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Delivered via UPS

September 24, 2013

Joseph A. Kath
Endangered Species Manager
Division of Natural Heritage
Illinois Department of Natural Resources
One Natural Resources Way
Springfield, IL 62702-1271

RE: Peabody Arclar Mining, LLC
Rocky Branch Mine (IDNR Permit No. 428)
Conservation Plan for Marsh Rice Rat Incidental Take Permit

Dear Mr. Kath:
Please find enclosed the subject Conservation Plan and Implementing Agreement to secure an Incidental Take Permit for the marsh rice rat at the Peabody Arclar Mining, LLC Rocky Branch Mine. The comprehensive plan was prepared by HDR Engineering of Murphysboro, Illinois under the direction of Amanda Pankau M.S. The plan was developed to minimize any impact to the local marsh rice rat population. Given the increase in marsh rice rat habitat in southern Illinois and several studies documenting increased occurrences of the species it is reasonable to assume that the proposed operation will not affect the likelihood of survival of the species in Illinois. Furthermore, given the species regular use of reclaimed surface mined lands and ability to disperse and colonize new areas, it is likely that the species will utilize the wetland habitats created on the mine permit area after reclamation.

Please contact me at 812-434-8593 or smcgarvie@peabodyenergy.com with any questions.

Sincerely,

Scott D. McGarvie
Authorized Representative

Enclosure

c: Rocky Branch SMCRA file
Pat Malone – IDNR/DEE
Scott Fowler – IDNR/OMM
Amanda Pankau – HDR Engineering

Marsh Rice Rat (*Oryzomys palustris*) Conservation Plan

Rocky Branch
Permit Application No. 428
Saline County, IL

Prepared for:
Peabody Arclar Mining, LLC

Prepared by:
HDR Engineering
1339 Walnut Street
Murphysboro, IL 62966

September 2013

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1.0 INTRODUCTION AND BACKGROUND

1.1 Project background

Peabody Arclar Mining, LLC (Arclar) has proposed surface coal mining activities at Rocky Branch Mine in Saline County, IL (**Figure 1**). The proposed permit area is approximately 1091.8 acres. The Illinois Department of Natural Resources, Office of Realty and Environmental Planning (OREP) requested that Arclar conduct surveys for the state threatened marsh rice rat (*Oryzomys palustris*). Arclar obtained assistance from HDR Engineering, Inc. (HDR) and a live-trapping survey (conducted August 5 – 9, 2013) identified the presence of marsh rice rats within a system of channelized, agricultural ditches within the northeastern portion of the proposed permit area. Arclar plans to request an authorization for "incidental taking" of the marsh rice rat on the proposed Rocky Branch Mine permit area. At the direction of Arclar, HDR developed the following Conservation Plan in accordance with 17 Ill. Adm. Code Part 1080.

1.2 Project Location and Ownership

The proposed permit area is located in Saline County, IL, immediately east of Harrisburg, IL (**Figure 2**). The proposed permit area includes the following described real estate: Part of the SW ¼ of the SE ¼ , Part of the E ½ , and the W ½ of the SW ¼ of Section 14; Parts of the N ½ of the NE ¼ and N ½ of the NW ¼, Part of the SE ¼ of the SW ¼ and the Whole of the SE ¼ of Section 15; Part of the NE ¼ and SE ¼ of Section 22; the NW ¼ of the NE ¼, Part of the N ½ of the SW ¼ and the Whole of the NW ¼ of Section 23; The W ½ and Part of the E ½ of the SE ¼ Section 18; Parts of the NE ¼ of Section 19; Part of the SW ¼ of the NW 1/4 , and Part of the NW ¼ of the SW ¼ of Section 20; all in T9S, R7E, Saline County, Illinois. The permit area covers 1091.8 total acres.

Real estate within the permit area is owned by American Land Holdings of Illinois, LLC, Peabody Arclar Mining, LLC, Church Estate, State of Illinois (Dept. of Transportation) and Virginia Kuhn.

1.3 Species Background Information

The marsh rice rat (*Oryzomys palustris*) is an Illinois state threatened species (IDNR 2011). The species is known to occur in freshwater and saltwater wetlands throughout the southeastern United States, with Illinois occurring at the northern extent of its range. Its threatened status in Illinois is a result of wetland habitat decline and the species' existence at the periphery of its range (Eubanks et al. 2011). Marsh rice rats utilize shallow wetland types, including palustrine emergent, palustrine scrub-shrub, palustrine aquatic bed, and riverine aquatic bed (Cowardin et al. 1979, Hofmann et al. 1990). Hofmann et al. (1990) concluded that "optimal habitat" for the species in southern Illinois included standing water and emergent wetland vegetation. The average home range of marsh rice rats in southern Illinois was reported to be 1.3 acres (Hofmann and Gardner 1992).

As mentioned above, HDR Engineering, Inc. (HDR) conducted a live-trapping survey from August 5 – 9, 2013 and identified the presence of marsh rice rats on the permit area. Trapping was conducted in all areas of suitable wetland and stream habitats, and marsh rice rats were identified in only one portion of the permit area. Three marsh rice rats were captured along a reach of channelized, agricultural ditches within the northeastern portion of the permit area. Soy beans were planted to the top of the slope on both sides of the ditch.

The distance between the edge of soybeans to edge of soybeans was approximately 30 feet and the total ditch depth was approximately 8 - 10 feet. The ditch bottom was 2 – 4 feet wide and composed of sand and small gravel. At the time of trapping, the ditch bottom was mostly dry, but there were interspersed pools up to 20 feet long and 8 inches deep. Vegetation within the channel and on the slopes was dominated by reedgrass (*Phragmites australis*), giant ragweed (*Ambrosia trifida*), barnyard grass (*Echinochloa muricata*), goldenrods (*Solidago spp.*), giant foxtail (*Setaria faberi*), and rice cut grass (*Leersia oryzoides).* Occasional woody vegetation (<3 inch diameter at breast height) within the ditch included red maple *(Acer rubra)* and black willow *(Salix nigra).*

1.4 Description of Activities

The proposed Rocky Branch Mine is a conventional truck shovel surface mining operation. Mining related disturbance will be initiated with construction of sediment control structures. Areas to be mined will be cleared and grubbed of vegetation where necessary. Topsoil and rooting media will be removed and direct replaced on previously mined and graded areas when possible, or stockpiled for future reclamation work. Additional unconsolidated materials will then loaded and moved, exposing the consolidated overburden. Overburden materials will be removed to expose and remove the coal seam. Stripped overburden will normally be direct hauled to backfill the previous pit. Backfilled overburden is then graded to meet approximate original contour. Upon completion of the final rock grade required depths of root media and topsoil will redistributed to meet the approved post-mine capability/land use plan. This direct haul back method of mining provides for contemporaneous reclamation and soil replacement as the pit advances through the mining area. Topsoil replacement is followed closely by revegetation as final reclamation proceeds. Final cuts areas will be reclaimed as permanent impoundments.

1.5 Adverse Effects

As described above, surface mining requires removal of all consolidated and unconsolidated material over the coal seam. As a result, the existing known and potential marsh rice rat habitat on the proposed permit area can not be avoided by the proposed operation.

2.0 MINIMIZATION AND MITIGATION MEASURES

2.1 Estimated area and amount of impact

The ditch reach known to be utilized by marsh rice rats was a total of 2,900 linear feet and was identified as an intermittent stream in a wetland and stream delineation. As described above, the ditch had wetland vegetation growing within the channel and on the banks, making it suitable for marsh rice rat use.

The wetland and stream delineation was conducted by Wetland Services. The delineation identified a total of 35,093 linear feet of streams, consisting of 8,540 linear feet of Rocky Branch (intermittent), 16,731 linear feet of ephemeral streams, 6,624 linear feet of intermittent streams, and 3,198 linear feet of perennial streams. A total of 6.13 acres of wetlands were delineated within the project area. Six (6) open water features, totaling 6.71 acres, were identified within the permit area.

2.2 Management Plans to Enable Continued Use

2.2.1 Incremental advancement and contemporaneous reclamation.

The applicant will limit the amount of marsh rice rat habitat impacted at any one time by

removing vegetation and topsoil incrementally as mining advances, and by practicing contemporaneous reclamation. Impacts to soil and vegetation on the proposed mine permit area will occur in advance of the pit to the minimal extent necessary given the rate of mining and seasonal considerations. Marsh rice rats utilizing the site may therefore be able to move upstream or downstream in the opposite direction of mining advancement, eventually reaching potentially suitable habitat outside the proposed mine permit area. Incremental advancement will therefore decrease the impact to the marsh rice rat. Furthermore, the applicant will practice contemporaneous reclamation, meaning backfilling, grading, topsoil replacement, and revegetation will occur as mining advances. Backfilling and grading will occur within 180 days following coal removal and shall not be more than 4 spoil ridges behind the pit being worked. Revegetation will occur during the first normal period favorable for planting conditions after soil replacement unless extended by the State of Illinois.

2.2.2 Alternative Habitat Creation

While continued use of the current habitat by the marsh rice rat may not be possible, alternative habitats may be created on-site during the life of the mine. Affected area runoff will be collected by diversion ditches and pass through sediment ponds before leaving the proposed permit area. Diversion ditches and sediment ponds on mine permit areas often develop wetland vegetation and may provide suitable habitat for the marsh rice rat.

