHERED SHALE, gray, slightly moist, sampled as HARD soil	1063	SPT-5	16	11-11-39 (N = 50)	13.2					
	AUGER REFUSAL AT 12.4 FEET										
15		1058									
20		1053									

MACTEC SOIL-ROCK (BORING PICTURE) 3112090496 BALL CREEK WWTP.GPJ MACTEC DATABASE TEMPLATE 01.GDT 3/24/09

START DATE: 3/2/2009
 CONTRACTOR: Geo-Drill, Inc.
 DRILLER: T. Simpson
 EQUIPMENT: B-24
 METHOD: SFA
 HOLE DIA.: 4" OD
 HAMMER: Manual
 LOGGED BY: MCM
 PREPARED BY: MCM
 REMARKS:

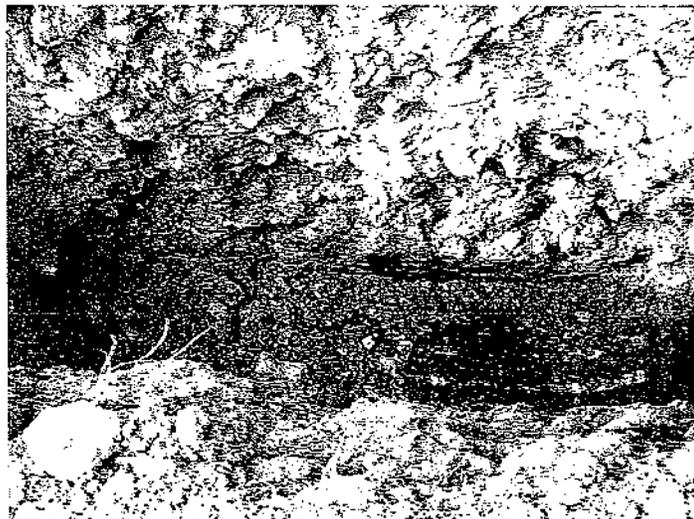


View of B-8 after drilling looking south



MACTEC TEST PIT (PIC W/ ATTERBERG) 3112090496 BALL CREEK WWTP.GPJ MACTEC DATABASE TEMPLATE 01.GDT 3/25/09

DEPTH (ft)	SOIL CLASSIFICATION AND REMARKS SEE KEY SYMBOL SHEET FOR EXPLANATION OF SYMBOLS AND ABBREVIATIONS BELOW.	DEPTH (ft)	DCP (psi)	Liquid Limit/ Plastic Limit	NATURAL MOISTURE CONTENT, %	REMARKS
0	TOPSOIL (2") CLAYEY SAND (SC), Orange brown, moist, with roots and small rock fragments					<p>Note: No information on the test pit log should be used without considering the entire content of the main document.</p>
2	CLAYEY SAND (SC), Orange brown and gray, very moist to wet, with rock fragments (a few as large as 1" diameter in upper 5 feet)					
10	WEATHERED SHALE, bluish gray TEST PIT TERMINATED AT 10.5 FEET					
6						Collapsing of upper 5 feet of test pit sides observed; water observed entering test pit at 5 feet
8						
10						
12						
14						
16						
18						
20						



START DATE: 3/2/2009
 CONTRACTOR: AST Environmental
 EQUIPMENT: Trackhoe
 LOGGED BY: MCM
 PREPARED BY: MCM
 REMARKS:

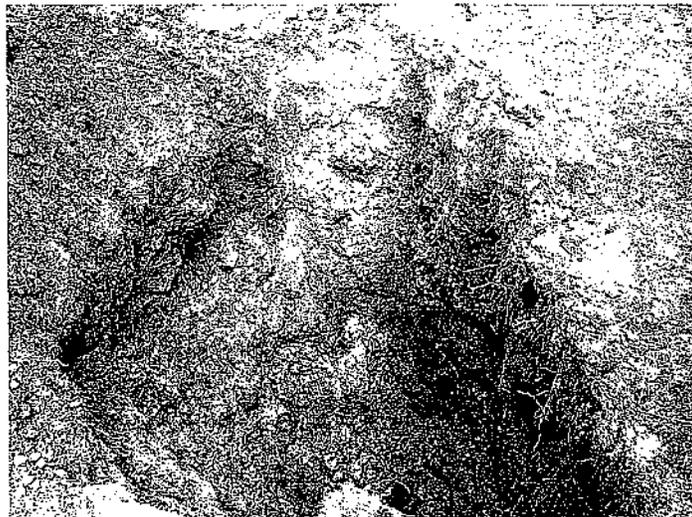
TEST PIT RECORD

Project: Ball Creek WWTP
 Project No: 3112-09-0496
 Checked By: MCM Test Pit No.: TP-1



MACTEC TEST PIT (PIC W/ ATTERBERG) 3112090498 BALL CREEK WWTP.GPJ MACTEC DATABASE TEMPLATE 01.GDT 3/25/09

DEPTH (ft)	SOIL CLASSIFICATION AND REMARKS SEE KEY SYMBOL SHEET FOR EXPLANATION OF SYMBOLS AND ABBREVIATIONS BELOW.	DEPTH (ft)	DCP (bpf)	Liquid Limit/ Plastic Limit	NATURAL MOISTURE CONTENT, %	REMARKS
0	TOPSOIL (2") CLAYEY SAND (SC), Tannish brown, moist, with trace roots					Note: No information on the test pit log should be used without considering the entire content of the main document.
2	CLAYEY SAND (SC), Orange brown and gray, very moist to wet, with rock fragments					
4						
6	Water observed entering the test pit at about 6 feet					
10	WEATHERED SHALE, bluish gray					
12	TEST PIT TERMINATED AT 12 FEET					
14						
16						
18						
20						



START DATE: 3/2/2009
 CONTRACTOR: AST Environmental
 EQUIPMENT: Trackhoe
 LOGGED BY: MCM
 PREPARED BY: MCM
 REMARKS:

TEST PIT RECORD

Project: Ball Creek WWTP
 Project No: 3112-09-0496
 Checked By: MCM Test Pit No.: TP-2



MACTEC TEST PIT (P/C W/ ATTENBERG) 3112090496 BALL CREEK WWTP.GPJ MACTEC DATABASE TEMPLATE 01.GDT 3/25/09

DEPTH (ft)	SOIL CLASSIFICATION AND REMARKS SEE KEY SYMBOL SHEET FOR EXPLANATION OF SYMBOLS AND ABBREVIATIONS BELOW.	DEPTH (ft)	DEPTH (ft)	SAMPLE IDENT.	SAMPLE TYPE	DCP (blf)	Liquid Limit/ Plastic Limit	NATURAL MOISTURE CONTENT, %	REMARKS <i>Note: No information on the test pit log should be used without considering the entire content of the main document.</i>
0	TOPSOIL (4") Orange brown and brown LEAN CLAY (CL), moist	0.0 - 0.3							
2				BK-1					
3	TEST PIT TERMINATED AT 3 FEET								
4									
6									
8									
10									
12									
14									
16									
18									
20									



START DATE: 3/2/2009
 CONTRACTOR: AST Environmental
 EQUIPMENT: Trackhoe
 LOGGED BY: MCM
 PREPARED BY: MCM
 REMARKS:

TEST PIT RECORD

Project: Ball Creek WWTP
 Project No: 3112-09-0496
 Checked By: *MCM* Test Pit No.: TP-4



APPENDIX B

**Laboratory Testing Procedures
Summary of Laboratory Tests**

LABORATORY TESTING PROCEDURES

Soil Classification: Soil classifications provide a general guide to the engineering properties of various soil types and enable the engineer to apply past experience to current problems. In our investigations, samples obtained during drilling operations are examined in our laboratory and visually classified by an engineer. The soils are classified according to consistency (based on number of blows from standard penetration tests), color and texture. These classification descriptions are included on our "Test Boring Records."

The classification system discussed above is primarily qualitative and for detailed soil classification two laboratory tests are necessary: grain size tests and plasticity tests. Using these test results the soil can be classified according to the AASHTO or Unified Classification Systems (ASTM D 2487). Each of these classification systems and the in-place physical soil properties provides an index for estimating the soil's behavior. The soil classification and physical properties obtained are presented in this report.

Atterberg Limits: Portions of the samples are taken for Atterberg Limits testing to determine the plasticity characteristics of the soil. The plasticity index (PI) is the range of moisture content over which the soil deforms as a plastic material. It is bracketed by the liquid limit (LL) and the plastic limit (PL). The liquid limit is the moisture content at which the soil becomes sufficiently "wet" to flow as a heavy viscous fluid. The plastic limit is the lowest moisture content at which the soil is sufficiently plastic to be manually rolled into tiny threads. The liquid limit and plastic limit are determined in accordance with ASTM D 4318.

Moisture Content: The Moisture Content is determined according to ASTM D 2216.

Compaction Tests: Compaction tests are run on representative soil samples to determine the dry density obtained by a uniform compactive effort at varying moisture contents. The results of the test are used to determine the moisture content and unit weight desired in the field for similar soils. Proper field compaction is necessary to decrease future settlements, increase the shear strength of the soil and decrease the permeability of the soil.

The two most commonly used compaction tests are the standard Proctor test and the modified Proctor test. They are performed in accordance with ASTM D698 and D1557, respectively. Generally, the standard Proctor compaction test is run on samples from building or parking areas where small compaction equipment is anticipated. The modified Proctor compaction test is generally performed for heavy structures, highways, and other areas where large compaction equipment is expected. In both tests a representative soil sample is placed in a mold and compacted with a compaction hammer. Both tests have three alternate methods.

The moisture content and unit weight of each compacted sample is determined. Usually 4 to 5 such tests are run at different moisture contents. Test results are presented in the form of a dry unit weight versus moisture content curve. The compaction method used and any deviations from the recommended procedures are noted in this report.

