

ATTACHMENT II-E

GEOLOGY

The Warrior 282, LLC. - Warrior Mine No. 1 is located in Sections 13, 14, and 23 Township 14 South, Range 3 West, Jefferson County, Alabama, as seen from the Warrior, Alabama U.S.G.S. 7.5 minute Quadrangle. The proposed mine site will occupy approximately 167 acres of which approximately 156 acres is bonded as mining area (See Mine Site Location Map).

The proposed permit area is approximately 1.3 miles west of the Gun Mining Co, Inc. - Warrior Exploration Pit (ASMC Permit No. P-3581). ASMC Permit No. P-3103 (Hal Cook Enterprises, Inc - Warrior Pit) is located within and adjacent to the proposed permit area. One underground mine, Pilot Coal Inc. - Warrior Mine No. 1 (ASMC Permit No. P-3464), is within the permit boundary. See the Previous Mining Map for locations.

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 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.

Exploratory Drilling within the proposed permit area has shown a parting in the Jefferson Seam. This parting is not laterally consistent, but is seen in the lithologic description for W282MW-1. The Upper Bench of the Jefferson Seam at this location is 19.2 inches and is separated from the Lower Bench of the Jefferson Seam by 2.6 ft. of shale with sandstone streaks. The Lower Bench at this location is 7.2 inches thick and lies approximately 30.8 ft. above the Black Creek Seam.

No faults are known to occur within the proposed Warrior Mine site.

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.

Chemical analysis, including pH, total sulfur, and neutralization potential was conducted on overburden samples from W282DH-1 and W282DH-3 at PERC Engineering according to ASTM guidelines (See attached analysis).

Coal samples were sent to and analyzed by Auburn University Soil Testing Laboratory in Auburn, Alabama. The results of these analyses are shown in the attached documents.

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.

The location of CH2, CH3, C3, W282WMW1, W282MW2A, W282DH-1, and W282DH-3 were determined using Latitude and Longitude taken from the drillers' logs. The locations of W282WMW1 and W282MW2A were taken from a map originally prepared by McGehee Engineering Corp. The elevation of the above sites was

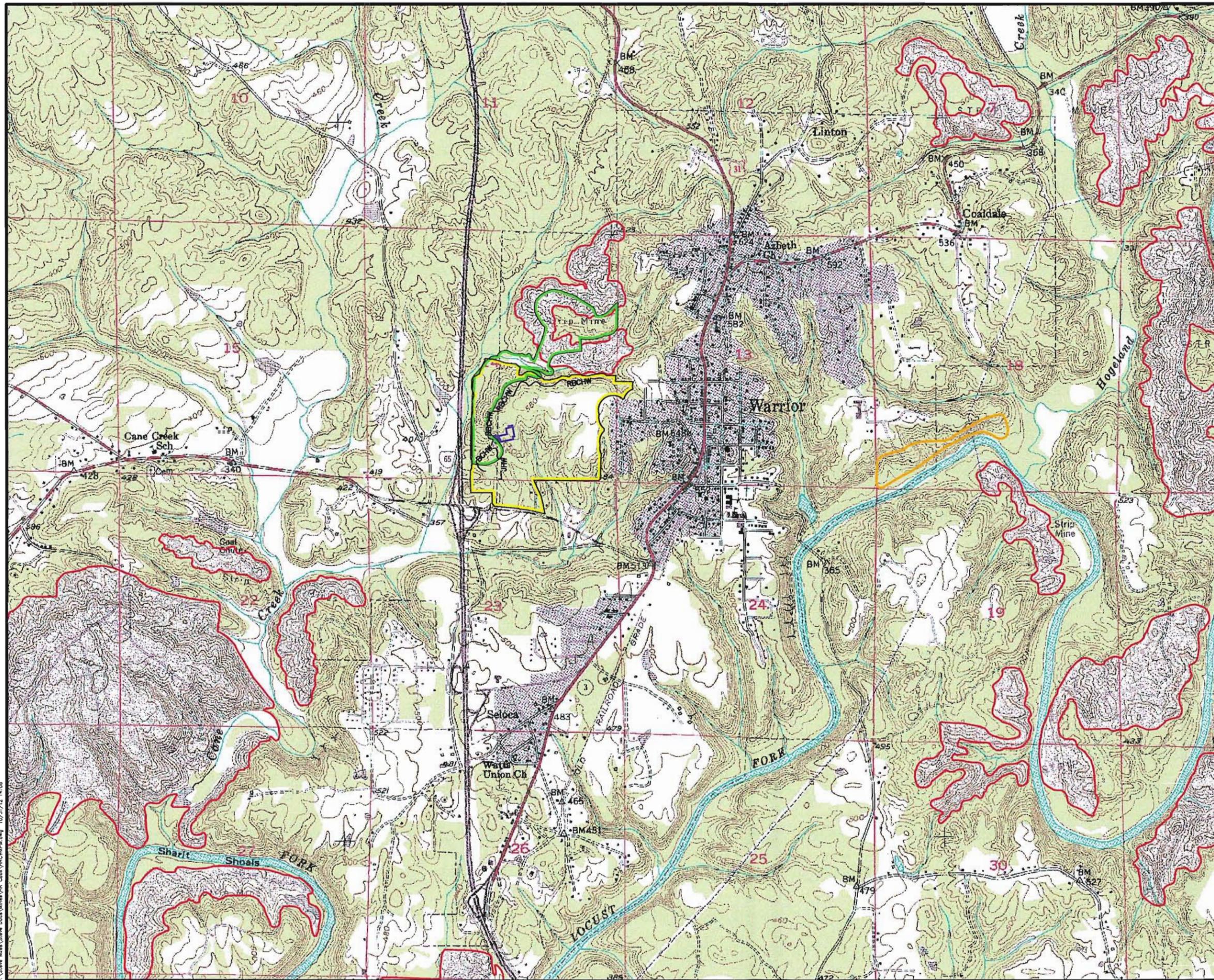
estimated from 2 ft. contours from the Jefferson County, Alabama GIS Department.

Coal seam elevations from sites CH2, CH3, C3, W282WMW1, W282MW2A, W282DH-1, and W282DH-3 were utilized to construct the attached Structure-Contour Map for the Black Creek Coal Seam. This map is utilized to determine the elevation and orientation of the lowest target coal seam within the coal recovery area.

The lithology of selected drill holes, local surface topography from the Jefferson County 2ft. contours, and coal structure taken from the attached Structure-Contour Map for the Black Creek Coal Seam was utilized to construct the attached fence diagrams A - A' and B -B'. The location of the fence diagrams are shown on the Mine Site Location Map.

The strike and dip of the strata within the proposed permit area is complex due to the presence of low, open folding, however in general, the strike direction ranges from approximately North 30° East to North 85° East with a dip that is toward the Southeast and ranges from approximately 0.95° to 1.4°.

Aquifers encountered which would be affected by mining are discussed in the Determination of the Probable Hydrologic Consequences.