2.2.3 Protection of Off-site Habitat

In accordance with 62 Ill. Adm. Code Section 1816.45(a) the applicant will design, construct and maintain appropriate sediment control measures using the best technology currently required by the Illinois Department of Natural Resources and the Illinois Environmental Protection Agency. Specific measures to be used include, disturbing the smallest practicable area at any one time, stabilizing backfill material, retaining sediment within disturbed areas, diverting runoff away from disturbed areas, and diverting runoff into designed diversion ditches and sediment ponds. Other erosion control measures that may be used include straw dikes, riprap, check dams, mulches, vegetative sediment filters, and retention ponds. These measures will ensure that potential marsh rice rat habitats occurring in the surrounding area will be protected.

2.3 Minimization and Mitigation Measures

2.3.1 Post-Mining Wetland and Stream Mitigation

Arclar will conduct onsite, post-mining wetland and stream mitigation to satisfy the requirements of Section 404 of the Clean Water Act. The proposed mitigation will, at a minimum, replace the function of the pre-mining wetlands and streams. The restored wetlands and streams will provide habitat for the marsh rice rat.

The following information was taken from Arclar's Mitigation Plan that was prepared for the U.S. Army Corp of Engineers Section 404 permit.

The jurisdictional wetlands that are disturbed by mining or related activities will be greatly enhanced and mitigated on-site. Those wetlands not presently classified as PFO will be mitigated with PFO bottomland hardwood wetlands. Wetlands presently classified as PFO will be mitigated with PFO bottomland hardwood wetlands regardless of the existing dominant tree type (i.e. existing PFO wetlands with dominant soft-mast tree species). Wetland mitigation will be located on property controlled by the applicant. Tree species will be managed for

predominately hard-mast producing species. Flat topography will be constructed which will provide a desirable hydrologic environment for the creation of forested wetlands. The hydrology will be enhanced by stream mitigation designs which will include a wide floodplain at the bankfull depth in the area of the wetland mitigation.

As streams are being mined through, collection diversion ditches (CDD) will be built to direct the water around the disturbance on a temporary basis facilitating the mining process. The use of diversion ditches allows the streams to be put back in planned locations where floodplain areas can be widened when necessary. The general topography will be similar to the pre-mining conditions, but will have some swell due to the handling of the disturbed overburden material. The regraded watersheds will generally resemble the premining areas, and replaced streams will be designed and constructed so that both upstream and downstream pre-mining connectivity is maintained. The type of stream channel proposed for mitigation will be contingent on the existing land use. Streams located in a more stable, natural environment, will be mitigated with a natural design channel that will provide a functional lift above the present conditions. This lift will be comprised of, but not limited to, an enhanced riparian buffer, natural channel configuration, reduced entrenchment, and engineered structure placement [Natural Channel Stream Mitigation]. Channelized streams that are located in agricultural fields will be replaced by stream mitigation with similar channel configurations to facilitate continued farming practices but provide a lift over the existing conditions by providing a deciduous riparian buffer, reduced entrenchment, and stable side slopes [Enhanced Linear Channel Stream Mitigation]. Rocky Branch will be replaced by stream mitigation with similar channel configurations utilizing both a two-stage channel design [Two-Stage Channel Stream Mitigation] and natural channel design [Natural Channel Stream Mitigation]. The two-stage channel design will provide a lift over the existing agricultural Rocky Branch conditions by providing the necessary sediment transport within the bankfull discharge channel to reduce and potentially eliminate future channel maintenance. Ecological function is also improved by maintaining deeper flow depths and shading provided by herbaceous vegetation on the floodplain terraces and by incorporating a riparian buffer.

Grade control structures will be incorporated into the proposed channel design to maintain stream stability at the transition zones between the two-stage channel, enhanced linear, and natural channel design mitigation with unaffected streams. Grade control will be provided by the installation of cross vanes, step pools, or rock sills at appropriate locations to prevent any destabilizing effects from propagating through the restored reaches. The type of grade control structure will depend on the change of bed elevation from one stream segment to another. A single or series of cross vanes or rock sills will be used to transition the stream profile over short elevation changes while step pools will be used for larger changes in elevation. The grade control structures are intended to be bed control structures which provide a hard point in the streambed that is capable of stopping headcuts. By preventing headcut migration, the grade control structures provide vertical, as well as lateral stability to the stream mitigation.

The main design consideration for the type of grade control structure to be used is the elevation difference between the two streams being connected. When siting any of the structures, a stable upstream approach is desirable. The constructed mitigation, either natural design or linear, will be constructed directly into the structure to reduce scouring forces which may result in flanking the structure and destabilizing it. Step pools provide a natural way to transition the stream bed through a relatively large change in elevation. Step pools in streams

serve several purposes: dissipating the energy of high velocity discharges, protecting the bed and banks from this high-energy erosive flow, and providing fish passages through several small "steps" instead of one big "jump". Step heights will be limited to 6 inches where fish passage is a concern, but typically step height will increase with increasing channel slope so that steep channels will have taller steps with a maximum step of 2 feet. Cross vanes or rock sills will provide elevation changes from 0 to 24 inches. The mitigated stream locations are subject to change, but the streams will be constructed according to this plan. Riparian buffers will be established for all stream mitigation and will be comprised of a combination of native tree species.

All constructed stream and wetland mitigation will be protected in perpetuity by having the respective property owner(s) on whose property the mitigation is located execute a completed Declaration of Restrictive Covenants. The deed restriction will be recorded with the property deed on all mitigation sites within 60 days of mitigation construction completion per tract.

2.3.2 Additional Post-Mining Habitat Creation

Approximately 50.7 acres of permanent impoundments will be created as part of the post-mining land use. Arclar proposes to conduct minor grading along 25% of the banks to create shallow water emergent wetlands with a width of approximately 10-20 feet. These wetlands will provide post-mining habitat for the marsh rice rat.

2.4 Monitoring

2.4.1 NPDES Monitoring

As described above, affected area runoff will be collected by diversion ditches and passed through sediment ponds before leaving the proposed permit area. The sediment pond outfalls will be approved under the National Pollutant Discharge Elimination System (NPDES) permit program and will be regulated to ensure that discharge water quality meets appropriate effluent limits. The specific effluent limits will be determined by the Illinois Environmental Protection Agency during the NPDES permitting process. In particular, water quality information during active mining base flow conditions will include, at a minimum, pH, total suspended solids, sulfate, chloride, alkalinity, acidity and total iron. Discharge monitoring reports will be submitted quarterly to the Illinois Environmental Protection Agency.

2.4.2 Wetland and Stream Mitigation Monitoring

The applicant will conduct annual monitoring of the on-site wetlands and streams that will be restored after mining cessation. Annual monitoring reports will be submitted to the Corps to ensure the restored features are meeting the established success criteria. Monitoring will be conducted for a minimum monitoring period of 5 years or until the mitigation is acceptable by the Corps.

3.0 ADAPTIVE MANAGEMENT PRACTICES

The following adaptive management plan was taken from Arclar's Mitigation Plan that was prepared for the U.S. Army Corp of Engineers Section 404 permit.

Peabody Arclar Mining, LLC is committed to the successful completion of the proposed mitigation plan. The permit requires formal annual monitoring for the duration of the mitigation construction and proof of success periods. As with any reclamation/mitigation obligation, Peabody conducts internal informal monitoring to allow early detection and correction of

potential problems. It is anticipated that a reasonable period of time will be needed to allow vegetative and soil stability to establish within the mitigated waters and the contributing watershed. Corrective action will be taken as needed to promote successful mitigation as quickly as possible. It is anticipated that any deficiencies will be corrected during the monitoring and maintenance process outlined in the permit application; however, the following Adaptive Management Plan is proposed as an additional decision making guide in forming mitigation plan changes should the need arise.

Forested Wetlands			
Component	**Critical Time**	**Root Cause Analysis**	**Potential Corrective Actions**
Tree survival below 50 percent of the initial planting rate of 300 trees/acre	Any annual evaluation	• Conduct physical and chemical soil analyses • Evaluate damage from wildlife • Evaluate vegetative competition	• Adjust physical and/or chemical soil components and replant • Utilize natural predator techniques to deter damage from wildlife • Increase safe application of herbicides to reduce vegetative competition
Lack of wetland hydrology indicators	Following 3rd year of annual monitoring	• Obstructions or watershed alterations • Evaluate ground water recharge status • Evaluate surface water contributions	• Eliminate obstructions • Allow additional time for recharge • Direct additional surface runoff to wetland
Lack of hydric soil indicators	Following 3rd year of annual monitoring	• Evaluate actual depth to hydric soil • Evaluate flow detention time within wetland • Coordinate causal analysis with hydrology factors	• Allow additional time for hydric soil development • Modify contours to increase detention time within wetland • Direct additional surface runoff to wetland
Increasing presence of invasive species	Any annual evaluation	• Evaluate needs for chemical and/or physical removal of species • Evaluate other potential contributing factors	• Remove invasive species by physical or chemical means • Adjust other contributing factors if possible.