California Bearing Ratio: The California Bearing Ratio (CBR) is a punching shear test which provides data that is a semi-empirical index to the strength and deflection characteristics of the soil, and has been widely correlated with pavement performance to establish criteria for selecting pavement thicknesses. The test is performed on a 6-inch diameter, 5-inch thick disk of compacted soil that is confined in a steel cylinder. The sample is first compacted in accordance with Method B or D of ASTM D698 or D1557. The samples may be tested unsoaked or in a soaked condition. For the soaked test, the sample is inundated under a confining pressure to approximate the weight of future pavement, in order to evaluate the potential swell characteristics of the soil.

The test is performed by forcing a piston approximately 2 inches in diameter into the soil sample at the rate of 0.05 inch per minute to a depth of 0.5 inch to determine the resistance to penetration. The CBR is the ratio, expressed as a percentage, of the actual load required to penetrate the soil to a 0.1 inch depth compared to the load it takes to penetrate a standard crushed stone to the same depth. The results of the CBR tests are presented in the Appendix.

Borehole	Depth	Sample Type	Atterberg Limits			USCS Classification	Natural Moisture Content (%)	Unconfined Compress. Strength (Soil-psi)	% Finer than #200 Sieve	Unit Weight (pcf)		Maximum Dry Density (pcf)	Optimum Moisture Content (%)	CBR	Swell (%)	Rock Core		Unconfined Compress. Strength (Rock-psi)
			Liquid Limit	Plastic Limit	Plasticity Index					Dry Density	Wet Density					RQD	Percent Recovery	
B-1	0.0	SPT					19.5											
B-1	1.5	SPT					15.1											
B-1	4.0	SPT					17.6											
B-1	6.5	SPT					11.6											
B-4	0.0	SPT					14.6											
B-4	1.5	SPT					21.3											
B-4	4.0	SPT					23.6											
B-4	6.5	SPT					14.0											
B-5	0.0	SPT					15.1											
B-5	1.5	SPT					10.4											
B-5	4.0	SPT					13.5											
B-5	6.5	SPT					13.1											
B-5	9.0	SPT					15.8											
B-6	0.0	SPT					19.9											
B-6	1.5	SPT					17.3											
B-6	4.0	SPT					16.1											
B-6	6.5	SPT					26.7											
B-7	0.0	SPT					21.1											
B-7	1.5	SPT					17.2											
B-7	4.0	SPT					19.4											
B-7	6.5	SPT					24.9											
B-7	9.0	SPT					17.2											
B-8	0.0	SPT					19.8											
B-8	1.5	SPT					21.0											
B-8	4.0	SPT					21.3											
B-8	6.5	SPT					16.6											

Summary of Laboratory Results

Project: Ball Creek WWTP
 Project No: 3112-09-0496
 Checked By: *ML*

Remarks:

* SPT/SS = Split-spoon BG = Bulk / bag sample
 UD/SH = Undisturbed sample RC = Rock core



Borehole	Depth	Sample Type	Atterberg Limits			USCS Classification	Natural Moisture Content (%)	Unconfined Compress. Strength (Soil-psi)	% Finer than #200 Sieve	Unit Weight (pcf)		Maximum Dry Density (pcf)	Optimum Moisture Content (%)	CBR	Swell (%)	Rock Core		Unconfined Compress. Strength (Rock-psi)
			Liquid Limit	Plastic Limit	Plasticity Index					Dry Density	Wet Density					RCQD	Percent Recovery	
B-8	9.0	SPT	38	20	18	CL	13.2				108.5	16.9	3.0	2.60				
TP-4	2.0	BK																

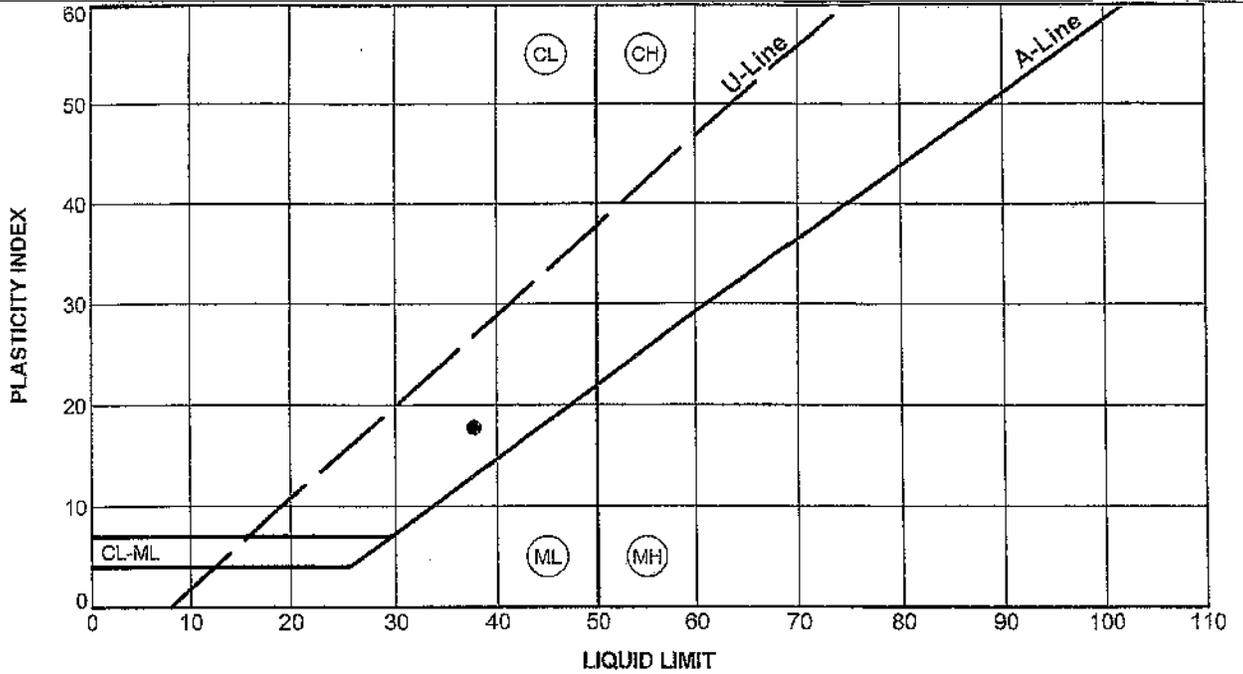
Summary of Laboratory Results

Project: Ball Creek WWTP
 Project No: 3112-09-0496
 Checked By: *ML*



Remarks:

* SPT/SS = Split-spoon BG = Bulk / bag sample
 UD/SH = Undisturbed sample RC = Rock core



MACTEC_ATTERBERG_LIMITS 3112090496 BALL CREEK WWTP.GPJ MACTEC DATABASE TEMPLATE 01.GDT 3/24/09

Symbol	Location	Depth, feet	LL	PL	PI	Natural Moisture Content, %	LI	USCS	Soil Classification
●	TP-4	2.0	38	20	18			CL	Orange brown and brown LEAN CLAY (CL)

Remarks:

Test Method - ASTM D4318

ATTERBERG LIMITS RESULTS

Project: Ball Creek WWTP

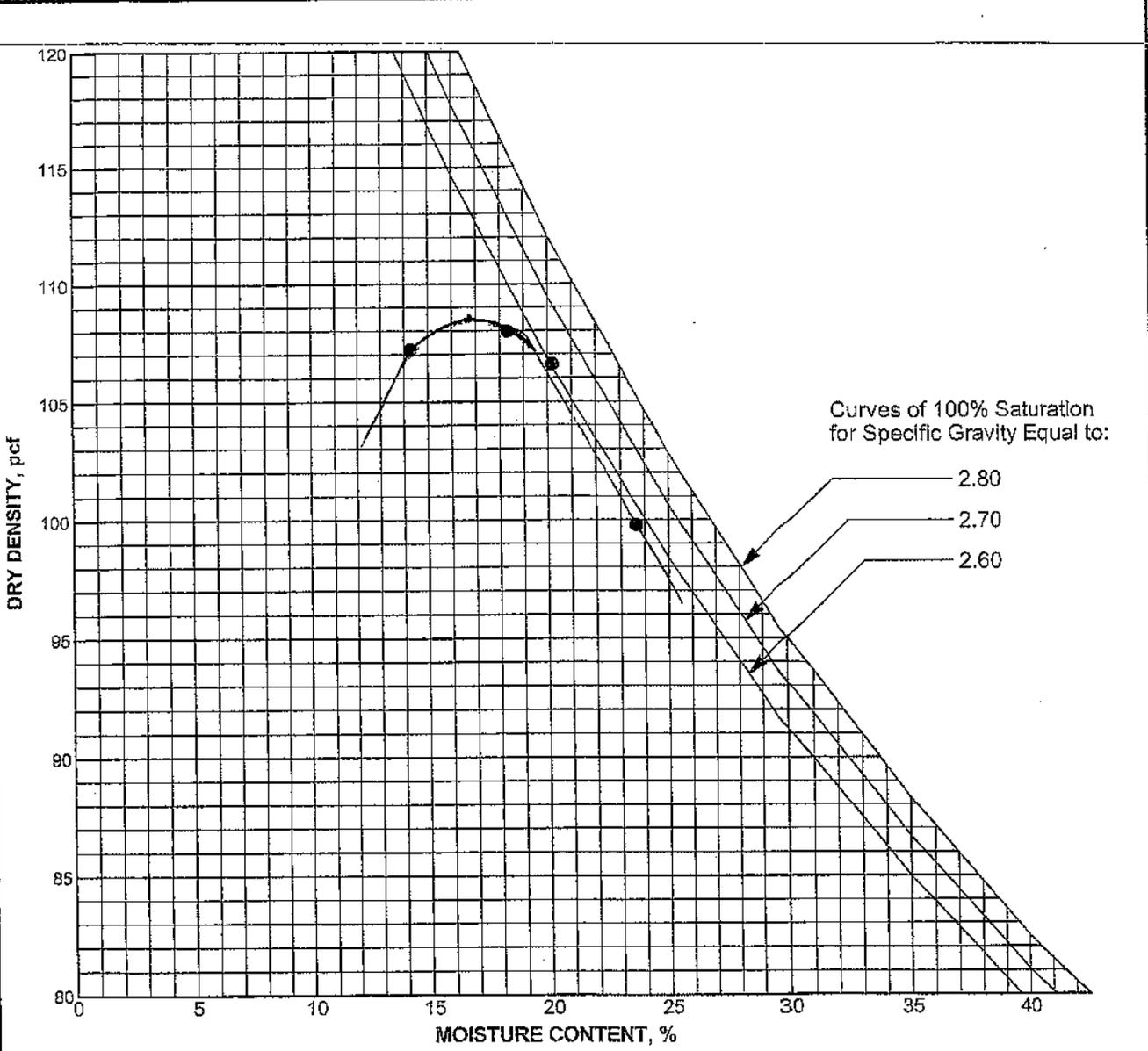
Project No: 3112-09-0496

Checked By: *MCA*



LL=Liquid Limit; PL= Plastic Limit; PI=Plasticity Index; LI=Liquidity Index

MACTEC, COMPACT 80-120, NO. LINE 3112090496 BALL CREEK WWTP.GPJ, MACTEC DATABASE TEMPLATE D1.GDT, 3/24/09



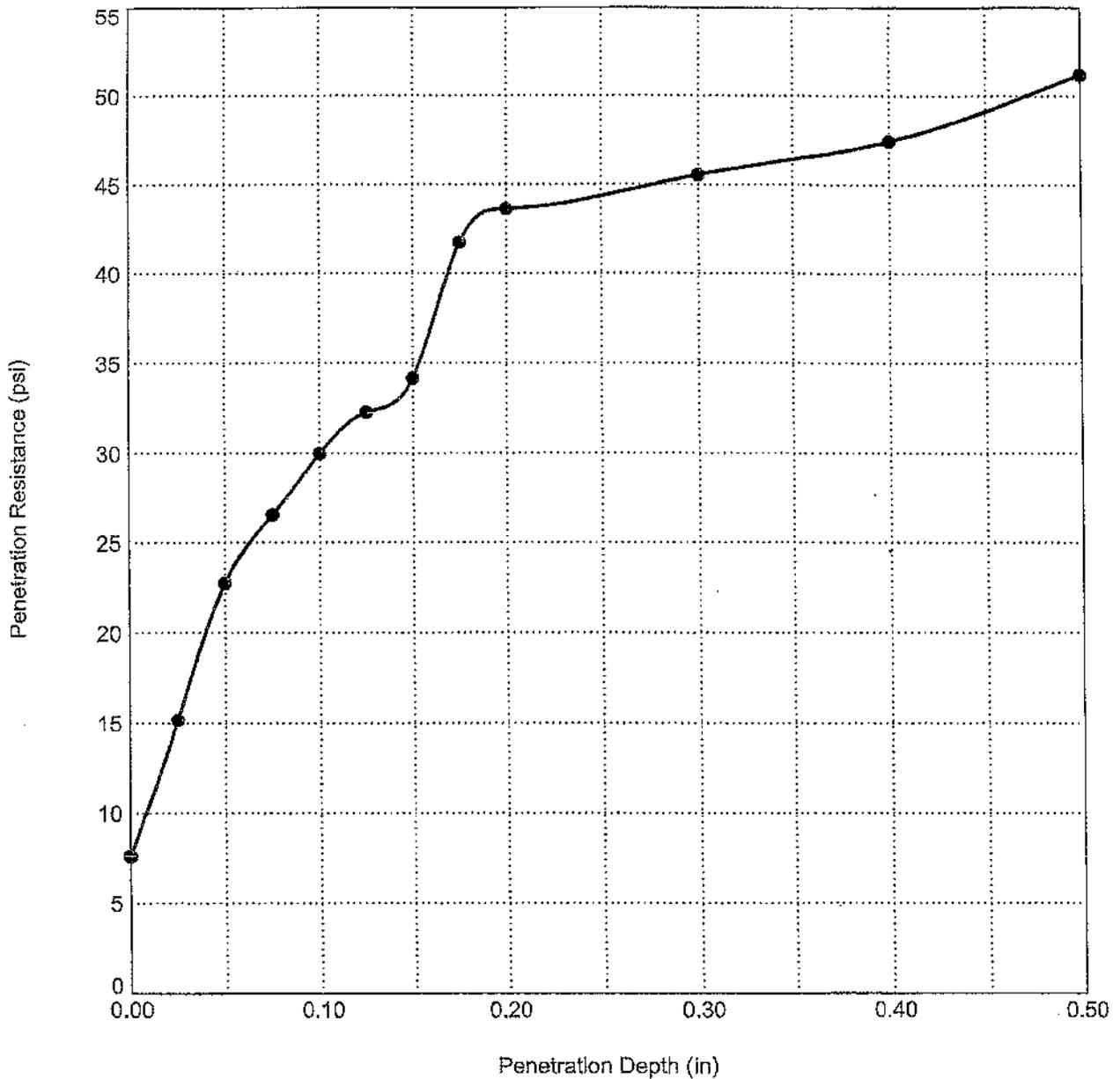
Symbol	Location	Depth, feet	Soil Classification	Maximum Dry Density, pcf	Optimum Moisture Content, %	Natural Moisture Content, %
●	TP-4	2.0	Orange brown and brown LEAN CLAY (CL)	108.5	16.9	

Remarks:
 Test Method - ASTM D698A (Standard Effort)

MOISTURE-DENSITY RELATIONSHIP
 Project: Ball Creek WWTP
 Project No: 3112-09-0496
 Checked By: *MA*



MACTEC CBR PENETRATION 3112090496 BALL CREEK WWTP.GPJ MACTEC DATABASE TEMPLATE 01.GDT 3/25/09



Symbol	Location	Depth, feet	Soil Classification	Maximum Dry Density (pcf)	Optimum Moisture Content, %	Natural Moisture (%)	Assigned CBR (%)	Percent Swell (%)
●	TP-4	2.0	Orange brown and brown LEAN CLAY (CL)	108.5	16.9		3.0	2.60

ASTM D 1883-99

CBR PENETRATION

Project: Ball Creek WWTP
 Project No: 3112-09-0496
 Checked By: *MC*



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FAX
(606) 633-0972

March 24, 2010

Lewis H. Warrix, Chairman
Troublesome Creek Environmental Authority
971 Perry Park Road
Hazard, KY 41701

Dear Mr. Warrix:

Pursuant to your request, we hereby certify that we have made a careful examination of the title to the property hereinafter described, we state as follows:

DESCRIPTION OF THE PROPERTY:

This tract is 1.34 acres, more or less, situated in Knott County, Kentucky, at Knob Bottom Branch of Balls Fork of Troublesome Creek, a tributary of the North Fork of Kentucky River. It is more particularly described in the attached Exhibit "A".

CURRENT TITLE:

Troublesome Creek Environmental Authority, Inc. acquired subject property from Consol of Kentucky, Inc. dated October 1, 2009, as recorded in Deed Book 249, Page 82, records of Knott County Court Clerk's Office.

COMMENTS EXAMINED:

We have made an examination of the records of the Knott County Court Clerk's Office in Hindman, Kentucky, from the sovereignty, down to and including October 22, 2010 at 2:00 p.m. All available and pertinent land records in the County Court Clerk's Office of Knott County were examined, including grantor/grantee indices, lis pendens records, federal tax lien records, lien books, lodged but unrecorded instruments, deed books, mortgage books, will books, plat books, oil and gas lease books and county court record books as are properly kept and indexed in the Knott County Court Clerk's Office.

We have not examined any instruments which are not of record. Unless otherwise expressly stated herein to the contrary this opinion does not cover matters concerning boundaries or surveys, the rights of persons in possession, improper indexing of public records, errors or missions of public officials, forgeries, failure of consideration, incapacity of parties, improper delivery of deeds, any applicable bankruptcy or insolvency laws, liens for current taxes not yet due, all matters not of record, including statutory mechanics and materialmen's liens not of record, enforcement of regulations or orders by any governmental authority having jurisdiction over the surface and minerals of the subject land, or any other matter affecting the title to this property which does not appear of record. The index of financing statements and liens on personal property and fixtures was not examined. We have presumed the genuineness and validity of all instruments we have examined and all court proceedings affecting this title. Also, we have made reasonable assumptions as to sources of title. We have examined only the surveys and patents which came to our attention during the normal course of our examination of the county court records. We express no opinion as to whether other surveys or patents may affect this property. This report is also subject to anything which a properly conducted environmental audit of the real property and appurtenances may reveal.

COMMENTS, EXCEPTIONS AND REQUIREMENTS:

This opinion is rendered subject to the facts which will be shown by an accurate survey of the captioned land to establish the lines of occupation, use and possession and acreage contained therein. The description of the subject property contained in Exhibit "A" attached hereto is adequate for the validity of the deeds and other instruments which rely upon it.

REQUIREMENT: An accurate survey and plat of the subject property should be made. The plat should show all buildings, improvements, fences, encroachments, easements, rights of way, cemeteries, roadways, utility lines and natural landmarks. Further, it is best practice to Consol of Kentucky, Inc. deed of conveyance to investigate the possessory history of this property and maintain in the ownership file a report of this possession covering a period of not less than 35 years. This report should include information regarding improvements, fencing, character of use, roads, cemeteries or evidence of occupation by any one other than those determined to be owners. You should obtain at least two affidavits of possession which show this history, use and occupation of this land for a period of at least 35 years. Further, if you determine that there are tenants using the subject land, obtain and maintain in the file a disclaimer by them of any interest in the coal. This disclaimer should be in a recordable form, but it is not necessary for it to be recorded at this time.

