

**INDIVIDUAL 404 PERMIT
(LRL-2011-707-B)**

**SURFACE FACILITIES FOR AN UNDERGROUND
COAL MINE OPERATION**

In McLean County, Kentucky

CYPRESS CREEK MINE SITE

Prepared for:

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EXHIBITS

STANDARD OPERATING PROCEDURES

1. Pre-Application Meeting.

An on-site meeting with a representative from the United States Army Corps of Engineers (USACE) was conducted on February 10th, 2015 to confirm jurisdictional waters and discuss the proposed project; the relocation of a barge loading facility and addition of a conveyor from the permitted mining operation to the new loading facility.

2. Receipt of Application.

Please refer to ENG Form 4345 and attachments for information related to applicant, authorized agent, project location, project description and purpose, adjoining property owners and signature authorization. See Exhibit 1 for project location.

A. Detailed description of proposed activity:

(1) Impacts

Under this permit modification, Hartshorne Mining Group, LLC, is proposing a new barge loading site and adding a conveyor corridor from the existing permitted mine site to the new loading site. The following impacts are expected from this modification: 40 feet of ephemeral stream (or 0.004 surface acres), 40 feet of intermittent stream (or 0.014 surface acres), and 40 feet of perennial stream (or 0.019 surface acres). Five wetlands will be filled with a total area of 0.352 acres. Stream lengths to be impacted by the proposed activity are also listed below in Section 2A(1)(a).

(a) Direct Impacts

- The proposed activity will not involve any permanent fills.
- Three road crossings over streams will be required for a conveyor maintenance access road; one over a perennial stream, one over an intermittent stream, and one over an ephemeral stream.
- Deadmen, for anchoring, will be utilized for the barge loading area; all being located above the ordinary high water elevation of the Green River.
- Mining will affect one intermittent stream for 40 feet (culvert crossing), one ephemeral stream for 40 feet (culvert crossing), one perennial stream for 40 feet (culvert crossing), and 0.352 acres of wetlands; required to develop additional surface operations in support of an underground mining operation. Once the new barge loading site approved, the existing

permitted barge loading site will be eliminated from use. Due to the length of time the project facilities will be in use, the development of on-site mitigation is not practical; mitigation will be in the form of an in lieu fee (see mitigation section).

(b) Indirect Impacts

- Cypress Creek will be crossed using a clear span to support the conveyor within the project boundary (see Exhibit 5). No direct impact to the stream is anticipated.
- Site development will result in impacts to streams and wetlands and will indirectly impact aquatic life movement by creating temporary obstacles (culvert crossing installation).

(2) Drainage Acreage

The new barge loading facility location encompasses a 21.5 acre tract on the Green River, near River Mine 60.1. At this point the Green River has a drainage area of approximately 7,601 square miles. The proposed conveyor corridor encompasses 32.4 acres, and will cross Cypress Creek, where it has a drainage area of 143.9 square miles. A maintenance road which parallels the conveyor will impact three streams with culvert crossings. Drainage areas for these watersheds are 1888 acres (PER-2), 193 acres (INT-10), and 45 acres (E-26). No resources will be impacted at the barge loading site on the Green River. Refer to Table 1 in the "Stream Habitat Assessment and Wetland Delineation Report" for drainage areas of each impact.

(3) Purpose

The purpose of the proposed activity is to relocate a barge loading facility to a safer location on the Green River (further away from the USACE defined restricted area near Dam #2 at Calhoun) and provide conveyor transport to that facility. The purpose of the permitted mining site is for the extraction of coal from the WK #9 seam in order to meet future energy demands of the United States. The project is expected to last 30 years, and will extend full time employment to over 350 workers. Business activities associated with the project are expected to boost local economy in a region that has suffered economically since the 1970's.

(4) Schedule

Work is expected to begin in 2015, and to be completed in approximately 30 years (2045).

(5) Dredged or Fill Material

Material consisting of native rock and soil will be generated during project development. Streams and wetlands will be impacted by excavation during the surface development process.

The volume of streams, to ordinary high water (OHW) mark, is approximately 128 cubic yards. The volume of wetlands is approximately 570 cubic yards. The barge loading area impacts are all above OHW.

B. Minimal Impact Determination

(1) Loss of Aquatic Functions

Loss of aquatic functions: The primary functions of streams within the project boundary are aquatic habitat and movement, water conveyance, sediment transport and a potential water source for terrestrial animals. In addition, smaller ephemeral streams and headwaters of the larger streams supply organic material to lower reaches and eventually to larger stream systems. Intermittent streams may support aquatic insects and/or fish; however, streams located in agricultural areas may not have fully recovered from past disturbance. The primary functions of wetlands within the project boundary include: flood water storage, energy dissipation, nutrient retention, subsurface water storage and wildlife habitat.

Some stream and wetland functions will be lost during project development and the life of the underground mining operation. Therefore, since this operation is expected to have an operational life of 30 years, mitigation will be provided by payment of an in lieu fee to the Kentucky Department of Fish and Wildlife Resources.

(2) Gain of Aquatic Functions

Aquatic functions will be gained by the payment of an in lieu fee to the Kentucky Department for Fish and Wildlife Resources for additional mitigation efforts in the basin.

(3) Avoidance and Minimization

This permit has facilities that have been located and designed to avoid and minimize adverse impacts to waters of the U.S.