Natural Design Stream Mitigation			
Component	**Critical Timing**	**Root Cause Analysis**	**Potential Corrective Actions**
Recurring channel instability issues	Following 3rd year of annual monitoring	• Evaluate quality and quantity of vegetation • Evaluate structure placement and frequency • Evaluate stability of contributing watershed	• Replant additional vegetation species and supplement soil fertility • Install additional structures to improve stability • Stabilize watershed as appropriate
Aquatic life not trending toward permit standard	Following 4th year of annual monitoring	• Evaluate need for additional habitat enhancements • Evaluate extent of weather impacts (temperature, precipitation, etc.)	• Install habitat enhancements as needed • Allow additional time for development

Riparian Buffers			
Component	**Critical Timing**	**Root Cause Analysis**	**Potential Corrective Actions**
Tree survival below 80 percent of the initial planting rate of 300 trees/acre	Any annual evaluation	• Physical and chemical soil analyses • Animal damage • Vegetative competition	• Adjust physical and/or chemical soil components and replant • Utilize natural predator techniques to deter damage from wildlife • Increase safe application of herbicides to reduce vegetative competition
Increasing presence of invasive species	Any annual evaluation	• Evaluate needs for chemical and/or physical removal of species • Evaluate other potential contributing factors	• Remove invasive species by physical or chemical means • Adjust other contributing factors is possible.
Prolonged erosion or soil instability	Following 3rd year of annual monitoring	• Evaluate herbaceous species density • Analyze the reclaimed watershed for contributing factors	• Supplement soil and/or vegetative species to increase ground cover • Construct additional erosion control features within the reclaimed watershed

4.0 FINANCIAL ASSURANCES

Arclar is required under the Illinois Surface Mined Land Conservation and Reclamation Act to provide financial assurances that shall continue until all reclamation, restoration and abatement work for the permit has been completed, and the permit terminated by release of the Illinois Department of Natural Resources finical security instrument. That release process involve comprehensive review by IDNR specialists and public review opportunities.

5.0 ALTERNATIVES ANALYSIS

The following alternatives analysis was prepared by Arclar to satisfy the requirements of Section 404 of the Clean Water Act. There are four alternatives considered for the Rocky Branch Mine operation. A detailed description of each of the alternatives follows.

A. The "No Action" Alternative would be to not mine the Rocky Branch Mine coal reserves. The "No Action" alternative would result in many negative side effects:

Loss of ~200 direct jobs with an annual payroll, including benefits of ~$21.6 million. Many of the employees are long term employees in the mining industry and are not currently trained for other employment. The mining industry is vitally important to the local economy of Gallatin County and Saline County, as well as to the region and state. Additionally, the current mine operation provides approximately $47,000 in tax revenue to Gallatin County and Saline County on an annual basis and is a significant consumer for many local suppliers and vendors.

Approximately half of the electricity produced in the United States (45 percent)[3] and approximately 35 percent[4] of the electricity produced in Illinois comes from coal-fired power plants. The economical availability of high-quality coal is paramount to the local, state, and

national economy and national security. The Energy Information Administration's 2012 Annual Energy Outlook projects, coal will still remain the dominant source of electricity generation with a 38-percent share of total generation in 2035[3]. Total primary energy consumption is expected to grow by 0.3 percent per year from 2010 to 2035 with the largest growth in the commercial sector.

The loss in future tax revenue for Saline County as well as the state of Illinois, both direct and indirect would be significant, particularly when the replacement industry is unknown. Mining operations have greatly diminished in southern Illinois during the past 10 years. Mining at the Rocky Branch Mine would continue to contribute a much needed boost to the local economy and tax base.

The economic losses to the company would be significant as large investments in land, coal reserves, equipment, and infrastructure have been made well in advance using a business plan dependent on maximizing recovery of the reserve. Many local land and reserve owners would also suffer significant loss if mining does not occur.

B. The Project Relocation Alternative is not a viable alternative as essentially the same or more aquatic resources would be encountered at any mining location in the Midwest. Another location would, in fact, require additional disturbance of natural areas for infrastructure construction. More importantly, the potential mining locations are dictated by the site specific geology. Unlike many other industries, coal mining cannot be relocated to more desirable areas. The mine must be located where the mine-able reserve is located. Relocation would have the same results as alternative "A".

C. The use of "Alternative Mining Techniques" to recover the coal reserve is considered during the planning and permitting process. In most cases, a coal reserve is essentially either suitable for surface mining or underground mining. The coal reserves at Rocky Branch are not conducive to underground mining for the following reasons: the number of individual coal seams to be mined and the thickness of the unconsolidated layer above the coal seams. The unconsolidated layer ranges between 2 and 46 feet thick, and averages 20 feet in thickness. The coal reserve to be mined at Rocky Branch consists of the *Allenby, Herrin (No. 6), Briar Hill (No. 5A), and Springfield (No. 5) Coal Members*, with the *Springfield (No. 5)* being the lowest coal seam to be mined. Overburden through the lowest coal seam *Springfield (No. 5)* ranges in thickness from 27 to 223 feet across the permit area. If underground mining were an option on one seam, approximately 12.5 percent of the total reserve could be recovered. This significant reduction in reserve would not support the existing and future investment in the mining infrastructure as the proposed mining would be conducted in multiple coals seams as well a recovering any minor coal seams encountered during surface mining.

Augering the coal is another alterative mining technique that was considered. Limited augering may occur along fringe areas where only a single seam is present, but it is not a feasible alternative to replace surface mining due to multi-seamed areas, low resource recovery, elevation changes, rolling coal seam, and general configuration of the mine plan. Augering will aid in avoidance and minimization; however, recovery will be less than 50 percent of the seam to be augered.

Pod mining is another alternative mining technique considered to be not feasible. Pod mining would consist of the excavation of smaller pits in between the aquatic resources. This technique would make mining economically unfeasible as mining costs would more than double

while coal recovery would diminish dramatically. Furthermore, the aquatic resources are interspersed in such a fashion, that any excavated pit could not avoid impacting aquatic resources. Each pit would have to be excavated to the lowest coal seam with lay back areas on all sides to ensure safe operating conditions. Additional lay backs would be needed to allow for construction of separate diversions and sediment basins for each pod area. The overburden from each pit would have to be stockpiled and then replaced into the pit after coal removal, as opposed to conventional surface mining where pits advance continuously with overburden being deposited into the previous pit. Coal recovery would be lost under each aquatic resource, the related pit and drainage control lay back areas and overburden stockpile area. The extra costs associated with these factors, coupled with less recovery of the resource, eliminates pod mining as an option. This type of mining would result in an inconsistent supply of coal to processing facilities, transportation facilities and ultimately to the electric utilities. Capital intensive businesses cannot operate in such a manner.

D. The "Preferred Action" alternative is to follow the surface mining plan. Peabody Arclar Mining will operate a conventional truck and shovel multiple seam surface mining operation mining of the *Springfield (No. 5), Briar Hill (No. 5A),* and *Herrin (No. 6) Coal Members* as well as any minor recoverable seams encountered. This operation will maximize coal recovery and ensure that re-disturbance does not occur in the future when coal demand is likely to increase. Steps will be taken, as always, to *minimize* effects to the aquatic resources by placing required sediment basins and diversions as close to the coal extraction area as possible. The project boundary has been reduced to the minimum area required to adequately conduct the mining operations. Advance disturbance will be minimized and concurrent high quality reclamation will be ongoing to keep the disturbed area to a minimum at any given time. Best Management Practices will be utilized to guard against negative impacts to the aquatic ecosystem outside of the area planned for mining. Stream and wetland mitigation will take place as quickly as practical employing the best techniques available to ensure successful mitigation. Mitigation areas will be monitored closely by well-trained staff. Stream mitigation is a developing science and training will be ongoing using consultants as needed.

In summary, there are no legitimate alternatives to the surface mining method of coal removal for the reserve. The only alternative would be to cease mining, resulting in the loss of high paying jobs, important tax revenue, ancillary economic growth, financial losses on investment to Peabody Arclar Mining, LLC, and serious interruption to the coal supply necessary for basic electricity production in Illinois and surrounding states.

6.0 LIKELIHOOD OF SURVIVAL OF SPECIES IN ILLINOIS

The marsh rice rat is known to occur in 11 counties in southern Illinois. A recent southern Illinois study identified marsh rice rats in all major watersheds surveyed including, the Big Muddy River, the Cache River, the Mississippi River, the Saline River, and the Ohio River (Eubanks et al. 2011). Several strong, persistent populations are known to occur in Saline County west of Harrisburg.

The marsh rice rat was listed as threatened in Illinois in 1978. Populations in southern Illinois have benefited in recent decades from the construction and restoration of emergent wetlands as a result of the Wetland Reserve Program (WRP), wetland protection and mitigation, and wetland restoration associated with mined land reclamation (Eubanks et al. 2011). Specifically, from 1992 to 2007, the Natural Resources Conservation Service spent more than

$10,000,000 to restore 25,286 ha of wetlands through WRP (Eubanks et al. 2011). Wetland protection and mitigation has increased greatly since the passing of the Clean Water Act in 1973. Wetlands associated with reclaimed mined lands in southern Illinois have been documented as suitable marsh rice rat habitat numerous times between the mid-1970s and present day (Urbanek and Klimstra 1986, Hoffman et al. 1990, Nawrot and Duncan 2010a, Nielsen et al. 2006, Eubanks 2010, Nawrot and Duncan 2010b). A recent study concluded that increase in wetland areas may have benefited marsh rice rat populations that they are no longer at risk for extirpation in Illinois (Eubanks et al. 2011).

