August 15, 2011

Gary J. Heaton, P.E.
Alabama Surface Mining Commission
P. O. Box 2390
Jasper, AL 35502-2390

RE: **National Coal of Alabama, Inc.**
Poplar Springs North Mine, P-3886

Dear Mr. Heaton:

I hereby certify the enclosed detailed design plans for Sediment Basins 039 for the above referenced Mine are in accordance with the Regulations of the Alabama Surface Mining Commission as adopted by Act 81-435 of December 18, 1981 and as amended to date and that the information used in the enclosed basin design plans is true and correct to the best of my knowledge and belief.

If you have any questions or need additional information, please do not hesitate to contact our office.

Sincerely,

McGehee Engineering Corp.

Sanford M. Hendon, P.E.
Alabama Reg. No. 18208

SEDIMENT BASIN CONSTRUCTION SPECIFICATIONS

Sediment basins (temporary or permanent) will be designed and constructed using the following as minimum specifications:

1. EMBANKMENT REQUIREMENTS

A) The minimum width of the top of the embankment will under no circumstance be less than twelve (12) feet.

B) The embankment will have a minimum front and back slope no steeper than the slopes listed on the detailed design sheet.

C) The foundation area of the embankment will be cleared and grubbed of all organic matter with no surface slope steeper than 1 horizontal to 1 vertical. The entire wet area, as measured from the upstream toe of the embankment to the normal pool level, will be cleared of trees and large brush.

D) A core will be constructed in a cutoff trench along the centerline of the embankment. The cutoff trench will be of suitable depth and width to attain relatively impervious material.

E) The embankment construction material will be free of sod, roots, stumps, rocks, etc., which exceed six (6") inches in diameter. The embankment material will be placed in layers of twelve (12") inches or less and compacted to ninety five (95%) percent of the standard proctor density, as set forth in ASTM.

F) The embankment, foundation and abutments will be designed and constructed to be stable under normal construction and operating conditions, with a minimum static safety factor of 1.3 at normal pool level with steady seepage saturation conditions.

G) The actual constructed height of the embankment will be a minimum of five (5%) percent higher than the design height to allow for settling over the life of the embankment.

H) The design embankment height for temporary impoundments will be a minimum of one (1) foot above the maximum water level anticipated from a 10 Year - 24 Hour or a 25 Year - 6 Hour precipitation event (whichever is greater). The design embankment height for permanent impoundments will be a minimum of one (1) foot above the maximum water level anticipated from a 10 Year - 24 Hour or a 25 Year - 6 Hour precipitation event (whichever is greater).

I) For embankments constructed as point source discharges, the embankment will be constructed and abutments keyed into undisturbed, virgin, ground if at all possible. In the event that this can not be achieved, additional design and construction specifications will be submitted in the detailed design plans.

J) The embankment and all areas disturbed in the construction of the embankment will be seeded with a mixture of perennial and annual grasses, fertilized and mulched to prevent erosion and ensure restabilization. Hay dams, silt fences, rock check dams, etc. will be installed, where deemed necessary, as additional erosion prevention methods.

K) For basins that will be constructed in spoil material or other pervious previously mined areas, the interior or "wet" area of the basin will be lined with a minimum of one (1') foot of clay material with a permeability no greater than 1×10^{-6} cm/sec up to the emergency spillway elevation. The clay liner material will be placed in lifts no greater than six (6") inches and compacted to ninety-five (95) percent of the standard proctor density.

2. DISCHARGE STRUCTURE REQUIREMENTS

A) The primary spillway will be designed to adequately carry the anticipated peak runoff from a 10 Year - 24 Hour precipitation event. The combination primary and secondary (emergency) spillway system will be designed to safely carry the anticipated peak runoff from a 25 Year - 6 Hour precipitation event. When sediment basins are proposed in the drainage course of a public water supply, the spillway system will be designed and constructed to adequately carry the runoff from a 50 Year - 24 Hour precipitation event.

