



CONSERVATION PLAN FOR THE INCIDENTAL TAKING OF THE SPOTTED DUSKY SALAMANDER

April 25, 2006 (Draft for Informal IDNR Comment)

**MOUNDS PRODUCTION COMPANY, LLC
PARM SURFACE MINE
PULASKI COUNTY, ILLINOIS**

Prepared For: Illinois Department of Natural Resources

Prepared By: Mounds Production Company, LLC

Introduction

Project Background. In April 1998, Mounds Production Company, LLC (“MPC”) acquired a clay processing and manufacturing facility in Mounds, Illinois and related mining assets from American Colloid Company. Mining rights on the tract in question, commonly known as the Parm tract, were among the acquired assets. The tract now belongs to the Cypress Creek Wildlife Refuge, a wildlife refuge within the National Wildlife Refuge System operated by the United States Fish and Wildlife Service (“USFWS”). During site investigations and other planning necessary to develop a surface mine operation and reclamation plan for the Parm tract, MPC determined that an Illinois-listed endangered species, *Desmognathus fuscus conanti*, or spotted dusky salamander, occurs in the central ravine of the tract.

Project Location. The Parm tract is located just off Olive Branch Road, about 4.5 miles west of the MPC’s Mounds, Illinois facility. The entire tract, about 90 acres, comprises the West ½ of the Southwest ¼ of Section 7, Township 16 South, Range 1 West, of the Third Principal Meridian, Pulaski County, Illinois; however, in this Conservation Plan, references to the “Parm tract” refer only to the approximately 40 acres on which MPC proposes to conduct surface mining and related activities. All of the 40 acres lies east of the Cache River. See Map 1.

Biological Data

Description. The spotted dusky salamander is a moderately stout salamander with dark markings and remnants of larval pale spots on the back. See Figure 1. These markings form an irregular dark-bordered light stripe down the back of the adult salamander. Juveniles are more prominently spotted. The underside is light with black flecks. Larvae are short, between eight and 12 millimeters long, with glistening, white gills (Phillips, et al., 1999).

Adult spotted dusky salamanders range from about six to 14 centimeters total length. Males are generally larger than the females, possibly due to the male’s greater average longevity (Petranka, 1998).

Habitat and Life Habits. Throughout most of its range, the spotted dusky salamander is known to occur in woodland seeps, streams and cold headwater springs. In Illinois, cold, rocky and heavily forested ravines provide optimum habitat (Herkert, ed., 1992).

Adults are mainly active on the surface at night, taking shelter under leaves, logs and rocks or in burrows during the day. They feed on invertebrates such as arthropods, annelids and mollusks as well as other salamanders and their own larvae. They mate in spring to early summer, roughly April to July. In spring of the year, females may migrate short distances to breeding habitats. Later, juveniles disperse from these sites into the surrounding forest. During the winter, the adults and juveniles retreat to underground areas, dispersing into

surrounding forest in spring (Petranka, 1998). Eggs are deposited in clusters of 10 to 20 in burrows or in depressions under logs or leaves near water. The female guards the nest, curling around the eggs to protect them. Hatching occurs in one to two months depending upon temperature. The larvae make their way into the nearby water where they grow and feed until transforming the following spring (Smith, 1961, and Phillips et al., 1999).

Distribution and Range. The spotted dusky salamander is a subspecies of the dusky salamander, which occurs widely from southern New Brunswick and southeastern Quebec to the Gulf Coast of Alabama, Mississippi, and Louisiana (Petranka, 1998). The spotted dusky salamander occurs from southern Illinois southeastward to northeastern Georgia and southward to Florida, Alabama, Mississippi, and Louisiana (Petranka, 1998). It is found in extreme southern Illinois where it is known from a few locations in Pulaski County and one, possibly introduced, location in Johnson County. The historical range of this salamander in southern Illinois was probably much the same as its present range (Herkert, ed., 1992). Because it barely enters the state, the dusky salamander was originally placed on the Illinois Department of Conservation's list of rare and endangered species (Brandon & Huheey, 1979). In 2002, however, the Illinois Department of Conservation changed the name of the listed species from the dusky salamander, *Desmognathus fuscus*, to the spotted dusky salamander, *Desmognathus fuscus conanti*.