(a) The proposed project under this permit concerns the relocation of a barge loading facility and the addition of a conveyor corridor (including a maintenance road). The surface disturbance associated with a proposed underground mine operation, including a barge loading facility have been approved (COE ID No. LRL-2011-707), and the Kentucky Division of Mine Permits. The modifications under this permit will minimize the footprint and distance along

Green River impacted by development of a barge loading facility. The existing (permitted) loading site lies along 2710 feet of the river, while the new site lies along 875 feet of river bank.

(b) The areas investigated for this permit, for possible impacts to streams, wetlands, and open waters were: a 53.5-acre barge loading facility site and a 45.2 acre conveyor corridor (see Baseline section of application). The original footprint for the new loading facility also involved 3126 feet of Green River stream bank. As indicated earlier, the final proposed loading facility was substantially reduced in scope. The development of the barge loading and fleeting area will take place above the ordinary high water elevation of the Green River, minimizing any direct impacts to that perennial stream. In addition, the siting of the facility and deadmen will allow for avoidance of streams and wetlands located in the original study area along the river.

Hartshorne Mining Group (HMG) proposes avoidance and minimization of direct impacts to 2.510 acres of wetlands, 375 linear feet of intermittent, and 896 linear feet of ephemeral stream (based on resources studied for potential impact). They will avoid impacts to Cypress Creek by providing a clear span crossing for the conveyor. The crossing is only 8 feet in width, so impacts to the existing tree canopy will additionally be minimal. See Exhibits 4, 5, and the “Summary of Impacts”, for information concerning the avoided resources. HMG proposes to further mitigate unavoidable impacts through payment of an in lieu fee to the Kentucky Department of Fish & Wildlife Resources. The payment of a fee is appropriate due to the length of the mining operation (estimated at 30 years) and the lack of other opportunities in the area. The only alternative that would result in no impacts to waters of the U.S. is a “no-build” alternative, which would not meet the needs of the proposed project (see the Alternatives Analysis section). A complete avoidance of impacts to all streams and wetlands within the project boundary was determined not to be practical.

Erosion control measures during project development will be employed to minimize the increase of suspended solids and turbidity. Erosion control measures will include temporary seeding and mulching and silt fence. Use of existing features on the site will avoid additional impacts to waters of the U.S. For example, existing roads will be used for access to the dock/loading facility main facility site, avoiding additional impacts to waters. Additional measures include timely construction and maintenance of the sediment controls utilized.

(c) The proposed project will impact ephemeral, intermittent, and perennial streams and wetlands. No information has been found that lists any of the aquatic sites as high quality waters. For example, there are no Outstanding Resource Waters, Division of Water Reference Reaches, Class 1-3 Undeveloped or Wild and Scenic Rivers or Cold Water Habitat located within the project boundary.

(d) Sediment control measures will be utilized and are located as close as practical to the surface operation boundary in order to intercept as much of the interior drainage as possible and treat water before it leaves the site.

(e) - (h) Please refer to the "Stream Habitat Assessment and Wetland Delineation Report" prepared for Hartshorne Mining Group, LLC, for a description of the aquatic environment, stream impact details, a summary of functional (habitat) assessment, delineations of waters of the U.S., descriptions of stream quality, and wetland classifications.

(4) Cumulative Impacts Analysis

(a) Land Disturbance Activities:

Introduction

This document will use terminology following current EIS guidance. An impact, or effect, means the change or modification to an environmental resource brought about by an outside action. Impacts can, and will, vary in significance, magnitude, and duration. Impacts may also be beneficial or adverse depending on the action and resource affected. For this analysis, short-term impacts are those with effects evident for a few years, generally less than the lifetime of the project (e.g. ground clearing activities). Long-term impacts generally would be those with effects extending beyond the lifetime of the project (i.e. beyond reclamation). Impact magnitude will be defined as follows: major impacts could cause significant change, stress, or depletion to an environmental resource, potentially resulting in irretrievable loss; moderate impacts could cause some change in a resource, generally with readily apparent effects; minor impacts are those that are detectable but slight; negligible impacts are those at the lower limit of detection causing insignificant change or stress to resources; and no impact applies to a level at which no discernable or measurable impacts are observed. In cases where quantitative resource evaluation was not possible, analyses were based on best available information and professional judgment. (Office of Surface Mining, 2006).

The proposed project area, also referred to as the Cypress Creek Mine Site, has a footprint of approximately 188 acres; but the cumulative impact analysis has been expanded to a 12-digit HUC watershed. The "Review Area" now refers to Pond Drain-Cypress Creek, HUC051100060507; an area of approximately 27.0 mi². Little data, other than coal severance tax records, are available prior to the advent of SMCRA permitting in the late 1970's. As a result, much of the discussion of past impacts is qualitative. Current and future impacts are based upon the best available data for resources of concern, but still involve a degree of

speculation. Cumulative impacts were considered based upon present-day baseline conditions defined. The future time boundary of the analysis is determined by the release of project areas from agency oversight. The estimated lifetime of the project is thirty years, and an additional five years for reclamation and bond release of the mine areas will be assessed. Therefore, the cumulative impacts analysis will focus on a period of earliest available data for each resource to thirty-five years after mining begins, and will refer to this timeframe as the “Review Period” for the remainder of the document.