B) Channel linings, for secondary (emergency) spillways will be a trapezoidal open channel constructed in natural ground and planted with a mixture of both annual and perennial grasses being predominantly fescue and bermuda. In the event that the spillway can not be constructed in natural ground the spillway will be lined with riprap, concrete, asphalt or durable rock (See Detailed Design Plans for Spillway Lining).

C) When consisting of pipe, the primary spillway will be installed according to Class "C" pipe installation for embankment bedding.

D) Sediment basins with a single spillway system, such as a skimmer board, will be a trapezoidal open channel constructed in consolidated, nonerodible material and lined with rip-rap, concrete, asphalt or durable rock (See Detailed Design Plans for Spillway Lining).

E) The primary spillway will be designed and constructed with device to eliminate floating solids from leaving the impoundment. This device will consist of a turned down elbow when using pipe or a skimmer system when using an open channel spillway.

F) When necessary, to prevent erosion of the embankment or discharge area, a splash pad of rip-rap, durable rock, sacrete, etc. will be installed at the discharge end of the primary spillway.

G) The combined spillway systems, for sediment basins constructed in series, will be designed to adequately accommodate the entire drainage area.

3. INSPECTION, MAINTENANCE AND CERTIFICATION REQUIREMENTS

A) Inspections will be conducted regularly during construction of the sediment basin by a qualified registered professional engineer or other qualified person under the direction of a professional engineer. Upon completion of construction, the sediment basin will be certified, by a qualified registered professional engineer, to the Regulatory Authority as having been constructed in accordance with the approved detailed design plans.

B) Sediment basins will be inspected semi-monthly for erosion, instability, etc., with maintenance performed as necessary, until the removal of the structure or until a Phase III Bond Release is granted.

C) Sediment basins will be examined quarterly for structural weakness, instability, erosion, slope failure, or other hazardous conditions with maintenance performed as necessary.

D) Formal inspections will be made annually, by a qualified registered professional engineer or other qualified person under the direction of a professional engineer, including any reports or modifications, in accordance with 880-X- 10C- .20[1(j)] of the Alabama Surface Mining Regulations.

E) Retained sediment will be removed from each sediment basin when the accumulated sediment reaches the maximum allowable sediment volume as set forth in the detailed design plans.

4. BASIN REMOVAL REQUIREMENTS

A) Upon completion of mining, reclamation, restabilization and effluent standards being met, each sediment basin not proposed as a permanent water impoundment will be dewatered in a controlled manner by either pumping or siphoning. Upon successful dewatering, a determination will be made as to the retained sediment level in the basin. After determining the retained sediment level, a channel will be cut into the embankment down to the retained sediment level on the side of the embankment deemed most suitable to reach natural ground without encountering prohibiting rock. The embankment material removed from this newly constructed channel will be spread and compacted over the previous impoundment (wet area) area to prevent erosion and ensure restabilization. The newly constructed channel will be of adequate width (minimum 30 feet) and sloped to a grade (approximately 1% to 3%) which will cause all surface drainage to travel across this area in sheet flow, minimizing the possibility of erosion. Also, where necessary, hay dams will be installed in strategic locations across the width of the channel to retain sediment and slow the water velocity to a favorable rate. Upon removal of the embankment section, all disturbed areas will be graded in such a manner to ensure slope stability, successful restabilization and to minimize erosion. All disturbed areas will be seeded with a mixture of annual and perennial grasses, fertilized and mulched. No slope, existing or created in the removal of the sediment basin, will be left on a grade that will slip or slough.

5. PERMANENT WATER IMPOUNDMENT REQUIREMENTS

A) Prior to a request for a Phase II Bond Release, all sediment basins being left as permanent water impoundments will have supplemental data submitted to the Regulatory Authority concerning water quality, water quantity, size, depth, configuration, postmining land use, etc.

B) Final grading slopes of the entire permanent water impoundment area will not exceed a slope of 2 Horizontal to 1 Vertical to provide for safety and access for future water users.