Potential Impacts

Mining. MPC is planning a surface mine on the Parm tract. Trees will be harvested and other vegetation will be removed prior to the start of mining. The topsoil will be removed; Mounds gravel and other overburden (material that lies between the topsoil and the Porter's Creek formation of absorbent clay) will then be removed using bulldozers and/or pan scrapers. The clay will be removed using excavators, loaded onto trailer dump trucks and hauled to MPC's Mounds plant for processing. The spotted dusky salamander occurs in the upland ravine bottom and banks.

Haul Road Crossing. Approximately 12 to 36 months after commencing mining west of the ravine, MPC plans to cross the ravine to begin mining the east side of the tract. MPC plans to build a haul road across the ravine to accommodate this progression. This haul road crossing will affect the spotted dusky salamander's habitat.

Sediment Control Structures. Concurrently with the development of the haul road crossing, MPC plans to develop sediment retention and control structures as a part of federally mandated National Pollutant Discharge Elimination System ("NPDES") permit requirements. These structures will be rock check/filter dams located in gullies draining into the central ravine. The NPDES permit discharge point will be located east of the central ravine, and will connect with the central ravine on the ravine's north side, downstream of the haul road crossing, thereby potentially affecting the spotted dusky salamander. See Map 2.

Mitigating Measures. In *Measures to Minimize Potential Impacts on the Spotted Dusky Salamander* below, MPC outlines measures it believes will minimize any potential impacts on the spotted dusky salamander resulting from MPC's mining activities on the Parm tract.

Quantification of Take

There is one principal area of potential impact where the spotted dusky salamanders and larvae have been identified. This area is the central ravine running from south to north before widening and flattening into the Cache River Flood Plain. The number of spotted dusky salamanders actually occurring in the ravine is unknown; however, some incidental take can be expected during site clearing activities and haul road construction and use.

Measures To Minimize Potential Impacts on the Spotted Dusky Salamander

MPC has consulted with the Illinois Department of Natural Resources ("IDNR"), USFWS, the Illinois Nature Preserves Commission, the United States Department of Agriculture Natural Resource Conservation Service ("USDA-NRCS"), and the Illinois Natural Areas Inventory in developing its general mining plan and this Conservation Plan. MPC's plans minimize detrimental impacts to the ecology and cultural resources of the area. MPC has developed this Conservation Plan for the sustainable use and ultimate restoration of the upland forest and ravine complex of the Parm tract. In addition, MPC has taken steps to protect the Cache River, buffer the central ravine salamander habitat from mining activities, and provide visual and noise barriers between neighboring land uses and the Parm mine site.

Reduced Mine Area. MPC's initial plan contemplated mining the entire Parm tract, about 40 acres including the central ravine; however, since determining the potential presence in the ravine of the spotted dusky salamander, MPC now plans to mine only upslope of the central ravine on both the west and east sides. This reduced mine area, about 21 acres, significantly reduces the long term value to MPC of the Parm tract. See *Abandonment of Clay Assets/Habitat Preservation* below. MPC will maintain an undisturbed, wooded buffer between mine areas and the ravine to provide shade and reduce sediment impacts. MPC will pay particular attention to protecting the upper reaches of the ravine habitat that play a critical role in spotted dusky salamander life reproduction and life cycle. MPC will not harvest timber, mine or conduct related mining activities within this critical habitat area. MPC will install silt fence upslope of the buffer at the start of clearing and timbering activities on adjacent mining areas. During all mining activity on adjacent areas, particularly clearing and stripping, MPC will limit sediment transport to protect habitat and limit incidental take. In addition, MPC will utilize other Best Management Practices (USDA-NRCS, 1997, and GSWCC, 2002), including a diversion ditch/berm system upslope of silt fences when necessary to reduce sediment transport into the system. See Map 2.

