WARRIOR 282, LLC.
WARRIOR MINE
ATTACHMENT IV-C-2

TOPSOIL VARIANCE APPLICATION

SUBMITTED BY:
PERC ENGINEERING CO., INC.
P.O. BOX 1712
JASPER, ALABAMA 35502-1712

STATE OF ALABAMA
SURFACE MINING COMMISSION
P.O. BOX 2390 - JASPER, ALABAMA 35502-2390
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October 31, 2012

Subject: Findings on Topsoil Variance Application
Warrior 282, LLC Warrior Mine #1, P-3953

Warrior 282, LLC
c/o PERC Engineering Co. Inc
P.O. Box 1712
Jasper, AL 35502-1712

Dear Sirs:

I have reviewed the application for a variance from our regulations on the salvaging of topsoil and have made the following findings:

1. This site consists of several soil regimes which will be treated differently. There is an area of approximately 31 acres of prime farm soil, shown on the soil map, that is not included in the variance request. Soil must be salvaged and restored according to ASMC standards on this area. The Application applies to the remainder of the proposed permit which consists of previously mined areas with no topsoil and areas of steep, poor quality soil.

2. The difficulty of salvaging A horizon topsoil on the steeply sloping areas make this a choice between native subsoils and rock overburden. The applicant has demonstrated that the rock overburden on the site is the best available material for revegetation. Therefore, the Application is approved, subject to the standards contained in the Application and the following terms and conditions:

Prior to Phase I Bond Release, sampling and testing of the soil substitute material for the following parameters will be conducted and the results submitted to the ASMC: textural analysis of the coarse and fine fractions, paste ph, total sulfur acid-base account. Procedures for Phase I Bond Release textural sampling shall be approved by the ASMC. The following textural standards shall apply to all areas of the variance:

1. The topsoil substitute material, constituting the top six inches of growth medium, shall contain no durable rock greater than 24 inches in any dimension.

2. The topsoil substitute material shall contain no more than 10% by weight of rocks 10 inches or greater in size.

3. The topsoil substitute material shall contain no more than 15 % by weight of rocks between 3 inches and 10 inches in size.

4. The substitute material shall contain no more than 50 % by weight of materials between 3 inches and 0.75 inches in size.

5. The substitute material shall contain at least 30 % by weight of soil sized (<2 mm) material.

Should the above findings prove to be incorrect or further experience with this site warrant it, this approval may be revoked and the saving and redistribution of topsoil required.

Sincerely,

Bill Kitchens

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ABSTRACT

Mining by the surface method has occurred on the Black Creek Group by pre-law operators in the past in the Warrior area. In most instances where pre-law operators regraded overburden, it was without regard for existing topsoils. Also, even though in many instances pre-law operators didn't revegetate, natural revegetation occurred on sites within and adjacent to the proposed permit with surprising success. Revegetation success at these sites are largely due to a consistent lithology of shale and some sandstone, which, when mixed during mining, results in a medium which is favorable for both pine tree and ground cover growth. When taking into consideration the fact that a majority of the requested topsoil variance area is occupied by the soil: Montevallo-Nauvoo Association, steep which has been shown in prior applications to be of poor quality and, the remainder of the requested topsoil variance area is previously mined and has exhibited acceptable 'natural' revegetation, it will be shown in this application that heterogeneous overburden at this site is superior to the native topsoils as a medium for post mine revegetation.

The purpose of this paper is to compare local topsoils versus heterogeneous overburden materials to demonstrate the superiority of the heterogeneous overburden, and also compare such relevant issues such as overburden lithologies and overburden geochemistries of the Warrior Mine to demonstrate

the likelihood of producing revegetation success at the Warrior Mine.

SITE CONSIDERATIONS

The Warrior 282, LLC., Warrior Mine site is located in Sections 13, 14, and 23, Township 14 South, Range 3 West, Jefferson County Alabama as seen from the Warrior, Alabama USGS 7.5 minute quadrangles. The proposed mine site will occupy approximately 167 acres of which approximately 156 will be mining area.

Soils information for the permit and adjacent areas were taken from the "Soil Survey of Jefferson County, Alabama" that was issued in August of 1982. Soil types and boundaries delineated within the proposed permit area and adjacent areas are shown on the attached soil map as well as the permit area location, previously mined areas, drill hole and overburden and topsoil sampling locations. Soils delineated on the Soil Map within and adjacent to the proposed permit area are as follows:

Map Symbol	Soil Name and Slope Range
29	Montevallo-Nauvoo association, steep
**30	Nauvoo fine sandy loam, 2 - 8 percent slopes

35	Palmerdale complex, steep
39	Sullivan - State Complex, 0 - 2 percent slopes

** - Denotes Prime Farmland soils.

Note that soils 30 & 39 are not included in the Topsoil Variance proposal. The previously disturbed areas within and adjacent to the proposed permit area which was utilized for overburden sampling sites was mined by Hal Cook Enterprises at their Warrior Pit (ASMC permit number P-3103).

LAND USE

The premining land use for mining area within the proposed permit area is both previously disturbed areas and undeveloped forest. Previously disturbed areas are delineated on the Soil Map and are a result of surface mining. The post mining landuse for mining area within the proposed permit area is commercial / industrial. Post mining revegetation consists of perennial grasses.

TOPSOIL DESCRIPTIONS

The following descriptions are for soils delineated within the Warrior Mine as shown above that are included in the topsoil variance proposal. As stated

previously, soils information (including soil descriptions) for the permit and adjacent areas were taken from the "Soil Survey of Jefferson County, Alabama" that was issued in August of 1982.

29-Montevallo-Nauvoo association, steep

This map unit consists of soils on strongly dissected areas of sandstone and shale plateaus in the northern and western parts of the county. Extensive surface and deep mining of coal occur in this area. The underlying layers of sandstone, siltstone, shale, and coal are nearly level. The ridges are commonly underlain by sandstone, and the side slopes are generally underlain by shale and siltstone. The soils are in a regular pattern that is closely related to landscape position and underlying parent material. Areas of this map unit are large. Slope ranges from 6 to 55 percent.

Montevallo soils, on the steep sides of ridges, make up about 40 percent of the map unit. Typically, the surface layer is very dark gray shaly silt loam and dark grayish brown shaly silt loam about 6 inches thick. The subsoil is yellowish brown very shaly silt loam about 10 inches thick. The underlying material is weathered siltstone and shale. The slope of Montevallo soils in this map unit is generally more than 15 percent.

Nauvoo soils, on ridgetops and ridge sides, make up about 25 percent of most areas. Typically, the surface layer is dark grayish brown fine sandy loam about 6 inches thick. The subsoil is about 36 inches thick. The upper 6 inches is yellowish brown fine sandy loam, and the lower 30 inches is yellowish red clay loam. The underlying material is soft, highly weathered sandstone. The slope of Nauvoo soils in this map unit is generally 6 to 15 percent.

The available water capacity is very low for Montevallo soils and moderate for Nauvoo soils. In most years, there are periods in which soil moisture is not adequate for optimum plant growth. These periods are longer for Montevallo soils. Both soils are moderately permeable and have a low shrink-swell potential. Surface runoff is rapid for Montevallo soils and moderately rapid for Nauvoo soils. If these soils do not have a plant cover, sheet and rill erosion is a very severe hazard for Montevallo soils and a severe hazard for Nauvoo soils. The surface layer of both soils is strongly acid to very strongly acid. Nauvoo soils can be tilled within a wide range in moisture content. Minor soils in this association are Allen, Docena, Gorgas, Holston, State, Sullivan, and Townley soils. Also some areas have sandstone bedrock outcrop, and a few areas have been surface mined for coal. Allen and Holston soils are on fans, foot slopes, and toe slopes. Docena, State, and Sullivan soils are in depressions, drainageways, and on flood plains. Gorgas soils are on side slopes. Townley soils, the most extensive of the minor soils, are on ridgetops and upper sides of

ridges; slope ranges from 10 to 25 percent. These minor soils and Rock outcrop make about 35 percent of the map unit. The soils of this map unit are used primarily for woodland. Many small areas have been altered by surface mining of coal. A few small areas are used for cultivated crops and pasture. Montevallo soils are not suited to cultivated crops, pasture, or hay because of steep slopes, the hazard of erosion, and shallow soil depth. Areas of Nauvoo soils and the minor Townley soils are suited to these uses, but they are limited by slope and the hazard of erosion. Areas of these soils are generally long and narrow, small, and poorly accessible. The soils of this map unit are suited to woodland use. Suitable species, productivity potential, and management problems are variable. Montevallo soils are suited to coniferous trees, and the potential productivity is moderate. However, the steep slopes and shallow soil depth are limitations. During wet seasons, windthrow of trees is a moderate hazard. Constructing and maintaining roads for logging, loading areas, and fire lanes is difficult on these soils. Poor harvesting techniques can cause severe erosion. Nauvoo soils are well suited to coniferous and deciduous tress, and the potential productivity is moderate to high. There are no significant management concerns. These soils are well suited to constructing and maintaining roads for logging, loading areas, and fire lanes. If grading is necessary for loading areas, stockpiling of the surface layer material and respreading it after harvest will help vegetation restoration. Montevallo soils are not favorable for residential and industrial uses because of steep slopes and shallow soil depth. Septic tank

effluent may flow out to the surface because of pressure caused by elevation difference, or it may flow laterally or downslope through rock cracks, and then surface around residential units at a lower elevation. Plant growth is difficult to maintain on the steep, shallow Montevallo soils. Extensive excavation is needed to prepare dwelling sites on these soils, and potential soil loss is severe. Nauvoo soils are favorable for residential and industrial uses, but slope is a limitation. Also, areas of Nauvoo soils and the included Townley soils are generally long and narrow and are poorly accessible. The soils of this map unit are suited to most low traffic recreation uses. Nauvoo soils are better suited to most recreation facilities than Montevallo soils. A few sites are suitable for pond construction. Many areas of Montevallo soils have suitably shaped basins. However, these soils are shallow in depth and have poor reservoir basins. In such basins, excessive seepage may occur through rock cracks and old root channels. Also, suitable soil material for dams is not available. Surface and subsurface mining of coal is extensive in many areas of these soils. Reclaiming these soils after surface mining operations is difficult because of the remaining steep slopes, the droughty nature of rock spoil, and the wide variation of reaction. Grading and reapplying topsoil will help reduce these problems. Most of the needed topsoil can be stockpiled on site before mining. Montevallo soils are a poor source of topsoil because they are shallow and have steep slopes. A much thicker layer of topsoil can be obtained from some minor soils, primarily Nauvoo, Allen, and Holston soils. The loamy subsoil of these soils can be

modified for suitable rooting medium by applying lime and fertilizer and by minimizing tillage. The Montevallo soils are in capability subclass VIIe and in woodland ordination group 4d. The Nauvoo soils are in capability subclass IVe and in Woodland ordination group 2o.

35-Palmerdale complex, steep

This complex consists of steep, somewhat excessively drained Palmerdale soils and other soils on surface mining spoil piles. The sediment-producing slope and highwalls have convex slopes. The sediment-receiving benches, drainageways, and basins have concave slopes. Slope ranges from 15 to 60 percent in most areas. Areas are 40 to 1,000 or more acres and irregular in shape. The areas of Palmerdale soils and other soils in this complex are so intricately mixed, or so small, that mapping them separately was not practical. Palmerdale soils and similar soils make up about 70 percent of the map unit. Typically, Palmerdale soils are more than 60 inches thick. The soil is dark gray very shaly silt loam. In places, soils are similar to Palmerdale soils except that they are medium acid to moderately alkaline, or they have slopes of less than 15 percent. Other soils on benches, in drainageways, and in basins make up about 20 percent of the map unit. These soils are more than 60 inches thick. Typically, they have a silt loam surface layer about 10 inches thick. The underlying material is very shaly silt loam. The available water capacity for Palmerdale soils is low. There are

lengthy periods in which soil moisture is not adequate for optimum plant growth. Palmerdale soils are moderately rapidly permeable and have a low shrink-swell potential. These soils are subject to subsidence. Surface runoff is very rapid. The hazard of rill and channel erosion is very severe. The surface layer is strongly acid in Palmerdale soils and medium acid to moderately alkaline in soils similar to Palmerdale soils. Included in mapping are areas of Montevallo, Nauvoo, and Townley soils. The included soils and areas of escarpments, highwalls, and bedrock outcrop make up about 10 percent of the map unit. The soils are not suited to cultivated crops, pasture, and have because of steep slopes, fragments on the surface, and the droughty nature of the soils. Present land use of these soils is oriented primarily towards reclamation and establishment of trees. Reclaiming Palmerdale soils is difficult because of steep slopes, the hazard of erosion, droughtiness, and the acidity of the soil. In addition, north facing slopes are subject to soil freezing to a depth of several inches and "frost heave" during thawing. Some of the problems of reclamation can be minimized by applying topsoil from other soils and adding lime and fertilizer. The information in table 12 should be used to locate sources of topsoil. Palmerdale soils are suited to coniferous and deciduous trees; the potential productivity is moderate. Coniferous trees are generally favorable trees establish on these soils. Management concerns include a severe erosion hazard, a severe equipment use limitation, and a severe seedling mortality rate. Some areas are not accessible because of slope gradients and the location of

highwalls. Other soils on benches and toe slopes and in basins and drainageways have a higher potential productivity than Palmerdale soils. The alkaline soils are poorly suited to most trees, especially pines. The soils of this map unit are in capability subclass VIIs and in woodland ordination group 3x.