NATIONAL COAL OF ALABAMA, INC.
POPLAR SPRINGS NORTH MINE, P-3886

DETAILED DESIGN PLANS
SEDIMENT BASIN 039

Watershed Map

Capacity Table

Plan View Drawing

Embankment Cross Section

Typical Clay Liner

NATIONAL COAL OF ALABAMA, INC.
POPLAR SPRINGS NORTH MINE, P-3886

SPILLWAY CHANNEL SPECIFICATIONS
SEDIMENT BASIN 039

The entire control section and tail ditch section of the emergency spillway will be cut into natural ground and lined with a grass mixture (predominantly bermuda and fescue grasses). The gradient of the control section of the emergency spillway will not exceed two (2%) percent. The gradient of the tail ditch section of the emergency spillway will not exceed ten (10%) percent.

The control section and tail ditch section of the emergency spillway will extend from the inner face of the embankment, past the center line of the embankment and be carried out beyond the downstream slope of the embankment. See attached plan view drawing and SEDCAD+ CHANNEL DESIGN.

The control section and tail ditch section of the emergency spillway will be a minimum of 1.72 feet as measured vertically, allowing 0.72 feet for the maximum anticipated flow and 1.0 foot of dry freeboard.

SEDCAD 4.0

National Coal of Alabama, Inc. Poplar Springs North Mine, P-3886, R-6 Sediment Basin 039 Spillway Control Section

Material: Grass mixture

Trapezoidal Channel

Bottom Width (ft)	Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Retardance Classes	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)	Limiting Velocity (fps)
10.00	2.0:1	2.0:1	2.0	D, B	1.00			5.0

	Stability Class D w/o Freeboard	Stability Class D w/ Freeboard	Capacity Class B w/o Freeboard	Capacity Class B w/ Freeboard
Design Discharge:	5.00 cfs		5.00 cfs	
Depth:	0.35 ft	1.35 ft	0.72 ft	1.72 ft
Top Width:	11.41 ft	15.41 ft	12.88 ft	16.88 ft
Velocity:	1.32 fps		0.61 fps	
X-Section Area:	3.78 sq ft		8.22 sq ft	
Hydraulic Radius:	0.326		0.622	
Froude Number:	0.41		0.13	
Roughness Coefficient:	0.0754		0.2521	

The minimum spillway depth shall be 1.72 feet for the entire length of the control section and tail section. The maximum spillway gradient will be 10 %.

NATIONAL COAL OF ALABAMA, INC.
POPLAR SPRINGS NORTH MINE, P-3886

HYDROLOGY AND SEDIMENTOLOGY PREDICTION
10 YEAR - 24 HOUR PRECIPITATION EVENT
SEDIMENT BASIN 039

NATIONAL COAL OF ALABAMA, INC.
POPLAR SPRINGS NORTH MINE, P-3886

HYDROLOGY AND SEDIMENTOLOGY PREDICTION
25 YEAR - 6 HOUR PRECIPITATION EVENT
SEDIMENT BASIN 039

NATIONAL COAL OF ALABAMA, INC.
POPLAR SPRINGS NORTH MINE, P-3886

STABILITY ANALYSIS

STABILITY ANALYSIS PROCEDURE

The computer program used to analyze the slope stability was the REAME Slope Stability Program as developed by Dr. Yang H. Huang, P.E. of the University of Kentucky.

The soil types of the foundation material beneath the proposed embankment structures of Sediment Basin 039 was sampled, analyzed and classified by personnel of McGehee Engineering Corp. The depths to the stiff base of Sediment Basin 039 (2.0) was measured by personnel of McGehee Engineering Corp.

The soil type to be used in the construction of the proposed embankment structure of Sediment Basin 039 was sampled, analyzed and classified by personnel of McGehee Engineering Corp. This sample of material was taken from adjacent ridge top material near the embankment centerline that is representative of the material to be used as dam material.