Haul Road Crossing. The haul road crossing will be sited as far downstream as is feasible, about 250 feet downstream of the middle reach of the ravine's

drainage. The actual crossing site has been selected to minimize the linear feet of disturbance in the ravine corridor. In addition, the road surface elevation of the crossing will be lowered to the absolute minimum, about 20 feet below MPC's initially planned crossing elevation, to further limit the project foot print in the ravine. The haul road right of way will be 50 feet wide. Sediment control measures will be taken during construction to minimize sediment delivery to areas adjacent to the haul road fill. The road will be graveled, and slopes armored with riprap, to protect slopes and minimize sediment movement. Culvert inlets and outlets will also be protected with riprap. See Figure 2.

Sediment Retention/Control Structures. During the first 24-36 months of mining activity, the Parm tract's present drainage patterns will ensure that storm water will drain away from the spotted dusky salamander habitat in the central ravine. Upon crossing the central ravine with mining operations, MPC will select sediment structure sites with attention to protecting potential spotted dusky salamander habitat. See Map 2. Areas that may be subject to inundation during rain events and sediment storage will be selected as far downstream from known habitat as is feasible.

Compensation/Mitigation of Incidental Take

Abandonment of Clay Assets/Habitat Preservation. By reducing the size of its mine, MPC is effectively abandoning mineable and valuable clay to prevent disturbance of most of the central ravine. MPC estimates that it is abandoning approximately 94,000 tons of raw clay. Depending upon the finished product produced from this clay, MPC estimates that it is ultimately foregoing between \$5,452,000 and \$6,617,600 in revenue as a result of this reduction of mine area.

Habitat Restoration/Trial Habitat Creation. On the Parm tract (as is the case at all of MPC's other mine sites), MPC will restore and reclaim previously disturbed areas as new mining progresses. MPC will work with Ronald Brandon, PhD. (or another expert reasonably designated by IDNR), and IDNR to restore previously disturbed spotted dusky salamander habitat as part of MPC's general restoration and reclamation activities. In consultation with the expert and IDNR, MPC will also construct one new trial habitat on the Parm site once mining operations begin east of the central ravine. The trial habitat will be surveyed (see *Surveying and Monitoring* below) to determine whether spotted dusky salamanders will colonize the constructed habitat.

Surveying and Monitoring

Beginning in the fall 2006, MPC will retain the services of a biologist specialist to carry out surveys of the spotted dusky salamander population on the site. MPC will survey twice annually during mining and reclamation of the site. Counts will be carried out in spring to best assess larvae production and in fall for adult/juvenile population counts. Any dead spotted dusky salamanders will be collected according to IDNR recommended procedures and turned over to IDNR as soon as practicable.

MPC will submit a copy of the biologist's monitoring reports to IDNR within one month of receipt of each fall report. These reports will consist of the biologist's monitoring findings, and include data on any incidental takes recorded during the previous monitoring period. MPC will maintain these records as long as any mining or reclamation activity is occurring on the Parm tract and otherwise in accordance with MPC's general document retention policies and procedures.

Following completion of reclamation, the area of concern and any areas developed as trial habitat will continue to be monitored for an additional two years. This two-year post-reclamation monitoring will consist of spring surveys to assess larvae production and fall surveys of adult and juvenile populations. At the end of the second year of post-reclamation monitoring, MPC will provide a final project report to IDNR.

Verification of Funding

While any mining or reclamation activities are occurring on the Parm tract, MPC will obtain and maintain a surety bond commensurate with the recommendations of the IDNR's estimation of project costs. MPC will provide proof of bonding to IDNR prior to commencing mining of any portion of the site that was not disturbed in previous mining and site disturbances.

No-Take Alternatives

There are no practical no-take alternatives, since the only no-take alternative would require abandonment of the Parm tract. MPC may only mine on real property in which it has a contractual or other legal right to mine. Even on those sites on which it has the right to mine, MPC can only mine where recovery of the clay is economically feasible. The Parm tract is one of a very few sites meeting these criteria. In any event, because the spotted dusky salamander habitat is found where Mounds gravel's contacts with Porter's Creek clay outcrops, it is likely that any other economically feasible site would be determined to be a potential spotted dusky salamander occurrence.