I PERSONS IN THE CHAIN OF TITLE EXECUTED THE FOLLOWING EASEMENTS WHICH CONCERN THE SUBJECT PROPERTY:

- (a) Easement from Bess K. Johnson, et. al., to Kentucky West Virginia Power

Company, dated May 16, 1950, recorded Deed Book 75, Page 389, Knott County Clerk's Office.

This easement was supplemented by the following instruments:

- 1) From John Standford and Polly Standford, dated June 6, 1950, recorded Deed Book 75, Page 172.
 - 2) From Henry Owens and Pearl Owens, his wife, dated June 15, 1950, recorded Deed Book 76, Page 58.
 - 3) From Nan Boaz and William N. Boaz, her husband, dated May 23, 1950, recorded Deed Book 76, Page 57.
 - 4) From Robert Owens and Minnie Owens, dated May 25, 1950, recorded Deed Book 76, Page 57.
 - 5) From Clara Farris and Sherlie B. Farris, her husband, dated June 21, 1951, recorded Deed Book 76, Page 205.
 - 6) From Oscar Owens, dated May 23, 1950, recorded Deed Book 75, Page 172.
- (b) Easement from Oscar B. Owens, single, C.B. Owens and Evelyn Owens, his wife, to Kentucky West Virginia Gas Company, dated August 16, 1983, recorded Deed Book 129, Page 436, Knott County Clerk's Office. This is a pipeline easement and right-of-way.
- (c) Easement from Consol of Kentucky to Kentucky West Virginia Gas Company, dated June 9, 2003, recorded in Deed Book 217, Page 28, records of Knott County Clerk's Office.
- (d) Easement from Consol of Kentucky to Knott County Water and Sewer District dated June 8, 2008, recorded in Deed Book 243, Page 546, records of Knott County Clerk's Office.
- (e) Easement from Consol of Kentucky to Kentucky Power Company dated August 3, 2008, recorded in Deed Book 245, Page 72, records of Knott County Clerk's Office.

REQUIREMENT: It is best practice to locate and avoid these easements with any planned development.

- (f) Easement from Consol of Kentucky to Troublesome Creek Environmental Authority, dated October 1, 2009, recorded in Deed Book 249, Page 77, records of Knott

County Clerk's Office.

II PERSONS IN THE CHAIN OF TITLE EXECUTED THE FOLLOWING DEEDS WHICH MAY CONCERN THE SUBJECT PROPERTY:

- (a) John S. Grigsby to Robert Patton, dated February 3, 1893, recorded in Deed Book 6, Page 1 21, Knott County Records.
- (b) Elijah Grigsby and Jennet Grigsby, his wife, to Joseph Grigsby, dated September 1 6, 1 902, recorded Deed Book 11, Page 196, Knott County Records.
- (c) Elijah Grigsby, et. al. to K.J. Day, dated July 9, 1913, recorded Deed Book 34, Page 147, Knott County Records.
- (d) D.F. Grigsby, et. al., to Harris E. Combs, dated September 10, 1888, recorded Deed Book H, Page 614, Perry County Records.
- (e) Bessie Johnson, et. al. to Commonwealth of Kentucky, deed dated December 10, 1957, recorded Deed Book 81, Page 486, Knott County Records.
This is a deed for a roadway over property which appears to be part of the Harvey Owens estate.
- (f) James Stewart to Silas Casebolt dated December 9, 1 968 recorded in Deed Book D, Page 51, Perry County, this deed conveys James Stewart survey dated August 12, 1848, Patent 14749 dated April 6, 1850.

REQUIREMENT: It is best practice to determine that these deeds do not concern the subject tract.

NOTE: Ronald Owens died intestate in 1960 as discussed in Item No. 21. His Affidavit of Descent states that he was survived only by Myrene Owens, his widow. However, the interest in his estate listed for Myrene Owens was $\frac{1}{2}$ interest. We have assumed that his mother was Pearl Owens and that she inherited the other $\frac{1}{2}$ interest in his estate.

REQUIREMENT: it is recommend that a corrected Affidavit of Descent for Ronald Owens which accurately identifies his heirs, their relationship to him and the interest they inherited.

III PERSONS IN THE CHAIN OF TITLE EXECUTED THE FOLLOWING OIL AND GAS AND COAL LEASES WHICH CONCERN THE SUBJECT TRACT:

- (a) Oscar Owens, Cullen Owens and Evelyn Owens to Bert T. Combs, lease dated March 29, 1979, recorded Lease Book 29, Page 227, Knott County, for a primary term of two (2) years.
- (b) Oscar Owens, Cullen Owens and Evelyn Owens to Kentucky West Virginia Gas

Company, lease dated January 7, 1972, recorded Lease Book 25, Page 97, Knott County, for a primary term of five (5) years. The lease was extended for two (2) years on November 11, 1976, by instrument recorded in Lease Book 27, Page 703, Knott County.

(c) Cullen Owens and/or Evelyn Owens, his wife, and Oscar Owens to KEPCO, Inc. dated November 6, 1981, Knott County for a primary term of two (2) years.

REQUIREMENT: It is recommended that Troublesome Creek Environmental Authority determine whether or not these oil and gas leases are now in effect. If they are then you should exercise due regard for the rights of the oil and gas lessee in your operations.

NOTE: We have assumed that Myrene Owens and Marjorie Owens Hartsoe and Myrene Hartsoe who have been found in the chain of title are the same person.

REQUIREMENT: You should verify that this assumption is correct.

(d) C. B. Owens, Evelyn Owens and O. B. Owens leased to Kragon Land and Mineral Company the coal underlying the subject tract by lease dated September 24, 1981, and recorded in Lease Book 31, page 430, Knott County. The primary term is two (2) years, with the option to extend it. We found nothing recorded which extended the lease.

NOTE: We are advised by the Office of the Secretary of State that Kragon Land and Mineral Company merged into Kentucky May Coal Company which has an address c/o Florida Progress Company, 270 1st Avenue South, St. Petersburg, Florida, 33701.

REQUIREMENT: It is best practice to determine that this lease has terminated.

(e) There is a Release and Surrender of Coal Mining Lease between Miller Bros. Coal, Inc. and Consol of Kentucky, Inc. dated March 19, 2005, as recorded in Lease Book 62, Page 312, records of Knott County Court Clerk's Office.

NOTE: Unrecorded Lease dated December 21, 2000.

IV TITLE EASEMENTS OR RESERVATIONS FROM GRANTORS CONSOL OF KENTUCKY, INC.

The most immediate Grantor Consol of Kentucky, Inc. reserved and excepted to the following rights:

- a) It is understood by all parties that employees of CONSOL of Kentucky, Inc. shall be allowed to enter upon the property at anytime, and at their expense, to check the existing ground water monitoring well located there, until such time that it is no longer in use.
- b) It is also understood by all parties that there shall exist a perpetual easement being 20' feet in width, to allow for ingress and egress and installation of any utilities or other appurtenances that might be necessary for the use and convenience of the owners of the

tract of land herein being described above, provided that the perpetual easement be kept free and clear of any obstructions as to allow for ingress and egress to the adjoining property remaining owned by CONSOL of Kentucky, Inc., and being more particularly described as follows:

Beginning at the intersection of the centerline of the access road leading to the property being described herein, and the eastern edge of KY Route 1087, said point has an approximate Kentucky South Zone 1983 Datum State Plane Coordinate value of north: 2,038,917.8847 and east: 2,441,898.6519, and is referenced by a line extending S 43° 26' 24" E, a distance of 42.38' feet from the inlet end of a culvert and concrete headwall running underneath KY Route 1087 at the mouth of Knob Bottom Hollow, and by a line extending S 14° 55' 26" W, a distance of 32.91' feet from the outlet end of the same culvert with concrete headwall running underneath KY Route 1087, thence leaving the eastern edge of KY Route 1087 and following the centerline of said perpetual easement for eight (8) calls as follows:

N 83° 44' 24" E, a distance of 27.33' feet to a point;

N 89° 24' 24" E, a distance of 33.21' feet to a point;

N 76° 47' 28" E, a distance of 23.33' feet to a point;

N 62° 24' 25" E, a distance of 21.16' feet to a point;

N 57° 34' 30" E, a distance of 19.31' feet to a point;

N 35° 48' 25" E, a distance of 33.41' feet to a point;

N 22° 33' 40" E, a distance of 17.63' feet to a point;

N 06° 12' 28" E, a distance of 42.32' feet to a point in the existing access road on the western boundary of the tract of land being described herein above and there ending.

c) Party of the first part retains the rights to the water monitoring well located on the property and reasonable rights of ingress and egress to that well including but not limited to the right to connect electric power to the well and a water pipeline.

d) The coal underlying this property has been extracted and the surface overlying or adjacent to the underground workings may be subject to subsidence. Any structures erected hereafter should be designed and constructed so as to prevent or minimize any subsidence damage.

e) All coal, oil, gas and other minerals, mineral buy products and minerals owned by the party of the first part are excepted from this conveyance. The party of the first part expressly reserves unto it self, its successors and assigns all of the necessary rights and privileges to mine, drill for, produce and transport the coal and other minerals from the property described hereinabove.

I find no other easements, gas and oil leases or utility easements for the subject property.

GENERAL EXCEPTIONS, RESERVATIONS AND LIMITATIONS:

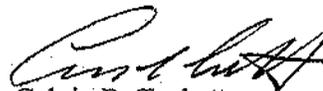
A) There is excepted from this title opinion any unrecorded instruments that may affect title hereto.

B) This title opinion excepts to and does not cover any such state of facts that would be disclosed by an accurate survey of the property or by going upon the grounds and making an inspection of the premises, including the rights of the parties in possession other than the owners, shortages of areas, inaccuracies of descriptions, as shown in public records.