GEOLOGIC DESCRIPTION

Geologic description of the Warrior permit area was by qualified personnel of PERC Engineering Co., Inc. from several drill holes within and adjacent to the permit area and is as follows:

"Structurally, this site is located within the Warrior Coal Basin. The Warrior Basin is the southern most of a series of Pennsylvanian basins of the Appalachian Plateau. Structurally, the Warrior Basin is formed by a large gentle syncline that extends from north-central Mississippi in the west to north-central Alabama in the east. The syncline is tilted southwestward with a regional dip of 30 to 200 feet per mile. Toward the interior of the Warrior Basin, the regional southwest dip of Pottsville strata is modified by a series of three synclines and two anticlines. Of these, the major structures are the Warrior and Coalburg synclines, and the Sequatchie anticline. The fold axes are parallel to the Appalachian system in a northeast-southwest direction and plunge to the southwest with the regional dip.

Locally, the strata which outcrops in the immediate vicinity of the Warrior Mine includes sandstones, shales, and coal associated with the Black Creek Coal Group. According to "Depositional Settings of the Pottsville Formation in the Black Warrior Basin", the Black Creek Coal Group is in the Warrior Coal Basin and lies approximately 100 to 300 feet above the J Coal Group. This reference also states that the Black Creek Coal Group is the lowest coal within the Warrior Basin and ranges from approximately 45 - 160 ft. thick. This reference also states that the Bremen Sandstone Member lies above the Black Creek Coal Group, but is generally restricted to Cullman and Walker Counties.

The target coal seams at this facility which are present within and adjacent to the proposed permit area are, in descending order, the Lick Creek, the Jefferson, and the Black Creek Seams.

According to "Depositional Settings of the Pottsville Formation in the Black Warrior Basin", the Lick Creek Seam occurs approximately 45 ft. above the Jefferson Seam, and averages 14 inches thick. The Jefferson Seam occurs approximately 10 to 80 ft. above the Black Creek Seam, and ranges in thickness from 24 to 60 inches. The Black Creek Seam ranges from 18 to 36 inches thick.

Locally, exploratory drilling within the proposed permit boundary reveals that the

Black Creek Seam outcrops between approximately 390 ft. MSL and 430 ft. MSL within the proposed permit area and averages approximately 1.6 ft. thick. The Jefferson Seam exists at an average of approximately 17 ft. above the Black Creek Seam and averages 2.3 ft. thick. The Jefferson Seam outcrops between approximately 430 ft. MSL and 450 ft. MSL in the permit area. The Lick Creek Seam is an average of approximately 38 ft. above the Jefferson Seam, and is approximately at 1.0 ft. thick, and outcrops between approximately 455 ft. MSL and 485 ft. MSL in the permit area.

Overburden thickness above the Black Creek Coal Seam ranges from approximately 0 ft. at the outcrop to approximately 169 ft. at the deepest point, with an average of approximately 164.1 ft. thick as shown from available drill hole lithologies. The lithology of Pottsville Formation strata overlying the Black Creek Seam within the proposed permit area is as follows: a 15 ft. interval of weathered sandstone, followed by a 5 ft. interval of weathered sandstone with little shale, which is followed by a 20 ft. interval of weathered sandstone, followed by an interval of sandy shale approximately 25 ft. thick is followed by an interval of shale approximately 38 ft. thick, which is followed by the Lick Creek Seam. The Lick Creek Seam is approximately 1.1 ft. in thickness and is followed by an interval of shale approximately 10.9 ft. thick, followed by an interval of sandy shale approximately 5 ft. thick, followed by an interval of sandy shale 5 ft. in thickness, followed by the Jefferson Seam. The Jefferson

Seam is approximately 1.8 ft. in thickness and is followed by an interval of sandy shale 17.6 ft. in thickness, followed by the Black Creek Seam. The Black Creek Seam is approximately 1.6 ft. in thickness and is followed by 10.8 ft. of shale. This lithology was taken from W282DH-1 and these intervals vary in thickness and facies changes occur depending upon their location within the proposed permit area.

The Geochemical Analysis revealed two acid forming layers in the overburden at the Warrior Mine. These layers were from 104.10 ft. to 110.00 ft. depth in Geochemical Analysis Site W282DH-1 and from 160 ft. to 165 ft. depth in Geochemical Analysis Site W282DH-3. Both intervals are contiguous to the target coal seams at this site and sample bags containing these intervals were found to be contaminated with coal. Due to the fact that all overburden at this site does not occupy similar areas, intervals shown in the attached analysis which are located in the upper portions of the drill logs occupy a smaller volume than intervals which are located closer to the bottom, consequently, their acid-base accounts do not contribute as substantially to the overall chemistry of the overburden. In an attempt to more accurately describe the acid-base potential of the overburden at the Warrior Mine site, a spreadsheet which was developed at the Pennsylvania Dept. of Environmental Resources, Bureau of Mining and Reclamation was employed. This spreadsheet not only takes into account the volume occupied by each interval tested, but also the amount of coal lost into

the spoil. The results of this method showing both the volume weighted acid-base potential of the area each drill hole represents, but also a summary of the overall acid-base potential of the entire proposed permit area on a volume weighted basis is shown in the attached analysis. The overall results of this analysis from Geochemical Analysis Sites W282DH-1 and W282DH-3 are favorable: overburden at the Warrior Mine contains an average of 13.29 (tons CaCO3/1000 tons overburden) excess neutralization potential. This excess neutralization potential will neutralize the acid found in the acid forming layers discussed above and no acid drainage is anticipated at this site."

SAMPLING TECHNICS

Information utilized to describe the orientation, lithology, and geochemistry of the Warrior Mine site and adjacent areas include exploratory drill sites, geochemical analysis sites, and groundwater monitoring wells. The following Exploratory Drill Sites were drilled by Walker Drilling Services, Inc. in March 2008: CH2, and CH3. The following Exploratory Drill Site was drilled by Layne Christensen in October 2008: C3. The following Groundwater Monitoring Sites were drilled and cased by personnel of Walker Drilling Services, Inc. in January 2007: W282WMW1 and W282MW2A. The following Geochemical Analysis Sites were drilled by Walker Drilling Services, Inc. In October 2008: W282DH-1 and W282DH-3.

The drill used to drill the sites drilled by Walker Drilling Services, Inc. was a Gardner-Denver GD1500 air rotary drill, utilizing 4 and 3/4 and 7 and 7/8 inch drill bits. Samples were collected from W282DH-1 and W282DH-3 by personnel from Walker Drilling Services, Inc. every 5 ft. in depth or change in lithology, cataloged, and stored in reclosable storage bags for later inspection and testing. These samples were delivered to the PERC Engineering Laboratory where the lithology of the samples were determined by a Geologist. See attached lithologic descriptions.

Soil and overburden samples were taken at locations in the attached soil map by qualified personnel of PERC Engineering in November and December of 2010. Four samples of soil number 29 were collected along with four samples of heterogeneous overburden from previously disturbed areas within the proposed permit area. Each sample was selected as the most representative of the area in both texture and vegetative cover (which reflects chemical suitability). Samples were taken by digging a cylindrical to slightly conical shaped hole 6-8 inches deep with a spade. All contents of this section are included in the sample. Soil samples taken lack vegetative and other organic cover so they will more accurately reflect topsoil that is cleaned of vegetative cover and stockpiled for soil redistribution. Sieve analysis was conducted on oven-dried samples by PERC Engineering Co., Inc. to determine coarse fragment and soil percentages. Results of this analysis is in Appendix 2. The minus 2mm (or soil) fraction of

all samples were then sent to Auburn University Soil Testing Laboratory for the following analyses: Soil fertility, pH, recommendations for post mining revegetation, % sand, silt, and clay, available water capacity, and ppm of nitrate nitrogen in the soil. Results of this analysis are given in Appendix 3. Note: available water capacity (AWC) conducted by Auburn University Testing Laboratory is determined on only the soil (-2mm) fraction of the sample obtained in the field. To obtain the "Total" available water capacity, the AWC will be added to the available water capacities of the larger coarse fragments as shown in Appendix 4.

Senders sample designations listed in Appendix 3 are as follows:

7258 - Soil 29-1	7262 - Overburden #1
7259 - Soil 29-2	7263 - Overburden #2
7260 - Soil 29-3	7264 - Overburden #3
7261 - Soil 29-4	7265 - Overburden #4

OVERBURDEN VS TOPSOIL COMPARISON

Cumulative results from Appendices 2 & 3 are as follows:

	SOIL (AVE.):	OVERBURDEN (AVE.):
pH (median)	4.65	6.33
	Fertility ratings for P, K, & Mg:	
Phosphorus	9	171
Potassium	179	313

	SOIL (AVE.):	OVERBURDEN (AVE.):
Magnesium	1,002	1,826
Recommendations for Limestone, N, P_2O5, K_2O:		
Limestone (Tons/Acre)	1.75	0.00
N (Lbs./Acre)	60	60
P_2O5 (Lbs./Acre)	85	20
K_2O (Lbs./Acre)	30	0
Sulfur (percent)	0.0143	0.0616
Maximum Potential Acidity*	0.4477	1.9234
Neutralizing Potential*	0.5000	18.740
Acid-Base Account*	+0.0523	+16.8166
Percent Organic Matter	0.55	5.45
Nitrate Nitrogen (ppm)	5.33	13.35
Sand Percentage	46.56	52.18
Silt Percentage	23.13	27.20
Clay Percentage	30.32	20.62

	SOIL (AVE.):	OVERBURDEN (AVE.):
Available Water Capacity (In. H_2O/In. Soil)	0.1175	0.1150
Course Fragment Percentage	27.15	58.48
Soil Percentage	72.85	41.52
"Total" Available H_2O Capacity (in. H_2O/in. soil)	0.1061	0.0873
Soil Erodibility Factor "K"	.25	.20

*Tons CaCo3 Equivalent/1000 tons material

A discussion of the above comparison resulting from physical and chemical analysis conducted on topsoil and overburden samples taken at locations indicated on the attached soils map is as follows:

The pH of the overburden samples were closer to an optimum pH for the proposed post mining revegetation than the native soil samples. Auburn Soil Testing Laboratory uses a target pH of 6.5 for this type of vegetation as the optimum value. The topsoil samples were analyzed having an median pH of 4.65 S.U., which is classified as "very strongly acid" by the USDA Soil Conservation Service while the heterogeneous overburden samples were

analyzed having a median pH of 6.33 S.U., which is classified as "slightly acid". As a result, the Auburn Soil Testing Laboratory recommends 1.75 tons per acre more lime on native topsoils than on the overburden sampled.

Overburden at the Warrior Mine is also much more fertile than the native topsoils. Overburden was rated higher in all three macronutrient categories: phosphorus, magnesium, and potassium. As a result, Auburn University's Soil Testing Laboratory reported that the overburden requires an average of 95 lbs/acre more additional nutrients than the native topsoils.

The acid-base accounts of the two media were both positive, and neither represented a danger of being forming acid, however, the heterogeneous overburden was much higher. Also, overburden contained an average of more organic matter and nitrate nitrogen than the native topsoils.

Textural analysis, performed by the PERC Engineering Laboratory revealed that the native topsoil samples contained more soil and less coarse fragments than the overburden samples, as expected. Typically, as soil percentage increases, so does available water capacity, and this is what has occurred during this analysis. The heterogeneous overburden was also found to have a higher percentage of sand than the native topsoil samples in the soil sized material, more silt than the native topsoil samples in the soil sized material, and less clay

than the native topsoil in the soil sized material. The result was that the available water capacity of the soil sized material in the soil was greater, but by less than *3 thousandths* of an inch of water (0.1175 In. H_2O/In. Soil for the native soil versus 0.1150 In. H_2O/In. Soil for the overburden). Also, when the total available water capacity for both media is calculated as shown in Appendix 4, the total available water capacity of the heterogeneous overburden was very close in value to the total available water capacity of the native topsoils (0.1061 In. H_2O/In. Soil for the native soil versus 0.0873 In. H_2O/In. Soil for the overburden). A difference of less than two hundredths of an inch per inch exists. When considering that the thickness of the revegetation media is only 6 inches, this difference is only 0.1128 inches of water (close to 1/10th of an inch) and is hardly significant. During periods of low or no rainfall, the amount of soil moisture in the root zone of the plants has a direct affect on whether or not the plant survives. However, during drought conditions, *water that is available to plants is most usually found deeper in the root zone than six inches*. It is plant water found much deeper in the root zone that will allow the revegetation to survive. In either case (soil versus overburden), the water utilized by the plants during drought conditions will be from heterogeneous overburden.

It should also be noted that the native topsoil is essentially completely weathered while many of the coarse fragments in the overburden will eventually

break down into soil sized material and increase its total available water capacity causing the difference in total available water capacity to be less and less as time advances. Virtually all of the differences in water holding capacity between the two media can be attributed to the amount of weathering in each.

Also, as is typical for comparisons between topsoils and overburden materials, regraded topsoils exhibit a greater tendency to erode than regraded overburden, especially in steeper slope areas, due to the fact that 'new' overburden typically contains more coarse fragments which resists rainfall impact and erosion due to overland flow. Many of these coarse fragments will eventually break down into soil sized material, adding to the soil percentage, while 'protecting' the mixture from erosion in the early stages of reclamation in outslope areas where slopes are steeper whereas the native soils are more likely to erode from a lack of coarse fragments and will probably not increase the amount of soil contained in this medium, due to it already being weathered. As shown on the Topsoil Variance Map accompanying this report, the dominant soil type within the proposed topsoil variance area (other than previously disturbed areas) is: Montevallo-Nauvoo Association, steep. This confirms the steepness of the proposed permit area, and magnifies the need for the utilization of heterogeneous overburden at this site. As stated earlier, Montevallo-Nauvoo Association has been shown in prior applications to be of poor quality for reclamation.

The above information suggests that the overburden at the proposed Warrior Mine is equal to or more suitable than the native topsoils for post mining revegetation.