LEGEND

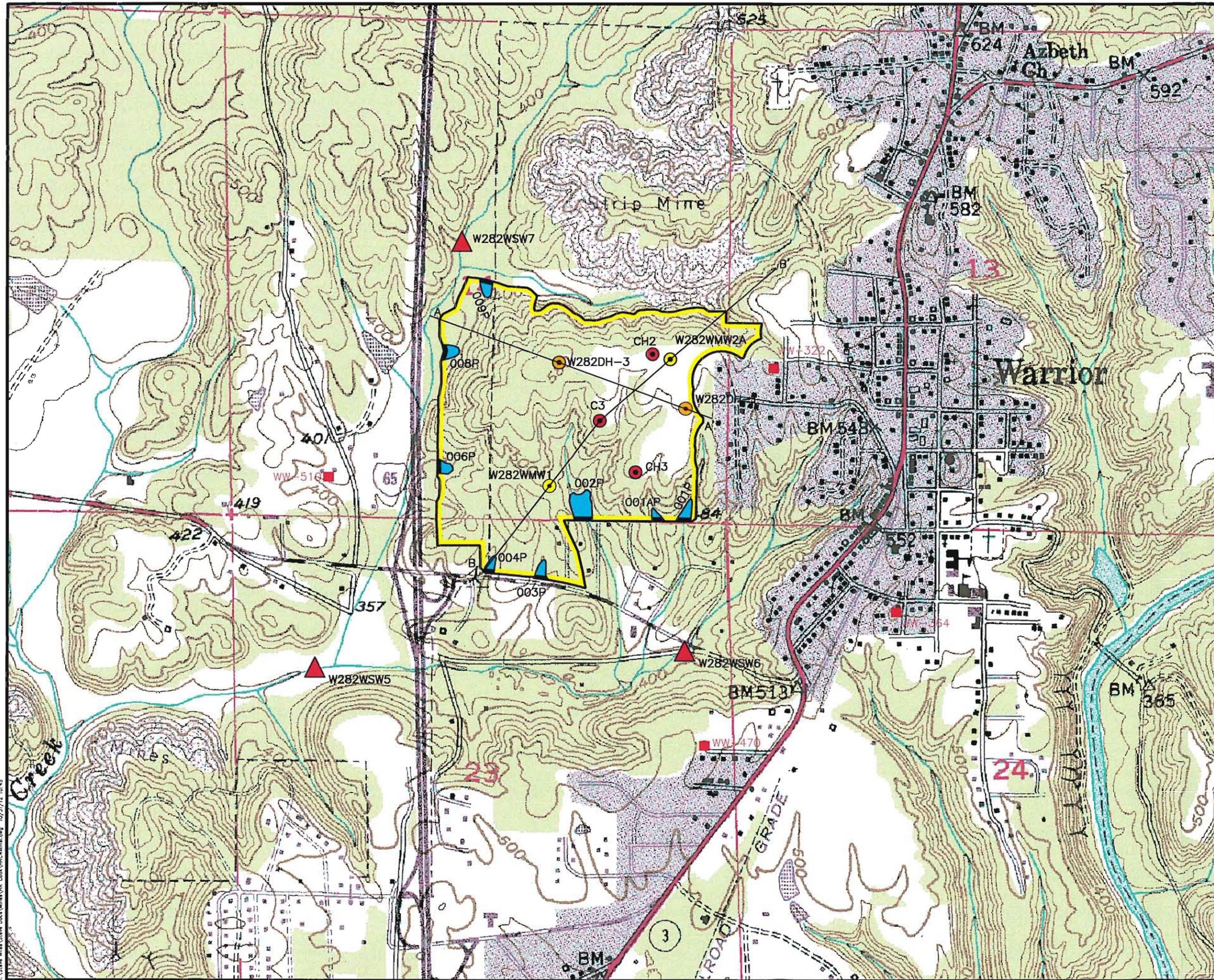
- Permit Boundary
- Gun Mining Co., Inc. –
Warrior Exploration Pit
(ASMC Permit No. P-3581)
- Pilot Coal Inc. – Warrior Mine No. 1
(Underground Mine)
(ASMC Permit No. P-3464)
- Hal Cook Enterprises, Inc. –
Warrior Pit
(ASMC Permit No. P-3103)
- Previous Mining
- BCHW— Black Creek Seam Highwall
- JHW— Jefferson Seam Highwall
- RBCHW— Reclaimed Black Creek Seam Highwall



**Warrior 282, LLC.
Warrior Mine
Previous Mining Map**

DRAWN BY: JNG	DATE: 11-29-10
DWG. NAME: HRCWMPM	
APPROVED BY: TST	SCALE: 1"=2000'

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- LEGEND**
-  Permit Boundary
 -  Fence Diagram
 -  001P Sediment Basin
 -  W282WMW1, W282WMW2A Groundwater Monitoring Site
 -  W282DH-1, W282DH-3 Geochemical Analysis Site
 -  CH2, CH3, C3 Exploratory Drill Site
 -  W282WSW5, W282WSW6, W282WSW7 Surface Water Monitoring Site
 -  WW-510 Well at Residence (510 only one used)



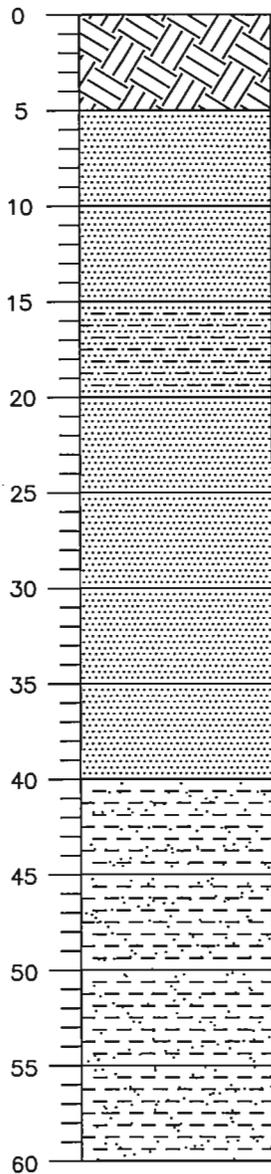
**Warrior 282 LLC
Warrior Mine
Mine Site Location Map**

DRAWN BY: JNG	DATE: 2-8-11
DWG. NAME: HRCWMMSL	
APPROVED BY: TST	SCALE: 1"=1000'

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INTERVAL:

DESCRIPTION:



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

MATCH LINE
SHEET 2 OF 3

SHEET 1 OF 3

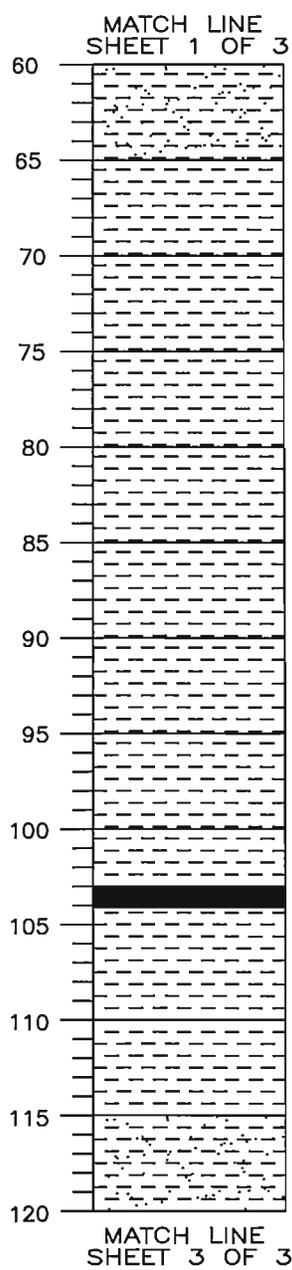
DRILL: Gardner-Denver GD1500

SURFACE ELEVATION: ±563.5 ft. MSL



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

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

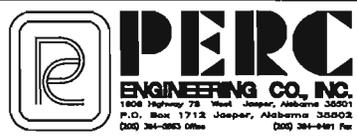


INTERVAL:

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

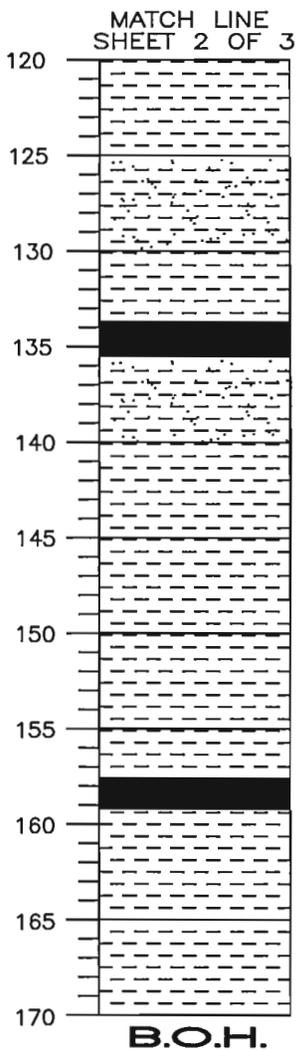
SHEET 2 OF 3
 DRILL: Gardner-Denver GD1500
 SURFACE ELEVATION: ±563.5 ft. MSL



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

DRAWN BY: JNG	DATE: 10-20-10
DWG. NAME: HRCWMLITH	
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

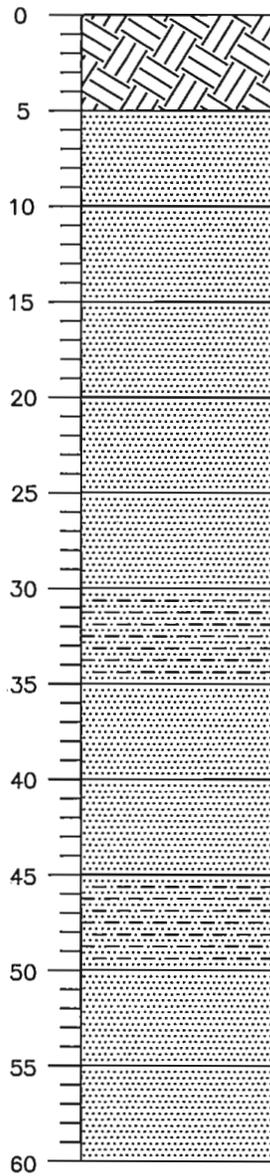


**Warrior 282, LLC.
Warrior Mine
Lithologic Description for
W282DH-1**

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

INTERVAL:

DESCRIPTION:



MATCH LINE
SHEET 2 OF 3

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

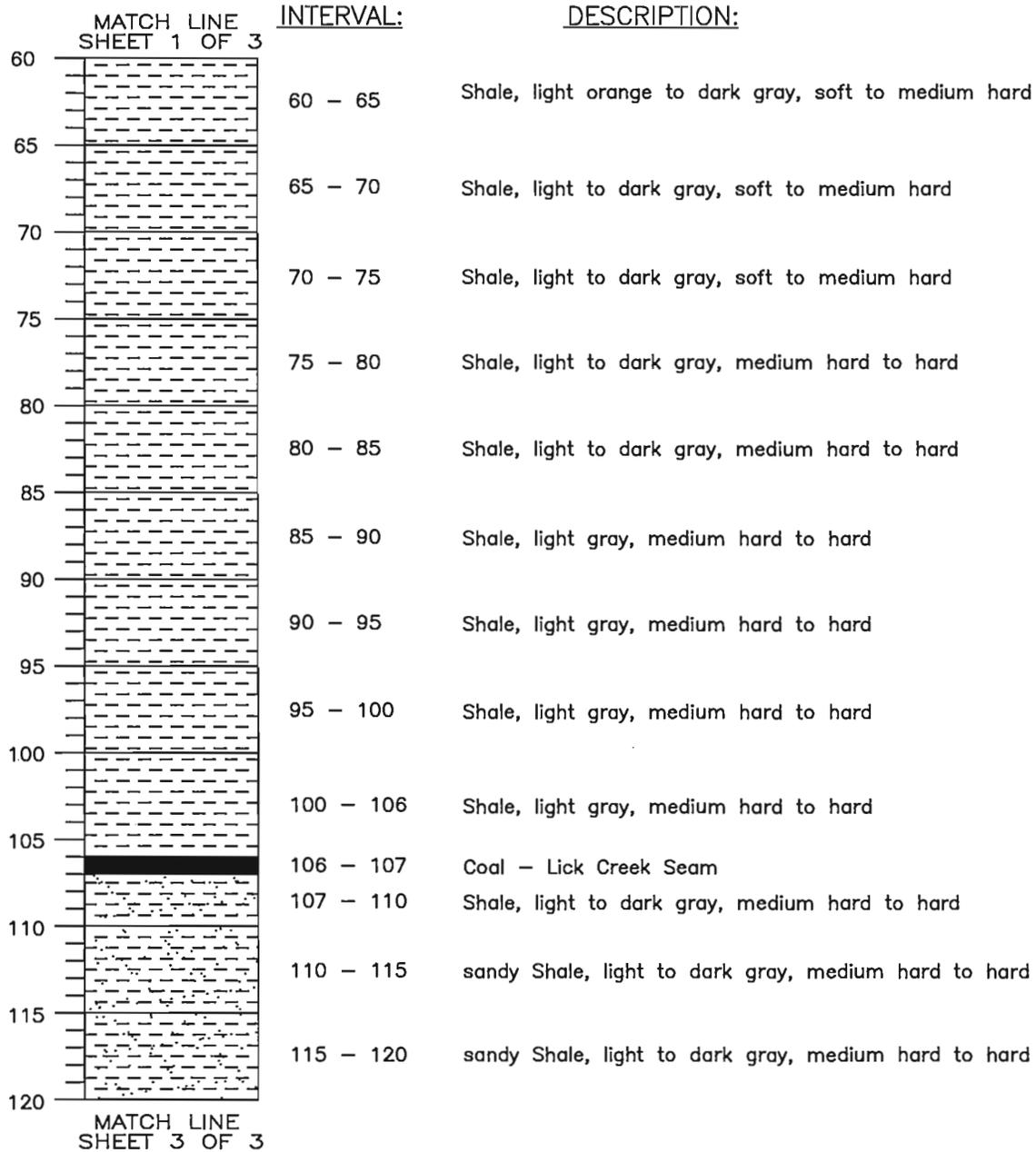
DRILL: Gardner-Denver GD1500

SURFACE ELEVATION: ±591.5 ft. MSL



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

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DWG. NAME: HRCWMLITH	
APPROVED BY: TST	SCALE: 1" = 10' vertical