C) That this title opinion does not cover any and all indexing errors and discrepancies or inaccuracies of the written public records and computer records of the County Court Clerk, Knott County, Kentucky.

I trust this information will be of assistance to Troublesome Creek Environmental Authority in the development of this property.

Sincerely Yours,



Calvin R. Tackett

EXHIBIT A

Description for a certain tract or parcel of land lying and being in the Commonwealth of Kentucky, county of Knott, near the community of Vest, approximately 2.5 miles west along KY Route 1087 from the junction of KY Route 1087 and 4 lane KY Route 80 at Softshell, and being more particularly described as follows:

Unless otherwise stated any monument referred to as a capped pin set is an 18" inch rebar 5/8" inch in diameter with a plastic cap inscribed R. M. Johnson Engineering, PLS 3521 or Roy D. Patrick PLS 3521.

Beginning at a point in the center of Knob Bottom Hollow, said point being a common point in a tract of land now or formerly owned by CONSOL of Kentucky, Inc. as recorded in a deed from Cullen B. Owens, et al, dated September 15, 1999 in Deed Book 192, Page 405, records of the Knott County Court Clerk's Office. Said point has an approximate Kentucky South Zone 1983 Datum State Plane Coordinate value of north: 2,038,957.0971 and east: 2,442,062.5002 and is referenced by a line extending N 62° 32' 45" E, a distance of 151.80' feet from the inlet end of a culvert with concrete headwall running underneath KY Route 1087 at the mouth of Knob Bottom Hollow, and by a line extending N 67° 36' 13" E, a distance of 186.38' feet from the outlet end of the same culvert with concrete headwall running underneath KY Route 1087, thence leaving the center of Knob Bottom Hollow, severing the CONSOL of Kentucky, Inc. tract, following the new lines of CONSOL of Kentucky, Inc., for twenty-six (26) calls as follows:

- N 01° 20' 26" E, a distance of 8.14' feet to a capped pin set;
- N 37° 59' 08" W, a distance of 17.93' feet to a capped pin set;
- N 08° 46' 37" E, a distance of 86.88' feet to a capped pin set;
- N 07° 40' 29" E, a distance of 154.64' feet to a capped pin set;
- N 03° 28' 12" E, a distance of 97.88' feet to a capped pin set;
- N 13° 02' 21" E, a distance of 160.78' feet to a capped pin set;
- N 82° 33' 45" E, a distance of 43.06' feet to a capped pin set;

N 82° 33' 45" E, a distance of 10.86' feet to a point in the center of Knob Bottom Hollow; thence following the center of Knob Bottom Hollow;
S 24° 28' 43" E, a distance of 18.35' feet to a point;
S 07° 41' 30" E, a distance of 33.21' feet to a point;
S 02° 02' 04" W, a distance of 32.52' feet to a point;
S 00° 12' 47" E, a distance of 69.82' feet to a point;
S 04° 48' 53" E, a distance of 35.09' feet to a point;
S 00° 39' 14" W, a distance of 76.90' feet to a point;
S 04° 32' 21" E, a distance of 27.51' feet to a point;
S 06° 50' 02" W, a distance of 62.28' feet to a point;
S 00° 28' 02" E, a distance of 68.75' feet to a point;
S 12° 17' 59" E, a distance of 67.16' feet to a point;
S 05° 06' 46" W, a distance of 36.73' feet to a point;
S 14° 31' 57" W, a distance of 10.67' feet to a point;
S 62° 54' 31" W, a distance of 25.70' feet to a point;
N 75° 18' 10" W, a distance of 32.34' feet to a point;
N 79° 19' 49" W, a distance of 11.53' feet to a point;
N 88° 32' 50" W, a distance of 45.35' feet to a point;
N 64° 30' 26" W, a distance of 27.48' feet to the beginning containing 1.34 acres more or less, as per a survey by R. M. Johnson Engineering, Inc. completed on July 16, 2008.

It is understood by all parties that employees of CONSOL of Kentucky, Inc. shall be allowed to enter upon the property at anytime, and at their expense, to check the existing ground water monitoring well located there, until such time that it is no longer in use.

It is also understood by all parties that there shall exist a perpetual easement being 20' feet in width, to allow for ingress and egress and installation of any utilities or other appurtenances that might be necessary for the use and convenience of the

owners of the tract of land herein being described above, provided that the perpetual easement be kept free and clear of any obstructions as to allow for ingress and egress to the adjoining property remaining owned by CONSOL of Kentucky, Inc., and being more particularly described as follows:

Beginning at the intersection of the centerline of the access road leading to the property being described herein, and the eastern edge of KY Route 1087, said point has an approximate Kentucky South Zone 1983 Datum State Plane Coordinate value of north: 2,038,917.8847 and east: 2,441,898.6519, and is referenced by a line extending S 43° 26' 24" E, a distance of 42.38' feet from the inlet end of a culvert and concrete headwall running underneath KY Route 1087 at the mouth of Knob Bottom Hollow, and by a line extending S 14° 55' 26" W, a distance of 32.91' feet from the outlet end of the same culvert with concrete headwall running underneath KY Route 1087, thence leaving the eastern edge of KY Route 1087 and following the centerline of said perpetual easement for eight (8) calls as follows:

- N 83° 44' 24" E, a distance of 27.33' feet to a point;
- N 89° 24' 24" E, a distance of 33.21' feet to a point;
- N 76° 47' 28" E, a distance of 23.33' feet to a point;
- N 62° 24' 25" E, a distance of 21.16' feet to a point;
- N 57° 34' 30" E, a distance of 19.31' feet to a point;
- N 35° 48' 25" E, a distance of 33.41' feet to a point;
- N 22° 33' 40" E, a distance of 17.63' feet to a point;
- N 06° 12' 28" E, a distance of 42.32' feet to a point in the existing access road on the western boundary of the tract of land being described herein above and there ending.

Being part of the land conveyed to CONSOL of Kentucky Inc., by deed from Cullen B. Owens and Evelyn G. Owens, his wife, and Oscar B. Owens, single, dated September 15, 1999, recorded in Deed Book 192, Page 405, Knott County.

Party of the first part retains the rights to the water monitoring well located on the property and reasonable rights of ingress and egress to that well including but not limited to the right to connect electric power to the well and a water pipeline.

The coal underlying this property has been extracted and the surface overlying or adjacent to the underground workings may be subject to subsidence. Any structures erected hereafter should be designed and constructed so as to prevent or minimize any subsidence damage.

All coal, oil, gas and other minerals, mineral buy products and minerals owned by the party of the first part are excepted from this conveyance. The party of the first part expressly reserves unto it self, its successors and assigns all of the necessary rights and privileges to mine, drill for, produce and transport the coal and other minerals from the property described hereinabove.

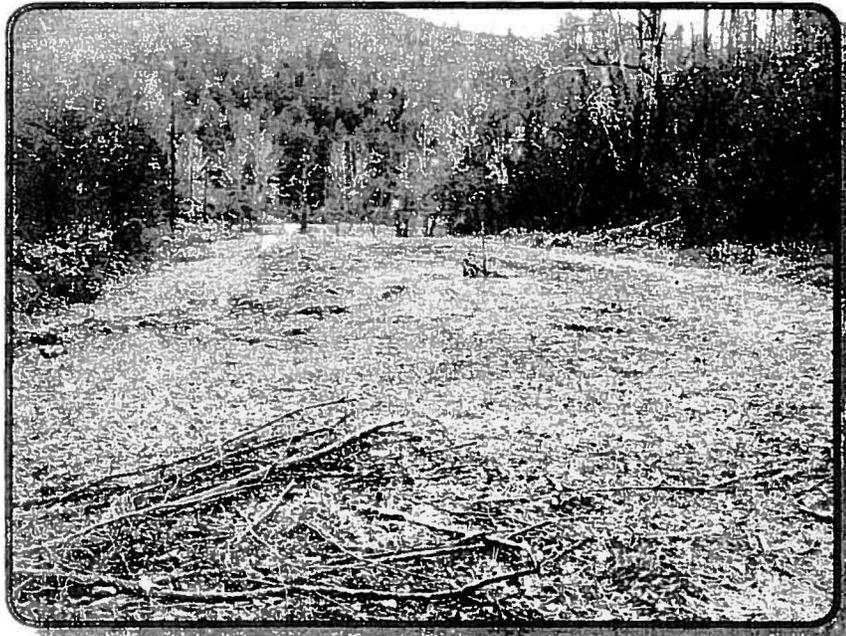
Log Sheet for Interviews

- Jim Childers, CONSOL Energy (Previous Owner of Property), Interviewed on October 7, 2009. Stated he knew of no underground mining in the area. Also stated the property has been vacant for some time but has recently been leased to a neighbor for corn growing.
- John Handshoe, Neighbor to property, Interviewed on October 13, 2009. Stated the site had been vacant for 30+ years and had no memory of site flooding. No knowledge of underground tanks.
- Randy Thompson, Knott County Judge Executive, Interviewed on October 15, 2009. Stated the site had been vacant as long as he could remember except for the occasional corn crop.

Appendix E
Cultural Resources Assessment

Contract Publication Series 09-041

A CULTURAL RESOURCE SURVEY OF THE PROPOSED BALLS CREEK WASTEWATER TREATMENT PLANT IN KNOTT COUNTY, KENTUCKY



by
David J. Stephenson

Prepared for
R.M. Johnson Engineering, Inc.