SOIL PROPERTIES

USAGE	TYPE	COHESION (psf)	INTERNAL ANGLE OF FRICTION	EFFECTIVE DENSITY (pcf)
039 FOUND.	SM	270.00	33.02	132.14
039 DAM	SM	270.00	33.02	132.14

ANALYSIS RESULTS

BASIN	STATIC SAFETY FACTOR
039	2.751

NATIONAL COAL OF ALABAMA, INC.
POPLAR SPRINGS NORTH MINE, P-3886

STABILITY ANALYSIS - COMPUTER OUTPUT
SEDIMENT BASIN 039 - STATIC

REAME
(Rotational Equilibrium Analysis of Multilayered Embankments)

National Coal of Alabama, Inc.
Poplar Springs North Mine, P-3886
Sediment Basin 039
Static Case

Number of cases to be analyzed 1

Case Number 1

Number of boundary lines= 4
Number of points on boundary lines are: 2 2 3 7

On boundary line no. 1 Point no. and coordinates are:
1 .000 4.000 2 500.000 .000

On boundary line no. 2 Point no. and coordinates are:
1 200.000 4.400 2 282.653 3.739

On boundary line no. 3 Point no. and coordinates are:
1 .000 6.000 2 200.000 4.400 3 224.000 14.000

On boundary line no. 4 Point no. and coordinates are:
1 .000 14.000 2 224.000 14.000 3 234.500 18.200 4 246.500 18.200 5 276.753 6.099
6 282.653 3.739 7 500.000 2.000

Line no. and slope of each segment are:
1 -.008
2 -.008
3 -.008 .400
4 .000 .400 .000 -.400 -.400 -.008

No. of radius control zones= 1 Plot or no plot= 1 No. of seepage cases= 1

Total no. of lines at bottom of radius control zones is: 1

For rad. cont. zone no. 1 Radius decrement= .000 No. of Circles= 5 Id no. for first circle=, 1
Line no.= 1 Begin pt. no.= 1 End pt. no.= 2

Soil no.	Cohesion	F. angle	Unit wt.
1	270.000	33.020	132.140
2	270.000	33.020	132.140
3	.000	.000	62.400

Seismic coefficient= .000 Min. depth of tallest slice= .000 Unit weight of water= 62.400

The factors of safety are determined by the SIMPLIFIED BISHOP method

NSPG= 1 NSRCH= 0 No. of slices= 10 No. of add. radii= 2

No. of points on water table for each case= 6

Under seepage condition 1point no. and coordinates of water table are:
1 .000 14.000 2 224.000 14.000 3 246.776 11.127 4 276.753 6.099 5 282.653 3.739

6 500.000 2.000

point1=(247.000, 39.000) point2=(247.000, 19.000) point3=(284.000, 19.000) NJ= 2 NI= 2
Automatic search will follow after grid with XINC= 10.000 and YINC= 10.000

At point (247.000, 39.000) under seepage 1,the radius and the corresponding factor of safety are:
36.975 9.306 33.741 9.442 30.507 9.759 27.274 10.529 24.040 14.484
Lowest factor of safety= 9.306 and occurs at radius = 36.975

At point (247.000, 29.000) under seepage 1,the radius and the corresponding factor of safety are:
26.975 8.655 23.742 8.545 20.510 8.710 17.277 9.476 14.044 13.223
25.898 8.618 24.820 8.560 22.665 8.573 21.587 8.631
Lowest factor of safety= 8.545 and occurs at radius = 23.742

At point (247.000, 19.000) under seepage 1,the radius and the corresponding factor of safety are:
16.975 9.030 13.766 9.487 10.557 10.384 7.347 12.051 4.138 14.863
Lowest factor of safety= 9.030 and occurs at radius = 16.975

At point (265.500, 39.000) under seepage 1,the radius and the corresponding factor of safety are:
37.123 2.980 34.972 3.176 32.821 3.513 30.670 4.117 28.520 5.748
Lowest factor of safety= 2.980 and occurs at radius = 37.123