Given the increase in marsh rice rat habitat in southern Illinois and several studies documenting increased occurrences of the species it is reasonable to assume that the proposed operation will not affect the likelihood of survival of the species in Illinois. Furthermore, given the species regular use of reclaimed surface mined lands and ability to disperse and colonize new areas, it is likely that the species will utilize the wetland habitats created on the mine permit area after reclamation (Loxterman et al. 1998).

7.0 IMPLEMENTING AGREEMENT

An implementing agreement is included as Appendix A.

8.0 LITERATURE CITED

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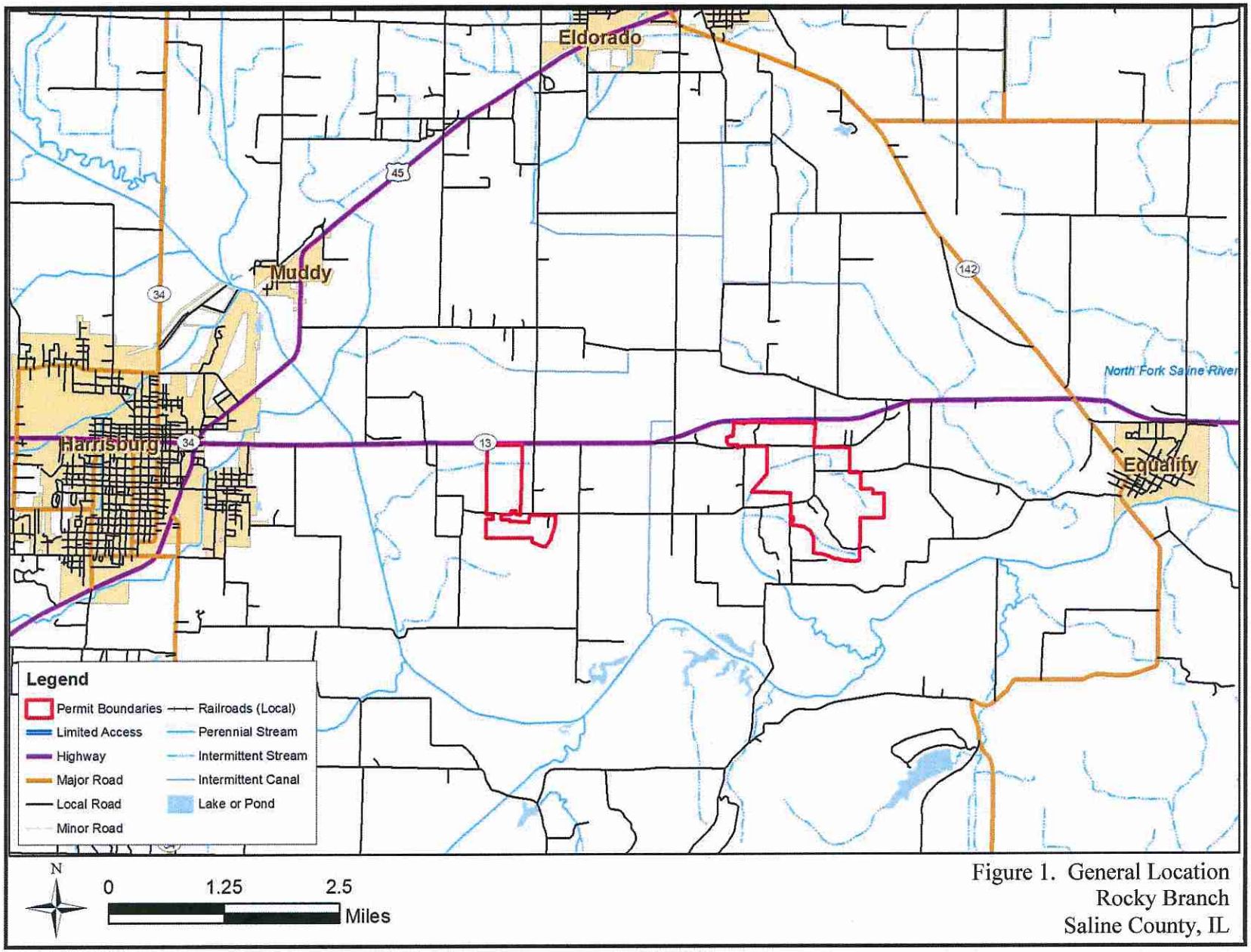


Figure 1. General Location
Rocky Branch
Saline County, IL

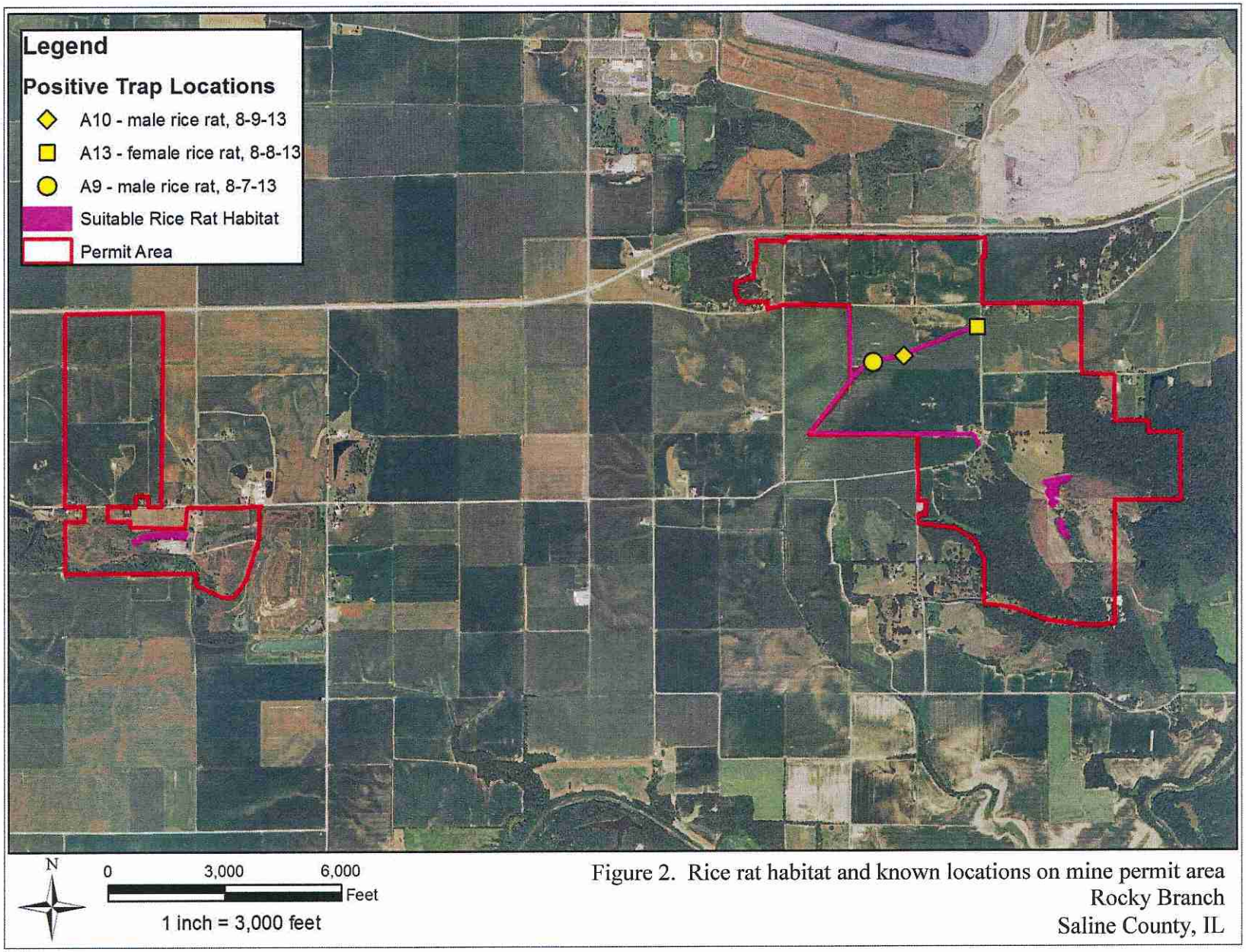
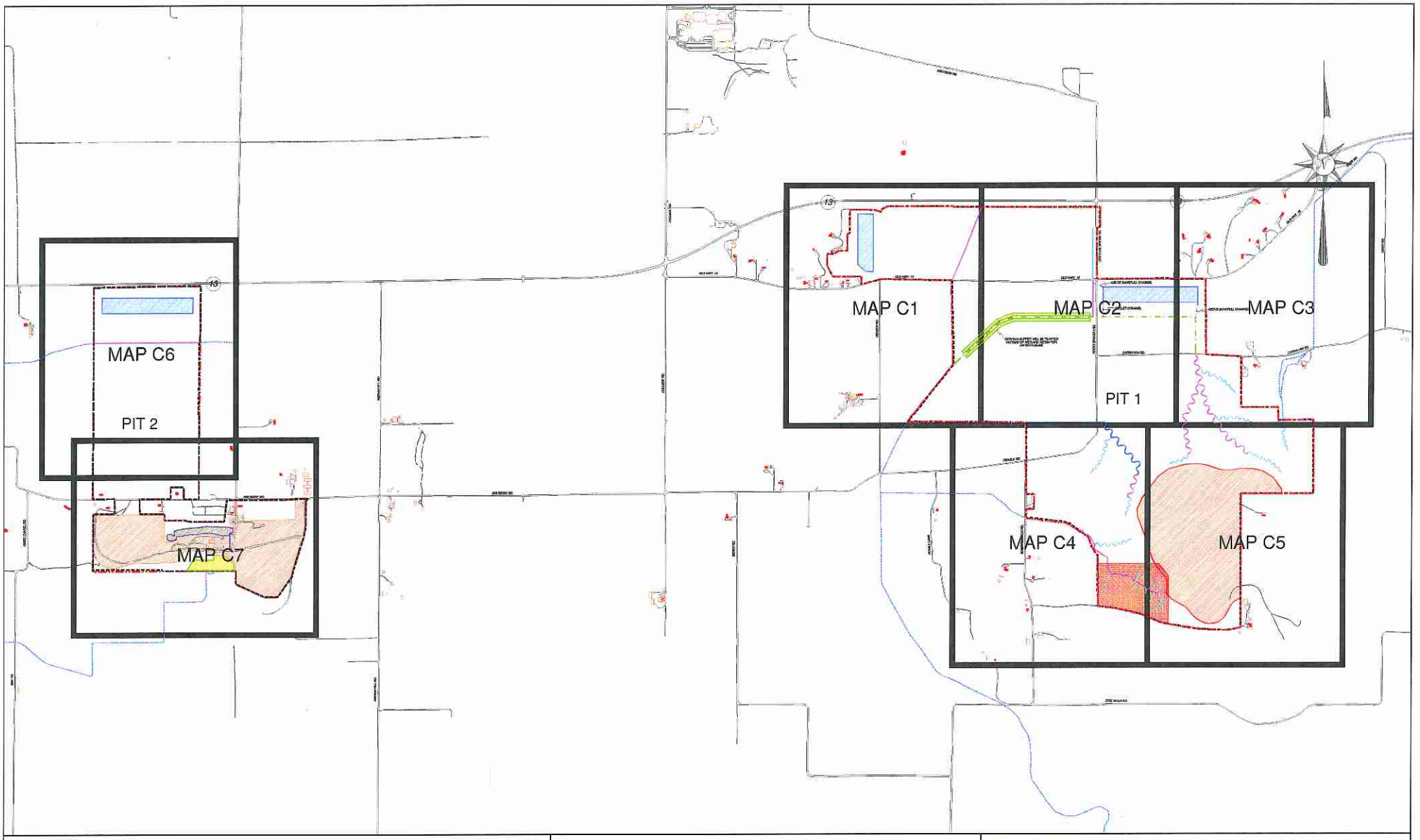