Summary

MPC is committed to minimizing potential harm to the spotted dusky salamander that may occur due to permitted mining activities on the Parm tract. MPC has removed most of the central ravine area from its mining plan, abandoning at least 94,000 tons of valuable clay assets.

Wherever feasible, structures will be placed so as to minimize potential spotted dusky salamander habitat disturbance and destruction. Spotted dusky salamander habitat will be protected from sediment damages by Best Management Practices such as silt fencing, water control berms, rock filter structures and vegetated buffers. The NPDES permit discharge point will be located east and north of the central ravine, and drainage from the outfall will enter the ravine system as far downstream of the haul road crossing, and as far downstream from the headwaters, as is feasible. Any incidental take will be recorded, with all related records appropriately retained at MPC's Mounds plant.

Post-mining reclamation will occur on an ongoing basis as mining of new acreage on the site proceeds, and will include restoration of any disturbed potential spotted dusky salamander habitat. MPC will also construct one trial habitat on the site. The entire site will be monitored until two years following completion of final mine reclamation.

Implementing Agreement

Ron Yancey (or successor), Plant Manager, Mounds Production Company, LLC, will be responsible for MPC's execution on the Parm tract of all site-specific obligations under the incidental take authorization.

Candace Trimble (or successor), Geologist, Oil-Dri Corporation of America, will be MPC's primary contact with the IDNR, coordinating MPC's performance under the incidental take authorization and ensuring MPC's timely filing of all required reports under the incidental take authorization.

Charles P. Brissman (or successor), Vice President and General Counsel, Oil-Dri Corporation of America, will be responsible at the corporate level for ensuring MPC's executing of all obligations under the incidental take authorization.

List of Maps and Figures

Map 1 – Parm Mine Location

Map 2 – Mine Plan Map Showing Spotted Dusky Salamander Habitat

Figure 1 – Photo of Adult Spotted Dusky Salamander

Figure 2 – Haul Road Crossing and NPDES Discharge Point

Cover Photo from Illinois Salamanders Poster, Brandon, Illinois Department of Natural Resources, April 2002

References

- Brandon, Ronald A., and James E. Huheey. 1979. Distribution of the dusky salamander, *Desmognathus fuscus* (Green), in Illinois. *Natural History Miscellanea* No 205, pp. 1-7.
- Georgia Soil and Water Conservation Commission, 2000. *Manual for Erosion and Sediment Control in Georgia*, 5th ed.
- Herkert, James R., ed., 1992. *Endangered and Threatened Species of Illinois: Status and Distribution, Vol. 2: Animals*, Illinois Endangered Species Protection Board, p. 76.
- Karlin, Alvan A. and Ralph A. Pfingsten. 1989. In Pfingsten, Ralph A. and Floyd L. Downs, eds. *Salamanders of Ohio*. Ohio Biological Survey Bulletin New Series Vol. 7, No. 2, pp. 174-180.
- Petranka, James W. 1998. *Salamanders of the United States and Canada*. Smithsonian Institution Press, Washington, DC, pp. 173-181.
- Phillips, Christopher A., Brandon, Ronald A., Moll, Edward O., 1999. *Field Guide to Amphibians and Reptiles of Illinois*, Illinois Natural History Survey, Champaign, IL, Manual 8, pp. 76-77.
- Smith, Philip W., 1961. *The Amphibians and Reptiles of Illinois*. Illinois Natural History Survey, Vol. 28, Article 1, pp. 59-61.
- United States Department of Agricultural, Natural Resource Conservation Service, 1997. *National Engineering Handbook, Part 650*. Engineering Field Handbook, 5th ed.