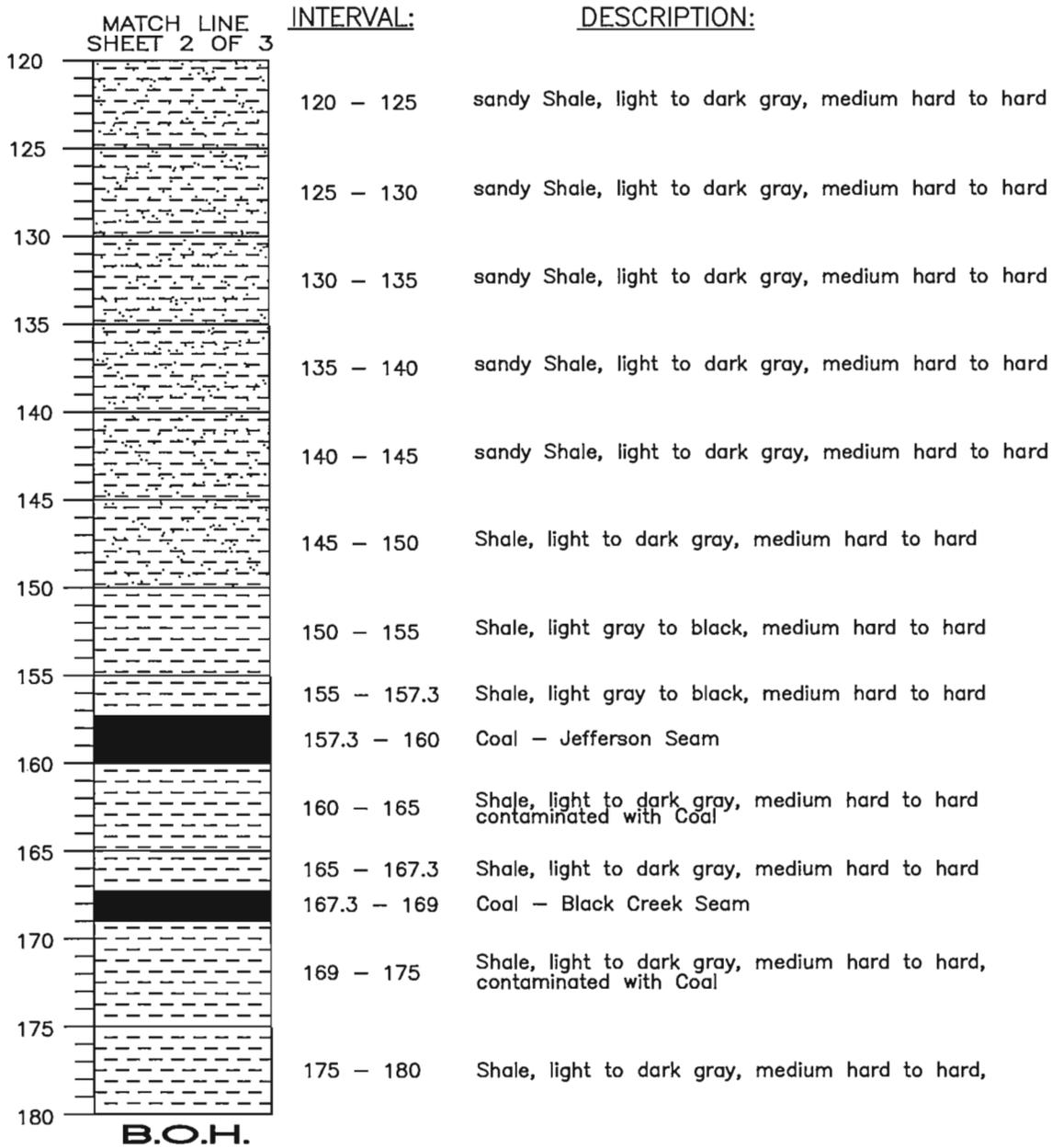


SHEET 2 OF 3
 DRILL: Gardner-Denver GD1500
 SURFACE ELEVATION: ±591.5 ft. MSL



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

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



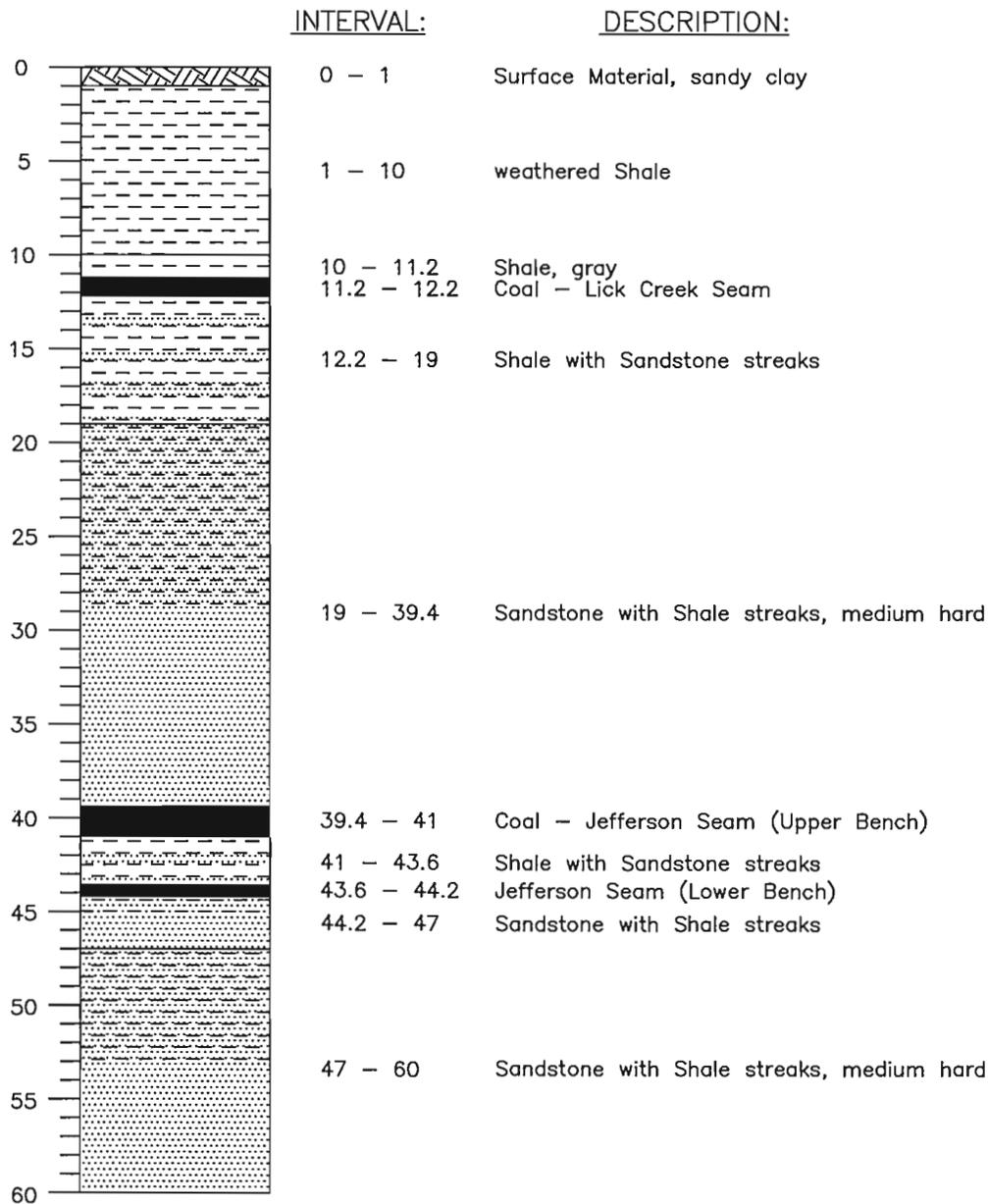
SHEET 3 OF 3
 DRILL: Gardner-Denver GD1500
 SURFACE ELEVATION: ±591.5 ft. MSL