PROPOSED VARIANCE AREA VS. ADJACENT SITE SIMILARITIES

As stated previously, mining by the surface method has occurred within and adjacent to the permit area by Hal Cook Enterprises at their Warrior Pit under ASMC permit number P-3103 and by pre-law miners. Revegetation (both regulated and natural) has occurred at this site with surprising success. Revegetation success was largely due to a consistent lithology of shale and some sandstone, which, when mixed during mining, results in a medium which is favorable for both pine tree and ground cover growth. The samples collected for this topsoil variance came from this reclamation. Because this mining was from the same Coal Group that is going to be recovered by the Warrior Mine, there is no reason to believe that the reclamation at this site would present any additional technical, chemical, or lithologic problems than was earlier encountered.

RESULTS AND CONCLUSIONS

The conclusion of all the data represented in this report is that the overburden

is not only physically and chemically superior or equal to the topsoil in a majority of the parameters tested and is therefore the preferred medium in which to conduct revegetation operations, but is also the same material used for prior revegetation at an adjacent site where reclamation success has been observed.

The heterogenous overburden at the Warrior Mine was observed to be similar to or superior to the native topsoils in the following parameters: pH, phosphorus content, potassium content, magnesium content, liming rate, fertilization rate, neutralization potential, acid-base account, organic matter and nitrate nitrogen content, percent silt content in the soil sized material, and soil erodibility. The fact that the topsoil variance area is proposed in the same area with revegetation success, with the same seams targeted, where the overburden is both physically and chemically similar, suggests that the reclamation success at the Warrior Mine will be as successful as the adjacent revegetation. As stated above, virtually all of the differences in water holding capacity between the two can be attributed to the amount of weathering in each media.

REDISTRIBUTION PLAN

The mining method used at the Warrior Mine is a Dozer/Loader operation. Overburden will be rough graded by Caterpillar type dozers. Once overburden

has been rough graded, farm-type tractors will be used to disc the overburden to its final contour, decrease compaction, and increase the mechanical breakage of the surface layer. Rocks 24" in diameter that remain upon the surface, if any, will be collected and buried. At this time the following criteria will be used to evaluate the textural quality of the graded overburden:

a) Rocks of a size greater than 10" shall not exceed 10% by weight of the substitute material.

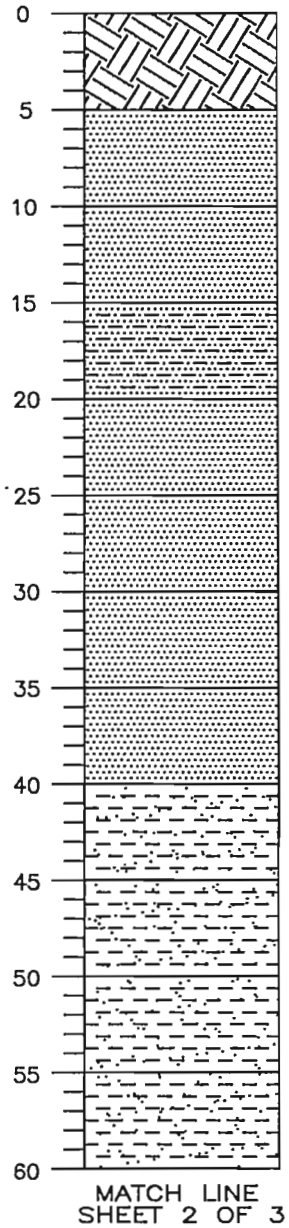
b) The substitute material shall not contain more than 15% by weight of materials between 10 and 3 inches in size.

c) The substitute material shall not contain more than 50% by weight of materials between 3 and .75 inches in size.

d) At least 30% by weight of the substitute material shall be of a size less than 2 millimeters.

Sampling frequency shall be 1 sample/ 20 Acres. Overburden sampling shall be identical to the guidelines set forth in the "Sampling Technics" section of this report. If this criteria is not met, Warrior 282, LLC. shall redisc the overburden and resample. If increasing the mechanical breakage will not enhance the texture of the graded overburden to a satisfactory level, additional soil sized material will be hauled and spread on site or rocks will be recovered from the surface and buried until the above criteria is achieved. The final texture samples taken shall be sent to the Auburn University Soil Laboratory where the following tests shall be conducted: %sand, silt, & clay, textural classification, pH, total sulfur, acid-base account, fertility ratings for phosphorus, potassium, and

magnesium, and amendment recommendations for post mining revegetation for limestone, nitrogen, P_2O and K_2O. Results of this analysis will be used to determine the amount of soil amendments, if any, to be applied to the plant medium. Results of all analyses shall be supplied to the Regulatory Authority for review. Any toxic forming materials encountered will be removed or covered with 4 feet of non-toxic non-acid forming material. Approved seed mixtures will be planted and hay used as mulch will be blown upon the seeded overburden according to ASMC guidelines. The above reclamation procedures will be conducted by track equipment, where feasible, and all traffic except pond monitoring vehicles and reseeding equipment shall be prohibited from reclaimed areas to reduce compaction. The preceding report suggests that the post mining productivity of the Warrior Mine will be enhanced by the utilization of overburden for a plant growth medium in conjunction with the above stated reclamation procedures.



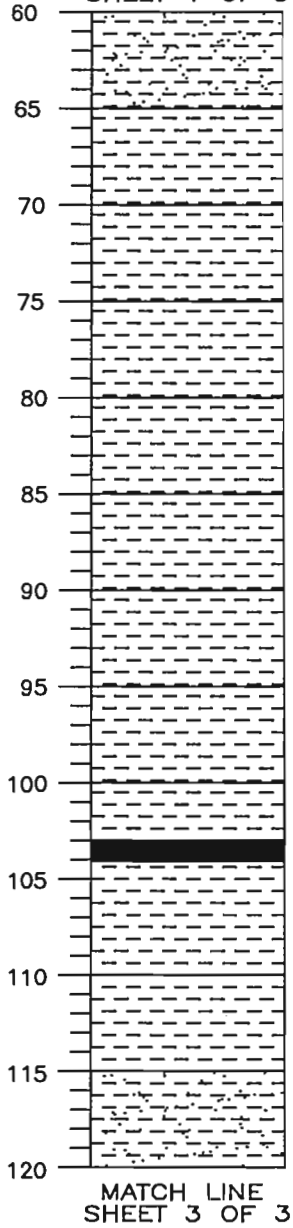
INTERVAL:	DESCRIPTION:
0 – 5	Surface Material, Sandstone little Shale, weathered, soft to medium hard
5 – 10	Sandstone, light to medium orange, weathered, soft to medium, fine to medium grained
10 – 15	Sandstone, light to medium orange, weathered, fine to medium grained, soft to medium hard
15 – 20	Sandstone with little Shale, weathered, white to light orange, soft to medium hard, fine to medium grained
20 – 25	Sandstone, medium hard to hard, fine to medium grained, light to dark gray
25 – 30	Sandstone, medium hard to hard, fine to medium grained, light to dark gray
30 – 35	Sandstone, medium hard to hard, fine to medium grained, light to dark gray
35 – 40	Sandstone with little Shale, medium hard to hard, fine to medium grained, light gray
40 – 45	sandy Shale, light to dark gray, soft to medium
45 – 50	sandy Shale, light to dark gray, soft to medium
50 – 55	sandy Shale, light to dark gray, soft to medium
55 – 60	sandy Shale, light to dark gray, medium hard to hard

SHEET 1 OF 3
DRILL: Gardner–Denver GD1500
SURFACE ELEVATION: ±563.5 ft. MSL

PERC ENGINEERING CO., INC.
1604 Highway 78 West Jasper, Alabama 35501
P.O. Box 1712 Jasper, Alabama 35502
(205) 384-6883 Office (205) 384-6491 Fax

Warrior 282, LLC.
Warrior Mine
Lithologic Description for
W282DH-1

DRAWN BY: JNG DWG. NAME: HRCWMLITH	DATE: 10–20–10
APPROVED BY: TST	SCALE: 1" = 10' vertical



INTERVAL:	DESCRIPTION:
60 – 65	sandy Shale, light to dark gray, medium hard to hard
65 – 70	Shale, light to dark gray, medium hard to hard
70 – 75	Shale, light to dark gray, medium hard to hard
75 – 80	Shale, light to dark gray, medium hard to hard
80 – 85	Shale, light to dark gray, medium hard to hard
85 – 90	Shale, light to dark gray, medium hard to hard
90 – 95	Shale, light to dark gray, medium hard to hard
95 – 100	Shale, light to dark gray, medium hard to hard
100 – 103	Shale, dark gray to black, medium hard to hard
103 – 104.1	Coal – Lick Creek Seam
104.1 – 110	Shale, medium gray to black, medium hard to hard (contaminated with coal)
110 – 115	Shale, light to dark gray, medium hard
115 – 120	sandy Shale, light to medium gray, soft to medium hard

SHEET 2 OF 3
DRILL: Gardner–Denver GD1500
SURFACE ELEVATION: ±563.5 ft. MSL

PERC
ENGINEERING CO., INC.
1606 Highway 78 West Jasper, Alabama 35501
P.O. Box 1712 Jasper, Alabama 35502
(205) 384-8863 Office (205) 384-9491 Fax

Warrior 282, LLC.
Warrior Mine
Lithologic Description for
W282DH-1

DRAWN BY: JNG DWG. NAME: HRCWMLITH	DATE: 10–20–10
APPROVED BY: TST	SCALE: 1" = 10' vertical

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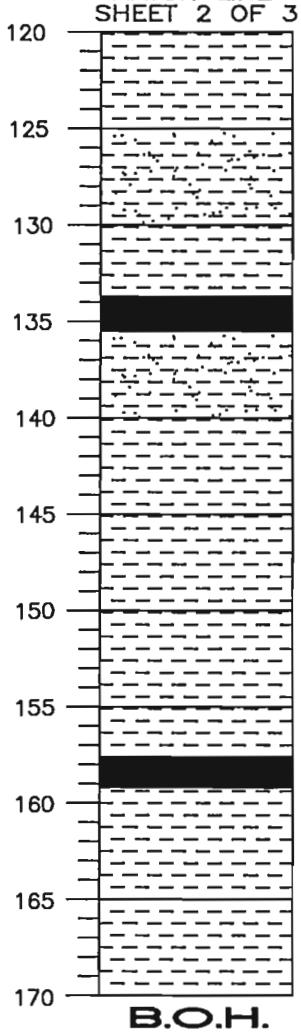

INTERVAL:	DESCRIPTION:
120 – 125	Shale, light to dark gray, medium hard
125 – 130	sandy Shale, medium to dark gray, medium hard to hard
130 – 133.7	Shale, light to dark gray, medium hard
133.7 – 135.5	Coal – Jefferson Seam
135.5 – 140	sandy Shale, light to medium gray, soft to medium
140 – 145	Shale, light to dark gray, medium hard to hard
145 – 150	Shale, light to dark gray, medium hard to hard
150 – 155	Shale, light to dark gray, medium hard to hard
155 – 157.6	Shale, light to dark gray, medium hard to hard
157.6 – 159.2	Coal – Black Creek Seam
160 – 165	Shale, dark gray to black, medium hard to hard, contaminated with coal
165 – 170	Shale, dark gray to black, medium hard to hard,

SHEET 3 OF 3
DRILL: Gardner–Denver GD1500
SURFACE ELEVATION: ±563.5 ft. MSL

PERC ENGINEERING CO., INC.
1606 Highway 78 West Jasper, Alabama 35501
P.O. Box 1712 Jasper, Alabama 35502
(205) 384-8983 Office (205) 384-9491 Fax

Warrior 282, LLC.
Warrior Mine
Lithologic Description for
W282DH-1

DRAWN BY: JNG DWG. NAME: HRCWMLITH	DATE: 10–20–10
APPROVED BY: TST	SCALE: 1" = 10' vertical

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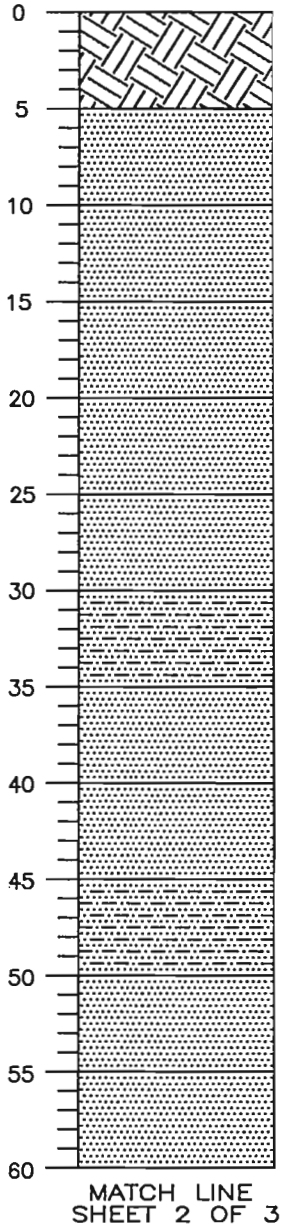

INTERVAL:	DESCRIPTION:
0 – 5	Surface Material, Sandstone, weathered, light to medium orange, fine to medium grained, soft to medium hard
5 – 10	Sandstone, weathered, white, light to medium orange, fine to medium grained, soft to medium hard
10 – 15	Sandstone, weathered, light to medium orange, fine to medium grained, hard
15 – 20	Sandstone, weathered, light to medium orange, fine to medium grained, hard
20 – 25	Sandstone, weathered, light to medium orange, fine to medium grained, hard
25 – 30	Sandstone, weathered, light to medium orange, fine to medium grained, hard
30 – 35	Sandstone with some Shale, weathered, light to medium orange, fine to medium grained, medium hard to hard
35 – 40	Sandstone, weathered, light to medium orange, fine to medium grained, hard
40 – 45	Sandstone, weathered, light to medium orange, fine to medium grained, hard
45 – 50	Sandstone with some Shale, weathered, dark orange to light gray, fine to medium grained, medium hard to hard
50 – 55	Sandstone, weathered, light to medium orange, fine to medium grained, medium hard to hard
55 – 60	Sandstone, weathered, light to medium orange, fine to medium grained, medium hard to hard