Baseline Conditions

Landuse changes have impacted much of the landscape. Cultivated agricultural land occupies 77% of the Review Area (approximately 13,400 acres), and is found throughout the review area. Farm production is roughly evenly divided between soybean and corn (US Department of Agriculture, 2002). Forest covers only 13% of the Review Area (approximately 2,300 acres). Forests are concentrated along the main stems and larger tributaries of local streams. Some large blocks remain and often are connected by forested riparian corridors. The remaining landuses reflect generally more recent land development. Developed areas occupy roughly 6% of the land surface (990 acres). However, larger communities, such as Calhoun and Sacramento, are outside the Review Area. Undeveloped grassland and pasture occupy 1.7% of the area (approximately 280 acres), and is a result of either agricultural development or mine reclamation. Open water, scrub/shrub, and herbaceous land represent other minor landcovers (0.3%), and often are the result of land manipulation related to surface mining and reclamation activities. Wetlands, both natural and manmade, represent the remaining 2% (or approximately 320 acres) of the Review Area (NLCD, 2001; SMIS, 2010).

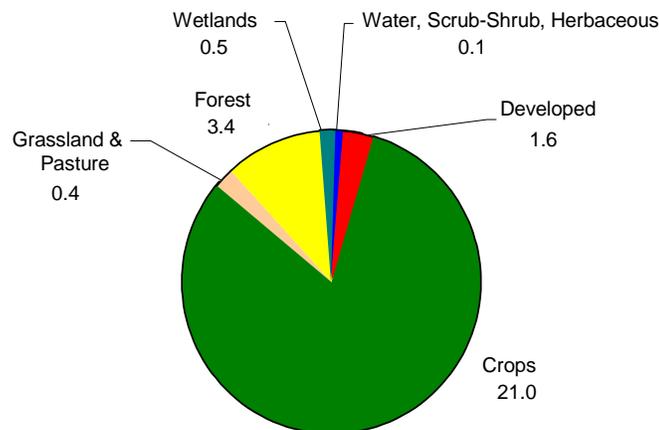


Figure 1. Review Area landcover totals in square miles. Data extracted from USGS NLCD 2001 dataset.

Agriculture has been extremely important to the economy of the region, and remains a significant source of employment and revenue, though to a lesser degree than historically. Still, the large areas cleared for pasture or row crops have converted much wetland and forest area into agricultural land. Wetland losses are difficult to quantify given sparse data for the area. However, using hydric soils versus NWI delineations suggest from a potential of over 12,000 acres, there are currently only around 300 acres remaining. This loss is greater than the average for the state, though not unexpected since most of the Review Area is relatively flat and heavily farmed.

Resource extraction has not been a large agent of landuse change. Research has indicated that there have been only 4 SMCRA-era permits in the Review Area (totaling 622 acres of disturbance) before the original Cypress Creek Mine was permitted, which added another 188 acres. No pre-law permits were identified. All permits prior to the original Cypress Creek Mine have been for surface mining, and have been reclaimed. The only pending permit found is this proposal from Hartshorne Mining Group, LLC for changes concerning their current permitted area.

Future Actions

Estimates and projections of future development follow methods discussed in the Final Programmatic Environmental Impact Statement on Mountaintop Mining/Valley Fills in Appalachia issued by EPA 28 October 2005. Even though this method of mining is not utilized in Western Kentucky, the projection method is still applicable. In this method, coal mine permit information for the previous ten years was used to determine a rate of impact for that time period. Assuming this rate will continue at this level in the future, cumulative impacts were then extrapolated from the data set. This method was used in the current cumulative impacts analysis and was further applied to other potentially significant agents of change in the Review Area.

Mining has not been a significant activity in the Review Area. Prior to the original Cypress Creek Mine, only 4 SMCRA-era permits were found, and those have already been reclaimed. Total past mining disturbance accounts for only 3.6% of the RA. Hartshorne Mining Group, LLC, has been permitted to establish the surface facilities for an underground mine, impacting 188 acres; or another 1.1% of the RA. This facility would remain in use in the foreseeable future as well (with a 30-year life span for the underground mining operation).

Crop production is expected to remain relatively static, future projections therefore assume no net expansion of agricultural land over the review period (although use of existing agricultural land may become more intensive). Construction of residences has been modest, but concentrated around Calhoun, which is outside the Review Area. Residential development will continue at a slow pace in the review area. Soil data for the Review Area indicate this development will be constrained to outside the area, as most soils within are moderately, to very, limited for construction by flooding and shallow saturation zones (NRCS, 2010). It is expected that most development will continue to occur around established communities, as supported by an analysis of population changes between 1990 and 2000 (US Census data); which showed strong population growth outside the Review Area near the communities of Calhoun and Sacramento. Commercial development faces the same constraints due to flood-prone soils and shallow zones of saturation and is likely restricted to the same areas where residential development is expected to occur. Based on physical limitations and the lack of historical and current commercial development within the Review Area, future commercial development is likely negligible.

The currently permitted mine site will impact 1.852 acres of wetland; this permit will add another 0.352 acres of impact. The total represents 0.7% of the total wetland area in the Review Area (this permit represents only 0.1% of the total). The loss of wetland associated with the project plus current estimated background loss rates are not significant in respect to historic losses. The project impacts will be offset by restoration activities funded by payment of an in lieu fee.

Comparisons of forested areas indicated on USGS 7.5' topographic maps with the most recent (2004) FSA aerial photography suggest forests in the Review Area have remained static the last few years. The proposed project will remove approximately 15 acres of forest cover in the Review Area. However, most of this will be re-established on site during mitigation activities and reclamation of the mine facility. Low levels of forest loss with concurrent gains, as well as low levels of projected development, suggest minor future forest conversion. No net loss of forest will occur as a result of the proposed project. In addition, outside the Cypress Creek Mine area, the Review Area contains several relatively unfragmented forest blocks, most with corridors to adjacent stands. Forested wetlands that will be impacted by the project should be offset by re-creation offsite through the in lieu fee program. Overall forest acreage and ecological function is expected to remain near current levels during the review period; cumulative impacts on ecological systems of concern are therefore expected to be minor.