Map 1 – Parm Mine Location

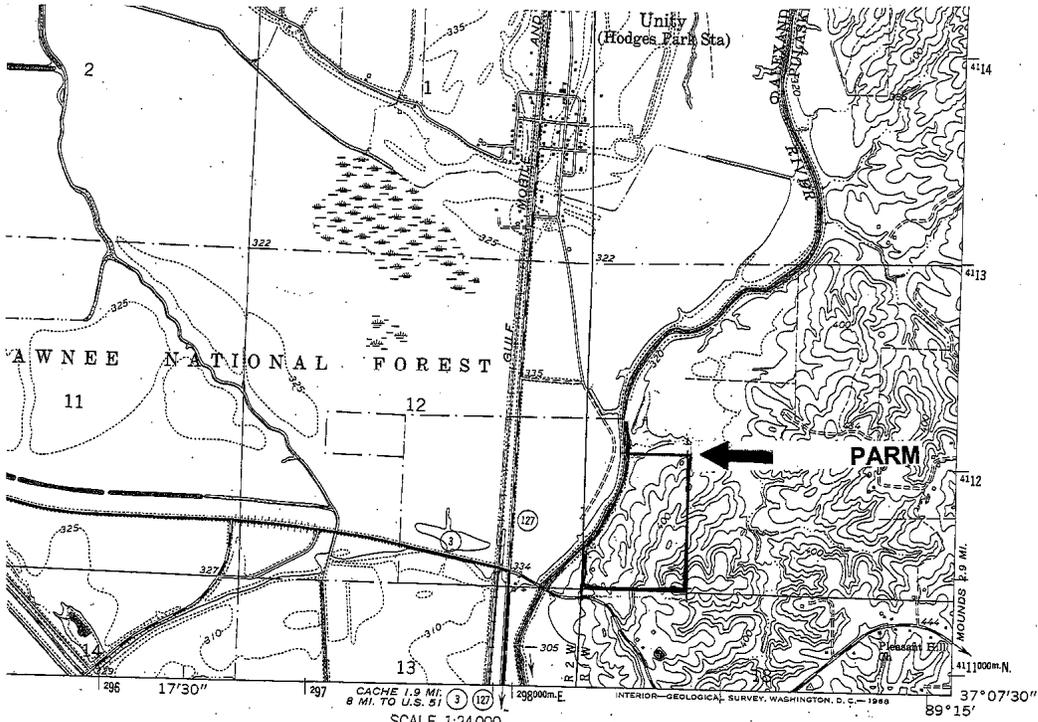
**MOUNDS PRODUCTION COMPANY, LLC
PARM MINE**