At point (265.500, 29.000) under seepage 1,the radius and the corresponding factor of safety are:
27.123 2.960 25.115 3.148 23.107 3.524 21.100 4.303 19.092 6.245
Lowest factor of safety= 2.960 and occurs at radius = 27.123

At point (265.500, 19.000) under seepage 1,the radius and the corresponding factor of safety are:
17.123 3.411 15.259 3.689 13.394 4.153 11.529 5.015 9.664 7.112
Lowest factor of safety= 3.411 and occurs at radius = 17.123

At point (284.000, 39.000) under seepage 1,the radius and the corresponding factor of safety are:
37.271 4.456 36.465 4.931 35.658 5.685 34.852 6.648 34.046 11.923
Lowest factor of safety= 4.456 and occurs at radius = 37.271

At point (284.000, 29.000) under seepage 1,the radius and the corresponding factor of safety are:
27.271 5.320 26.608 5.949 25.944 6.988 25.281 7.632 24.618 13.912
Lowest factor of safety= 5.320 and occurs at radius = 27.271

At point (284.000, 19.000) under seepage 1,the radius and the corresponding factor of safety are:
17.271 7.058 16.751 7.963 16.231 9.515 15.710 12.581 15.190 17.089
Lowest factor of safety= 7.058 and occurs at radius = 17.271

For piezometric line No. 1

At point (265.500, 29.000) ,RADIUS 27.123
the minimum factor of safety is 2.960

At point (265.500, 29.000) under seepage 1,the radius and the corresponding factor of safety are:

27.123 2.960 25.115 3.148 23.107 3.524 21.100 4.303 19.092 6.245
Lowest factor of safety= 2.960 and occurs at radius = 27.123

At point (275.500, 29.000) under seepage 1,the radius and the corresponding factor of safety are:
27.203 3.057 25.922 3.293 24.641 3.891 23.360 5.079 22.079 8.432
Lowest factor of safety= 3.057 and occurs at radius = 27.203

At point (255.500, 29.000) under seepage 1,the radius and the corresponding factor of safety are:
27.043 4.115 24.309 4.232 21.574 4.490 18.839 4.888 16.105 5.803
Lowest factor of safety= 4.115 and occurs at radius = 27.043

At point (265.500, 39.000) under seepage 1,the radius and the corresponding factor of safety are:
37.123 2.980 34.972 3.176 32.821 3.513 30.670 4.117 28.520 5.748
Lowest factor of safety= 2.980 and occurs at radius = 37.123

At point (265.500, 19.000) under seepage 1,the radius and the corresponding factor of safety are:
17.123 3.411 15.259 3.689 13.394 4.153 11.529 5.015 9.664 7.112
Lowest factor of safety= 3.411 and occurs at radius = 17.123

At point (268.000, 29.000) under seepage 1,the radius and the corresponding factor of safety are:
27.143 2.857 25.317 3.095 23.491 3.548 21.665 4.429 19.839 6.614
Lowest factor of safety= 2.857 and occurs at radius = 27.143

At point (270.500, 29.000) under seepage 1,the radius and the corresponding factor of safety are:
27.163 2.842 25.519 3.113 23.874 3.614 22.230 4.589 20.585 7.076
Lowest factor of safety= 2.842 and occurs at radius = 27.163

At point (273.000, 29.000) under seepage 1,the radius and the corresponding factor of safety are:
27.183 2.890 25.720 3.181 24.258 3.721 22.795 4.801 21.332 7.665
Lowest factor of safety= 2.890 and occurs at radius = 27.183

At point (270.500, 31.500) under seepage 1,the radius and the corresponding factor of safety are:
29.663 2.791 27.983 3.047 26.303 3.539 24.622 4.501 22.942 6.923
Lowest factor of safety= 2.791 and occurs at radius = 29.663

At point (270.500, 34.000) under seepage 1,the radius and the corresponding factor of safety are:
32.163 2.757 30.447 3.000 28.731 3.475 27.015 4.422 25.299 6.784
Lowest factor of safety= 2.757 and occurs at radius = 32.163