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

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

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MATCH LINE
SHEET 2 OF 2

SHEET 1 OF 2

DRILL: Gardner-Denver GD1500

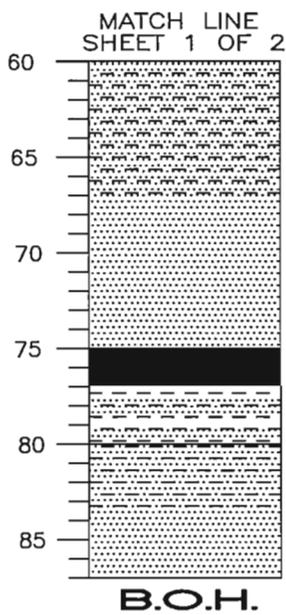
SURFACE ELEVATION: ±490.5 ft. MSL

Lithology taken from drillers' log



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

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



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

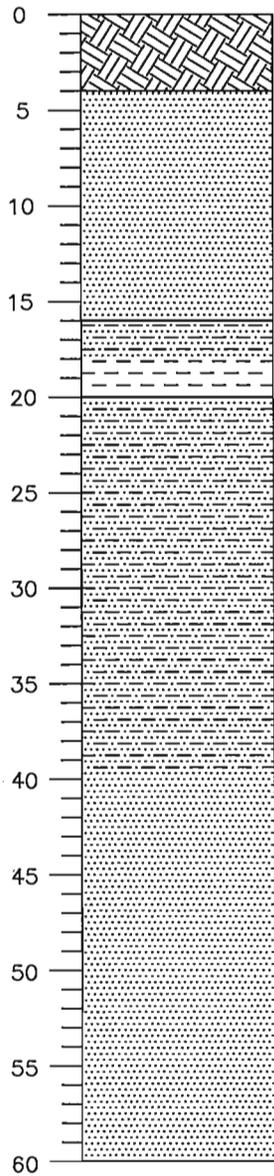


**Warrior 282, LLC.
Warrior Mine
Lithologic Description for
W282MW-1**

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

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

MATCH LINE
SHEET 2 OF 3

SHEET 1 OF 3

DRILL: Gardner-Denver GD1500
SURFACE ELEVATION: ±574.5 ft. MSL
Lithology taken from drillers' log



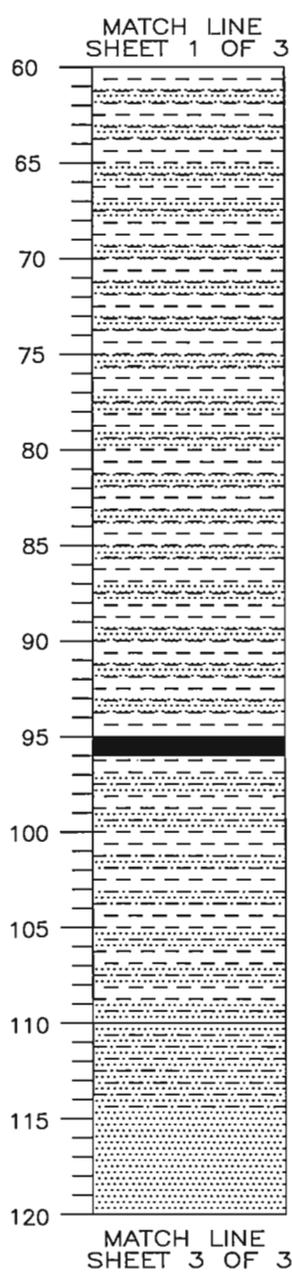
**Warrior 282, LLC.
Warrior Mine
Lithologic Description for
W282MW-2A**

DRAWN BY: JNG
DWG. NAME: HRCWMLITH

DATE: 11-2-10

APPROVED BY: TST

SCALE: 1" = 10' vertical



INTERVAL:

DESCRIPTION:

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

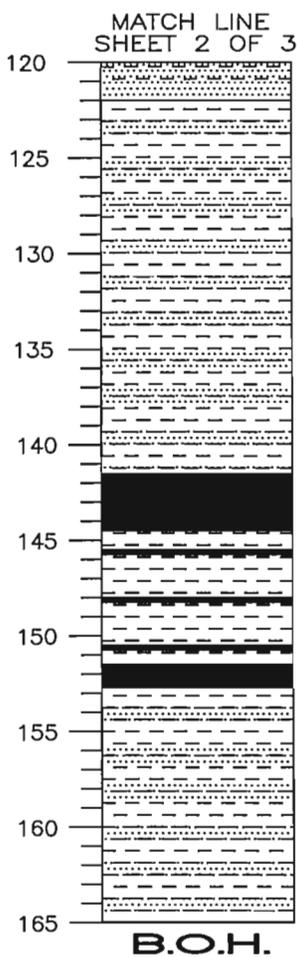
Lithology taken from drillers' log



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

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

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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.
1806 Highway 78 West Jasper, Alabama 35001
P.O. Box 1712 Jasper, Alabama 35002
(205) 284-2553 Office (205) 284-8481 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



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	***
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	***
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	***
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



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 ***
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 ***
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 ***
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

