Howard

Engineering & Geology, Inc.

P.O Box 271 • 2550 W Hwy. 72, Suite 1• Harlan, Ky 40831 • Phone/Fax: (606) 573-6924 • Email: dcaudill@howardeng-geo.com

October 5, 2009

Mr. Robert Frazier, Supervisor
Department for Natural Resources
Division of Mining Permits
#2 Hudson Hollow Complex
Frankfort, KY 40601

Attn: Joe Lydon

RE: Appolo Fuels, Inc.
Permit No. 807-0368, Original

Dear Joe:

As a result of the meeting at DNR on 10/01/09 we are re-submitting the above referenced application with the changes to proposed Hollow Fill #1 as discussed in the meeting. All attachments, drawings, maps, etc. that were affected have been revised to reflect this change.

If you have any questions or require additional information please call our office at your earliest convenience.

Sincerely,

Danny Caudill
Howard Engineering and Geology, Inc.

Howard

Engineering & Geology, Inc.

P O Box 271 • 2550 W. Hwy. 72, Suite 1• Harlan, Ky 40831 • Phone/Fax (606) 573-6924 • Email dcaudill@howardeng-geo.com

September 25, 2009

Mr. Robert Frazier, Supervisor
Department for Natural Resources
Division of Mining Permits
#2 Hudson Hollow Complex
Frankfort, KY 40601

Attn: Joe Lydon

RE: Appolo Fuels, Inc.
Permit No. 807-0368, Original

Dear Joe:

In response to your third technical review letter dated September 8, 2009, we have made the following corrections to the above referenced application.

Please note: Upon review by the permittee and new enforcement policies by the Department of Reclamation and Enforcement the permittee has removed reference to RAM #124 from this permit application

1) General Notes: The applicant has addressed a CRV for Hollow Fill #1 in Attachment 12.2.A and Attachment 25.1.A.

2) Item 14.5 (Indiana bat survey report): A complete copy of the Indiana bas survey report has been submitted to the Critical Resources Review Section for review.

3) Item 26.3: I has been identified in the construction narrative (Attachment 26.3.A) the source of the durable material for the underdrain material. The attachment states "The material for the underdrains will be identified in the field by the job foreman using the available material for rock underdrain identified in the Geologic cross sections of this proposed permit application in Attachment 15.2."

Sincerely,

Danny Caudill
Howard Engineeing and Geology, Inc.

Howard

Engineering & Geology, Inc.

P.O. Box 271 • 2550 W Hwy 72, Suite 1• Harlan, Ky 40831 • Phone/Fax (606) 573-6924 • Email. dcaudill@howardeng-geo.com

September 1, 2009

Mr. Robert Frazier, Supervisor
Department for Natural Resources
Division of Mining Permits
#2 Hudson Hollow Complex
Frankfort, KY 40601

Attn: Joe Lydon

RE: Appolo Fuels, Inc.
Permit No. 807-0368, Original

Dear Joe:

In response to your third technical review letter dated August 19, 2009, we have made the following corrections to the above referenced application.

1) General Notes:

   a) All notary statements have been: (1) Signed by a notary; (2) Date the statement was signed and (3) Date the notary's commission expires and (4) State in which commissioned.

   b) A letter has been provided from Tennessee OSM.

2) Item 11.4:

   a) The dashed line with circles is the symbol for a power line as shown on the USGS quadrangle maps and noted in the legend. The circles are not individual support structures for the power line. The individual support structures have been shown and labeled on the MRP Map and the map in Attachment 11.4. Subsidence protection has been provided for the structures within the proposed auger/highwall mining boundary.

   b) No highwall shall come within 75 feet of a Kentucky Utilities Company distribution structure has been listed in the "others" category.

   c) No surface shall be removed within 25 feet of a Kentucky Utilities Company distribution anchor has been listed in the "others" category

3) Item 12.2:

   a) As per our phone conversation with the Department the two (2) acre sediment structure is now referenced as a "temporary sediment pond".

   b) As per our phone conversation with the Department the list of equipment provided is deemed acceptable.

   c) Highwall:

      (I) The applicant recognizes that the ***optimum*** open highwall length noted is in excess of the 4,500 feet being requested. This has been discussed under this attachment.

      (II) The applicant is only requesting 4500 feet in length.

(III) The mining of the four coal seams within the footprint of Hollow Fill #1 is deemed to be part of the hollow fill construction and is not included in the CRV variance requested.

4) Item 14.5:

a) Additional information requested will be submitted upon completion.

b) Additional information requested will be submitted upon completion.

c) Additional information requested will be submitted upon completion.

5) Item 25.1:

a) The applicant recognizes that the ***optimum*** open highwall length noted is in excess of the 4,500 feet being requested. This has been discussed under this attachment.

b) The applicant is only requesting 4500 feet in length.

c) The mining of the four coal seams within the footprint of Hollow Fill #1 is deemed to be part of the hollow fill construction and is not included in the CRV variance requested.

6)

a) The "8'" have been replaced with "16'" in the two (2) durable rock underdrain drawings as requested.

b) A drawing has been provided that depicts the highwall side drains (lateral rock drain).

7) As per the compliance reviewer's conversation with Tim Messer an additional stability analysis has been provided depicting the worst case with no mining within the footprint of the hollow fill.

8) The reply letter statement (Item 12 from TWW-2) has been added to attachment 26.3.A as requested.

If you have any questions or require additional information please call our office at your earliest convenience.

Sincerely,

Danny Caudill X. 124
Howard Engineering and Geology, Inc.

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR NATURAL RESOURCES

Steven L. Beshear
Governor

Division of Mine Permits
2 Hudson Hollow
Frankfort, Kentucky 40601
Phone (502) 564-2320
Fax (502) 564-6764
www.minepermits.ky.gov

Leonard K. Peters
Secretary

Carl E. Campbell
Commissioner

August 19, 2009

TIMOTHY C HOWARD
HOWARD ENGINEERING & GEOLOGY INC
PO BOX 271
HARLAN KY 40831

RE: Permit Application No. 807-0368
Original
APPOLO FUELS INC

Dear Mr. Howard:

The Division of Mine Permits has completed the third technical review of the referenced permit application. Effective the date of this letter, this application has been placed in the "Technically Withdrawn" (TWW) status. The following deficiencies have been identified from the review:

Note: This is the third time this application has been withdrawn for technical deficiencies. Prior to resubmitting the application the applicant and/or consultant must schedule a meeting with appropriate DMP personnel to discuss the deficiencies. DMP personnel will be in contact with you concerning scheduling of the meeting.

1. General Notes:

   a) In order for a notary statement to be deemed valid by the Division, the statement must include the following three components: (1) Notary signature; (2) Date the statement was signed; (3) Date the notary's commission expires.

   b) It would appear that this application is soon to undergo TAC proceedings. Therefore, it is advisable to provide the letter from the Tennessee OSM office as soon as possible.

2. Item 11.4:

   a) Subsidence protection should be shown for all power poles.

   b) The correspondence states that no highwall may come within seventy-five feet of KU Company's distribution structure.

c) The correspondence states that no surface may be removed within twenty-five feet of KU Company's distribution anchor.

3. Item 12.2:

a) After a discussion with senior staff members here at the Division, the proposed series of sumps is not permissible. The applicant is only allowed one sump per two-acre area past the last bona fide sediment structure.

b) If it is not possible to provide specific makes and models for the equipment, then the applicant must provide the minimum capabilities that each piece of equipment is able to provide to the mining and reclamation plan. For example, provide how many yards a bulldozer can push, how many yards a haul back truck can haul, and how many yards an excavator can remove in an hour or with each bucket.

c) Highwall

I. The applicant must clarify whether the highwall will be 4500 feet or 4800 feet in length.

II. If the highwall is to be 4800 feet in length, then the appropriate and applicable items must be addressed (i.e. Item 11.5 - Supplemental Insurance).

III. There needs to be more clarification on how the four coal seams within the footprint of Hollowfill #1 will be addressed in the CRV variance.

4. Item 14.5 – Critical Resources Review Section (Indiana bat survey report):

a) The survey report provided is incomplete, and therefore unacceptable at this time. The survey report needs to include a map showing the location of the proposed permit area, which clearly marks the mist-netting sites and acoustic sampling (Anabat) sites.

b) Photographs of the sampling sites need to be included.

c) Datasheets of the sampling at each site need to be included.

5. Item 25.1: Highwall

a) The applicant must clarify whether the highwall will be 4500 feet or 4800 feet in length.

b) If the highwall is to be 4800 feet in length, then the appropriate and applicable items must be addressed (i.e. Item 11.5 - Supplemental Insurance).

c) There needs to be more clarification on how the four coal seams within the footprint of Hollowfill #1 will be addressed in the CRV variance.

6. Attachment 26.3 – Engineering Compliance Review (Profile Drawing – Underdrain Box):

a) Replace "8'" with *16'* in the two (2) durable rock underdrain drawings cross-sections.

b) Enclose an additional drawing that depicts a highwall side-drain with filter (per TWW-2).

7. Attachment 26.3.A – Engineering Compliance Review (Building sequence of HF-1; from TWW 1-&-2): Show a series of schematics on how HF-1 and its underdrains shall be built.

8. Attachment 26.3.A – Engineering Compliance Review (Reply-Letter Item 12 from TWW-2): Add the reply-letter statement to attachment 26.3.A.

The deficiencies noted above must be corrected to comply with applicable State surface coal mining permitting laws and regulations [KRS 350 and 405 KAR].

To ensure timely processing of your application, the Division respectfully requests that the deficiencies be corrected and the application returned to this agency within 60 days of the date of this letter. Failure to do so could result in additional enforcement action by the Division of Mine Reclamation and Enforcement.

Please be advised that mining operations seeking new or modified coverage under the Coal KPDES General Permit must submit a Notice of Intent (NOI-CM) to the Division of Water. Please file the NOI-CM with the Division of Water as soon as possible in order to avoid potential delays in the processing and issuance of your SMCRA/DNR permit.

Please disregard if you have filed the NOI.

NOTE: If this application is in an electronic format, an entirely new MPA file must be resubmitted. If in paper format, the Regional Office and this office must be updated with the corrections upon resubmittal. [Refer to 405 KAR 8:010 Section 12(1)(c)]

If you have questions concerning this matter, please contact me at (502) 564-2320.

Sincerely,

Robert Frazier, Supervisor
Division of Mine Permits

RF/JL/sre
Enclosure: Original application less compliance demonstrations and property ownership documents
c: File No. 807-0368 (e)
Middlesboro Regional Office (e)
Joe Lydon (e)
GARY ASHER
APPOLO FUELS INC
PO BOX 1727
MIDDLESBORO KY 40965

Howard

Engineering & Geology, Inc.

P O Box 271 • 2550 W. Hwy. 72, Suite 1• Harlan, Ky 40831 • Phone/Fax: (606) 573-6924 • Email: dcaudill@howardeng-geo.com

August 14, 2009

Mr. Robert Frazier, Supervisor
Department for Natural Resources
Division of Mining Permits
#2 Hudson Hollow Complex
Frankfort, KY 40601

Attn: Joe Lydon

RE: Appolo Fuels, Inc.
Permit No. 807-0368, Original

Dear Joe:

In response to your second technical review letter dated July 23, 2009, we have made the following corrections to the above referenced application.

Note: The additional request from the compliance reviewer that the material available for underdrain construction has been shown on the geologic cross-section in Item 15. Also Attachment 26.3 has been revised as requested.

1) General Notes:

   a) A letter will be provided before TAC from Tennessee Office of Surface Mining stating that they agree with the mining plan proposed by this application, i.e. transportation of spoil from the OSM permit to Hollow Fill #1, etc.

   b) The lease agreement was provided for the Division.

2) Item 11.4:

   a) The letter from Kentucky Utilities has been provided.

   b) A 300' controlled blasting area has been shown for the power company transmission line within the proposed surface permit boundary. There is no support poles located within the proposed surface permit boundary.

   c) The 50% recovery zone has been shown on the variance/waiver map.

3) Item 11.5:

   a) The agreed upon distance from the power line support structure and the controlled blasting area has been listed in the "others" category.

   b) Road C has been listed as a permanent road with a grade variance and culvert spacing waiver.

4) Item 12.2:

   a) The language regarding windrowed material not impounding water has been added to attachment 12.2.a.

b) The highwall miner cutting width and web width have been revised in the narrative to be consistent with item 35.

c) The applicant recognizes that the ***optimum*** open highwall length noted is in excess of the 4,500 feet being requested. This has been discussed under this attachment.

d) The specific number of production units (spreads) has been noted under this attachment.

(I) The discussion of safety berms has been added to the attachment

(II) The total time highwall elimination is 180 days. This has been referenced in the attachment.

(III) Types of equipment have been listed in the attachment. The permittee cannot provide ***specific*** equipment due to the volatility of the heavy equipment market and the limited availability of certain makes and types of heavy equipment.

(IV) The specific number of production units (spreads) has been noted under this attachment.

(V) The discussion of coal mixing has been addressed under this item.

5) Item 14.5: The report for the Indiana bat mist netting survey has been provided.

6) Item 15: Geologic information from Tennessee was reviewed by David W. Howard, P.G. (KY-0050 and TN0365). Hole number BAC-3 is the only geologic data point that is within ½ mile of the state line and HF-1. A review of lithology from this corehole indicates that the geologic strata overlying the Hignite coal bed in Tennessee is very consistent with the strata in Kentucky. The lithology of BAC-3 is very similar to HW-1 and HW-4. Since a correlation of overlying strata can be made, geochemical characteristics of the strata overlying the Hignite coal bed in Tennessee can be inferred to be of similar characteristics as the strata overlying the Hignite coal bed in Kentucky. Also, the application indicates that any acidic or toxic strata encountered will be handled in accordance with Attachment 29.2.A

7) Item 15.1: The correct coal seam elevations from the legend of the MRP map has been listed in this item.

8) Item 24.2: This item has been answered "no" as requested.

9) Item 24.8: The last paragraph has been revised as requested to remove the statement "except when the flyrock poses an immediate danger to public safety." It is the applicant's opinion that removal of this statement poses a greater risk to public safety in the event that a flyrock incident occurs.

10) Item 25.1:

a) The highwall miner cutting width and web width have been revised in the narrative to be consistent with item 35.

b) The applicant recognizes that the ***optimum*** open highwall length noted is in excess of the 4,500 feet being requested. This has been discussed under this attachment.

11) Item 25 – Engineering Compliance Review (Additional Cross-Sections): Additional cross-sections "U" thru "Y" have been provided in Attachment 25.1.A.

12) Attachment 26.3.A – Engineering Compliance Review (Material properties of HF-1): Geologic information from Tennessee was reviewed by David W. Howard, P.G. (KY-0050 and TN0365). Hole number BAC-3 is the only geologic data point that is within ½ mile of the state line and HF-1. A review of lithology from this corehole indicates that the geologic strata overlying the Hignite coal bed in Tennessee is very consistent with the strata in Kentucky. The lithology of BAC-3 is very similar to HW-1 and HW-4. Since a correlation of overlying strata can be made, geochemical and geotechnical characteristics of the strata overlying the Hignite coal bed in Tennessee can be inferred to be of similar characteristics as the strata overlying the Hignite coal bed in Kentucky. Also, the application indicates that any acidic or toxic strata encountered will be handled in accordance with Attachment 29.2.A

13) Attachment 26.3.A – Engineering Compliance Review (Building sequence of HF-1; from TWW-1): The construction of hollow fill #1 is provided in the plan view and cross-section drawings.

14) Attachment 26.3.A – Engineering Compliance Review (HF-1 underdrain along the base of the Buckeye Springs seam.): A lateral drain has been provided along the base of the Buckeye Springs seam as requested.

15) Item 35.1: The sizes of the highwall miner cuts and webs, distance into the seam from the highwall and centerlines have been provided in the "Mining Plan in Subsidence Protection Zones" drawing.

If you have any questions or require additional information please call our office at your earliest convenience.

Sincerely,

Danny Caudill
Howard Engineeing and Geology, Inc.

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR NATURAL RESOURCES

Steven L. Beshear
Governor

Division of Mine Permits
2 Hudson Hollow
Frankfort Kentucky 40601
Phone (502) 564-2320
Fax (502) 564-6764
www.minepermits.ky.gov

Leonard K. Peters
Secretary

Carl E. Campbell
Commissioner

July 28, 2009

TIMOTHY C HOWARD
HOWARD ENGINEERING & GEOLOGY INC
PO BOX 271
HARLAN KY 40831

RE: Permit Application No. 807-0368
Original
APPOLO FUELS INC

Dear Mr. Caudill:

The Division of Mine Permits has completed the second technical review of the referenced permit application. Effective the date of this letter, this application has been placed in the "Technically Withdrawn" (TWW) status. The following deficiencies have been identified from the review:

1. General Notes:

   a) The necessary information needed for the Tennessee Permit that is associated with this application must be received before this application can begin TAC proceedings.

   b) The Division is retaining the lease agreement that has been submitted under separate cover.

2. Item 11.4:

   a) Please include a letter from the owner of the power line that would disclose the buffer zone agreed upon between the applicant and the owner of the power line.

   b) Please delineate a buffer zone on the variance/waiver map and all other applicable maps for the portion of power line that is located within the surface mining area of Pond 10.

   c) Please show the 50% recovery zone on the variance/waiver map.

3. Item 11.5:

a) Please list the agreed upon distance from the power line in the "Others" category of this item.

b) Material in Item 33 would suggest that Road C is to remain as permanent. Please clarify.

4. Item 12.2:

a) Please include language that would state that the windrowed material will not be allowed to impound water.

b) The highwall miner description ratio appears to exceed the fifty percent extraction ratio that is addressed in Item 35. Please clarify.

c) The total requested open highwall (4,500 feet) does not appear to equal the mentioned highwall miner working area (3,300 feet) plus the active surface mining pit (1,500) feet. Please address.

d) The following comments were asked in the last technical review letter, and they didn't appear to be addressed in the latest submission. Please address the following:

I. If previously mined benches do not have a natural safety berm, a safety berm must be constructed prior to mining. Please include language that would describe the construction of the berm in paragraph two of page four of the narrative.

II. Distances for type of mining have been discussed. Please include timelines and/or timeframes.

III. Specific descriptions of the makes and models of the equipment to be used.

IV. The number of spreads of equipment.

V. Whether or not coal will be blended.

5. Item 14.5 – Critical Resources Review Section (Fish and Wildlife Resource)s: Our records show that we have not received a copy of the report for the Indiana bat mist netting survey completed for this application. Please submit a copy for review and approval to CRRS to receive TAC clearance of this application.

6. Item 15 (More than half of HF-1 is from Tennessee): Submit geologic data from the Tennessee portion of the mine site; determine NP/PA values.

7. Item 15.1: The coal seam elevations listed in the table do not match the elevations listed in the legend of the MRP map.

8. Item 24.2 – Blasting Compliance Review: If, as the applicant states in attachment 24.2.A, there are no buildings used as a dwelling…or institutional building, the answer to this question should be "no".

9. Item 24.8 – Blasting Compliance Review: Remove the last paragraph on the last page and replace it with the following paragraph:

"In the event of flyrock, the permittee will immediately notify the Division of Mine Reclamation and Enforcement pursuant to 405 KAR 7:040 and that the permittee will not disturb or remove the muck pile until an investigation by the Department is concluded."

10. Item 25.1:

    a) The highwall miner description ratio appears to exceed the fifty percent extraction ratio that is addressed in Item 35. Please clarify.

    b) The total requested open highwall (4,500 feet) does not appear to equal the mentioned highwall miner working area (3,300 feet) plus the active surface mining pit (1,500) feet. Please address.

11. Item 25. – Engineering Compliance Review (Additional Cross-sections): A portion of the watershed that contributes to HF-1's drainage is in Tennessee; show additional cross-sections along the ridges (and perpendicular to them); hence, one is aware of the changes in the postmining topography that contributes to HF-1 drainage.

12. Attachment 26.3.A – Engineering Compliance Review (Material properties of HF-1): Add a very clear cut statement that the engineer (Timothy C. Howard) has reviewed the geologic data from Tennessee; he shall present/narrate his findings on the toxicity, acidity, and SDI of the materials hauled from the Tennessee portion into HF-1.

13. Attachment 26.3.A – Engineering Compliance Review (Building sequence of HF-1; from TWW-1): Show a series of schematics on how HF-1 and its underdrains shall be built.

14. Attachment 26.3.A – Engineering Compliance Review (HF-1 Underdrain along the base of the Buckeye Springs seam): An additional constructed underdrain (filter schematic to be shown) along the base of the highwall is needed.

15. Item 35.1: Please discuss diameters of auger bits, distance into the seam from the highwall, and centerlines.

The deficiencies noted above must be corrected to comply with applicable State surface coal mining permitting laws and regulations [KRS 350 and 405 KAR].

To ensure timely processing of your application, the Division respectfully requests that the deficiencies be corrected and the application returned to this agency within 60 days of the date of this letter. Failure to do so could result in additional enforcement action by the Division of Mine Reclamation and Enforcement.

Please be advised that mining operations seeking new or modified coverage under the Coal KPDES General Permit must submit a Notice of Intent (NOI-CM) to the Division of Water. Please file the NOI-CM with the Division of Water as soon as possible in order to avoid potential delays in the processing and issuance of your SMCRA/DNR permit.

Please disregard if you have filed the NOI.

NOTE: If this application is in an electronic format, an entirely new MPA file must be resubmitted. If in paper format, the Regional Office and this office must be updated with the corrections upon resubmittal. [Refer to 405 KAR 8:010 Section 12(1)(c)]

If you have questions concerning this matter, please contact me at (502) 564-2320.

Sincerely,

Robert Frazier, Supervisor
Division of Mine Permits

RF/JL/sre
Enclosure: Original application
c: File No. 807-0368 (e)
Middlesboro Regional Office (e)
Joe Lydon (e)
GARY ASHER
APPOLO FUELS INC
PO BOX 1727
MIDDLESBORO KY 40965

Howard
Engineering & Geology, Inc.
P O Box 271 • 2550 W. Hwy. 72, Suite 1• Harlan, Ky 40831 • Phone/Fax: (606) 573-6924 • Email: dcaudill@howardeng-geo.com

July 17, 2009

Mr. Robert Frazier, Supervisor
Department for Natural Resources
Division of Mining Permits
#2 Hudson Hollow Complex
Frankfort, KY 40601

Attn: Joe Lydon

RE: Appolo Fuels, Inc.
Permit No. 807-0368, Original

Dear Joe:

In response to your first technical review letter dated July 10, 2009, we have made the following corrections to the above referenced application.

Please Note: As per previous discussion with Rob Frazier we have added an additional haul road "C", located near the toe of Hollow Fill #1 to the application. The addition of the road will result in an additional 2.40 acres added to the proposed permit boundary. All affected items have been revised to reflect the additional acreage. As per the referenced conversation we will not be required to re-advertise.

1) General Notes:

   a) The duplicate copies have been removed.

   b) The information in regard to the Tennessee permit will be addressed upon completion.

   c) The lab analyses for geological sampling points HW5, HW6 and HW7 have been provided in Item 15.

   d) The required documentation for the surface owner has been provided.

2) Item 8.6: The completed RAM #56 Statements will be provided when the application is TAC'D.

3) Item 9.4: A notarized true and accurate copy of the first page of "Special Warranty Deed" has been provided in the application. A complete copy of the "Special Warranty Deed" has been provided under a separate cover for review by the Department. The complete copy woill not be submitted in the comprehensive application.

4) Item 12.2: Attachment 12.2.A has been revised. A notarized true and accurate copy of the first page of the "Special Warranty Deed" has been placed in that application along with a "Chain of Custody" narrative. A complete copy of the "Special Warranty Deed" has been provided under a separate cover for the Department's viewing. The entire document will not be incorporated into the application.

5) Item 14.5 – A Mist Net Survey has been conducted for the proposed permit boundary and there were no Indiana Bats recorded. Therefore, as a result of this survey we will not longer assume presence of the Indiana Bat. The Mist Net Survey has been submitted to the Department.

6) Item 15.1: All Coal Seams to be mined by this permitting action have been listed.

7) Item 15.2: A narrative has been provided that addresses all coal seams proposed to be mined by this application.

8) Item 16.3: Updated groundwater baseline data has been provided.

9) Item 17.5: Updated surface water baseline data has been provided.

10) Item 18.1: Fracturing has been discussed in Attachment 15.4:

11) Item 19.1: Fracturing has been discussed in Attachment 15.4.

12) Item 21.2.: "Table 8" has been provided.

13) Item 21.5: PMLU comments from the affected landowner have been provided.

14) Item 22.1: The land use designation has been provided on the MRP/ERI Map.

15) Item 22.4 (a): Language has been included that addresses pest and disease control measures.

16) Item 23.1: A Soils map has been provided.

17) Item 23.3 (a): A geologic cross sections has been provided.

18) Item 23.2 (b): Lab analysis has been provided.

19) Item 23.2 (c): The following statements have been clarified.

    a) A soil scientist statement has been provided.

    b) The letter has been removed and the PMLU is stated in other sections of the application.

20) Item 24.3: Permit numbers 807-5157, 807-5025 and 807-5179 have been included in a discussion of active underground works included as attachment 24.3.A. There are currently no active underground works within 500 feet of the proposed blasting area, and no reasonably foreseeable active underground works that could be within 500 feet of the proposed blasting during the time period of blasting.

21) Item 24.8: Blasting Compliance Review:

    a) The reference to the statement from RAM #140 concerning the muck pile in the event of a flyrock incident has been added.

    b) The requested statement regarding blocking access has been added.

    c) A maximum ground vibration of 4 in/sec is proposed for gas well and lines. The method of ensuring that this limit is not exceeded is through monitoring with a seismograph.

    d) See response to #20 above.

    e) A statement regarding not blasting during regular church services was previously included.

    f) The reference to "regulated structure" has been revised to "dwelling".

22) Item 25.1:

a) The reclamation variance request revised in Attachment 12.2.A has been incorporated in Attachment 25.1.A.

b) The letter has been removed from the application..

23) Item 25.4: Typical drawings for both types of seals have been provided.

24) Item 26.3: the narrative has been revised to state " A terrace will be constructed at every 50 foot in elevation.

25) Item 31.3:

a) The narrative has been revised to address all the coal seams to be mined.

b) The narrative has been revised to address the two acre disturbance limit before constructing a sediment pond and has also been included in Attachment 12.2.A.

c) The narrative has been revised to include how the sediment that is to be "dipped" when the sediment structure has reached capacity will be handled.

26) Item 32.4: A SWS map for ditches has been provided.

27) Item 33.1: Average road bed width has been provided on typical cross-sectional drawings of all roads.

28) Item 35.1: A subsidence protection plan has been provided and the 50% recovery areas have been shown on the MRP/ERI map.

29) Item 35.3: The narrative now includes the methods of mining for the seams.

30) MRP Map: All wells and pipelines have been shown.

Engineer Review Comments

1) Attachment 25.1: The green existing ground (green line) has been shown.

2) Attachment 25.4: Typical drawings for both types of seals have been provided. The strata lab analysis show that no acidic strata to be encountered during the mining operation and the seams to be mined do not have a history of acid mine drainage. Therefore, acid mine drainage (AMD) does not need to be addressed.

3) Attachment 26.3.:

a) A general location map showing the Tennessee mine site in relation to the Kentucky mine site has been provided in Item 26. Based on field surveys of the strata to be mined in Tennessee verses the strata to be mined in Kentucky there are not any geologic anomalies to discuss. As this is the same mountain and the same strata extending from Kentucky into Tennessee. Granted as you progress miles further into Tennessee the soils and strata do begin to change. However there are no changes to the strata within the permit areas involved.

b) Lab analysis provided in Item 15 demonstrates that the strata to be mined are durable material as per the SDI's. Therefore, no individual strata have been designated for the underdrain material.

c) Subsidence has been addressed as requested based on existing underground mines below the HF-1.

4) Attachment 26.3[Drawing (HF#1; A-A')]:

a) The fifty vertical feet of constructed under-drain from the top down and from the toe up of HF-1 has been shown on the profile view provided of HF-1. The mine benches within HF-1 have also been shown on the profile drawing. The rock drain will be constructed by natural segregation within all areas of the fill except those shown as **(constructed rock core 16' x 16')** on the profile drawing of HF-1. It is clearly shown on the profile drawing that the proposed cuts will not interfere with the constructed rock core drain.

b) The rock core drain was incorrectly shown as 16' x 8'. This has been corrected and the rock core drain is now shown as 16' x 16' on all HF-1 drawings.

5) Attachment 26.3.A [Narrative (Existence of Prelaw Fill at the Footprint)]:

The under-drain within the area in question will be constructed by natural segregation. There is no existing spoil material located within the existing channel where the rock core drain will be constructed.

6) Item 26.3 (REAME):

a) The accepted practice and methodology originally recommended the Cabinet does not typically model interface material in a simplified circular REAME run. A standard simplified circular stability only includes the basic two lines for rock and post mining. Additional details and soils are typically only added when needed at the discretion of the engineer. The interface material in question almost never has any substantial effect on the circular stability, but instead affects swase non-circular stability. With the typographical error in the surface line of the fill, the fill's circular stability is well above 1.5 and it is the opinion of HEG that further details will not significantly affect the numerical result of the stability of the fill.

b) The accepted practice and methodology for use with REAME when modeling simplified circular swase stability is to model the entire fill as saturated interface material, a considerably weaker material than any other material that is typically added to a fill. The modeling of the entire fill as saturated interface material, a material with the consistency of mud, will typically result in a much lower numerical factor of safety that when the fill is modeled in detail.

c) The coordinate has been revised.

d) Soil parameters have been changed to reflect 90% durable material, of which 67% is shale and 33% is sandstone.

e) The Buckeye Springs Seam key cut has bee added..

7) Attachment 31.3.A:

a) The sediment pool shall have a minimum capacity (from the lowest elevation in the reservoir to the crest of the principle spillway) to store 0.125 acre-feet per acre of disturbed area in the drainage area. As per the West Virginia Design Technical Handbook Page 1-8 Section 1.10 Sediment. As per past reviews from the Department, the sediment storage is set at a minimum to the elevation of the principle spillway.

b) The design sheet has been corrected to show the top width of 400' X 35' and a bottom width of 394' X 29'.

c) The design sheet has been corrected to show 2391.90' as the elevation of the principle spillway.

d) The stage storage curve and design sheet have been corrected.

e) All ponds will be constructed to the designed parameters in the field. Standard mining practices are routinely used to ensure that the pond is level and of adequate depth on both

ends to level the water in the pond to meet the required design parameters. Additionally field surveys of this existing mine bench have shown the existing bench to be very level with only minor dip and rise.

8) The dip has been shown on the MRP/ERI map.

9) Attachment 31.6.A: The attachment has been revised.

If you have any questions or require additional information please call our office at your earliest convenience.

Sincerely,

Danny Caudill
Howard Engineeing and Geology, Inc.

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR NATURAL RESOURCES

Steven L. Beshear
Governor

Division of Mine Permits
2 Hudson Hollow
Frankfort, Kentucky 40601
Phone (502) 564-2320
Fax (502) 564-6764
www.minepermits.ky.gov

Leonard K. Peters
Secretary

Carl E. Campbell
Commissioner

July 10, 2009

TIMOTHY C HOWARD
HOWARD ENGINEERING & GEOLOGY INC
PO BOX 271
HARLAN KY 40831

RE: Permit Application No. 807-0368
Original
APPOLO FUELS INC

Dear Mr. Caudill:

The Division of Mine Permits has completed the first technical review of the referenced permit application. Effective the date of this letter, this application has been placed in the "Technically Withdrawn" (TWW) status. The following deficiencies have been identified from the review:

1. General Notes:

   a) There appears to be duplicate copies between application pages 8 and 9. Please address.

   b) Please continue to pursue the necessary information in regard to the Tennessee Permit that is associated with this application.

   c) Please continue to pursue lab analyses for all geological sampling (HW 5, HW 6, and HW7).

   d) Please provide the documentation that is required for the surface owner as it was discussed during a phone conversation on June 9, 2009 between staff members here at the Division and yourself.

2. Item 8.6: Please ensure to complete the RAM #56 statements that have been provided in the permit packet.

3. Item 9.4: To be continued.

4. Item 12.2: Per administrative regulation 405 KAR 16:020 Section 2 and the a staff meeting here at the Division, it has been determined that all contemporaneous reclamation variance requests must unquestionably establish the essential need for just such a variance and provide the suitable demonstrations that would undeniably protect the environment and public. With regard to this, the applicant must address and incorporate all of the following comments (if they have not been already included) in all of the applicable sections of the permit packet:

   a) Describe the essential need for the variance.

   b) The extent of the highwall.

   c) The amount of highwall that will be exposed at any one time.

   d) The amount of highwall that will be exposed before the operation exceeds the two acre limit for the in pit retention of sediment and runoff.

   e) Active mining benches will have a natural berm built on a solid portion of the bench to aid the in pit retention as well as preventing material (i.e. rock) from leaving the mining area.

   f) If previously mined benches do not have a natural safety berm, a safety berm must be constructed prior to mining. Please include a typical drawing that would include width and height of the berm.

   h) A detailed mining sequence (timeline).

   i) The number of seams to be mined.

   j) The method\methods of mining.

   k) Specific descriptions of the makes and models of the equipment to be used.

   l) The number of spreads of equipment.

   m) The equipment that will be left for reclamation.

   n) Whether or not coal will be mixed.

5. Item 14.5 – Critical Resources Review Section (Indiana bat PEP)

   a) Remove all references to selective cutting or similar language.

   b) Choose only one of the two options. The applicant may remove all trees within the proposed area, or the applicant can remove only the maternity roost trees. If the applicant elects to remove potential maternity/roost trees only, a biologist with Indiana bat expertise must mark the trees prior to removal.

c) The DMRE inspector must be contacted for a site inspection after the removal of trees.

d) Please include a post-mining land use map showing the locations of all shallow water depressions, and the location and acreages of all planting types (trees, grasses, etc.)

6. Item 15.1: The applicant has not listed all the coals seams that are being proposed to be mined by this permitting action. Please address.

7. Item 15.2: Please provide a narrative that addresses all of the coal seams to be mined (i.e. coal seams that underlie HF #1).

8. Item 16.3: The applicant may not submit groundwater baseline data in excess on three years old. Please provide recent data.

9. Item 17.5: The applicant may not submit surface water baseline data in excess on three years old. Please provide recent data.

10. Item 18.1: There is mention of fracturing in the narrative under part one of the groundwater section. It would appear that the fracture/relief recharge phenomenon of this physical geographic region is being described. Yet, it doesn't appear that the applicant addressed this in Item 15.4. Please clarify.

11. Item 19.1: Part "C" of the narrative mentions the fracturing that was discussed in the above comment (Item 18.1). Please clarify.

12. Item 21.2: The applicant references "Table 8" within the narrative. This table could not be found. Please address.

13. Item 21.5: Please provide PMLU comments from the affected landowners as soon as the comments become available.

14. Item 22.1: The land use designation referenced in the narrative was not found on the map. Please address.

15. Item 22.4 (a): Please include a language that would address pest and disease control measures.

16. Item 23.1: Please provide a soils map.

17. Item 23.2 (a): The geological cross-section was not found. Please provide. In addition, please be sure to identify the material that is being proposed to be used as alternate topsoil on the drawing.

18. Item 23.2 (b): The chemical and physical analysis was not found. Please provide.

19. Item 23.2 (c): Please clarify the following statements that have been stated in the letter:

    a) The letter needs to be from a qualified soil scientist or agronomist.

    b) Clarify PMLU (Forestland vs. Fish & Wildlife).

20. Item 24.3 – Blasting Compliance Review: Department records indicate that some of the existing underground works are active. Indicate this in this item and indicate that an SMP-61 will be provided for both active and abandoned underground mines.

21. Item 24.8 – Blasting Compliance Review:

    a) Parts of RAM #140 were left out of this item. Ensure that all of RAM #140 is included in this item.

    b) Indicate that all roads leading to or located within 1000 feet of the blast area will be blocked by flagmen a minimum of 1000 feet from the blast prior to detonation and remain closed until the all clear signal is given.

    c) As per 405 KAR 16:120 Section 4 (7)(a) propose for approval a maximum ground vibration limit for all gas wells, pipelines and support structures in the vicinity of the blasting area. Indicate how this limit(s) will be ensured and verified.

    d) Our records indicate that there are active underground mines within 500 feet of the blasting site. Provide a protection plan for underground miners.

    e) There is at least one church indicated in the vicinity of the permit area therefore as per 405 KAR 16:120 Section 4(1)(a)&(b) indicate that blasting will not occur during normal times religious services are being conducted.

    f) Specify the protection plan for dwellings within 1000 feet of the blasting area. Appendix B is referenced for "regulated structure" which is not defined.

22. Item 25.1:

    a) Please ensure to incorporate the pertinent comments mentioned in Item 12.2 within the narrative for the contemporaneous reclamation variance request.

    b) The distance within the letter doesn't seem to correspond with other statements made in the application for the contemporaneous reclamation variance request.

23. Item 25.4: Please provide a typical drawing for both types of seals mentioned in the narrative.

24. Item 26.3: Please revise the third sentence of the first paragraph to read "A terrace will be constructed at every 50 foot in elevation."

25. Item 31.3:

    a) Please provide a narrative that addresses all of the coal seams to be mined (i.e. coal seams that underlie HF #1).

    b) Please include language in the second paragraph on page one that would indicate that the applicant will not exceed the two acre disturbance limit before constructing a sediment pond.

    c) Please include language in the third and fourth paragraphs on page one on how the applicant will handle the sediment that is to be "dipped" when the sediment structure reaches its sediment capacity.

26. Item 32.4: Per our phone conversation on June 17, 2009, please provide a SWS for the ditches.

27. Item 33.1: Please include average road bed width on all typical cross-sectional drawings of all roads.

28. Item 35.1: A subsidence protection plan is required for the power transmission line mentioned in the narrative.

29. Item 35.3: How does the applicant propose to mine the seams mentioned in the narrative? Please include a description in both Item 12.2 and this item.

30. MRP Map – Blasting Compliance Review: Show all wells and pipelines on the map.

The deficiencies noted above must be corrected to comply with applicable State surface coal mining permitting laws and regulations [KRS 350 and 405 KAR].

To ensure timely processing of your application, the Division respectfully requests that the deficiencies be corrected and the application returned to this agency within 60 days of the date of this letter. Failure to do so could result in additional enforcement action by the Division of Mine Reclamation and Enforcement.

Please be advised that mining operations seeking new or modified coverage under the Coal KPDES General Permit must submit a Notice of Intent (NOI-CM) to the Division of Water. Please file the NOI-CM with the Division of Water as soon as possible in order to avoid potential delays in the processing and issuance of your SMCRA/DNR permit.

Please disregard if you have filed the NOI.

NOTE: If this application is in an electronic format, an entirely new MPA file must be resubmitted. If in paper format, the Regional Office and this office must be updated with the corrections upon resubmittal. [Refer to 405 KAR 8:010 Section 12(1)(c)]

If you have questions concerning this matter, please contact me at (502) 564-2320.

Sincerely,

Robert Frazier, Supervisor
Division of Mine Permits

RF/JL/sre
Enclosure: Original application
c: File No. 807-0368 (e)
Middlesboro Regional Office (e)
Joe Lydon (e)
GARY ASHER
APPOLO FUELS INC
PO BOX 1727
MIDDLESBORO KY 40965

Subject: Engineer Review Comments
From: "Lydon, Joe (EEC)" <Joe.Lydon@ky.gov>
Date: Wed, 15 Jul 2009 10:57:27 -0400
To: "Danny Caudill" <dcaudill@howardeng-geo.com>
CC: "Frazier, Robert (EEC)" <robert.frazier@ky.gov>, "Luttrell, Allen (EEC)" <Allen.Luttrell@ky.gov>

Mr. Caudill:

Here are Mohammad Razavi's comments that were erroneously omitted from the latest TWW letter.

1. Attachment 25.1 [Backfilling and Grading Cross Sections; Sheet 1 of 4 (C-C')]: Please make sure that the existing ground (green line) is also shown.

2. Attachment 25.4.A (Seals Drawings): Please make sure that they are enclosed; further, please address AMD, incase.

3. Attachment 26.3.A [Narrative (HF-1)]: More than half of the fill materials are from Tennessee (14,500,000 cu.yd. of the total 24,020,986 cu.yd.); please address,

    a. 80% durable materials guarantee [distance of the transported materials (a general small map the shows the boundary of the TN mine site relative to the KY mine site would help one to understand the variation in the geologic anomalies); discussion on TN geologic data & its variation relative to the KY portion, etc.].

    b. Materials for underdrain (from a specific segment of a specific geologic column; please review the below question in regard to the strong presence of shale materials).

    c. Based on the Division's database, there appears to underground mine working beneath HF-1 (Clark Fork Coal Co, not shown in the MRP map); please address subsidence.

4. Attachment 26.3 [Drawing (HF #1; A-A')]: A rearrangement of constructed underdrains are needed,

    a. The seams below Hignite are being mined; hence, please review the profile and show placed underdrain where 50-ft vertical drop may not be achievable due to mining of these seams before the spoil from the Hignite job can be brought-in. i.e., a schematic of HF-1 building-sequence may be useful.

    b. Please Note: HW 5, 6, & 7 shows a predominance of shale; the current drawing shows an underdrain that is 16' x 8' (i.e., sandstone); please clarify if this dimension/selection is accurate since inside the hollow is being mined first.

5. Attachment 26.3.A [Narrative (Existence of Prelaw Fill at the Footprint)]: Based on the topo map (and mentioned in the narrative), a portion of the fill appears to be on the prelaw spoils (±100' elevation of the 2100' contour line; perhaps below Poplar Lick seam); please clarify the measures to be taken to ensure that this portion of the underdrain is built accordingly on top of the prelaw spoil.

6. Item 26.3 (REAME):

    a. Please model the interface materials unless excavating to bedrock is mentioned in the narrative (Please justify the depth of the subsoil in the narrative 26.3.A, if modeled into the program).

    b. Plane Failure (Cohesion, Friction Angle, & Unit Weight): 160, 24, & 125, respectively, instead of the ones (20, 37, & 127.5) used in the circular failure; please clarify (Note: See sub-item "d" before answering this question).

    c. Line 2 (Point 21): x=1196 does not match the stability drawing (x=1169); please clarify.

    d. Soil Parameter Calculations: Please review HW 1, 2, 5, 6, & 7; the predominant material appears to be shale; hence, assigning only 40% shale to obtain a weighted-average friction angle of 37° cannot be justified from the submitted information. This is an important issue since the safety factors are right at 1.5 & 1.2 (static & seismic, respectively).

    e. It appears the Buckeye Springs bench is not modeled into the program; please clarify.

7. Attachment 31.3.A:

    a. Both Pond Design Sheets: Sediment Storage El. are the same as the P.S.W. Elev; please correct the sediment.

    b. Pond 2 (Stage-Storage Table vs. Pond Design Sheet): At 2488.00 ft-MSL (i.e., bottom), the area is shown as 0.262-ac in the S-S table. However, bottom-length*bottom-width=294'*29'=0.196-ac in the pond design sheet; the error accumulates significantly to about 0.7 ac-ft reaching the top of the pond. Please clarify.

    c. Pond 10 (PSW Elevation): Design sheet shows 2395.50 ft-MSL, however, S-S curve (and SEDCAD) shows 2391.90 ft-MSL. Please clarify.

    d. Pond 14 (PSW Elevation): S-S curve & the design sheet show 2325.5 ft-MSL, however, SEDCAD uses 2325.0 ft-MSL. Please clarify.

    e. Some ponds are along the direction of the dip; the length of the ponds are in the range of 300-ft to 500-ft. Hence, a 1% dip can create a depth variation of 3-ft to 5-ft in a pond's depth; the GQ map shows up to 2% dip (i.e., a 6-ft to 10-ft difference in the depth of a pond from one end to the other). Please clarify what field measures are needed.