Figure 2. Rice rat habitat and known locations on mine permit area
Rocky Branch
Saline County, IL

Appendix A

Wetland and Stream Mitigation Map



LEGEND

- USACE PERMIT BOUNDARY
- ROCKY BRANCH MINE SURFACE MINE PERMIT #428
- STRUCTURES
- ROADS
- PREVIOUSLY AFFECTED AREA
- AVOIDANCE AREA
- APPROXIMATE LOCATION OF OPEN WATER MITIGATION

NATURAL / ENHANCED LINEAR

- APPROXIMATE LOCATION OF EPHEMERAL MITIGATION
- APPROXIMATE LOCATION OF INTERMITTENT MITIGATION
- APPROXIMATE LOCATION OF PERENNIAL MITIGATION
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- APPROXIMATE LOCATION OF WETLAND MITIGATION

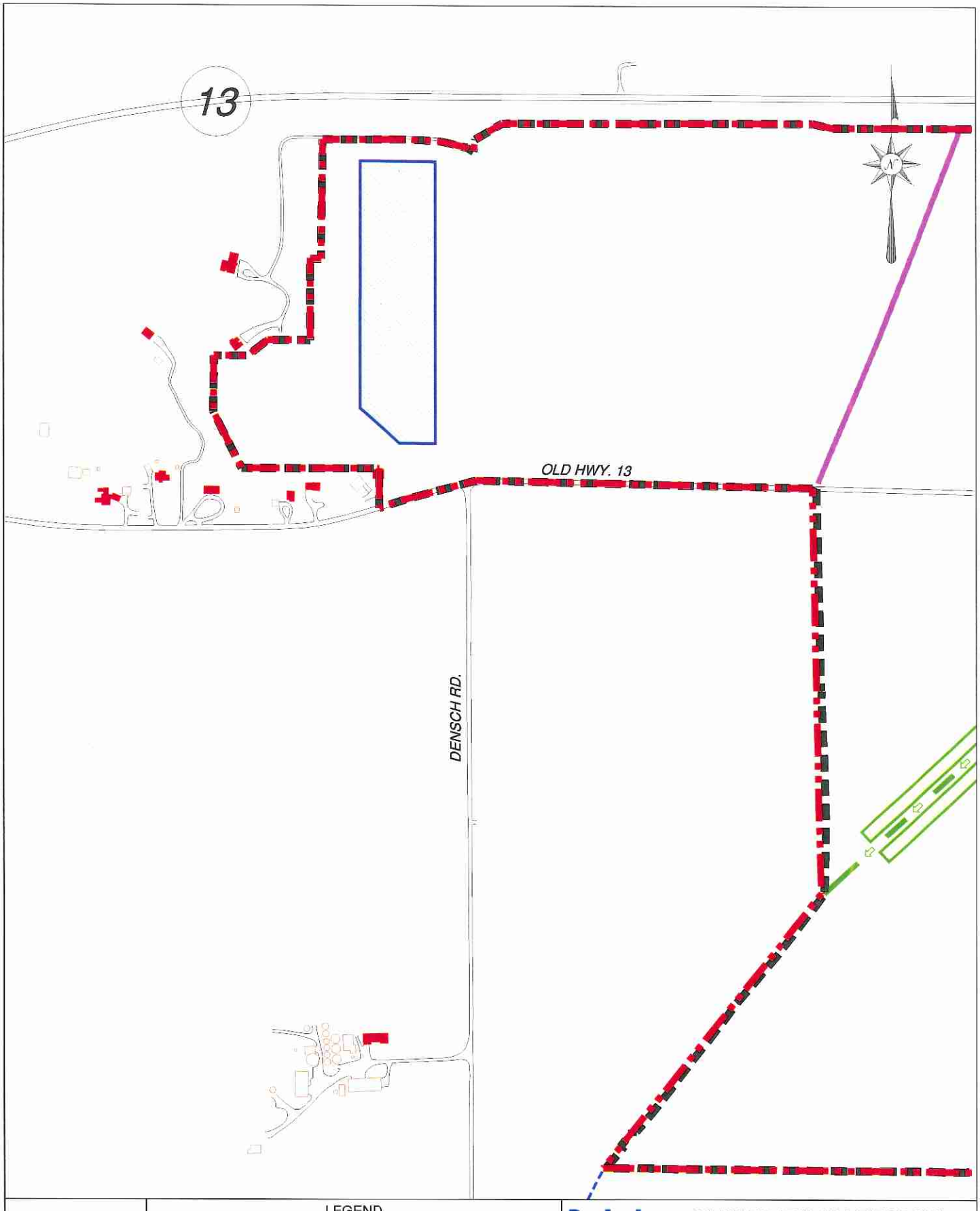
Peabody ENERGY

PEABODY ARCLAR MINING, LLC
Equality, Illinois

PERMIT NO.:	#428	PROJECT NAME:	ROCKY BRANCH MINE
SCALE:	1" = 2,500'	QUADRANGLE:	RUDEMENT, IL 7.5 MIN QUAD
DRAWN BY:	AMN	DESCRIPTION:	SECTIONS 15, 15, 18, 19, 20, 22, AND 23 IN T9S, R7E IN SALINE COUNTY, ILLINOIS
DATE:	JULY 5, 2012 - REV. JULY 23, 2013		

ROCKY BRANCH MINE
STREAM AND WETLAND MITIGATION MAP

MAP C (OVERALL)