Historically, agricultural lands in the Review Area have been protected. Agriculture is not expected to expand significantly during the review period, but some farmland may be converted to residential land near urban centers outside of the Review Area. As nearly all of the Review Area is rural, development of existing farmland is expected to be minimal. The project is unlikely to impact population patterns or movements. This permit proposal may impact areas currently in crop production, but stockpiling of prime farmland top-soils and restoration of these areas to pre-mining production levels are required by Kentucky reclamation regulations (405 KAR 16:020; 16:040; 16:200). The majority of the Cypress Creek Mine Site area is currently used for agricultural purposes.

(b) Watershed Improvement Projects

Preservation Areas –No preservation areas or Wildlife Management Areas are located within the project boundary.

Restoration of Previously Mined Areas – No previously mined areas are located within the project boundary, although the surface for the underground Cypress Creek Mine is currently permitted.

Enhancement Activities - Enhancement activities were proposed for the original permitted mine site. Due to the expected life span of the facilities under this modification opportunities for enhancement activities are limited. Any enhancement activities resulting from this permit would be expected through the in-lieu fee process for mitigation. No other enhancement activities are known in the area.

C. Compensatory Mitigation:

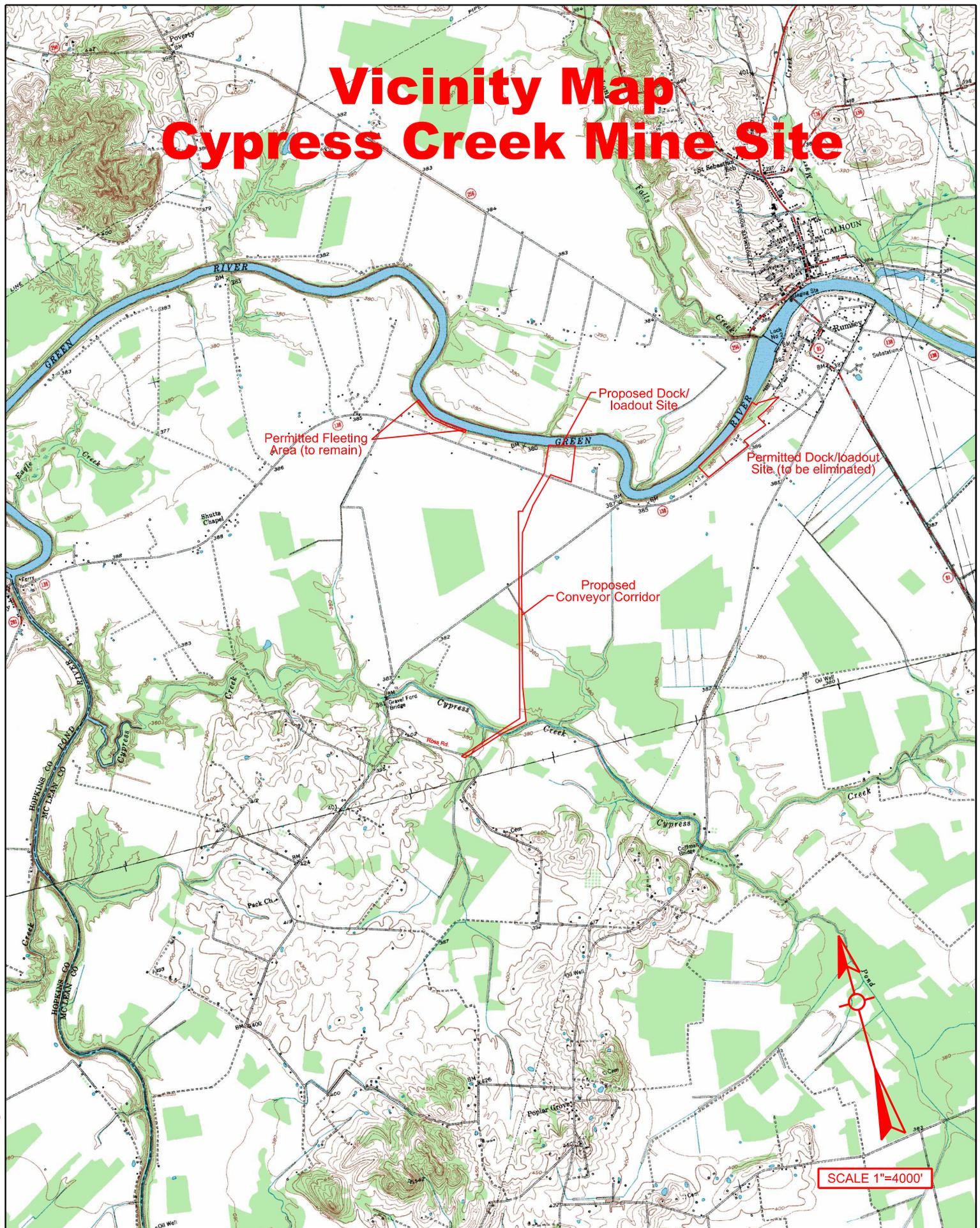
Due to the life expectancy of the project (approximately 30 years), mitigation is proposed in the form of in-lieu fees paid to the Kentucky Department of Fish and Wildlife Resources (KDF&WR). The payment of an in lieu fee is appropriate due to the life-span of the operation, the minor scale of the impacts, and the lack of available sites in the project area to provide mitigation opportunities. The proposed fee is based on the latest guidance provided by the Louisville District Corps of Engineers in *Public Notice No. LRL-2003-27-pgj* and latest information from the KDF&WR (*effective 1/15/2015*). According to these documents, the fees outside of the Eastern Kentucky Coalfield Region will be related to “Adjusted Mitigation Units” and set dollar amounts per foot for streams, or per acre for wetlands. The following “In Lieu Fee Table” has details on the proposed fees associated with specific impacts.