8. MRP Map: Please show the regional dip.

9. Attachment 31.6.A: Similar to attachment 31.5.A, please address encountering dried toxic sediments.

Please incorporate Mo's comments in your response letter.

Howard
Engineering & Geology, Inc.
P O Box 271 • 2550 W. Hwy 72, Suite 1• Harlan, Ky 40831 • Phone/Fax: (606) 573-6924 • Email. dcaudill@howardeng-geo.com

March 25, 2009

Mr. Robert Frazier, Supervisor
Department for Natural Resources
Division of Mining Permits
#2 Hudson Hollow Complex
Frankfort, KY 40601

Attn: Joe Lydon

RE: Appolo Fuels, Inc.
Permit No. 807-0368, Original

Dear Joe:

In response to your second completeness review letter dated March 6, 2009, we have made the following corrections to the above referenced application.

1) General Notes:

   a) The reference to AOC Variance for re-mining in Item 11.5. has been removed.

   b) Lab analysis has been provided for HW1, HW2, HW3 and HW4. The remaining lab analysis will be provided upon completion by the laboratory.

2) Item 9.4: Notarized copy of the lease document has been provided.

3) Item 13.1: The archaeological survey will be submitted to the Department upon completion.

4) Item 26.3: Cross-sections locations for Hollow Fill #1 have been shown on the MRP Map and the cross-sections are included in Item 26.3.

5) Item 28.1: The narrative has been revised.

6) MRP Map: All the coal seams to be mined and their elevations have been show within the legend of the MRP Map.

7) Walk Sheet: The language provided in the response letter dated February 24, 2009 has been included in Attachments 12.2.A and 26.3.A as requested.

If you have any questions or require additional information please call our office at your earliest convenience.

Sincerely,

Danny Caudill
Howard Engineeing and Geology, Inc.

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR NATURAL RESOURCES

Steven L. Beshear
Governor

Division of Mine Permits
2 Hudson Hollow
Frankfort, Kentucky 40601
Phone (502) 564-2320
Fax (502) 564-6764
www.minepermits.ky.gov

Leonard K. Peters
Secretary

Carl E. Campbell
Commissioner

March 6, 2009

TIMOTHY C HOWARD
HOWARD ENGINEERING & GEOLOGY INC
PO BOX 271
HARLAN KY 40831

RE: Application No. 807-0368
Original
Appolo Fuels Inc

Dear Mr. Caudill:

The Division of Mine Permits has conducted a completeness review of the above referenced application. As a result of this review your application was found incomplete and therefore unacceptable in the following respects:

1. General Notes:

   a) There still seems to be places within the application that are referring to an AOC variance for re-mining (i.e. Item 11.5).

   b) Please continue to pursue, obtain, and submit all required lab analyses, sampling\monitoring data, and all other pertinent permits and\or applications that may be associated with this permitting action.

2. Item 9.4: The applicant does need to provide some form of documentation for the extraction of coal by surface mining methods when the mineral and surface rights have been severed. Please address either (a), (b), or (c) to satisfy the requirements for this item.

3. Item 13.1 (Cultural Resources) – CRRS: The archaeological survey requested by CRRS has not been received. Please submit this survey to obtain AAA clearance from CRRS for this application.

4. Item 26.3: The MRP map appears to be lacking cross-sections on HF #1.

5. Item 28.1: The narrative appears to be lacking the language "...the temporary waste disposal site will move with the operation as mining advances". Please address.

6. MRP: Please provide all coal seam names and elevations that are being proposed to be mined under this application within the legend.

7. Walksheet: Please include the language that the applicant has provided under the latest response letter (dated February 24, 2009) within an appropriate narrative (i.e. Item 12, 25, 26, or 29?).

This review has resulted in the application being administratively withdrawn effective the date of this letter. (All corrections identified above should be made and the application resubmitted to this office within 30 days of the date of this letter. The applicant is also responsible for ensuring that the Regional Office copy and Frankfort office copy of the application are also corrected.)

Please be advised that mining operations seeking new or modified coverage under the Coal KPDES General Permit must submit a Notice of Intent (NOI-CM) to the Division of Water. Please file the NOI-CM with the Division of Water as soon as possible in order to avoid potential delays in the processing and issuance of your SMCRA/DNR permit.

Please disregard if you have filed the NOI.

NOTE: If this application is in an electronic media format, the CD/disk will be retained by this office and a new CD/disk must be resubmitted with the red original binder.

Should you have any questions regarding this matter, you may contact me at (502) 564-2320.

Sincerely,

Robert Frazier, Supervisor
Division of Mine Permits

RF/JL/sre
Enclosure: Original application
c: File No. 807-0368 (e)
Middlesboro Regional Office (e)
Joe Lydon (e)
GARY ASHER
APPOLO FUELS INC
PO BOX 1727
MIDDLESBORO KY 40965

Howard
Engineering & Geology
P.O Box 271 • 2550 W. Hwy. 72, Suite 1• Harlan, Ky 40831 • Phone/Fax: (606) 573-6924 • Email: dcaudill@howardeng-geo.com

February 24, 2009

Mr. Robert Frazier, Supervisor
Department for Natural Resources
Division of Mining Permits
#2 Hudson Hollow Complex
Frankfort, KY 40601

Attn: Joe Lydon

RE: Appolo Fuels, Inc.
Permit No. 807-0368, Original

Dear Joe:

In response to your first completeness review letter dated January 20, 2009, we have made the following corrections to the above referenced application.

1) General Notes:

   a) The additional coal seams proposed to be mined by this application are located within the footprint of Hollow Fill #1 and are shown on the MRP/ERI map. The proposed seams are the Buckeye Springs, Poplar Lick, Sterling and the Strays. Three (3) additional geologic sample sites have been added in the footprint of Hollow Fill #1. All geologic data is in the process of being collected and/or at the laboratory for analysis and will be included in the application upon completion. And the additional information will be provided in the applicable sections of the MPA-03.

   b) Item 6.6 has been corrected and now reflects the difference of 57.57 acres.

   c) The information from the Tennessee permit will be provided upon completion.

2) Item 4.3: The latitude/longitude has been corrected

3) Item 8.4: The total for spoil storage area within the table has been corrected.

4) Item 8.6:

   a) Signed and notarized RAM #56 statements will be provided prior to TAC.

   b) The number of acres overlapped on each permit has been included.

5) Item 9.4: Documentation for the mineral rights and surface rights has been removed from the application.

6) Item 10.2:

   a) The latitude and longitude have been removed from the "Notice of Intention to Mine".

   b) The last sentence in paragraph 3 has been removed.

   c) The note to the publisher has been corrected as requested.

7) Item 11.4:

   a) A map has been provided in Attachment 11.4.A that delineates the distances to structures and/or facilities that are being proposed to be granted waivers.

   b) All known abandoned and active underground mine works have been shown and the approximate elevation of the Poplar Lick Coal Seam has been provided.

8) Item 11.5: There are no surface mining activities proposed within three hundred (300) feet of the Crown Castle International Towers.

9) Item 12.2: Attachment 12.2.A has been revised.

10) Item 13.1: The Archaeological Survey is being completed and will be submitted to the Department upon completion.

11) Items 14.5: The permittee will assume presence of the Indiana Bat at this time and will conduct mist netting at approved dates. Upon completion of the mist netting if no Indiana Bats are found the permit will be revised.

12) Item 16.1: An updated groundwater user survey is currently being conducted and will be included upon completion.

13) Item 16.2: A groundwater monitoring point STA 1 has been added to the northeast of the permit area. Monitoring point GW1 has been removed from the application.

14) Item 17.4: The monitoring stations shown are currently being monitored for other permits in the area and have background data available and as Appolo Fuels is currently monitoring these station it will not add any additional burden for the collection of samples.

15) Item 21.5: The statement that "We have provided copies of the letters which have been sent out to the land owners." Has been removed as all notification to the land owners was through e-mail correspondence.

16) Item 21.10: The permanent road acreage has been corrected to 24.33 to include both roads "A" and "B".

17) Item 23.2:

   a) The attached letter has been signed.

   b) The information requested is currently being analyzed at the lab and will be included upon receipt in our office.

18) Item 25.1:

   a) The attached letter has been signed.

   b) A cross section that bisects the mining on Maiden Ridge and Turner Spur has been provided.

   c) All coal seams to be mine have been shown on the cross sections. Pleas note that the Buckeye Springs, Poplar Lick, Sterling and Strays coal seams are only to be mined in the footprint of Hollow Fill #1 and have been shown on the profile of hollow Fill #1.

   d) All cross sections have been re-labeled as requested.

19) Item 25.2: All reference to an AOC Variance has been removed from the application as requested.

20) Item 25.2: Cross sections have been relabeled as requested.

21) Item 28.1:

a) The statement that woody material will be placed in the backfill has been removed.

b) It now states in this attachment that the temporary waste disposal site has not been shown on the MRP map as it is a temporary site and will move within the permit boundary as mining advances.

22) Item 31.1: the grid coordinates have been corrected.

23) Item 32.1: The Stream Restoration Plan requested by CRRS has been provided and a copy has been forwarded to CRRS.

24) Item 32.3:

a) The ditches have been corrected ditch P3D1 was mislabeled as P4D1.

b) The ditches were designed for worst case and the same design will be used for both ditches and the information provided includes both of the ditches.

25) MRP Map:

a) The existing permits have been shown in different colors as requested.

b) The underground works map in Item 11.4 and the MRP map have been updated.

26) Walkmap:

a) The mine adits have been shown on the MRP/ERI Map.

b) The existing slide areas have been shown on the MRP/ERI Map.

c) The seeps have been shown on the MRP/ERI Map.

27) Walksheet:

a) The attached letter has been signed.

I. End of Road "A" has been labeled correctly.

II. The coal seams proposed to be mined within the footprint of Hollow Fill #1 have been shown

b) The information requested is currently being analyzed at the lab and will be included upon receipt in our office.

I. The permittee is currently pursuing a 404 permit.

II. The old slate dump has already contributed to the degradation of the stream and will be covered by Hollow Fill #1. The dump was created pre-law and its make-up and extents are not known.

III. The hollow fill design requirements for the state of Tennessee meet the requirements for the Department.

IV. Correspondence from Kentucky Utilities has been requested and will be included in the application upon receipt in our office.

V. The proposed underground mining area has been removed from the area around the FCC towers. As previously stated there are no surface disturbance proposed within 300 feet of the towers.

If you have any questions or require additional information please call our office at your earliest convenience.

Sincerely,

Danny Caudill
Howard Engineeing and Geology, Inc.

ENVIRONMENTAL AND PUBLIC PROTECTION CABINET
DEPARTMENT FOR NATURAL RESOURCES

Ernie Fletcher
Governor

2 Hudson Hollow
Frankfort, Kentucky 40601
Phone (502) 564-6940
Fax (502) 564-5698
www.naturalresources.ky.gov
www.kentucky.gov

Teresa J. Hill
Secretary

Susan C. Bush
Commissioner

January 20, 2009

TIMOTHY C HOWARD
HOWARD ENGINEERING & GEOLOGY INC
PO BOX 271
HARLAN KY 40831

RE: Application No. 807-0368
Original
Appolo Fuels, Inc.

Dear Mr. Howard:

The Division of Mine Permits has conducted a completeness review of the above referenced application. As a result of this review your application was found incomplete and therefore unacceptable in the following respects:

1. General Notes:

   a) The narrative for Item 12.2 and the Walksheet mention more coal seams to be mined than what the applicant has addressed within all of Item 15. Please clarify. If the clarification would warrant the addition of more coal seams, please complete and submit all the applicable sections of the MPA - 03

   b) From the original walk (09/16/08) to the latest walk (01/12/09), there is a difference of 57.57 acres. The total acres listed in this item are 63.89 acres. Please account for the discrepancy in all the applicable sections of the MPA – 03.

c) The applicant needs to provide all the prudent information from the Tennessee permit. Please include this information within all the appropriate sections of the MPA – 03.

2. Item 4.3: The latitude\longitude grid coordinates must plot at the eastern most access from a public road. Please update all applicable portions of the application.

3. Item 8.4: It appears that the applicant had inadvertently left out the totals for spoil storage are within the table. Please address,

4. Item 8.6:

   a) Please be advised that the applicant must have all the RAM #56 statements signed and notarized before O & C will TAC the permit pack.

   b) Please include the number of acres overlapped on each permit.

5. Item 9.4: The applicant does not need to provide documentation for the mineral rights. The applicant does need to provide documentation for the surface rights.

6. Item 10.2:

   a) Please be advised, per RAM #131 to latitude\longitude grid coordinates are no longer required to be included in the "Notice of Intention to Mine."

   b) Per the guidelines set forth in RAM #106, the last sentence of paragraph is not necessary to be included in the advertisement.

   c) Per RAM #106, the applicant is advised that "the note to the publisher should state that the notice is clearly legible and that the heading 'NOTICE OF INTENTION TO MINE' is a minimum of ten (10) points, bold face, all capitals type."

7. Item 11.4:

   a) Please ensure to delineate all distances to structures and\or facilities that are being proposed to be granted waivers on the MRP Map.

   b) Please include all abandoned and active underground works on the map. Lastly, please show the elevation of the Poplar Lick Seam.

8. Item 11.5: Please provide correspondence from Crown Castle International that would allow the applicant to conduct surface mining activities within three hundred (300) feet of their towers.

9. Item 12.2: Please complete a general proofing of the narrative. There appears to be incorrect acreages, inaccurate grid coordinates, coal seams listed that do not appear anywhere else in the application, a seemingly small amount of equipment to handle the alternate contemporaneous reclamation standards variance request and other items.

10. Item 13.1 – Cultural Resources: The Archaeological Survey requested by CRRS has not been received. Please submit this survey to obtain AAA clearance from CRRS for this application.

11. Item 14.5 – Fish & Wildlife Information: An Indiana Bat Survey or an Indiana Bat Protection & Enhancement Plan requested by CRRS has not been received. Please submit either of these items to obtain AAA clearance from CRRS for this application.

12. Item 16.1: A groundwater user survey must be conducted.

13. Item 16.2: Please justify the lack of groundwater monitoring on the Northeast side of the permit area. It appears that both the dip and groundwater flow are oriented in that direction. If the applicant is able to demonstrate that lack of a need for groundwater monitoring on the Northeast side of the permit, then please justify the lack of a groundwater monitoring in the Sowder Creek Drainage Basin.

14. Item 17.4: It would appear that surface water monitoring stations would prove to be more relevant near the mouth of both Marsee Branch and Sowder Creek. Please address.

15. Item 21.5: There is a comment within the narrative that states the inclusion of copies of the letters that have been sent out to the respective surface owners. These letters were not found. Please continue to pursue the receipt of comments from the effected surface owners.

16. Item 21.10: There is notation that indicates that there is permanent road acreage. This appears to conflict with the information provided in Item 11.5. Please clarify.

17. Item 23.2:

    a) Please have Mr. Danny Caudill sign the attached letter.

b) The referenced attachments (Attachments 23.2.B and 23.2.C) were not found. Please address

18. Item 25.1:

    a) Please have Mr. Danny Caudill sign the attached letter.

    b) Please provide cross-sections that would bisect the mining on Maiden Ridge and Turner Spur.

    c) Ensure that all coal seams to be mined appear on all cross-sections.

    d) All cross-sections should be labeled as such: A - A^{1}.

19. Item 25.2: After a meeting with the Section Supervisor and Branch Manager, it has been determined that the applicant will not be granted an AOC variance. Therefore, please remove all material that would be associated with this request from the permit pack.

20. Item 26.3: Both the attachment and the MRP Map should have all the cross-sections labeled as such: A - A^{1}.

21. Item 28.1:

    a) Please ensure that all stability analyses account for the woody material in the backfill.

    b) Please show the temporary waste disposal area on the MRP Map.

22. Item 31.1: There appears to be problems with the grid coordinates for sediment structures 9 thru 14. Please clarify.

23. Item 32.1 – Stream Restoration Plan: The Stream Restoration Plan requested by CRRS was not included in the comprehensive application. Please include this item to obtain AAA Clearance from CRRS for this application.

24. Item 32.3

    a) There appears to be two (2) P4D1's on the MRP Map.

    b) It appears that the applicant has used the same nomenclature for one (1) ditch two (2) different times on the MRP Map (i.e. P6D1) and has only provided one row of information for the two (2) ditches in the table. Please clarify.

25. MRP Map:

    a) It is difficult to distinguish one (1) overlapping permit from another. Therefore, the Division requests that the applicant use different colors for all of the overlapping permits that appear in gold.

    b) The Division's GIS Database would suggest that the permit may overlap a number of other surface mining permits, as well as overlying other active and abandoned underground works. Please address.

26. Walkmap: The inspector has notated the following:

    a) Mine adits that are located to the East of Pond #7.

    b) Slide areas near the Western most extent of permit 807-7019.

    c) Seeps: One (1) located near Pond #4 and another located to the East of Pond #2.

27. Walksheet:

    a) Maps section:

        I. End of Road "A" is labeled "End Road B".

        II. Consultant states that company proposes to mine the Buckeye Spring, Poplar Lick, Sterlin and Stray Seams within the footprint of HF #1, but the seams are not shown of the map.

    b) Comments\Recommendations section:

        I. HF#1 – Blue line stream within the footprint of proposed fill.

        II. HF#1 – An old slate dump within the proposed footprint.

        III. HF Design: If the engineering design requirements for Tennessee are less restrictive than that of the guidelines provided under the applicable chapters of the 405 KAR administrative regulations, please advise.

        IV. Power lines crossing near Pond #10. Correspondence should be provided granting the applicant surface disturbance within 100 feet of a utility. Lastly, be sure to address all applicable portions of the MPA – 03.

V. Please elaborate on the following comment: "Area around FCC towers has been removed."

This review has resulted in the application being administratively withdrawn effective the date of this letter. (All corrections identified above should be made and the application resubmitted to this office within 30 days of the date of this letter. The applicant is also responsible for ensuring that the Regional Office copy and Frankfort Office copy of the application are also corrected.)

Please be advised that mining operations seeking new or modified coverage under the Coal KPDES General Permit must submit a Notice of Intent (NOI-CM) to the Division of Water. Please file the NOI-CM with the Division of Water as soon as possible in order to avoid potential delays in the processing and issuance of your SMCRA/DNR permit.

Please disregard if you have filed the NOI.

NOTE: If this application is in an electronic media format, the CD/disk will be retained by this office and a new CD/disk must be resubmitted with the red original binder.

Should you have any questions regarding this matter, you may contact me at (502) 564-2320.

Sincerely,

Robert Frazier, Acting Supervisor
Division of Mine Permits

RF\JL/cw

Enclosure: Original application less Item 31 (compliance demonstrations volume)

c: File No. 807-0368 (e)
Middlesboro Regional Office (e)
Joe Lydon (e)
GARY ASHER
APPOLO FUELS INC
PO BOX 1727
MIDDLESBORO KY 40965

Howard
HEG
Engineering & Geology, Inc.
P O Box 271 • 2550 W Hwy 72, Suite 1• Harlan, Ky 40831 • Phone/Fax (606) 573-6924 • Email: dcaudill@howardeng-geo.com

December 30, 2008

Department for Natural Resources
Middlesboro Regional Office
1804 East Cumberland Avenue
Middlesboro, Kentucky 40965

RE: Appolo Fuels, Inc.
Permit No. 807-0368
Original Application

To Whom It May Concern:

We are submitting our "MPA-01" and "MPA-03" Applications for the above referenced Mining operation. The mining operation is located 1.56 miles northeast from the junction of Kentucky 74 with Kentucky 535 in Bell County. This operation is further located on the Eagan, Kay Jay, Frakes & Fork Ridge 7 ½ minute U.S.G.S. Quadrangle maps at Latitude 36°35'41"N and Longitude 83°52'34"W.

Please contact us at our office if you have any questions or require additional information.

Sincerely,

Danny Caudill
Howard Engineering & Geology, Inc.

TECHNICAL INFORMATION FOR A MINING PERMIT

This form supplies all technical information in regard to the mining and reclamation plan for the permit. It shall be filed in conjunction with MPA-01 for all original and amendment applications.	PERMIT NUMBER *807-0368* DSMRE ID NUMBER *000095*

3. Identification of Applicant/Engineer

3.1 Applicant Name *Appolo Fuels, Inc.*

3.2 Engineer *Timothy C. Howard* Registration No. *15,317*
Associated with *Howard Engineering & Geology, Inc.*
Address *P.O. Box 271, 2550 W.Hwy. 72 Suite 1*
City *Harlan* State *KY* Zip *40831*
Telephone No. *(606)573-6924 FAX (606)573-9543*

3.3 Indicate the name, address, and telephone number of the individual to whom all permit application correspondence including return of the application for correction or modification, is to be addressed. If such designation is not made, the cabinet will return the application only to the applicant. If such designation is changed at some future date, the applicant is responsible for notifying the cabinet.

Name *Timothy C. Howard* Telephone No. *(606)573-6924*
Address *P.O. Box 271, 2550 W.Hwy. 72 Suite 1*
City *Harlan* State *KY* Zip *40831*

4. Site Location Information

4.1 Name of proposed mine *Hignite Mine #1*
Local Address *P.O. Box 1727, Middlesboro, Kentucky 40965*

4.2 Contact person at mine site *Larry Hunley* Title *Environmental Manager*
Telephone Number *(606) 248-1535*

4.3 County(ies) *Bell* Quadrangle(s) *Fork Ridge, Kayjay, Frakes & Eagan*
Latitude *36-35-41* Longitude *83-52-34*
Nearest named stream *Clear Fork* Nearest community *Fonde*

4.4 Is any of the proposed mining area previously permitted or pending permitting under KRS 350?
[*XX*] YES [ ] NO. If "YES", list the permittee name, permit number, and current status of operations. If additional pages are necessary, identify as "Item 4.4 continued".
See Attachment 4.4.A.

5. Application Information

5.1 Type of application [*X*] Original [ ] Amendment No. _____

ATTACHMENT 4.4.A

PREVIOUSLY PERMITTED AREAS/OVERLAPS

The permits which will be overlapped as part of this permit application are described as follows:

1) Appolo Fuels, Inc. permit #807-7019. Permit status is pending.

2) Appolo Fuels, Inc. permit #807-0365. Permit status is pending.

3) Appolo Fuels, Inc. permit #807-0314. Active.

4) Bell County Coal Corporation permit #807-5202. No Disturbance.

5) Bell County Coal Corporation permit #807-5157. Active.

The above listed permits have been delineated on the Mining and Reclamation Plan Map provided in this application.

5.2 Type of Operation: (check all appropriate boxes)

[ ]	Surface Area (SA)	[ ]	Refuse Disposal (RD)
[X]	Surface Contour (SC)	[ ]	Underground (UG)
[X]	Surface Auger (SG)	[ ]	Processing Plant (PP)
[X]	Surface Remining (SR)	[ ]	Haul Road Only (LO)
[ ]	Surface Refuse Recovery (RR)	[ ]	Load Out Only (LO)
[ ]	Steep Slope (SS)	[ ]	In-situ (IS)
[ ]	Surface Mountaintop (SM)	[ ]	Other_____

6. Advance Notification Information

6.1 Is proposed permit located within boundaries for which a governmental planning agency has jurisdiction to act with regard to land use, air, or water quality planning? [ ] YES [XX] NO. If "YES", provide agency name and correct mailing address:

Agency Name _____
Mailing Address _____
_____

6.2 Is proposed permit area located within boundaries of any sewage and/or water treatment authorities, water companies which provide sewage or water services to citizens in the area or the proposed permit, or have water sources, collection, treatment, or distribution facilities located in the area of the proposed permit? [ ] YES [X] NO.

Authority/Company Name _____
Mailing Address _____
_____

6.3 Is proposed permit area located within the watershed of any U.S. Army Corps of Engineer projects? [ ] YES [X] NO. If "YES", indicate below and provide one additional copy of the application:

Huntington District	[ ]	Dewey Lake	[ ]	Fishtrap Lake
	[ ]	Grayson Lake	[ ]	Paintsville Lake
	[ ]	Yatesville Lake		
Louisville District	[ ]	Buckhorn Lake	[ ]	Carr Fork Lake
	[ ]	Cave Run Lake	[ ]	Green River Watershed
Nashville District	[ ]	Lake Cumberland	[ ]	Laurel River Lake
	[ ]	Martin's Fork Watershed	[ ]	Lake Barkley
	[ ]	Dale Hollow Lake	[ ]	Middlesboro Flood Control Project Watershed

6.4 Is proposed permit area located within the official limits of any town, city or municipality? [ ] YES [X] NO. If "YES", provide name and county:

Town/City Name _____ County _____

6.5 Was any of the data presented in this application prepared/provided as a result of a Small Operator Assistance Program (SOAP) grant?
[ ] YES [X] NO. If "YES", provide SOAP identification number _____.

6.6 Is the proposed permit boundary and acreage under this application the same as proposed under the corresponding "preliminary" permit application?
[ ] YES [X] NO. If "NO", describe differences:
30.48 acres of Mining Area, 24.09 acres of Road and 3.00 acres of Pond have Been added to the permit acreage total.

NOTE: If significant differences are determined to exist, another field walk by regional personnel may be required.

7. Permit Information

7.1 Each new original permit will be issued for a term of five (5) years. If an initial term in excess of five (5) years is required, provide the information stipulated by 405 KAR 8:010, Section 17 as "Attachment 7.1.A."
N/A, More than five (5) year permit term not requested.

7.2 Provide the acreage associated with the following activities. If additional pages are necessary, identify as "Item 7.2 continued".

	Currently Permitted	Additions/ Deletions	Redesig-nations	Total Acreage
Mining or Face Up Areas	---	***274.25***	---	***274.25***
Roads	---	***26.73***	---	***26.73***
Sediment Ponds	---	***5.00[1]***	---	***5.00[1]***
Spoil Storage Areas	---	***102.41***	---	***102.41***
Waste Disposal Areas	---	---	---	---
Facility and Processing Areas	---	---	---	---
Coal Stockpile & Loading Areas	---	---	---	---
Mine Management Areas	---	---	---	---
Rock Check	---	***0.50***	---	***0.50***
Drainage Corridor	---	***0.50***	---	***0.50***
Total Surface Disturbance Area	---	***409.39***	---	***409.39***
Underground Areas	---	---	---	---
Auger/Highwall Mining Areas	---	***437.97***	---	***437.97***
Total Underground/Auger Area	---	***437.97***	---	***437.97***
Permit Area	---	***847.36***	---	***847.36***

[1] ***On-Bench Dug-Out Pond Acreage Included In Mining Area.***

7.3 If this permit contains acreage in more than one county, name the counties affected and specify surface and underground acreage within each county. If incremental acreage fees are being used, provide a table indicating acreage per county, per increment as Attachment 7.3.A.
N/A - All Acreage In Bell County Only

County	Total Surface Acreage	Total Underground Acreage

8. Bonding & Fees

8.1 Check the proposed bonding plan to be used:
[ ] Single Area [X] Incremental, with **Seven** (7) total increments.

8.2 If incremental bonding is proposed, identify the increment(s) which will be initially bonded prior to permit issuance.
Increment #1

8.3 For incremental bonding submit an incremental bonding map to clearly identify the number and boundary of each increment.
See Attachment 8.3.A

8.4 Complete the following charts with acreage for each increment:

Increment	#1	#2	#3
Mining or Face Up Areas	---	*54.98*	*29.92*
Roads	*26.73*	---	---
Sediment Ponds	---	*0.00*[1]	*0.00*[1]
Spoil Storage Area	---	---	---
Waste Disposal Areas	---	---	---
Facility and Processing Areas	---	---	---
Coal Stockpile & Loading Areas	---	---	---
Mine Management Areas	---	---	---
Rock Check	---	---	---
Drainage Corridor	---	---	---
Total Surface Disturbance Area	*23.73*	*54.98*	*29.92*
Underground Areas	---	---	---
Auger/Highwall Miner Areas	---	*116.78*	*72.54*
Total Underground/Auger Area	---	*116.78*	*72.54*
Permit Area	*23.73*	*171.76*	*102.46*

1 - 1.50 acres of Ponds double bonded as Mining Area on Increment #2, 1.00 acres of Ponds double bonded as Mining Area on Increment #3, 2.00 acres of Ponds double bonded as Mining Area on Increment #4 and 3.00 acres of Ponds double bonded as as Mining Area on Increment #5. 4.02 acres of Road double bonded as Spoil Storage Area on Increment #6. A total of 11.52 acres double bonded but is only counted in surface acreage one time for a total of 409.39 acres as shown in Item 7.2.

See Attachment 8.4.A For Additional Increments.

Appolo Fuels, Inc.
Application #807–0368
Incremental Bonding Map

SCALE 1" = 500'

INCREMENT	#1	#2	#3	#4	#5	#6	#7	TOTALS
MINING OR FACE UP AREAS	---	54.98	29.92	72.36	116.99	---	---	274.25
ROADS	26.73	---	---	---	---	0.00[1]	---	26.73
SEDIMENT PONDS	---	0.00[1]	0.00[1]	0.00[1]	0.00[1]	5.00	---	5.00
SPOIL STORAGE AREAS	---	---	---	---	---	66.40	36.01	102.41
WASTE DISPOSAL AREAS	---	---	---	---	---	---	---	---
FACILITY & PROCESSING AREAS	---	---	---	---	---	---	---	---
COAL STOCKPILE & LOADING AREAS	---	---	---	---	---	---	---	---
MINE MANAGEMENT AREAS	---	---	---	---	---	---	---	---
ROCK CHECK	---	---	---	---	---	0.50	---	0.50
DRAIANGE CORRIDOR	---	---	---	---	---	0.50	---	0.50
TOTAL SURFACE DISTURBANCE AREA	26.73	54.98	29.92	72.36	116.99	72.40	36.01	409.39
UNDERGROUND AREAS	---	---	---	---	---	---	---	---
AUGER/HIGHWALL MINER AREAS	---	116.78	72.54	124.28	124.37	---	---	437.97
TOTAL UNDERGROUND/AUGER AREA	---	116.78	73.54	124.28	124.37	---	---	437.97
TOTAL PERMIT AREA	26.73	171.76	102.46	196.64	241.36	72.40	36.01	847.36

INCREMENT #1 INCREMENT #2
INCREMENT #3 INCREMENT #4
INCREMENT #5 INCREMENT #6
INCREMENT #7

NOTES:

1–1.50 ACRES OF POND DOUBLE BONDED AS MINING AREA ON INCREMENT #2, 1.00 ACRES OF POND DOUBLE BONDED AS MINING AREA ON INCREMENT #3, 2.00 ACRES OF POND DOUBLE BONDED AS MINING AREA ON INCREMENT #4, 3.00 ACRES OF POND DOUBLE BONDED AS MINING AREA ON INCREMENT #5, 4.02 ACRES OF ROAD DOUBLE BONDED AS SPOIL STORAGE AREA ON INCREMENT #6.

A TOTAL OF 11.52 ACRES IS DOUBLE BONDED BUT IS ONLY COUNTED IN THE SURFACE ACRES ONE TIME FOR A TOTAL OF 409.39 ACRES AS SHOWN IN ITEM 7.2 OF THIS APPLICATION.

ACTIVE/ABANDONED AREA DISCLAIMER

The areas marked as "ACTIVE" and/or "ABANDONED" on this map were copied from a map purportedly prepared by a third-party. HEG affimatively states that it has used its best engineering practice in utilizing the third party map information but, due to physical conditions, CANNOT VERIFY, OR REPRESENT OR WARRANT THE ACCURACY OR COMPLETENESS of the third party map information. HEG DISCLAIMS ALL REPRESENTATIONS AND/OR WARRANTIES whether express, implied or statutory including but not limited to, warranties of title, merchantability and fitness for a particular purpose or use, and it makes no representation as to any property rights and further disclaims all liability for any and all damages that may arise from the use of the third party map information by anyone. HEG specifically disclaims all liability for the consequences of decisions made by anyone on the basis of the third party map information and affirmatively states that it is the user's responsibility to review and understand the limitations of the information.

CERTIFICATION

I, Timothy C. Howard, P.E. No. 15,317

Date: 10/5/09

hereby certify in accordance with 405 KAR 7:040, Section 10, that this document is correct as determined by accepted engineering practices and includes all information required of it by Chapter 350 and KAR Title 405.

STATE OF KENTUCKY
TIMOTHY C. HOWARD
15,317
LICENSED PROFESSIONAL ENGINEER

Prepared By
HOWARD
HEG
Engineering and Geology, Inc.

ATTACHMENT 8.4.A

INCREMENTAL BOND PLAN

Increment	#4	#5	#6	#7	Total
Mining or Face Up Areas	72.36	116.99	---	---	274.25
Roads	---	---	0.00 [1]	---	26.73
Sediment Ponds	0.00 [1]	0.00 [1]	5.00	---	5.00 [1]
Spoil Storage Areas	---	---	66.40	36.01	102.41
Waste Disposal Areas	---	---	---	---	---
Facility and Processing Areas	---	---	---	---	---
Coal Stockpile & Loading Areas	---	---	---	---	---
Mine Management Areas	---	---	---	---	---
Rock Check	---	---	0.50	---	0.50
Drainage Corridor	---	---	0.50	---	0.50
Total Surface Disturbance Area	72.36	116.99	72.40	36.01	409.39
Underground Areas	---	---	---	---	---
Auger/Highwall Mining Areas	124.28	124.37	---	---	437.97
Total Underground/Auger Area	124.28	124.37	---	---	437.97
PERMIT AREA	196.64	241.36	72.40	36.01	847.36

1 - 1.00 acres of Ponds double bonded as Mining Area on Increment #2, 1.50 acres of Ponds double bonded as Mining Area on Increment #3, 2.00 acres of Ponds double bonded as Mining Area on Increment #4 and 3.00 acres of Ponds double bonded as as Mining Area on Increment #5. 4.02 acres of Road double bonded as Spoil Storage Area on Increment #6. A total of 11.52 acres double bonded but is only counted in surface acreage one time for a total of 409.39 acres as shown in Item 7.2.

8.5 Complete the following chart which details additional information about each increment.

Increment	#1	#2	#3
Prelaw Mined Acreage	---	---	---
Alternate Topsoil Acreage	---	***54.98***	***29.92***
Mulching Variance	---	---	---
Prime Farmland Acreage	---	---	---
Stream Channel Alternate Acreage	---	---	---
Number of Off Bench Ponds	***0***	***0***	***0***

See Attachment 8.5.A

If additional pages are necessary, duplicate this chart and identify as "Item 8.5 continued".

8.6 Provide a narrative describing all acreage overlaps. This includes double bonding and shared facilities (with identification of other permits involved). In addition, all overlaps shall be clearly identified on the map requested in Item 8.3.

See Attachment 8.6.A

8.7 Check the method of acreage fee payment to be used:

[ ] Single Area [***X***] Incremental

8.8 [***X***] Permitting processing fee of $375 is included.

If applicable, indicate amount of acreage fees included:

Number of surface acres _____ X $75 = _____ acreage fee.

See Attachment 8.8.A.

To Be Provided When Application Is TAC'ed

Appolo Fuels, Inc.
#807-0368

ATTACHMENT 8.5.A

Increment	#4	#5	#6	#7	Totals
Prelaw Mined Acreage	---	---	---	---	---
Alternate Topsoil Acreage	72.36	116.99	72.40	36.01	382.60
Mulching Variance	---	---	---	---	---
Prime Farmland Acreage	---	---	---	---	---
Stream Channel Alteration Acreage	---	---	---	---	---
Number of Off Bench Ponds	0	0	1	0	0

ATTACHMENT 8.6.A

Permit Overlaps

1. Proposed Mining Area will overlap a portion of existing road which is currently being permitted by Appolo Fuels, Inc. on their permit #807-7019. Overlap acreage is 14.61 acres.

2. Proposed Road Area will overlap a portion of existing road which is currently being permitted by Appolo Fuels, Inc. on their permit #807-0365. Overlap acreage is 5.53 acres.

3. Proposed Road Area will overlap a portion of existing road which is currently being permitted by Appolo Fuels, Inc. on their permit #807-0314. Overlap acreage is 5.99 acres.

4. Proposed Road Area will overlap a portion of existing road which is currently being permitted by Bell County Coal Corporation on their permit #807-5202. Overlap acreage is 20.06 acres.

5. Proposed Road Area will overlap a portion of existing road which is currently being permitted by Bell County Coal Corporation on their permit #807-5157. Overlap acreage is 21.02 acres.

The proposed overlaps will be bonded by this permit application.

Appolo Fuels, Inc.
#807-0368

ATTACHMENT 8.6

STATEMENT OF LIABILITY FOR OVERLAPPED AREAS
(in accordance with RAM #56)

Appolo Fuels, Inc. acknowledges that its Application Number *807-0368* overlaps areas already included in *807-7019* held by *Appolo Fuels, Inc.* *Appolo Fuels, Inc.* expressly agrees to assume liability, immediately upon issuance of *807-0368*, for reclamation of all areas included within the permit area of *807-7019* including any areas previously disturbed by *Appolo Fuels, Inc.*

Reclamation of areas disturbed prior to issuance of *807-0368* shall proceed according to the following schedule: *Backfill and grading plan. Appolo Fuels, Inc.* (and the undersigned SURETY, if applicable) expressly agree that the bond filed with Application No. *807-0368* will guarantee reclamation of the entire permit area of *807-0368*, whether disturbed in connection with *807-0368* or previously disturbed in connection with *807-7019*.

_____ _____
APPLICANT/AUTHORIZED REPRESENTATIVE DATE

PRINT NAME:_____

SUBSCRIBED AND SWORN BEFORE ME BY _____
THIS _____ DAY OF _____, 2006.

NOTARY PUBLIC_____
MY COMMISSION EXPIRES_____

_____ _____
SURETY REPRESENTATIVE DATE

PRINT NAME: _____

Appolo Fuels, Inc.
#807-0368

ATTACHMENT 8.6

STATEMENT OF LIABILITY FOR OVERLAPPED AREAS
(in accordance with RAM #56)

Appolo Fuels, Inc. acknowledges that its Application Number *807-0368* overlaps areas already included in *807-0314* held by *Appolo Fuels, Inc.* *Appolo Fuels, Inc.* expressly agrees to assume liability, immediately upon issuance of *807-0368*, for reclamation of all areas included within the permit area of *807-0314* including any areas previously disturbed by *Appolo Fuels, Inc.*

Reclamation of areas disturbed prior to issuance of *807-0368* shall proceed according to the following schedule: *Backfill and grading plan. Appolo Fuels, Inc.* (and the undersigned SURETY, if applicable) expressly agree that the bond filed with Application No. *807-0368* will guarantee reclamation of the entire permit area of *807-0368*, whether disturbed in connection with *807-0368* or previously disturbed in connection with *807-0314*.

_____ _____
APPLICANT/AUTHORIZED REPRESENTATIVE DATE

PRINT NAME:_____

SUBSCRIBED AND SWORN BEFORE ME BY _____
THIS _____ DAY OF _____, 2006.

NOTARY PUBLIC_____
MY COMMISSION EXPIRES_____

_____ _____
SURETY REPRESENTATIVE DATE

PRINT NAME: _____

Appolo Fuels, Inc.
#807-0368

ATTACHMENT 8.6

STATEMENT OF LIABILITY FOR OVERLAPPED AREAS
(in accordance with RAM #56)

Appolo Fuels, Inc. acknowledges that its Application Number *807-0368* overlaps areas already included in *807-0365* held by *Appolo Fuels, Inc.* *Appolo Fuels, Inc.* expressly agrees to assume liability, immediately upon issuance of *807-0368*, for reclamation of all areas included within the permit area of *807-0365* including any areas previously disturbed by *Appolo Fuels, Inc.*

Reclamation of areas disturbed prior to issuance of *807-0368* shall proceed according to the following schedule: *Backfill and grading plan. Appolo Fuels, Inc.* (and the undersigned SURETY, if applicable) expressly agree that the bond filed with Application No. *807-0368* will guarantee reclamation of the entire permit area of *807-0368*, whether disturbed in connection with *807-0368* or previously disturbed in connection with *807-0365.*

_____ _____
APPLICANT/AUTHORIZED REPRESENTATIVE DATE

PRINT NAME:_____

SUBSCRIBED AND SWORN BEFORE ME BY _____
THIS _____ DAY OF _____, 2006.

NOTARY PUBLIC_____
MY COMMISSION EXPIRES_____

_____ _____
SURETY REPRESENTATIVE DATE

PRINT NAME: _____

ATTACHMENT 8.6

STATEMENT OF LIABILITY FOR OVERLAPPED AREAS
(in accordance with RAM #56)

Appolo Fuels, Inc. acknowledges that its Application Number *807-0368* overlaps areas already included in *807-5202* held by *Bell County Coal Corporation*. *Appolo Fuels, Inc.* expressly agrees to assume liability, immediately upon issuance of *807-0368*, for reclamation of all areas included within the permit area of *807-5202* including any areas previously disturbed by *Bell County Coal Corporation*.

Reclamation of areas disturbed prior to issuance of *807-0368* shall proceed according to the following schedule: *Backfill and grading plan. Appolo Fuels, Inc.* (and the undersigned SURETY, if applicable) expressly agree that the bond filed with Application No. *807-0368* will guarantee reclamation of the entire permit area of *807-0368*, whether disturbed in connection with *807-0368* or previously disturbed in connection with *807-5202.*

_____ _____
APPLICANT/AUTHORIZED REPRESENTATIVE DATE

PRINT NAME:_____

SUBSCRIBED AND SWORN BEFORE ME BY _____
THIS _____ DAY OF _____, 2006.

NOTARY PUBLIC_____
MY COMMISSION EXPIRES_____

_____ _____
SURETY REPRESENTATIVE DATE

PRINT NAME: _____

Appolo Fuels, Inc.
#807-0368

ATTACHMENT 8.6

STATEMENT OF LIABILITY FOR OVERLAPPED AREAS
(in accordance with RAM #56)

Appolo Fuels, Inc. acknowledges that its Application Number *807-0368* overlaps areas already included in *807-5157* held by *Bell County Coal Corporation*. *Appolo Fuels, Inc.* expressly agrees to assume liability, immediately upon issuance of *807-0368*, for reclamation of all areas included within the permit area of *807-5157* including any areas previously disturbed by *Bell County Coal Corporation*.

Reclamation of areas disturbed prior to issuance of *807-0368* shall proceed according to the following schedule: *Backfill and grading plan. Appolo Fuels, Inc.* (and the undersigned SURETY, if applicable) expressly agree that the bond filed with Application No. *807-0368* will guarantee reclamation of the entire permit area of *807-0368*, whether disturbed in connection with *807-0368* or previously disturbed in connection with *807-5157.*

_____ _____
APPLICANT/AUTHORIZED REPRESENTATIVE DATE

PRINT NAME:_____

SUBSCRIBED AND SWORN BEFORE ME BY _____
THIS _____ DAY OF _____, 2006.

NOTARY PUBLIC_____
MY COMMISSION EXPIRES_____

_____ _____
SURETY REPRESENTATIVE DATE

PRINT NAME: _____

ATTACHMENT 8.8.A

Acreage Fees

Increment #	Surface Acreage	Acreage Fee
Increment #1	26.73	$2,025.00
Increment #2	54.98	$4,125.00
Increment #3	29.92	$2,250.00
Increment #4	72.36	$5,475.00
Increment #5	116.99	$8,775.00
Increment #6	108.41	$8,175.00

8.9 Have credit acres been applied to the acreage fee amount? [ ] YES [**X**] NO. If "YES", list below the permit number, permittee name, acreage and amount. Attach copies of the bond release forms showing that those acreages were not disturbed. Identify attached documents as "Attachment 8.9.A, 8.9.B" etc. If additional pages are necessary, identify as "Item 8.9 continued".