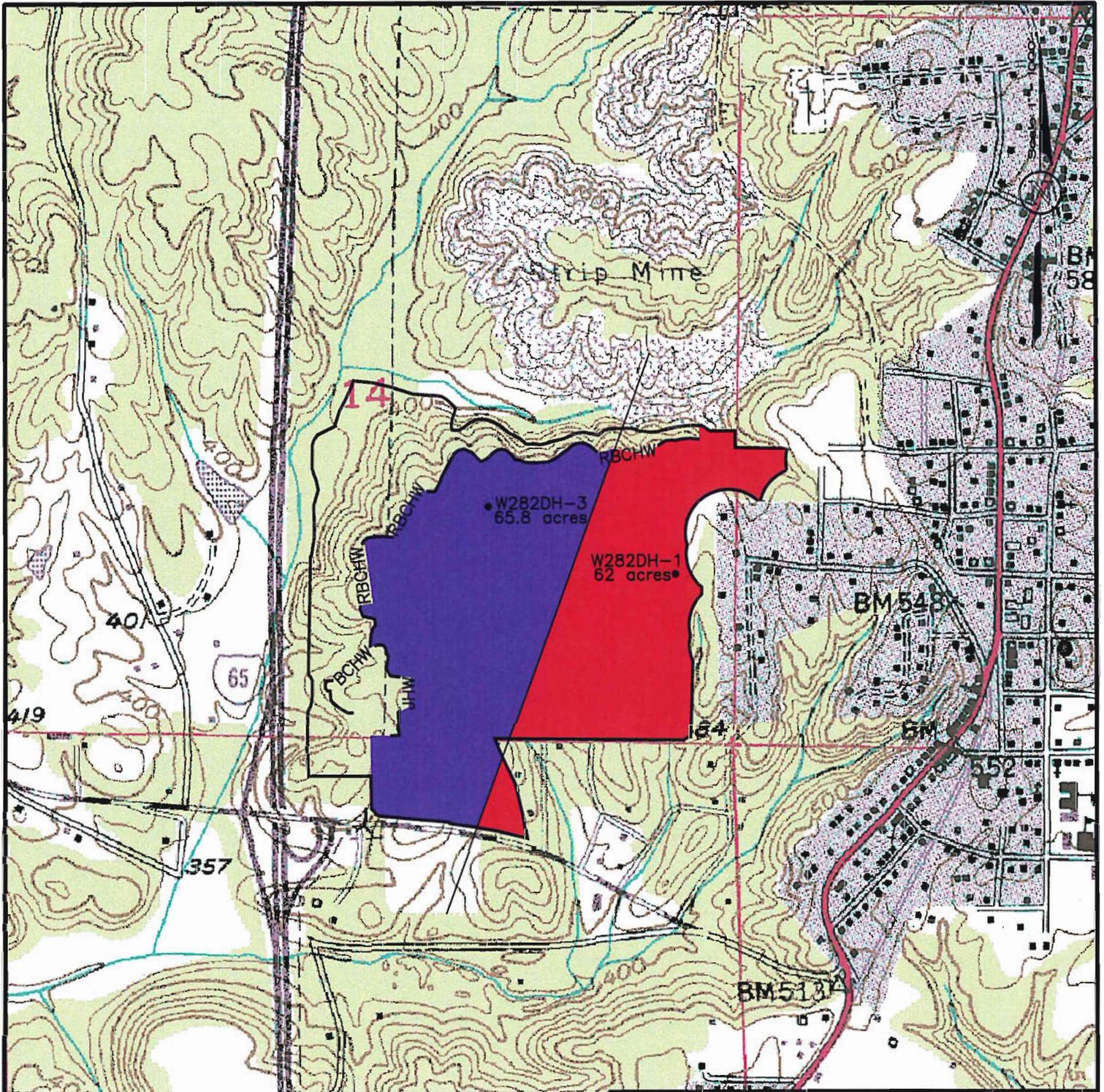
ANALYSIS : Mine Package

INCLUDES : Sulfur

Lab I.D.	Sample I.D.	S %
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	0.186

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



LEGEND

- Permit Boundary
- BCHW — Black Creek Seam Highwall
- RBCHW — Reclaimed Black Creek Seam Highwall
- JHW — Jefferson Seam Highwall

W282DH-1
W282DH-3 • Geochemical Analysis Site

- Area Covered by W282WDH-1
- Area Covered by W282WDH-3



**Warrior 282, LLC.
Warrior Mine
Theissen Polygon Map**

DRAWN BY: JNG	DATE: 11-29-10
DWG. NAME: HRCWTP	
APPROVED BY: TST	SCALE: 1"=1000'

OVERBURDEN ANALYSIS SPREADSHEET

OPERATOR: **Warrior 282, LLC**

PERMIT NO:

DRILL HOLE: **W282DH-1**

COUNTY:

TOWNSHIP:

CLAY	CL	3450	
SHALE	SH	3700	
SILTSTONE	ST	3750	ALK ADD(Ins/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):

THRESHOLD	SULFUR	NP	FIZZ
VALUES:	0	0.00	0

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:

CLAY CL 3450
 SHALE SH 3700
 SILTSTONE ST 3750
 SANDSTONE SS 3670
 LIMESTONE LS 3670
 COAL CO 1800
 CARBONOLITH CB 2580
 OTHER OT 3670

ALK ADD(Ins/ac CaCO3):
 COAL SEAMS:
 STATE PLANE ZONE:
 FEET (NORTH/SOUTH):
 FEET (EAST/WEST):
 SURFACE ELEV. (FT):

THRESHOLD SULFUR NP FIZZ
 VALUES: 0 0.00 0

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
 PERCENT SANDSTONE: 14%
 NP/MPA RATIO: 3.52
 TONS/ACRE REQUIRED (1:1): 3949 EXCESS