Prepared by



CULTURAL RESOURCE ANALYSTS, INC.
www.cra-ky.com

Contract Publication Series 09-041

A CULTURAL RESOURCE SURVEY OF THE PROPOSED BALLS CREEK WASTEWATER TREATMENT PLANT IN KNOTT COUNTY, KENTUCKY

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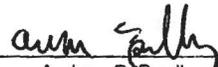
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Andrew P. Bradbury, RPA
Co-Principal Investigator

March 12, 2009

Lead Agency: United States Army Corps of Engineers
OSA Project Registration No.: FY09_5855

ABSTRACT

On February 26, 2009, Cultural Resource Analysts, Inc., personnel completed a phase I cultural resource survey of a proposed wastewater treatment facility in Knott County, Kentucky. The project area was located along Knob Bottom in northern Knott County. The survey was conducted at the request of Stephen R. Harris, EIT, LSIT, of R.M. Johnson Engineering, Inc., on behalf of the Troublesome Creek Environmental Authority. A records review was conducted at the Office of State Archaeology. The review indicated the project area had not been previously surveyed, nor were any previously recorded sites located within the project area. The entire project area measured 1.9 ha (4.7 acres) and was surveyed in its entirety. Fieldwork consisted of intensive pedestrian survey supplemented by screened shovel testing. No archaeological sites were recorded as a result of this survey. No archaeological sites or historic properties listed in, or eligible for, the National Register of Historic Places will be affected by the proposed project, and cultural resource clearance is recommended.

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I. INTRODUCTION

On February 26, 2009, Cultural Resource Analysts, Inc. (CRAI), personnel completed a phase I cultural resource survey of a proposed wastewater treatment facility in Knott County, Kentucky. The project area was located along Knob Bottom in northern Knott County (Figure 1). The survey was conducted at the request of Stephen R. Harris, EIT, LSIT, of R.M. Johnson Engineering, Inc., on behalf of The Troublesome Creek Environmental Authority. Michael Curran and David J. Stephenson completed the fieldwork in approximately eight person hours. Office of State Archaeology (OSA) Geographic Information Systems (GIS) data requested by CRAI on February 17, 2009, was returned on February 20, 2009. The results were researched by Heather Barras of CRAI at the OSA on February 25, 2009. The OSA project registration number is FY09-5855. The scope of work is included as Appendix A.

Purpose of Study

The project was conducted to comply with USACE 404 funding requirements and Section 106 of the National Historic Preservation Act. The purpose of this assessment was to locate, describe, evaluate, and make appropriate

recommendations for the future treatment of any historic properties or sites that may be affected by the project. For the purposes of this assessment, a site was defined as "any location where human behavior has resulted in the deposition of artifacts or other evidence of purposive behavior at least 50 years of age" (Sanders 2001:2). Cultural deposits meeting this definition but less than 50 years of age were not considered sites in accordance with "Archeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines" (National Park Service 1983).

The following is a description of the project area, the field methods used, and the results of this investigation. It conforms to the *Specifications for Conducting Fieldwork and Preparing Cultural Resource Assessment Reports* (Sanders 2001).

Project Description

The Troublesome Creek Environmental Authority is proposing the construction of a wastewater treatment facility in Knott County, Kentucky. The proposed project area is located north of KY 1087 near the intersection of Balls Fork and Knob Bottom (Figure 2). The area is located within the floodplain and surrounding sideslopes of Knob Bottom.

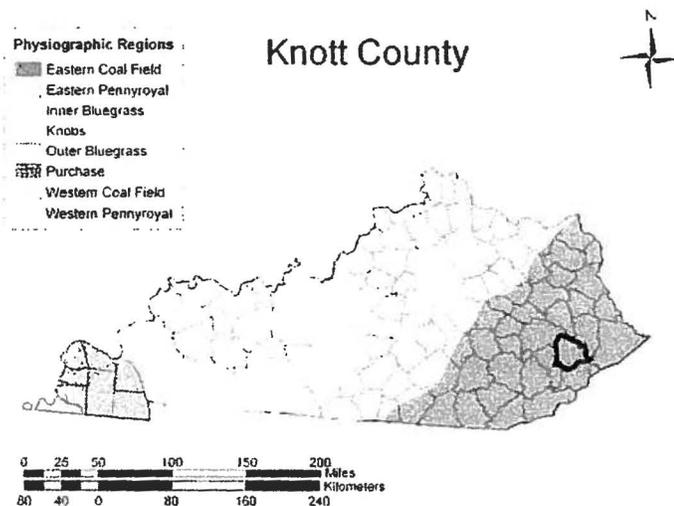


Figure 1. Map of Kentucky showing the location of Knott County.

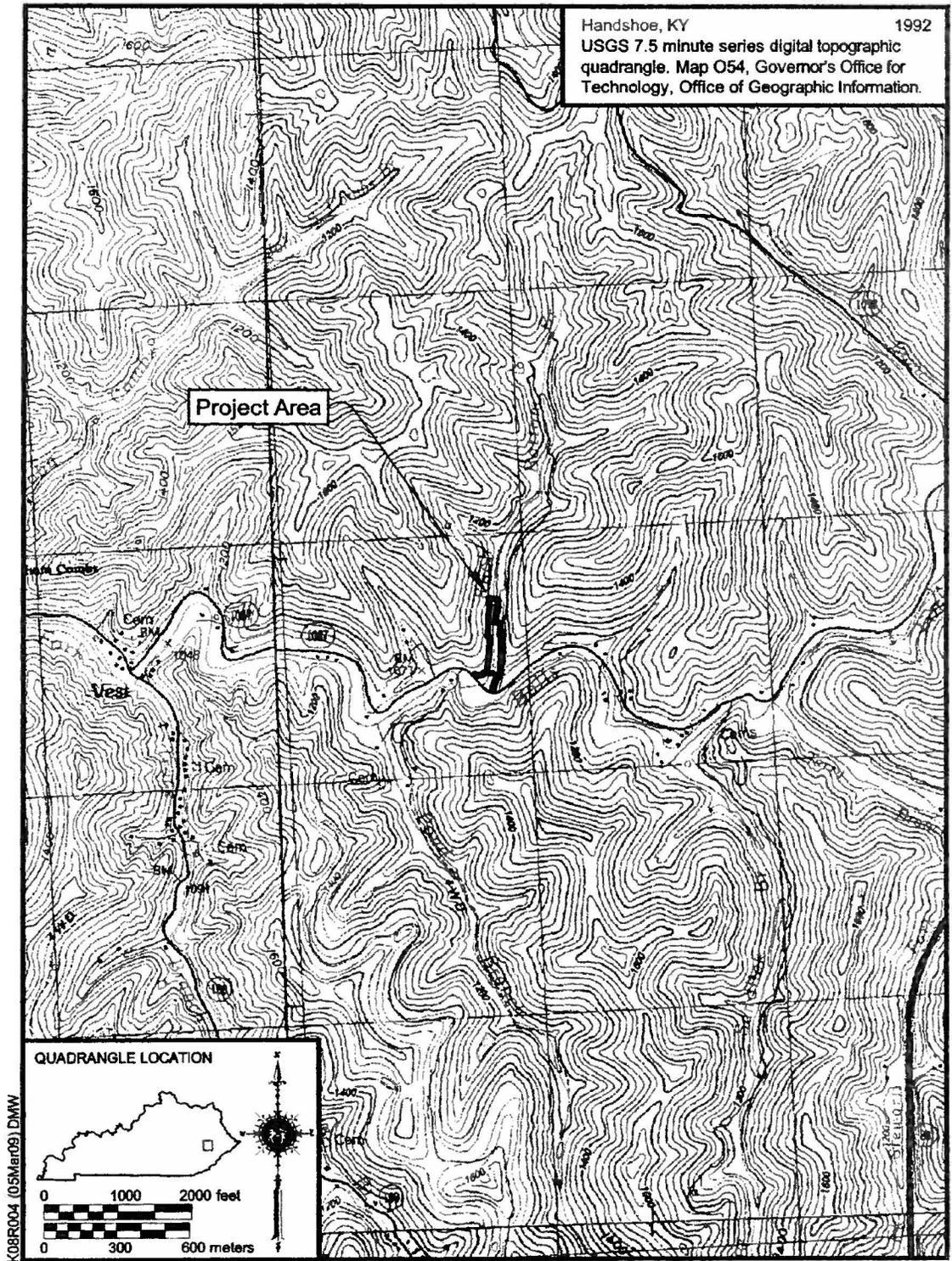


Figure 2. Location of project area on topographic quadrangle.

The proposed project includes the construction of a new wastewater treatment facility and an access road and the creation of a borrow area (Figure 3). The total proposed area measured 1.9 ha (4.7 acres). Elevations within the proposed treatment facility and access road locations range from 324.6 to 329.1 m (1,065 to 1,080 ft) above mean sea level (AMSL). Elevations within the borrow area portion of the project area range from approximately 329.1 to 338.3 m (1,080 to 1,110 ft) AMSL.

Summary of Findings

Prior to conducting the field research, a records review was conducted at the OSA. The review indicated that no archaeological sites or investigations had been documented within the project area.

No archaeological sites were recorded during this survey. No archaeological sites listed in, or eligible for listing in, the National Register of Historic Places (NRHP) will be affected by the proposed project, and cultural resource clearance is recommended for the proposed permit application.

II. ENVIRONMENTAL SETTING

Physiography and Geology

Knott County is situated in the Eastern Kentucky Coal Field physiographic region (McGrain and Currens 1978:43). The area is dissected maturely and consists of winding, narrow crested ridges and narrow valleys. The terrain is rugged and exhibits great local relief. Outside of Harlan County, Knott County has the highest elevations in Kentucky.

Geologically, the study area was underlain by interbedded sandstone, siltstone, shale and limestone of the Pennsylvanian and Mississippian Systems (McDonald and Blevins 1965; McIntosh 2004). The level-bedded sedimentary rocks of the Breathitt Formation comprise the most extensive outcrops in the region. Major rock strata

consist of sandstone, shale, siltstone, and coal interspersed with narrow beds of calcareous shale or limestone (McIntosh 2004:119).

Ridges and valleys occupy about equal portions of the landscape. Few large streams are present and there is a general absence of flat land, except for narrow strips in the valley bottoms. Upland elevations exceed 426.7 m (1,400 ft) AMSL (McGrain and Currens 1978:43).