PERMIT NUMBER	PERMITTEE NAME	UNDISTURBED ACREAGE	RATE PER ACRE	TOTAL

Total acreage fee credit $_____

8.10 If permittee name is different from applicant, submit a letter from the permittee granting the credit acres to the applicant.

N/A

8.11 Based upon all surface acres total to be disturbed under the proposed permit, provide an estimate of costs of reclamation. Attach detailed supporting calculations as "Attachment 8.11.A".

See Attachment 8.11.A.

9. Right of Entry

9.1 For all properties to be permitted by this application, complete the following chart for all surface and mineral owners. In the case of surface owners of severed estates which overlie underground works, but no surface disturbance is proposed, list n/a for type of document, grantor of rights, and date.

OWNER	TYPE OF DOCUMENT	GRANTOR OF RIGHTS	EXECUTION DATE	ACREAGE
Appolo Fuels, Inc.	***Lease***	***WPP LLC***	***6/01/2000***	***±2500***
Appolo Fuels, Inc.	***Lease***	***Corrigan TLP LLC c/o Molpus Hardwoods Group LLC***	***6/01/2000***	***±2500***

ATTACHMENT 8.11.A

G) Seed and mulch surface disturbances
409.39ac @ $496/ac = $203,058.00

*Seed 55# @ $2/# = $110.00
Fertilizer 210# @ $2.50/50# = $ 11.00
Lime 2T @ $25/T = $ 50.00
Mulch 1.5T @ $150/T = $225.00
Labor @ $100/ac = $100.00
$496.00

Total $203,058.00

H) Cost For Monitoring Sediment Structures Until Removal is as follows:
(4) years of quarterly monitoring at $10.00/inspection for each pond. 16 ponds X $10.00 = $160.00 cost per round of inspection. $160 cost per round X 16 quarters of inspections = $2,560.00

I) Maintenance Cost
(2) days labor and equipment per quarter for 4 years @ 40.00/hr. 16 quarters X 16hrs./quarter X $40.00 = $10,240.00

J) Surface and Groundwater Monitoring
(4) years of active bi-monthly monitoring at silt structures, quarterly monitoring at groundwater points and quarterly monitoring of surface water monitoring points.

A) Bi-monthly at pond:
16 ponds X 6 samples/year X 4 years = 384 samples

B) Quarterly at Groundwater Monitoring Points:
(1) groundwater point X 4 samples/yr. X 4 years = 16 samples

C) Quarterly at Surface water Points:
1 site X 4 samples/yr. X 4 years = 16 samples
Total Samples 416 X $20.00/sample = $8,320.00

Total Reclamation Cost = $271,295.00

9.2 Explain the legal rights claimed by the applicant for the proposed permit area:
See Attachment 9.2.A

9.3 Are any rights to enter and mine the area, as claimed by the applicant, subject to any pending litigation? [ ] YES [X] NO

9.4 Have the private surface and mineral estates been severed for any parcel of land within the proposed permit area? [X] YES [ ] NO. If "YES", and the applicant proposes to extract coal by surface mining methods, one (1) of the following items shall be provided as part of this application:

(a) Notarized copy of the letter or a lease document from the surface owner(s) consenting to the use of surface mining methods to extract coal within the proposed permit area; or
See Attachment 9.4.A

(b) Notarized copy of the document of conveyance which originally severed the private surface and mineral estates and also expressly grants or reserves the right to extract coal by surface mining methods; or

(c) Notarized copy of a judicial order which expressly grants or reserves the right to extract coal by surface mining methods.

Is the order subject to pending litigation? [ ] YES [X] NO

Documents submitted in response to this requirement shall be identified as "Attachments 9.4.A., 9.4.B.", etc.

9.5 Describe any interest, options or pending bids on interest held or made by the applicant for lands which are contiguous to the proposed permit area. If additional pages are needed, identify as "Item 9.5 continued".
None

9.6 Is the proposed permit area within or adjacent to any lands where a federal agency owns either the surface or mineral rights? [ ] YES [X] NO.
If "YES", list the agency controlling such lands. Describe the location and boundaries of these lands with respect to the proposed permit area. If additional pages are needed, identify as "Item 9.6 continued".

_____
Agency

_____ ( )
Address Telephone Number

ATTACHMENT 9.4.A

The following page, "Special Warranty Deed" first page is a true and accurate copy of the original.

Notary Public: Mary B. Cahill

State in which commissioned: Kentucky

My commission expires: 2-13-10

Date: 8-28-09

AT – 017

State of Kentucky
County of Bell -ss-

I, Becky Blevins, Clerk within and for the State and county aforesaid, do hereby certify that the foregoing Special Warranty Deed was this day lodged for record, whereupon, the same has been duly recorded in Book No. 339 at page No. 533 record of my said office. Given under my hand this the 21st day of Dec. 2007

Becky Blevins, Clerk

By Beth Hurst
Deputy

Deed

SPECIAL WARRANTY DEED

(Bell County, Kentucky)

THIS SPECIAL WARRANTY DEED, made as of the 17th day of December, 2007 by and between ATAYA HARDWOODS, LLC, a Delaware limited liability company, having an address of c/o RMK Timberland Group, 260 Peachtree Street, Suite 1800, Atlanta, Georgia 30303, Grantor, and CORRIGAN TLP LLC, a Delaware limited liability company, having an address of c/o Molpus Woodlands Group, LLC, 654 North State Street, Jackson, Mississippi 39202, Grantee.

WITNESSETH: That for and in consideration of the sum of $25,867,784.04, ALL FULLY PAID, the receipt and sufficiency of which are hereby acknowledged, Grantor has bargained and sold and does hereby grant, sell and convey unto Grantee, its successors and assigns, forever, the surface lands and timber situated in Bell County, Kentucky, and more particularly described on Exhibit "A" attached hereto and made a part hereof.

TOGETHER WITH those matters shown or described on Exhibit "B" attached hereto and made a part hereof.

SUBJECT TO (i) the mineral reservation contained in that certain Special Warranty Deed dated July 1, 2003 from BLC Properties, LLC to Ataya Hardwoods, LLC recorded in Book 316, Page 217 in the County Clerk's Office of Bell County, Kentucky and that certain Corrective Special Warranty Deed from BLC Properties, LLC to Ataya Hardwoods, LLC recorded on December 9, 2003 in Book 318, Page 520 in the County Clerk's Office of Bell

917.00
25,867.00

Deed Tax of 25867.00 Collected
This 21st Day of Dec. 2007
BECKY BLEVINS, Clerk
By BH DC

533

Appolo Fuels, Inc.
#807-0368

ATTACHMENT 9.4.A

The following thirty-eight (38) pages, Lease documents are true and accurate copies of the originals.

Notary Public: Amy L. Caudill

State in which commissioned: Kentucky

My commission expires: 2-13-10

Date: 8-28-09

JOAN ASHER CAWOOD

BELL COUNTY COURT CLERK
PINEVILLE, KY 40977

606-337-6143

DATE 12-9 20 03

RECEIVED FROM Cunnagin & Cunnagin

ADDRESS

	AS PAYMENT FOR	AMOUNT
	Deeds	59800
	Deed Transfer Tax	
	Affidavit of Descent	
	Mortgages	
	Releases	
	Powers of Attorney	
	Articles of Incorporation	
	Mechanics Liens	
	Fixture Filings	
	Liens	
	Leases	
	Bonds	
	Wills	
	County Orders	
	Miscellaneous	
	Copies	
	TOTAL	598.00

12175 RECEIVED BY. BH

CORRECTIVE SPECIAL WARRANTY DEED

(Bell County, Kentucky)

THIS CORRECTIVE SPECIAL WARRANTY DEED (this "Deed"), made as of the 1st day of July, 2003, by and between **BLC PROPERTIES LLC,** a Delaware limited liability company, c/o Baillie Lumber Company, P.O. Box 6, 4002 Legion Drive, Hamburg, New York 14075-0006 ("Grantor"), and **ATAYA HARDWOODS, LLC,** a Delaware limited liability company, c/o Evergreen Timberland Investment, Management, 191 Peachtree Street, NE, 24th Floor, MC: GA-8036, Atlanta, Georgia 30303 ("Grantee").

WITNESSETH: That for correction of a deed and no monetary consideration ~~and in consideration of the sum of $15,436,111.66, ALL FULLY PAID~~, the receipt and sufficiency of which are hereby acknowledged, Grantor has bargained and sold and does hereby grant, sell and convey unto Grantee, its successors and assigns, forever, in fee simple, the following described property situated in **Bell County, Kentucky**, and more particularly described as follows (collectively, the "Real Property"):

ALL of the lands situated in Bell County, Kentucky as more particularly described on Exhibit "A" attached hereto and made a part hereof, together with (a) all buildings, structures and improvements of every nature located or situated on such lands, (b) any and all trees growing, lying, standing or located or situated on such lands, (c) all and singular the tenements, rights, easements, whether by deed, reservation or prescription, hereditaments, rights of way, privileges, liberties, appendages and appurtenances now or hereafter belonging or in anywise appertaining to such lands, (d) all development rights, air rights, and surface water relating to

such lands, (e) all estate, claim, demand, right, title or interest of Grantor in and to any land, street, road, highway, avenue or alley (vacated, open, proposed or otherwise) in, on, across, in front of, abutting or adjoining such lands, or any part thereof, (f) any and all interest of Grantor in and to all strips and gores belonging or pertaining to such lands, and (g) any after-acquired title to any of the foregoing;

LESS AND EXCEPT the lands described on Exhibit "B-1" attached hereto and made a part hereof, the lands described on Exhibit "B-2" (the "Excluded Areas") attached hereto and made a part hereof, and the lands described on Exhibit "B-3" (the "Removed Property") attached hereto and made a part hereof. Grantor hereby reserves, and there is excepted from this conveyance, Grantor's entire estate in the lands described on Exhibit "B-2" and Exhibit "B-3" attached hereto and made a part hereof.

TOGETHER WITH those matters shown or described on Exhibit "C" attached hereto and made a part hereof;

SUBJECT TO the herein described Mineral Reservation and the Permitted Encumbrances shown or described on Exhibit "D" attached hereto and made a part hereof.

Previous deeds indicate that the Real Property hereby conveyed contains approximately 32,474.0000 acres in Bell County, Kentucky, less and except the Excluded Areas described on Exhibit "B-2" attached hereto and made a part hereof, the Removed Property described on Exhibit "B-3" attached hereto and made a part hereof, and the Permitted Encumbrances shown or described on Exhibit "D" attached hereto and made a part hereof, but Grantor makes **no warranty** as to quantity of acreage.

MINERAL RESERVATION:

Grantor hereby reserves all of the coal, coalbed methane, stone, limestone, oil, gas of any type, sand, gravel, all ores, clays, slates, salts, and all other solid, liquid or gaseous substances or minerals of any kind or character upon, underlying or relating to, and the entire mineral estate in fee simple absolute upon, underlying or relating to, all of the Real Property conveyed by this Deed together with all rights incidental, convenient or appurtenant thereto and all of same are excepted from this conveyance, it being expressly understood and agreed that were it not for the reservations and exceptions as aforesaid and the rights and obligations of Grantor and Grantee contained in that certain Surface Damage and Royalty Agreement dated this same date (the "Surface Damage Agreement"), then this sale and conveyance would not have been made. Subject only to the rights of Grantee to receive certain payments in the Surface Damage Agreement, Grantor shall have and does hereby reserve the absolute right to enter upon the Real Property hereby conveyed and to explore for, mine, drill, excavate, dig and take all other actions necessary or convenient to extract, prepare, remove, store, transport and market all such minerals or otherwise develop or market the mineral estate by all methods now known or hereafter developed or discovered including, without limitation, those methods which cause damage to the surface of the land, or the timber, structures or crops thereon. The payments to Grantee provided by the Surface Damage Agreement shall be consideration and payment in full for the future use of and damage to the surface of the Real Property. Notwithstanding any present or future federal, state, or local law, regulation, rule, or procedure, in no event shall Grantor, its successors, assigns or lessees, be required to obtain the consent of Grantee, or its successors or assigns, to enter upon the Real Property hereby conveyed to exercise any of the foregoing reserved rights; any such consent of Grantee, and of its successors and assigns, is hereby reserved by Grantor in this Deed and is hereby given by Grantee's acceptance of this Deed; presentation of a copy of this Deed shall constitute conclusive evidence of the consent of Grantee, its successors and assigns; and Grantee, its successors and assigns shall supply any additional written confirmation of such consent as may be reasonably requested by Grantor, its successors and assigns. No lessee of Grantor shall be liable to Grantee for the payments required by the Surface Damage Agreement. All of the rights and interests herein reserved shall be binding upon and inure to the benefit of Grantor, its successors, lessees, and assigns.

TO HAVE AND TO HOLD the same, in fee simple, together with all the appurtenances thereunto belonging unto Grantee, its successors and assigns, forever, Grantor hereby specially warrants that Grantor will forever warrant and defend the Real Property so granted to Grantee, its successors and assigns, against every person lawfully claiming the same or any part thereof by, through or under Grantor but not otherwise, excepting all matters shown as Permitted Encumbrances on Exhibit "D" attached hereto and incorporated herein.

This Corrective Deed is given by Grantor to correct the legal description of Excluded Area # 5 as described on Exhibit "B-2" to that certain Special Warranty Deed also dated as of July 1, 2003, as heretofore given by Grantor to Grantee, and recorded in the Bell County Clerk's Office on July 14, 2003 in Book 316, Page 217, which Deed contained an inadequate legal description of such Excluded Area # 5.

CONSIDERATION CERTIFICATE: The parties to this Deed hereby certify that the consideration reflected above is the full consideration paid for the property conveyed by this Deed.

IN TESTIMONY WHEREOF, Grantor has hereunto executed this Special Warranty Deed as of the day and year first above written. The Grantee signs solely for the purpose of certification of consideration.

GRANTOR:

BLC PROPERTIES LLC, a Delaware limited liability company

By: Baillie Properties, LP, a Delaware limited partnership, Its Manager

By: _____
Jeffrey S. Meyer, President

GRANTEE:

ATAYA HARDWOODS, LLC, a Delaware limited liability company

By: Wachovia Bank, National Association, its Manager

By: _____
Mary H. Stephens
Assistant Vice President

STATE OF New York
COUNTY OF Erie

Before me, the undersigned Notary Public in and for the State and County aforesaid, personally appeared **Jeffrey S. Meyer,** with whom I am personally acquainted, or proved to me on the basis of satisfactory evidence (being a New York drivers license), and who, upon his oath, subscribed and sworn to, and acknowledged himself to be the President of Baillie Properties, LP, a Delaware limited partnership, which is the Manager of BLC Properties LLC, a Delaware limited liability company, the within named Grantor, and that he, on behalf of such Manager, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing the name of BLC Properties LLC, a Delaware limited liability company, by himself as President of such Manager, as his free act and deed.

Witness my hand and seal at office this the 5th day of December, 2003.

Sandra J Mace

NOTARY PUBLIC, STATE OF New York

My Commission Expires:
May 2, 2006

(SEAL)

SANDRA J MACE
Notary Public, State of New York
Qualified in Erie County
My Commission Expires May 2, 2006

STATE OF Georgia
COUNTY OF Fulton

Before me, the undersigned Notary Public in and for the State and County aforesaid, personally appeared Mary H. Stephens, of **ATAYA HARDWOODS, LLC, a Delaware Limited Liability Company,** with whom I am personally acquainted, or proved to me on the basis of satisfactory evidence (being a Georgia drivers license), and who, upon her oath, subscribed and sworn to, and acknowledged herself to be the Assistant Vice President of Wachovia Bank, National Association, who is the Manager of Ataya Hardwoods, LLC, the within named Grantee, and that he, on behalf of such Manager, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing the name of Ataya Hardwoods, LLC, a Delaware limited liability company, by herself as Assistant Vice President of such Manager, as her free act and deed.

Witness my hand and seal at office this the 3 day of December, 2003.

NOTARY PUBLIC, STATE OF Georgia

My Commission Expires:
11/2/06

(SEAL)

MEAGAN MEHLHOP
NOTARY PUBLIC
FULTON COUNTY
GEORGIA
EXPIRES
NOV 2 2006

FLADOCS 162973v1 (3HR101!.DOC)

This instrument prepared by:

Willis C. Cunnagin
Cunnagin & Cunnagin
Attorneys at Law
201 S. Main Street, P. O. Box 1070.
London, KY 40743-1070

This instrument was prepared from information furnished by the parties involved and the preparer makes no representation as to the status of the title or the accuracy of information.

State of Kentucky
County of Bell -ss-

I Joan Asher Cawood, Clerk within and for the State and county aforesaid, do hereby certify that the foregoing Corrective Special Warranty Deed was this day lodged for record, whereupon the same was duly recorded in Deed Book No. 318 at page No. 520 record of my said office.

Given under my hand this the 9th day of Dec. 2003.

JOAN ASHER CAWOOD, CLERK

By Beth Hurst
Deputy Clerk

DEED EXHIBIT "A"

Legal Description

All of the lands situated in Bell County, Kentucky which were conveyed to BLC Properties LLC from J. M Huber Corporation by Special Warranty Deed dated July 5, 2001 and of record in Deed Book 307, at page 601 et seq. in the records of the Bell County Clerk's Office to which reference is made for a more particular description thereof, including, without limitation, the property described in the legal descriptions set forth below and the other exhibits annexed hereto.

Notwithstanding the legal descriptions set forth below and the other Exhibits annexed hereto, this Deed does not convey, nor purport or intend to convey, any land or interest in land that was not conveyed in the deed to BLC Properties LLC set forth above.

Surface Damage and Royalty Agreement

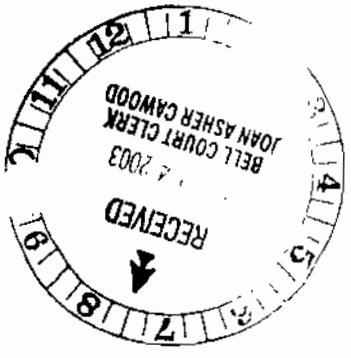
Dated July 1, 2003

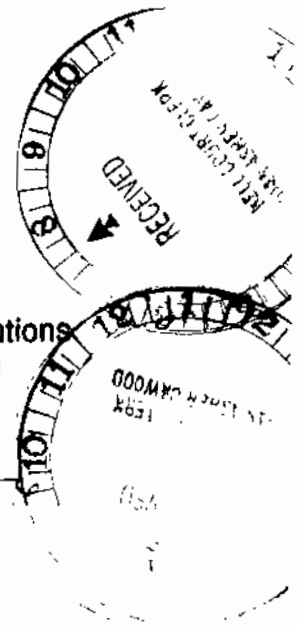
Between

BLC Properties LLC

and

Ataya Hardwoods, LLC





RETURN TO:
LexisNexis Document Solutions
901 Adlai Stevenson Drive
Springfield, Illinois 62703

F1790655

Table of Contents

Table of Contents
(continued)

Page

SURFACE DAMAGE AND ROYALTY AGREEMENT

THIS SURFACE DAMAGE AND ROYALTY AGREEMENT (this "**Agreement**"), is made as of the 1st day of July, 2003, by and between **BLC PROPERTIES LLC**, a Delaware limited liability company (herein referred to as "**Mineral Owner**") and **ATAYA HARDWOODS, LLC**, a Delaware limited liability company (herein referred to as "**Surface Owner**").

WHEREAS, by separate deeds of even date herewith (the "**Deeds**"), Mineral Owner, as Grantor, has sold and conveyed unto Surface Owner, as Grantee, certain parcels of real property located in Bell, Knox and Leslie Counties, Kentucky, and in Campbell, Claiborne, Bledsoe, Sequatchie and Van Buren Counties, Tennessee (all of said parcels so conveyed as of even date herewith are collectively referred to herein as the "**Real Property**"); and

WHEREAS, in the Deeds Mineral Owner reserved and excepted its entire mineral estate with respect to the Real Property in fee simple absolute (the "**Mineral Estate**") including, without limitation, all of its interest in the coal, coalbed methane, oil, gas of any kind, stone, limestone, sand, gravel, ores, clays, slates, salts, liquids and all other solid, liquid or gaseous substances or minerals of any kind or character upon, underlying or relating to the Real Property (the "**Minerals**"), together with all rights incidental, convenient or appurtenant thereto, including the absolute right without further consent of Surface Owner to enter upon the Real Property and to explore for, mine, drill, excavate, dig and take all other actions necessary or convenient to extract, prepare, remove, store, transport and market all such Minerals or otherwise develop or market the Mineral Estate by all methods now known or hereafter developed or discovered including, without limitation, those methods which cause damage to the surface of the Real Property, or the timber, structures or crops thereon; and

WHEREAS, the parties intend that the exercise of the foregoing rights shall be subject to the provisions of this Agreement; and

WHEREAS, the Real Property was conveyed to Surface Owner subject to those certain existing mineral leases described on **Exhibit "B"** attached hereto (the "**Existing Mineral Leases**") with the third-party lessees described therein (the "**Existing Mineral Lessees**"); and

WHEREAS, from time to time from and after the date hereof Mineral Owner contemplates entering into mineral leases with respect to additional portions of the Real Property (the "**Additional Mineral Leases**") with existing or new third-party lessees (the "**Additional Mineral Lessees**"); and

WHEREAS, from time to time from and after the date hereof Mineral Owner contemplates granting extensions of the term of certain Existing Mineral Leases (the "**Extended Mineral Leases**") with Existing Mineral Lessees (the "**Extended Mineral Lessees**") (the Existing Mineral Lessees, the Additional Mineral Lessees, and the Extended Mineral Lessees are sometimes collectively referred to herein as the "**Lessees**"); and

WHEREAS, any Extended Mineral Leases and any Additional Mineral Leases will contain certain terms and conditions as more particularly described in **Exhibit "C"** to this Agreement; and

WHEREAS, Mineral Owner and Surface Owner desire to agree upon, among other things, the compensation to be paid to Surface Owner by Mineral Owner for any and all damage to the surface of the Real Property and the trees, timber, structures or crops thereon caused by the exploration, extraction, removal or mining of the Minerals by Mineral Owner or by the Lessees of Mineral Owner, and any and all activities related thereto, and to provide for certain royalty payments to Surface Owner from the proceeds received by Mineral Owner from the mining of the Minerals; and

NOW, THEREFORE, as part of the same sale and conveyance described in the Deeds and for the same consideration stated therein, the receipt and sufficiency of which is hereby acknowledged, and with the understanding that were it not for the agreements, terms and conditions herein contained the sale and conveyance of the Real Property by Mineral Owner would have not been made, Mineral Owner and Surface Owner hereby agree as follows:

1. **Mining of Minerals and Mineral Leases.**

(a) Compliance With Agreement. Mineral Owner and its successors and assigns shall comply with all the terms and conditions of this Agreement in connection with any exploration, extraction, removal or mining of any Minerals, and any and all activities related thereto. This Agreement shall apply, in accordance with its terms, to any action to develop or produce the Minerals.

(b) Required Lease Conditions. Mineral Owner shall not enter into any Additional Mineral Lease or any Extended Mineral Lease unless such lease contains provisions substantially the same as those specified in **Exhibit "C"** hereof. Mineral Owner shall provide to Surface Owner a copy of each Additional Mineral Lease and each Extended Mineral Lease within five (5) business days of the execution thereof by Mineral Owner and the Additional Mineral Lessee or the Extended Mineral Lessee.

(c) Assignment of Rights to Surface Owner. Concurrent with the date of this Agreement, Mineral Owner shall assign to Surface Owner, in the form attached hereto as **Exhibit "D"**, a concurrent interest in certain of Mineral Owner's rights under the Existing Mineral Leases.

(d) Coal Washing Etc. Prohibited. Except as otherwise provided in paragraph (e) below, and except for sizing or crushing coal for shipping, Mineral Owner is specifically prohibited from washing or otherwise mechanically or chemically cleaning or refining coal on the Real Property and from using any portion of the Real Property for tipple or related storage areas. Mineral Owner shall be prohibited from depositing slurry, fines, gob or any other processing waste or contaminated water on the Real Property. Mineral Owner shall not amend any Existing Mineral Lease to permit any Existing Mineral Lessee to wash or otherwise mechanically or chemically clean or refine coal on the Real Property (except for sizing or crushing coal for shipping) or to use any portion of the Real Property for tipple or related storage areas, except as provided in paragraph (e) below, nor to deposit slurry, fines, gob or any other processing waste or contaminated water on the Real Property. Surface Owner may consent in writing to any activity otherwise prohibited by this paragraph (d).

(e) Mineral Owner May Purchase for Coal Washing Etc..

(i) In the event Mineral Owner desires to utilize, or to permit any Lessee to utilize, a portion of the Real Property solely for an activity which is otherwise prohibited by paragraph (d) above, Mineral Owner shall have the right (except that in the case of such proposed use by an Existing Mineral Lessee having the right to do so under an Existing Mineral Lease, Mineral Owner shall have the obligation), by written notice to Surface Owner, to purchase from Surface Owner the fee simple portion (including a reasonable buffer area and access roads) of the Real Property reasonably required for any such use. In the event that Mineral Owner desires to or is required to make such a purchase it shall notify Surface Owner in writing. In making any such purchase, Mineral Owner shall cooperate with Surface Owner to minimize interference with the plans and operations of Surface Owner.

(ii) The purchase price of such portion of the Real Property to be conveyed to Mineral Owner under subparagraph (i) shall be the amount that would be computed pursuant to Section 3(e)(iii) below as Surface Owner's interest in such portion of the Real Property as if it were a "Leased Tract" (as defined below). Surface Owner shall convey such portion of the Real Property to Mineral Owner within fifteen (15) business days following the determination of the value thereof by delivery of a deed therefor in the form attached hereto as **Exhibit "E"**. Any portion of the Real Property to be conveyed to Mineral Owner under subparagraph (i) shall be surveyed by Mineral Owner, at its cost and expense, if in the opinion of Mineral Owner a survey is necessary to determine the exact location and number of acres to be conveyed.

(iii) Subparagraph (i) shall not apply to any portion of the Real Property that is located in any "Restricted Mining Area" (as defined below), except with the written consent of Surface Owner.

(f) No Avoidance of Agreement. Mineral Owner shall not enter into any Additional Mineral Lease or Extended Mineral Lease with any party or person affiliated with, controlled by or under common control with Mineral Owner if such Additional Mineral Lease or Extended Mineral Lease has the actual or foreseeable effect of avoiding any payment due or other obligations of Mineral Owner for the benefit of Surface Owner under this Agreement, including without limitation, the payment of any Royalty Payments or Surface Damages as those terms are defined in Section 3 hereof.

(g) No Mining Without Permits. Mineral Owner shall not explore, extract, remove or mine any Minerals without first obtaining and at all times thereafter maintaining all material permits and licenses (the **"Mining Permits"**) required by all Federal, State and local laws (including laws relating to protection of the environment), statutes, regulations, ordinances, judicial decisions, decrees and judgments (collectively, **"Laws"**).

2. **Mining Notice and Mining Area.**

(a) Mining Notice. Within fifteen (15) days after the filing by Mineral Owner of an application for any Mining Permit, or within fifteen (15) days after receipt by Mineral Owner of notice of the filing by any Lessee of an application for any Mining Permit, or in the case of any area listed on **Exhibit "F"** attached hereto (the "**Undisturbed Permitted Areas**") within ninety (90) days following the date of this Agreement, Mineral Owner shall give written notice to Surface Owner (the "**Mining Notice**") enclosing a true and correct copy of any permit map associated with such application and specifying the method of extraction to be used, the location and the number of acres of the surface of the Real Property that will be damaged by such mining (the "**Mining Area**"), the types of Minerals to be mined, and the location of any rights-of-way necessary for and number of acres of the surface of the Real Property that will be damaged by the construction of any new roads necessary for access to the Mining Area and for the construction of utilities, pipelines, gas collection facilities or other structures to be used in the mining operations to be conducted by Mineral Owner or any Lessee (the "**Rights-of-Way**").

(b) Restricted Mining Areas.

(i) **Exhibit "G"** attached hereto describes certain areas designated as "**Restricted Mining Areas**", and specifies the activities that are restricted in such areas pursuant to the provisions of this Section 2(b). The location of these areas is generally shown on the maps attached as **Exhibit "G-1"** hereto ("**Restricted Mining Area Maps**").

(ii) Without the prior written consent of Surface Owner, Mineral Owner shall not apply for, nor shall Mineral Owner enter into any Additional Mineral Lease or Extended Mineral Lease allowing any lessee thereunder to apply for without the prior written consent of Surface Owner, a Mining Permit allowing the extraction of any Minerals in any area where such extraction is described as "Restricted" in Column "B" of **Exhibit "G"** (each, a "**Restricted Activity**"), nor shall Mineral Owner take any action to commence any such Restricted Activity without the prior written consent of Surface Owner.

(c) Reconveyance of Portions of Real Property. Surface Owner shall have the right by written notice to Mineral Owner to grant and convey to Mineral Owner fee simple title to any Mining Area and the related Rights-of-Way by delivery of a deed therefor in the form attached hereto as **Exhibit "E"**, subject to all easements, restrictions, and encumbrances of record, and Mineral Owner shall have the obligation to accept such conveyance. Surface Owner shall notify Mineral Owner of its election to convey any such Mining Area and the related Rights-of-Way within fifteen (15) days after receipt by Surface Owner of notice that all material Mining Permits with respect to any Mining Area have been issued. Closing of such conveyances shall occur within thirty (30) days after the date the Surface Damages (as defined below) due to Surface Owner with respect to such Mining Area and related Rights-of-Way are finally determined under the provisions of Section 3(d) hereof (or in the case of a Mining Area where Strip Mining (as defined below) will be conducted, thirty (30) days following Surface Owner's receipt of such notice that all material Mining Permits have been issued). At such closing, Mineral Owner shall pay to Surface Owner all such Surface Damages due to Surface Owner with regard to the Mining Area and Rights-of-Way then being conveyed. Any Mining Area and Rights-of-Way that Surface Owner shall elect to convey to Mineral Owner under this Section 2(c) shall be surveyed by Surface Owner, at its cost and expense, if in the opinion of

Surface Owner a survey is necessary to determine the exact location and number of acres of the Mining Area and Rights-of-Way. Any such conveyance of any Mining Area and Rights-of-Way by Surface Owner shall not operate to waive any Royalty Payments (as defined herein) to which the Surface Owner would otherwise be entitled hereunder with respect to such Mining Area and Rights-of-Way.

3. **Compensation to Surface Owner for Surface Damages.**

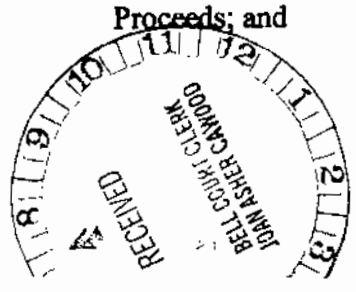
(a) Definitions. As used in this Agreement, the capitalized terms set forth below shall have the following meanings:

(i) **"Royalty"** as used herein shall mean (1) any interest in production or extraction of Minerals or the proceeds therefrom that is directly or indirectly owned or reserved by or for the benefit of Mineral Owner or granted to the Mineral Owner, its successors or assigns, or to its benefit, whether directly or indirectly, in connection with any present or future lease or other arrangement or agreement for the production or extraction of Minerals, including, but not limited to, whether similar or dissimilar, royalty, excess royalty, overriding royalty, rent, profits interest, production payments, cash bonus received by the Mineral Owner at the time of executing any future oil, gas, or mineral lease, or rental paid for the privilege of deferring commencement of development under any existing or future lease, whether paid in cash or in-kind; (2) any payment so granted or reserved to be paid in lieu of production including, but not limited to, whether similar or dissimilar, any shut-in well payments or advance or minimum royalty; (3) in the event of the development and mining of any portion of the Minerals by Mineral Owner, its successors and assigns, the same interest in production, proceeds or payment to which Surface Owner would have been entitled if Mineral Owner, as of the date of commencement of development, had executed a lease at arms-length with an unrelated party providing for production royalties at prevailing market rates, taking into account location and other relevant factors, and in the event that Mineral Owner and Surface Owner cannot agree on the amount of such royalties, they shall cooperate to appoint an independent consultant to determine such rates for the purpose of this Section 3(a); and (4) as to production or extraction of substances from lands pooled or unitized with the Minerals, "Royalty" shall include only that portion of said production, proceeds or payment attributable to Mineral Owner's interest in said production unit. "Royalty" shall not include (A) any sale or similar conveyance of all or a portion of the Mineral Estate in place, nor (B) any item specified in this subparagraph (i) payable or paid with respect to any production or extraction occurring prior to the date of this Agreement.

(ii) **"Royalty Proceeds"** means all gross payments received, directly or indirectly, by or for the benefit of Mineral Owner from a Royalty with respect to Minerals, that are not subject to repayment or recoupment.

(iii) **"Royalty Interests"** means a perpetual, non-participating royalty interest in an amount equal to:

A. two and one-half percent (2½%) of all Royalty Proceeds; and



B. an additional seven and one-half percent (7½%) of any Royalty Proceeds with respect to coal produced or extracted from, under or on the Real Property by means of Strip Mining (as defined below).

(iv) **"Royalty Payments"** means the payments owed by Mineral Owner to Surface Owner pursuant to clause (A) of subparagraph (d)(i) below.

(v) **"Strip Mining"** means the extraction of coal from an open strip mine pit (or other similar surface removal methods which may be developed in the future) and the extraction of coal in the facing-up of deep mines, but does not include any instance or method in which the surface of the Real Property is not disturbed by such extraction nor the extraction of coal by any other mining method, including but not limited to high wall mining or auger mining.

(b) Grant. Mineral Owner does hereby grant, bargain, sell, convey, transfer, assign and deliver to Surface Owner forever the Royalty Interests, free and clear of all superior liens and claims, and without restriction as to transferability (but subject to the provisions of Section 7(c) below).

(c) Payments and Audits.

(i) The Royalty Payments provided for in this Section 3 shall be determined on a cash basis for each calendar month. Mineral Owner shall determine the amount of Royalty Payments due to Surface Owner for each month, and make payment therefor by the 20th day following the end of each month. Mineral Owner shall deduct no costs of Mineral Owner, including costs for production, transportation, taxes, commissions, or marketing, from any Royalty Payment. Together with any Royalty Payments, Mineral Owner shall deliver to Surface Owner a detailed reconciliation certified by Mineral Owner showing the manner in which Royalty Payments made to Surface Owner pursuant to this Agreement were computed and the information on which such computations were based.

(ii) Surface Owner shall, at its sole cost and expense except as hereinafter provided, have the right once during any calendar quarter, upon ten (10) business days advance written notice, to examine or audit the books, accounts and records of Mineral Owner concerning the basis for any Royalty Payments made during the prior thirty-six (36) months (or, if shorter, since the end of the period most recently audited), in order to verify the amount of the Royalty Payments payable by the Mineral Owner hereunder. Upon written notice by Surface Owner to Mineral Owner given within thirty (30) days following such audit demonstrating that the Royalty Payments made for the audited period are less than the amount owed to Surface Owner for such audited period, Mineral Owner shall adjust the Royalty Payments immediately next due to Surface Owner by the amount of the deficiency demonstrated by such audit, and shall in addition pay to Surface Owner interest on the amount of such deficiency, at the prime rate of interest (as such rate may vary from time to time) in effect during the period of each such deficiency (as reported in the *Wall Street Journal* or similar publication), or if higher, at the rate then in effect for interest on civil judgments in the United States District Courts, from the date such deficient amount should have been paid until the date of such actual payment. In the event the deficiency demonstrated by any audit under this subparagraph (ii)

exceeds ten percent (10%) of the amount such audit demonstrates was actually payable, Mineral Owner shall pay the reasonable costs incurred by Surface Owner in conducting such audit.

(d) Surface Damage Payments.

(i) In the event Mineral Owner delivers to Surface Owner a Mining Notice, Mineral Owner shall pay to Surface Owner as agreed upon damages for the destruction of any portion of the Real Property that will result from the mining and related activities to the surface and the trees and timber located in the Mining Area and Rights-of-Way described in such Mining Notice (the "**Surface Damage Payments**"): (A) the amounts of the Royalty Interests described in paragraph (a) and granted to Surface Owner in paragraph (b) above, plus (B) except with respect to Strip Mining (as specified in subparagraph (iv) below), an amount determined as provided in subparagraph (ii) below.

(ii) The amount determined under this subparagraph (ii) shall be equal to the sum of (a) Nine Hundred Dollars ($900) multiplied by the number of whole and partial acres to be damaged in the Mining Area and the Rights-of-Way; provided, however, commencing five (5) years from the date hereof, and each five (5) years thereafter, such dollar amount shall be increased by One Hundred Dollars ($100) per acre, plus (b) the fair market value of all merchantable trees and timber located in the Mining Area and the Rights-of-Way, determined as provided in subparagraph (iii) below.

(iii) Within thirty (30) days after receipt by Surface Owner or Mineral Owner of a notice requiring the determination of the fair market value of trees and timber on a portion of the Real Property, both parties shall promptly make a good faith attempt to mutually agree upon such fair market value. In the event that they are unable to do so within such thirty (30) day period, the parties shall promptly agree upon and jointly appoint an independent forestry consultant to determine the fair market value thereof. The consultant shall reach a decision within thirty (30) days after such appointment, and the decision of the consultant as to such value shall be final and binding on all parties. Each party shall pay one-half (½) of the cost of such consultant. In the event the parties are unable to agree on the appointment of a consultant, each party will promptly appoint an independent forestry consultant, each of which may be a consultant previously engaged by the appointing party with respect to the Real Property, and such two consultants will in turn promptly select a third independent forestry consultant to act with them on a panel. The panel of consultants will reach a decision within thirty (30) days after the selection of the third consultant, and the decision of the panel of consultants as to such value will be final and binding on the parties, or if the panel of consultants is unable to agree within such thirty (30) day period, the decision of the third consultant shall be final and binding. The cost of the consultant retained by each party shall be paid by such party and each party shall pay one-half (½) of the cost of the third consultant, if any, appointed hereunder. Following any payment of Surface Damages under this paragraph (d), Mineral Owner shall own all trees and timber located within such Mining Area and Rights-of-Way, and shall have the right to harvest, cut and remove all such trees and timber.

(iv) Subparagraph (ii) of this paragraph (d) shall not apply to, and no amount shall be determined or payable under subparagraph (ii) with respect to, any Mining Areas and Rights-of-Way with respect to which the Royalty Payments for a Royalty Interest described in Section 3(a)(iii)(B) (pertaining to Strip Mining) will be applicable.

(e) Special Surface Damage Provisions For Specified Mining Areas.

(i) Provisions applicable to mining.

A. The provisions of this subparagraph (e)(i) shall apply in the event that Mineral Owner enters into any Additional Mineral Lease or any Extended Mineral Lease for (and upon the issuance of all material Mining Permits to any Existing Mineral Lessee for) the mining of coal in any portion of the "**Specified Mining Areas**" described and shown on **Exhibit "G"** and **Exhibit "G-1"** in the Tennessee Counties of Bledsoe, Sequatchie, or Van Buren.

B. Mineral Owner shall give written notice to Surface Owner within fifteen (15) days after (I) the execution of any Additional Mineral Lease or any Extended Mineral Lease by Mineral Owner for the mining of coal in any portion of the Specified Mining Areas (a "**Leased Tract**"), (II) the receipt of notice by Mineral Owner of the transfer of all material Mining Permits to Tennessee Classic Coal Co., Inc. ("**TCC**") for the mining of coal in the portion of the Specified Mining Area formerly covered by that certain lease dated January 2, 1974 between J.M. Huber Corporation and Meadowlark Farms, Inc./Ayrshire Land Company and known as the "Skyline Coal Company Lease" (the "**Skyline Tract**"), or (III) the receipt of notice by Mineral Owner of the issuance of all material Mining Permits to TCC for the mining of coal in all or part of the balance of that portion of the Specified Mining Area covered by that certain lease dated January 1, 2002 between BLC Properties LLC and TCC, as amended on June 23, 2003 (the "**New TCC Tract**"). Within forty-five (45) days of receiving such written notice from Mineral Owner, Surface Owner may elect by giving written notice to Mineral Owner that the provisions of Sections 2(a) and 2(c) and of paragraph (a)(iii)(B) of this Section 3 (requiring the payment of an additional 7½% of Royalty Proceeds for Strip Mining) shall not apply with respect to the mining of coal from such Leased Tract, the Skyline Tract, or such New TCC Tract, as the case may be, and that the following provisions of this subparagraph (e)(i) shall apply instead.

C. If Surface Owner makes the election specified in subparagraph (i)(B) with respect to any Leased Tract, Surface Owner shall sell and Mineral Owner shall purchase, in fee simple, Surface Owner's interest in such Leased Tract for the full fair market value thereof, determined as provided in subparagraph (iii) below.

D. If Surface Owner makes the election specified in subparagraph (i)(B) with respect to the Skyline Tract, Surface Owner shall sell and Mineral Owner shall purchase, in fee simple, Surface Owner's interest in that portion of the Skyline Tract on which surface coal mining has not been conducted previously (consisting of approximately 482 acres), for an amount determined as if the provisions of paragraphs (a)(iii)(A) (requiring the payment of 2½% of Royalty Proceeds) and (d)(2) (providing for surface damage payments of $900 per acre plus the value of merchantable trees and timber on such acreage) of this Section 3 applied to such portion of the Skyline Tract.

E. If Surface Owner makes the election specified in subparagraph (i)(B) with respect to any portion of the New TCC Tract, Surface Owner shall sell and Mineral Owner shall purchase, in fee simple, Surface Owner's interest in such portion of the New TCC Tract, for an amount determined as if the provisions of paragraphs (a)(iii)(A)

ATTACHMENT 9.2.A

The applicant, Appolo Fuels, Inc. has a lease from the landowner, CORRIGAN TLP LLC C/O MOLPUS HARDWOODS GROUP LLC and the mineral owner WPP LLC, dated June 1, 2000. CORRIGAN TLP LLC C/O MOLPUS HARDWOODS GROUP LLC is the legal and equitable owner of the surface rights and WPP, LLC is the legal and equitable owner of the mineral rights to all of the property contained in this application for surface mining. Appolo Fuels, Inc. has the right to enter, mine by surface mining methods, construct mine related facilities with the rights to ingress and egress the subject property containing over 2,500 acres in Bell County. These rights are not subject to any pending litigation.

10. Notice of Intention to Mine

10.1 List the name of the newspaper of largest circulation in each county in which the proposed operation will be located.

COUNTY	NEWSPAPER
Bell	***Middlesboro Daily News***

10.2 Provide on a separate page immediately following this section the language of the "Notice of Intention to Mine" to be advertised in the newspaper(s) listed in Item 10.1 and identify as "Attachment 10.2.A.". In accordance with 405 KAR 8:030, or 8:040, a copy of each of the four newspaper advertisements or an affidavit from the newspaper editor(s) including a copy of the final advertisement shall be submitted to the department not later than 15 days after the date of the final advertisement. NOTE: The cabinet cannot complete the final processing and issuance of a mining permit unless and until all advertising requirements have been properly fulfilled by the applicant. Failure to submit accurate newspaper advertisements in a timely manner will result in the delayed issuance of a permit.
See Attachment 10.2.A.

11. Areas Designated Unsuitable for Mining & Requests for Variances

NOTE: Only those waivers and variances identified in this section will be considered for approval by the cabinet.

11.1 Is any part of the proposed permit area: [ ] within lands designated by the state as unsuitable for mining; [ ] under study for designation as such; [ ] within an area with special conditions as a result of a lands unsuitable study. If entire permit area is not designated unsuitable and not currently under study for such designation, check here [***XX***]. Attach DSMRE clearance letter as "Attachment 11.1.A."