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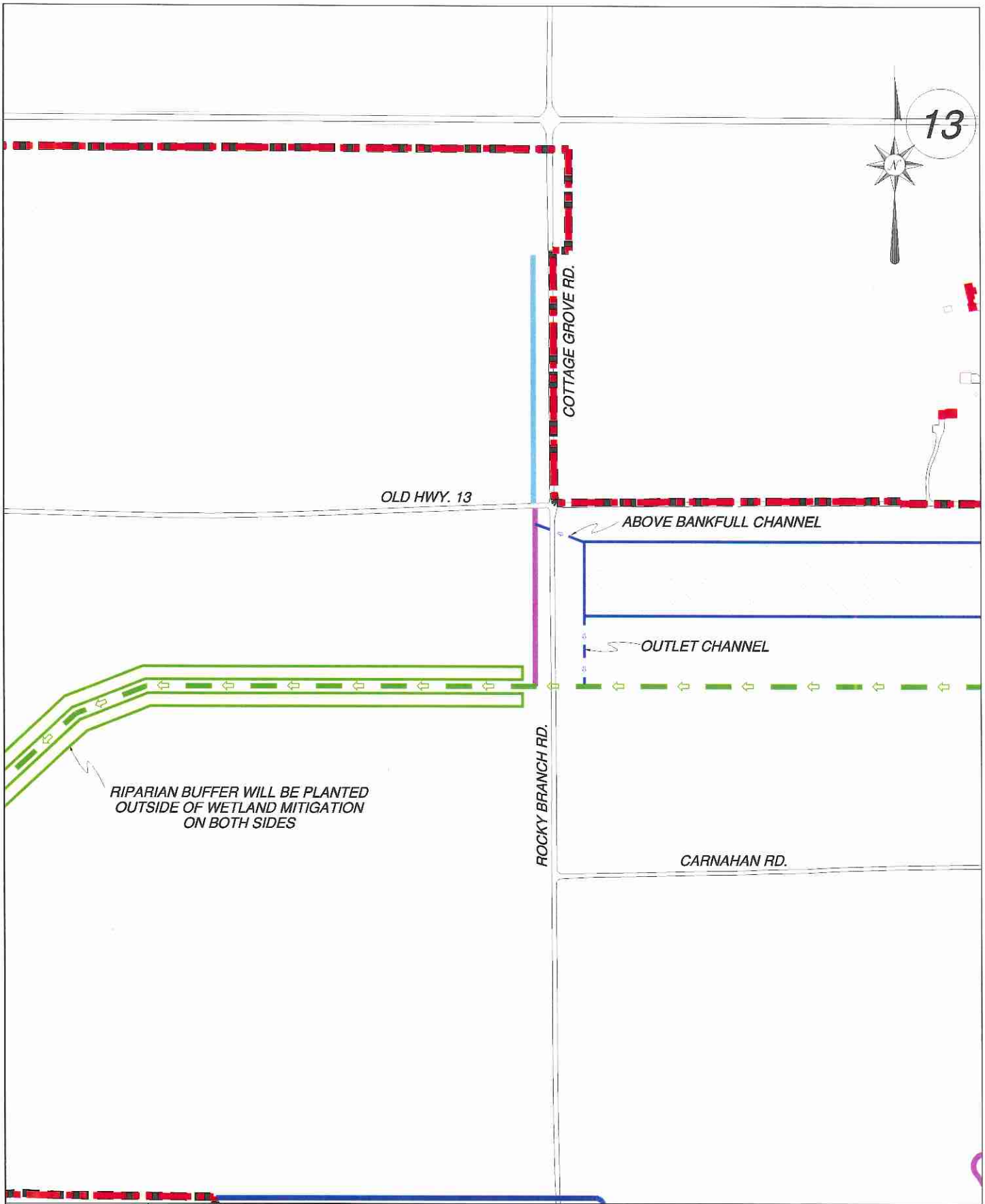
DATE:	JULY 5, 2012 - REV. JULY 23, 2013		

ROCKY BRANCH MINE
STREAM AND WETLAND MITIGATION MAP

MAP C1



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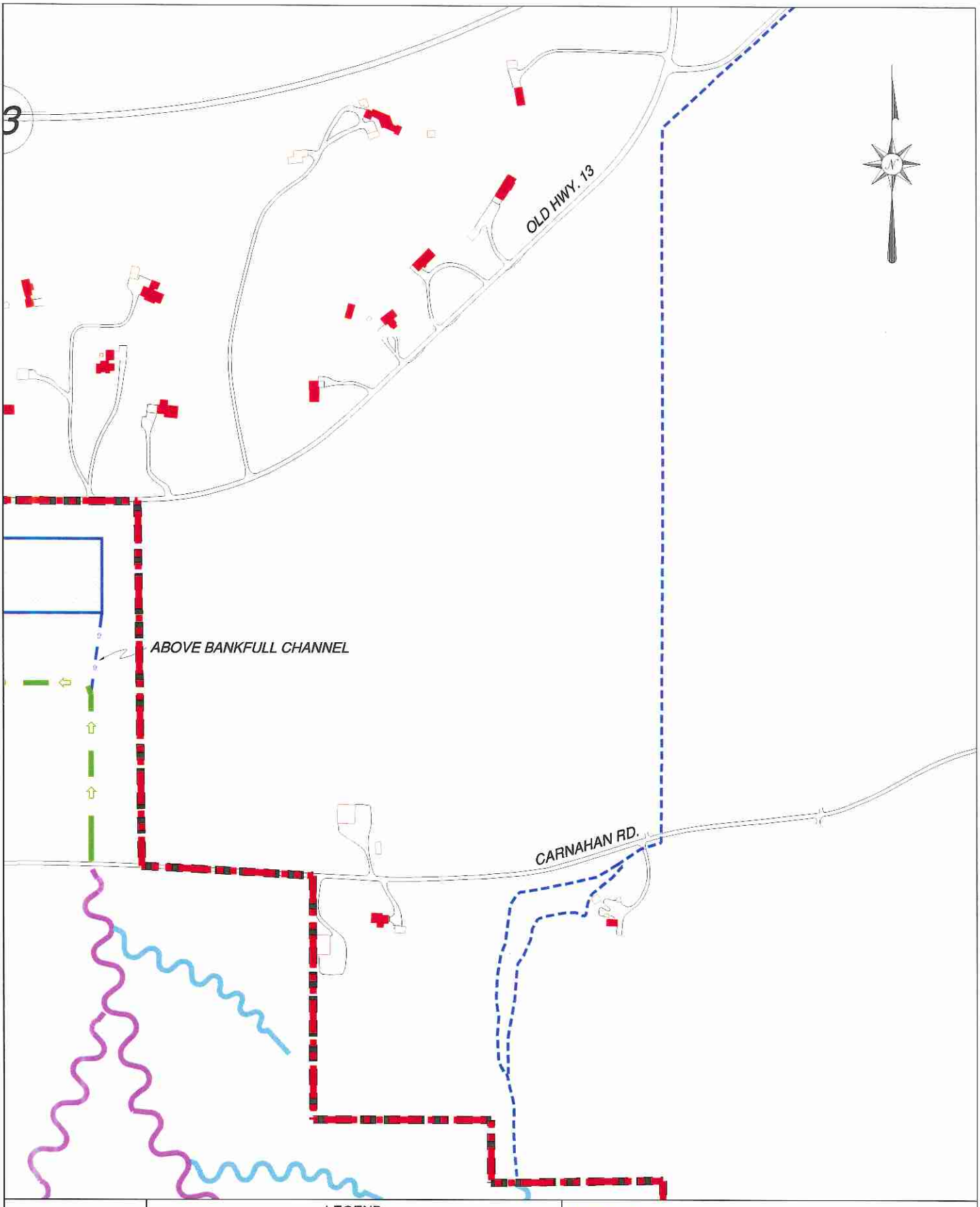
DATE:	JULY 5, 2012 - REV. JULY 23, 2013		