The highest point in the county is 719.3 m (2,360 ft) AMSL on a mountain at the head of Arnold Fork at the junction of Knott, Letcher, and Pike Counties. The lowest elevation in the county is at 205.7 m (675 ft) AMSL at the mouth of Jones Fork where it joins the Right Fork of Beaver Creek (McGrain and Currens 1978:43).

This area is within the Big Sandy River drainage system. The North Fork of the Kentucky River drains the largest portion of Knott County to the southwest, and Jones Fork, Beaver Creek, and Rock Fork drain Knott County into the Big Sandy River. The current project area drains into Knob Bottom.

Soils

Three general soil associations have been mapped in Knott County, including the Shelocta-Highsplint-Cloverlick-Kimper, the Handshoe-Cloverlick-Feds creek-Marrowbone, and the Shelocta-Cloverlick-Feds creek-Kimper associations (McIntosh 2004:17-22). Variations in the soils within and between associations generally reflect variations of topography and other patterns. The current project area is mapped within the Shelocta-Highsplint-Cloverlick-Kimper association.

The Shelocta-Highsplint-Cloverlick-Kimper association contains very deep and deep, well-drained, steep and very steep soils that have a loamy subsoil. Soils in this association are generally found on hillsides in southwestern Knott County in watersheds of some of the larger creeks. The soil association covers approximately 47 percent of the county (McIntosh 2004:19).

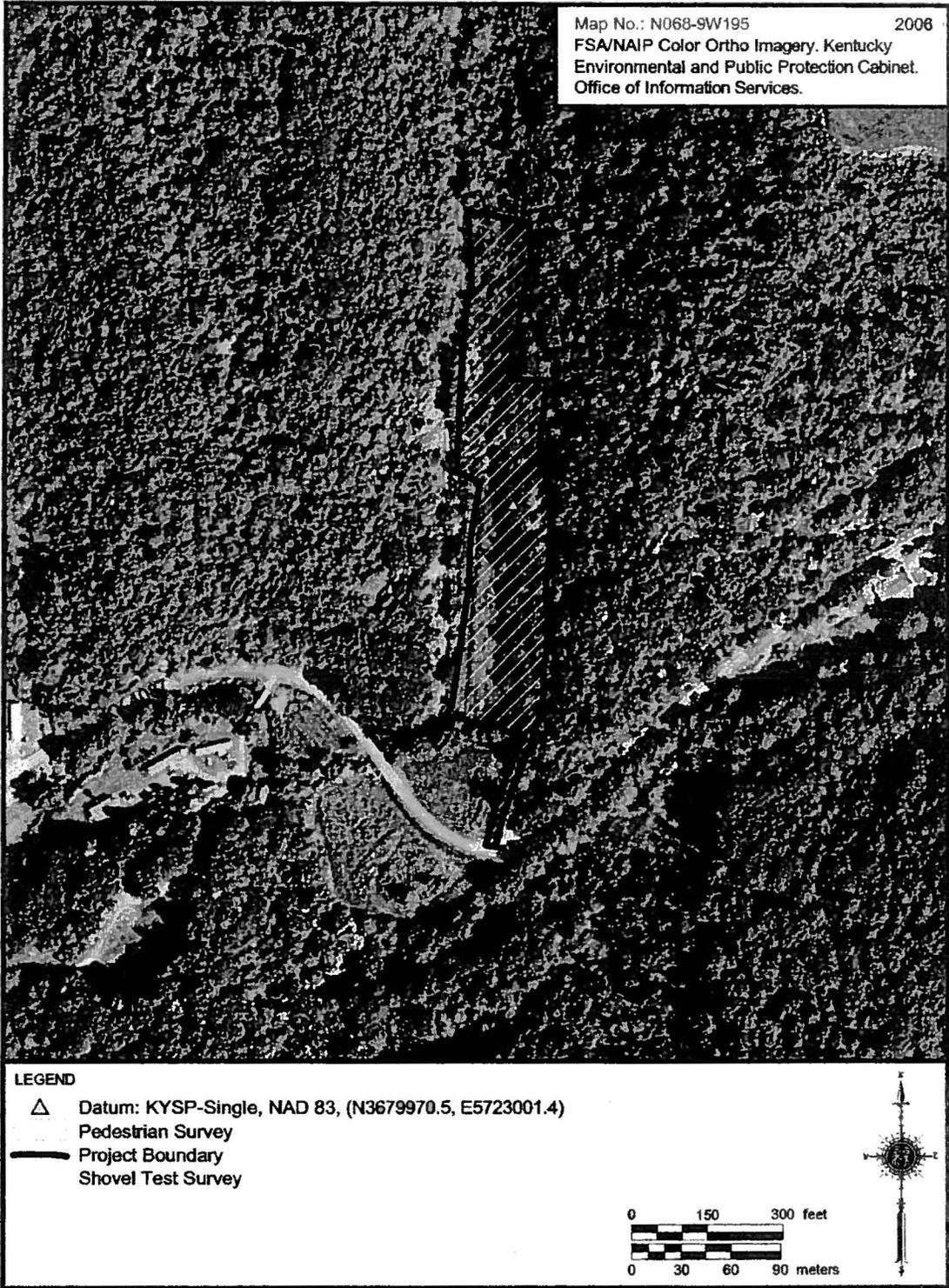


Figure 3. Project area plan map.

Individual soils mapped within the project area boundaries consist of Grigsby sandy loam, occasionally flooded, and Handshoe-Feds creek-Marrowbone complex, 30 to 80 percent slopes, very stony (all soil descriptions are taken from McIntosh 2004).

Feds creek soils are well drained, moderately rapidly permeable soils on hill slopes, mountainsides, benches, footslopes, and in drainage ways. These soils formed in loamy colluvium weathered from sandstone, siltstone, and shale.

Grigsby soils are well drained, moderately to moderately rapidly permeable soils on floodplains. These soils formed in mixed alluvium.

Handshoe soils are well drained, moderately rapidly permeable soils on sideslopes and footslopes on hills and mountains. These soils formed in colluvium weathered from acid brown or gray sandstone.

Marrowbone soils are well drained, moderately to moderately rapidly permeable soils on hill slopes, mountainsides, nose slopes and ridgetop crests. These soils formed in loamy residuum or colluvium weathered from interbedded sandstone and siltstone.

Climate

The climate in this area of Kentucky is continental in character, and temperature and precipitation levels fluctuate widely. The prevailing winds are westerly; therefore, most of the storms cross the state in a west to east pattern. Low pressure storms that originate in the Gulf of Mexico and move in a northeasterly direction across Kentucky contribute the greater proportion of precipitation received by the state. Warm, moist, tropical air masses from the Gulf predominate during the summer months when humidity levels are high. As storms move through the state, occasional hot and cold periods of short duration may be experienced. During the spring and fall, storm systems tend to be less severe and have a smaller frequency, thus resulting in less radical extremes in temperature and rainfall (Anderson 1959).

The average daily temperature in Knott County in January is 32.6 degrees Fahrenheit, and the average temperature in July is 74.5 degrees Fahrenheit (McIntosh 2004:142), based on data collected between 1961 and 1990 at Baxter and Jermiah, Kentucky. Precipitation level averages kept during the same period of time indicate that Knott County receives about 101.6 cm (40 in) of rain annually.

Vegetation

The Eastern Kentucky Coal Field physiographic region is located in the rugged east portion of the Mixed Mesophytic Forest (Braun 1950:146). The forest associations found in this region are the oldest and most complex of the deciduous forests. Because of the large number of dominants in this forest, the composition and relative abundance of the dominants vary greatly from place to place (Braun 1950:44).

In the rugged eastern area, sugar maple-basswood-buckeye-tulip poplar segregates occur mainly on north-facing slopes. Oak-chestnut and oak-hickory communities occupy upper slopes and ridgetops. Pine is dominant on ridgetops where rock outcrops occur, and beech and white oak are located where shale is the underlying rock. Oak, oak-hickory, and oak-pine communities comprise the modern eastern Kentucky forest community (Niquette and Henderson 1984).

The herbaceous vegetation of the understory is exceedingly rich and varied and includes showy flowers and ferns. The interdependence of the canopy and the herbaceous layer is strongly marked (Braun 1950:45-46). Much of the area within the mixed mesophytic forest region is now occupied by secondary forest, and many of these areas bear little or no resemblance to the original forest cover (Braun 1950:48).

Description of the Project Area

The project area is located directly north of the intersection of Knob Bottom Road and KY 1087 in Knott County, Kentucky (see Figure 2). Topography within the project area included the floodplain and a portion of the western sideslope of the Knob Bottom stream valley, and elevations ranged from approximately 324.6 to 329.1 m (1,065 to 1,080 ft) AMSL. The floodplain portion of the project area was located in a harvested field with a surface visibility of 70 percent (Figure 4). Ground surface visibility along the sideslope in the borrow portion of the project area was obscured by leaf litter and tree falls. Portions of the borrow area had been disturbed by logging activities and a line of recently installed telephone poles on the eastern and northern edges of the project area (Figure 5).

A representative soil profile within the project area includes 14 cm (5.5 in) of dark yellowish brown sandy loam overlying a 20 cm (7.8 in) layer of dark yellowish brown sandy loam with river gravel. These soil profiles appear to match those of Fedscreek and Grigsby soils as described in the Knott and Letcher Counties soil survey (McIntosh 2004).