11.2 Indicate if proposed surface mining and reclamation activities will occur on, or are adjacent to: [ ] national park system; [ ] national or state forest lands; [ ] national system of trails; [ ] national wilderness preservation system; [ ] wild and scenic rivers system, including "study" rivers; [ ] state wild rivers established pursuant to KRS 146; [ ] national recreation areas; [ ] public wildlife management area; and/or [ ] places listed in or eligible for listing in the National Register of Historic Places. If not, check here [***XX***].

Appolo Fuels, Inc.
#807-0368

ATTACHMENT 10.2.A

NOTICE OF INTENTION TO MINE
PURSUANT TO APPLICATION NUMBER 807-0368

1) In accordance with KRS 350.055, notice is hereby given that Appolo Fuels, Inc., P.O. Box 1727, Middlesboro, Kentucky, 40965, has applied for a permit for a surface coal mining and reclamation operation affecting 847.36 acres located 1.33 miles northeast of Fonde in Bell County.

2) The proposed operation is approximately 1.56 miles northeast from KY 74's junction with KY 535 and located on Clear Fork.

3) The proposed amendment is located on the Fork Ridge, Kayjay, Frakes and Eagan U.S.G.S. 7 1/2 minute quadrangle maps. The operation will use the contour, remining and auger/highwall miner methods of surface mining. The surface area owned by Corrigan TLP LLC C/O Molpus Hardwoods Group LLC.

4) The application has been filed for public inspection at the Department for Natural Resources Middlesboro Regional Office, 1804 East Cumberland Avenue, Middlesboro, Kentucky 40965. Written comments, objections, or requests for a permit conference must be filed with the Director, Division of Mining Permits, #2 Hudson Hollow, U.S. 127 South, Frankfort, Kentucky 40601

NOTES TO PUBLISHER:

1. **The publisher should insure that the notice is clearly legible and that the heading "NOTICE OF INTENTION TO MINE" is a minimum of ten (10) point, bold face, all capitals type.**

2. **4Th and final advertisement to include this additional paragraph:**
   This is the final advertisement of this application. All comments, objections or request for a permit conference must be received within thirty days of today's date.

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR NATURAL RESOURCES

Steven L. Beshear
Governor

Division of Mine Permits
2 Hudson Hollow
Frankfort, Kentucky 40601
Phone (502) 564-2320
Fax (502) 564-6764
www.minepermits.ky.gov

Leonard K. Peters
Secretary

Carl E. Campbell
Commissioner

October 20, 2008

T.C. HOWARD
HOWARD ENGR. & GEO., INC.
PO BOX 271
HARLAN KY 40831

RE: Appolo Fuels, Inc.
Application # 807-0368 NW

Dear Mr. Howard:

The Division of Mine Permits has conducted the critical resources review of the above referenced application. Attached are the Division's findings, listed by application item, describing the issues that must be addressed. The findings for each application item are summarized below.

11.1 Areas Designated Unsuitable for Mining: None identified
12.2 General Description of Mining and Reclamation Operations: BMPs recommended
Stream Restoration Plan
13.1 Cultural or Historic Resources: Archaeological survey required
14.1 Fish and Wildlife Information: T/E species identified
Myotis sodalis Indiana bat
14.4 Fish and Wildlife Survey: Required as listed below
Indiana bat PEP or Indiana bat survey
21.11 Fish and Wildlife Enhancement Plan: Required

These attachments and supporting documentation must be incorporated into the appropriate sections of the comprehensive application.

Significant changes from the preliminary application or to the mine plan may require additional environmental review.

If you have any questions concerning this matter, please contact the review biologist, Lori Adams, or archaeologist, Rose Moore, Critical Resources Review Section, at (502) 564-2320.

Sincerely,

Danita LaSage

Danita LaSage, Acting Supervisor
Critical Resources Review Section/
Small Operator Assistance Program/
401 WQC
Division of Mine Permits

Enclosure to Applicant

c: Rose Moore (e)
Lori Adams (e)
David Morgan, SHPO
Mike Hardin, KDFWR
Lee Andrews, USFWS
Permit File – w/enclosure Doug Bartley (e)
Appolo Fuels, Inc.
PO Box 1727
Middlesboro, KY 40965

Appolo Fuels, Inc.
Application No. 807-0368 NW
October 20, 2008

Application Item 11.1: Lands Unsuitable for Mining

Please be advised that mining operations seeking new or modified coverage under the Coal KPDES General Permit must submit a Notice of Intent (NOI-CM) to the Division of Water. Please file the NOI-CM with the Division of Water as soon as possible in order to avoid potential delays in the processing and issuance of your SMCRA/DNR permit.

1. As of this date, there are no lands in the proposed permit area designated unsuitable for surface coal mining or under study for such designation, as provided in 405 KAR Chapter 24.

2. The proposed permit area does not fall within an area with special conditions as a result of a lands unsuitable study.

3. The proposed permit area is not located within a U.S. Army Corps of Engineers project area.

4. Based on information available to the Department, there are no federal lands within or adjacent to the proposed permit area.

11.3 Indicate if the proposed permit area is within: [***X***] 500' of known abandoned or active underground mines; [ ] 300' of a public park, public building, school, church, community or institutional building; [ ] 300' of an occupied dwelling; [ ] 100' of the outside right-of-way line of a public road; [***X***] 100' of a stream; [ ] 100' of a cemetery, or prehistoric burial ground. If not, check here [ ].

11.4 For each item checked in items 11.2 and 11.3 above, attach appropriate maps to identify the location and boundaries of the lands or facilities referenced. These attachments shall be identified as "Attachment 11.2.A." and "Attachment 11.3.A." respectively. Any required waiver documentation such as land owner consent or approval of appropriate state or federal agencies shall be attached. These attachments shall be identified as "Attachment 11.4.A., 11.4.B.", etc. Any engineering designs for Item 11.3 shall be submitted in other appropriate sections of this application.

See Attachment 11.4.A

11.5 Indicate below all waivers and variances to be requested for the proposed operation. The acreage (or facility designation) affected should be provided as requested. Those variances which have been granted in previous applications to this permit should be marked with an [x] while those proposed or expanded as part of this application should be marked with an [*]. The documentation necessary to approve each variance requested as part of this application shall be submitted in the appropriate sections of this application.

[ ] Post mining land use change
[*] Alternate topsoil material for ***382.60*** acres
[ ] Permanent pond #_____
[ ] AOC variance: remining for _____ acres
[ ] AOC variance: steep slope for _____ acres
[ ] AOC variance: mountaintop removal for _____ acres
[*] Alternate contemporaneous reclamation standards
[ ] Alternate contemporaneous reclamation standards for joint surface and underground operations
[ ] Mulching variance
[*] Permanent road(s) # ***Roads "A","B","C" & "D"***
[*] Culvert spacing variance for roads # ***Roads "A", "B", "C" & "D"***
[*] Grade variance for roads # ***Roads "A", "B" & "C"***

OTHERS: ***[*] Prime farmland negative determination [*]Waiver to mine within 0 feet of Clear Fork, an unnamed tributary of Clear Fork and Marsee Branch [*] Within 0' of abandoned mine works, [*]No Surface shall be removed within 50' of any pole on the subject line, [*]Controlled Blasting within 300' of Power Company Distribution Line. [*]No highwall shall come within 75' of Kentucky Utilities Company distribution structure. [*]No surface shall be removed within 25' of any Kentucky Utilities Distribution anchor.***

11.6 If valid existing rights are claimed for any part of the proposed permit area identified in 11.1, 11.2, or 11.3, submit the required information as "Attachment 11.6.A".

N/A

Appolo Fuels, Inc.

Underground Works Map

Permit #807–0368

Scale 1" = 500'

LEGEND

Existing Hignite Seam Underground Workings Approx. Elev. 2400'	Existing Buckeye Springs Seam Underground Workings Approx. Elev. 1940'
Existing Poplar Lick Seam Underground Workings Approx. Elev. 2000'	Existing Mason Seam Underground Workings Approx. Elev. 1700'
Existing Sterling Seam Underground Workings Approx. Elev. 2190'	Existing Stray Seam Underground Workings Approx. Elev. 2300'

CERTIFICATION

I, Timothy C. Howard P.E. No. 15,317

Date: 10/12/09

hereby certify in accordance with 405 KAR 7:040, Section 10, that this document is correct as determined by accepted engineering practices and includes all information required of it by Chapter 350 and KAR Title 405.

STATE OF KENTUCKY TIMOTHY C. HOWARD 15,317 LICENSED PROFESSIONAL ENGINEER

Prepared By
HOWARD HEG
Engineering and Geology, Inc.

ACTIVE/ABANDONED AREA DISCLAIMER

The areas marked as "ACTIVE" and/or "ABANDONED" on this map were copied from a map purportedly prepared by a third–party. HEG affirmatively states that it has used its best engineering practice in utilizing the third party map information but, due to physical conditions, CANNOT VERIFY, OR REPRESENT OR WARRANT THE ACCURACY OR COMPLETENESS of the third party map information. HEG DISCLAIMS ALL REPRESENTATIONS AND/OR WARRANTIES whether express, implied or statutory including but not limited to, warranties of title, merchantability and fitness for a particular purpose or use, and it makes no representation as to any property rights and further disclaims all liability for any and all damages that may arise from the use of the third party map information by anyone. HEG specifically disclaims all liability for the consequences of decisions made by anyone on the basis of the third party map information and affirmatively states that it is the user's responsibility to review and understand the limitations of the information.

ATTACHMENT 11.4.A

WAIVERS AND VARIANCES

The following waivers and/or variances have been granted for previous permitting actions and will be requested as part of this application:

1) Waiver in order to use Alternate Topsoil Material as a part of the reclamation of the mining area.

2) Waiver for contemporaneous reclamation standards.

3) A Prime Farmland Negative Determination.

4) A waiver in order to make surface disturbances within 100 feet of a stream.

5) Retain roads as permanent structures.

6) Waiver for mining within 500' of known abandoned mine works.

7) Waiver in order to use Alternate Sediment Control.

Kentucky Utilities Company P.O. Box 87 Fourmile, Kentucky 40939

August 11, 2009

Mr. Larry Adams
Director of Permits
Natural Resources & Environmental Protection Cabinet
#2 Hudson Hollow Complex
U. S. 127 South
Frankfort, KY 40601

Dear Mr. Adams,

Re: Permit No. 807-0368

Kentucky Utilities Company has no objection to the mining by Appolo Fuels near our Middlesboro to Fonde 12 KV distribution line on Fonde Mountain in Bell County provided the following conditions are met:

1. No surface shall be removed within 50 feet of any pole on the subject line. At the edge of the undisturbed zone (50 ft.), the soil overburden will be graded on a 2:1 slope to the top of the rock.

2. No highwall shall come within 75 feet of a Kentucky Utilities Company distribution structure. Apollo Fuels will accept responsibility for all damages of any nature to our lines as a result of its mining operation, and will make restitution thereof.

3. No surface shall be removed within 25 feet of any Kentucky Utilities Company distribution anchor. At the edge of the undisturbed zone (25 ft.), the soil overburden will be graded on a 2:1 slope to the top of the rock.

4. No material will be filled under the lines without written approval from Kentucky Utilities Company.

5. Only controlled blasting will be permitted within 300 ft. of the transmission line. Apollo Fuels assumes liability for all damages incurred by such blasting.

6. During mining and reclamation work, Kentucky Utilities Company must, at all times, retain access to the transmission line. Access to the line will be required for both heavy and light duty rubber tired equipment.

7. Reclamation of the site, specifically around the structures, shall be performed in such a manner to promote positive drainage and re-vegetation. The conditions as allowed in (1&2) above are temporary and will be reclaimed in such a manner to assure soil stability around the structures Surface slopes around the structure shall not be less than 2:1. Access to the line for maintenance equipment shall be maintained.

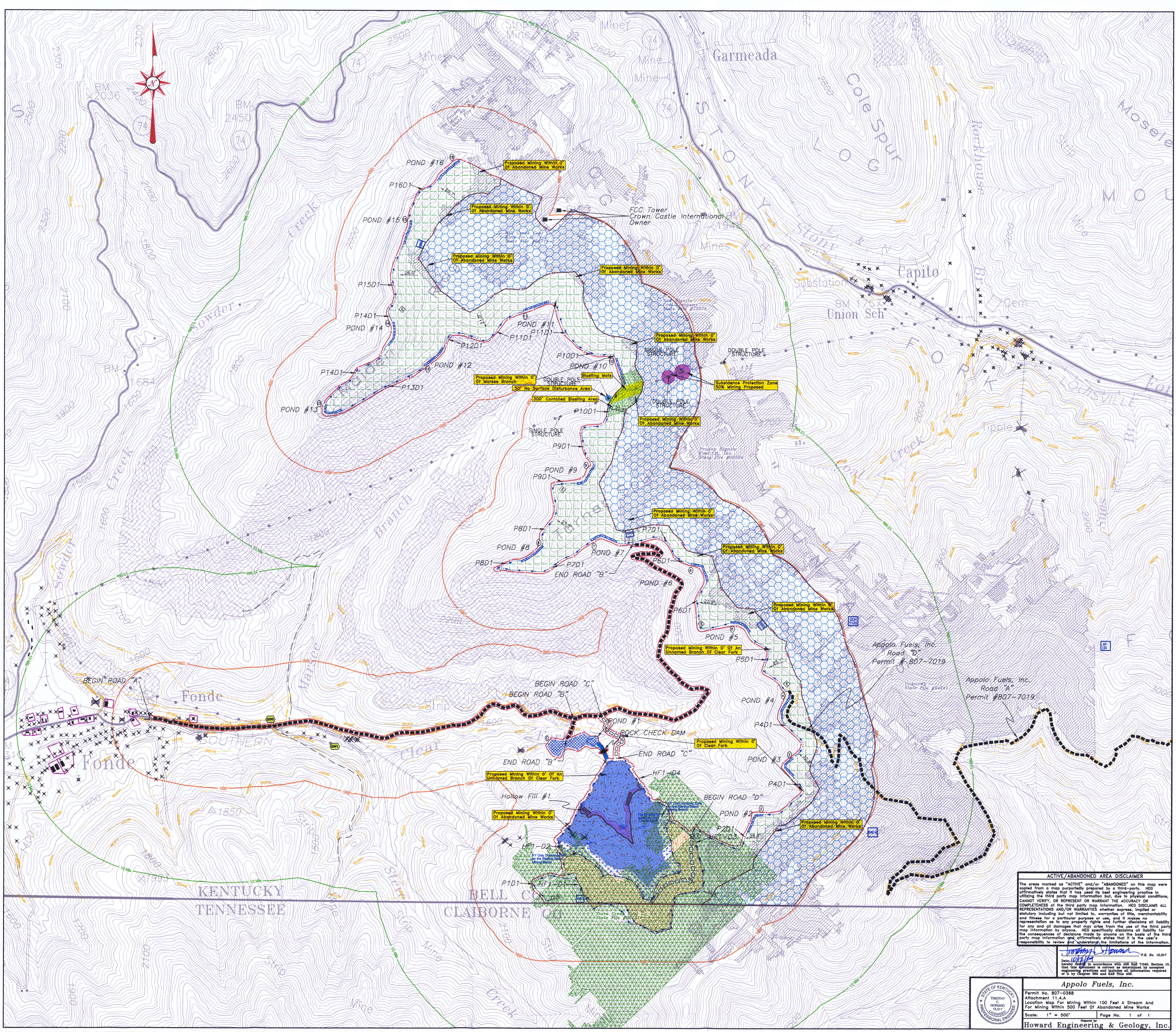
8. All mining equipment, vehicles, etc., that operate underneath our lines or in close proximity to it shall maintain clearances not less than those required by National Electric Safety Code Standards. Apollo Fuels will assume liability for all damages incurred to our distribution lines as result of the operation of its equipment.

If you should need additional information or have any questions, please let me know.

Sincerely,

Mike Money
Sr Design Technician
Kentucky Utilities Company

Cc: File
Mr. Danny Caudill
Howard Engineering



ACTIVE/ABANDONED AREA DISCLAIMER

The areas marked as "ACTIVE" and/or "ABANDONED" on this map were copied from a map purportedly prepared by a third-party. HEG affirmatively states that it has used its best engineering practice in utilizing the third party map information but, due to physical conditions, CANNOT VERIFY, OR REPRESENT OR WARRANT THE ACCURACY OR COMPLETENESS of the third party map information. HEG DISCLAIMS ALL REPRESENTATIONS AND/OR WARRANTIES whether express, implied or statutory including but not limited to, warranties of title, merchantability and fitness for a particular purpose or use, and it makes no representation as to any property rights and further disclaims all liability for any and all damages that may arise from the use of the third party map information by anyone. HEG specifically disclaims all liability for the consequences of decisions made by anyone on the basis of the third party map information and affirmatively states that it is the user's responsibility to review and understand the limitations of the information.

I, ________, P.E. No. 15,317

Date: ________

hereby certify in accordance with 405 KAR 7:040, Section 10, that this document is correct as determined by accepted engineering practices and includes all information required of it by Chapter 350 and KAR Title 405.

STATE OF KENTUCKY TIMOTHY C. HOWARD 15,317 LICENSED PROFESSIONAL ENGINEER

Appolo Fuels, Inc.

Permit No. 807-0368
Attachment 11.4.A
Location Map For Mining Within 100 Feet A Stream And For Mining Within 500 Feet Of Abandoned Mine Works

Scale: 1" = 500' | Page No. 1 of 1

Prepared by:
Howard Engineering & Geology, Inc.

12 General Description of Mining and Reclamation Operations

12.1 Indicate the types of facilities to be constructed/utilized:

- [X] Sediment ponds, no. **16**
- [ ] Fresh water ponds, no. _____
- [ ] Levees, _____ ft.
- [ ] Water treatment facilities
- [X] Coal haulroads
- [X] Access roads
- [ ] Conveyors, _____ ft.
- [ ] Rail loading facilities
- [ ] Coal refuse fills
- [ ] Coal slurry impoundments
- [ ] Coal stockpiles
- [X] Excess spoil fills, no. ***1***
- [ ] Hard rock/durable rock fills, no. _____
- [ ] Deep mine entries, no. _____
- [ ] Coal processing facilities
- [ ] Mine management and/or support areas
- [ ] Loading facilities
- [ ] Other _____

12.2 Provide a narrative description, identified as "Attachment 12.2.A.", of each phase of the proposed surface and underground mining operation. Include the anticipated starting and termination dates of each phase and/or increment, major equipment to be utilized, acreage affected in each phase, and the total acreage affected over the life of this permit. the narrative should describe the location and mitigation plans for any utility lines which will be encountered. If this application is an amendment, describe any changes to the mining plan proposed for the currently permitted area.

See Attachment 12.2.A.

12.3 Describe the plan for maximizing resource recovery. Provide as Attachment 12.3.A.

See Attachment 12.3.A.

13. Cultural or Historic Resources

13.1 List and describe any cultural or historic resources listed, or eligible for listing, on the National Register of Historic Places and any known archaeological sites within or adjacent to the proposed permit area. Provide under separate cover a description of the measures to be taken to mitigate adverse impacts to these sites and a map showing their location.

See Attachment 13.1.A

ATTACHMENT 12.2.A

Plan of Operation

The mining activity proposed in this application will allow for the remining, contour strip and highwall/auger mining of the Hignite, Strays, Sterling, Poplar Lick and Buckeye springs coal seams. This operation is located near the community of Fonde in Bell county in Clear Fork on the Fork Ridge, Kayjay, Frakes and Eagan 7 ½ Minute U.S.G.S. Maps at Latitude 36° 35' 41" and Longitude 83° 52' 34" at the eastern most point of the operation. The proposed application will consist of 409.39 acres of surface disturbance and underlie an additional 437.97 acres for a total proposed permit area of 847.36 acres within the permit boundary.

Access to the mining area will be provided from the existing Appolo Fuels, Inc. permit #807-7019. In addition, Road "A" is being proposed in this permit to provide access from the proposed operation to the public highway at Fonde. Upon issuance of this application, it is anticipated that mining will begin in the general area of hollow fill #1. Pond #1 will be constructed prior to any disturbance in its watershed. Upon the completion and certification of Pond #1, clearing and grubbing will begin in the footprint of hollow fill #1. The entire footprint of the hollow fill will be scraped to bedrock prior to placement of fill material. As part of the hollow fill construction, the permittee is proposing to surface and auger/highwall mine the Buckeye Springs, Poplar Lick, Sterling, Stray coal seams and any splits or riders associated with these coal beds within the footprint of hollow fill #1. This surface mining within the foot print of the hollow fill will provide open benches along these coal beds that will act as key cuts in the construction of the hollow fill and will thus promote stability. As mining of the Hignite coal seam (and any mineable splits or riders that may be encountered) begins near hollow fill #1, the spoil generated from the initial surface mine cuts will be deposited into the hollow fill as per the hollow fill construction notes under item 26 of this

ATTACHMENT 12.2.A

application. If for any unforeseen reason the related OSM Tennessee operation should not be mined as planned, the size of proposed hollow fill #1 will be greatly reduced. The hollow fill has been designed for spoil from this application and an OSM Tennessee operation. The hollow fill design notes the capacity of the fill from this proposed Kentucky application and it is noted in these designs and on the MRP/ERI Map that the additional storage for the Tennessee operation will not be disturbed until the OSM Tennessee permit is issued. Ditches KYHF1-D1 and KYHF1-D3 have been designed for the Kentucky only fill design. Road "D" has been designed for access to the Kentucky fill and will dual usage as road and hollow fill. This design will allow for both the mining of the Kentucky and Tennessee permits.

While the initial plan calls for the mining to begin at hollow fill #1, the permittee may opt to begin mining at another area of the permit.

It is proposed by this application to surface and auger/highwall mine the coal seams encountered during the construction of Hollow Fill #1. The mining will consist of contour and 50% auger/highwall mining, as detailed in Item 35, of the Buckeye Springs, Poplar Lick, Sterling and Strays coal seams and any rider seams encountered. The coal seams will be mined as they are encountered during the construction of the hollow fill. Mining within the footprint of the hollow fill is anticipated to begin in the Buckeye Springs coal seam. The Buckeye Springs coal seam will be mined with an 80' highwall for a key cut for Hollow Fill #1. As a result of this mining the highwall will be exposed until the construction of the hollow fill would encompass the exposed highwall. The next coal seam to be encountered in the construction of the fill would be the Poplar Lick coal seam. As a result of this mining the highwall will be exposed until the construction of the hollow fill would encompass the

ATTACHMENT 12.2.A

exposed highwall. With the fill already encompassing the mining of the Buckeye Springs seam the Poplar Lick coal seam would be the only exposed highwall. It should be noted that the close proximity of the Poplar Lick and the Sterling coal seams that the mining of the seams may be included in the same highwall. This mining would continue until all the coal seams within the footprint of the hollow were encountered. As only one seam will be mined at any given time the permittee proposes a variance to the limits of the contemporaneous reclamation. The variance is based on the greatest length of highwall to be exposed at a given time which would be during the mining of the Strays coal seam. The length of exposed highwall during the mining of this seam would be approximately 4000'. This contemporaneous reclamation variance is in addition to the contemporaneous reclamation variance requested for the mining of the Hignite coal seam. The variance for Hollow Fill #1 is described as follows: The permittee proposes a maximum total open highwall distance of 4,500 feet and a time of 180 calendar days. This total open highwall distance is understood to be the distance from the initial bench cut for blast drilling to the completed backfilling process that is ready for revegetation seeding.

As part of the proposed variance, the permittee will post Additional Supplemental Assurance to the Cabinet in the amount of Fifty Thousand Dollars ($50,000.00) for each 1,500 feet of additional highwall. This will result in a total additional distance of 4,500 feet and One Hundred Thousand Dollars ($150,000.00) of supplemental assurance.

It should be noted that a perennial or "blue line" stream is depicted on the U. S. G. S. topographic map within the footprint of hollow fill #1 and the permittee is currently working with the U. S. Corps of Engineers to obtain permit approval for this fill under Section 404 of the Clean Water Act. In addition, the Hignite coal bed has an existing pre-law contour

ATTACHMENT 12.2.A

surface mine bench over the entire length of the proposed surface mining in this application. This pre-law mine bench is of varying widths and has been identified on the backfilling and grading sections under item 25 of this application.

Sediment control for the mining activities proposed in this application will be provided by the construction of fifteen (15) on-bench sediment control ponds and one (1) off-bench sediment control pond (for a total of 16 sediment ponds for this permit). These ponds, as designed, will control the sediment run-off from the proposed mining areas. As the contour surface mining advances, on-bench sediment ponds will be constructed to control the sediment run-off. It is to be understood that these proposed ponds are on-bench ponds and will not be constructed until coal mining has advanced beyond the designated pond location site. After coal has been removed from the pit floor, the pond will be promptly constructed and an as-built certification for the respective pond submitted to the Regional DNR office.

As a result of new policy from the Division of Mine Permits, the permittee is proposing supplemental sediment control to satisfy the new two (2) acre disturbance limit set by the Division. This supplemental sediment control will be a temporary sediment pond constructed as per the typical design shown in item 31 of this application. This temporary sediment pond will be constructed in advance of the last constructed on-bench sediment pond and will be constructed for each two (2) acres of mining disturbance that is created beyond the last on-bench sediment pond that is constructed. These ponds will be temporary in nature and will be removed once mining advances to a point that the next designed on-bench pond can be constructed and certified. No water detained in these temporary sediment ponds will be directly discharged from the permit area. The exit channel of the temporary sediment pond will be constructed such that the surface water will

flow in series through each temporary sediment pond constructed and back to the last constructed on-bench sediment pond. In the event gravity flow will not allow the surface water to flow from the temporary sediment ponds back to the on-bench sediment pond, the water will be pumped. Only the sediment ponds proposed will be designated as KPDES discharge sites since the temporary sediment ponds are only acting as a temporary detention basin. In addition to the proposed temporary sediment ponds, all surface water runoff on the bench areas in advance of the last constructed pond will be intercepted and controlled within the mine pit area. No water from the mining areas shall be released without flowing through an on-bench sediment pond that is designated as a KPDES discharge point.

In addition to the primary sediment control noted above, secondary sediment control may be utilized in order to control water and sediment runoff. This secondary sediment control can be in the form of detention sumps, straw bales, silt fence or other means of sediment control and can be freely installed and utilized by the permittee throughout the entire permitted area without the need of permitting modifications or revisions provided these secondary sediment control devices are located within the permit boundary limits. Periodic inspections of the sediment control devices (both primary and secondary) will ensure that all structures are functioning properly. Access to construct and maintain each sediment pond will be provided directly from within the permit boundary.

A proposed design location of each sediment pond has been shown on the M.R.P. map, however, the construction location of the on-bench ponds proposed may be moved by the permittee if field conditions dictate, provided the on-bench pond is constructed within the design sub-watershed for the pond. This pond sub-watershed map can be found under

ATTACHMENT 12.2.A

item 31 of this application.

Each pond will be constructed by excavating material from natural ground in order to construct the pond. Once the pond excavation has been completed, the principal spillway will be installed and/or the emergency spillway will be constructed. The spillway will be checked for proper elevation and width. All spillways will be rip-rapped from the inlet side through the outlet side to reduce erosion and to dissipate energy. The rip-rap that will be used to line the spillways will be durable shot rock obtained from this job site or will be purchased limestone from a local quarry. It is anticipated that there will be adequate amounts of durable shot rock generated during the surface mining activity.

The mining activities proposed in this application include secondary highwall cuts associated with re-mining and highwall auger mining within the mining area. Since a pre-law contour cut exists over the entire length of the permit boundary, the natural outcrop berm has been removed on most areas of the Hignite coal outcrop. This permit proposes that a reconstructed safety berm be constructed at the outcrop edge of the Hignite coal seam and construction of this berm is detailed under item 25. This is most effective and economical method of mining given the circumstances. Prior to excavating any spoil as a part of the surface mining activity on the coal seam, vegetation will be stripped from the site. All trees and woody material will be windrowed on the outside edge of the bench or burned. If the permittee utilizes the windrow option, the vegetative material shall be placed on the lower limits of the planned mining and will be placed within the proposed permit boundary and this windrowed material will be placed so that it does not impound water. The topsoil/alternate which exists throughout the permit area will be segregated as part of the on-going mining operation and will be placed over the backfill area as needed. Details of the

ATTACHMENT 12.2.A

topsoil/alternate handling plan can be found under item 23 of this application.

Since this permit proposes to utilize highwall type mining methods to maximize the recovery of coal reserves, it is essential that a variance for alternate contemporaneous reclamation be obtained for this permit. Approval of this variance will allow the permittee to expose sufficient coal bed outcrop to ensure continuous production from the highwall mining machine. Based upon the planning projections of the permittee, the highwall miner will mine and advance through approximately one hundred (100) linear feet of exposed highwall each production day. This assumption is based upon the highwall miner mining a hole width of ten (10) feet and an anticipated hole web width of ten (10) feet. In addition, it is anticipated that a twenty (20) feet barrier pillar will be left unmined after the completion of twenty (20) highwall miner holes. In addition to this daily mining rate, the highwall miner would require an operations area of approximately three-hundred (300) linear feet for coal stockpile, push beam storage, and other related ancillary equipment.

In order to ensure continuous availability of mining for the highwall miner, the permittee must plan this operation such that a sufficient length of highwall has been contour mined and available for the highwall miner to mine. Based upon the permittee's extensive experience in highwall mining, it has been determined that an optimum of thirty (30) days of highwall mining production needs to be excavated in advance of the highwall mining machine to ensure continuous mining production. Using our assumptions noted above, this would dictate that the highwall miner would require an optimum length of 3,300 feet of open highwall available for mining. Coupling this distance with the active surface mining pit and the backfilling process, it is clear that a variance is needed beyond the 1,500 feet limit for open highwall.

ATTACHMENT 12.2.A

Based upon this evidence, this application proposes a variance to the limits of contemporaneous reclamation and this variance is described as follows: The permittee proposes a maximum total open highwall distance of 4,500 feet and a time of 180 calendar days. This total open highwall distance is understood to be the distance from the initial bench cut for blast drilling to the completed backfilling process that is ready for revegetation seeding. The applicant recognizes that the ***optimum*** open highwall length noted above is in excess of the requested 4,500 feet maximum length, however, this 4,500 feet limit will provide the applicant ample length to conduct the proposed surface mining.

As part of the proposed variance, the permittee will post Additional Supplemental Assurance to the Cabinet in the amount of Fifty Thousand Dollars ($50,000.00) for each 1,500 feet of additional highwall beyond the initial 1,500 feet. This will result in a total additional distance of 3,000 feet and One Hundred Thousand Dollars ($100,000.00) of supplemental assurance. The permittee can opt to submit Supplement Assurance in 50,000.00 dollar increments and posting of the Supplement Assurance bond would not be required until the permittee has reached the maximum linear distance, i.e., 1,500 feet for the posting of Supplement Assurance #1 and 3,000 feet for the posting of Supplement Assurance #2. The permittee acknowledges that the requested 4,500 feet open highwall limit is slightly less than the calculated optimum limit noted above, but the proposed 4,500 feet limit should provide ample distance to conduct the surface mining proposed in this application and will eliminate the need to request a third Supplemental Assurance Bond for this permit.

It is anticipated that the permittee would extract the coal seams in the representative mine pits and transport them directly to the processing plant without mixing or blending,

however, the permittee may choose to temporarily store coal on the permitted mining areas and blend these coals prior transport to the processing plant. This need for temporary coal storage may arise due to inclement weather or other unforeseen acts that would prevent transportation of the coal from the site.

Upon completion of all mining activity described in this application, all areas of the permit area will be backfilled as per the backfilling and grading designs shown under item 25 of this application. The reclaimed mine areas will be re-vegetated with a variety of grasses, legumes and trees to a post-mining land use of Unmanaged Forestland and details of this re-vegetation plan can be found under item 22 of this application. The proposed mining will continue until all coal that can be economically removed has been mined from the permit area.

It is anticipated that the permittee will mine this permit utilizing one (1) production unit or spread and the equipment which will be used in the surface operation will include but will not be limited to the following:

1) Hydraulic Excavators, 2-3
2) Bulldozers, 2-4
3) Haulback Trucks, 4-6
4) Endloaders, 1-3
5) Road Grader, 1-2
6) Blasthole Drill, 1-2
7) Water Truck, 1-2
8) Hydroseeder, 1-2
9) Mulcher, 1-2

ATTACHMENT 12.2.A

10) Coal Trucks (Tandem), 2-6

11) Highwall Mining Machine or Auger, 1

Once active coal production has ended on this permit and only reclamation operations remain, the permittee may choose to remove a portion of the mining equipment listed above from this operation. It shall be the discretion of the permittee to employ the necessary equipment to complete the reclamation of this permit, however, the reclamation limits noted above with respect to linear distance and time shall be adhered to with respect to final reclamation of this permit.

In order to minimize the effects on the streams we will use Best Management Practices (BMP's) during construction of the sediment ponds and road construction. BMP's which may be used either singly or in combination any of the following:

-Basins
-Diversion Ditches
-Filter Strips
-Land grading and shaping
-Minimization of surface disturbance
-Mulching
-Placement of rip-rap
-Rapid revegetation, especially along stream banks
-Rock check dams
-Silt fences
-Straw bale barriers
-Stream bank stabilization
-Sumps and Work in periods of no/low flow or dry weather.

Appolo Fuels, Inc.
Application No. 807-0368 NW
October 20, 2008

Application Item 12.2: General Description of Mining and Reclamation Operations
The proposed permit may temporarily affect intermittent or perennial stream segment(s) of Clear Fork. The Division recommends that the applicant include a **stream restoration plan** as an attachment to Application Item 31.6. Restoration should strive to reconstruct the pre-mining conditions of the natural stream. The plan must, at a minimum, describe the following pre-disturbance stream parameters and propose measures to reconstruct them: substrate characterization, channel slope and width, riffle-pool ratios, run-bend ratios, water depth, average flow, and riparian vegetation. Profile, plan, and cross-sectional views of the pre-mining and the restored stream channel must also be included.

The applicant must include a copy of the restoration plan in the comprehensive application and submit **one (1) copy under separate cover** to the following address: Critical Resources Review Section, Division of Mine Permits, #2 Hudson Hollow, Frankfort, Kentucky 40601.

The proposed permit may result in impacts on aquatic resources. The Division recommends the use of Best Management Practices (BMPs) to aid in sediment control. BMPs may include, but are not limited to, any of the following, singly or in combination:

Basins
Diversion ditches
Filter strips
Land grading and reshaping
Maintenance of a 100' buffer zone along streams
Minimization of surface disturbance
Mulching
Placement of rip-rap
Rapid revegetation, especially along stream banks
Rock check dams
Silt fences
Straw bale barriers
Stream bank stabilization
Sumps
Work in periods of no or low flow or dry weather

The narrative description of mining operations (Attachment 12.2.A) provided in the comprehensive application should specify what BMPs will be implemented.

Mr. Allen Luttrell, Assistant Director
Kentucky Department of Natural Resources
Division of Mine Permits
2 Hudson Hollow Road
Frankfort, Kentucky 40601

Subject: Tennessee Permitting Action Associated With Proposed Kentucky (KY) Permit No. 8070368

Dear Mr. Luttrell:

Tim Messer, consultant for Apollo Fuels' proposed KY Permit # 8070368, has contacted OSM's Knoxville Field Office indicating that your office has requested a letter from OSM confirming that spoil materials that would result from the extension of the above subject permit into Tennessee may be disposed of within the State of Kentucky under the aforementioned Kentucky permit. Please be assured that in principal, OSM would have no objection to such disposal as long as the disposal would occur under an approved KY SMCRA permit and these spoil materials were indeed "excess" materials not required to eliminate highwall and re-establish approximate original contour within the Tennessee portion of the proposed mine site. We must point out that at present, there has been no permit submitted to us for the extension of the proposed KY mine site into Tennessee. As such, we can only speak in principal and cannot attest to the quantity or quality of any spoil materials that may be disposed of in KY under any future proposal for a Tennessee SMCRA permit.

We hope this letter is sufficient to meet the needs of the KY coal mine regulatory program. If you have any questions, please contact Jeff Coker at (865) 545-4103, ext. 155.

Sincerely,

William R. Winters, Supervisor
Technical Group

cc: Tim Messer
Howard Engineering and Geology
P.O. Box 271
2550 W. Highway 72, Suite 1
Harlan, KY 40831

OSM Lexington Field Office

ATTACHMENT 12.3.A

Maximum Resource Recovery Plan

As detailed previously in this application, the mining activity proposed in this application will includes surface contour, re-mining and highwall auger mining activity on the Hignite coal seams. We will provide in this attachment the general plan for maximizing the resource recovery proposed in this permit.

The surface mining activity proposed in this application will use the contour, re-mining and highwall auger mining method of mining. The remining will provide a secondary excavation on the existing bench on the coal seam. This cut will extend back into the location depicted on the cross sections in Item 25. In any case, the mining activity proposed in this application will remove the maximum volume of overburden and coal as is determined by current economic conditions. Removal from all of the coal via this method will extract perimeter coal which would not be accessible by underground mining methods. The mining activity described above will utilize the best technology currently available to insure complete and efficient removal of the remaining reserves in this seam that were not previously extracted by underground and contour/auger mining during past mining operations.

Appolo Fuels, Inc.
Application No. 807-0368, NW
October 16, 2008

Application Item 13.1: Cultural or Historic Resources

The Division of Mine Permits has received comments from the State Historic Preservation Officer (SHPO) concerning the potential for archaeological resources within the proposed permit area. A copy of the SHPO comments is attached for your information and use.

The Division of Mine Permits has considered these comments and has determined that the proposed operation may potentially impact archaeological resources that are eligible for listing in the National Register of Historic Places. **Therefore, an archaeological survey of the proposed permit area is required.** If you so request, a list of individuals and firms qualified to conduct archaeological investigations in the Commonwealth will be provided to you.

The applicant must submit five (5) copies of the resulting archaeological survey report to the following address: Critical Resources Review Section, Division of Mine Permits, Department for Natural Resources, No. 2 Hudson Hollow, Frankfort, KY 40601.

COMMERCE CABINET
KENTUCKY HERITAGE COUNCIL

Steven L. Beshear
Governor

The State Historic Preservation Office
300 Washington Street
Frankfort, Kentucky 40601
Phone (502) 564-7005
Fax (502) 564-5820
www.kentucky.gov

Marcheta Sparrow
Secretary

October 13, 2008

Thomas Barbour, Acting Supervisor
Critical Resources Review Section
DSMRE/Division of Permits
#2 Hudson Hollow Complex
U.S. 127 South
Frankfort, Kentucky 40601

RE: Appolo Fuels, Inc
Application #807-0368 NW
Bell County

Dear Mr. Barbour:

Thank you for your letter of September 18, 2008 (received September 22, 2008) concerning the above referenced project. A review of our files indicates that the proposed project will not impact any previously recorded archaeological sites. However, the proposed permit area has never been investigated by a professional archaeologist to determine if any properties eligible for listing in the National Register of Historic Places are present. Investigations of projects in similar environmental contexts have resulted in the identification of a large number of sites some of which have been determined eligible for listing in the National Register. Given the project area's environmental setting, in my opinion, it has a high potential for impacting archaeological sites, particularly rockshelters. Therefore, I recommend that all undisturbed portions of the proposed permit area be surveyed by a professional archaeologist.

In order to make a preliminary determination if properties eligible for listing in the National Register of Historic Places will be affected by this project, the applicant must submit photographs of all structures 50 years or older that are within and adjacent to the project area. Each photograph should be labeled by street address with a brief description of potential impacts or proposed treatment, and should be accompanied by a project map showing their location. Upon completion of our review, this office will advise the applicant if further consultation is required. As always, I would be happy to provide you with a technical review of the report documenting the results of these investigations. Should you have any questions, feel free to contact Lori Stahlgren of my staff at 564-7005 ext 151.

Sincerely,

Mark Dennen, Acting Executive Director
Kentucky Heritage Council and
State Historic Preservation Officer

LCS/lcs

14. Fish and Wildlife Information

14.1 Has any threatened or endangered species or the critical habitat of such species been identified within or adjacent to the proposed permit area?
[***XX***] YES [ ] NO. If "No", attach DSMRE documentation to verify this determination. Identify as "Attachment 14.1.A".

14.2 If the answer to 14.1 is "YES" or a threatened or endangered species or critical habitat has been reported within or adjacent to the proposed permit area, list the species involved and provide a map identifying its location relative to the proposed permit area. Identify as "Attachment 14.2.A".
See Attachment 14.2.A.

14.3 Will any "wetland" area be impacted by the proposed operation?
[ ] YES [***XX***] NO.

If "YES", provide acreage of wetland, and delineate its boundaries on the ERI Map.
Acreage of wetland ***N/A***

14.4 Provide as "Attachment 14.4.A", the results of any fish and wildlife survey conducted for the proposed area, or other studies required by DSMRE.
See Attachment 14.4.A.

14.5 Provide a description of the measures which will be taken to avoid or minimize adverse impacts to wetland areas, important fish and wildlife species, the critical habitat of such species, or other species protected by state or federal law. If additional pages are needed, identify as "Item 14.5 continued".
See Attachment 14.5.A

15. Geologic Information

15.1 Provide the information requested below concerning the coal seam(s) to be mined:

USGS Name	Thickness (inches)	% Total Sulfur	% Pryite Sulfur	Elevation
Hignite	***12"-36"***	***<1.00%***		***2490'-2510'***
Strays Splits	***12"-30"***	***<1.00%***		***2300'-2340'***
Sterling	***24"-39"***	***<1.00%***		***2140'-2090'***
Poplar Lick	***12"-36"***	***<1.00%***		***2110'-2160'***
Buckeye Springs	***18"-36"***	***<1.00%***		***2000'-2040'***

15.2 Provide a description of the geology within the proposed permit area down to and including the stratum immediately below the lowest coal seam to be mined. The description shall include the structural geology, lithology, thickness and chemical characteristics of the overburden strata which will be removed and strata which may be impacted in areas overlying underground works. Include the results of the baseline geologic sampling program on cabinet approved forms and all appropriate drill logs, stratigraphic columns, cross sections, geochemical lab results and other information on which the description is based. Submit description and related information as "Attachment 15.2.A, 15.2.B", etc.
See Attachment 15.2.A

Appolo Fuels, Inc.
Application No. 807-0368 NW
October 20, 2008

Application Item 14.1: Fish and Wildlife Information

1. The Division's review of the Kentucky State Nature Preserves Commission's Natural Heritage Database indicates that occurrences of state/federally designated threatened or endangered species **have been recorded** within or adjacent to the proposed permit area. Please refer to Attachment 14.4 for information on any site-specific resource information that is required in the permit application to satisfy 405 KAR 8:030/040, Section 20. For additional assistance, please contact:

   United States Fish & Wildlife Service
   Kentucky Ecological Services Field Office
   330 West Broadway, Room 266
   Frankfort, KY 40601
   (502) 695-0468

Federally listed species:

Indiana bat	*Myotis sodalis*

ATTACHMENT 14.2.A

It has been determined by the department that the Indiana Bat may inhabit or may have potential habitat within or adjacent to the proposed permit boundary.

Species Involved = Myotis sodalist (Indiana Bat)

Location = The exact location is confidential and not known therefore a map has not been provided.