IN LIEU FEE TABLE

CYPRESS CREEK SITE - Permit LRL-2011-707-B
McLean County

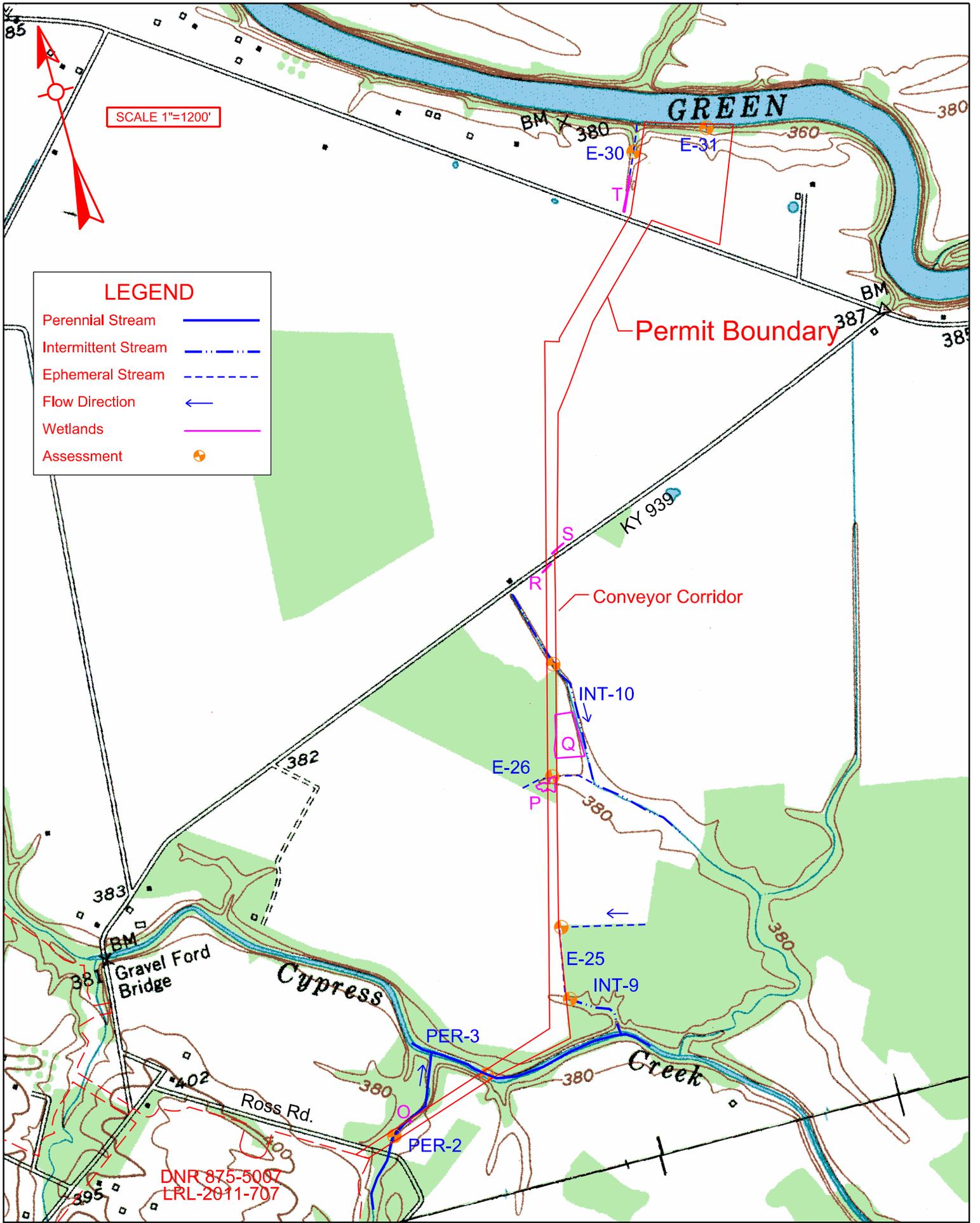
Stream ID	Resource Type	Type of Impact	Acreage of Impact	Watershed size (acres)	RPB Score	Stream Quality	Impact Length	Mitigation Ratio	Adjusted Mitigation Units (AMU's)	In Lieu Fee (dollars)
PER-2	perennial	culvert	0.019	1888	112	poor	40	1.50	60.0	18,000.00
INT-10	intermittent	culvert	0.014	193	97	poor	40	1.00	40.0	12,000.00
E-26	ephemeral	culvert	0.004	45	86	poor	40	0.50	20.0	6,000.00
Wetland O	PEM1A	fill	0.008					2	0.016	733.44
Wetland P	PFO1B	fill	0.205					2	0.410	18,794.40
Wetland Q	PFO1B	fill	0.113					2	0.226	10,359.84
Wetland R	PEM1E	fill	0.012					2	0.024	1,100.16
Wetland S	PEM1E	fill	0.014					2	0.028	1,283.52
									Total	68,271.36