At point (270.500, 36.500) under seepage 1,the radius and the corresponding factor of safety are:
34.663 2.751 32.911 2.971 31.159 3.417 29.408 4.349 27.656 6.655
Lowest factor of safety= 2.751 and occurs at radius = 34.663

At point (270.500, 39.000) under seepage 1,the radius and the corresponding factor of safety are:
37.163 2.758 35.375 2.969 33.588 3.385 31.800 4.282 30.013 6.536
Lowest factor of safety= 2.758 and occurs at radius = 37.163

At point (273.000, 36.500) under seepage 1,the radius and the corresponding factor of safety are:
34.683 2.772 33.113 3.010 31.543 3.525 29.973 4.557 28.403 7.178

Lowest factor of safety= 2.772 and occurs at radius = 34.683

At point (268.000, 36.500) under seepage 1,the radius and the corresponding factor of safety are:
34.643 2.831 32.710 3.025 30.776 3.395 28.843 4.172 26.909 6.236
Lowest factor of safety= 2.831 and occurs at radius = 34.643

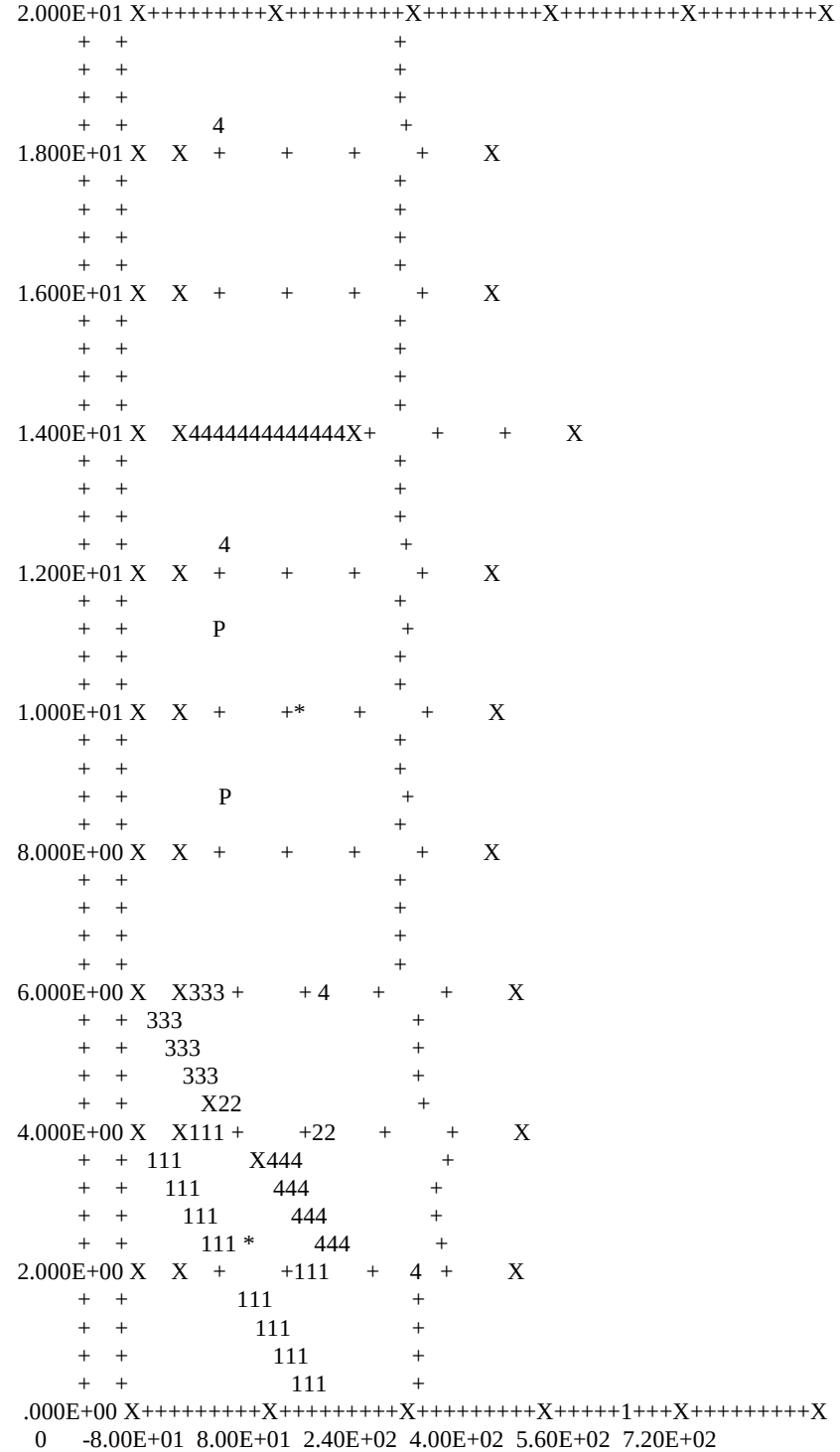
For piezometric line No. 1

At point (270.500, 36.500) ,RADIUS 34.663
the minimum factor of safety is 2.751

1

NATIONAL COAL OF ALABAMA, INC.
POPLAR SPRINGS NORTH MINE, P-3886

Cross section in distorted scale. Numerals indicate boundary line no.
If there area more than 10 bound. lines, alphabets will then be used. P indicates Piezometric line. If a portion of Piezometric line coincides with the ground or another boundary line, only the ground or boundary line will be shown. X indicates intersection of two boundary lines. * indicates failure surface.