Appolo Fuels, Inc.
Application No. 807-0368 NW
October 20, 2008

Application Item 14.4: Fish and Wildlife Survey

Based upon the Division's environmental review, it has been determined that the proposed operation has the potential to impact the Indiana bat, *Myotis sodalis,* a federally designated endangered species. Therefore, in accordance with 405 KAR 8:030/040, Section 20(2)(a-c), the subject application will require site-specific fish and wildlife resources information, in the form of an **Indiana bat survey or an Indiana bat protection and enhancement plan.** The applicant should follow procedures outlined in the November 1, 2000 *Guidelines for the Development of Protection and Enhancement Plans for the Indiana Bat.* Abandoned mine portals are not present on the above referenced permit area, therefore, the applicant must choose between Option 1 and Option 3 as presented in the *Guidelines.*

Option 1: The applicant assumes presence of the Indiana bat on a permit that has no open caves or abandoned mine portals.

This option requires:

- An Indiana bat protection and enhancement plan (see page 4 of the *Guidelines)*

Option 3: The applicant conducts a survey to demonstrate the presence or probable absence of the Indiana bat in summer habitat on the proposed permit area. This is only applicable for permits which do not have any open caves or abandoned mine portals.

This option requires:

- A summer survey study plan and survey report (see pages 9, 12, and 13 of the *Guidelines)*

The study plans must be approved prior to the initiation of fieldwork. Surveys must be conducted by an appropriately qualified biologist. If you so request, a list of individuals and firms qualified to conduct Indiana bat assessments will be provided to you.

The applicant must submit three (3) copies of the study plans, survey reports and/or protection and enhancement plan to the Department at the following address: Critical Resources Review Section, Division of Permits, Kentucky Department for Surface Mining Reclamation and Enforcement, No. 2 Hudson Hollow, Frankfort, KY 40601.

ATTACHMENT 14.5.A

As a part of this application in order to protect endangered species we have conducted mist net and portal survey of the proposed permit area and the adjacent areas. No Indiana Bats were mist netted and there is no presence. A portal closure has been conducted according to the enclosed plan. There are not wet-lands within the proposed permit area.

ATTACHMENT 14.5.A

CLOSING AND EXCLUSION METHODOLOGY FOR EXISTING PORTALS

The following exclusion activities are proposed for portal sites 1, 2 and 3 as described and illustrated in the "Indiana Bat Summer Use Determination, Final Report" submitted to the DSMRE by Howard Engineering & Geology, Inc. for the above referenced permit application. Exclusion activities are projected to take place during the first week of May 2009 more specifically on the 1st and 2nd of May 2009 barring no unforeseen circumstance or conditions. Observation of portals will consist of two nights study.

Night One May 1, 2009

(1) Portal sites 4 and 5 will be observed through normal emergence time periods. Night vision goggles may be used if necessary during this procedure.

(2) All portals will then be temporarily closed by placing one (1") inch or smaller mesh wire over the opening to insure that the portals are inaccessible.

Night two May 2, 2009

(1) Prior to dusk, the wire mesh placed on night one (1) used to prevent access to the portal, will be lowered to allow any natural emergence.

(2) Emergence will be observed during normal time periods.

(3) Wire mesh will then be placed permanently over the portals to prevent ingress to the portals.

The wire mesh will remain in-place and functional until permanent closure of the portals can be achieved. Permanent closure of the portals will take place within a minimum of two (2) days of the exclusion activities.

This plan has been compiled from the previous discussions and recommendations by the DSMRE and the USF&WS on other mining permits on which the Indiana Bat (Myotis Sodalis) had been identified by the survey which had open portals.

ATTACHMENT 15.2.A

Geologic Description

The coal beds to be extracted in this proposed permit are identified on the Kayjay and Fork Ridge U.S.G.S. geologic quadrangles as the Hignite, Strays, Sterling, Poplar Lick and Buckeye Springs coal seams. The entire interval to be impacted by this operation is within the Breathitt Group of the Pennsylvanian Age. The Hignite coal bed is persistent and one of the most commercially important in the mapped area. It has been extensively deep mined in the Log Mountains between Garmeada and Chenoa. Numerous underground mines are scattered elsewhere, especially along Fork and Canada Ridges, but it probably has not been extensively deep mined in the vicinity of Canada Peak and adjacent parts of Canada Ridge. It has been stripped and augered in many parts of the quadrangle. In 1971 and 1972 deep mines were active in the Hignite bed on Maiden Ridge and near the head of Rockhouse Branch. Several relatively thick coal beds occur above the Hignite seam in the central part of the area; drill hole data show that although these seams contain shale partings, as much as 150 inches of coal including the Hignite coal locally occurs in a 50-foot interval. This zone has been stripped locally in the upper parts of Little Clear Creek. Several deep mines were worked in a seam about 50 feet above the Hignite coal bed near the head of Stoney Fork. The Strays, Sterling, Poplar Lick and Buckeye Springs coal seams have been stripped, augered and deep mined in many parts of the quadrangle.

Based on the pre-mining geologic sampling program, the structural geology within the proposed permit area which includes the Hignite, Strays, Sterling, Poplar Lick and Buckeye coal seams is predominantly medium gray shales, gray sandstones and sandy shales.

The immediate material above the Hignite seam at sample site locations identified in this application consists of 5.00 feet to 20.00 feet of gray shale in most areas with gray sandstone in other areas. The floor material for the Hignite coal seam in this proposed permit is dark gray shale in almost all locations with other areas showing gray sandstone. The geologic information forms on the following pages contain a specific description and thickness for each unit at a minimum of 10 feet above and below the Hignite coal seam.

The immediate material above the Strays seam at the sample site location identified in this application consists of 31.50 feet of dark gray shale. The floor material for the Strays coal seam in this proposed permit is gray shale. The geologic information forms on the following pages

contain a specific description and thickness for each unit at a minimum of 10 feet above and below the Strays coal seam.

The immediate material above the Sterling seam at sample site locations identified in this application consists of 2.00 feet dark black shale, then 41.50 feet of gray shale. The floor material for the Sterling coal seam in this proposed permit is gray shale. The geologic information forms on the following pages contain a specific description and thickness for each unit at a minimum of 10 feet above and below the Sterling coal seam.

The immediate material above the Poplar Lick seam at sample site locations identified in this application consists of 50.25 feet of gray shale. The floor material for the Poplar Lick coal seam in this proposed permit is sandy shale. The geologic information forms on the following pages contain a specific description and thickness for each unit at a minimum of 10 feet above and below the Poplar Lick coal seam.

The immediate material above the Buckeye Springs seam at sample site locations identified in this application consists of 8.40 feet gray shale. The floor material for the Buckeye Springs coal seam in this proposed permit is gray shale. The geologic information forms on the following pages contain a specific description and thickness for each unit at a minimum of 10 feet above and below the Buckeye Springs coal seam.

STRUCTUAL GEOLOGY

Regionally, the proposed area lies in the southwest portion of the Middlesboro Syncline. More locally the strata and coal beds to be impacted by this operation is influenced by the southern limb of the smaller syncline within the Middlesboro Syncline located to the northwest of the proposed permit area giving this strata a dip of 1 percent towards northeast. No known major faulting or fracturing exists in the permit area.

CHEMICAL CHARACTERISTICS

As can be seen on the subsequent pages, the results of the geological testing have determined that no potentially acidic strata will be impacted by this proposed application.

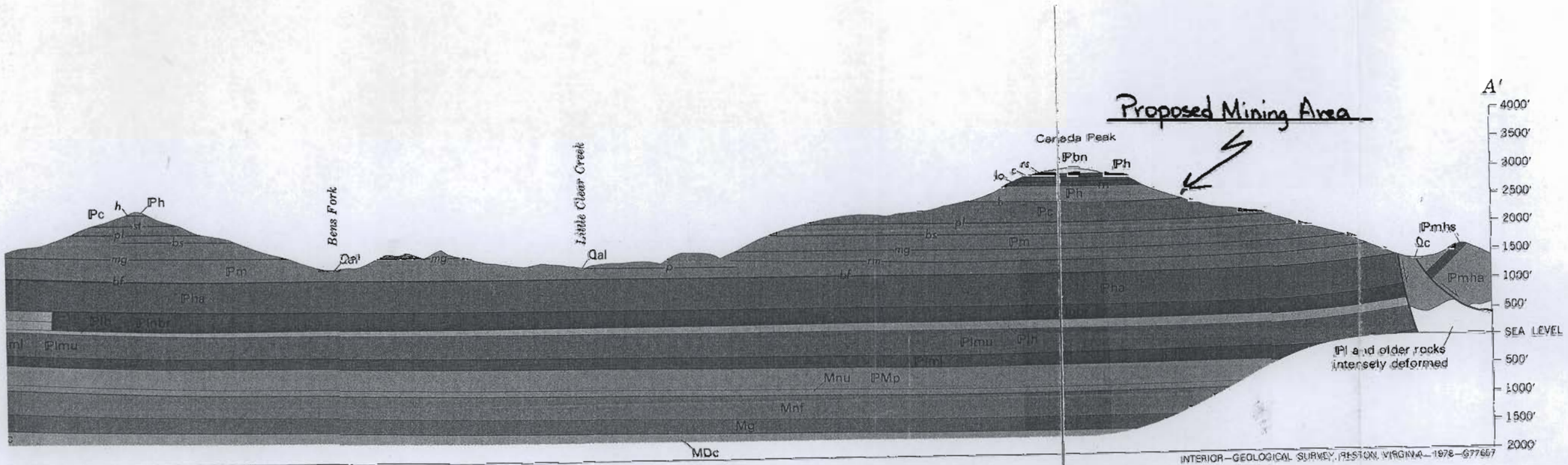
As part of this application we are proposing to provide geologic samples from the following locations within the permit area.

ATTACHMENT 15.2.A

HW-1	Latitude 36° 35' 08" N(4,052,481) Longitude 83° 51' 04" W(244,912)
HW-2	Latitude 36° 35' 55" N(4,053,900) Longitude 83° 50' 24" W(245,949)
HW-3	Latitude 36° 36' 12" N(4,054,445) Longitude 83° 50' 52" W(245,269)
HW-4	Latitude 36° 37' 01" N(4,055,986) Longitude 83° 51' 34" W(244,270)
HW-5	Latitude 36° 35' 12" N(4,052,603) Longitude 83° 51' 02" W(244,966)
HW-6	Latitude 36° 35' 14" N(4,052,663) Longitude 83° 51' 00" W(245,017)
HW-7	Latitude 36° 35' 18" N(4,052,784) Longitude 83° 50' 57" W(245,095)
DDH 11-03	Latitude 36° 35' 55" N(4,053,887) Longitude 83° 50' 06" W(246,397)

The following geologic sites will be used for correlation only:

AF-120	Latitude 36° 35' 50" N(4,053,683) Longitude 83° 49' 13" W(247,890)
BAC-2	Latitude 36° 35' 19" N(4,052,778) Longitude 83° 50' 02" W(246,464)



QUADRANGLE, BELL AND KNOX COUNTIES, KENTUCKY

I, Timothy C. Howard, P.E. No. 15,317

Date: 12/29/08

hereby certify in accordance with 405 KAR 7:040, Section10, that this document is correct as determined by accepted engineering practices and includes all information required of it by Chapter 350 and KAR Title 405.

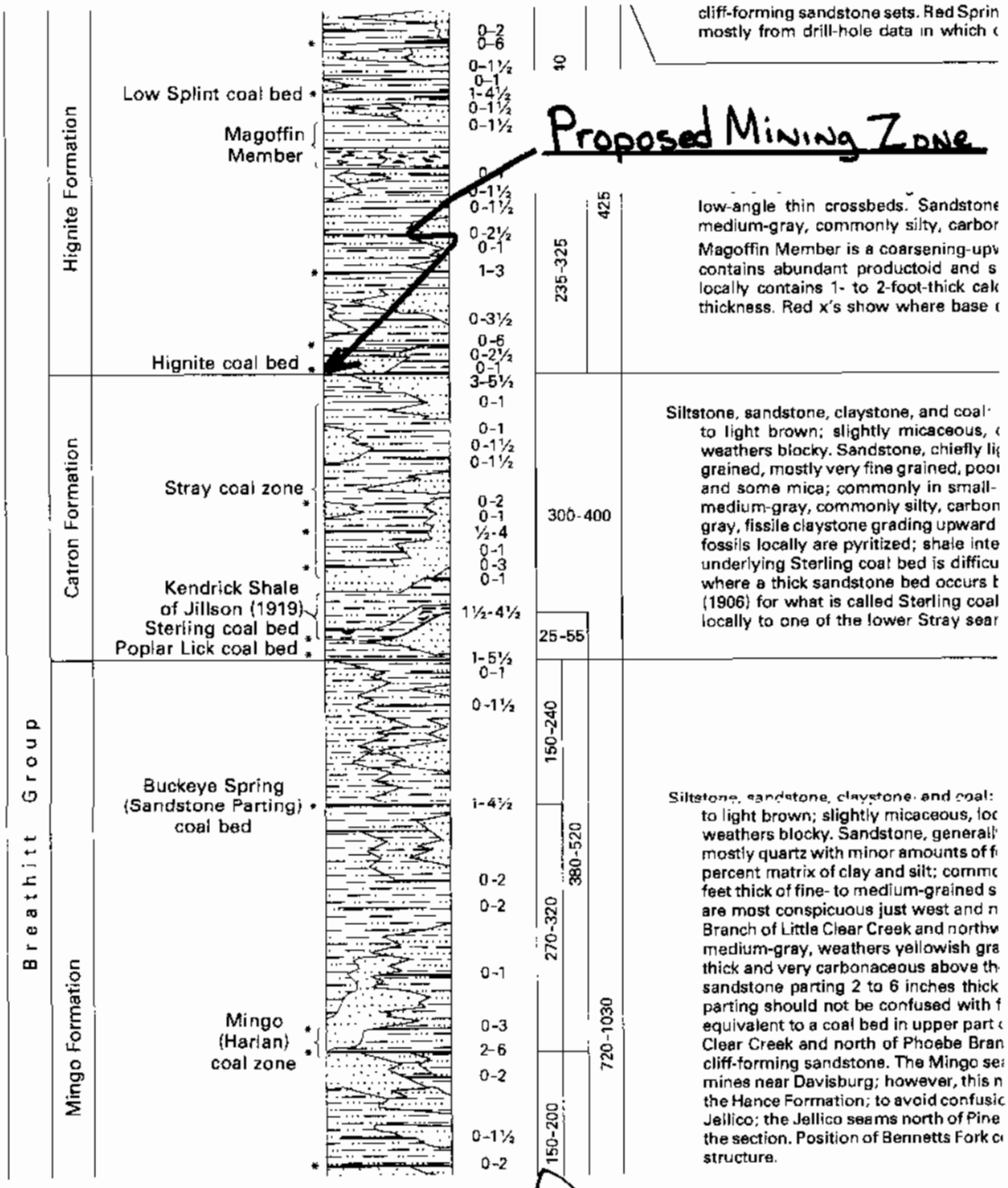
STATE OF KENTUCKY
TIMOTHY C. HOWARD 15,317 LICENSED
PROFESSIONAL ENGINEER

Appolo Fuels, Inc.

Permit No. 807-0368
Geologic Setting Map
Attachment 15.2

Scale: None | Page No. 1 of 1

Prepared by:
Howard Engineering & Geology, Inc.



I, Timothy C. Howard, P.E. No. 15,317

Date: 12/29/08

hereby certify in accordance with 405 KAR 7:040, Section10, that this document is correct as determined by accepted engineering practices and includes all information required of it by Chapter 350 and KAR Title 405.

STATE OF KENTUCKY
TIMOTHY C. HOWARD 15,317 LICENSED
PROFESSIONAL ENGINEER

Appolo Fuels, Inc.

Permit No. 807-0368
Geologic Setting Map
Attachment 15.2

Scale: None | **Page No.** 1 of 1

Prepared by:
Howard Engineering & Geology, Inc.

GEOLOGICAL INFORMATION FORM

(Please print or type all responses)

1. Quadrangle Name Kayjay & Forkridge

Quadrar
(For office use only)

2. Latitude 3 6 3 5 0 8

3. Longitude 8 3 5 1 0 4

4. UTM Zone (Eastern Kentucky = 17, Western Kentucky = 16) 1 7

5. UTM Easting coordinate 2 4 4 9 1 2

6. UTM Northing coordinate 4 0 5 2 4 8 1

7. Quadrangle Scale 1
1/24,000 = 1; 1/62,500 = 2; 1/125,000 = 3; Other = 4 - Explain _____

8. State Identification Code Number 2 1
(Use Federal Information Processing Standards Code (FIPS). The FIPS number for Kentucky is 21; additional surrounding states may be found on the last page of this form.)

9. County Code Number (refer to county number list on the last page of this form) 0 0 7

10. Coal Company Name Appolo Fuels, Inc.

11. Operator's Appolo Fuels, Inc. (*Last*) , _____ (*First*) , _____ (*M.I.*)

12. Permit Number 8 0 7 - 0 3 6 8

13. SOAP Identification Number

14. Hole Number HW 1

15. Date (month, day, year) 1 0 1 0 0 8

16. Driller's Howard (*Last*) , David (*First*) , W. (*M.I.*)

17. Type of Sample 9
Core = 5; Chip = 6; Auger = 7; Geophysical log = 8; Highwall = 9;
Other = 10 - Explain _____

18. Top of hole elevation (round to nearest unit of measurement and indicate units used*) 2 6 6 0 F

19. Top of hole determination T
Barometer = B; Survey = S; Hand Level = H; Topo = T;
Other = O - Explain _____

20. Cumulative thickness of the sample (round to nearest unit of measurement and indicate units used*) 1 7 0 F

21. Name of geologist or engineer responsible for preparing this form
Howard (*Last*) , David (*First*) , W. (*M.I*) , P.G.#50 (*Title*)

GEOLOGICAL INFORMATION SHEET

(Please print or type)

Hole Number HW1 UTM Zone 17 Quadrangle Forkridge & Kayjay

Latitude 363508 UTM E Coordinate 244912

Longitude 835104 UTM N Coordinate 4052481

Driller Howard (Last) David (First) W. (M.I.) Date 101008

Type: ☐ Core ☐ Chip ☒ Highwall ☐ Auger ☐ G-log ☐ Other _____

Unit of Measurement: ☐ Feet & Inches ☒ Feet & Tenths ☐ Metric

DRILLERS LOG SHEET

(Please print or type)

Rock Code	Unit Thickness	Cumulative Thickness	Avg. N.P.	Avg. P.A.	Comments
001	0.50	0.50	- - -	- - -	Topsoil/Native Soil
001	2.00	2.50	- - -	- - -	Subsoil/Alternate Topsoil
124	2.00	4.50	24 .4 3	4 .2 8	Dark Gray Shale
300	4.00	7.50	75 .0 4	3 .7 3	Sandy Shale
540	2.80	10.25	24 .8 9	3 .8 4	Gray Sandstone
300	1.40	11.65	36 .5 3	3 .2 7	Sandy Shale
124	2.00	13.65	37 .7 7	3 .1 4	Dark Gray Shale
020	3.15	13.95	- - -	- - -	Coal (Hignite Seam)
124	3.00	14.25	26 .0 3	2 .2 8	Dark Gray Shale
300	1.50	15.75	36 .2 1	2 .0 7	Sandy Shale
020	2.35	16.00	- - -	- - -	Coal (Hignite Seam)
540	1.00	17.00	13 .7 8	3 .4 7	Gray Sandstone

Appalachian Field Services Company Inc.
P.O. Box 373
Baxter, Kentucky 40806
Telephone (606) 573-0521

SAMPLE IDENTIFICATION : APPOLO FUELS INC.

PERMIT NUMBER : 807 - 0368, (HW - 1)

SAMPLED BY : H.E.G.
SAMPLE DATE : 12/22/2008
REPORT DATE : 03/06/2009

SAMPLE #	FIZZ RATING	PASTE pH	NEUTRALIZATION POTENTIAL	TOTAL SULFUR %	POTENTIAL ACIDITY	CODE	SDI % RETAINED	THICKNESS INTERVAL
1	NONE	7.48	25.82	0.074	2.31	124	96.72	5.00 '
2	NONE	7.69	22.10	0.110	3.44	124	95.85	5.00 '
3	NONE	7.64	25.36	0.090	2.81	124	95.49	2.00 '
4	SLIGHT	7.56	71.92	0.108	3.38	300	96.55	5.00 '
5	SLIGHT	7.59	73.48	0.119	3.72	300	96.51	5.00 '
6	SLIGHT	7.61	76.08	0.129	4.03	300	96.67	5.00 '
7	SLIGHT	7.46	71.40	0.109	3.41	300	97.10	5.00 '
8	SLIGHT	7.65	76.08	0.118	3.69	300	94.87	5.00 '
9	SLIGHT	7.49	79.20	0.116	3.63	300	95.90	5.00 '
10	SLIGHT	7.44	78.16	0.106	3.31	300	95.93	5.00 '
11	SLIGHT	7.51	74.00	0.150	4.69	300	96.05	5.00 '
12	NONE	7.45	27.68	0.154	4.81	540	95.57	5.00 '
13	NONE	7.61	23.50	0.106	3.31	540	95.96	5.00 '
14	NONE	7.64	26.29	0.107	3.34	540	94.15	5.00 '
15	NONE	7.86	27.22	0.147	4.59	540	92.35	5.00 '
16	NONE	7.67	21.64	0.122	3.81	540	92.56	5.00 '
17	NONE	7.56	23.03	0.101	3.16	540	94.44	3.00 '
18	NONE	7.46	37.78	0.114	3.56	300	95.20	5.00 '
19	NONE	7.61	37.78	0.111	3.47	300	93.95	5.00 '
20	NONE	7.48	34.02	0.089	2.78	300	96.14	4.00 '
21	SLIGHT	7.87	78.16	0.142	4.44	124	95.32	5.00 '
22	NONE	7.50	20.39	0.082	2.56	124	96.21	5.00 '
23	NONE	7.54	24.15	0.071	2.22	124	96.45	5.00 '
24	NONE	7.62	28.38	0.107	3.34	124	94.96	5.00 '
25	NONE	7.58	26.03	0.073	2.28	124	96.65	3.00 '
26	NONE	7.64	33.08	0.090	2.81	300	95.24	5.00 '
27	NONE	7.58	34.49	0.098	3.06	300	94.84	5.00 '
28	NONE	7.64	41.07	0.097	3.03	300	95.37	5.00 '
29	NONE	7.39	8.17	0.114	3.56	540	93.79	5.00 '
30	NONE	7.60	18.98	0.108	3.38	540	94.23	5.00 '

SUBMITTED BY : _____

GEOLOGICAL INFORMATION FORM

(Please print or type all responses)

Quadrai *(For office use only)*

1. Quadrangle Name Kayjay & Forkridge

2. Latitude 3 6 3 5 5 5

3. Longitude 8 3 5 0 2 4

4. UTM Zone (Eastern Kentucky = 17, Western Kentucky = 16) 1 7

5. UTM Easting coordinate 2 4 5 9 5 0

6. UTM Northing coordinate 4 0 5 3 9 0 0

7. Quadrangle Scale 1
1/24,000 = 1; 1/62,500 = 2; 1/125,000 = 3; Other = 4 - Explain _____

8. State Identification Code Number 2 1
(Use Federal Information Processing Standards Code (FIPS). The FIPS number for Kentucky is 21; additional surrounding states may be found on the last page of this form.)

9. County Code Number (refer to county number list on the last page of this form) 0 0 7

10. Coal Company Name Appolo Fuels, Inc.

11. Operator's Appolo Fuels, Inc. *Last* , _____ *First* , _____ *M.I.*

12. Permit Number 8 0 7 - 0 3 6 8

13. SOAP Identification Number

14. Hole Number HW 2

15. Date (month, day, year) 1 0 1 0 0 8

16. Driller's Howard *Last* , David *First* , W. *M.I.*

17. Type of Sample 9
Core = 5; Chip = 6; Auger = 7; Geophysical log = 8; Highwall = 9;
Other = 10 - Explain _____

18. Top of hole elevation (round to nearest unit of measurement and indicate units used*) 2 6 7 0 F

19. Top of hole determination T
Barometer = B; Survey = S; Hand Level = H; Topo = T;
Other = O - Explain _____

20. Cumulative thickness of the sample (round to nearest unit of measurement and indicate units used*) 1 7 2 F

21. Name of geologist or engineer responsible for preparing this form
Howard *Last* , David *First* , W. *M.I.* , P.G.#50 *Title*

GEOLOGICAL INFORMATION SHEET

(Please print or type)

Hole Number HW2 UTM Zone 17 Quadrangle Forkridge & Kayjay

Latitude 363555 UTM E Coordinate 245950

Longitude 835024 UTM N Coordinate 4053900

Driller Howard (Last) David (First) W. (M.I.) Date 101008

Type: ☐ Core ☐ Chip ☒ Highwall ☐ Auger ☐ G-log ☐ Other _____

Unit of Measurement: ☐ Feet & Inches ☒ Feet & Tenths ☐ Metric

DRILLERS LOG SHEET

(Please print or type)

Rock Code	Unit Thickness	Cumulative Thickness	Avg. N.P.	Avg. P.A.	Comments
001	0.50	0.50	- - -	- - -	Topsoil/Native Soil
001	23.15	23.65	- - -	- - -	Subsoil/Alternate Topsoil
124	14.50	38.15	27.07	2.33	Dark Gray Shale
300	40.00	78.15	58.47	4.17	Sandy Shale
124	10.00	88.15	39.98	2.63	Dark Gray Shale
300	14.00	102.15	54.10	3.37	Sandy Shale
540	21.00	123.15	23.66	3.40	Gray Sandstone
124	6.00	129.15	25.50	2.25	Dark Gray Shale
020	4.50	133.65	- - -	- - -	Coal (Hignite Seam)
124	3.00	136.65	28.72	2.25	Dark Gray Shale
300	23.00	159.65	35.55	3.82	Sandy Shale
020	2.15	161.80	- - -	- - -	Coal (Hignite Seam)
300	10.00	171.80	50.26	4.25	Sandy Shale

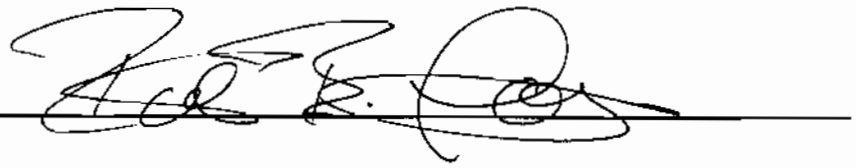
Appalachian Field Services Company Inc.
P.O. Box 373
Baxter, Kentucky 40806
Telephone (606) 573-0521

SAMPLE IDENTIFICATION : APPOLO FUELS INC.

PERMIT NUMBER : 807 - 0368, (HW - 2)

SAMPLED BY : H.E.G.
SAMPLE DATE : 12/22/2008
REPORT DATE : 03/05/2009

SAMPLE #	FIZZ RATING	PASTE pH	NEUTRALIZATION POTENTIAL	TOTAL SULFUR %	POTENTIAL ACIDITY	CODE	SDI % RETAINED	THICKNESS INTERVAL
1	NONE	7.65	29.21	0.074	2.31	124	96.75	5.00 '
2	NONE	7.33	22.28	0.064	2.00	124	96.43	5.00 '
3	NONE	7.59	29.71	0.086	2.69	124	96.50	4.50 '
4	SLIGHT	7.43	54.41	0.109	3.41	300	96.66	5.00 '
5	SLIGHT	7.46	55.38	0.160	5.00	300	95.68	5.00 '
6	SLIGHT	7.56	58.29	0.137	4.28	300	95.14	5.00 '
7	SLIGHT	7.59	52.47	0.157	4.91	300	96.48	5.00 '
8	SLIGHT	7.47	58.78	0.144	4.50	300	97.12	5.00 '
9	SLIGHT	7.53	73.81	0.138	4.31	300	96.47	5.00 '
10	SLIGHT	7.41	70.90	0.136	4.25	300	96.36	5.00 '
11	SLIGHT	7.29	43.74	0.082	2.56	300	96.41	5.00 '
12	SLIGHT	7.52	39.24	0.094	2.94	124	96.76	5.00 '
13	SLIGHT	7.69	40.71	0.074	2.31	124	95.62	5.00 '
14	SLIGHT	7.68	55.90	0.102	3.19	300	96.52	5.00 '
15	SLIGHT	7.69	51.00	0.094	2.94	300	96.25	5.00 '
16	SLIGHT	7.70	55.41	0.127	3.97	300	96.11	4.00 '
17	SLIGHT	7.41	7.39	0.106	3.31	540	95.36	5.00 '
18	SLIGHT	7.71	30.91	0.119	3.72	540	93.78	5.00 '
19	SLIGHT	7.53	24.30	0.106	3.31	540	94.27	5.00 '
20	SLIGHT	7.81	26.01	0.120	3.75	540	94.03	5.00 '
21	SLIGHT	7.68	29.69	0.100	3.13	540	94.18	1.00 '
22	NONE	7.53	25.75	0.074	2.31	124	96.06	5.00 '
23	NONE	7.68	25.25	0.070	2.19	124	95.72	1.00 '
24	NONE	7.75	28.72	0.072	2.25	124	95.63	3.00 '
25	SLIGHT	7.64	34.66	0.132	4.13	300	96.16	5.00 '
26	SLIGHT	7.62	33.67	0.116	3.63	300	96.47	5.00 '
27	SLIGHT	7.73	49.51	0.118	3.69	300	95.56	5.00 '
28	SLIGHT	7.76	34.66	0.124	3.88	300	96.65	5.00 '
29	SLIGHT	7.57	25.26	0.121	3.78	300	96.34	3.00 '
30	SLIGHT	7.69	50.50	0.135	4.22	300	96.25	5.00 '
31	SLIGHT	7.62	50.01	0.137	4.28	300	97.07	5.00 '

SUBMITTED BY : 

GEOLOGICAL INFORMATION FORM

(Please print or type all responses)

1. Quadrangle Name Kayjay & Forkridge

Quadrar
(For office use only)

2. Latitude 3 6 3 6 1 2

3. Longitude 8 3 5 0 5 2

4. UTM Zone (Eastern Kentucky = 17, Western Kentucky = 16) 1 7

5. UTM Easting coordinate 2 4 5 2 6 9

6. UTM Northing coordinate 4 0 5 4 4 4 5

7. Quadrangle Scale 1
1/24,000 = 1; 1/62,500 = 2; 1/125,000 = 3; Other = 4 - Explain _____

8. State Identification Code Number 2 1
(Use Federal Information Processing Standards Code (FIPS). The FIPS number for Kentucky is 21; additional surrounding states may be found on the last page of this form.)

9. County Code Number (refer to county number list on the last page of this form) 0 0 7

10. Coal Company Name Appolo Fuels, Inc.

11. Operator's Appolo Fuels, Inc. (*Last*) , _____ (*First*) , _____ (*M.I.*)

12. Permit Number 8 0 7 - 0 3 6 8

13. SOAP Identification Number

14. Hole Number HW 3

15. Date (month, day, year) 1 0 1 0 0 8

16. Driller's Howard (*Last*) , David (*First*) , W. (*M.I.*)

17. Type of Sample 9
Core = 5; Chip = 6; Auger = 7; Geophysical log = 8; Highwall = 9;
Other = 10 - Explain _____

18. Top of hole elevation (round to nearest unit of measurement and indicate units used*) 2 6 2 0 F

19. Top of hole determination T
Barometer = B; Survey = S; Hand Level = H; Topo = T;
Other = O - Explain _____

20. Cumulative thickness of the sample (round to nearest unit of measurement and indicate units used*) 1 3 3 F

21. Name of geologist or engineer responsible for preparing this form
Howard (*Last*) , David (*First*) , W. (*M.I.*) , P.G.#50 (*Title*)

GEOLOGICAL INFORMATION SHEET

(Please print or type)

Hole Number HW3 UTM Zone 17 Quadrangle Forkridge & Kayjay

Latitude 363312 UTM E Coordinate 245269

Longitude 835052 UTM N Coordinate 4054445

Driller Howard (Last) David (First) W. (M.I.) Date 101008

Type: ☐ Core ☐ Chip ☒ Highwall ☐ Auger ☐ G-log ☐ Other _____

Unit of Measurement: ☐ Feet & Inches ☒ Feet & Tenths ☐ Metric

DRILLERS LOG SHEET

(Please print or type)

Rock Code	Unit Thickness	Cumulative Thickness	Avg. N.P.	Avg. P.A.	Comments
001	1.00	1.00	- - -	- - -	Topsoil/Native Soil
001	25.75	26.75	- - -	- - -	Subsoil/Alternate Topsoil
124	15.00	41.75	23.0 1	2.7 8	Dark Gray Shale
540	50.00	91.75	10.6 3	5.0 8	Gray Sandstone
020	4.25	96.00	- - -	- - -	Coal (Hignite Seam)
124	1.50	97.50	17.3 3	2.5 0	Dark Gray Shale
540	23.50	121.00	13.8 5	5.3 6	Gray Sandstone
020	2.00	123.00	- - -	- - -	Coal (Hignite Seam)
540	10.00	133.00	10.4 4	6.0 8	Gray Sandstone

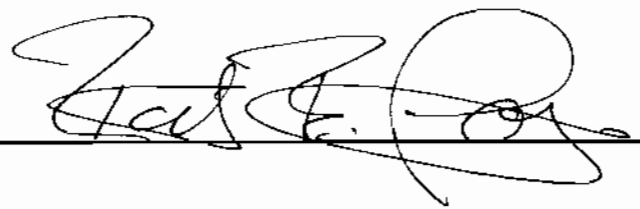
Appalachian Field Services Company Inc.
P.O. Box 373
Baxter, Kentucky 40806
Telephone (606) 573-0521

SAMPLE IDENTIFICATION : APPOLO FUELS INC.

PERMIT NUMBER : 807 - 0368, (HW - 3)

SAMPLED BY : H.E.G.
SAMPLE DATE : 12/22/2008
REPORT DATE : 03/05/2009

SAMPLE #	FIZZ RATING	PASTE pH	NEUTRALIZATION POTENTIAL	TOTAL SULFUR %	POTENTIAL ACIDITY	CODE	SDI % RETAINED	THICKNESS INTERVAL
1	NONE	7.64	22.86	0.083	2.59	124	96.02	5.00 '
2	NONE	7.51	23.30	0.094	2.94	124	96.28	5.00 '
3	NONE	7.62	22.86	0.090	2.81	124	95.28	5.00 '
4	NONE	7.32	16.63	0.136	4.25	540	94.79	5.00 '
5	NONE	7.23	14.85	0.117	3.66	540	92.10	5.00 '
6	NONE	7.66	22.86	0.103	3.22	540	93.50	5.00 '
7	NONE	7.32	16.18	0.102	3.19	540	94.93	5.00 '
8	NONE	7.14	9.51	0.111	3.47	540	94.75	5.00 '
9	NONE	7.12	2.98	0.153	4.78	540	94.34	5.00 '
10	NONE	7.42	8.92	0.214	6.69	540	93.83	5.00 '
11	NONE	7.64	5.45	0.209	6.53	540	90.90	5.00 '
12	NONE	7.54	3.97	0.246	7.69	540	93.34	5.00 '
13	NONE	7.59	4.96	0.234	7.31	540	91.75	5.00 '
14	NONE	7.65	17.33	0.080	2.50	124	95.03	1.50 '
15	NONE	7.47	4.46	0.197	6.16	540	92.36	5.00 '
16	NONE	7.49	5.95	0.177	5.53	540	93.51	5.00 '
17	NONE	7.76	16.88	0.185	5.78	540	90.91	5.00 '
18	NONE	7.45	14.58	0.190	5.94	540	94.31	5.00 '
19	NONE	7.46	22.40	0.108	3.38	540	94.24	3.50 '
20	NONE	7.56	11.82	0.137	4.28	540	94.14	5.00 '
21	NONE	7.71	9.06	0.252	7.88	540	94.43	5.00 '

SUBMITTED BY : 

GEOLOGICAL INFORMATION FORM

(Please print or type all responses)

Quadra
(For office use only)

1. Quadrangle Name Kayjay & Forkridge

2. Latitude 3 6 3 7 0 1

3. Longitude 8 3 5 1 3 4

4. UTM Zone (Eastern Kentucky = 17, Western Kentucky = 16) 1 7

5. UTM Easting coordinate 2 4 4 2 7 0

6. UTM Northing coordinate 4 0 5 5 9 8 6

7. Quadrangle Scale 1
1/24,000 = 1; 1/62,500 = 2; 1/125,000 = 3; Other = 4 - Explain _____

8. State Identification Code Number 2 1
(Use Federal Information Processing Standards Code (FIPS). The FIPS number for Kentucky is 21; additional surrounding states may be found on the last page of this form.)

9. County Code Number (refer to county number list on the last page of this form) 0 0 7

10. Coal Company Name Appolo Fuels, Inc.

11. Operator's Appolo Fuels, Inc. (*Last*) , _____ (*First*) , _____ (*M.I.*)

12. Permit Number 8 0 7 - 0 3 6 8

13. SOAP Identification Number

14. Hole Number HW 4

15. Date (month, day, year) 1 0 1 0 0 8

16. Driller's Howard (*Last*) , David (*First*) , W. (*M.I.*)

17. Type of Sample 9
Core = 5; Chip = 6; Auger = 7; Geophysical log = 8; Highwall = 9;
Other = 10 - Explain _____

18. Top of hole elevation (round to nearest unit of measurement and indicate units used*) 2 5 8 0 F

19. Top of hole determination T
Barometer = B; Survey = S; Hand Level = H; Topo = T;
Other = O - Explain _____

20. Cumulative thickness of the sample (round to nearest unit of measurement and indicate units used*) 2 1 0 F

21. Name of geologist or engineer responsible for preparing this form
Howard (*Last*), David (*First*), W. (*M.I.*), P.G.#50 (*Title*)

GEOLOGICAL INFORMATION SHEET

(Please print or type)

Hole Number HW4 UTM Zone 17 Quadrangle Forkridge & Kayjay

Latitude 363701 UTM E Coordinate 244270

Longitude 835134 UTM N Coordinate 4055986

Driller Howard (Last) David (First) W. (M.I.) Date 101008

Type: ☐ Core ☐ Chip ☒ Highwall ☐ Auger ☐ G-log ☐ Other _____

Unit of Measurement: ☐ Feet & Inches ☒ Feet & Tenths ☐ Metric

DRILLERS LOG SHEET

(Please print or type)

Rock Code	Unit Thickness	Cumulative Thickness	Avg. N.P.	Avg. P.A.	Comments
001	0.75	0.75	- - -	- - -	Topsoil/Native Soil
001	36.00	36.75	- - -	- - -	Subsoil/Alternate Topsoil
300	50.00	86.75	51.40	3.51	Sandy Shale
540	50.00	136.75	20.94	4.04	Gray Sandstone
124	33.00	169.75	23.59	2.80	Dark Gray Shale
020	3.50	173.25	- - -	- - -	Coal (Hignite Seam)
300	25.00	198.25	28.97	2.61	Sandy Shale
020	1.75	200.00	- - -	- - -	Coal (Hignite Seam)
540	10.00	210.00	12.08	4.28	Gray Sandstone

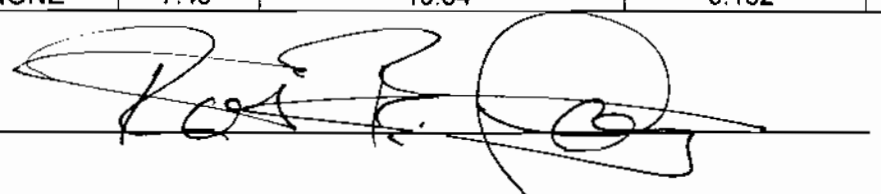
SAMPLE IDENTIFICATION : APPOLO FUELS INC.

PERMIT NUMBER : 807 - 0368, (HW - 4)

SAMPLED BY : H.E.G.
SAMPLE DATE : 12/22/2008
REPORT DATE : 03/23/2009

Appalachian Field Services Company Inc.
P.O. Box 373
Baxter, Kentucky 40806
Telephone (606) 573-0521

SAMPLE #	FIZZ RATING	PASTE pH	NEUTRALIZATION POTENTIAL	TOTAL SULFUR %	POTENTIAL ACIDITY	CODE	SDI % RETAINED	THICKNESS INTERVAL
1	SLIGHT	7.75	71.12	0.144	4.50	300	96.70	5.00 '
2	NONE	7.65	24.56	0.094	2.94	300	96.88	5.00 '
3	SLIGHT	7.55	32.97	0.102	3.19	300	96.05	5.00 '
4	SLIGHT	7.73	24.52	0.140	4.38	300	96.87	5.00 '
5	SLIGHT	7.49	58.58	0.114	3.56	300	96.63	5.00 '
6	SLIGHT	7.59	74.39	0.150	4.69	300	96.89	5.00 '
7	SLIGHT	7.48	54.22	0.130	4.06	300	97.06	5.00 '
8	NONE	7.51	24.08	0.078	2.44	300	95.63	5.00 '
9	NONE	7.43	25.52	0.082	2.56	300	97.19	5.00 '
10	NONE	7.66	24.08	0.089	2.78	300	97.13	5.00 '
11	NONE	7.42	24.56	0.149	4.66	540	94.09	5.00 '
12	NONE	7.44	17.84	0.124	3.88	540	93.82	5.00 '
13	NONE	7.15	26.00	0.122	3.81	540	95.91	5.00 '
14	NONE	7.41	23.12	0.111	3.47	540	93.84	5.00 '
15	NONE	7.53	20.56	0.117	3.66	540	94.89	5.00 '
16	NONE	7.46	20.10	0.130	4.06	540	94.28	5.00 '
17	NONE	7.45	20.56	0.128	4.00	540	94.53	5.00 '
18	NONE	7.33	21.02	0.127	3.97	540	95.65	5.00 '
19	NONE	7.44	21.94	0.114	3.56	540	95.39	5.00 '
20	NONE	7.36	13.66	0.169	5.28	540	94.66	5.00 '
21	NONE	7.30	23.78	0.106	3.31	124	95.71	5.00 '
22	NONE	7.32	21.48	0.092	2.88	124	96.64	5.00 '
23	NONE	7.53	20.72	0.085	2.66	124	95.69	5.00 '
24	NONE	7.54	17.36	0.093	2.91	124	96.36	5.00 '
25	NONE	7.41	19.76	0.094	2.94	124	95.18	5.00 '
26	SLIGHT	7.64	42.78	0.084	2.63	124	96.46	5.00 '
27	NONE	7.58	19.28	0.073	2.28	124	96.18	3.00 '
28	NONE	7.39	20.24	0.059	1.84	300	96.04	5.00 '
29	NONE	7.65	20.72	0.074	2.31	300	95.63	5.00 '
30	NONE	7.74	23.60	0.082	2.56	300	95.34	5.00 '
31	NONE	7.54	19.28	0.086	2.69	300	96.19	5.00 '
32	SLIGHT	7.87	61.03	0.117	3.66	300	94.77	5.00 '
33	NONE	7.59	13.52	0.122	3.81	540	94.22	5.00 '
34	NONE	7.49	10.64	0.152	4.75	540	93.13	5.00 '

SUBMITTED BY : 

GEOLOGICAL INFORMATION FORM

(Please print or type all responses)

1. Quadrangle Name Kayjay & Forkridge

2. Latitude 3 6 3 5 5 0

3. Longitude 8 3 4 9 1 3

4. UTM Zone (Eastern Kentucky = 17, Western Kentucky = 16) 1 7

5. UTM Easting coordinate 2 4 7 8 9 0

6. UTM Northing coordinate 4 0 5 3 6 8 3

7. Quadrangle Scale 1
   1 / 24,000 = 1, 1 / 62,000 = 2, 1 / 125,000 = 3, Other = 4, Explain _____

8. State Identification Code Number 2 1
   (Use Federal Information Processing Standards Code (FIPS). The FIPS number for Kentucky is 21; additional surrounding states may be found on the last page of this form.)