III. RESULTS OF THE FILE AND RECORDS SEARCH AND SURVEY PREDICTIONS

Previous Research in Knott County

Prior to initiating fieldwork, a search of records maintained by the NRHP (available online at: <http://www.nr.nps.gov/nrloc1.htm>) and the OSA (FY09-5855) was conducted to: 1) determine if the project area had been previously surveyed for archaeological resources; 2) identify any previously recorded archaeological sites that were situated within the project area; 3) provide information concerning what

archaeological resources could be expected within the project area; and 4) provide a context for any archaeological resources recovered within the project area. The OSA file search was conducted between February 17 and 25, 2009. The work at OSA consisted of a review of professional survey reports and records of archaeological sites for an area encompassing a 2-km radius of the project footprint. To further characterize the archaeological resources in the general area, the OSA archaeological site database for the county was reviewed and synthesized. The review of professional survey reports and archaeological site data in the county provided basic information on the types of archaeological resources that were likely to occur within the project area and the landforms that were most likely to contain these resources. The results are discussed below.

OSA records revealed that four previous professional phase I archaeological surveys have been conducted within a 2-km radius of the project area. Two previously recorded sites have been located in this area also. None of these sites, however, will be affected by the proposed construction.

The records search revealed that two historic (15Kt106 and 15Kt113) archaeological sites were situated within a 2-km radius of the project area. The 2-km radius included areas within the Handshoe, Kentucky, quadrangle (United States Geological Survey [USGS] 1992).

Previous Archaeological Investigations

Between June 3 and 5, 1991, CRAI personnel completed a phase I archaeological assessment of a proposed coal mining operation along Patten Fork in Knott County, Kentucky (Hand 1991). The survey was conducted at the request of Walturn Engineering, Inc., on behalf of Miller Brothers Construction Company, Inc., (Permit Application Number 860-0316). The total permitted area of 119.9 ha (296.4 acres) was surveyed in its entirety. Fieldwork consisted of an intensive pedestrian survey supplemented with shovel testing. No sites or historic properties were located, and cultural resource clearance was recommended (Hand 1991).



Figure 4. Overview of floodplain portion of the project area, facing north.



Figure 5. Overview of borrow area in northern portion of the project area, facing north.

Between December 9 and 11, 1999, Betty J. McGraw completed a phase I archaeological assessment of a proposed amendment to an existing coal mining operation in Knott County, Kentucky (McGraw 1999). The survey was conducted at the request of Walturn Engineering, Inc., on behalf of Miller Brothers Construction, Inc. The total amended area of 180.7 ha (446.5 acres) was surveyed in its entirety. Fieldwork consisted of an intensive pedestrian survey supplemented with shovel testing. No sites or historic properties were located, and cultural resource clearance was recommended (McGraw 1999).

Between July 13 and September 19, 2000, Betty J. McGraw completed a phase I archaeological assessment of a proposed coal mining operation in Knott County, Kentucky (McGraw 2000). The survey was conducted at the request of Walturn Engineering, Inc., on behalf of Miller Brothers Construction, Inc. The total amended area of 158.4 ha (391.5 acres) was surveyed in its entirety. Fieldwork consisted of an intensive pedestrian survey supplemented with shovel testing.

One previously unrecorded archaeological site, 15Kt106, was identified during the survey. Site 15Kt106 consisted of an abandoned farmstead and a hand-dug well. No artifacts were recovered in association with the structure. It was determined that the house would not be impacted by the proposed mining activities, and cultural resource clearance was recommended (McGraw 2000).

On December 3, 2002, and February 4, 2003, Betty J. McGraw completed a phase I archaeological assessment of a proposed amendment to an existing coal mining operation in Knott County, Kentucky (McGraw 2002). The survey was conducted at the request of Walturn Engineering, Inc., on behalf of Miller Brothers Construction, Inc. The total amended area of 48.5 ha (119.9 acres) was surveyed in its entirety. Fieldwork consisted of an intensive pedestrian survey supplemented with shovel testing.

One previously unrecorded archaeological site, 15Kt113, was identified during the survey. Site 15Kt113 consisted of the remains

of a historic farmstead represented by a stone lined well and mortared stone well house. The entire surrounding area had been leveled by bulldozing, and no other evidence of the farmstead remained. Due to the apparent amount of disturbance present, the site was recommended not eligible for inclusion in the NRHP, and cultural resource clearance was recommended (McGraw 2002).

Archaeological Site Data

OSA records show that prior to this survey, 119 archaeological sites have been recorded in Knott County (Table 1). The majority of archaeological sites consist of historic farm/residences (n = 48, 40.34 percent) followed by rockshelters (n = 29, 24.37 percent), open habitation sites without mounds (n = 21, 17.65 percent), and unspecified (n = 8, 6.72 percent). The remaining site types include cemeteries (n = 3, 2.52 percent), industrial (n = 6, 5.04 percent), and stone mounds (n = 4, 3.36 percent).

Table 1. Summary of Selected Information for Previously Recorded Sites in Knott County. Data Obtained from OSA and May Contain Coding Errors.

Site Type:	N	%
Cemetery	3	2.52
Historic Farm/Residence	48	40.34
Industrial	6	5.04
Open Habitation Without Mounds	21	17.65
Rockshelter	29	24.37
Stone Mound	4	3.36
Unspecified	8	6.72
Total	119	100
Time Periods Represented:	N	%
Paleoindian	0	0
Archaic	2	1.63
Woodland	8	6.5
Late Prehistoric	7	5.69
Indeterminate Prehistoric	34	27.64
Historic	66	53.66
Unspecified	6	4.88
Total	123*	100
* One site may represent more than one time period.		
Landform:	N	%
Dissected Uplands	21	17.65
Floodplain	31	26.05
Hillside	33	27.73
Other	14	11.76
Terrace	10	8.4
Unspecified	10	8.4
Total	119	100

The landform locations of sites in Knott County were examined to determine the likelihood of encountering sites on similar landforms within the project area. The majority of sites in Knott County are located on hillsides (n = 33, 27.73 percent), floodplains (n = 31, 26.05 percent), and dissected uplands (n = 21, 17.65 percent). Site types located on hillsides are predominately rockshelters (n = 20, 60.61 percent) followed by historic farm/residences (n = 6, 18.18 percent), open habitation without mounds (n = 4, 12.12 percent), cemeteries (n = 2, 6.06 percent), and industrial (n = 1, 3.03 percent). Most of the sites situated on dissected uplands are historic farm/residences (n = 10, 47.62 percent) followed by rockshelters (n = 4, 19.05 percent), stone mounds (n = 4, 19.05 percent), and open habitation sites without mounds (n = 3, 14.29 percent).

Map Data

In addition to the file search, a review of available maps was initiated to help identify potential historic properties (structures) or historic archaeological site locations within the proposed project area. The following maps were reviewed:

1914 (reprinted 1927) Troublesome, Kentucky, 15-minute series topographic quadrangle (United States Geological Survey [USGS]);

1930 Map of the Surface Structural Geology of Knott County, Kentucky (USGS);

1937 Highway and Transportation Map of Knott County, Kentucky (Kentucky Department of Highways [KDOH]);

1952 General Highway Map of Knott County, Kentucky (KDOH);

1992 Handshoe, Kentucky, 7.5-minute series topographic quadrangle (USGS).

The maps provided useful information about the general location of former structures and alerted the crew to the possible existence of historic deposits within a general area. No structures were indicated on any of the available maps.

Survey Predictions

Considering the known distribution of sites in the county, the available information on site types recorded, and the nature of the present project area, certain predictions were possible regarding the kinds of sites that might be encountered within the project area. Prehistoric open habitation sites without mounds were the primary site type expected. Because of the project area's proximity to the town of Vest, historic residences and cemeteries were also considered a possibility. Due to the lack of steep gradients within the project area, however, the possibility of encountering rockshelters was low, despite their prevalence throughout the rest of the county.

IV. METHODS

The project area is located north of the intersection of Knob Bottom Road and KY 1087 in Knott County, Kentucky. Topography within the project area included the floodplain and a portion of the western sideslope of the Knob Bottom stream valley, and elevations ranged from approximately 324.6 to 329.1 m (1,065 to 1,080 ft) AMSL. (see Figure 3).

At the time of the current survey, the proposed access road and water treatment plant location were situated in a cultivated field with a surface visibility of 70 percent. The northern portion of the project, consisting of the proposed borrow area, was situated on a sideslope with trees and brush and a surface visibility of 0 percent.

The entire project area was initially subjected to pedestrian surface survey. This was accomplished by walking parallel transects at 5-m intervals to identify any cultural materials exposed on the surface. When no cultural materials were identified, a single transect of subsurface shovel tests was excavated at 20-m intervals across the floodplain. In all cases, shovel test probes (STPs) measured not less than 35 cm in diameter and extended well into the subsoil. All fill removed from the tests was screened

through .64-cm (.25-in) mesh hardware cloth, and the sidewalls and bottoms were examined for cultural material and features. The presence of charcoal, any indication of deeper deposits on the floodplain, and general soil characteristics (e.g., texture or Munsell colors) were recorded by individual level.

A representative soil profile within the project area includes 14 cm (5.5 in) of dark yellowish brown sandy loam overlaying a 20 cm (7.8 in) layer of dark yellowish brown sandy loam with river gravel. These soil profiles appear to match those of Fedscreek and Grigsby soils, as described in the Knott and Letcher Counties soil survey (McIntosh 2004). No archaeological materials, subsurface features, or cultural disturbances were identified during pedestrian survey or during subsurface testing.

V. RESULTS AND CONCLUSIONS

Note that a principal investigator or field archaeologist cannot grant clearance to a project. Although the decision to grant or withhold clearance is based, at least in part, on the recommendations made by the field investigator, clearance may be obtained only through an administrative decision made by the lead federal agency in consultation with the State Historic Preservation Office (the Kentucky Heritage Council [KHC]).

No archaeological sites or historic resources were recorded as a result of this investigation, and no sites listed in, or eligible for, the NRHP will be affected by the proposed construction. Cultural resource clearance is therefore recommended.

If any previously unrecorded archaeological materials are encountered during construction activities, the KHC should be notified immediately at (502) 564-6662. Furthermore, if human skeletal material is discovered, construction activities should cease and the KHC, the local coroner, and the local law enforcement agency must be notified, as described in KRS 72.020.

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