The minimum factor of safety is 2.751



NATIONAL COAL OF ALABAMA, INC.
POPLAR SPRINGS NORTH MINE, P-3886

BASIN 039 FOUNDATION

SIEVE ANALYSIS

(ASTM C136-96a)

Company Name: National Coal of Alabama, Inc.
Location: Poplar Springs
Sample I.D.: Basin 039
Description: Foundation

Sample Date: 5/12/11
Analyzed By: 40685
Date Analyzed: 4/11/11
Requested By: S. Hendon

Weight of Oven Dry Sample (W): 1002.0 Grams

Sieve No.	Sieve + Sample Weight	Sieve Weight	Sample Weight Retained	Percent of Total Retained	Cumulative Weight Percent	Percent Retained	Percent Finer
1"	0.0	0.0	0.0	0.0	0.0	0.0	100.0
3/4"	0.0	0.0	0.0	0.0	0.0	0.0	100.0
1/2"	539.0	539.0	0.0	0.0	0.0	0.0	100.0
4	598.0	514.0	84.0	8.4	8.4	8.4	91.6
10	568.0	461.0	107.0	10.7	19.1	19.1	80.9
40	624.0	382.0	242.0	24.2	43.2	43.2	56.8
200	732.0	344.0	388.0	38.7	81.9	81.9	18.1
Pan	540.0	359.0	181.0	18.1	100.0	100.0	0.0
		Total Weight (W1):	1002.0				

SOIL CLASSIFICATION

Unified System (ASTM D-2487)

Liquid Limit: 21.3
Plastic Limit: 18.5
Plasticity Index: 2.8

Soil Classification: SM

Coarse Grained
Silty Sand

Effective Cohesion: 1.8750 psi
Total Cohesion: 6.528 psi
Permeability: 12.30 ft/yr
Maximum Dry Density: 115.0 pcf
Optimum Moisture: 14.9 %
Effective Cohesion: 270.0 psf
Angle of Internal Friction: 33.02 degrees
Mass Unit Weight: 132.14 pcf

NATIONAL COAL OF ALABAMA, INC.
POPLAR SPRINGS NORTH MINE, P-3886

BASIN 039 DAM MATERIAL

mcgehee engineering corp

SIEVE ANALYSIS

(ASTM C136-96a)