ROCKY BRANCH MINE
STREAM AND WETLAND MITIGATION MAP

MAP C2



LEGEND

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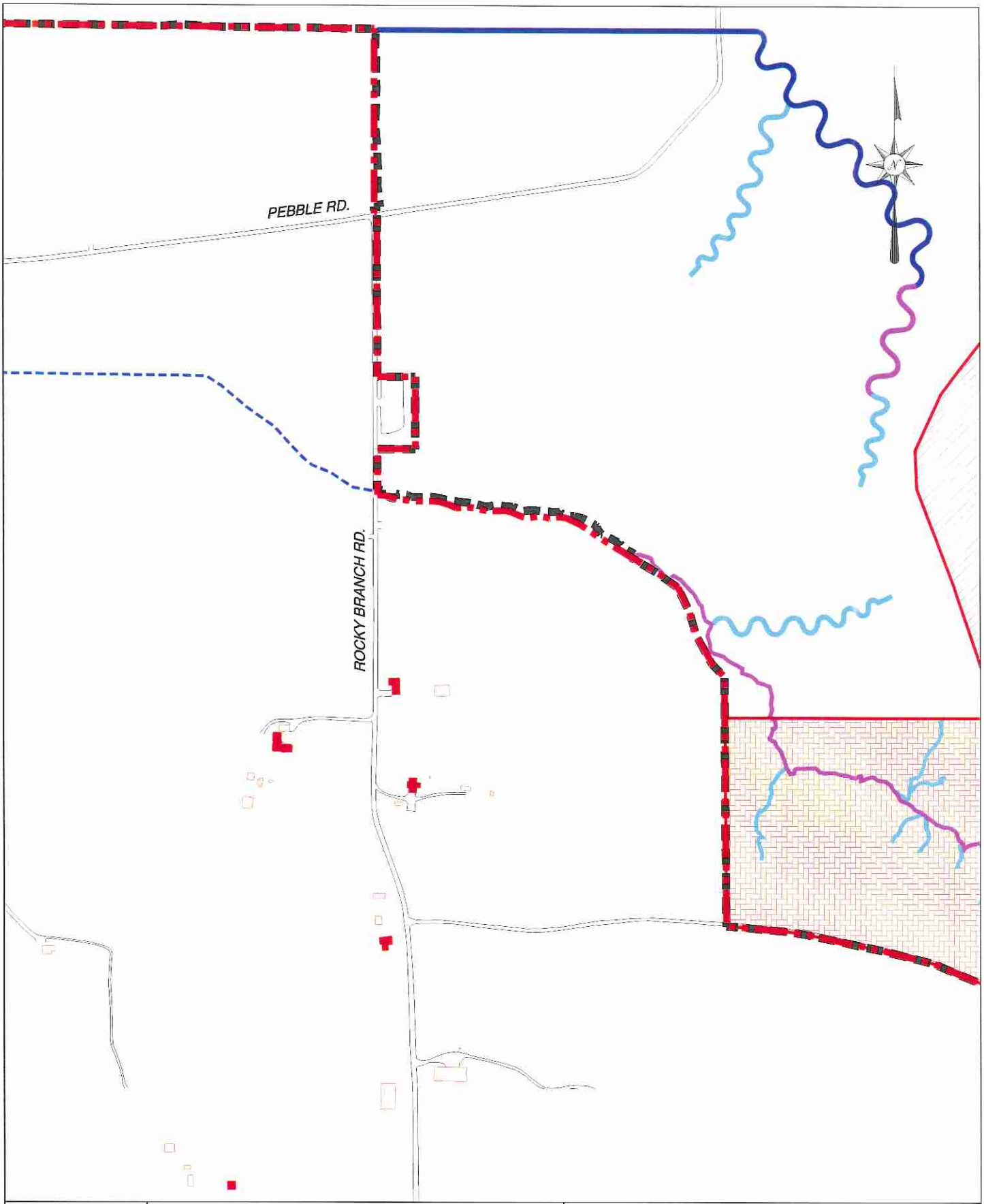
ROCKY BRANCH MINE
STREAM AND WETLAND MITIGATION MAP

MAP C3



LEGEND

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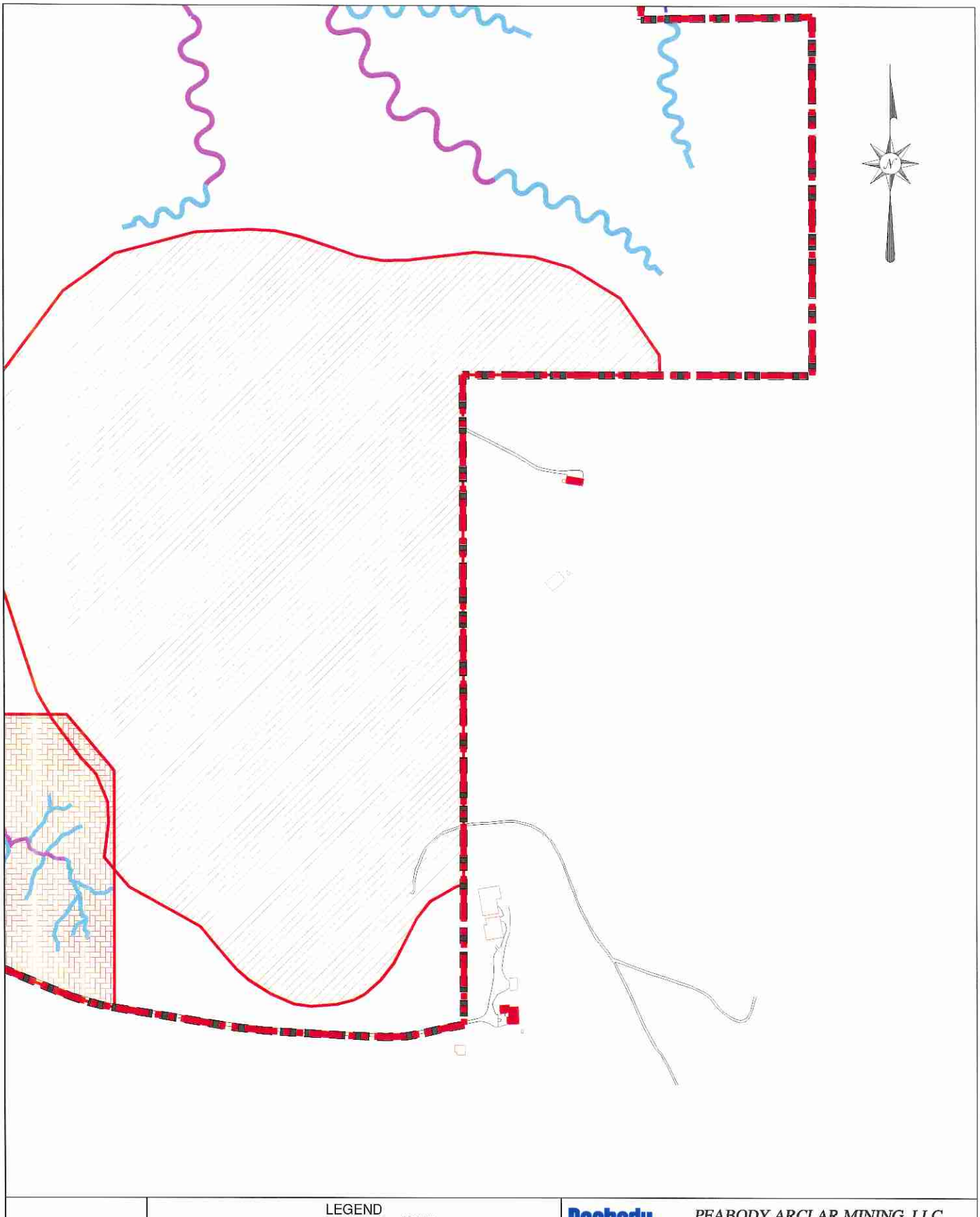
ROCKY BRANCH MINE
STREAM AND WETLAND MITIGATION MAP

MAP C4



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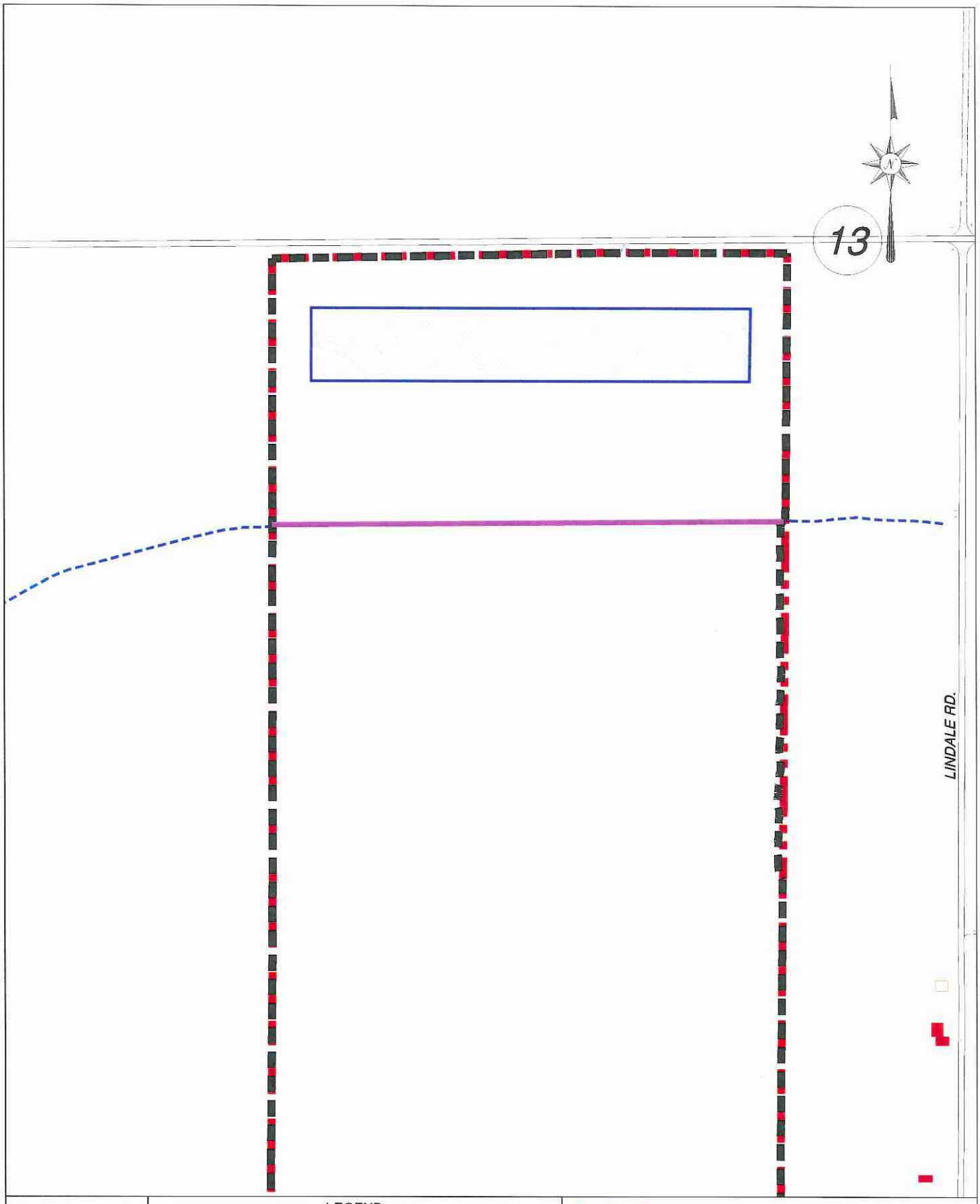
DATE:	JULY 5, 2012 - REV. JULY 23, 2013		