9. County Code Number (refer to county number list on the last page of this form) 0 0 7

10. Coal Company Name Appolo Fuels, Inc.

11. Operator's Name Same
    (Last) , (First) (Int.)

12. Permit Number 8 0 7 - 0 3 6 8

13. SOAP Identification Number

14. Hole Number A F 1 2 0

15. Date (month, day, year) 0 5 1 5 9 0

16. Driller's or Sampler's Name Smith (Last), William (First) (Int.)

17. Type of Sample 5
    Core = 5; Chip = 6; Auger--7,Geophysical log = 8;
    Highwall =9; Other= 10 - Explain _____

18. Top of hole elevation (round to nearest unit of measurement and indicate units used*) 2 6 3 1 F

19. Top of hole determination T
    (Barometer = B; Survey = S; Hand Level = H; Topo = T;
    Other = 0 - Expiain:_____

20. Cumulative thickness of the sample (round to nearest unit of measurement and indicate units used*) 2 2 4 F

21. Name of geologist or engineer responsible for preparing this form (last, first, middle initial and title)

Howard (Last), David (First) W. (Int.) P.G.#50 (Title)

Attachment 15 2 A

GEOLOGICAL INFORMATION SHEET

(Please Print or Type)

Hole Number A F 1 2 0 UTM Zone 1 7 Quadrangle Kayjay & Forkridge

Latitude 3 6 3 5 5 0 UTM E Coordinate 2 4 7 8 9 0

Longitude 8 3 4 9 1 3 UTM N Coordinate 4 0 5 3 6 8 3

Driller or Sampler Smith (Last), William (First), ____ (Int.) Date 0 5 1 5 9 0

Type: ☒ Core ☐ Chip ☐ Highwall ☐ Auger ☐ G-log ☐ Other _____

Unit of Measurement: ☐ Feet & Inches, ☒ Feet & Tenths, ☐ Metric

DRILLER LOG SHEET

(Please Print or Type)

Page 2 of 2 pages.

Rock Codes	Unit Thickness	Cumulative Thickness	NP	PA	Comments
124	1.98'	1.98'			Dark Gray Shale
540	5.17'	7.15'			Gray Sandstone
300	17.08'	24.23'			Sandy Shale
123	4.50'	28.73'			Gray Shale w/ Coal Streaks
124	13.75'	42.48'			Dark Gray Shale
540	4.83'	47.31'			Gray Sandstone
543	9.83'	57.14'			Gray Sandstone w/Shale Streaks
300	26.33'	83.47'			Sandy Shale
124	3.67'	87.14'			Dark Gray Shale
323	14.17'	101.31'			Gray Shale w/Sandstone Streaks
020	2.50'	103.81'			Coal w/Shale Partings (Hignite Seam)
124	5.42'	109.23'			Dark Gray Shale
540	3.67'	112.90'			Gray Sandstone
124	11.92'	124.82'			Dark Gray Shale
020	1.50'	126.32'			Coal (Hignite Seam)
124	9.42'	135.74'			Dark Gray Shale
540	4.33'	140.07'			Gray Sandstone
124	17.08'	157.15'			Dark Gray Shale
543	10.67'	167.82'			Gray Sandstone w/Shale Streaks
020	1.17'	168.99'			Coal (Hignite Seam)
123	2.67'	171.66'			Coal w/Shale Streaks
540	52.67'	224.33'			Gray Sandstone

GEOLOGICAL INFORMATION FORM

(Please print or type all responses)

1. Quadrangle Name Kayjay & Forkridge

2. Latitude [3][6][3][5][1][9]

3. Longitude [8][3][5][0][0][2]

4. UTM Zone (Eastern Kentucky = 17, Western Kentucky = 16) [1][7]

5. UTM Easting coordinate [2][4][6][4][6][4]

6. UTM Northing coordinate [4][0][5][2][7][7][4]

7. Quadrangle Scale [1]
   1 / 24,000 = 1, 1 / 62,000 = 2, 1 / 125,000 = 3, Other = 4, Explain _____

8. State Identification Code Number [2][1]
   (Use Federal Information Processing Standards Code (FIPS). The FIPS number for Kentucky is 21; additional surrounding states may be found on the last page of this form.)

9. County Code Number (refer to county number list on the last page of this form) [0][0][7]

10. Coal Company Name Appolo Fuels, Inc.

11. Operator's Name Same
    (Last) , (First) (Int.)

12. Permit Number [8][0][7][-][0][3][6][8]

13. SOAP Identification Number [ ][ ][ ][ ][ ][ ][ ][ ]

14. Hole Number [B][A][C][-][2][ ][ ]

15. Date (month, day, year) [0][1][3][1][9][0]

16. Driller's or Sampler's Name LJ Hughes & Sons, Inc.
    (Last) , (First) (Int.)

17. Type of Sample [5]
    Core = 5; Chip = 6; Auger--7,Geophysical log = 8;
    Highwall =9; Other= 10 - Explain _____

18. Top of hole elevation (round to nearest unit of measurement and indicate units used*) [3][1][2][0] [F]

19. Top of hole determination [T]
    (Barometer = B; Survey = S; Hand Level = H; Topo = T;
    Other = 0 - Expiain:_____

20. Cumulative thickness of the sample (round to nearest unit of measurement and indicate units used*) [ ][1][9][5] [F]

21. Name of geologist or engineer responsible for preparing this form (last, first, middle initial and title)
    Howard (Last), David (First) W. (Int.) P.G.#50 (Title)

Attachment 15 2 A

GEOLOGICAL INFORMATION SHEET

(Please Print or Type)

Hole Number BAC-2 UTM Zone 17 Quadrangle Kayjay & Forkridge

Latitude 363519 UTM E Coordinate 246464

Longitude 835002 UTM N Coordinate 4052774

Driller or Sampler LJ Hughes & Sons, Inc. (Last) , (First) (Int.) Date 013190

Type: ☒ Core ☐ Chip ☐ Highwall ☐ Auger ☐ G-log ☐ Other _____

Unit of Measurement: ☐ Feet & Inches, ☒ Feet & Tenths, ☐ Metric

DRILLER LOG SHEET

(Please Print or Type)

Page 2 of 2 pages.

Rock Codes	Unit Thickness	Cumulative Thickness	NP	PA	Comments
300	30.00'	30.00'			Sandy Shale
124	8.00'	38.00'			Dark Gray Shale
540	7.00'	45.00'			Gray Sandstone
300	26.00'	71.00'			Sandy Shale
540	32.00'	103.00'			Gray Sandstone
124	2.00'	105.00'			Dark Gray Shale
300	17.33'	122.33'			Sandy Shale
020	2.92'	125.25'			Coal (Hignite Seam)
124	2.58'	127.83'			Dark Gray Shale
020	0.42'	128.25'			Coal (Hignite Seam)
124	3.58'	131.83'			Dark Gray Shale
300	11.42'	143.25'			Sandy Shale
020	1.00'	144.25'			Coal (Hignite Seam)
124	7.67	151.92'			Dark Gray Shale
540	43.00'	194.92'			Gray Sandstone

GEOLOGICAL INFORMATION FORM

(Please print or type all responses)

1. Quadrangle Name Kayjay & Forkridge

2. Latitude 3 6 3 5 5 5

3. Longitude 8 3 5 0 0 6

4. UTM Zone (Eastern Kentucky = 17, Western Kentucky = 16) 1 7

5. UTM Easting coordinate 2 4 6 3 9 7

6. UTM Northing coordinate 4 0 5 3 8 8 7

7. Quadrangle Scale 1
   1 / 24,000 = 1, 1 / 62,000 = 2, 1 / 125,000 = 3, Other = 4, Explain _____

8. State Identification Code Number 2 1
   (Use Federal Information Processing Standards Code (FIPS). The FIPS number for Kentucky is 21; additional surrounding states may be found on the last page of this form.)

9. County Code Number (refer to county number list on the last page of this form) 0 0 7

10. Coal Company Name Appolo Fuels, Inc.

11. Operator's Name Same
    (Last) , (First) (Int.)

12. Permit Number 8 0 7 - 0 3 6 8

13. SOAP Identification Number

14. Hole Number D D H 1 1 0 3

15. Date (month, day, year) 1 2 0 9 0 3

16. Driller's or Sampler's Name _____ , _____ _____
    (Last) (First) (Int.)

17. Type of Sample 5
    Core = 5; Chip = 6; Auger--7,Geophysical log = 8;
    Highwall =9; Other= 10 - Explain _____

18. Top of hole elevation (round to nearest unit of measurement and indicate units used*) 2 5 8 3 F

19. Top of hole determination T
    (Barometer = B; Survey = S; Hand Level = H; Topo = T;
    Other = 0 - Expiain: _____

20. Cumulative thickness of the sample (round to nearest unit of measurement and indicate units used*) 1 9 5 F

21. Name of geologist or engineer responsible for preparing this form (last, first, middle initial and title)

Howard (Last), David (First) W. (Int.) P.G.#50 (Title)

Attachment 15 2 A

GEOLOGICAL INFORMATION SHEET

(Please Print or Type)

Hole Number D D H 1 1 0 3 UTM Zone 1 7 Quadrangle Kayjay & Forkridge

Latitude 3 6 3 5 5 5 UTM E Coordinate 2 4 6 3 9 7

Longitude 8 3 5 0 0 6 UTM N Coordinate 4 0 5 3 8 8 7

Driller or Sampler _____ (Last), _____ (First) _____ (Int.) Date 1 2 0 9 0 3

Type: ☒ Core ☐ Chip ☐ Highwall ☐ Auger ☐ G-log ☐ Other _____

Unit of Measurement: ☐ Feet & Inches, ☒ Feet & Tenths, ☐ Metric

DRILLER LOG SHEET

(Please Print or Type)

Page 2 of 2 pages.

Rock Codes	Unit Thickness	Cumulative Thickness	NP	PA	Comments
300	45.00'	45.00'	27.58	4.00	Sandy Shale
124	10.00'	55.00'	23.50	2.69	Dark Gray Shale
540	45.00'	100.00'	37.78	2.34	Gray Sandstone
124	5.00'	105.00'	31.66	3.28	Dark Gray Shale
540	1.00'	106.00'	21.46	2.75	Gray Sandstone
124	4.00'	110.00'	15.90	2.59	Dark Gray Shale
005	4.00'	114.00'			Mine Void
124	3.50'	117.50'	30.39	96.44	Dark Gray Shale
300	12.50'	130.00'	40.59	3.16	Sandy Shale
540	9.50'	139.50'	45.94	2.28	Gray Sandstone
124	0.50'	140.00'	42.88	2.75	Dark Gray Shale
020	2.00'	142.00'			Coal (Hignite Seam)
540	52.80'	194.80'	67.36	2.25	Gray Sandstone

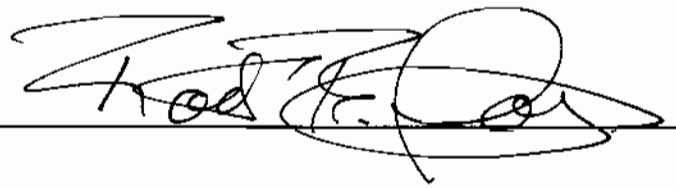
Appalachian Field Services Company Inc.
P.O. Box 373
Baxter, Kentucky 40806
Telephone (606) 573-0521

SAMPLE IDENTIFICATION : APPOLO FUELS INC.

PERMIT NUMBER : 807 - 0368 (DDH - 11 - 03)

SAMPLED BY : D. JONES / J. CHILDERS
SAMPLE DATE : 12/09/2003
REPORT DATE : 10/09/2008

SAMPLE #	FIZZ RATING	PASTE pH	NEUTRALIZATION POTENTIAL	TOTAL SULFUR %	POTENTIAL ACIDITY	CODE	SDI % RETAINED	THICKNESS INTERVAL
1	SLIGHT	6.98	27.58	0.128	4.00	300	97.13	45.00 '
2	SLIGHT	8.06	23.50	0.086	2.69	124	95.65	10.00 '
3	SLIGHT	8.12	37.78	0.075	2.34	540	97.81	45.00 '
4	SLIGHT	7.88	31.66	0.105	3.28	124	91.62	5.00 '
5	SLIGHT	8.08	21.46	0.088	2.75	540	98.13	1.00 '
6	NONE	8.20	15.90	0.083	2.59	124	93.50	4.00 '
7	SLIGHT	8.17	30.39	0.104	3.25	124	96.44	3.50 '
8	SLIGHT	7.86	40.59	0.101	3.16	300	98.47	12.50 '
9	SLIGHT	8.23	45.94	0.073	2.28	540	98.43	9.50 '
10	SLIGHT	8.24	42.88	0.088	2.75	124	94.52	0.50 '
11	SLIGHT	8.27	67.36	0.072	2.25	540	97.29	52.80 '

SUBMITTED BY : 

GEOLOGICAL INFORMATION FORM

(Please print or type all responses)

1. Quadrangle Name Forkridge

2. Latitude 3 6 3 5 1 2

3. Longitude 8 3 5 1 0 2

4. UTM Zone (Eastern Kentucky = 17, Western Kentucky = 16) 1 7

5. UTM Easting coordinate 2 4 4 9 6 6

6. UTM Northing coordinate 4 0 5 2 6 0 3

7. Quadrangle Scale 1
   1 / 24,000 = 1, 1 / 62,000 = 2, 1 / 125,000 = 3, Other = 4, Explain _____

8. State Identification Code Number 2 1
   (Use Federal Information Processing Standards Code (FIPS). The FIPS number for Kentucky is 21; additional surrounding states may be found on the last page of this form.)

9. County Code Number (refer to county number list on the last page of this form) 0 0 7

10. Coal Company Name Appolo Fuels, Inc.

11. Operator's Name Same
    (Last) , (First) (Int.)

12. Permit Number 8 0 7 - 0 3 6 8

13. SOAP Identification Number

14. Hole Number H W 5

15. Date (month, day, year) 0 2 2 4 0 9

16. Driller's or Sampler's Name _____ , _____ _____
    (Last) (First) (Int.)

17. Type of Sample 9
    Core = 5; Chip = 6; Auger--7,Geophysical log = 8;
    Highwall =9; Other= 10 - Explain _____

18. Top of hole elevation (round to nearest unit of measurement and indicate units used*) 2 4 5 4 F

19. Top of hole determination T
    (Barometer = B; Survey = S; Hand Level = H; Topo = T;
    Other = 0 - Expiain;_____

20. Cumulative thickness of the sample (round to nearest unit of measurement and indicate units used*) 1 2 7 F

21. Name of geologist or engineer responsible for preparing this form (last, first, middle initial and title)

Howard (Last), David (First) W. (Int.) P.G.#50 (Title)

Attachment 15 2 A

GEOLOGICAL INFORMATION SHEET

(Please Print or Type)

Hole Number H W 5 _ _ _ _ UTM Zone 1 7 Quadrangle Forkridge

Latitude 3 6 3 5 1 2 UTM E Coordinate 2 4 4 9 6 6

Longitude 8 3 5 1 0 2 UTM N Coordinate 4 0 5 2 6 0 3

Driller or Sampler _____ (Last), _____ (First) _____ (Int.) Date 0 2 2 4 0 9

Type: ☐ Core ☐ Chip ☒ Highwall ☐ Auger ☐ G-log ☐ Other _____

Unit of Measurement: ☐ Feet & Inches, ☒ Feet & Tenths, ☐ Metric

DRILLER LOG SHEET

(Please Print or Type)

Page 2 of 2 pages.

Rock Codes	Unit Thickness	Cumulative Thickness	NP	PA	Comments
001	0.50'	0.50'	---	---	Topsoil/Native Soil
001	5.00'	5.50'	---	---	Subsoil/Alternate Topsoil
124	31.50'	37.00'	25.62	3.78	Dark Gray Shale
020	1.00'	38.00'	---	---	Coal (Strays Seam)
124	8.75'	46.75'	32.61	2.81	Gray Shale
020	1.75'	48.50'	---	---	Coal (Strays Seam)
124	12.25'	60.75'	26.97	3.59	Gray Shale
540	5.00'	65.75'	3.47	6.72	Gray Sandstone
124	44.50'	110.25'	18.04	5.50	Gray Shale
020	2.50	112.75'	---	---	Coal (Strays Seam)
124	2.75'	115.50'	18.98	4.78	Gray Shale
020	1.13'	116.63'	---	---	Coal (Strays Seam)
124	10.00'	126.63	23.21	5.44	Gray Shale

Appalachian Field Services Company Inc.
P.O. Box 373
Baxter, Kentucky 40806
Telephone (606) 573-0621

SAMPLE IDENTIFICATION : APPOLO FUELS INC.

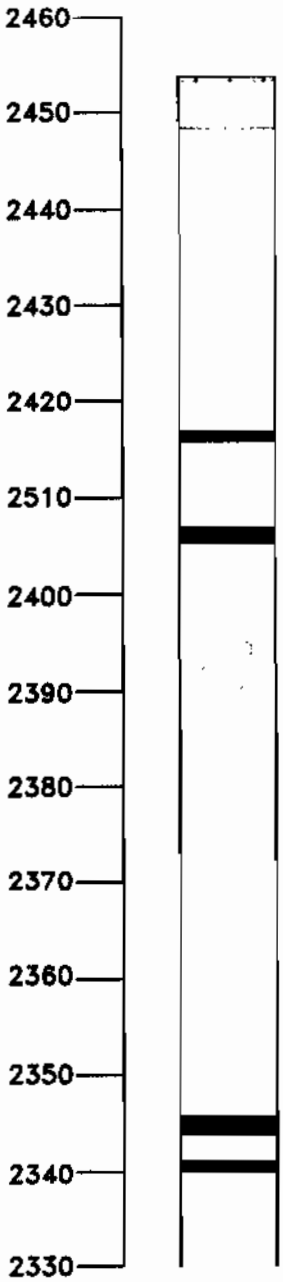
PERMIT NUMBER : 807 - 0368, (HW - 5)

SAMPLED BY : H.E.G.
SAMPLE DATE : 02/26/2009
REPORT DATE : 03/27/2009

SAMPLE #	FIZZ RATING	PASTE pH	NEUTRALIZATION POTENTIAL	TOTAL SULFUR %	POTENTIAL ACIDITY	CODE	SDI % RETAINED	THICKNESS INTERVAL
1	NONE	7.26	24.62	0.121	3.78	124	95.05	31.50 '
2	NONE	7.59	32.61	0.090	2.81	124	96.24	8.75 '
3	NONE	7.74	26.97	0.115	3.59	124	96.46	12.25 '
4	NONE	4.73	3.47	0.215	6.72	500	96.03	5.00 '
5	NONE	6.15	18.04	0.176	5.50	124	91.09	44.50 '
6	NONE	6.13	18.98	0.153	4.78	124	95.33	2.75 '
7	NONE	6.18	23.21	0.174	5.44	124	95.60	10.00 '

SUBMITTED BY : _____

HW-5



0.50' (001) TOPSOIL/NATIVE SOIL
5.00' (001) SUBSOIL

31.50' (124) DARK GRAY SHALE
Durable Strata for Underdrain Construction

1.00' (020) COAL (STRAYS SEAM)

8.75' (124) GRAY SHALE
Durable Strata for Underdrain Construction

1.75' (020) COAL (STRAYS SEAM)

12.25' (124) GRAY SHALE
Durable Strata for Underdrain Construction

5.00' (540) GRAY SANDSTONE
Durable Strata for Underdrain Construction

44.50' (124) GRAY SHALE

2.50' (020) COAL (STRAYS SEAM)
2.75' (124) GRAY SHALE
1.13' (020) COAL (STRAYS SEAM)

10.00' (124) GRAY SHALE

I, Timothy C. Howard, P.E. No. 15,317

Date: 8/11/09

hereby certify in accordance with 405 KAR 7:040, Section10, that this document is correct as determined by accepted engineering practices and includes all information required of it by Chapter 350 and KAR Title 405.

STATE OF KENTUCKY
TIMOTHY C. HOWARD 15,317
LICENSED PROFESSIONAL ENGINEER

Appolo Fuels, Inc.

Permit No. 807-0368
Geologic Highwall Sample HW-5
Attachment 15.2.A

Scale: 1" = 20' | Page No. 1 of 1

Prepared by:
Howard Engineering & Geology, Inc.

GEOLOGICAL INFORMATION FORM

(Please print or type all responses)

1. Quadrangle Name Forkridge

2. Latitude [3][6][3][5][1][4]

3. Longitude [8][3][5][1][0][0]

4. UTM Zone (Eastern Kentucky = 17, Western Kentucky = 16) [1][7]

5. UTM Easting coordinate [2][4][5][0][1][7]

6. UTM Northing coordinate [4][0][5][2][6][6][3]

7. Quadrangle Scale [1]
   1 / 24,000 = 1, 1 / 62,000 = 2, 1 / 125,000 = 3, Other = 4, Explain _____

8. State Identification Code Number [2][1]
   (Use Federal Information Processing Standards Code (FIPS). The FIPS number for Kentucky is 21; additional surrounding states may be found on the last page of this form.)

9. County Code Number (refer to county number list on the last page of this form) [0][0][7]

10. Coal Company Name Appolo Fuels, Inc.

11. Operator's Name Same _____ (Last), _____ (First) _____ (Int.)

12. Permit Number [8][0][7][-][0][3][6][8]

13. SOAP Identification Number [ ][ ][ ][ ][ ][ ][ ][ ]

14. Hole Number [H][W][6][ ][ ][ ][ ]

15. Date (month, day, year) [0][2][2][4][0][9]

16. Driller's or Sampler's Name _____ (Last), _____ (First) _____ (Int.)

17. Type of Sample [9]
    Core = 5; Chip = 6; Auger--7,Geophysical log = 8;
    Highwall =9; Other= 10 - Explain _____

18. Top of hole elevation (round to nearest unit of measurement and indicate units used*) [2][3][0][6] [F]

19. Top of hole determination [T]
    (Barometer = B; Survey = S; Hand Level = H; Topo = T;
    Other = 0 - Expiain:_____

20. Cumulative thickness of the sample (round to nearest unit of measurement and indicate units used*) [ ][1][5][5] [F]

21. Name of geologist or engineer responsible for preparing this form (last, first, middle initial and title)

Howard (Last), David (First) W. (Int.) P.G.#50 (Title)

Attachment 15 2 A

GEOLOGICAL INFORMATION SHEET

(Please Print or Type)

Hole Number H W 6 _ _ _ _ UTM Zone 1 7 Quadrangle Forkridge

Latitude 3 6 3 5 1 4 UTM E Coordinate 2 4 5 0 1 7

Longitude 8 3 5 1 0 0 UTM N Coordinate 4 0 5 2 6 6 3

Driller or Sampler _____ (Last), _____ (First) _____ (Int.) Date 0 2 2 4 0 9

Type: ☐ Core ☐ Chip ☒ Highwall ☐ Auger ☐ G-log ☐ Other _____

Unit of Measurement: ☐ Feet & Inches, ☒ Feet & Tenths, ☐ Metric

DRILLER LOG SHEET

(Please Print or Type)

Page 2 of 2 pages.

Rock Codes	Unit Thickness	Cumulative Thickness	NP	PA	Comments
001	0.50'	0.50'	---	---	Topsoil/Native Soil
001	3.50'	4.00'	---	---	Subsoil/Alternate Topsoil
300	42.50'	46.50	25.26	4.25	Shandy Shale
124	41.50'	88.00'	24.75	2.44	Gray Shale
114	2.00'	90.00'	2.03	1.03	Dark Black Shale
020	3.25'	93.25'	---	---	Coal (Sterling Seam)
124	50.25'	143.50'	26.27	2.91	Gray Shale
020	1.50'	145.00'	---	---	Coal (Poplar Lick Seam)
300	10.00'	155.00'	22.23	3.22	Sandy Shale

Appalachian Field Services Company Inc.
P.O. Box 373
Baxter, Kentucky 40806
Telephone (606) 573-0521

SAMPLE IDENTIFICATION : APPOLO FUELS INC.

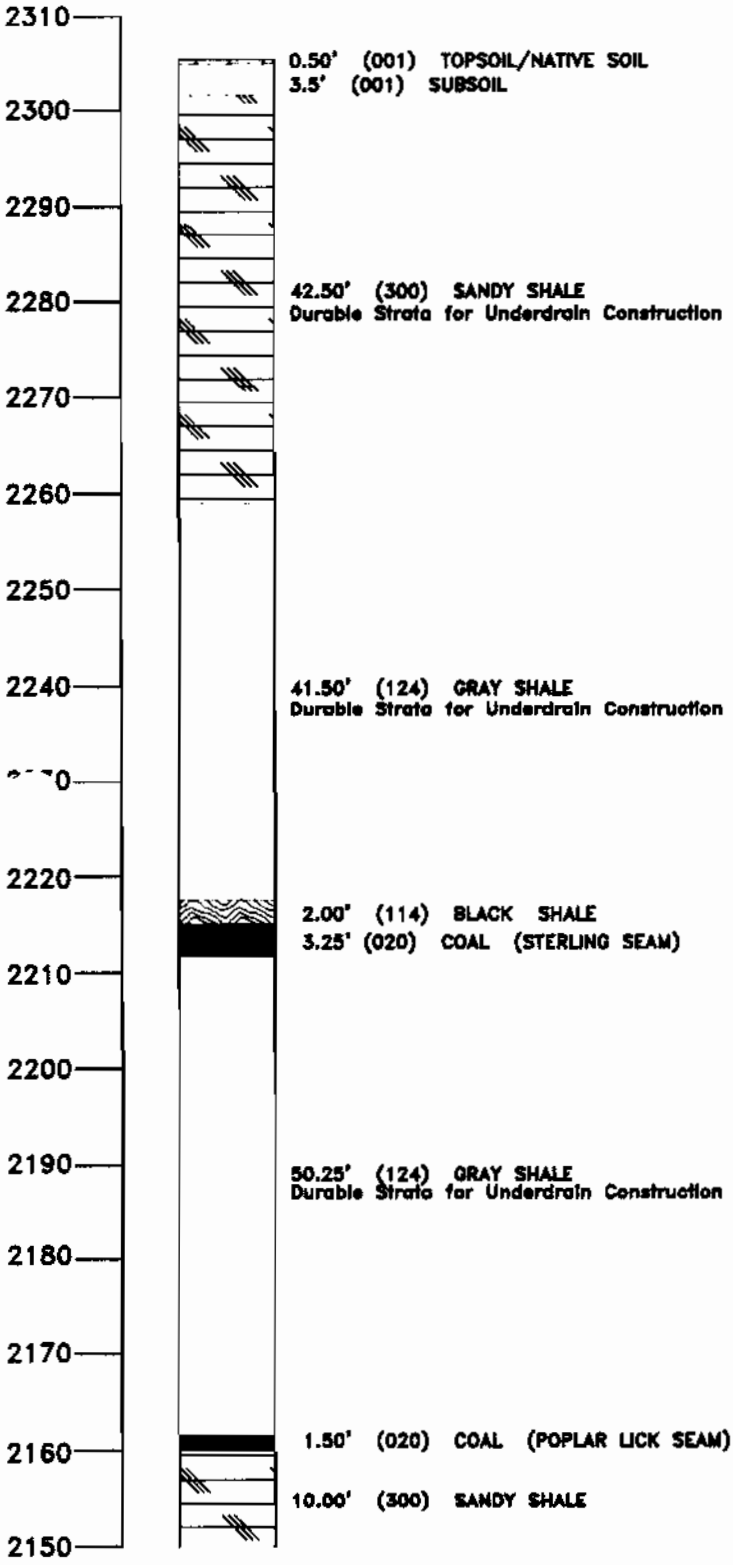
PERMIT NUMBER : 807 - 0368, (HW - 6)

SAMPLED BY : H.E.G.
SAMPLE DATE : 02/26/2009
REPORT DATE : 03/27/2009

SAMPLE #	FIZZ RATING	PASTE pH	NEUTRALIZATION POTENTIAL	TOTAL SULFUR %	POTENTIAL ACIDITY	CODE	SDI % RETAINED	THICKNESS INTERVAL
1	NONE	7.46	25.26	0.136	4.25	300	96.08	42.50 '
2	NONE	7.71	24.75	0.078	2.44	124	97.05	41.50 '
3	NONE	6.80	2.03	0.033	1.03	114	96.32	2.00 '
4	NONE	7.41	26.27	0.093	2.91	124	96.63	50.25 '
5	NONE	7.45	22.23	0.103	3.22	300	96.25	10.00 '

SUBMITTED BY : _____

HW-6



I, Timothy C. Howard, P.E. No. 15,317

Date: 8/11/09

hereby certify in accordance with 405 KAR 7:040, Section10, that this document is correct as determined by accepted engineering practices and includes all information required of it by Chapter 350 and KAR Title 405.

STATE OF KENTUCKY
TIMOTHY C. HOWARD 15,317 LICENSED PROFESSIONAL ENGINEER

Appolo Fuels, Inc.

Permit No. 807-0368
Geologic Highwall Sample HW-6
Attachment 15.2.A

Scale: 1" = 20'

Page No. 1 of 1

Prepared by:
Howard Engineering & Geology, Inc.

GEOLOGICAL INFORMATION FORM

(Please print or type all responses)

1. Quadrangle Name Forkridge

2. Latitude 3 6 3 5 1 8

3. Longitude 8 3 5 0 5 7

4. UTM Zone (Eastern Kentucky = 17, Western Kentucky = 16) 1 7

5. UTM Easting coordinate 2 4 5 0 9 5

6. UTM Northing coordinate 4 0 5 2 7 8 4

7. Quadrangle Scale 1
   1 / 24,000 = 1, 1 / 62,000 = 2, 1 / 125,000 = 3, Other = 4, Explain _____

8. State Identification Code Number 2 1
   (Use Federal Information Processing Standards Code (FIPS). The FIPS number for Kentucky is 21; additional surrounding states may be found on the last page of this form.)

9. County Code Number (refer to county number list on the last page of this form) 0 0 7

10. Coal Company Name Appolo Fuels, Inc.

11. Operator's Name Same
    (Last) , (First) (Int.)

12. Permit Number 8 0 7 - 0 3 6 8

13. SOAP Identification Number

14. Hole Number H W 7

15. Date (month, day, year) 0 2 2 4 0 9

16. Driller's or Sampler's Name _____ , _____ _____
    (Last) (First) (Int.)

17. Type of Sample 9
    Core = 5; Chip = 6; Auger--7,Geophysical log = 8;
    Highwall =9; Other= 10 - Explain _____

18. Top of hole elevation (round to nearest unit of measurement and indicate units used*) 2 0 3 7 F

19. Top of hole determination T
    (Barometer = B; Survey = S; Hand Level = H; Topo = T;
    Other = 0 - Expiain: _____

20. Cumulative thickness of the sample (round to nearest unit of measurement and indicate units used*) 1 0 9 F

21. Name of geologist or engineer responsible for preparing this form (last, first, middle initial and title)

Howard (Last), David (First) W. (Int.) P.G.#50 (Title)

GEOLOGICAL INFORMATION SHEET

Attachment 15 2 A

(Please Print or Type)

Hole Number H W 7 _ _ _ _ UTM Zone 1 7 Quadrangle Forkridge

Latitude 3 6 3 5 1 8 UTM E Coordinate 2 4 5 0 9 5

Longitude 8 3 5 0 5 7 UTM N Coordinate 4 0 5 2 7 8 4

Driller or Sampler _____ (Last), _____ (First) _____ (Int.) Date 0 2 2 4 0 9

Type: ☐ Core ☐ Chip ☒ Highwall ☐ Auger ☐ G-log ☐ Other _____

Unit of Measurement: ☐ Feet & Inches, ☒ Feet & Tenths, ☐ Metric

DRILLER LOG SHEET

(Please Print or Type)

Page 2 of 2 pages.

Rock Codes	Unit Thickness	Cumulative Thickness	NP	PA	Comments
001	0.50'	0.50'	---	---	Topsoil/Native Soil
001	3.00'	3.50'	---	---	Subsoil/Alternate Topsoil
300	83.25'	86.75'	21.11	3.59	Shandy Shale
124	8.40'	95.15	28.29	2.06	Gray Shale
020	2.45	97.60'	---	---	Coal (Buckeye Springs Seam)
124	4.60'	102.20'	23.74	2.41	Gray Shale
300	7.25	109.45'	24.75	3.78	Sandy Shale

SAMPLE IDENTIFICATION : APPOLO FUELS INC.

Appalachian Field Services Company Inc.
P.O. Box 373
Baxter, Kentucky 40806
Telephone (606) 573-0521

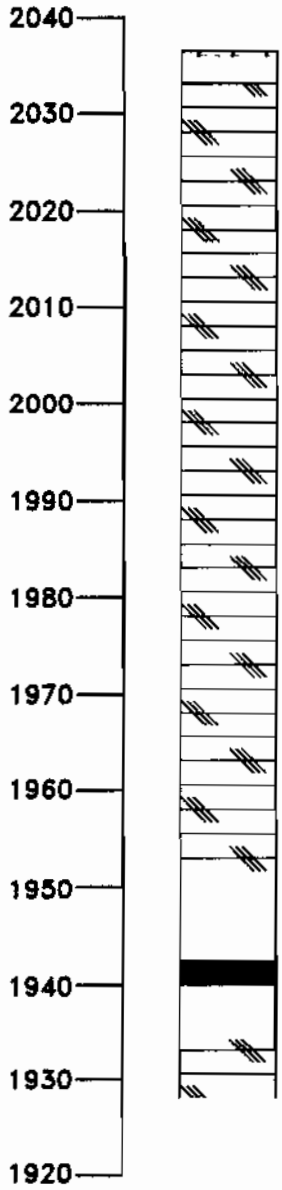
PERMIT NUMBER : 807 - 0368, (HW - 7)

SAMPLED BY : H.E.G.
SAMPLE DATE : 02/26/2009
REPORT DATE : 03/27/2009

SAMPLE #	FIZZ RATING	PASTE pH	NEUTRALIZATION POTENTIAL	TOTAL SULFUR %	POTENTIAL ACIDITY	CODE	SDI % RETAINED	THICKNESS INTERVAL
1	NONE	7.44	21.22	0.115	3.59	300	96.32	83.25 '
2	NONE	7.63	28.29	0.066	2.06	124	96.47	8.40 '
3	NONE	7.46	23.74	0.077	2.41	124	96.22	4.60 '
4	NONE	7.62	24.75	0.121	3.78	300	95.58	7.25 '

SUBMITTED BY : 

HW-7



0.50' (001) TOPSOIL/NATIVE SOIL
3.00' (001) SUBSOIL

83.25' (300) SANDY SHALE
Durable Strata for Underdrain Construction

8.40' (124) GRAY SHALE
Durable Strata for Underdrain Construction

2.45' (020) COAL (BUCKEYE SPRINGS SEAM)

4.60' (124) GRAY SHALE

7.25' (300) SANDY SHALE

I, Timothy C. Howard, P.E. No. 15,317

Date: 8/11/09

hereby certify in accordance with 405 KAR 7:040, Section10, that this document is correct as determined by accepted engineering practices and includes all information required of it by Chapter 350 and KAR Title 405.

STATE OF KENTUCKY
TIMOTHY C. HOWARD 15,317 LICENSED PROFESSIONAL ENGINEER

Appolo Fuels, Inc.

Permit No. 807-0368
Geologic Highwall Sample HW-7
Attachment 15.2.A

Scale: 1" = 20'

Page No. 1 of 1

Prepared by:
Howard Engineering & Geology, Inc.

2680'
2670'
2660'
2650'
2640'
2630'
2620'
2610'
2600'
2590'
2580'
2570'
2560'
2550'
2540'
2530'
2520'
2510'
2500'
2490'
2480'
2470'
2460'
2450'
2440'
2430'
2420'
2410'
2400'
2390'
2380'
2370'
2360'

HW-4

0.75' (001) TOPSOIL/NATIVE SOIL

36.00' (001) SUBSOIL/ALTERNATE TOPSOIL

50.00' (300) SANDY SHALE
Durable Strata for Underdrain Construction

50.00' (540) GRAY SANDSTONE
Durable Strata for Underdrain Construction

33.00' (124) DARK GRAY SHALE
Durable Strata for Underdrain Construction

3.50' (020) COAL (HIGNITE SEAM)

25.00' (300) SANDY SHALE

1.75' (020) COAL (HIGNITE SEAM)

10.00' (540) GRAY SANDSTONE

HW-1

0.50' (001) TOPSOIL/NATIVE SOIL

22.00' (001) SUBSOIL/ALTERNATE TOPSOIL

12.00' (124) DARK GRAY SHALE
Durable Strata for Underdrain Construction

40.00' (300) SANDY SHALE
Durable Strata for Underdrain Construction

28.00' (540) GRAY SANDSTONE
Durable Strata for Underdrain Construction

14.00' (300) SANDY SHALE

20.00' (124) DARK GRAY SHALE
Durable Strata for Underdrain Construction

3.15' (020) COAL (HIGNITE SEAM)
3.00' (124) DARK GRAY SHALE

15.00' (300) SANDY SHALE

2.35' (020) COAL (HIGNITE SEAM)

10.00' (540) GRAY SANDSTONE

HW-3

1.00' (001) TOPSOIL/NATIVE SOIL

25.75' (001) SUBSOIL/ALTERNATE TOPSOIL

15.00' (124) DARK GRAY SHALE
Durable Strata for Underdrain Construction

50.00' (540) GRAY SANDSTONE
Durable Strata for Underdrain Construction

4.25' (020) COAL (HIGNITE SEAM)
1.50' (124) DARK GRAY SHALE

23.50' (540) GRAY SANDSTONE

2.00' (020) COAL (HIGNITE SEAM)

10.00' (540) GRAY SANDSTONE

HW-2

0.50' (001) TOPSOIL/NATIVE SOIL

23.15' (001) SUBSOIL/ALTERNATE TOPSOIL

14.50' (124) DARK GRAY SHALE
Durable Strata for Underdrain Construction

40.00' (300) SANDY SHALE
Durable Strata for Underdrain Construction

10.00' (124) DARK GRAY SHALE
Durable Strata for Underdrain Construction

14.00' (300) SANDY SHALE
Durable Strata for Underdrain Construction

21.00' (540) GRAY SANDSTONE
Durable Strata for Underdrain Construction

6.00' (124) DARK GRAY SHALE
Durable Strata for Underdrain Construction
4.50' (020) COAL (HIGNITE SEAM)
3.00' (124) DARK GRAY SHALE

23.00' (300) SANDY SHALE

2.15' (020) COAL (HIGNITE SEAM)

10.00' (300) SANDY SHALE

DDH-11-03

45.00' (300) SANDY SHALE
Durable Strata for Underdrain Construction

10.00' (124) DARK GRAY SHALE
Durable Strata for Underdrain Construction

45.00' (540) GRAY SANDSTONE
Durable Strata for Underdrain Construction

5.00' (124) DARK GRAY SHALE
1.00' (540) GRAY SANDSTONE
2.00' (124) DARK GRAY SHALE
Durable Strata for Underdrain Construction
4.00' (005) MINE
3.50' (124) DARK GRAY SHALE

12.50' (300) SANDY SHALE

9.50' (540) GRAY SANDSTONE

0.50' (124) DARK GRAY SHALE
2.00' (020) COAL (HIGNITE SEAM)

52.80' (540) GRAY SANDSTONE

BAC-2

30.00' (300) SANDY SHALE

8.00' (124) DARK GRAY SHALE

7.00' (540) GRAY SANDSTONE

26.00' (300) SANDY SHALE

32.00' (540) GRAY SANDSTONE

2.00' (124) DARK GRAY SHALE

17.33' (300) SANDY SHALE

2.92' (020) COAL (HIGNITE SEAM)
2.58' (124) DARK GRAY SHALE
2.42' (020) COAL (HIGNITE SEAM)
3.58' (124) DARK GRAY SHALE

11.42' (300) SANDY SHALE

1.00' (020) COAL (HIGNITE SEAM)

7.67' (124) DARK GRAY SHALE

43.00' (540) GRAY SANDSTONE

AF-120

1.98' (124) DARK GRAY SHALE
5.17' (540) GRAY SANDSTONE

17.08' (300) SANDY SHALE

4.50' (123) GRAY SHALE W/COAL STREAKS

13.75' (124) DARK GRAY SHALE

4.83' (540) GRAY SANDSTONE

9.83' (543) GRAY SANDSTONE W/SHALE STREAKS

26.33' (300) SANDY SHALE

3.67' (124) DARK GRAY SHALE

14.17' (323) GRAY SHALE W/SANDSTONE STREAKS

2.50' (020) COAL W/SHALE PARTINGS (HIGNITE SEAM)
5.42' (124) DARK GRAY SHALE

3.67' (540) GRAY SANDSTONE

11.92' (124) DARK GRAY SHALE

1.50' (020) COAL (HIGNITE SEAM)

9.42' (124) DARK GRAY SHALE

4.33' (540) GRAY SANDSTONE

17.08' (124) DARK GRAY SHALE

10.67' (543) GRAY SANDSTONE W/SHALE STREAKS

1.17' (020) COAL (HIGNITE SEAM)
2.67' (123) GRAY SHALE W/COAL STREAKS

52.67' (540) GRAY SANDSTONE

NOTE: NO HORIZONTAL SCALE

I, Timothy C. Howard, P.E. No. 15,317
Date: 8/11/04
hereby certify in accordance with 405 KAR 7:040, Section10, that this document is correct as determined by accepted engineering practices and includes all information required of it by Chapter 350 and KAR Title 405.

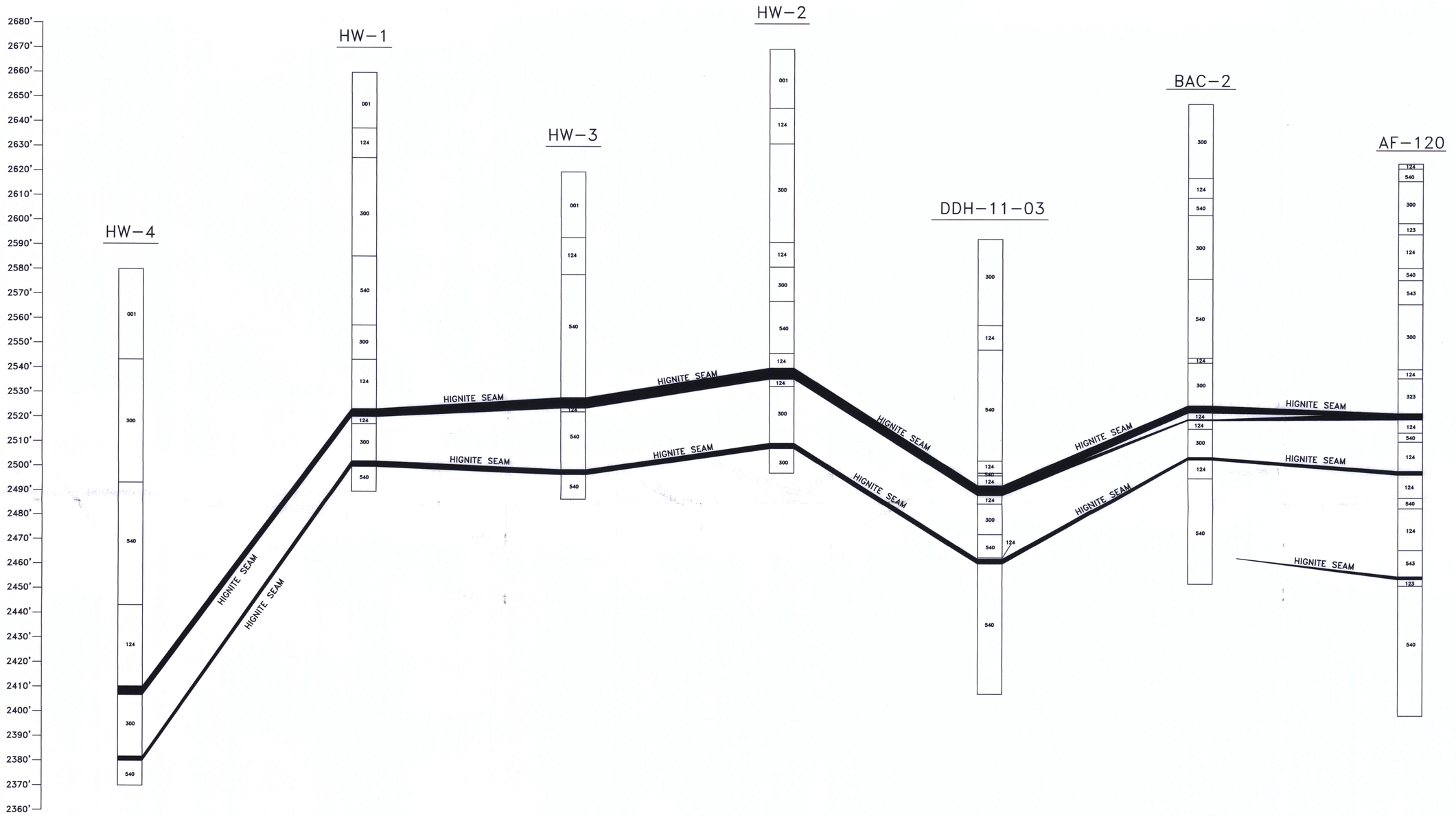
STATE OF KENTUCKY
TIMOTHY C. HOWARD
15317
LICENSED PROFESSIONAL ENGINEER

Appolo Fuels, Inc.