**Sec. 7, Township 16 S, Range 1 W of the 3rd Pincipal Meridian
Pulaski County, Illinois**

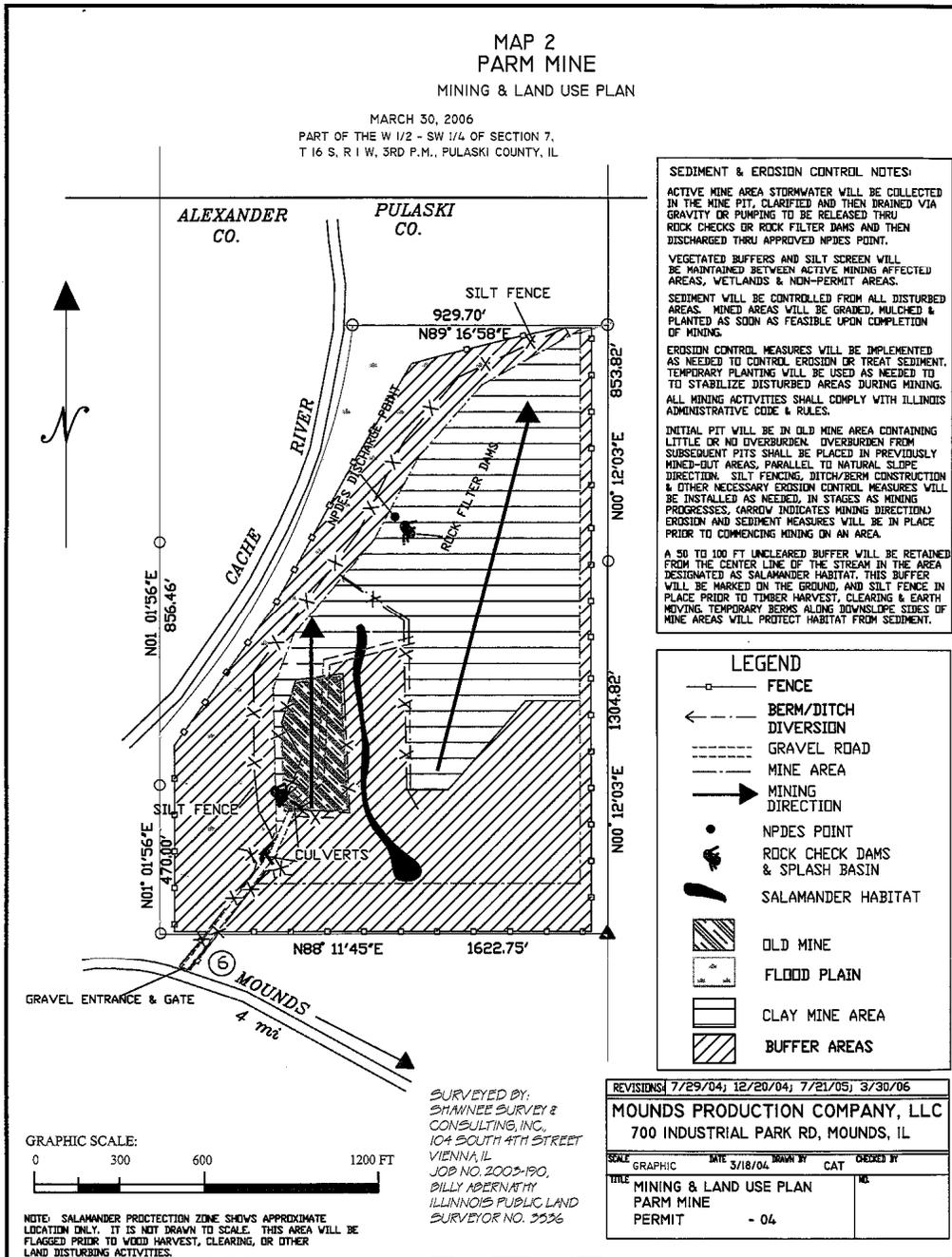
TAMMS, ILL.
NE/4 THEBES 15' QUADRANGLE
N3707.5—W8915/7.5

1967

AMS 3158 III NE—SERIES V863



Map 2 – Mine Plan Map Showing Spotted Dusky Salamander Habitat



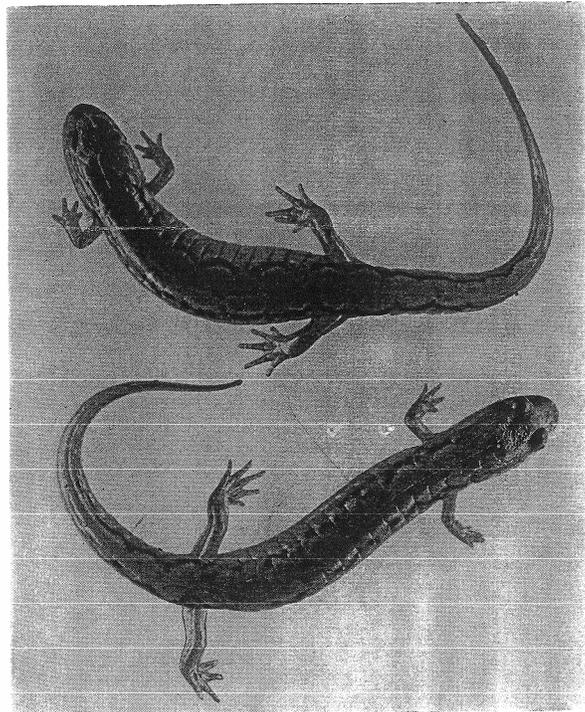


Figure 1. Photo of *Desmognathus fuscus conanti*. From Smith, 1961, INHS.