Vicinity Map Cypress Creek Mine Site



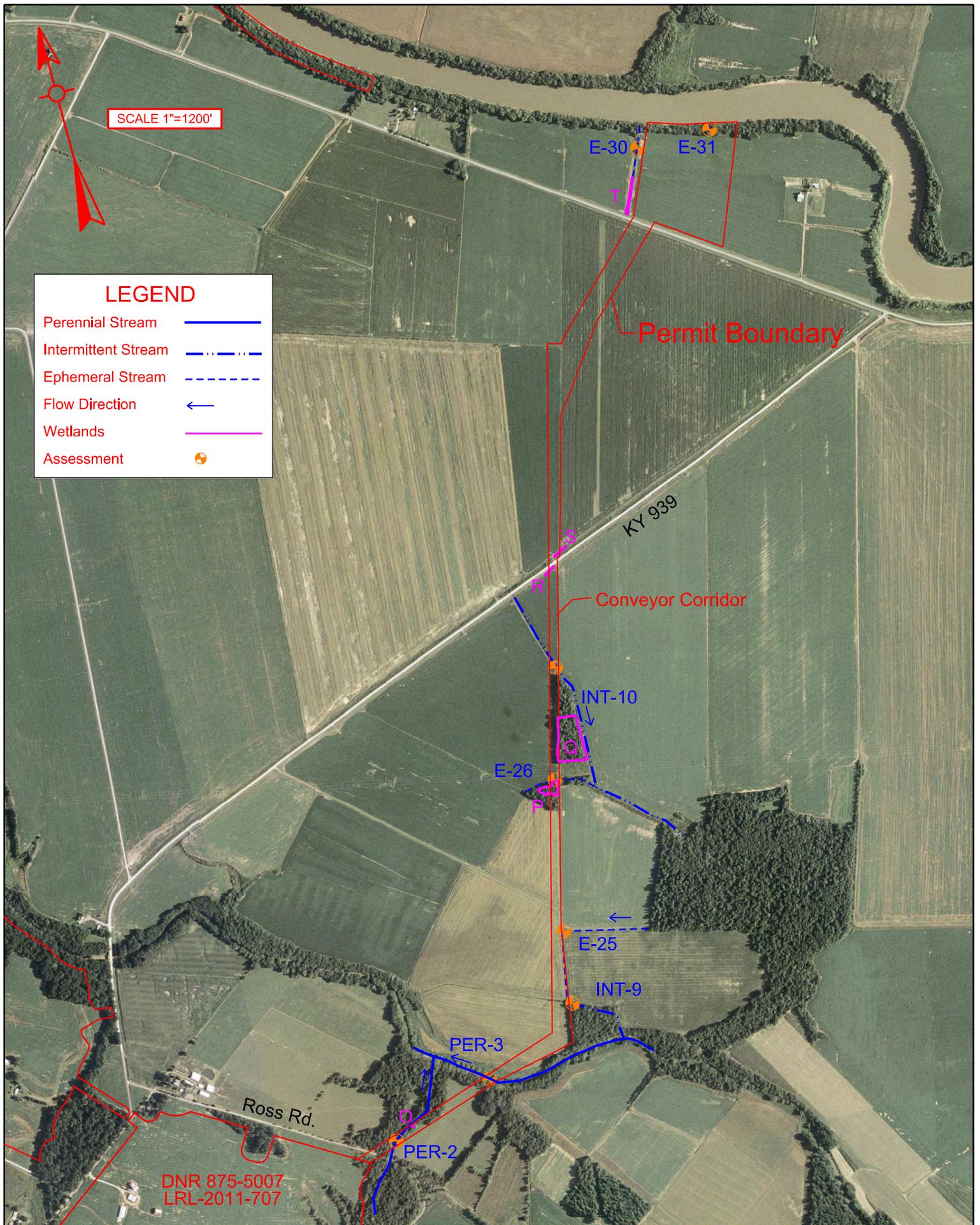
T.H.E. Engineers, Inc.	PROJECT: Cypress Creek Loadout/Conveyor Mine Site			Permit Limits	
	COUNTY: McLean	STATE: KY	NEAR: Rumsey	ITEM: Vicinity Map	Exhibit 1

DATE:



T.H.E. Engineers, Inc.	PROJECT: Cypress Creek Loadout/Conveyor Mine Site - Jurisdictional Waters Delineation		Streams and Wetlands	
	COUNTY: McLean	STATE: KY	NEAR: Rumsey	USGS Map
				Exhibit 2

DATE:



SCALE 1"=1200'

LEGEND

- Perennial Stream ———
- Intermittent Stream - - - - -
- Ephemeral Stream - - - - -
- Flow Direction ←
- Wetlands ———
- Assessment ●