Company Name: National Coal of Alabama, Inc.
Location: Poplar Springs
Sample I.D.: Basin 039
Description: Dam Material

Sample Date: 5/12/11
Analyzed By: 40685
Date Analyzed: 4/11/11
Requested By: S. Hendon

Weight of Oven Dry Sample (W): 1003.0 Grams

Sieve No.	Sieve + Sample Weight	Sieve Weight	Sample Weight Retained	Percent of Total Retained	Cumulative Weight Percent	Percent Retained	Percent Finer
1"	0.0	0.0	0.0	0.0	0.0	0.0	100.0
3/4"	0.0	0.0	0.0	0.0	0.0	0.0	100.0
1/2"	589.0	539.0	50.0	5.0	5.0	5.0	95.0
4	748.0	514.0	234.0	23.3	28.3	28.3	71.7
10	680.0	461.0	219.0	21.8	50.1	50.1	49.9
40	636.0	382.0	254.0	25.3	75.5	75.5	24.5
200	456.8	344.0	112.8	11.2	86.7	86.7	13.3
Pan	492.2	359.0	133.2	13.3	100.0	100.0	0.0
		Total Weight (W1):	1003.0				

SOIL CLASSIFICATION

Unified System (ASTM D-2487)

Liquid Limit: 21.3
Plastic Limit: 17.8
Plasticity Index: 3.5

Soil Classification: SM

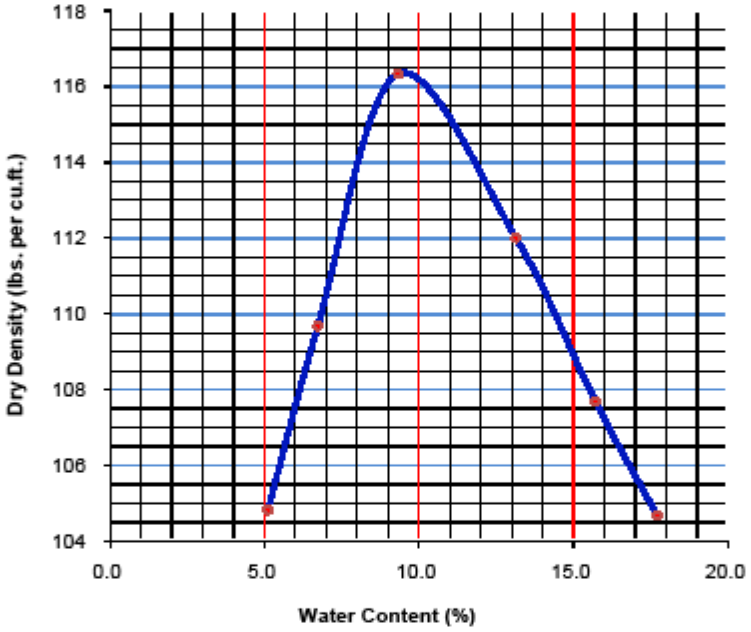
Coarse Grained
Silty Sand

Effective Cohesion: 1.8750 psi
Total Cohesion: 6.528 psi
Permeability: 12.30 ft/yr
Maximum Dry Density: 115.0 pcf
Optimum Moisture: 14.9 %
Effective Cohesion: 270.0 psf
Angle of Internal Friction: 33.02 degrees
Mass Unit Weight: 132.14 pcf

NATIONAL COAL OF ALABAMA, INC.
POPLAR SPRINGS NORTH MINE, P-3886

BASIN 039 PROCTOR

National Coal of Alabama, Inc.
Poplar Springs, Basin 039, Dam Material
Moisture Density Relationship
(Proctor Method)



ASTM D-698 Method C	Water Content %	Specific Gravity	%> No. 4	%< No. 200	LL %	PL %	PI %
			23.30	13.30	21.3	17.8	3.5

Sample Description, Classification and Location	Sample No.:	Basin 039 Dam Material
Coarse Grained Silty Clayey Sand	Optimum Moisture Content=	9.5
	Maximum Dry Density =	116.2