Permit # 807-0368
Geologic Drawing
Attachment 15.2.A.

Scale: 1" = 20' | Page No. 1 of 1

Prepared by
Howard Engineering & Geology, Inc.



NOTE: NO HORIZONTAL SCALE

I, Timothy C. Howard, P.E. No. 15,317

Date: 12/29/06

hereby certify in accordance with 405 KAR 7:040, Section10, that this document is correct as determined by accepted engineering practices and includes all information required of it by Chapter 350 and KAR Title 405.

STATE OF KENTUCKY
TIMOTHY C. HOWARD
15,317
LICENSED PROFESSIONAL ENGINEER

Appolo Fuels, Inc.

Permit # 807-0368
Geologic Correlation Drawing
Attachment 15.2.A.

Scale: 1" = 20' | Page No. 1 of 1

Prepared by:
Howard Engineering & Geology, Inc.

15.3 Do aquifers exist within the proposed permit area below the lowest coal seam to be mined, which may be adversely affected by the mining operation?
[ ] YES [XX] NO. If "YES", describe the structural geology, lithology and thickness of each stratum from the lowest coal seam to be mined to such aquifers. Submit description and related information as "Attachment 15.3.A".

15.4 Describe all aquifers located within and adjacent to the proposed permit area which the mining operation may adversely impact. Identify the description as "Attachment 15.4.A". At a minimum, the description shall include, for each aquifer, the following information:

Aquifers within the permit area

(a) aquifer identification,
(b) top elevation,
(c) lithology,
(d) thickness,
(e) areal extent,
(f) number of users, and
(g) structural geology

Aquifers adjacent to the permit area

(a) approximate areal extent
(b) approximate thickness
(c) aquifer identification, and
(d) number of users

Correlate this information with the cross-section required in Item 15.2.
See Attachment 15.4.A

15.5 Provide, as "Attachment 15.5.A", a volume weighted acid-base account of all overburden strata to be removed by the proposed mining operation.
See Attachment 15.5.A

15.6 Describe the sampling program used for collection of premining geologic data within the proposed permit area. The description shall identify; (a) method of sample collection: (b) vertical sampling frequency; (c) parameters tested; (d) laboratory methods used, and (e) name of laboratory. Submit the description as "Attachment 15.6.A".
See Attachment 15.6.A

15.7 Provide the following information for each geologic sampling location. If additional pages are needed, identify as "Item 15.7 continued".

Site No.	Type (core, rotary, etc.)	Surface Elevation	Total Depth	Latitude	Longitude
HW 1	***Highwall***	***2660'***	***170'***	***36-35-08***	***83-51-04***
HW 2	***Highwall***	***2670'***	***172'***	***36-35-55***	***83-50-24***
HW 3	***Highwall***	***2620'***	***133'***	***36-36-12***	***83-50-52***
HW 4	***Highwall***	***2580'***	***210'***	***36-37-01***	***83-51-34***
****AF-120***	***Core***	***2631'***	***224'***	***36-35-50***	***83-49-13***
****BAC-2***	***Core***	***3120'***	***195'***	***36-35-19***	***83-50-02***
DD11-03	***Core***	***2583'***	***195'***	***36-35-55***	***83-50-06***

NOTE: Show the location of each geologic sampling site on the ERI Map.

****Correlation only***
See Attachment 15.7.A

ATTACHMENT 15.4.A

General Ground Water Hydrology Description

The proposed surface disturbance areas proposed in this application are located in the Cumberland Mountain Section of Eastern Kentucky. The Cumberland Mountain Section is comprised of two parallel mountain ridges running generally to the Northeast. Between the ridges lie rugged hilly areas similar in topography to the Kanawha Section, but which has much greater relief. Level areas most suitable for residential or commercial use are essentially limited to the valley bottoms along the stream beds. As a result, nearly all wells are situated in the valley bottoms. Rock strata in this area generally yield sufficient supplies of water for domestic use.

Ground water in the vicinity can generally be obtained from three potential sources. These sources are perched aquifers, the alluvium, and the stress fracture aquifer system along hillsides and the valley floors. All of the aquifers are inter-related and are part of the stress relief aquifer system.

Perched aquifers are essentially created by the extraction of coal seams using underground mining methods which leave voids that fill with water. Perched aquifers exist in the general area due to extensive past mining of most of the coal seams in the vicinity. Although the areal extent of the coal seam voids and addendum perched aquifers are limited because of topography, it is possible for this source of ground water to exist in the area.

The alluvium lies along the streams in the valley bottoms and is identified as a potential aquifer. It has the potential to produce in excess of 500 gpd to drilled wells where granular material is present in sufficient permeated thicknesses. Wells in the general vicinity which penetrate these saturated areas will provide adequate quantities of water for modern domestic uses or a small municipal water supply.

The strata of the Hance Formation are present below the valley bottoms. These formations are capable of providing an ample source of water for modern domestic or a small municipal water supply. Since fracturing is the method of ground water recharge and transmittal, and fracturing will not be diminished by this operation, the recharge capacity of these aquifers should not be affected.

Appolo Fuels, Inc.
#807-0368

ATTACHMENT 15.5.A

Acid Base Accounting Worst Case Hignite Seam

HW-3

CK CODE	SAMPLE #	THICKNESS	AREA (SQ.FT.)	N.P.	AREA X N.P.	P.A.	AREA X P.A.
124	1	15.00'	856.73	23.01	19,713.36	2.78	2,381.71
540	2	50.00'	6,228.61	10.63	66,210.12	5.08	31,641.34
020	–	COAL +	–	–	–	–	–
124	3	1.50'	273.27	17.33	4,735.77	2.50	683.18
540	4	23.50'	4,812.35	13.85	66,651.05	5.38	25,890.44
020	–	COAL +	–	–	–	–	–
			12,170.96		153,310.30		60,596.67

\+ COAL REMOVED

VOLUME WEIGHED N.P. 153,310.30
VOLUME WEIGHED P.A. 60,596.67

N.P. : P.A. = 2.53 : 1

Appolo Fuels, Inc.
#807-0368

ATTACHMENT 15.5.A

Acid Base Accounting Strays Seam

HW-5

CK CODE	SAMPLE #	THICKNESS	AREA (SQ.FT.)	N.P.	AREA X N.P.	P.A.	AREA X P.A.
124	1	31.50'	1,411.33	24.62	34,746.94	3.78	5,334.83
020	–	COAL +	–	–	–	–	–
124	2	8.75'	763.47	32.61	27,896.76	2.81	2,145.35
020	–	COAL +	–	–	–	–	–
124	3	12.25'	1,313.41	26.97	35,422.67	3.59	4,715.14
500	4	5.00'	599.05	2.47	1,479.65	6.72	4,025.62
124	5	44.50'	7,109.56	18.04	128,256.46	5.50	39,102.58
020	–	COAL +	–	–	–	–	–
124	6	2.75	589.55	18.98	11,189.66	4.78	2,818.05
020	–	COAL +	–	–	–	–	–
			11,786.45		238,992.14		58,141.57

\+ COAL REMOVED

VOLUME WEIGHED N.P. 238,992.14
VOLUME WEIGHED P.A. 58,141.57

N.P. : P.A. = 4.11 : 1

Appolo Fuels, Inc.
#807-0368

ATTACHMENT 15.5.A

Acid Base Accounting Sterling And Poplar Lick Seams

HW 6

CK CODE	SAMPLE #	THICKNESS	AREA (SQ.FT.)	N.P.	AREA X N.P.	P.A.	AREA X P.A.
300	1	42.50'	1,970.46	25.26	49,773.82	4.25	8,374.46
124	2	41.50'	5,379.61	24.75	133,145.35	2.44	13,126.25
114	3	2.00'	363.43	2.03	737.76	1.03	374.33
020	-	COAL +	-	-	-	-	-
124	4	50.25'	11,277.64	26.27	296,263.60	2.91	32,817.93
020	-	COAL +	-	-	-	-	-
			18,991.14		479,920.53		54,692.97

\+ COAL REMOVED

VOLUME WEIGHED N.P. 479,920.53
VOLUME WEIGHED P.A. 54,693.97

N.P. : P.A. = 8.77 : 1

Appolo Fuels, Inc.
#807-0368

ATTACHMENT 15.5.A

Acid Base Accounting Buckeye Springs Seam

HW 7

CK CODE	SAMPLE #	THICKNESS	AREA (SQ.FT.)	N.P.	AREA X N.P.	P.A.	AREA X P.A.
300	1	83.25'	9,730.27	21.22	206,476.33	3.59	34,931.67
124	2	8.40'	2,083.63	28.29	58,949.89	2.06	4,292.28
020	–	COAL +	–	–	–	–	–
			11,183.90		265,426.22		39,223.95

\+ COAL REMOVED

VOLUME WEIGHED N.P. 265,426.22
VOLUME WEIGHED P.A. 39,223.95

N.P. : P.A. = 6.77 : 1

Appolo Fuels, Inc.
#807-0368

ATTACHMENT 15.6.A.

In order to determine the geologic setting of the permit area, five (5) geologic sample sites were selected to sample the strata above and below the coal seam. The geologic sites selected are seven (7) highwall samples and one (1) core drill hole. The geologic sample sites are identified as HW1, HW2, HW3, HW4, HW5, HW6, HW7 and DDH11-03. Also, two (2) core drill samples were selected for correlation purposes only. The core drill samples for correlation are further known as AF-120 and BAC-2. All the above mentioned geologic sites are located on the MRP/ERI Map included in this purposed permit application. See geologic forms for identification of the sample sites.

The vertical sampling frequency listed in the hydrology and geology guidelines were followed for the sample collection from the sites sampled. Each strata greater than 0.5 feet in thickness was sampled. Strata with thickness between 1 and 5 feet were sampled at one representative location in the strata. Strata which ranged from 5 to 10 feet in thickness were sampled twice within the lithologic unit and a composite sample was formed. Strata greater than 10 feet in thickness were sampled at 5 foot intervals and then combined into one sample.

The samples were analyzed for maximum potential acidity using the peroxide oxidation total sulfur method or induction furnace, and the neutralization potential was determined using the hydrochloric acid method. The instructions listed in the EPA publication "Field & Laboratory Methods Applicable to Overburdens and Minesoils (EPA-600/2-78-054) were followed during the laboratory analysis at Appalachian Field Services,
P.O. Box 373, Baxter, Kentucky, 40806, Phone (606)-573-0521.

The following parameters will be tested using the method listed:

PARAMETER	METHOD
Ph	#3.2.2
Neutralization Potential	#3.2.3
Total Sulfur	#3.2.4
Maximum Potential	#3.2.4**

EPA Publication #EPA-600/2-78-054*
"Field and Laboratory Methods Applicable to Overburdens and Minesoil"
**Determined stoichiometrically from % Total Sulfur Determination

Appolo Fuels, Inc.
#807-0368

ATTACHMENT 15.7.A

GEOLOGIC SAMPLING LOCATION

SITE NO.	TYPE (core, rotary, etc.)	SURFACE ELEVATION	TOTAL DEPTH	LATITUDE	LONGITUDE
HW5	Highwall	2454'	127'	36-35-12	83-51-02
HW6	Highwall	2306'	155'	36-35-14	83-51-00
HW7	Highwall	2037'	109'	36-35-18	83-50-57

16. Ground Water

16.1 Provide the results of the ground water inventory conducted for the proposed permit and adjacent areas. The inventory shall identify wells, springs, underground mines, or other similar ground water supply facilities which are currently being used, have been used in the past, or have a potential to be used. For each supply source, describe the location, ownership, type of use and where possible other relevant information such as the depths and diameters of wells, approximate rate of usage, pumpage or discharge. Provide results as "Attachment 16.1.A".

See Attachment 16.1.A.

16.2 Describe the premining ground water monitoring program used to determine the seasonal variations in ground water quality and quantity for all aquifers and water transmitting zones. At a minimum, six months of data shall be collected. The description shall identify the location and construction specifications of each monitoring point used, parameters tested, and laboratory methods used. Submit the description as "Attachment 16.2.A".

See Attachment 16.2.A.

16.3 On approved cabinet forms submit the results of the premining ground water monitoring program. Original or notarized copies of all laboratory analyses shall be provided. Submit this information as "Attachment 16.3.A".

See Attachment 16.3.A.

17. Surface Water

17.1 Major Watershed(s) Affected:

[ ]	Big Sandy River (BS)	[ ]	Mississippi River (MS)
[X]	Cumberland River, Upper (CU)	[ ]	Ohio River (OH)
[ ]	Cumberland River, Lower (CL)	[ ]	Salt River (ST)
[ ]	Green River (GR)	[ ]	Tennessee River (TN)
[ ]	Kentucky River (KY)	[ ]	Tradewater River (TW)
[ ]	Licking River (LC)	[ ]	Tygarts Creek (TG)
[ ]	Little Sandy River (LS)		

17.2 Identify on the environmental resources map and provide a narrative description of the immediate watershed(s) receiving discharge from the proposed permit area. Describe any existing facilities or conditions within the watershed(s) (e.g. existing mining operations, abandoned surface or underground mines, logging operations, oil or gas exploration sites or wells, etc.) which may contribute to surface water pollution. Provide the description as "Attachment 17.2.A". On the ERI map, indicate the location of any existing discharges resulting from such facilities or activities.

See Attachment 17.2.A.

17.3 Provide as "Attachment 17.3.A", the results of the surface water user inventory for the proposed permit and adjacent areas. This inventory shall identify the name of the surface water boundary being used as a water supply source, the location, drainage area, ownership, type of usage, and where possible, other relevant information such as the rate of withdrawal and seasonal variation.

See Attachment 17.3.A.

Appolo Fuels, Inc.
#807-0368

ATTACHMENT 16.1.A

GROUND WATER USER INVENTORY

A ground water user's inventory has been conducted and the results of the inventory are provided on the following pages as part of this attachment. The users are identified by corresponding number on the MRP/ERI map provided with this application.

Appolo Fuels, Inc.
#807-0368

ATTACHMENT 16.1.A

Map Ref.	Name of User	Water Source	Elev.	Water Level	Total Depth	Gal./Day	Aquifer Ele.	Aquifer Type	Quality
1	No Structure	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2	Vacant	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3	Andy Lambdin	Municipal	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4	Fonde Baptist Church	Municipal	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5	Lawrence Lawson	Municipal	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6	Not at Home	Municipal	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7	Bill Hoover	Municipal	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8	Not at Home	Municipal	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9	Francis Russell	Municipal	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10	Mike Gaylor	Municipal	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11	Lloyd Huddleston	Municipal	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12	Clarence Lawson	Municipal	N/A	N/A	N/A	N/A	N/A	N/A	N/A
13	Wilma Mays	Municipal	N/A	N/A	N/A	N/A	N/A	N/A	N/A
14	Fonde Church of God	Municipal	N/A	N/A	N/A	N/A	N/A	N/A	N/A
15	Jeffery Partin	Municipal	N/A	N/A	N/A	N/A	N/A	N/A	N/A
16	Beech Grove Baptist Church	Municipal	N/A	N/A	N/A	N/A	N/A	N/A	N/A
17	Duff Sliber	Municipal	N/A	N/A	N/A	N/A	N/A	N/A	N/A
18	Robert Michael	Municipal	N/A	N/A	N/A	N/A	N/A	N/A	N/A
19	Charlene Hill	Municipal	N/A	N/A	N/A	N/A	N/A	N/A	N/A
20	Estelle Waldroop	Municipal	N/A	N/A	N/A	N/A	N/A	N/A	N/A
21	Harley Lambdin	Municipal	N/A	N/A	N/A	N/A	N/A	N/A	N/A
22	No Structure	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Appolo Fuels, Inc.
#807-0368

ATTACHMENT 16.1.A

Map Ref.	Name of User	Water Source	Elev.	Water Level	Total Depth	Gal./Day	Aquifer Ele.	Aquifer Type	Quality
23	Mellisa Lambdin	Municipal	N/A	N/A	N/A	N/A	N/A	N/A	N/A
24	Alfred Siler	Municipal	N/A	N/A	N/A	N/A	N/A	N/A	N/A
						N/A	N/A	N/A	N/A

ATTACHMENT 16.2.A

The pre-mining ground water monitoring program for the purpose of collecting background data will be utilized from ground water points GW1and GW-5. The locations of these sites are detailed on the MRP/ERI Map included in this application. The ground water monitoring sites are described as follows:

STA1	Lat. 36° 36' 52" N (4,055,636) Long. 83° 49' 55" W (246,722)
GW5	Latitude 36° 35' 40" N (4,053,520) Longitude 83° 52' 09" W (243,420)

These sites were chosen for the following reasons:

1) They are located downstream of the proposed disturbances

2) There is a sustained flow at these sites.

3) Samples collected at these sites will accurately reflect the conditions of the watersheds affected by the proposed disturbance.

4) These sites are being used for ground water monitoring and there is a history of the water quality and quantity at this site.

Samples taken at these sites will be analyzed for the following parameters using the methods listed:

PARAMETER	METHOD
Flow Rate	Flow Estimation Meter
Ph	SM #423*
Acidity	SM #402*
Alkalinity	SM #403*
Total Iron	SM #303A*
Total Manganese	SM #303A*
Sulfate	SM #426C*
Total Suspended Solids	SM #209C*
Specific Conductance	SM #205*

Since these sites are currently being monitored on a quarterly basis as part of ongoing operations, background data collection for this site will consist of the latest six (6) samples that have been collected on a quarterly basis.

WATER QUALITY DATA ENTRY FORMS: **Part 1**

Type of Report:
[X] Premining
[ ] During Mining/Reclamation
[ ] Other

STATION INFORMATION

PERMIT #: **807-0368** STATION #: **STA1** SOAP PERMITTEE #: **N/A**

*COUNTY #: **007** BASIN #: **02** QUAD NAME: **Fork Ridge**

STATION TYPE (check): [01] Spring [XX] Well [ ] Old Mine Works Portal
[02] Stream [05] Sediment Pond / Influent
[03] Lake [06] Sediment Pond / Discharge

FOR WELLS ONLY

DEPTH (ft): **125** CASING DIAMETER (in): **8"** AQUIFER DESCRIPTION: **Mason Coal Seam**
TOP OF AQUIFER (MSL): **~1600** AQUIFERTHICKNESS (ft): **1.5** TOP OF WELL ELEV. (MSL): **~1760**

WATERSHED DESCRIPTION: **Wooded-Previously Mined** DRAINAGE AREA (ac.):

LATITUDE (DMS): **36-36-52** LONGITUDE (DMS): **83-49-55**

UTM ZONE: **17** **16 West of 84° Longitude** UTM EASTING: **246,722** UTM NORTHING: **4,055,636**
17 East of 84° Latitude

LOCAL STREAM NAME: **Stony Fork**

COAL COMPANY NAME: **Bell County Coal Corporation**

COLLECTING FIRM NAME: **Cumberland Valley Engineering, Inc.; PO Box 1710, Harlan, KY 40831**

ANALYZING FIRM NAME: **Cumberland Valley Engineering, Inc.; PO Box 1710, Harlan, KY 40831**

COMMENTS:

SAMPLE DATA

PERMIT # 807-0368 STATION # STA1

SAMPLE No. [1]

PARAMETER	DATE MM/DD/YY	TEMP(C)	DISCHARGE (cfs)	CONDUCTIVITY	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	02/07/08	10		300	8.20	0	91			

PARAMETER	SO_4 Diss mg/l	O_2 Diss mg/l	Fe, Diss mg/l	Fe, Total mg/l	Mn, Diss mg/l	Mn, Total mg/l	Depth to water (ft)			
VALUE	585		0.10		0.10		1			

COMMENT:

SAMPLE No. [2]

PARAMETER	DATE MM/DD/YY	TEMP(C)	DISCHARGE (cfs)	CONDUCTIVITY	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	06/06/08	16		450	7.70	0	174			

PARAMETER	SO_4 Diss mg/l	O_2 Diss mg/l	Fe, Diss mg/l	Fe, Total mg/l	Mn, Diss mg/l	Mn, Total mg/l	Depth to Water (ft)			
VALUE	148		0.10		0.10		1			

COMMENT:

SAMPLE No. [3]

PARAMETER	DATE MM/DD/YY	TEMP(C)	DISCHARGE (cfs)	CONDUCTIVITY	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	09/23/08	16		575	7.30	0	216			

PARAMETER	SO_4 Diss mg/l	O_2 Diss mg/l	Fe, Diss mg/l	Fe, Total mg/l	Mn, Diss mg/l	Mn, Total mg/l	Depth to Water (ft)			
VALUE	173		0.10		0.10		1			

COMMENT:

SAMPLE DATA

PERMIT # 807-0368 STATION # STA 1

SAMPLE No. [4]

PARAMETER	DATE MM/DD/YY	TEMP(C)	DISCHARGE (cfs)	CONDUCTIVITY	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	12/19/08	22		290	7.30	0	70			

PARAMETER	SO_4 Diss mg/l	O_2 Diss mg/l	Fe, Diss mg/l	Fe, Total mg/l	Mn, Diss mg/l	Mn, Total mg/l	Depth to water (ft)			
VALUE	21		0.10		0.10		1			

COMMENT:

SAMPLE No. [5]

PARAMETER	DATE MM/DD/YY	TEMP(C)	DISCHARGE (cfs)	CONDUCTIVITY	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	01/16/09	12		280	6.70	0	308			

PARAMETER	SO_4 Diss mg/l	O_2 Diss mg/l	Fe, Diss mg/l	Fe, Total mg/l	Mn, Diss mg/l	Mn, Total mg/l	Depth to Water (ft)			
VALUE	33		0.10		0.10		1			

COMMENT:

SAMPLE No. [6]

PARAMETER	DATE MM/DD/YY	TEMP(C)	DISCHARGE (cfs)	CONDUCTIVITY	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	06/09/09	20		280	7.40	0	84			

PARAMETER	SO_4 Diss mg/l	O_2 Diss mg/l	Fe, Diss mg/l	Fe, Total mg/l	Mn, Diss mg/l	Mn, Total mg/l	Depth to Water (ft)			
VALUE	26		0.10		0.10		1			

COMMENT:

Cumberland Valley Engineering, Inc.

P.O. Box 1710, 107 North Cumberland Avenue
Harlan, Kentucky 40831
Office (606) 573-6836 C Laboratory (606) 573-6836
Fax (606) 573-4735

BELL COUNTY COAL CORPORATION
ROUTE 1, BOX 290
MIDDLESBORO, KY 40965

SAMPLE ID NUMBER: 00448 **Lab NUMBER:** 96117
PERMIT NUMBER: 807-5025-STA1 ~~SPRING~~
SAMPLE DATE: 2/7/2008
SAMPLE TIME: 15:55
COLLECTED BY: P. TAYLOR

REPORT OF WATER ANALYSIS

DEPTH TO WATER	1	feet
pH	8.2	std units
TOTAL ACIDITY	0	mg/L as CaCO3
TOTAL ALKALINITY	97.000	mg/L as CaCO3
DISSOLVED IRON	0.100	mg/L Fe
DISSOLVED MANGANESE	0.100	mg/L Mn
SPECIFIC CONDUCTANCE	300.000	µMHOS/CM
SULFATES	585.000	mg/L S04
TEMPERATURE	10.000	Deg. C.

I CERTIFY THE ABOVE RESULTS WERE OBTAINED BY USING ACCEPTED ANALYTICAL PROCEDURES AS PRESCRIBED IN STANDARD METHEDS AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE BELIEF

By: Terri Adkins

7/9/2009

Cumberland Valley Engineering, Inc.

P.O. Box 1710, 107 North Cumberland Avenue
Harlan, Kentucky 40831
Office (606) 573-6836 C Laboratory (606) 573-6836
Fax (606) 573-4735

BELL COUNTY COAL CORPORATION

ROUTE 1, BOX 290

MIDDLESBORO, KY 40965

SAMPLE ID NUMBER: 00448 **Lab NUMBER:** 97540

PERMIT NUMBER: 807-5025-STA1 ~~**SPRING.**~~

SAMPLE DATE: 6/6/2008

SAMPLE TIME: 13:55

COLLECTED BY: K. CLARK

REPORT OF WATER ANALYSIS

DEPTH TO WATER	1	feet
pH	7.9	std units
TOTAL ACIDITY	0	mg/L as CaCO3
TOTAL ALKALINITY	174.000	mg/L as CaCO3
DISSOLVED IRON	0.100	mg/L Fe
DISSOLVED MANGANESE	0.100	mg/L Mn
SPECIFIC CONDUCTANCE	450.000	µMHOS/CM
SULFATES	148.000	mg/L S04
TEMPERATURE	16.000	Deg. C.

I CERTIFY THE ABOVE RESULTS WERE OBTAINED BY USING ACCEPTED ANALYTICAL PROCEDURES AS PRESCRIBED IN STANDARD METHEDS AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE BELIEF

By: Terri Adkins

7/9/2009

Cumberland Valley Engineering, Inc.

P.O. Box 1710, 107 North Cumberland Avenue
Harlan, Kentucky 40831
Office (606) 573-6836 C Laboratory (606) 573-6836
Fax (606) 573-4735

BELL COUNTY COAL CORPORATION

ROUTE 1, BOX 290

MIDDLESBORO, KY 40965

SAMPLE ID NUMBER: 00448 **Lab NUMBER:** 98878

PERMIT NUMBER: 807-5025-STA1 ~~SPRING~~

SAMPLE DATE: 9/23/2008

SAMPLE TIME: 03:40

COLLECTED BY: J. MINIARD

REPORT OF WATER ANALYSIS

DEPTH TO WATER	1	feet
pH	7.3	std units
TOTAL ACIDITY	0	mg/L as CaCO3
TOTAL ALKALINITY	216.000	mg/L as CaCO3
DISSOLVED IRON	0.100	mg/L Fe
DISSOLVED MANGANESE	0.100	mg/L Mn
SPECIFIC CONDUCTANCE	575.000	µMHOS/CM
SULFATES	173.000	mg/L S04
TEMPERATURE	16.000	Deg. C.

I CERTIFY THE ABOVE RESULTS WERE OBTAINED BY USING ACCEPTED ANALYTICAL PROCEDURES AS PRESCRIBED IN STANDARD METHEDS AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE BELIEF

By: Terri Adkins

7/9/2009

Cumberland Valley Engineering, Inc.

P.O. Box 1710, 107 North Cumberland Avenue
Harlan, Kentucky 40831
Office (606) 573-6836 C Laboratory (606) 573-6836
Fax (606) 573-4735

BELL COUNTY COAL CORPORATION

ROUTE 1, BOX 290

MIDDLESBORO, KY 40965

SAMPLE ID NUMBER: 00448 **Lab NUMBER:** 99961

PERMIT NUMBER: 807-5025-STA1 ~~SPRING~~

SAMPLE DATE: 12/19/2008

SAMPLE TIME: 01:25

COLLECTED BY: J. COOPER

REPORT OF WATER ANALYSIS

DEPTH TO WATER	1	feet
pH	7.3	std units
TOTAL ACIDITY	0	mg/L as CaCO3
TOTAL ALKALINITY	70.000	mg/L as CaCO3
DISSOLVED IRON	0.100	mg/L Fe
DISSOLVED MANGANESE	0.100	mg/L Mn
SPECIFIC CONDUCTANCE	290.000	µMHOS/CM
SULFATES	21.000	mg/L S04
TEMPERATURE	22.000	Deg. C.

I CERTIFY THE ABOVE RESULTS WERE OBTAINED BY USING ACCEPTED ANALYTICAL PROCEDURES AS PRESCRIBED IN STANDARD METHEDS AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE BELIEF

By: Terri Adkins

7/9/2009

Cumberland Valley Engineering, Inc.

P.O. Box 1710, 107 North Cumberland Avenue
Harlan, Kentucky 40831
Office (606) 573-6836 C Laboratory (606) 573-6836
Fax (606) 573-4735

BELL COUNTY COAL CORPORATION

ROUTE 1, BOX 290

MIDDLESBORO, KY 40965

SAMPLE ID NUMBER: 00448 **Lab NUMBER:** 100332

PERMIT NUMBER: 807-5025-STA1 ~~SPRING~~

SAMPLE DATE: 1/16/2009

SAMPLE TIME: 12:10

COLLECTED BY: J. COOPER

REPORT OF WATER ANALYSIS

DEPTH TO WATER	1	feet
pH	6.7	std units
TOTAL ACIDITY	0	mg/L as CaCO3
TOTAL ALKALINITY	308.000	mg/L as CaCO3
DISSOLVED IRON	0.100	mg/L Fe
DISSOLVED MANGANESE	0.100	mg/L Mn
SPECIFIC CONDUCTANCE	280.000	µMHOS/CM
SULFATES	33.000	mg/L S04
TEMPERATURE	12.000	Deg. C.

I CERTIFY THE ABOVE RESULTS WERE OBTAINED BY USING ACCEPTED ANALYTICAL PROCEDURES AS PRESCRIBED IN STANDARD METHEDS AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE BELIEF

By: Terri Adkins

7/9/2009

Cumberland Valley Engineering, Inc.

P.O. Box 1710, 107 North Cumberland Avenue
Harlan, Kentucky 40831
Office (606) 573-6836 C Laboratory (606) 573-6836
Fax (606) 573-4735

BELL COUNTY COAL CORPORATION

ROUTE 1, BOX 290

MIDDLESBORO, KY 40965

SAMPLE ID NUMBER: 00448 **Lab NUMBER:** 101771

PERMIT NUMBER: 807-5025-STA1 ~~SPRING~~

SAMPLE DATE: 6/9/2009

SAMPLE TIME: 02:21

COLLECTED BY: J. COOPER

REPORT OF WATER ANALYSIS

DEPTH TO WATER	1	feet
pH	7.4	std units
TOTAL ACIDITY	0	mg/L as CaCO3
TOTAL ALKALINITY	84.000	mg/L as CaCO3
DISSOLVED IRON	0.100	mg/L Fe
DISSOLVED MANGANESE	0.100	mg/L Mn
SPECIFIC CONDUCTANCE	280.000	µMHOS/CM
SULFATES	26.000	mg/L S04
TEMPERATURE	20.000	Deg. C.

I CERTIFY THE ABOVE RESULTS WERE OBTAINED BY USING ACCEPTED ANALYTICAL PROCEDURES AS PRESCRIBED IN STANDARD METHEDS AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE BELIEF

By: Terri Adkins

7/9/2009

WATER QUALITY DATA ENTRY FORMS: **Part 1**

Type of Report:
[X] Premining
[ ] During Mining/Reclamation
[ ] Other

STATION INFORMATION

PERMIT #: **807-0368** STATION #: **GW5** SOAP PERMITTEE #: **N/A**

*COUNTY #: **007** BASIN #: **02** QUAD NAME: **Fork Ridge & Middlesboro South**

STATION TYPE (check): [01] Spring [**XX**] Well [ ] Old Mine
[02] Stream [05] Sediment Pond / Influent Works Portal
[03] Lake [06] Sediment Pond / Discharge

FOR WELLS ONLY
DEPTH (ft):_____ CASING DIAMETER (in): **6"** AQUIFER DESCRIPTION:_____
TOP OF AQUIFER (MSL):____ AQUIFERTHICKNESS (ft):_____ TOP OF WELL ELEV. (MSL):_____

WATERSHED DESCRIPTION: **Steep Slopes/Previously Mines** DRAINAGE AREA (ac.):_____

LATITUDE (DMS): **36-35-40** LONGITUDE (DMS): **83-52-09**

UTM ZONE: **17** **16 West of 84° Longitude** UTM EASTING: **243,420** UTM NORTHING: **4,053,520**
17 East of 84° Latitude

LOCAL STREAM NAME: **Clear Fork**

COAL COMPANY NAME: **Bell County Coal Corporation**

COLLECTING FIRM NAME: **Cumberland Valley Engineering, Inc. PO Box 1710, Harlan, KY 40831**

ANALYZING FIRM NAME: **Cumberland Valley Engineering, Inc. PO Box 1710, Harlan , KY 40831**

COMMENTS: _____

PER[illegible] # 807-0368 STATION # GW5

SAMPL[illegible]TA

SAMPLE No. [1]

PARAMETER	DATE MM/DD/YY	TEMP(C)	DISCHARGE (cfs)	CONDUCTIVITY	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	05/15/08	14		500	7.20	0	17			

PARAMETER	SO_4 Diss mg/l	O_2 Diss mg/l	Fe, Diss mg/l	Fe, Total mg/l	Mn, Diss mg/l	Mn, Total mg/l	Depth to water (ft)			
VALUE	138		0.10		0.10		15			

COMMENT:

SAMPLE No. [2]

PARAMETER	DATE MM/DD/YY	TEMP(C)	DISCHARGE (cfs)	CONDUCTIVITY	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	07/08/08	18		400	7.10	0	126			

PARAMETER	SO_4 Diss mg/l	O_2 Diss mg/l	Fe, Diss mg/l	Fe, Total mg/l	Mn, Diss mg/l	Mn, Total mg/l	Depth to Water (ft)			
VALUE	99		0.10		0.10		16			

COMMENT:

SAMPLE No. [3]

PARAMETER	DATE MM/DD/YY	TEMP(C)	DISCHARGE (cfs)	CONDUCTIVITY	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	07/31/08	17		375	6.90	0	253			

PARAMETER	SO_4 Diss mg/l	O_2 Diss mg/l	Fe, Diss mg/l	Fe, Total mg/l	Mn, Diss mg/l	Mn, Total mg/l	Depth to Water (ft)			
VALUE	78		0.10		0.10		15			

COMMENT:

PERMIT # 807-0368 STATION # GW5

SAMPLE DATA

SAMPLE No. [4]

PARAMETER	DATE MM/DD/YY	TEMP(C)	DISCHARGE (cfs)	CONDUCTIVITY	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	08/12/08	19		300	6.90	0	100			

PARAMETER	SO_4 Diss mg/l	O_2 Diss mg/l	Fe, Diss mg/l	Fe, Total mg/l	Mn, Diss mg/l	Mn, Total mg/l	Depth to water (ft)			
VALUE	73		0.10		0.10		15			

COMMENT:

SAMPLE No. [5]

PARAMETER	DATE MM/DD/YY	TEMP(C)	DISCHARGE (cfs)	CONDUCTIVITY	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	08/22/08	17		450	7.00	0	242			

PARAMETER	SO_4 Diss mg/l	O_2 Diss mg/l	Fe, Diss mg/l	Fe, Total mg/l	Mn, Diss mg/l	Mn, Total mg/l	Depth to Water (ft)			
VALUE	103		0.10		0.10		17			

COMMENT:

SAMPLE No. [6]

PARAMETER	DATE MM/DD/YY	TEMP(C)	DISCHARGE (cfs)	CONDUCTIVITY	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	09/03/08	18		450	7.20	0	342			

PARAMETER	SO_4 Diss mg/l	O_2 Diss mg/l	Fe, Diss mg/l	Fe, Total mg/l	Mn, Diss mg/l	Mn, Total mg/l	Depth to Water (ft)			
VALUE	75		0.10		0.10		12			

COMMENT:

Cumberland Valley Engineering, Inc.

P.O. Box 1710, 107 North Cumberland Avenue
Harlan, Kentucky 40831
Office (606) 573-6836 C Laboratory (606) 573-6836
Fax (606) 573-4735

BELL COUNTY COAL CORPORATION

ROUTE 1, BOX 290

MIDDLESBORO, KY 40965

SAMPLE ID NUMBER: 01452 **Lab NUMBER:** 97409

PERMIT NUMBER: 807-5025-GW-5 **WELL**

SAMPLE DATE: 5/15/2008

SAMPLE TIME: 10:42

COLLECTED BY: K. CLARK

REPORT OF WATER ANALYSIS

DEPTH TO WATER	15	feet
pH	7.2	std units
TOTAL ACIDITY	0	mg/L as CaCO3
TOTAL ALKALINITY	17.000	mg/L as CaCO3
DISSOLVED IRON	0.100	mg/L Fe
DISSOLVED MANGANESE	0.100	mg/L Mn
SPECIFIC CONDUCTANCE	500.000	µMHOS/CM
SULFATES	138.000	mg/L S04
TEMPERATURE	14.000	Deg. C.

I CERTIFY THE ABOVE RESULTS WERE OBTAINED BY USING ACCEPTED ANALYTICAL PROCEDURES AS PRESCRIBED IN STANDARD METHEDS AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE BELIEF

By: Terri Adkins

9/22/2008

Cumberland Valley Engineering, Inc.

P.O. Box 1710, 107 North Cumberland Avenue
Harlan, Kentucky 40831
Office (606) 573-6836 C Laboratory (606) 573-6836
Fax (606) 573-4735

BELL COUNTY COAL CORPORATION

ROUTE 1, BOX 290

MIDDLESBORO, KY 40965

SAMPLE ID NUMBER: 01452 **Lab NUMBER:** 98775
PERMIT NUMBER: 807-5025-GW-5 **WELL**
SAMPLE DATE: 7/9/2008
SAMPLE TIME: 11:00
COLLECTED BY: J. MINIARD

REPORT OF WATER ANALYSIS

DEPTH TO WATER	16	feet
pH	7.1	std units
TOTAL ACIDITY	0	mg/L as CaCO3
TOTAL ALKALINITY	126.000	mg/L as CaCO3
DISSOLVED IRON	0.100	mg/L Fe
DISSOLVED MANGANESE	0.100	mg/L Mn
SPECIFIC CONDUCTANCE	400.000	µMHOS/CM
SULFATES	99.000	mg/L S04
TEMPERATURE	18.000	Deg. C.

I CERTIFY THE ABOVE RESULTS WERE OBTAINED BY USING ACCEPTED ANALYTICAL PROCEDURES AS PRESCRIBED IN STANDARD METHEDS AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE BELIEF

By: Terri Adkins

Cumberland Valley Engineering, Inc.

P.O. Box 1710, 107 North Cumberland Avenue
Harlan, Kentucky 40831
Office (606) 573-6836 C Laboratory (606) 573-6836
Fax (606) 573-4735

BELL COUNTY COAL CORPORATION

ROUTE 1, BOX 290

MIDDLESBORO, KY 40965

SAMPLE ID NUMBER: 01452 **Lab NUMBER:** 98776

PERMIT NUMBER: 807-5025-GW-5 **WELL**

SAMPLE DATE: 7/31/2008

SAMPLE TIME: 12:00

COLLECTED BY: J. MINIARD

REPORT OF WATER ANALYSIS

FLOW	15	gal/min.
pH	6.9	std units
TOTAL ACIDITY	0	mg/L as CaCO3
TOTAL ALKALINITY	253.000	mg/L as CaCO3
DISSOLVED IRON	0.100	mg/L Fe
DISSOLVED MANGANESE	0.100	mg/L Mn
SPECIFIC CONDUCTANCE	375.000	µMHOS/CM
SULFATES	78.000	mg/L S04
TEMPERATURE	17.000	Deg. C.

I CERTIFY THE ABOVE RESULTS WERE OBTAINED BY USING ACCEPTED ANALYTICAL PROCEDURES AS PRESCRIBED IN STANDARD METHEDS AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE BELIEF

By: Terri Adkins

Cumberland Valley Engineering, Inc.

P.O. Box 1710, 107 North Cumberland Avenue
Harlan, Kentucky 40831
Office (606) 573-6836 C Laboratory (606) 573-6836
Fax (606) 573-4735

BELL COUNTY COAL CORPORATION

ROUTE 1, BOX 290

MIDDLESBORO, KY 40965

SAMPLE ID NUMBER: 01452 **Lab NUMBER:** 98417

PERMIT NUMBER: 807-5025-GW-5 **WELL**

SAMPLE DATE: 8/12/2008

SAMPLE TIME: 05:10

COLLECTED BY: K. CLARK

REPORT OF WATER ANALYSIS

DEPTH TO WATER	15	feet
pH	6.9	std units
TOTAL ACIDITY	0	mg/L as CaCO3
TOTAL ALKALINITY	100.000	mg/L as CaCO3
DISSOLVED IRON	0.100	mg/L Fe
DISSOLVED MANGANESE	0.100	mg/L Mn
SPECIFIC CONDUCTANCE	300.000	µMHOS/CM
SULFATES	73.000	mg/L S04
TEMPERATURE	19.000	Deg. C.

I CERTIFY THE ABOVE RESULTS WERE OBTAINED BY USING ACCEPTED ANALYTICAL PROCEDURES AS PRESCRIBED IN STANDARD METHEDS AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE BELIEF

By: Terri Adkins

9/22/2008

Cumberland Valley Engineering, Inc.

P.O. Box 1710, 107 North Cumberland Avenue
Harlan, Kentucky 40831
Office (606) 573-6836 C Laboratory (606) 573-6836
Fax (606) 573-4735

BELL COUNTY COAL CORPORATION
ROUTE 1, BOX 290
MIDDLESBORO, KY 40965

SAMPLE ID NUMBER: 01452 **Lab NUMBER:** 98774
PERMIT NUMBER: 807-5025-GW-5 **WELL**
SAMPLE DATE: 8/22/2008
SAMPLE TIME: 10:00
COLLECTED BY: J. MINIARD

REPORT OF WATER ANALYSIS

DEPTH TO WATER	17	feet
pH	7.0	std units
TOTAL ACIDITY	0	mg/L as CaCO3
TOTAL ALKALINITY	242.000	mg/L as CaCO3
DISSOLVED IRON	0.100	mg/L Fe
DISSOLVED MANGANESE	0.100	mg/L Mn
SPECIFIC CONDUCTANCE	450.000	µMHOS/CM
SULFATES	103.000	mg/L S04
TEMPERATURE	17.000	Deg. C.

I CERTIFY THE ABOVE RESULTS WERE OBTAINED BY USING ACCEPTED ANALYTICAL PROCEDURES AS PRESCRIBED IN STANDARD METHEDS AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE BELIEF

By: Terri Adkins

Cumberland Valley Engineering, Inc.