Permit Boundary

KY 939

Conveyor Corridor

INT-10

E-26

E-25

INT-9

PER-3

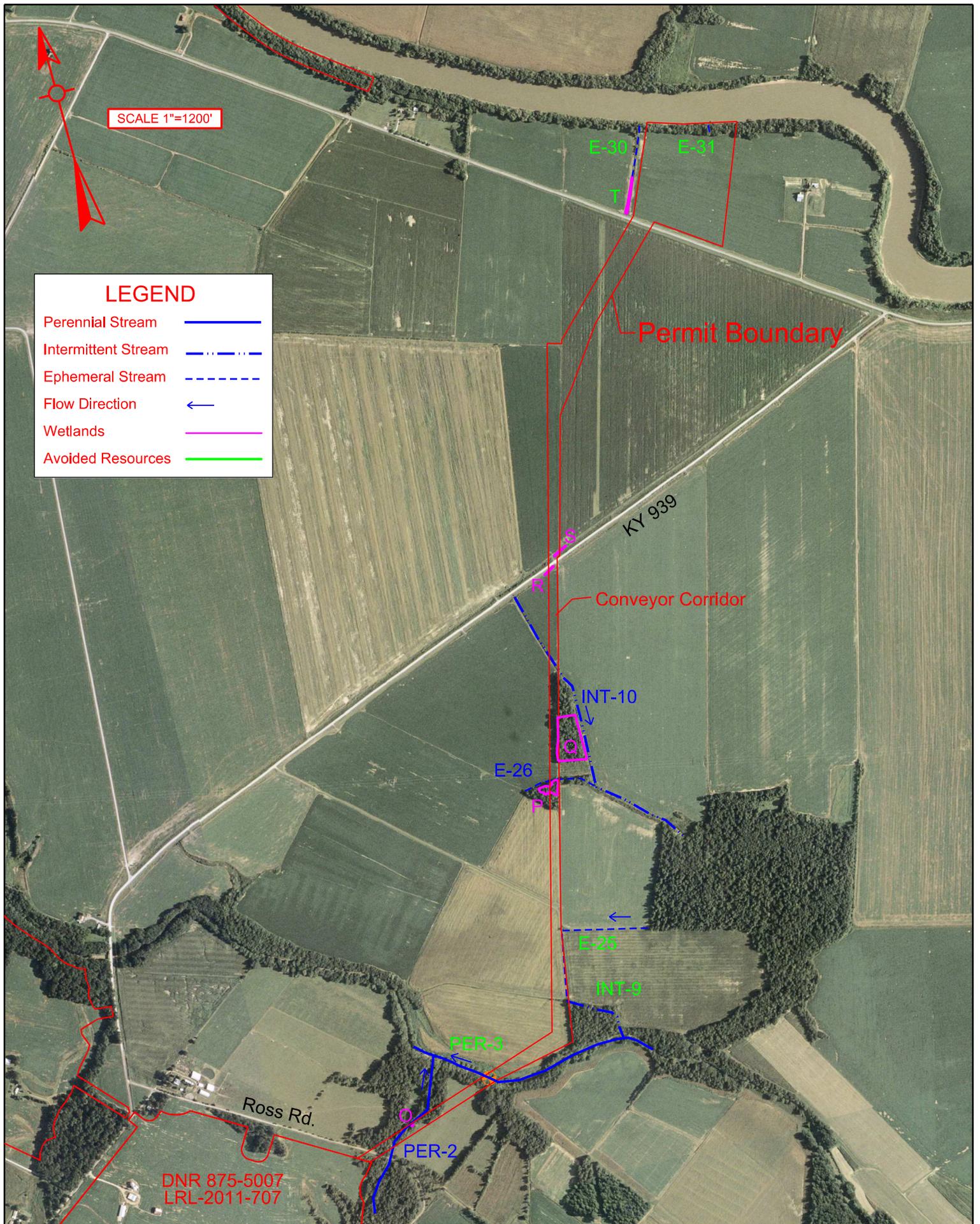
Ross Rd.

PER-2

DNR 875-5007
LRL-2011-707

T.H.E. Engineers, Inc.	PROJECT: Cypress Creek Loadout/Conveyor Mine Site - Jurisdictional Waters Delineation			Streams and Wetlands	
	COUNTY: McLean	STATE: KY	NEAR: Rumsey	AERIAL Map	Exhibit 3

DATE:



SCALE 1"=1200'

LEGEND

- Perennial Stream ———
- Intermittent Stream - - - - -
- Ephemeral Stream - - - - -
- Flow Direction ←
- Wetlands ———
- Avoided Resources ———

Permit Boundary

Conveyor Corridor

KY 939

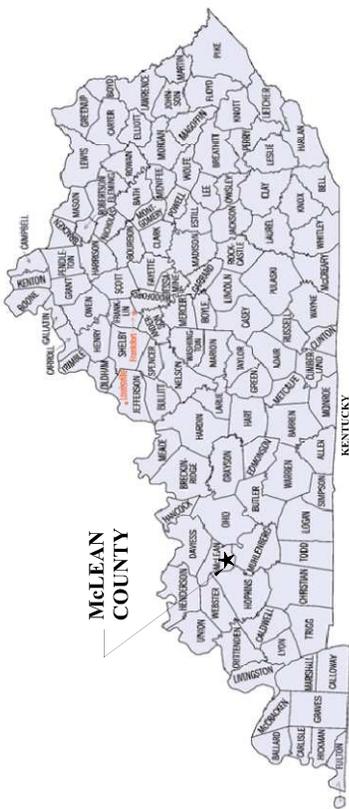
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LRL-2011-707