SHEET 1 OF 3
DRILL: Gardner–Denver GD1500
SURFACE ELEVATION: ±591.5 ft. MSL

PERC ENGINEERING CO., INC.
1608 Highway 78 West Jasper, Alabama 35501
P.O. Box 1712 Jasper, Alabama 35502
(205) 384-6883 Office (205) 384-6491 Fax

Warrior 282, LLC.
Warrior Mine
Lithologic Description for
W282DH-3

DRAWN BY: JNG DWG. NAME: HRCWMLITH	DATE: 10–20–10
APPROVED BY: TST	SCALE: 1" = 10' vertical

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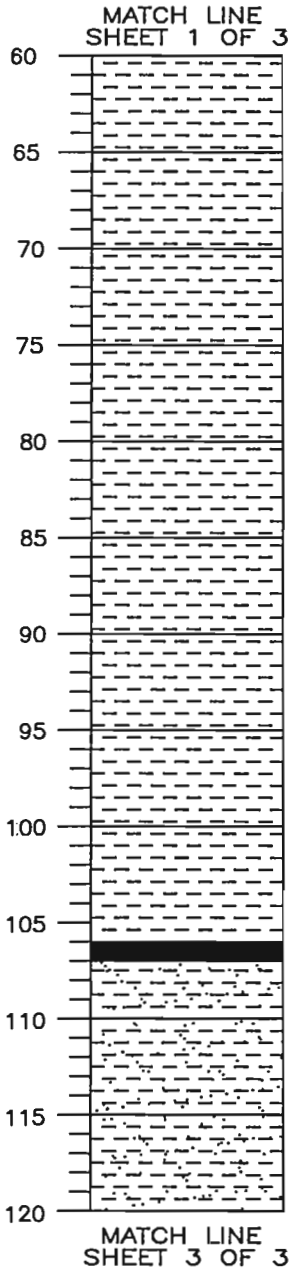

INTERVAL:	DESCRIPTION:
60 – 65	Shale, light orange to dark gray, soft to medium hard
65 – 70	Shale, light to dark gray, soft to medium hard
70 – 75	Shale, light to dark gray, soft to medium hard
75 – 80	Shale, light to dark gray, medium hard to hard
80 – 85	Shale, light to dark gray, medium hard to hard
85 – 90	Shale, light gray, medium hard to hard
90 – 95	Shale, light gray, medium hard to hard
95 – 100	Shale, light gray, medium hard to hard
100 – 106	Shale, light gray, medium hard to hard
106 – 107	Coal – Lick Creek Seam
107 – 110	Shale, light to dark gray, medium hard to hard
110 – 115	sandy Shale, light to dark gray, medium hard to hard
115 – 120	sandy Shale, light to dark gray, medium hard to hard

SHEET 2 OF 3
DRILL: Gardner–Denver GD1500
SURFACE ELEVATION: ±591.5 ft. MSL

PERC ENGINEERING CO., INC.
1606 Highway 78 West Jasper, Alabama 35501
P.O. Box 1712 Jasper, Alabama 35502
(205) 384-8863 Office (205) 384-9491 Fax

Warrior 282, LLC.
Warrior Mine
Lithologic Description for
W282DH-3

DRAWN BY: JNG DWG. NAME: HRCWMLITH	DATE: 10–20–10
APPROVED BY: TST	SCALE: 1" = 10' vertical

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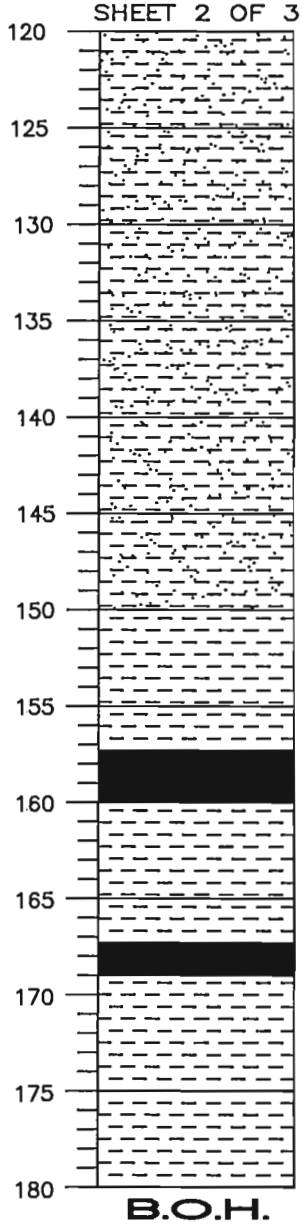


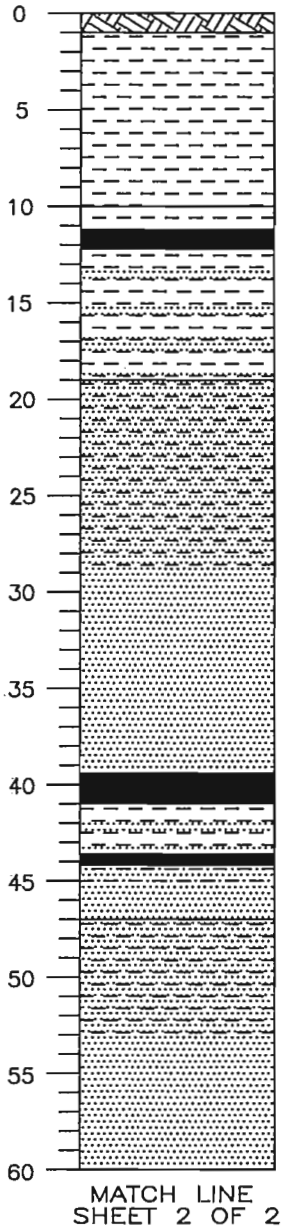
INTERVAL:	DESCRIPTION:
120 – 125	sandy Shale, light to dark gray, medium hard to hard
125 – 130	sandy Shale, light to dark gray, medium hard to hard
130 – 135	sandy Shale, light to dark gray, medium hard to hard
135 – 140	sandy Shale, light to dark gray, medium hard to hard
140 – 145	sandy Shale, light to dark gray, medium hard to hard
145 – 150	Shale, light to dark gray, medium hard to hard
150 – 155	Shale, light gray to black, medium hard to hard
155 – 157.3	Shale, light gray to black, medium hard to hard
157.3 – 160	Coal – Jefferson Seam
160 – 165	Shale, light to dark gray, medium hard to hard contaminated with Coal
165 – 167.3	Shale, light to dark gray, medium hard to hard
167.3 – 169	Coal – Black Creek Seam
169 – 175	Shale, light to dark gray, medium hard to hard, contaminated with Coal
175 – 180	Shale, light to dark gray, medium hard to hard,

SHEET 3 OF 3
DRILL: Gardner–Denver GD1500
SURFACE ELEVATION: ±591.5 ft. MSL

PERC ENGINEERING CO., INC.
1608 Highway 78 West Jasper, Alabama 35501
P.O. Box 1712 Jasper, Alabama 35502
(205) 384-6863 Office (205) 384-6491 Fax

Warrior 282, LLC.
Warrior Mine
Lithologic Description for
W282DH-3

DRAWN BY: JNG DWG. NAME: HRCWMLITH	DATE: 10–20–10
APPROVED BY: TST	SCALE: 1" = 10' vertical



INTERVAL:	DESCRIPTION:
0 – 1	Surface Material, sandy clay
1 – 10	weathered Shale
10 – 11.2	Shale, gray
11.2 – 12.2	Coal – Lick Creek Seam
12.2 – 19	Shale with Sandstone streaks
19 – 39.4	Sandstone with Shale streaks, medium hard
39.4 – 41	Coal – Jefferson Seam (Upper Bench)
41 – 43.6	Shale with Sandstone streaks
43.6 – 44.2	Jefferson Seam (Lower Bench)
44.2 – 47	Sandstone with Shale streaks
47 – 60	Sandstone with Shale streaks, medium hard

SHEET 1 OF 2
DRILL: Gardner–Denver GD1500
SURFACE ELEVATION: ±490.5 ft. MSL
Lithology taken from drillers' log

PERC ENGINEERING CO., INC.
1606 Highway 78 West Jasper, Alabama 35501
P.O. Box 1712 Jasper, Alabama 35502
(205) 384-0863 Office (205) 384-4491 Fax

Warrior 282, LLC.
Warrior Mine
Lithologic Description for
W282MW-1

DRAWN BY: JNG DWG. NAME: HRCWMLITH	DATE: 11–2–10
APPROVED BY: TST	SCALE: 1" = 10' vertical

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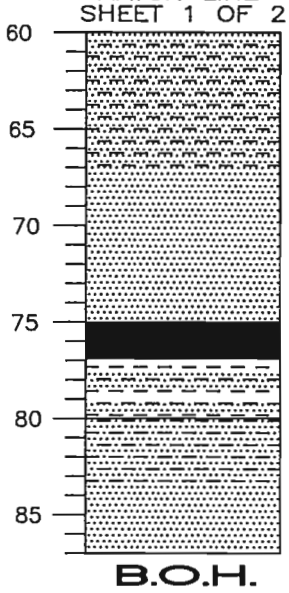

INTERVAL:	DESCRIPTION:
60 – 75	Sandstone with Shale streaks, medium hard
75 – 76.9	Coal – Black Creek Seam
76.9 – 80	Shale with Sandstone streaks
80 – 85	Sandstone with Shale streaks, medium hard

SHEET 2 OF 2
DRILL: Gardner Denver GD1500
SURFACE ELEVATION: ±490.5 ft. MSL
Lithology taken from drillers' log

PERC ENGINEERING CO., INC.
1906 Highway 78 West Jasper, Alabama 35501
P.O. Box 1713 Jasper, Alabama 35502
(205) 384-6063 Office (205) 384-9481 Fax

Warrior 282, LLC.
Warrior Mine
Lithologic Description for
W282MW-1

DRAWN BY: JNG DWG. NAME: HRCWMLITH	DATE: 11–2–10
APPROVED BY: TST	SCALE: 1" = 10' vertical

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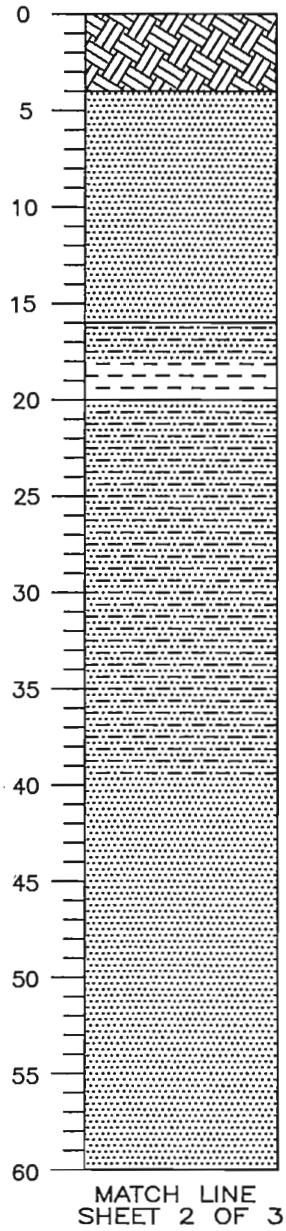

INTERVAL:	DESCRIPTION:
0 – 4	Surface Material, sandy clay
4 – 16	Sandstone, weathered
16 – 20	Shale with Sandstone streaks
20 – 60	Sandstone with Shale, medium hard

SHEET 1 OF 3
DRILL: Gardner–Denver GD1500
SURFACE ELEVATION: ±574.5 ft. MSL
Lithology taken from drillers' log

PERC ENGINEERING CO., INC.
1908 Highway 78 West Jasper, Alabama 35501
P.O. Box 1713 Jasper, Alabama 35502
(205) 384-5853 Office (205) 384-5491 Fax

Warrior 282, LLC.
Warrior Mine
Lithologic Description for
W282MW-2A

DRAWN BY: JNG DWG. NAME: HRCWMLITH	DATE: 11–2–10
APPROVED BY: TST	SCALE: 1" = 10' vertical

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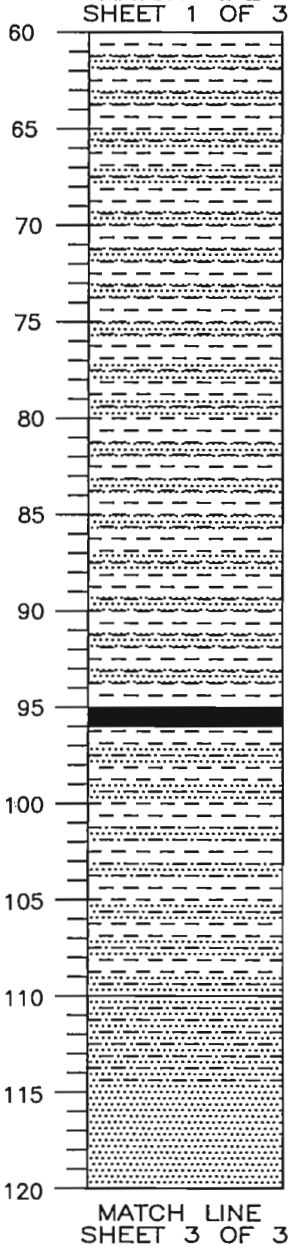