TOTAL (TONS): 103128.65
 TOTAL (TONS/THOUSAND): 5.1516

363003.96
 18.1334

259875.31
 12.98

20018574

CA 3

Walker Drilling

Log of Drilling

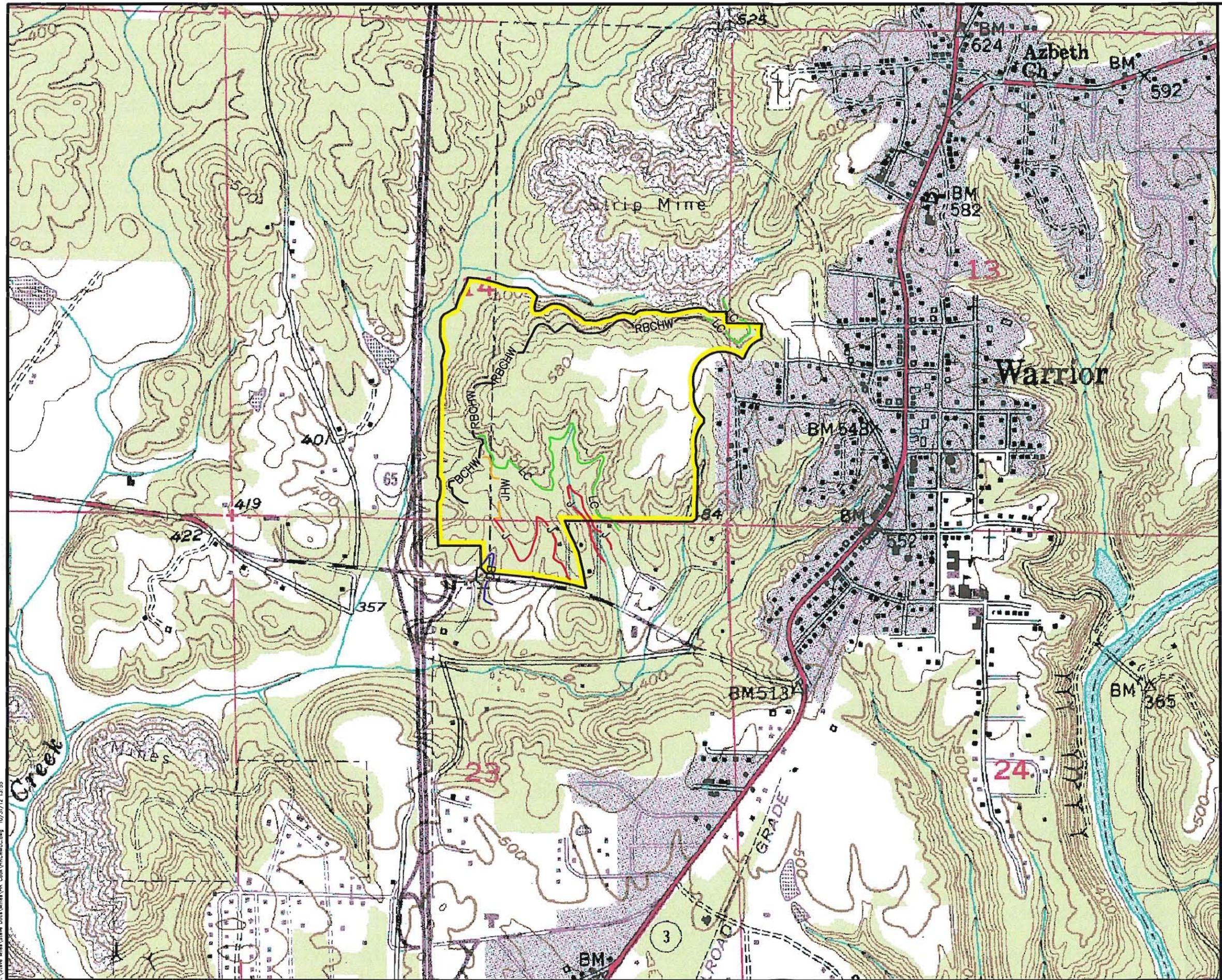
Driller: Dale Farley
Project No. # Jimmie Ryan
Client- 282 LLC
Hole No. # Hole #Core-3
GPS Cordinance N 33 48' 50.6" W 086 49' 02.9"
Date Started: 3/20/2008
Date Finished: 3/20/2008

Strata
 Thickness Depth

Classification Of Material		Strata	Thickness	Depth
Shale	S		1.50	95.00
Coal	LC		0.96	96.50
Shale	S		0.70	97.46
Coal/with Streaks	LC		0.23	98.16
Shale	S		1.20	98.39
				99.59
Shale	S		1.50	132.00
Coal	J		1.70	133.50
Shale	S		2.60	135.20
Coal	J		0.67	137.80
Shale	S		1.20	138.47
				139.67
Shale	S		2.80	153.00
Coal	BC		1.60	155.80
Fire Clay	Fire		2.10	157.40
Shale	S		0.50	159.50
				160.00
Total Depth				160.00

**Warrior 282, LLC.
Warrior Mine
Exploratory Drill Hole Information**

<u>Drill Hole</u>	<u>Surface Elevation</u>	<u>Depth to Bottom of Black Creek Seam</u>	<u>Elevation of Bottom of Black Creek Seam</u>
CH3	555.00	155.80	397.60
CH2	575.00	150.00	423.30
C3	557.50	145.70	411.80



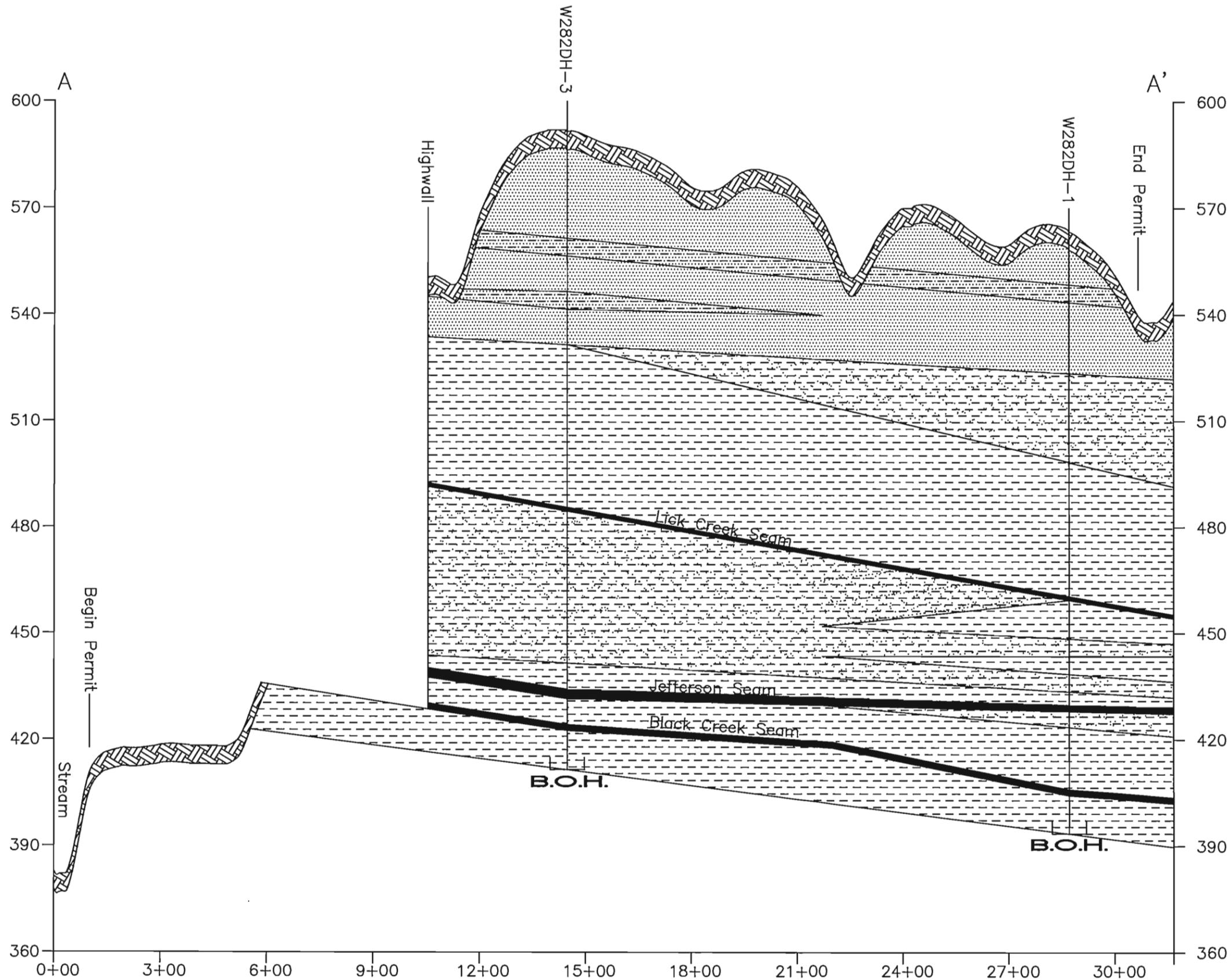
- LEGEND**
- Permit Boundary
 - LC Lick Creek Seam Outcrop
 - J Jefferson Seam Outcrop
 - BC Black Creek Seam Outcrop
 - BCHW Black Creek Seam Highwall
 - RBCHW Reclaimed Black Creek Seam Highwall
 - JHW Jefferson Seam Highwall