ROCKY BRANCH MINE
STREAM AND WETLAND MITIGATION MAP

MAP C5



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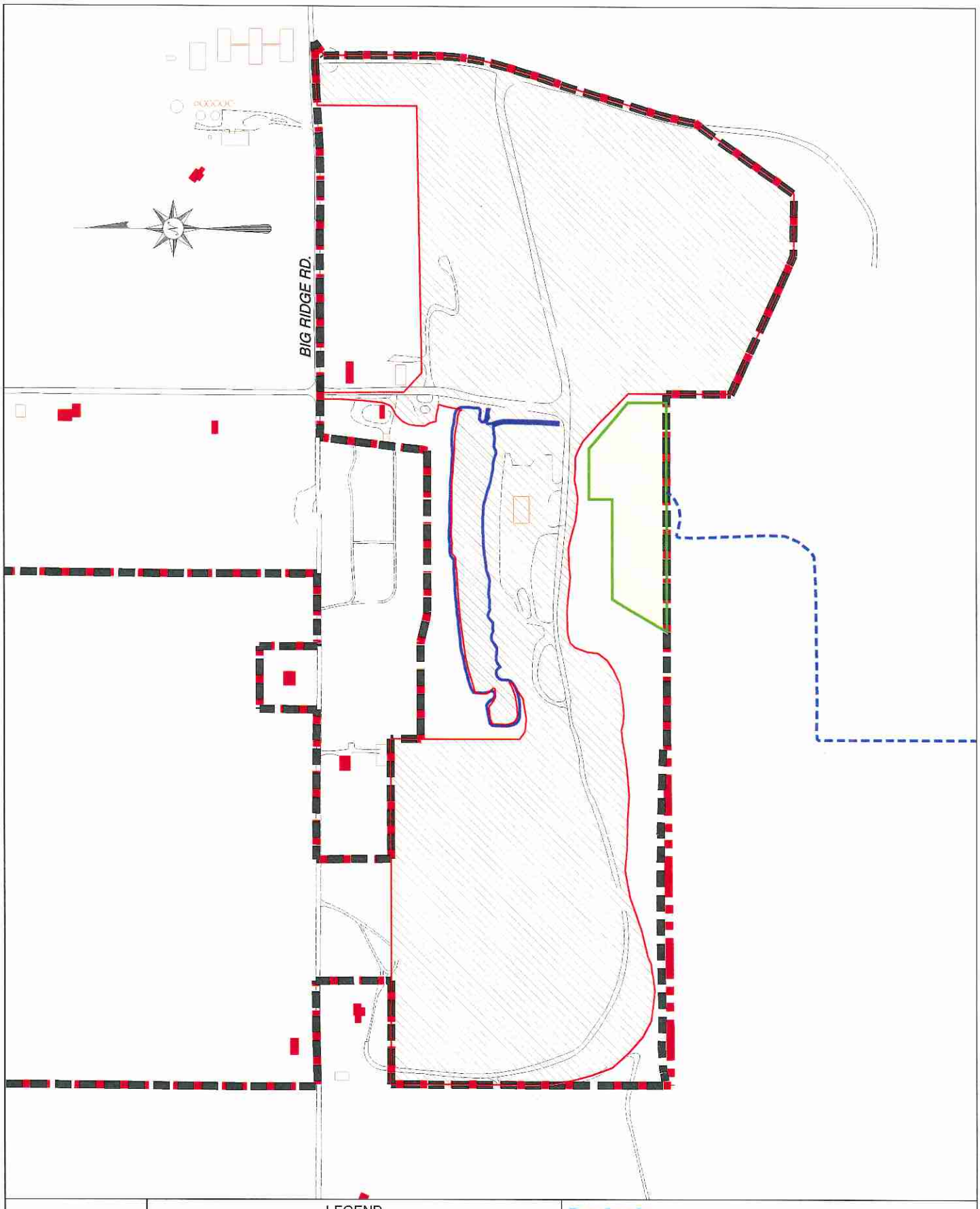
DATE:	JULY 5, 2012 - REV. JULY 23, 2013		

ROCKY BRANCH MINE
STREAM AND WETLAND MITIGATION MAP

MAP C6



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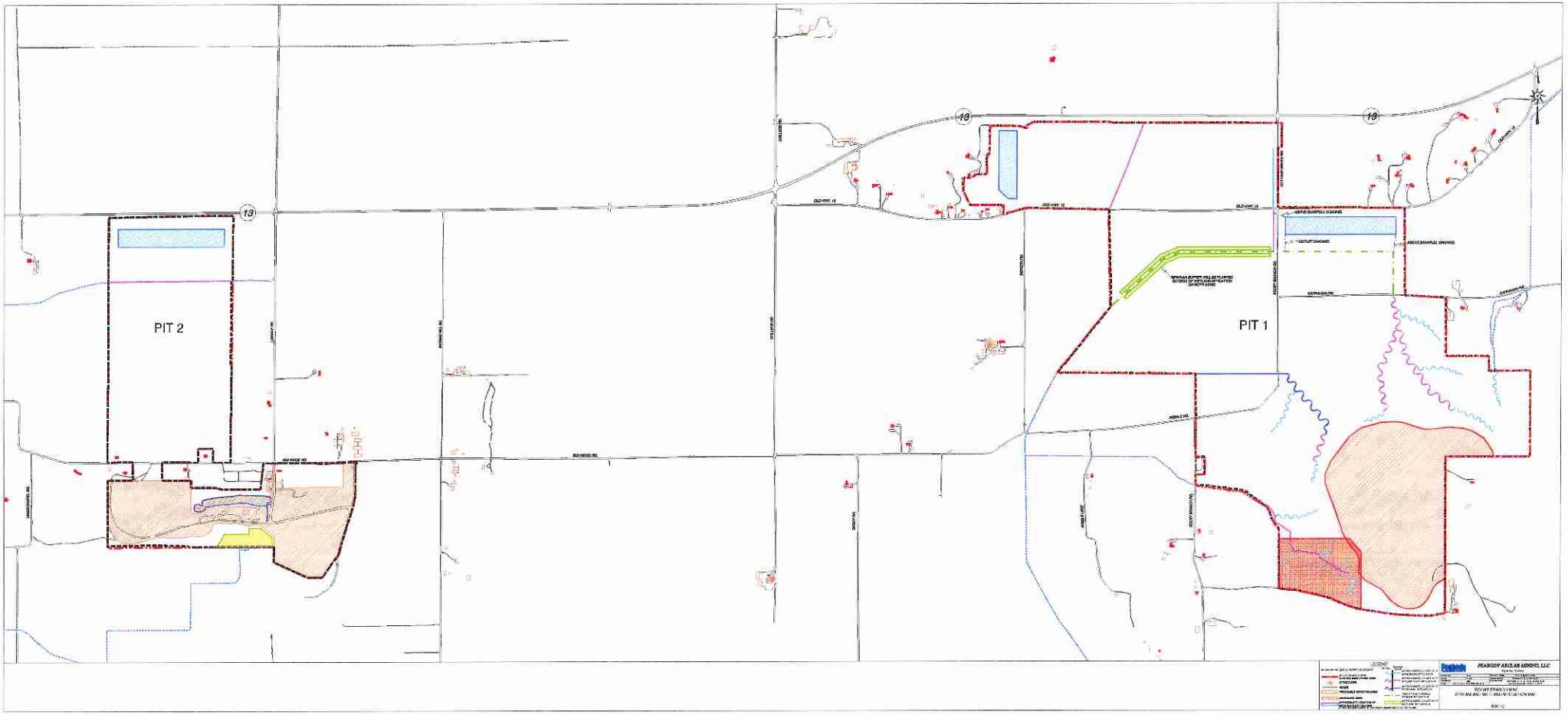
ROCKY BRANCH MINE
STREAM AND WETLAND MITIGATION MAP

MAP C7


PIT 2
PIT 1
13
LEGEND
PEABODY ARCLAR MINING, LLC

Appendix B

Implementing Agreement

Implementing Agreement for Rice Rat *(Oryzomys palustris)* Incidental Take Permit

Peabody Arclar Mining, LLC

Rocky Branch Mine

Permit Application No. 428

Saline County, IL

The following authorized representatives of Peabody Arclar Mining, LLC are identified as having the responsibility and legal authority to carry out the obligations and responsibilities of the activities identified and detailed in the conservation plan developed by HDR Engineering of Murphysboro, Illinois. This agreement recognizes that compliance with all applicable federal, state and local regulations pertinent to the proposed action and execution of the proposed conservation plan is required.

Bryce G. West
Director Environmental Services

Scott D. McGarvie
Senior Manager Environmental Services

September 24, 2013