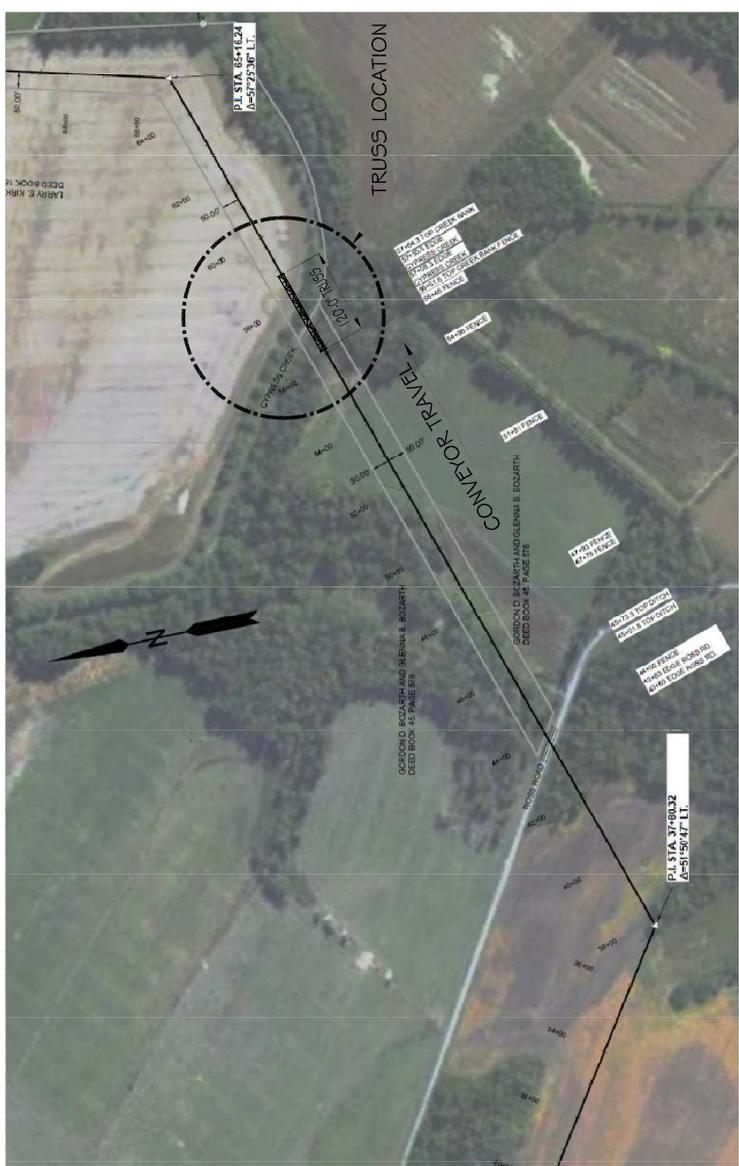
T.H.E. Engineers, Inc.	PROJECT: Cypress Creek Loadout/Conveyor Mine Site - Avoided Resources			Streams and Wetlands	
	COUNTY: McLean	STATE: KY	NEAR: Rumsey	AERIAL Map	Exhibit 4

DATE:

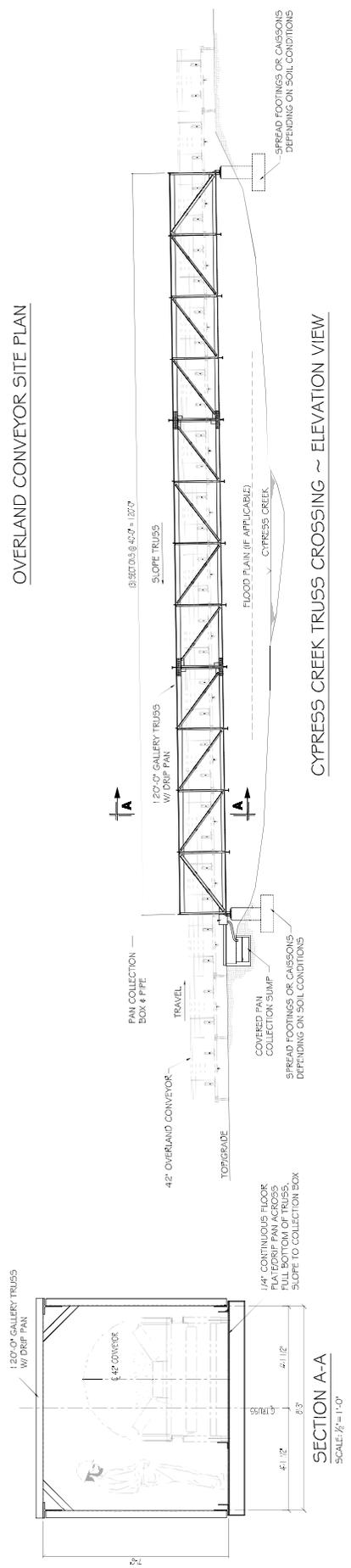
PREPARED FOR:



SITE LOCATION MAP



OVERLAND CONVEYOR SITE PLAN



CYPRUS CREEK TRUSS CROSSING ~ ELEVATION VIEW

PROPOSED OVERLAND CONVEYOR ~ CYPRUS CREEK TRUSS CROSSING		HARTSHORNE MINING GROUP, LLC		APPALACHIAN COAL SERVICES, LLC	
PROJECT	DESCRIPTION	CUSTOMER	LOCATION	DATE	REV.
	120'-0" TRUSS GENERAL ARRANGEMENT		MCLEAN COUNTY, KY		
BY					
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APPROVED: [Signature] SCALE: 1/8"=1'-0"

DATE: 2-12-15
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