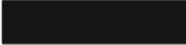
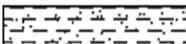
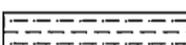
**Warrior 282 LLC
Warrior Mine
Coal Outcrop Map**

DRAWN BY: JNG	DATE: 11-29-10
DWG. NAME: HRCWMOC	
APPROVED BY: TST	SCALE: 1"=1000'

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LEGEND

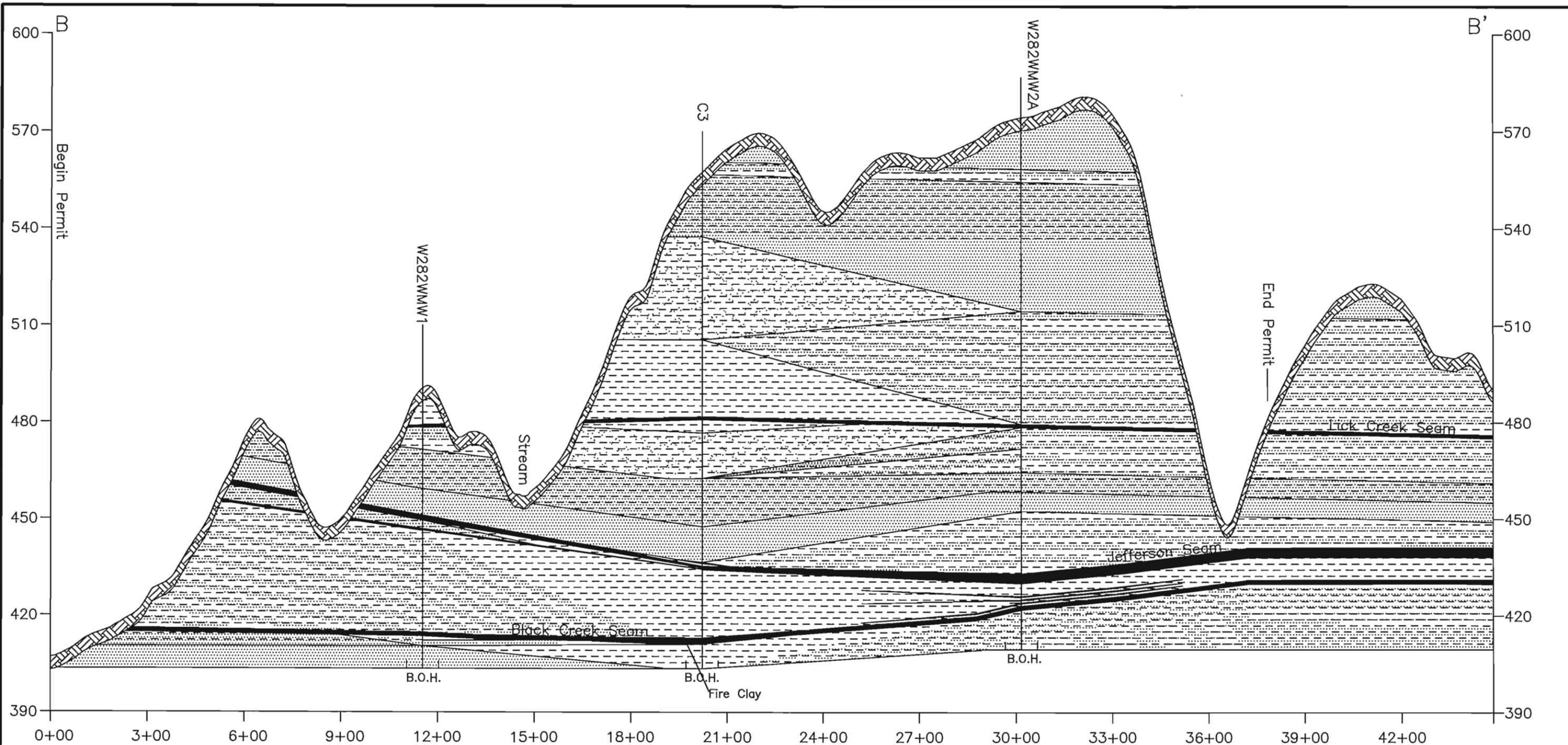
-  Coal
-  Shale
-  Sandy Shale
-  Sandstone
-  Sandstone with Shale
-  Surface Material
-  B.O.H.



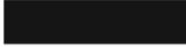
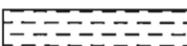
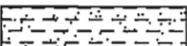
**Warrior 282, LLC.
Warrior Mine
Generalized Fence Diagram A - A'**

DRAWN BY: JNG	DATE: 11-3-10
DWG. NAME: HRCWmprofiles	
APPROVED BY: TST	SCALE: as noted

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LEGEND

- | | | | | | |
|---|-------------------------------------|--|-------------------------|---|-------------------------------------|
|  | Coal |  | Sandstone |  | Sandstone with Shale Streaks |
|  | Shale with Sandstone Streaks |  | Surface Material |  | Fireclay |
|  | Shale |  | Sandy Shale |  | Bottom of Hole |



Warrior 282, LLC.
Warrior Mine
Generalized Fence Diagram B - B'

DRAWN BY: JNG	DATE: 11-4-10
DWG. NAME: HRCWMprofile	
APPROVED BY: TST	SCALE: as noted

CERTIFICATION STATEMENT:

The preceding geologic section was prepared for Warrior 282, LLC. at the Warrior Mine site by me or under my supervision and I hereby certify that it is true and correct to the best of my knowledge or belief.

  _____

TIMOTHY S. THOMAS
PROFESSIONAL ENGINEER
LICENSE NO. 18830