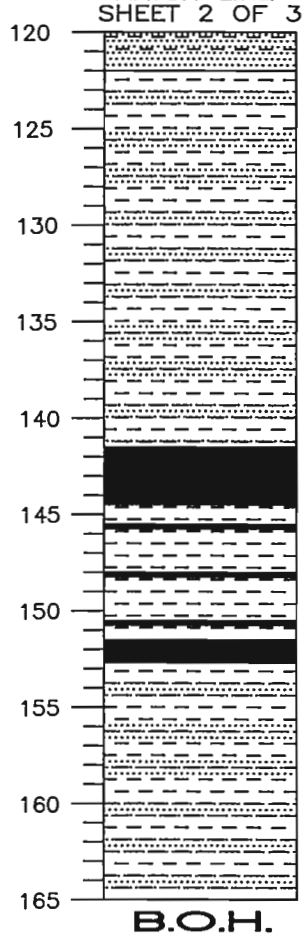
INTERVAL:	DESCRIPTION:
60 – 95	Shale with Sandstone streaks
95 – 96	Coal – Lick Creek Seam
96 – 110	Shale with Sandstone streaks
110 – 120	Sandstone with Shale streaks, medium hard

SHEET 2 OF 3
DRILL: Gardner–Denver GD1500
SURFACE ELEVATION: ±574.5 ft. MSL
Lithology taken from drillers' log

PERC ENGINEERING CO., INC.
1608 Highway 78 West Jasper, Alabama 35501
P.O. Box 1712 Jasper, Alabama 35502
(205) 384-5553 Office (205) 384-5491 Fax

Warrior 282, LLC.
Warrior Mine
Lithologic Description for
W282MW-2A

DRAWN BY: JNG DWG. NAME: HRCWMLITH	DATE: 11–2–10
APPROVED BY: TST	SCALE: 1" = 10' vertical



INTERVAL:	DESCRIPTION:
120 – 122	Sandstone with Shale streaks, medium hard
122 – 141.5	Shale with Sandstone streaks
141.5 – 144.5	Coal – Jefferson Seam
144.5 – 151.5	Shale with Coal streaks
151.5 – 152.7	Coal – Black Creek Seam
152.7 – 165	Shale with Sandstone streaks

SHEET 3 OF 3
DRILL: Gardner–Denver GD1500
SURFACE ELEVATION: ±574.5 ft. MSL
Lithology taken from drillers' log

PERC ENGINEERING CO., INC.
1908 Highway 78 West Jasper, Alabama 35501
P.O. Box 1712 Jasper, Alabama 35502
(205) 384-8361 Office (205) 384-9491 Fax

Warrior 282, LLC.
Warrior Mine
Lithologic Description for
W282MW-2A

DRAWN BY: JNG DWG. NAME: HRCWMLITH	DATE: 11–2–10
APPROVED BY: TST	SCALE: 1" = 10' vertical

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APPENDIX 1

PERC
ENGINEERING CO., INC.

Telephone: (205) 384-5553
Facsimile: (205) 295-3114 - Main Building
(205) 295-3115 - Water Lab
Web Address: www.percengineering.com

COMPANY NAME: Warrior 282 LLC

MINE NAME: Warrior Mine

DRILL HOLE: W282DH-1

COLLECTED BY: Client

DATE COLLECTED: 10-23-2008

ANALYZED BY: BS, SWR

DATE ANALYZED: 10-29-2008

All analysis is performed according to EPA standards.

INTERVAL		PASTE pH	% SULFUR	MAX. POT. *ACIDITY	NEUT. *POT	A-B *ACCOUNT	ACID FORMING
0.00	5.00	4.060	0.024	0.750	2.500	1.750	N
5.00	10.00	4.130	0.019	0.594	-1.250	-1.844	N
10.00	15.00	4.190	0.016	0.500	1.250	0.750	N
15.00	20.00	4.610	0.038	1.188	6.250	5.063	N
20.00	25.00	5.740	0.027	0.844	10.000	9.156	N
25.00	30.00	6.930	0.022	0.688	7.500	6.813	N
30.00	35.00	8.140	0.033	1.031	7.500	6.469	N
35.00	40.00	7.950	0.022	0.688	21.250	20.563	N
40.00	45.00	8.070	0.086	2.688	20.000	17.313	N
45.00	50.00	8.370	0.076	2.375	22.500	20.125	N
50.00	55.00	8.800	0.086	2.688	21.250	18.563	N
55.00	60.00	8.610	0.161	5.031	18.750	13.719	N
60.00	65.00	8.830	0.099	3.094	18.750	15.656	N
65.00	70.00	8.770	0.132	4.125	18.750	14.625	N
70.00	75.00	8.980	0.120	3.750	18.750	15.000	N
75.00	80.00	8.850	0.107	3.344	13.750	10.406	N
80.00	85.00	8.810	0.087	2.719	16.250	13.531	N
85.00	90.00	8.690	0.074	2.313	22.500	20.188	N
90.00	95.00	8.900	0.115	3.594	12.500	8.906	N
95.00	100.00	8.810	0.084	2.625	21.250	18.625	N
100.00	103.00	8.310	0.163	5.094	12.500	7.406	N
103.00	104.10 Coal	Coal	Coal	COAL	Coal	COAL	***
104.10	110.00	7.390	1.029	32.156	22.500	-9.656	Y
110.00	115.00	8.540	0.266	8.313	22.500	14.188	N
115.00	120.00	8.220	0.206	6.438	21.250	14.813	N
120.00	125.00	8.600	0.318	9.938	27.500	17.563	N
125.00	130.00	8.950	0.111	3.469	23.750	20.281	N
130.00	133.70	8.520	0.157	4.906	21.250	16.344	N
133.70	135.50 Coal	Coal	Coal	COAL	Coal	COAL	***
135.50	140.00	8.580	0.439	13.719	28.750	15.031	N
140.00	145.00	8.600	0.069	2.156	25.000	22.844	N
145.00	150.00	8.980	0.140	4.375	23.750	19.375	N
150.00	155.00	8.860	0.134	4.188	12.500	8.313	N
155.00	157.60	8.760	0.184	5.750	13.750	8.000	N
157.60	159.20 Coal	Coal	Coal	COAL	Coal	COAL	***
159.20	165.00	8.870	0.135	4.219	13.750	9.531	N
165.00	170.00	8.670	0.497	15.531	15.000	-0.531	N
**AVERAGE		5.118	0.158	4.951	16.616	11.665	N

*Calculated in tons CaCo3 per 1000 tons of material.
**Averages do not include coal seam to be mined or intervals below lowest seam.
***Not analyzed

APPENDIX 1

PERC ENGINEERING CO., INC.

Telephone: (205) 384-5553
Facsimile: (205) 295-3114 - Main Building
(205) 295-3115 - Water Lab
Web Address: www.percengineering.com

COMPANY NAME: Warrior 282 LLC

MINE NAME: Warrior Mine

DRILL HOLE: W282DH-3

COLLECTED BY: Client

DATE COLLECTED: 10-23-2008

ANALYZED BY: BS, SWR

DATE ANALYZED: 11-12-2008

All analysis is performed according to EPA standards.

INTERVAL		PASTE pH	% SULFUR	MAX. POT. *ACIDITY	NEUT. *POT	A-B *ACCOUNT	ACID FORMING
0.00	5.00	4.600	0.028	0.875	3.750	2.875	N
5.00	10.00	4.490	0.020	0.625	1.250	0.625	N
10.00	15.00	4.580	0.015	0.469	1.250	0.781	N
15.00	20.00	4.830	0.014	0.438	3.750	3.313	N
20.00	25.00	4.940	0.013	0.406	3.750	3.344	N
25.00	30.00	5.400	0.013	0.406	2.500	2.094	N
30.00	35.00	5.310	0.011	0.344	2.500	2.156	N
35.00	40.00	5.280	0.010	0.313	1.250	0.938	N
40.00	45.00	5.250	0.021	0.656	2.500	1.844	N
45.00	50.00	5.370	0.010	0.313	3.750	3.438	N
50.00	55.00	5.390	0.010	0.313	1.250	0.938	N
55.00	60.00	6.340	0.017	0.531	5.000	4.469	N
60.00	65.00	6.870	0.144	4.500	6.250	1.750	N
65.00	70.00	7.040	0.096	3.000	17.500	14.500	N
70.00	75.00	7.120	0.122	3.813	20.000	16.188	N
75.00	80.00	6.250	0.115	3.594	17.500	13.906	N
80.00	85.00	7.450	0.154	4.813	5.000	0.188	N
85.00	90.00	7.750	0.054	1.688	17.500	15.813	N
90.00	95.00	7.840	0.051	1.594	20.000	18.406	N
95.00	100.00	7.620	0.051	1.594	18.750	17.156	N
100.00	106.00	7.710	0.095	2.969	17.500	14.531	N
106.00	107.00 Coal	Coal	Coal	COAL	Coal	COAL	***
107.00	110.00	7.120	0.183	5.719	11.250	5.531	N
110.00	115.00	7.630	0.100	3.125	15.000	11.875	N
115.00	120.00	7.850	0.073	2.281	18.750	16.469	N
120.00	125.00	7.910	0.066	2.063	18.750	16.688	N
125.00	130.00	7.870	0.134	4.188	22.500	18.313	N
130.00	135.00	8.140	0.097	3.031	47.500	44.469	N
135.00	140.00	8.030	0.127	3.969	22.500	18.531	N
140.00	145.00	7.970	0.121	3.781	23.750	19.969	N
145.00	150.00	7.860	0.116	3.625	25.000	21.375	N
150.00	157.30	7.770	0.202	6.313	22.500	16.188	N
157.30	160.00 Coal	Coal	Coal	COAL	Coal	COAL	***
160.00	165.00	7.610	0.949	29.656	21.250	-8.406	Y
165.00	167.30	6.400	0.664	20.750	17.500	-3.250	N
167.30	169.00 Coal	Coal	Coal	COAL	Coal	COAL	***
169.00	175.00	6.930	0.218	6.813	12.500	5.688	N
**AVERAGE		5.335	0.138	4.320	13.027	8.707	N

*Calculated in tons CaCo3 per 1000 tons of material.
**Averages do not include coal seam to be mined or intervals below lowest seam.
***Not analyzed

SOIL TESTING LABORATORY

SURFACE MINE ANALYSIS REPORT

CLIENT I.D. : Perc Engineering Company,Inc.

SAMPLE I.D. : Warrior Mine #1

LAB I.D. : 09.S0419-S0552

ANALYSIS : Mine Package

INCLUDES : Sulfur

		S
Lab I.D.	Sample I.D.	%
09.S0419	DH1 0-5	0.024
09.S0420	DH1 5-10	0.019
09.S0421	DH1 10-15	0.016
09.S0422	DH1 15-20	0.038
09.S0423	DH1 20-25	0.027
09.S0424	DH1 25-30	0.022
09.S0425	DH1 30-35	0.033
09.S0426	DH1 35-40	0.022
09.S0427	DH1 40-45	0.086
09.S0428	DH1 45-50	0.076
09.S0429	DH1 50-55	0.086
09.S0430	DH1 55-60	0.161
09.S0431	DH1 60-65	0.099
09.S0432	DH1 65-70	0.132
09.S0433	DH1 70-75	0.120
09.S0434	DH1 75-80	0.107
09.S0435	DH1 80-85	0.087
09.S0436	DH1 85-90	0.074
09.S0437	DH1 90-95	0.115
09.S0438	DH1 95-100	0.084
09.S0439	DH1 100-103	0.163
09.S0440	DH1 104.1-110	1.029
09.S0441	DH1 110-115	0.266
09.S0442	DH1 115-120	0.206
09.S0443	DH1 120-125	0.318
09.S0444	DH1 125-130	0.111
09.S0445	DH1 130-133.7	0.157
09.S0446	DH1 135.5-140	0.439
09.S0447	DH1 140-145	0.069
09.S0448	DH1 145-150	0.140
09.S0449	DH1 150-155	0.134
09.S0450	DH1 155-157.6	0.184
09.S0451	DH1 159.2-165	0.135
09.S0452	DH1 165-170	0.497

09.S0485	DH3 0-5	0.028
09.S0486	DH3 5-10	0.020
09.S0487	DH3 10-15	0.015
09.S0488	DH3 15-20	0.014
09.S0489	DH3 20-25	0.013
09.S0490	DH3 25-30	0.013
09.S0491	DH3 30-35	0.011
09.S0492	DH3 35-40	0.010
09.S0493	DH3 40-45	0.021
09.S0494	DH3 45-50	0.010
09.S0495	DH3 50-55	0.010
09.S0496	DH3 55-60	0.017
09.S0497	DH3 60-65	0.144
09.S0498	DH3 65-70	0.096
09.S0499	DH3 70-75	0.122
09.S0500	DH3 75-80	0.115
09.S0501	DH3 80-85	0.154
09.S0502	DH3 85-90	0.054
09.S0503	DH3 90-95	0.057
09.S0504	DH3 95-100	0.051
09.S0505	DH3 100-106	0.095
09.S0506	DH3 107-110	0.183

09.S0507	DH3 110-115	0.100
09.S0508	DH3 115-120	0.073
09.S0509	DH3 120-125	0.066
09.S0510	DH3 125-130	0.134
09.S0511	DH3 130-135	0.097
09.S0512	DH3 135-140	0.127
09.S0513	DH3 140-145	0.121
09.S0514	DH3 145-151	0.116
09.S0515	DH3 150-155	0.119
09.S0516	DH3 155-157.3	0.202
09.S0517	DH3 160-165	0.949
09.S0518	DH3 165-167.3	0.664
09.S0519	DH3 169-175	0.218
09.S0520	DH3 175-180	0.990

OVERBURDEN ANALYSIS SPREADSHEET
OPERATOR: **Warrior 282, LLC**
PERMIT NO: DRILL HOLE: **W282DH-1**
COUNTY: TOWNSHIP:

THRESHOLD VALUES:	SULFUR	NP	FIZZ
	0	0.00	0

CLAY	CL	3450	
SHALE	SH	3700	
SILTSTONE	ST	3750	ALK ADD(tns/ac CaCO3):
SANDSTONE	SS	3670	COAL SEAMS:
LIMESTONE	LS	3670	STATE PLANE ZONE:
COAL	CO	1800	FEET (NORTH/SOUTH):
CARBONOLITH	CB	2580	FEET (EAST/WEST):
OTHER	OT	3670	SURFACE ELEV. (FT):

BOTTOM DEPTH (FT)	THICKNESS FEET	ROCK TYPE	FIZZ RATING	SULFUR %	NP	DEFICIENCY /EXCESS	ACREAGE	UNIT WT TONS/AC-FT	FRACTION SPOILED	TONS MPA	TONS NP	NET NP (TONS)	TONS OF OVERBURDEN
5.00	5.00	SS	0	0.02	2.50	1.75	1.95	3670	1.00	26.80	89.33	62.53	35732
10.00	5.00	SS	0	0.02	-1.25	-1.84	3.89	3670	1.00	42.43	0.00	-42.43	71464
15.00	5.00	SS	0	0.02	1.25	0.75	5.84	3670	1.00	53.60	133.99	80.40	107195
20.00	5.00	SS	0	0.04	6.25	5.06	7.79	3670	1.00	169.73	893.29	723.57	142927
25.00	5.00	SS	0	0.03	10.00	9.16	9.74	3670	1.00	150.74	1786.59	1635.85	178659
30.00	5.00	SS	0	0.02	7.50	6.81	11.68	3670	1.00	147.39	1607.93	1460.54	214391
35.00	5.00	SS	0	0.03	7.50	6.47	13.63	3670	1.00	257.94	1875.92	1617.98	250122
40.00	5.00	SS	0	0.02	21.25	20.56	15.58	3670	1.00	196.52	6074.40	5877.88	285854
45.00	5.00	SH	0	0.09	20.00	17.31	17.53	3700	1.00	871.33	6484.30	5612.97	324215
50.00	5.00	SH	0	0.08	22.50	20.13	19.47	3700	1.00	855.57	8105.37	7249.80	360239
55.00	5.00	SH	0	0.09	21.25	18.56	21.42	3700	1.00	1064.96	8420.58	7355.62	396263
60.00	5.00	SH	0	0.16	18.75	13.72	23.37	3700	1.00	2174.94	8105.37	5930.43	432286
65.00	5.00	SH	0	0.10	18.75	15.66	25.31	3700	1.00	1448.83	8780.82	7331.98	468310
70.00	5.00	SH	0	0.13	18.75	14.63	27.26	3700	1.00	2080.38	9456.27	7375.89	504334
75.00	5.00	SH	0	0.12	18.75	15.00	29.21	3700	1.00	2026.34	10131.71	8105.37	540358
80.00	5.00	SH	0	0.11	13.75	10.41	31.16	3700	1.00	1927.28	7925.25	5997.97	576382
85.00	5.00	SH	0	0.09	16.25	13.53	33.10	3700	1.00	1664.98	9951.59	8286.62	612406
90.00	5.00	SH	0	0.07	22.50	20.31	35.05	3700	1.00	1418.44	14589.67	13171.23	648430
95.00	5.00	SH	0	0.12	12.50	8.91	37.00	3700	1.00	2459.75	8555.67	6095.91	684454
100.00	5.00	SH	0	0.08	21.25	18.63	38.94	3700	1.00	1891.25	15310.14	13418.89	720477
103.00	3.00	SH	0	0.16	12.50	7.41	40.11	3700	1.00	2268.02	5565.69	3297.67	445255
104.10	1.10	CO	---	Coal	Coal	0.00	40.54	1800	0.15	0.00	0.00	0.00	12161
110.00	5.90	SH	0	1.03	22.50	-9.66	42.84	3700	1.00	30071.87	21041.54	-9030.33	935180
115.00	5.00	SH	0	0.27	22.50	14.19	44.79	3700	1.00	6887.31	18642.35	11755.04	828549
120.00	5.00	SH	0	0.21	21.25	14.81	46.73	3700	1.00	5565.69	18372.17	12806.49	864573
125.00	5.00	SH	0	0.32	27.50	17.56	48.68	3700	1.00	8949.68	24766.41	15816.73	900597
130.00	5.00	SH	0	0.11	23.75	20.31	50.63	3700	1.00	3219.63	22244.74	19025.11	936621
133.70	3.70	SH	0	0.16	21.25	16.34	52.07	3700	1.00	3497.30	15147.55	11650.25	712826
135.50	1.80	CO	---	Coal	Coal	0.00	52.77	1800	0.09	0.00	0.00	0.00	15815
140.00	4.50	SH	0	0.44	28.75	15.03	54.52	3700	1.00	12453.90	26099.29	13645.39	907802
145.00	5.00	SH	0	0.07	25.00	22.84	56.47	3700	1.00	2252.62	26117.31	23864.69	1044692
150.00	5.00	SH	0	0.14	23.75	19.38	58.42	3700	1.00	4728.13	25667.01	20938.87	1080716
155.00	5.00	SH	0	0.13	12.50	8.31	60.36	3700	1.00	4676.35	13959.25	9282.90	1116740
157.60	2.60	SH	0	0.18	13.75	8.00	61.38	3700	1.00	3395.06	8118.63	4723.57	590446
159.20	1.60	CO	---	Coal	Coal	0.00	62.00	1800	0.10	0.00	0.00	0.00	18600

TOTAL OVERBURDEN VOL.(ACRE-FT):	4872		TOTAL (TONS):	108894.77	354020.14	245125.36	17965069
PERCENT SANDSTONE:	7%		TOTAL (TONS/THOUSAND):	6.0615	19.7060	13.64	
NP/MPA RATIO:	3.25						
TONS/ACRE REQUIRED (1:1):	3954	EXCESS					

OVERBURDEN ANALYSIS SPREADSHEET
OPERATOR: **Warrior 282, LLC**
PERMIT NO: DRILL HOLE: **W282DH-3**
COUNTY: TOWNSHIP:

THRESHOLD VALUES:	SULFUR	NP	FIZZ
	0	0.00	0

CLAY	CL	3450	
SHALE	SH	3700	
SILTSTONE	ST	3750	ALK ADD(lns/ac CaCO3):
SANDSTONE	SS	3670	COAL SEAMS:
LIMESTONE	LS	3670	STATE PLANE ZONE:
COAL	CO	1800	FEET (NORTH/SOUTH):
CARBONOLITH	CB	2580	FEET (EAST/WEST):
OTHER	OT	3670	SURFACE ELEV. (FT):

BOTTOM DEPTH (FT)	THICKNESS FEET	ROCK TYPE	FIZZ RATING	SULFUR %	NP	DEFICIENCY /EXCESS	ACREAGE	UNIT WT TONS/AC-FT	FRACTION SPOILED	TONS MPA	TONS NP	NET NP (TONS)	TONS OF OVERBURDEN
5.00	5.00	SS	0	0.03	3.75	2.81	1.95	3670	1.00	33.55	134.18	100.64	35783
10.00	5.00	SS	0	0.02	1.25	0.63	3.89	3670	1.00	44.61	89.23	44.61	71382
15.00	5.00	SS	0	0.02	1.25	0.63	5.84	3670	1.00	66.98	133.96	66.98	107164
20.00	5.00	SS	0	0.01	3.75	3.44	7.79	3670	1.00	44.67	536.05	491.38	142947
25.00	5.00	SS	0	0.01	3.75	3.44	9.73	3670	1.00	55.80	669.55	613.75	178546
30.00	5.00	SS	0	0.01	2.50	2.19	11.68	3670	1.00	66.98	535.82	468.84	214328
35.00	5.00	SS	0	0.01	2.50	2.19	13.63	3670	1.00	78.16	625.28	547.12	250111
40.00	5.00	SS	0	0.01	1.25	0.94	15.57	3670	1.00	89.28	357.14	267.85	285710
45.00	5.00	SS	0	0.02	2.50	1.88	17.52	3670	1.00	200.93	803.73	602.80	321492
50.00	5.00	SS	0	0.01	3.75	3.44	19.47	3670	1.00	111.65	1339.78	1228.13	357275
55.00	5.00	SS	0	0.01	1.25	0.94	21.41	3670	1.00	122.77	491.09	368.32	392874
60.00	5.00	SS	0	0.02	5.00	4.38	23.36	3670	1.00	267.91	2143.28	1875.37	428656
65.00	5.00	SH	0	0.14	6.25	1.88	25.31	3700	1.00	2048.53	2926.47	877.94	468235
70.00	5.00	SH	0	0.10	17.50	14.38	27.25	3700	1.00	1575.39	8822.19	7246.80	504125
75.00	5.00	SH	0	0.12	20.00	16.25	29.20	3700	1.00	2025.75	10804.00	8778.25	540200
80.00	5.00	SH	0	0.12	17.50	13.75	31.15	3700	1.00	2161.03	10084.81	7923.78	576275
85.00	5.00	SH	0	0.15	5.00	0.31	33.09	3700	1.00	2869.52	3060.83	191.30	612165
90.00	5.00	SH	0	0.05	17.50	15.94	35.04	3700	1.00	1012.88	11344.20	10331.33	648240
95.00	5.00	SH	0	0.05	20.00	18.44	36.99	3700	1.00	1069.24	13686.30	12617.06	684315
100.00	5.00	SH	0	0.05	18.75	17.19	38.93	3700	1.00	1125.32	13503.84	12378.52	720205
106.00	6.00	SH	0	0.10	17.50	14.38	41.27	3700	1.00	2863.11	16033.40	13170.29	916194
107.00	1.00	Co	Coal	Coal	Coal	0.00	41.66	1800	0.17	0.00	0.00	0.00	12748
110.00	3.00	SH	0	0.18	11.25	5.63	42.83	3700	1.00	2674.20	5348.40	2674.20	475413
115.00	5.00	SH	0	0.10	15.00	11.88	44.78	3700	1.00	2588.84	12426.45	9837.61	828430
120.00	5.00	SH	0	0.07	18.75	16.56	46.72	3700	1.00	1890.70	16206.00	14315.30	864320
125.00	5.00	SH	0	0.07	18.75	16.56	48.67	3700	1.00	1969.61	16882.41	14912.79	900395
130.00	5.00	SH	0	0.13	22.50	18.44	50.62	3700	1.00	3804.41	21070.58	17266.17	936470
135.00	5.00	SH	1	0.10	47.50	44.38	52.56	3700	1.00	3038.63	46187.10	43148.48	972360
140.00	5.00	SH	0	0.13	22.50	18.44	54.51	3700	1.00	4096.77	22689.79	18593.02	1008435
145.00	5.00	SH	0	0.12	23.75	20.00	56.46	3700	1.00	3916.91	24807.11	20890.20	1044510
150.00	5.00	SH	0	0.12	25.00	21.25	58.40	3700	1.00	4051.50	27010.00	22958.50	1080400
157.30	7.30	SH	0	0.20	22.50	16.25	61.24	3700	1.00	10338.08	37217.08	26879.00	1654092
160.00	2.70	Co	Coal	Coal	Coal	0.00	62.30	1800	0.06	0.00	0.00	0.00	18167
165.00	5.00	SH	0	0.95	21.25	-8.44	64.44	3700	1.00	35391.66	25332.98	-10058.68	1192140
167.30	2.30	SH	0	0.66	17.50	-3.13	65.14	3700	1.00	11433.29	9700.97	-1732.32	554341
169.00	1.70	Co	Coal	Coal	Coal	0.00	65.80	1800	0.10	0.00	0.00	0.00	20135

TOTAL OVERBURDEN VOL.(ACRE-FT):	5431	TOTAL (TONS):	103128.65	363003.96	259875.31	20018574
PERCENT SANDSTONE:	14%	TOTAL (TONS/THOUSAND):	5.1516	18.1334	12.98	
NP/MPA RATIO:	3.52					
TONS/ACRE REQUIRED (1:1):	3949 EXCESS					

PERC ENGINEERING CO., INC.

Telephone: (205) 384-5553
Facsimile: (205) 295-3114 - Main Building
(205) 295-3115 - Water Lab
Web Address: www.percengineering.com

COMPANY NAME: Warrior 282, LLC

DATE SAMPLED: 11/5/2010

MINE NAME: Warrior Mine

DATE ANALYZED: 12/30/2010

SOIL / OVERBURDEN: Soil 29-1

ANALYZED BY: JRK

SAMPLE WEIGHT: 3880.4 (GRAMS)

LAB ID: 7258

TOPSOIL VARIANCE SIEVE ANALYSIS

SIEVE NUMBER	WT. SIEVE + SAMPLE (GRAMS)	WT. SIEVE (GRAMS)	WT. SAMPLE RETAINED (GRAMS)	PERCENT RETAINED	CUMULATIVE PERCENT RETAINED	PERCENT PASSING
1"	244.0	100.0	144.0	3.71	3.71	96.29
1/2"	367.2	100.0	267.2	6.89	10.60	89.40
1/4"	357.4	100.0	257.4	6.63	17.23	82.77
3/16"	145.9	100.0	45.9	1.18	18.41	81.59
2 MM	175.6	100.0	75.6	1.95	20.36	79.64
SOIL	3190.3	100.0	3090.3	79.64	100.00	0.00

% OF SAMPLE THAT IS COARSE FRAGMENTS : 20.36

% OF SAMPLE THAT IS SOIL : 79.64

PERC ENGINEERING CO., INC.