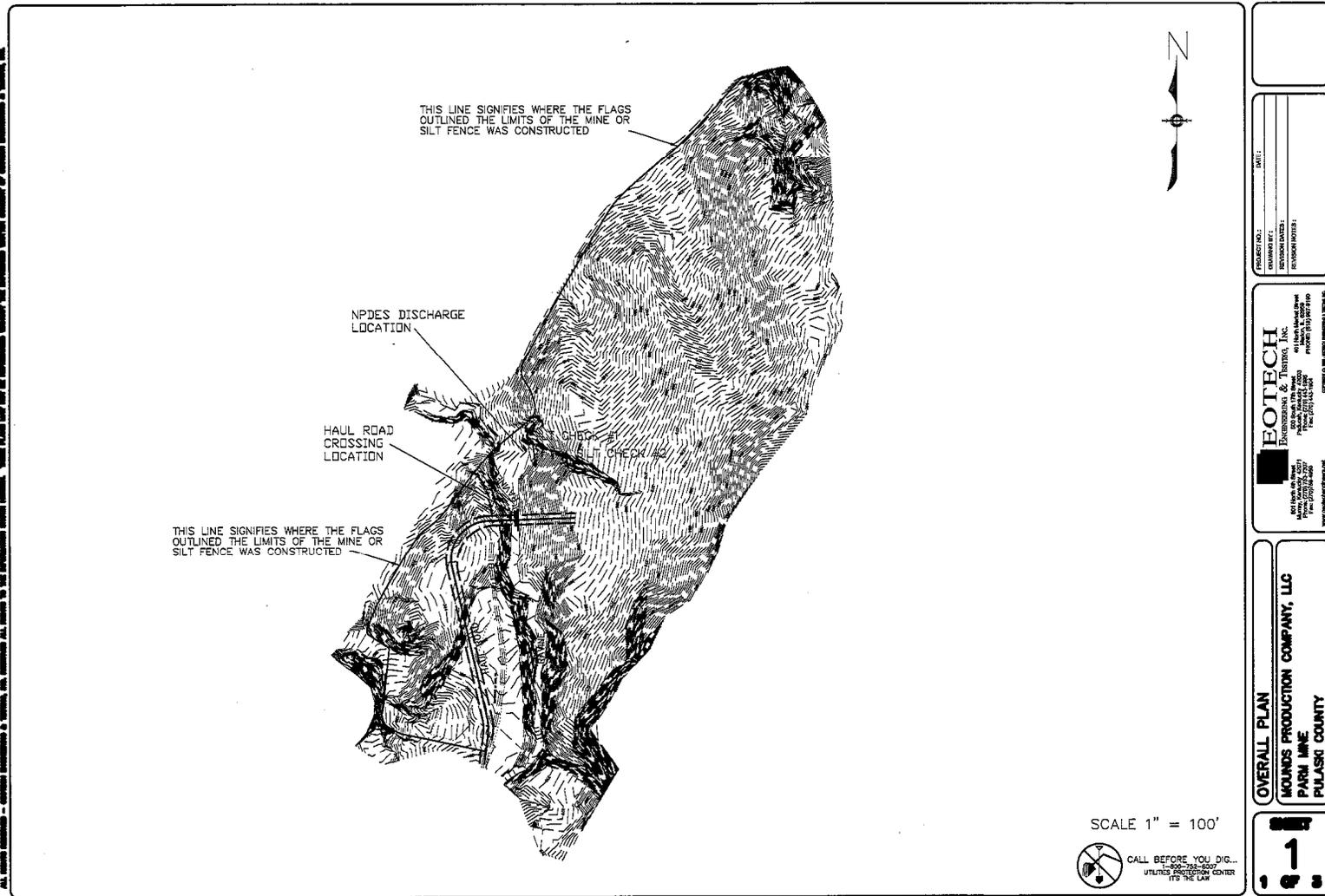


Figure 2. Haul Road Crossing and NPDES Discharge Point