Telephone: (205) 384-5553
Facsimile: (205) 295-3114 - Main Building
(205) 295-3115 - Water Lab
Web Address: www.percengineering.com

COMPANY NAME: Warrior 282, LLC

DATE SAMPLED: 11/5/2010

MINE NAME: Warrior Mine

DATE ANALYZED: 12/30/2010

SOIL / OVERBURDEN: Soil 29-2

ANALYZED BY: JRK

SAMPLE WEIGHT: 3773.5 (GRAMS)

LAB ID: 7259

TOPSOIL VARIANCE SIEVE ANALYSIS

SIEVE NUMBER	WT. SIEVE + SAMPLE (GRAMS)	WT. SIEVE (GRAMS)	WT. SAMPLE RETAINED (GRAMS)	PERCENT RETAINED	CUMULATIVE PERCENT RETAINED	PERCENT PASSING
1"	162.3	100.0	62.3	1.65	1.65	98.35
1/2"	766.9	100.0	666.9	17.67	19.32	80.68
1/4"	681.7	100.0	581.7	15.42	34.74	65.26
3/16"	291.7	100.0	191.7	5.08	39.82	60.18
2 MM	533.5	100.0	433.5	11.49	51.31	48.69
SOIL	1937.4	100.0	1837.4	48.69	100.00	0.00

% OF SAMPLE THAT IS COARSE FRAGMENTS : 51.31

% OF SAMPLE THAT IS SOIL : 48.69

PERC ENGINEERING CO., INC.

Telephone: (205) 384-5553
Facsimile: (205) 295-3114 - Main Building
(205) 295-3115 - Water Lab
Web Address: www.percengineering.com

COMPANY NAME: Warrior 282, LLC

DATE SAMPLED: 11/5/2010

MINE NAME: Warrior Mine

DATE ANALYZED: 12/30/2010

SOIL / OVERBURDEN: Soil 29-3

ANALYZED BY: JRK

SAMPLE WEIGHT: 3847.7 (GRAMS)

LAB ID: 7260

TOPSOIL VARIANCE SIEVE ANALYSIS

SIEVE NUMBER	WT. SIEVE + SAMPLE (GRAMS)	WT. SIEVE (GRAMS)	WT. SAMPLE RETAINED (GRAMS)	PERCENT RETAINED	CUMULATIVE PERCENT RETAINED	PERCENT PASSING
1"	100.0	100.0	0.0	0.00	0.00	100.00
1/2"	277.6	100.0	177.6	4.62	4.62	95.38
1/4"	452.5	100.0	352.5	9.16	13.78	86.22
3/16"	279.0	100.0	179.0	4.65	18.43	81.57
2 MM	530.7	100.0	430.7	11.19	29.62	70.38
SOIL	2807.9	100.0	2707.9	70.38	100.00	0.00

% OF SAMPLE THAT IS COARSE FRAGMENTS : 29.62

% OF SAMPLE THAT IS SOIL : 70.38

PERC ENGINEERING CO., INC.

Telephone: (205) 384-5553
Facsimile: (205) 295-3114 - Main Building
(205) 295-3115 - Water Lab
Web Address: www.percengineering.com

COMPANY NAME: Warrior 282, LLC

DATE SAMPLED: 11/5/2010

MINE NAME: Warrior Mine

DATE ANALYZED: 12/30/2010

SOIL / OVERBURDEN: Soil 29-4

ANALYZED BY: JRK

SAMPLE WEIGHT: 3636.3 (GRAMS)

LAB ID: 7261

TOPSOIL VARIANCE SIEVE ANALYSIS

SIEVE NUMBER	WT. SIEVE + SAMPLE (GRAMS)	WT. SIEVE (GRAMS)	WT. SAMPLE RETAINED (GRAMS)	PERCENT RETAINED	CUMULATIVE PERCENT RETAINED	PERCENT PASSING
1"	100.0	100.0	0.0	0.00	0.00	100.00
1/2"	179.9	100.0	79.9	2.20	2.20	97.80
1/4"	183.8	100.0	83.8	2.30	4.50	95.50
3/16"	145.4	100.0	45.4	1.25	5.75	94.25
2 MM	156.1	100.0	56.1	1.54	7.29	92.71
SOIL	3471.1	100.0	3371.1	92.71	100.00	0.00

% OF SAMPLE THAT IS COARSE FRAGMENTS : 7.29

% OF SAMPLE THAT IS SOIL : 92.71

PERC ENGINEERING CO., INC.

Telephone: (205) 384-5553
Facsimile: (205) 295-3114 - Main Building
(205) 295-3115 - Water Lab
Web Address: www.percengineering.com

COMPANY NAME: Warrior 282, LLC

MINE NAME: Warrior Mine

SOIL / OVERBURDEN: OB-1

SAMPLE WEIGHT: 2296.9 (GRAMS)

DATE SAMPLED: 11/5/2010

DATE ANALYZED: 12/30/2010

ANALYZED BY: JRK

LAB ID: 7262

TOPSOIL VARIANCE SIEVE ANALYSIS

SIEVE NUMBER	WT. SIEVE + SAMPLE (GRAMS)	WT. SIEVE (GRAMS)	WT. SAMPLE RETAINED (GRAMS)	PERCENT RETAINED	CUMULATIVE PERCENT RETAINED	PERCENT PASSING
1"	401.5	100.0	301.5	13.13	13.13	86.87
1/2"	433.8	100.0	333.8	14.53	27.66	72.34
1/4"	378.2	100.0	278.2	12.11	39.77	60.23
3/16"	403.7	100.0	103.7	4.51	44.28	55.72
2 MM	293.4	100.0	193.4	8.42	52.70	47.30
SOIL	1186.3	100.0	1086.3	47.30	100.00	0.00

% OF SAMPLE THAT IS COARSE FRAGMENTS : 52.70

% OF SAMPLE THAT IS SOIL : 47.30

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Web Address: www.percengineering.com

COMPANY NAME: Warrior 282, LLC

DATE SAMPLED: 11/5/2010

MINE NAME: Warrior Mine

DATE ANALYZED: 12/30/2010

SOIL / OVERBURDEN: OB-2

ANALYZED BY: JRK

SAMPLE WEIGHT: 3576.8 (GRAMS)

LAB ID: 7263

TOPSOIL VARIANCE SIEVE ANALYSIS

SIEVE NUMBER	WT. SIEVE + SAMPLE (GRAMS)	WT. SIEVE (GRAMS)	WT. SAMPLE RETAINED (GRAMS)	PERCENT RETAINED	CUMULATIVE PERCENT RETAINED	PERCENT PASSING
1"	630.6	100.0	530.6	14.83	14.83	85.17
1/2"	812.7	100.0	712.7	19.93	34.76	65.24
1/4"	774.1	100.0	674.1	18.85	53.61	46.39
3/16"	327.8	100.0	227.8	6.37	59.98	40.02
2 MM	534.1	100.0	434.1	12.14	72.12	27.88
SOIL	1097.5	100.0	997.5	27.88	100.00	0.00

% OF SAMPLE THAT IS COARSE FRAGMENTS : 72.12

% OF SAMPLE THAT IS SOIL : 27.88

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Web Address: www.percengineering.com

COMPANY NAME: Warrior 282, LLC

DATE SAMPLED: 11/5/2010

MINE NAME: Warrior Mine

DATE ANALYZED: 12/30/2010

SOIL / OVERBURDEN: OB-3

ANALYZED BY: JRK

SAMPLE WEIGHT: 3363.5 (GRAMS)

LAB ID: 7264

TOPSOIL VARIANCE SIEVE ANALYSIS

SIEVE NUMBER	WT. SIEVE + SAMPLE (GRAMS)	WT. SIEVE (GRAMS)	WT. SAMPLE RETAINED (GRAMS)	PERCENT RETAINED	CUMULATIVE PERCENT RETAINED	PERCENT PASSING
1"	281.5	100.0	181.5	5.40	5.40	94.60
1/2"	574.7	100.0	474.7	14.11	19.51	80.49
1/4"	531.0	100.0	431.0	12.81	32.32	67.68
3/16"	244.8	100.0	144.8	4.31	36.63	63.37
2 MM	410.0	100.0	310.0	9.22	45.85	54.15
SOIL	1921.5	100.0	1821.5	54.15	100.00	0.00

% OF SAMPLE THAT IS COARSE FRAGMENTS : 45.85

% OF SAMPLE THAT IS SOIL : 54.15

PERC ENGINEERING CO., INC.

Telephone: (205) 384-5553
Facsimile: (205) 295-3114 - Main Building
(205) 295-3115 - Water Lab
Web Address: www.percengineering.com

COMPANY NAME: Warrior 282, LLC

DATE SAMPLED: 11/5/2010

MINE NAME: Warrior Mine

DATE ANALYZED: 12/30/2010

SOIL / OVERBURDEN: OB-4

ANALYZED BY: JRK

SAMPLE WEIGHT: 3943.5 (GRAMS)

LAB ID: 7265

TOPSOIL VARIANCE SIEVE ANALYSIS

SIEVE NUMBER	WT. SIEVE + SAMPLE (GRAMS)	WT. SIEVE (GRAMS)	WT. SAMPLE RETAINED (GRAMS)	PERCENT RETAINED	CUMULATIVE PERCENT RETAINED	PERCENT PASSING
1"	673.0	100.0	573.0	14.53	14.53	85.47
1/2"	614.8	100.0	514.8	13.05	27.58	72.42
1/4"	804.0	100.0	704.0	17.85	45.43	54.57
3/16"	343.8	100.0	243.8	6.18	51.61	48.39
2 MM	557.5	100.0	457.5	11.60	63.21	36.79
SOIL	1550.4	100.0	1450.4	36.79	100.00	0.00

% OF SAMPLE THAT IS COARSE FRAGMENTS : 63.21

% OF SAMPLE THAT IS SOIL : 36.79

APPENDIX 3

Report on Soil Test

Auburn University Soil Testing Laboratory

Auburn University, AL 36849-5411

Perc Engineering Corp Inc
P O Box 1712
Jasper, AL 35502

County:Jefferson
District:1
Test Date:01/04/11

				SOIL TEST RESULTS					RECOMMENDATIONS			
LAB No.	Sample Designation	Crop	Soil Group*	pH**	Phosphorus P***	Potassium K***	Magnesium Mg***	Calcium Ca***	LIME-STONE	N	P_2O_5	K_2O
					Pounds/Acre				Tons/Acre	Pounds/Acre		
06837	Warrior 282 LLC Warrior Mine No 1 PO 18464 7258 See Comment 1 See Comment 2	Revegetation	4	4.6	VL 5	M 172	H 842	L 147	2.0	60	90	40
06838	7259 See Comment 1 See Comment 2	Revegetation	4	4.4	VL 15	H 231	H 2100	L 118	2.0	60	80	0
06839	7260 See Comment 1 See Comment 2	Revegetation	4	4.9	VL 12	M 170	H 930	M 232	1.5	60	80	40
06840	7261 See Comment 1 See Comment 2	Revegetation	4	4.7	VL 4	M 144	H 134	M 256	1.5	60	90	40
06841	7262 See Comment 2	Revegetation	4	6.1	EH 453	VH 353	H 1669	H 6804	0.0	60	0	0
06842	7263 See Comment 2	Revegetation	4	6.7	M 65	H 288	H 2009	H 3176	0.0	60	40	0
06843	7264 See Comment 2	Revegetation	4	6.7	H 92	H 296	H 1445	H 4733	0.0	60	0	0
06844	7265 See Comment 2	Revegetation	4	5.8	M 72	H 315	H 2181	H 1611	0.0	60	40	0

Comment No.1: Soil acidity (low pH) can be corrected with either dolomitic or calcitic lime.

* 1. Sandy soil (CEC < 4.6 $cmol_c kg^{-1}$)
* 2. Loams and Light clays (CEC = 4.6-9.0 $cmol_c kg^{-1}$)
* 3. Clays and soils high in organic matter (CEC > 9.0 $cmol_c kg^{-1}$)
* 4. Clays of the Blackbelt (CEC > 9.0 $cmol_c kg^{-1}$)

** 7.4 or higher - Alkaline ---------- 6.6-7.3 - Neutral ---------- 6.5 or lower - Acid ---------- 5.5 or lower - Strong Acid

*** Extractable nutrients in pounds per acre

If soil group = 1, 2 or 3, Method of Analysis = Mehlich-1. If soil group = 4, Method of Analysis = Miss/Lancaster.

Approved by: Steven Hulsey

Print Date: March 25, 2011

Report on Soil Test

Auburn University Soil Testing Laboratory

Auburn University, AL 36849-5411

Perc Engineering Corp Inc

P O Box 1712

Jasper, AL 35502

County:Jefferson

District:1

Test Date:01/04/11

Comment No.2: For perennial winter grass pasture, apply N, P, and K as recommended by September 1. Repeat N application in February. If grass is to be cut for hay, in February apply up to 40 pounds N and 35 pounds K2O per ton of anticipated hay yield.

The number of samples processed in this report is: 8

For further information call your county agent: (205) 879-6964

* 1. Sandy soil (CEC ‹ 4.6 $cmol_c kg^{-1}$)

* 2. Loams and Light clays (CEC = 4.6-9.0 $cmol_c kg^{-1}$)

* 3. Clays and soils high in organic matter (CEC > 9.0 $cmol_c kg^{-1}$)

* 4. Clays of the Blackbelt (CEC > 9.0 $cmol_c kg^{-1}$)

** 7.4 or higher - Alkaline - - - - - - - - - - - - - - 6.6-7.3 - Neutral - - - - - - - - - - - - - 6.5 or lower - Acid - - - - - - - - - - - - -5.5 or lower - Strong Acid

*** Extractable nutrients in pounds per acre

If soil group = 1, 2 or 3, Method of Analysis = Mehlich-1. If soil group = 4, Method of Analysis = Miss/Lancaster.

Approved by:

Print Date: March 25, 2011

Mine Analysis Report
Auburn University
Soil Testing Lab

Perc Engineering Co.,Inc.
PO Box 1712
Jasper,Al. 35502

ALFA Agricultural Service & Research Building
961 S. Donahue Dr.
Auburn University, Auburn, AL 36849-5411
Phone (334)844-3958
Soillab@auburn.edu

Routine Mine Report

Mine Name and Location: Warrior 282 LLC. Warrior Mine #1 **Special Analysis #: 11.G0042-G0045** **PO #: 18464 7258**

						Particle Size				
		S	OM	NO_3-N	Neutralizing Potential	%	%	%		H_2O avail.
Lab I.D.	Sample I.D.	%	%	ppm	Tons $CaCO_3$/1000Tons material	Sand	Silt	Clay	Textural Class	cm/cm
6837	7258	0.0140	0.3	8.5	<1.0	57.50	12.50	30.00	Sandy Clay Loam	0.10
6838	7259	0.0201	0.5	1.5	<1.0	26.25	37.50	36.25	Clay Loam	0.15
6839	7260	0.0116	0.9	10.2	<1.0	47.50	27.50	25.00	Sandy Clay Loam	0.12
6840	7261	0.0116	0.5	1.1	<1.0	55.00	15.00	30.00	Sandy Clay Loam	0.10

3/25/2011

Mine Analysis Report
Auburn University
Soil Testing Lab

Perc Engineering Co.,Inc.
PO Box 1712
Jasper,Al. 35502

ALFA Agricultural Service & Research Building
961 S. Donahue Dr.
Auburn University, Auburn, AL 36849-5411
Phone (334)844-3958
Soillab@auburn.edu

Multiple Sulfur Mine Report

Mine Name and Location: Warrior 282 LLC. Warrior Mine #1 | Special Analysis #: 11.G0045-G0049 | PO #: 18464 7258

Soil Texture

		OM	NO_3-N	Neutralizing Potential		%	%	%		H_2O avail.
Lab I.D.	Sample I.D.	%	ppm	Tons $CaCO_3$/1000 Tons material	max pot.acid.	Sand	Silt	Clay	Textural Class	cm^3/cm^3
6841	7262	8.1	27.4	28.40	2.23	41.20	38.80	20.00	Loam	0.13
6842	7263	3.4	6.6	11.60	1.27	60.00	20.00	20.00	Sandy Clay Loam	0.10
6843	7264	5.4	7.5	28.40	1.70	45.00	32.50	22.50	Loam	0.130
6844	7265	4.9	11.9	6.56	2.50	62.50	17.50	20.00	Sandy Clay Loam	0.100

MULTIPLE SULFUR ANALYSES

		%	%	%	%	%					
Lab I.D.	Sample I.D.	1rst	2nd	3rd	4rth	Ave					
6841	7262	0.0732	0.0840	0.0638	0.0641	0.0713					
6842	7263	0.0399	0.0349	0.0480	0.0396	0.0406					
6843	7264	0.0640	0.0684	0.0408	0.0438	0.0542					
6844	7265	0.0698	0.0818	0.0802	0.0885	0.0801					

DATE: 3-25-11

APPENDIX 4

Determination of the "Total Available Water Capacity."

Note: Soil & Overburden percentages taken from Appendix 2

SOILS (AVE) :

SAMPLE ----------PERCENT OF SAMPLE----------				NUMBER
	1"	½"	1/4"	2mm
Soil 29-1	3.71	6.89	6.63	3.13
Soil 29-2	1.65	17.67	15.42	16.57
Soil 29-3	0.00	4.62	9.16	15.84
Soil 29-3	0.00	2.20	2.30	2.79
AVE:	1.34	7.85	8.38	9.58

1.34% x .0389 in./in. = .0005
7.85% x .0492 in./in. = .0039
8.38% x .0603 in./in. = .0051
9.58% x .1149 in./in. = .0110

< 2mm average from Appendix 2: 72.85

Average available water capacity of < 2mm from Appendix 3 = .1175

72.85% x .1175 in./in. = .0856

Ave. TAWC for soils = .1061 in./in.

APPENDIX 4 (Continued)

OVERBURDEN (AVE.):

SAMPLE NUMBER	PERCENT OF SAMPLE			
	1"	½"	1/4"	2mm
OB-1	13.13	14.53	12.11	12.93
OB-2	14.83	19.93	18.85	18.51
OB-3	5.40	14.11	12.81	13.53
OB-4	14.53	13.05	17.85	17.78
AVE:	11.97	15.41	15.41	15.69

11.97% x .0389 in./in. = .0047
15.41% x .0492 in./in. = .0076
15.41% x .0603 in./in. = .0093
15.69% x .1149 in./in. = .0180

< 2mm average from Appendix 2 = 41.52

Average available water capacity of < 2mm from Appendix 3 = .1150

41.52% x .1150 in./in. = .0477

Ave. TAWC for overburden = .0873 in./in.

*Available water capacity values (in./in.) were obtained from Table 1 "A Method of Comparing Soil Materials for Plant Available Water" which was supplied by the Regulatory Authority.

Exhibit 1: Picture of Overburden Sampling site showing texture of overburden.

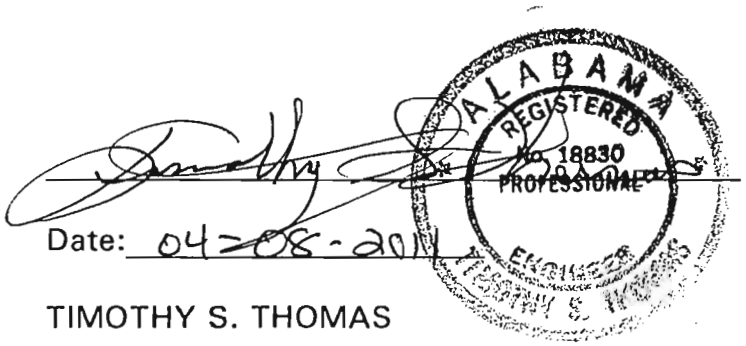
Exhibit 2: Another picture of Overburden Sampling site showing texture of overburden.

Exhibit 3: Picture of highwall at the existing site showing lithology of overburden.

Exhibit 4: Picture of native soil sampling site showing amount of coarse fragments and lack of 'A' Horizon.

CERTIFICATION STATEMENT:

The preceding geologic information submitted in the Topsoil Variance Application prepared for Warrior 282, LLC. at the Warrior Mine was by, or under the direction of a professional engineer and I hereby certify that it is true and correct to the best of my knowledge and belief.

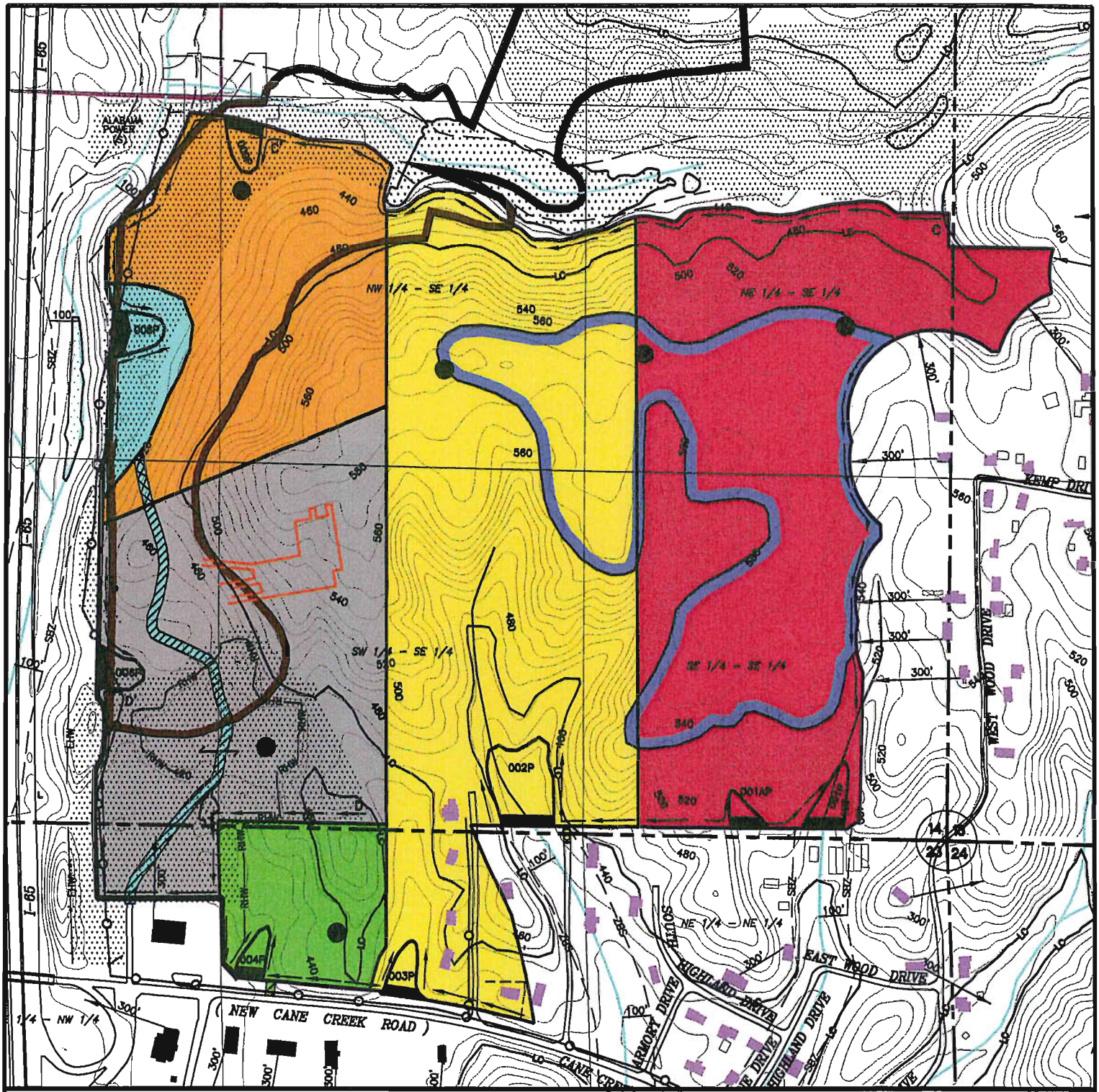


Date: 04-08-2011

TIMOTHY S. THOMAS

PROFESSIONAL ENGINEER

LICENSE NO. 18830



BOND LEGEND

- Topsoil to be saved at this site: 31 Acres.
- Topsoil to be saved in Inc. 1: 0 Acres.
- Topsoil to be saved in Inc. 2: 0 Acres.
- Topsoil to be saved in Inc. 3: 0 Acres.
- Topsoil to be saved in Inc. 4: 9 Acres.
- Topsoil to be saved in Inc. 5: 22 Acres.
- Topsoil to be saved in Inc. 6: 0 Acres.

Scale: 1" = 500'

N

PERC ENGINEERING CO., INC.

WARRIOR 282, LLC.
WARRIOR MINE NO. 1
P-3953
ADDENDUM TO ATTACHMENT IV-C-2
TOPSOIL REDISTRIBUTION MAP

DRAWN BY: C.M.O. DWG. NAME: W282WMTRM	DATE: 10-31-12
APPROVED BY: T.S.T.	SCALE: 1"=500'

V:\Steve Miles\Steve Docs\Mines\VR Cook\W282WMTRM.dwg 10/31/12 09:44

Warrior 282, LLC.
Warrior Mine
Attachment IV-B-1

OVERBURDEN RESTABILIZATION PLAN

All overburden shall be backfilled, compacted, and graded so that the post mining slope shall approximate the pre-mining slope (See Attachment IV-B-3) and in a timely manner (See Part IV-B-2). Overburden will be rough graded by Caterpillar type dozers. Once overburden has been rough graded, farm-type tractors will be used to disc the overburden to its final contour, decrease compaction, and increase the mechanical breakage of the surface layer. Rocks 24" in diameter that remain upon the surface, if any, will be collected and buried. At this time the following criteria will be used to evaluate the textural quality of the graded overburden:

a) Rocks of a size greater than 10" shall not exceed 10% by weight of the substitute material.

b) The substitute material shall not contain more than 15% by weight of materials between 10 and 3 inches in size.

c) The substitute material shall not contain more than 50% by weight of materials between 3 and .75 inches in size.

d) At least 30% by weight of the substitute material shall be of a size less than 2 millimeters.

If this criteria is not met, Warrior 282, LLC. shall redisc the overburden and resample. If increasing the mechanical breakage will not enhance the graded overburden to a satisfactory level, rocks will be collected from the surface and buried and/or additional soil sized material will be hauled and spread on site until the above criteria is achieved.

C.Revegetation

(1) Outline procedures for soil testing required to determine type and amount of soil amendments to be applied and to evaluate results of topsoil handling and replacement. (780.18, 816.25)

Once the texture criteria for final graded overburden has been met as outlined on Attachment IV-C-2, the final texture samples taken shall be sent to the Auburn University Soil Testing Laboratory where the following tests shall be conducted: % sand, silt, & clay, textural classification, pH, total sulfur, acid-base account, fertility ratings for phosphorus, potassium, and magnesium, and amendment recommendations for post mining revegetation for limestone, nitrogen, P_2O_5 and K_2O. Results of this analysis will be used to determine the amount of soil amendments, if any, to be applied to the plant medium and will be submitted to the Regulatory Authority for review.

Sampling frequency shall be 1 sample/20 acres. Overburden sampling for these areas shall be identical to the guidelines set forth in the "Sampling Technics" section of Attachment IV-C-2. .

(2) Are selected overburden materials to be used as a supplement or substitute for topsoil?
(XXX) Yes ( ) No

If, yes, provide results of analysis, trials, and tests required under Section 816.22(e). (779.21)

See Topsoil Variance Application (Attachment IV-C-2)