P.O. Box 1710, 107 North Cumberland Avenue
Harlan, Kentucky 40831
Office (606) 573-6836 C Laboratory (606) 573-6836
Fax (606) 573-4735

BELL COUNTY COAL CORPORATION
ROUTE 1, BOX 290
MIDDLESBORO, KY 40965

SAMPLE ID NUMBER: 01452 **Lab NUMBER:** 98777
PERMIT NUMBER: 807-5025-GW-5 **WELL**
SAMPLE DATE: 9/3/2008
SAMPLE TIME: 10:30
COLLECTED BY: J. MINIARD

REPORT OF WATER ANALYSIS

DEPTH TO WATER	12	feet
pH	7.2	std units
TOTAL ACIDITY	0	mg/L as CaCO3
TOTAL ALKALINITY	342.000	mg/L as CaCO3
DISSOLVED IRON	0.100	mg/L Fe
DISSOLVED MANGANESE	0.100	mg/L Mn
SPECIFIC CONDUCTANCE	450.000	µMHOS/CM
SULFATES	75.000	mg/L S04
TEMPERATURE	18.000	Deg. C.

I CERTIFY THE ABOVE RESULTS WERE OBTAINED BY USING ACCEPTED ANALYTICAL PROCEDURES AS PRESCRIBED IN STANDARD METHEDS AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE BELIEF

By: Terri Adkins

9/22/2008

ATTACHMENT 17.2.A

Watershed Description Narrative

The mining activity proposed in this application will consist of contour strip mining of the Hignite coal seam. This operation is located near the community of Fonde in Bell County in the named watersheds of Sowder Creek, Marsee Branch, Clear Fork and Steve Creek on the Forkridge, Kayjay, Frakes and Eagan 7 ½ Minute U.S.G.S. Quadrangle Maps.

The surface disturbances proposed as a part of this application will be located within the drainage area of four (4) watersheds as delineated on the MRP/ERI Map provided in this application. These watersheds are described further as follows:

WATERSHED DESIGNATION	DRAINAGE NAME	AREA	1st ORDER WATERSHED	TYPE DISTURBANCE
A1	Sowder Branch	2131	Yes	New
A2	Marsee Branch	792	Yes	New
A3	Clear Fork	1148	Yes	New
A4	Steve Branch	719	Yes	New

There are numerous other existing surface disturbances associated with both active and inactive mining activity located within the watersheds affected by the mining activity. Therefore we feel that the additional areas proposed by this application will not have any adverse effects on the water quality of quantity of this area.

ATTACHMENT 17.3.A

SURFACE WATER USERS

The water user inventory for this proposed operation has determined that no surface water users exist within the vicinity of the operation.

17.4 Describe the premining surface water monitoring program used to determine the seasonal variations in surface water quality and quantity. At a minimum, six months of data shall be collected. The description shall identify the location of each monitoring point, parameters tested, and laboratory methods used. Submit the description as "Attachment 17.4.A".
See Attachment 17.4.A.

17.5 On cabinet approved forms submit the results of the premining surface water monitoring program. Original or notarized copies of all laboratory analyses shall be provided. Submit this information as "Attachment 17.5.A".

See Attachment 17.5.A.

18. Determination of Probable Hydrologic Consequences

18.1 Provide as "Attachment 18.1.A", a determination of the probable hydrologic consequences (PHC) which the proposed mining operation will have on both surface water and ground water systems within the proposed permit area and adjacent areas. The contents of the determination shall conform to the requirements of 405 KAR 8:030, Section 32 (surface mine) or 405 KAR 8:040, section 32 (underground mine).
See Attachment 18.1.A.

18.2 Provide as "Attachment 18.2.A", a detailed description of the protective measures to be taken as part of the mining and reclamation operations to ensure compliance with 405 KAR 16:060 Sections, 1, 2, 3, 4, 5, 6, 8, 9, 12, and 405 KAR 16:080 (surface mine) or 405 KAR 18:060, Sections 1, 2, 3, 4, 5, 7, and 405 KAR 18:080 (underground mine). Detailed designs of protective measures shall be presented in other pertinent sections of this application.
See Attachment 18.2.A.

19. Alternate Water Supply Information

19.1 Describe the extent to which the proposed mining activities may approximately result in the contamination, diminution, or interruption of underground or surface sources of water within the proposed permit or adjacent areas which are used for domestic, agricultural, industrial or other beneficial uses. This description shall be noted as "Attachment 19.1.A".
See Attachment 19.1.A.

19.2 If contamination, diminution, or interruption may result, identify and describe the adequacy of the alternate source of water supply that could be developed. Provide this information as "Attachment 19.2.A". NOTE: The submission of the information required in Attachment 19.2.A is optional for underground mine applicants.
See Attachment 19.2.A.

ATTACHMENT 17.4.A

PRE-MINING SURFACE WATER MONITORING PLAN

We are proposing to utilize surface water monitoring point SW-004 as the background data site. The location of the site is detailed on the MRP/ERI Map. The existing surface water monitoring site is described as follows:

SW-004 - Latitude 36°35'21" N (4,053,206)
Longitude 83°53'37 W (241,134)

The site was chosen for the following reasons:

1) The site is located downstream of the proposed disturbance.

2) There is a sustained flow at the site.

3) Samples collected at the site will accurately reflect the conditions of the watersheds affected by the proposed disturbance.

4) The site is being used for in-stream surface water monitoring and there is a history of the water quality and quantity at the site.

Samples taken at the site will be analyzed for the following parameters using the methods listed:

PARAMETER	METHOD
Flow Rate	Flow Estimation Meter
ph	SM #423*
Acidity	SM #402*
Alkalinity	SM #403*
Total Iron	SM #303A*
Total Manganese	SM #303A*
Sulfate	SM #426C*
Total Suspended Solids	SM #209C*
Specific Conductance	SM #205*

Since the site is currently being monitored on a quarterly basis as part of ongoing operations, background data collection for these sites will consist of the latest six (6) samples that have been collected on a quarterly basis.

*"Standard Methods for the Examination of Water and Wastewater." 16th Edition, 1985.

WA .R QUALITY DATA ENTRY FORMS: **Part** 1

Type of Report:
[X] Premining
[ ] During Mining/Reclamation
[ ] Other

STATION INFORMATION

PERMIT #: **807-0368** STATION #: **SW004** SOAP PERMITTEE #: **N/A**

*COUNTY #: **007** BASIN #: **02** QUAD NAME: **Eagan**

STATION TYPE (check): [01] Spring [04] Well [ ] Old Mine Works Portal
[XX] Stream [05] Sediment Pond / Influent
[03] Lake [06] Sediment Pond / Discharge

FOR WELLS ONLY
DEPTH (ft):_____ CASING DIAMETER (in):____ AQUIFER DESCRIPTION:_____
TOP OF AQUIFER (MSL):_____ AQUIFERTHICKNESS (ft):____ TOP OF WELL ELEV. (MSL):_____

WATERSHED DESCRIPTION: **Steep Slopes/Previously Mined** DRAINAGE AREA (ac.):_____

LATITUDE (DMS): **36-35-21** LONGITUDE (DMS): **83-53-37**

UTM ZONE: **17** **16 West of 84° Longitude** **17 East of 84° Latitude** UTM EASTING: **241,134** UTM NORTHING: **4,053,206**

LOCAL STREAM NAME: **Clear Fork**

COAL COMPANY NAME: **Appolo Fuels, Inc.**

COLLECTING FIRM NAME: **Technical Water Laboratories, Inc. PO Box 309, Bledsoe, KY 40810**

ANALYZING FIRM NAME: **Technical Water Laboratories, Inc. PO Box 309, Bledsoe, KY 40810**

COMMENTS: _____

SAMPL ATA

PERM... # 807-0368 STATION # SW004

SAMPLE No. [1]

PARAMETER	DATE MM/DD/YY	TEMP(C)	DISCHARGE (gpm)	CONDUCTIVITY	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	04/08/08		1.20	450	7.60	0	115.13	15	310	

PARAMETER	SO_4 Diss mg/l	O_2 Diss mg/l	Fe, Diss mg/l	Fe, Total mg/l	Mn, Diss mg/l	Mn, Total mg/l	Depth to water (ft)			
VALUE	665			0.75		0.66				

COMMENT:

SAMPLE No. [2]

PARAMETER	DATE MM/DD/YY	TEMP(C)	DISCHARGE (gpm)	CONDUCTIVITY	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	06/23/08		1.66	390	7.70	0	116.80	12	255	

PARAMETER	SO_4 Diss mg/l	O_2 Diss mg/l	Fe, Diss mg/l	Fe, Total mg/l	Mn, Diss mg/l	Mn, Total mg/l	Depth to Water (ft)			
VALUE	72			0.65		0.43				

COMMENT:

SAMPLE No. [3]

PARAMETER	DATE MM/DD/YY	TEMP(C)	DISCHARGE (gpm)	CONDUCTIVITY	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	07/08/08		1.00	490	7.70	0	110.22	14	345	

PARAMETER	SO_4 Diss mg/l	O_2 Diss mg/l	Fe, Diss mg/l	Fe, Total mg/l	Mn, Diss mg/l	Mn, Total mg/l	Depth to Water (ft)			
VALUE	78			0..90		0..61				

COMMENT:

SAMPL TA

PERMIT # 807-0368 STATION # SW004

SAMPLE No. [4]

PARAMETER	DATE MM/DD/YY	TEMP(C)	DISCHARGE (gpm)	CONDUCTIVITY	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	09/12/08		1.06	468	7.60	0	112.10	10	390	

PARAMETER	SO_4 Diss mg/l	O_2 Diss mg/l	Fe, Diss mg/l	Fe, Total mg/l	Mn, Diss mg/l	Mn, Total mg/l	Depth to water (ft)			
VALUE	75			0.75		0.34				

COMMENT:

SAMPLE No. [5]

PARAMETER	DATE MM/DD/YY	TEMP(C)	DISCHARGE (gpm)	CONDUCTIVITY	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	11/17/08		1.20	408	7.50	0	118.02	9	320	

PARAMETER	SO_4 Diss mg/l	O_2 Diss mg/l	Fe, Diss mg/l	Fe, Total mg/l	Mn, Diss mg/l	Mn, Total mg/l	Depth to Water (ft)			
VALUE	70			0.67		0.12				

COMMENT:

SAMPLE No. [6]

PARAMETER	DATE MM/DD/YY	TEMP(C)	DISCHARGE (gpm)	CONDUCTIVITY	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	12/08/08		1.84	492	7.80	0	120.17	15	367	

PARAMETER	SO_4 Diss mg/l	O_2 Diss mg/l	Fe, Diss mg/l	Fe, Total mg/l	Mn, Diss mg/l	Mn, Total mg/l	Depth to Water (ft)			
VALUE	82			0.80		0.25				

COMMENT:

Appolo Fuels, Inc.
#807-0368

ATTACHMENT 17.5.A

The following six (6) pages, "Lab Analysis Reports" are true and accurate copies of the originals.

Notary Public: _____

State in which commissioned: Kentucky

My commission expires: 2-13-10

Date: 8-28-09

TECHNICAL WATER LABORATORIES, INC.

P.O. Box 309 Bledsoe, KY 40810 (606) 558-5079 Fax (606)558-5565

SAMPLE ANALYSIS RESULTS

Tested for (Company Name): Appolo Fuels. Inc.
Sample ID: 807-0365 & 807-0373 SW004
Lab# 16
Date Sampled: 04-08-2008
Date Analyzed: 04-09-2008
Sampled By: Leonard Thompson

Parameter	Value	Units	Remarks
PH	7.60		
Acidity to pH 8.3	0	Mg/L	*with hot peroxide
Alkalinity to pH 4.5	115.13	Mg/L	treatment
Total Iron	0.75	Mg/L	
Dissolved Iron		Mg/L	
Total Manganese	0.66	Mg/L	
Dissolved Manganese		Mg/L	
Total Suspended Solids	15	Mg/L	
Total Dissolved Solids	310	Mg/L	
Settleable Solids		Mg/L	
Total Solids		Mg/L	
Sulfates	66	Mg/L	
Calcium		Mg/L	
Nitrates		Mg/L	
Nitrogen (Ammonia)		Mg/L	
Bicarbonate		Mg/L	
Sodium		Mg/L	
Potassium		Mg/L	
Chloride		Mg/L	
Temperature		degrees c	
Turbidity			
Specific Conductance	450	Michromhos/CM	
Dissolved Oxygen		Mg/L	
Hardness		Mg/L	
Flow Rate (Gpm)	1.20	GPM	
Flow Rate (Cfs)		CFS	
Depth to Water		Feet	
Well Depth		Feet	

All tests are conducted in accordance with Acceptable analytical methods and Procedures and are correct and accurate to The best of my knowledge.

Signature of Laboratory Supervisor

TECHNICAL WATER LABORATORIES, INC.

P.O. Box 309 Bledsoe, KY 40810 (606) 558-5079 Fax (606)558-5565

SAMPLE ANALYSIS RESULTS

Tested for (Company Name): Appolo Fuels, Inc.
Sample ID: 807-0365 & 807-0373 SW004
Lab# 16
Date Sampled: 06-23-2008
Date Analyzed: 06-24-2008
Sampled By: Leonard Thompson

Parameter	Value	Units	Remarks
PH	7.70		
Acidity to pH 8.3	0	Mg/L	*with hot peroxide
Alkalinity to pH 4.5	116.80	Mg/L	treatment
Total Iron	0.65	Mg/L	
Dissolved Iron		Mg/L	
Total Manganese	0.43	Mg/L	
Dissolved Manganese		Mg/L	
Total Suspended Solids	12	Mg/L	
Total Dissolved Solids	255	Mg/L	
Settleable Solids		Mg/L	
Total Solids		Mg/L	
Sulfates	72	Mg/L	
Calcium		Mg/L	
Nitrates		Mg/L	
Nitrogen (Ammonia)		Mg/L	
Bicarbonate		Mg/L	
Sodium		Mg/L	
Potassium		Mg/L	
Chloride		Mg/L	
Temperature		degrees c	
Turbidity			
Specific Conductance	390	Michromhos/CM	
Dissolved Oxygen		Mg/L	
Hardness		Mg/L	
Flow Rate (Gpm)	1.66	GPM	
Flow Rate (Cfs)		CFS	
Depth to Water		Feet	
Well Depth		Feet	

All tests are conducted in accordance with Acceptable analytical methods and Procedures and are correct and accurate to The best of my knowledge.

Signature of Laboratory Supervisor

TECHNICAL WATER LABORATORIES, INC.

P.O. Box 309 Bledsoe, KY 40810 (606) 558-5079 Fax (606)558-5565

SAMPLE ANALYSIS RESULTS

Tested for (Company Name): Appolo Fuels, Inc.
Sample ID: 807-0365 & 807-0373 SW004
Lab# 16
Date Sampled: 07-08-2008
Date Analyzed: 07-09-2008
Sampled By: Leonard Thompson

Parameter	Value	Units	Remarks
PH	7.70		
Acidity to pH 8.3	0	Mg/L	*with hot peroxide
Alkalinity to pH 4.5	110.22	Mg/L	treatment
Total Iron	0.90	Mg/L	
Dissolved Iron		Mg/L	
Total Manganese	0.61	Mg/L	
Dissolved Manganese		Mg/L	
Total Suspended Solids	14	Mg/L	
Total Dissolved Solids	345	Mg/L	
Settleable Solids		Mg/L	
Total Solids		Mg/L	
Sulfates	78	Mg/L	
Calcium		Mg/L	
Nitrates		Mg/L	
Nitrogen (Ammonia)		Mg/L	
Bicarbonate		Mg/L	
Sodium		Mg/L	
Potassium		Mg/L	
Chloride		Mg/L	
Temperature		degrees c	
Turbidity			
Specific Conductance	490	Michromhos/CM	
Dissolved Oxygen		Mg/L	
Hardness		Mg/L	
Flow Rate (Gpm)	1.00	GPM	
Flow Rate (Cfs)		CFS	
Depth to Water		Feet	
Well Depth		Feet	

All tests are conducted in accordance with Acceptable analytical methods and Procedures and are correct and accurate to The best of my knowledge.

Signature of Laboratory Supervisor

TECHNICAL WATER LABORATORIES, INC.

P.O. Box 309 Bledsoe, KY 40810 (606) 558-5079 Fax (606)558-5565

SAMPLE ANALYSIS RESULTS

Tested for (Company Name): Appolo Fuels, Inc.
Sample ID: 807-0365 & 807-0373 SW004
Lab# 16
Date Sampled: 09-12-2008
Date Analyzed: 09-13-2008
Sampled By: Leonard Thompson

Parameter	Value	Units	Remarks
PH	7.60		
Acidity to pH 8.3	0	Mg/L	*with hot peroxide
Alkalinity to pH 4.5	112.10	Mg/L	treatment
Total Iron	0.75	Mg/L	
Dissolved Iron		Mg/L	
Total Manganese	0.34	Mg/L	
Dissolved Manganese		Mg/L	
Total Suspended Solids	10	Mg/L	
Total Dissolved Solids	390	Mg/L	
Settleable Solids		Mg/L	
Total Solids		Mg/L	
Sulfates	75	Mg/L	
Calcium		Mg/L	
Nitrates		Mg/L	
Nitrogen (Ammonia)		Mg/L	
Bicarbonate		Mg/L	
Sodium		Mg/L	
Potassium		Mg/L	
Chloride		Mg/L	
Temperature		degrees c	
Turbidity			
Specific Conductance	468	Michromhos/CM	
Dissolved Oxygen		Mg/L	
Hardness		Mg/L	
Flow Rate (Gpm)	1.06	GPM	
Flow Rate (Cfs)		CFS	
Depth to Water		Feet	
Well Depth		Feet	

All tests are conducted in accordance with Acceptable analytical methods and Procedures and are correct and accurate to The best of my knowledge.

Signature of Laboratory Supervisor

TECHNICAL WATER LABORATORIES, INC.

P.O. Box 309 Bledsoe, KY 40810 (606) 558-5079 Fax (606)558-5565

SAMPLE ANALYSIS RESULTS

Tested for (Company Name): Appolo Fuels, Inc.
Sample ID: 807-0365 & 807-0373 SW004
Lab# 16
Date Sampled: 11-17-2008
Date Analyzed: 11-18-2008
Sampled By: Leonard Thompson

Parameter	Value	Units	Remarks
PH	7.50		
Acidity to pH 8.3	0	Mg/L	*with hot peroxide
Alkalinity to pH 4.5	118.02	Mg/L	treatment
Total Iron	0.67	Mg/L	
Dissolved Iron		Mg/L	
Total Manganese	0.12	Mg/L	
Dissolved Manganese		Mg/L	
Total Suspended Solids	9	Mg/L	
Total Dissolved Solids	320	Mg/L	
Settleable Solids		Mg/L	
Total Solids		Mg/L	
Sulfates	70	Mg/L	
Calcium		Mg/L	
Nitrates		Mg/L	
Nitrogen (Ammonia)		Mg/L	
Bicarbonate		Mg/L	
Sodium		Mg/L	
Potassium		Mg/L	
Chloride		Mg/L	
Temperature		degrees c	
Turbidity			
Specific Conductance	408	Michromhos/CM	
Dissolved Oxygen		Mg/L	
Hardness		Mg/L	
Flow Rate (Gpm)	1.20	GPM	
Flow Rate (Cfs)		CFS	
Depth to Water		Feet	
Well Depth		Feet	

All tests are conducted in accordance with Acceptable analytical methods and Procedures and are correct and accurate to The best of my knowledge.

Signature of Laboratory Supervisor

TECHNICAL WATER LABORATORIES, INC.

P.O. Box 309 Bledsoe, KY 40810 (606) 558-5079 Fax (606)558-5565

SAMPLE ANALYSIS RESULTS

Tested for (Company Name): Appolo Fuels, Inc.
Sample ID: 807-0365 & 807-0373 SW004
Lab# 16
Date Sampled: 12-08-2008
Date Analyzed: 12-09-2008
Sampled By: Leonard Thompson

Parameter	Value	Units	Remarks
PH	7.80		
Acidity to pH 8.3	0	Mg/L	*with hot peroxide
Alkalinity to pH 4.5	120.17	Mg/L	treatment
Total Iron	0.80	Mg/L	
Dissolved Iron		Mg/L	
Total Manganese	0.25	Mg/L	
Dissolved Manganese		Mg/L	
Total Suspended Solids	15	Mg/L	
Total Dissolved Solids	367	Mg/L	
Settleable Solids		Mg/L	
Total Solids		Mg/L	
Sulfates	83	Mg/L	
Calcium		Mg/L	
Nitrates		Mg/L	
Nitrogen (Ammonia)		Mg/L	
Bicarbonate		Mg/L	
Sodium		Mg/L	
Potassium		Mg/L	
Chloride		Mg/L	
Temperature		degrees c	
Turbidity			
Specific Conductance	492	Michromhos/CM	
Dissolved Oxygen		Mg/L	
Hardness		Mg/L	
Flow Rate (Gpm)	1.84	GPM	
Flow Rate (Cfs)		CFS	
Depth to Water		Feet	
Well Depth		Feet	

All tests are conducted in accordance with Acceptable analytical methods and Procedures and are correct and accurate to The best of my knowledge.

Signature of Laboratory Supervisor

ATTACHMENT 18.1.A

PROBABLE HYDROLOGIC CONSEQUENCE DETERMINATION

The proposed mining associated with this permit will have no adverse affects to the existing hydrologic balance. Pre-law mining and logging has occurred within and adjacent to the proposed permit area. This in itself has effected a gradual change in the surface and ground water systems resulting in their present states. Due to the previous mining, remaining pre-law sites, and relatively small area of surface disturbance proposed per this permit, no perceptible effects to the existing balance is anticipated. Following are supporting discussions which address required specifics for both surface and ground water.

SURFACE WATER

1) PEAK DISCHARGE RATES, EMPHASIZING FLOODING POTENTIAL:

Peak discharge rates are expected to increase slightly from disturbed areas which have not re-established vegetation. These increases will be temporary until such time that vegetation is re-established. The disturbed areas will be very small when compared to the total watershed area. Likewise, the increase in discharge rates will be comparatively small, thus presenting no increase in flooding potential.

2) SETTLEABLE SOLIDS AT PEAK DISCHARGE:

Small increases of settleable solids at peak discharges are also anticipated from disturbed areas prior to revegetation. These settleable solids will be controlled by the sediment pond located as shown on the MRP Map. After mining, reclamation, and vegetation re-establishment, settleable solids concentrations should return to near pre-mining levels.

3) LOW-FLOW DISCHARGE RATES, EMPHASIZING THE POTENTIAL FOR WATER SUPPLY DIMINUTION:

Low-flow discharge rates during-mining are expected to be somewhat less than those existing prior to mining. This is primarily due to routing of run-off into the sedimentation pond and subsequent retention time. However, after mining, reclamation, and pond removal, the discharge rates at low-flow will be commensurate with pre-mining discharge.

4) SUSPENDED SOLIDS AT LOW FLOW:

Suspended solids are expected to increase temporarily from areas which have been cleared and grubbed. Implementation of the sediment structures will prevent the discharge of unacceptable levels. After mining/reclamation operations are completed and revegetation is substantial, concentrations are

expected to return closely to pre-mining levels.

5) PH, AT LOW FLOW, EMPHASIZING THE POTENTIAL FOR ACID DRAINAGE CONDITIONS:

Baseline hydrologic data indicates no acidity or associated problems. Also, as supported by the included baseline geologic data, neither the overburden nor the coal seam to be mined indicate a cumulative potential to produce acid mine drainage.

Based on the previous discussions, it is felt that the mining as proposed per this permit will have no detrimental impact to surface water. However, in-stream during-mining monitoring of the Clear Fork at the location shown on the MRP Map and ERI Map as point #SW-4 will allow identification and correction of any adverse effects, should they occur.

GROUNDWATER

1) WATER QUANTITY, EMPHASIZING WATER LEVELS/POTENTIAL WATER SUPPLY DIMINUTION FOR EXISTING USERS/DEWATERING OF POTENTIAL AQUIFERS:

Fracturing is the method of groundwater recharge and transmittal, and fracturing will not be diminished by this operation. Consequently water quantity should not be affected.

2) PH, EMPHASIZING THE POTENTIAL FOR ACID DRAINAGE CONDITIONS:

As shown by the baseline geologic and surface/ground water data, there are currently no acidity problems present, and no cumulative potential to produce acid drainage conditions are indicated. As a result, any infiltration will have no detrimental effect to the ground water regime.

Based on the previous discussions, it is felt that the mining proposed per this permit will have no adverse impacts to the ground water system. However, during-mining monitoring of ground water points #GW-1 and #STA1 will allow identification and correction of any adverse effects, should they occur.

ATTACHMENT 18.2.A

PROTECTION OF THE HYDROLOGIC BALANCE

SEDIMENT CONTROL MEASURES:

Utilization of the Sediment Structures will control sediment from the surface disturbance areas pertinent to this permit. Run-off from these areas will be passed through the structures prior to leaving the permitted area. Consequently, contributions of sediment to streams outside the permitted boundary will be prevented to the extent possible.

DISCHARGE STRUCTURES:

The primary sources of discharges pertinent to this permit are the previously discussed sediment structures. Standard engineering design procedures have been used to design these structures. The emergency spillways of the ponds will be rip-rapped to preclude excessive erosion and to prevent enlargement of the channel, if they are not cut in solid.

ACID FORMING AND TOXIC FORMING MATERIALS:

Baseline geologic sampling and subsequent acid base accounting does not indicate an overall cumulative potential to produce acidic drainage. However, if any are encountered they will be combined with the other strata of the column which has a total overall NP greater than PA. Consequently, the overall material will not have a potential to produce acidic or toxic forming matter. The material will be placed in the spoil storage area in such a manner to prevent any acid forming or toxic forming material from being exposed to air, water, or weathering and care will be taken to ensure covering of any acid forming or toxic forming material with a minimum of four (4) feet of non-toxic, non-acidic, and non-combustionable material.

GROUNDWATER PROTECTION AND RECHARGE CAPACITY:

As previously detailed in the preceding "Probable Hydrologic Consequences Determination" ground water is not expected be adversely affected by the proposed mining for the reasons specified in that text.

ATTACHMENT 18.2.A

SURFACE WATER PROTECTION:

In general surface water will be protected by the following:

A) Utilization of the sediment structures and/or alternate sediment control devices to prevent the contribution of sediment to stream flow outside the permit area, to the extent possible.

B) During-mining monitoring of the stream receiving discharge will serve to identify and allow correction of any detrimental effects should they occur.

WATER RIGHTS AND REPLACEMENT:

As also set forth in the "Probable Hydrologic Consequences Determination", the proposed mining is not expected to adversely impact surface or ground water systems. Consequently, water supply sources should not be affected. As a result, no specific water source replacement plans are needed.

DISCHARGES INTO UNDERGROUND MINES:

No discharge into underground mines is proposed per this permit.

DISCHARGES OF ACCUMULATED WATER:

Any water which has accumulated will be discharged in a controlled manner to a natural or constructed drainage way. Unless the discharge meets all applicable state and federal water quality standards, water will not be allowed to leave the permitted area without first passing through the sediment structures. Unless specifically authorized by the Cabinet, no spoil overburden, or natural barriers will be removed to release water accumulations.

ATTACHMENT 19.1.A

Extent To Which Mining Activities May Result In The Contamination, Diminution Or Interruption Of Water

The proposed mining activities will not result in the contamination, diminution or interruption of underground or surface sources of water within the proposed permit or adjacent areas which are used for domestic, agricultural, industrial or other beneficial uses due to the following:

a) Extensive underground and surface mining has previously occurred within the watersheds pertinent to application, without any apparent detrimental effect to water sources.

b) Contamination will not occur due to the absence of a potential to produce acid drainage, controlling sediment structures and during-mining monitoring to identify and correct any detrimental impacts, should any occur.

c) Diminution/interruption will not occur due to the operation not affecting the method of groundwater recharge and transmittal (fracturing).

ATTACHMENT 19.2.A

Alternate Sources Of Water Supply

It is not anticipated that the activities proposed in this application will have any adverse effects on any surface or ground sources of water. However, since mining activities are proposed, it is possible that surface water or groundwater sources could possibly be affected. If replacement of a domestic water supply is required by the Cabinet a water supply will be provide a temporary and permanent basis as follows. Within forty-eight (48) hours after receiving notice from the cabinet that the water supply was adversely impacted by mining, provide drinking water on an emergency basis. Within two (2) weeks after receiving notice from the cabinet that the water supply was adversely impacted by mining, provide a temporary water supply connected to the existing plumbing, if any, that provides water for all ordinary household purposes including drinking, cooking, bathing, sanitation and laundry and drinking water for poultry, livestock and domestic animals and water for noncommercial domestic agricultural and horticultural activities. Within two (2) years after receiving notice from the cabinet that the water supply was adversely impacted by mining, provide a satisfactory permanent water supply.

The following sources of water could be developed to replace any source of water which might be adversely affected by operation:

1) Cisterns: Individual residences could be provided with cisterns of adequate capacity to provide ample water supply. There is adequate rainfall within this area to allow the use of cisterns.

2) Deep Wells: The existing wells or new wells could be drilled to lower depths. The casings in these wells could be extended and the outside of the well casing could be grouted to seal off any water from seeping down into the well.

4) A chemical treatment system to clarify contaminated water could be provided for any source of water which might be adversely affected by this operation.

5) Stream channels could be cleaned in the event of heavy sedimentation or reconstructed in the event of cracks to enhance the surface water flow of the watershed.

20. Prime Farmland Investigation

20.1 Based upon the applicant's review of relevant information and the performance of an on-site investigation of the permit area, the applicant proposes a negative determination on ***409.39*** acres of this permit. This request is based upon the following:

[X] ***409.39*** acres should not be considered prime farmland due to the slope being greater than 10% or the soil is very rocky, or the area floods during a growing season more than once every two years thus reducing crop yields, etc. Documentation demonstrating this assertion is submitted as Attachment 20.1.A.

See Attachment 20.1.A

[ ] _____ acres should not be considered prime farmland as it has not been historically used as cropland. The standard departmental surface owner and third party affidavits are submitted as "Attachment 20.1.B and 20.1.C". Applicant should provide a narrative explaining why the acreage as not been farmed. This narrative should reference the history of nearby and adjacent lands.

[ ] _____ acres should not be considered prime farmland as demonstrated by the following U.S. Soil Conservation Service statement. The land designated on the USGS topographic map attached to permit application no. _____ has

[ ] no prime farmland soils
[ ] some prime farmland soils
[ ] all prime farmland soils

Name _____ Title _____

Signature _____ Date _____

20.2 For applicants claiming an exemption from prime farmland reconstruction submit proper documentation as "Attachment 20.2.A" to demonstrate that a permit has been obtained prior to August 3, 1977, or that the other requirements of 405 KAR 8:050, Section 3, have been met.

N/A

20.3 Identify the acreage of prime farmland acreage to be restored. Provide as "Attachment 20.3.A" the prime farmland restoration plan.

N/A

21. Land Use Information

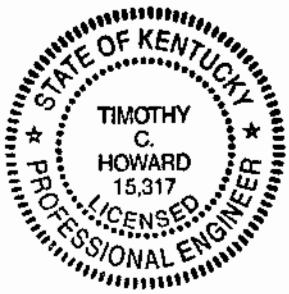
21.1 Describe the capability of the proposed permit area, before any mining, to support a variety of land uses. Consideration shall be given to soil and foundation, topography, vegetative cover and hydrology. Submit as "Attachment 21.1.A".

See Attachment 21.1.A.

Appolo Fuels, Inc.
#807-0368

ATTACHMENT 20.1.A

Based on the U.S.G.S. topographical map, and field investigation the areas proposed by this original permit application are located on slopes greater than ten (10%) percent.



Signature, Timothy C. Howard, P.E.

ATTACHMENT 21.1.A

The land use of this site prior to mining activity was forestry. The land is not suited to any other type of land use. The relatively steep slopes of the land, along with lack of access to the site, prevented the development of any type of land use including cropland, recreational, water resources, residential or industrial/commercial.

21.2 Provide an estimate of the permit area's potential productivity expressed in average of food, fiber, forage, or wood products. Provide as "Attachment 21.2.A".

See Attachment 21.2.A.

21.3 Describe the existing uses of the lands adjacent to the proposed permit areas and identify any local land use classifications of the proposed permit area. Submit as "Attachment 21.3.A".

See Attachment 21.3.A.

21.4 Describe the consideration which has been given to making the proposed postmining activities consistent with surface owner plans and applicable state and local land use plans and programs. Submit as "Attachment 21.4.A".

See Attachment 21.4.A

21.5 Attach copies of the comments concerning the proposed postmining land use from legal or equitable owner of record of the surface area to be affected. Also, attach any comments from federal, state, and local government agencies which would have to initiate, implement, approve, or authorize the proposed land use following reclamation. Submit as "Attachment 21.5.A, 21.5.B" etc.

See Attachment 21.5.A

21.6 Indicate existing land uses within the proposed permit area:

[***XX***] Forestland (40	***152.33*** ac.	[ ] Developed Water Resources (53)	_____ ac.
[ ] Pastureland (20)	_____ ac.	[ ] Residential (11)	_____ ac.
[ ] Cropland (21)	_____ ac.	[ ] Industrial/ Commercial (13)	_____ ac.
[ ] Fish and Wildlife (01)	_____ ac.	[ ] Undeveloped (60)	_____ ac.
[ ] Recreation (02)	_____ ac.		
[***XX***] Mined Lands (30)	***257.06*** ac.		

Clearly delineate on the Environmental Resources Map, the boundaries of each land use checked above.

21.7 If active coal mining is being conducted within the proposed permit area or if previous mining has been conducted within the proposed permit area, provide the following information: If not applicable, check here [***XX***].

Premining Land Use(s)	Acres
Unmanaged Forestland	***257.06***

21.8 If any land use (other than mining) has been in existence less than five years prior to the date of this application, describe the historic land use. Submit this description as "Attachment 21.8.A". If not applicable, check here [***XX***].

21.9 If previous mining has occurred within the proposed permit area, describe the type of mining used, coal seam or other strata mined, area extent of such mining, and approximate dates of the disturbances. Submit as "Attachment 21.9.A". All areas of prior disturbance shall be shown on the MRP Map. If not applicable, check here [ ].

See Attachment 21.9.A.

ATTACHMENT 21.2.A

ESTIMATE OF POTENTIAL PRODUCTIVITY

As the pre-mine land use of the site is Forestry, the productivity and average yield of the area will be discussed as woodland. The following information was obtained from the Soil Conservation Service in the "Soil Survey of Bell and Harlan Counties, Kentucky", December 1992.

We present the following discussion concerning Woodland Management and Productivity.

Soils vary in their ability to produce trees. Available water capacity and depth of the root zone have major effects on tree growth. Fertility and texture also influence tree growth. Elevation, aspect, and climate determine the kinds of trees that can grow on a site. Elevation and aspect are of particular importance in mountainous areas.

This soil survey can be used by woodland managers planning ways to increase the productivity of forest land. Some soils respond better to applications of fertilizer than others, and some are more susceptible to landslides and erosion after roads are built and timber is harvested. Table 8 summarizes the forestry information and rates the soils for a number of factors to be considered in management. Slight, moderate, and severe are used to indicate the degree of the major soil limitations to be considered in forest management.

Ratings of the erosion hazard indicate the probability that damage may occur if site preparation of harvesting activities expose the soil. The risk is slight if no particular preventive measures are needed under ordinary conditions; moderate if erosion-control measures are needed for particular silvicultural activities; and severe if special precautions are needed to control erosion for most silvicultural activities. Ratings of moderate or

severe indicate the need for construction of higher standard roads, additional maintenance roads, additional care in planning harvesting and reforestation activities, or the use of special equipment.

Ratings of equipment limitation indicate limits on the use of forest management equipment, year-round or seasonal, because of such soil characteristics as slope, wetness, stoniness, or susceptibility of the surface layer to compaction. As slope gradient and length increase, it becomes more difficult to use wheeled equipment. On the steeper slopes, tracked equipment is needed. On the steepest slopes, even tracked equipment cannot be operated and more sophisticated systems are needed. The rating is slight if equipment use is restricted by soil wetness for less the 2 months and if special equipment is not needed. The rating is moderate if slopes are so steep that wheeled equipment cannot be operated safely across the slope, if wetness restricts equipment use from 2 to 6 months per year, if stoniness restricts the use of ground-based equipment, or if special equipment is needed to prevent or minimize compaction. The ratings is severe if slopes are so steep that tracked equipment cannot be operated safely across the slopes, if wetness restricts equipment use of more than 6 months per year, if stoniness restricts the use of ground-based equipment, or if special equipment is needed to prevent or minimize compaction. Ratings of moderate or severe indicate a need to choose the most suitable equipment and to carefully plan the timing of harvesting and other management activities.

Ratings of seedling mortality refer to the probability of the death of naturally occurring or properly planted seedlings of good stock in periods of normal rainfall, as influenced by kinds of soil or topographic features. Seedling mortality is caused primarily by too much water or too little water. The factors used in rating a soil for seedling mortality are texture of the surface layer, depth to a seasonal high water table and the length of the

period when the water table is high, rock fragments in the surface layer, rooting depth, and the aspect of the slope. The mortality rate generally is highest on soils that have a sandy or clayey surface layer. The risk is slight if, after site preparation, expected mortality is less than 25 percent; moderate if expected mortality is between 25 and 50 percent; and severe if expected mortality exceeds 50 percent. Rating of moderate or severe indicate that it may be necessary to use containerized or larger than usual planting stock or to make special site preparations, such as bedding, furrowing, installing a surface drainage system, and providing artificial shade for seedlings. Reinforcement planting is often needed if the risk is moderate or severe.

Ratings of plant competition indicate the likelihood of the growth or invasion of undesirable plants. Plant competition is more severe on the more productive soils, on poorly drained soils, and on soils having a restricted root zone that holds moisture. The risk is slight if competition from undesirable plants hinders adequate natural or artificial reforestation but does not necessitate intensive site preparation and maintenance. The risk is moderate if competition from undesirable plants hinders natural or artificial reforestation to the extent that intensive site preparation and maintenance are needed. The risk is severe if competition from undersirable plants prevents adequate natural or artificial reforestation unless the site is intensively prepared and maintained. A moderate or severe rating indicates the need for site preparation to ensure the development of an adequately stocked stand. Managers must plan site preparation measures to ensure reforestation without delays.

The potential productivity of common trees on a soil is expressed as a site index and a volume number. Common trees are listed in the order of their observed general occurrence. Generally, only two or three tree species dominate. The first tree listed for

each soil is the indicator species for that soil. An indicator species is a tree that is common in the area and that is generally the most productive on a given soil.

The site index is determined by taking height measurements and determining the age of selected trees within stands of given species. This index is the average height, in feet, that the trees attain in a specified number of years. This index applies to fully stocked, even-aged, unmanaged stands. The site indices in table 8 are based on regional studies.

The volume is the yield likely to be produced by the most important trees expressed in cubic feet per acre per year calculated at the age of culmination of mean annual increment.

Trees to plant are those that are used for reforestation or, under suitable conditions, natural regeneration. They are suited to the soils and can produce a commercial wood crop. The desired product, topographic position (such as a low, wet area), and personal preference are three factors among many that can influence the choice of trees for use in reforestation.

Bell and Harlan Counties are in the mixed mesophytic forest region of the eastern deciduous forest. Steep mountain slopes make up about 90 percent of the survey area and, except for areas recently surface mined for coal, are forested. Maple, beech, yellow poplar, oak, and hickory are the dominant tree species.

Much of the forest land is owned by large corporations, which are primarily interested in the coal resources. Some of the forest land is in small private holdings. The Kentucky Ridge State Forest and the Kentenia State Forest, which make up a total of about 16,000 acres, are managed for multiple uses. Almost 16,000 acres of forest land is in the Cumberland Gap National Historical Park, Kingdom Come State Park, and Pine

Mountain State Park. Other forest land owned by state, federal, and local agencies makes up about 4,000 acres. Most of the publicly owned forest land is in the Helechawa-Alticrest-Varilla general soil map unit. Currently, three large sawmills operate in the survey area. Tree products, such as rough-sawn boards, mine props, shims, and blocking, are cut at several small mills. Mine props and fuel wood are cut by many landowners. Markets are insufficient for much of the low-quality hardwood.

FOREST SPECIES

The presettlement forest of the survey area was a mixed mesophytic deciduous forest, which flourished particularly in the higher mountains, in regard to number of tree species, size of trees, and variety of forest types. In the present-day mixed mesophytic forest association, several species generally are in a sand of trees. The most common species are sugar maple, yellow poplar, black locust, yellow buckeye, and basswood. Other species are northern red oak, red maple, white oak, chestnut oak, cucumbertree, American beech, eastern hemlock, black cherry, birch, magnolia, and hickory. The mixed mesophytic forest covers almost all of the Highsplint-Cloverlick-Guyandotte general soil map unit. It is on cool slopes and in coves.

Oak forests are in the drier areas, such as the south-and west-facing sides of mountains and the tops of mountains. The most common species are chestnut oak, scarlet oak, white oak, red maple, blackgum, and hickory. Oak-pine forests on Pine and Cumberland Mountains are also in the drier areas. Pitch pine, Virginia pine, and shortleaf pine are mixed with the oaks.

SOIL AND TREE RELATIONSHIPS

A knowledge of soils helps to provide a basic understanding of the distribution of tree species on the landscape and tree growth. Some of these relationships are readily

recognized. For example, yellow poplar grow well on deep or very deep, moist soils and scarlet oak or pine is common where the rooting depth is restricted or the moisture supply is limited. The soil serves as a reservoir for moisture, provides an anchor for roots, and supplies most of the available nutrients. Soil properties that directly or indirectly affect these growth requirements include organic matter content, reaction, fertility, drainage, texture, structure, depth, and landscape position. Elevation and aspect are of particular importance in mountainous areas. The available water capacity is primarily influenced by texture, organic matter content, rooting depth, and content of rock fragments. In the survey area, available water capacity is a limitation affecting tree growth only in the shallow soils, such as Totz soils, because of the fairly even and abundant summer rainfall. Changing the physical limitations of the soils is difficult, but timber stand improvement and thinning are useful in management.

All of the soils in the survey area, except for the shallowest ones, provide an adequate anchor for tree roots. The susceptibility to windthrow, or the uprooting of trees by the wind, is not a major management concern on most soils.

The available supply of nutrients affects tree growth. Mineral horizons in the soil are important. Mineralization of the humus releases nitrogen and other nutrients to plants. Calcium, magnesium, and potassium are held within the humus. Very small amounts of these nutrients are made available by the weathering of clay and silt particles. Most of the soils in the uplands have been leached and have only small amounts of nutrients below the surface layer. Where the surface layer is thin, as in Shelocta and Gilpin soils, careful management is needed during site preparation to ensure that the surface layer is not removed or degraded. The living plant community is part of the nutrient reservoir. The decomposition of leaves, stems, and other organic material recycles the nutrients that have

accumulated in the forest ecosystem. Fire, excessive trampling by livestock, and erosion can result in the loss of these nutrients. Forest management should include prevention of wildfires and protection from overgrazing. Aspect and landscape position influence the amount of available sunlight, air drainage, soil temperature, and moisture retention. North- and east-facing slopes, or cool slopes, are better suited to tree growth than south- and west-facing slopes, or that is thicker and has more humus and clay than that of the soils on warm slopes. Examples of soils on cool slopes are Cloverlick, Cutshin, Guyandotte, and Kimper. These soils have a slightly higher capacity hold water and a much higher capacity to hold nutrients than the soils on warm slopes. The mean annual soil temperature is about 2 degrees F lower on the cool slopes. The difference in temperature is most prevalent during the dormant season. Because less sunlight falls on the canopy in areas of the cool slopes, the air temperature in the canopy and the transpiration rate are lower and less water is needed.

Soils on the lower slopes may receive additional water because of internal waterflow. On the very steep uplands, much of the water movement during periods of saturation occurs as lateral flow within the subsoil.

Soil and air temperatures are lower on the upper slopes than on the lower slopes. The temperature decreases is about 1 degree F per 550-feet change in elevation. The soils at the base of warm slopes and the soils on the adjacent cool slopes are similar, probably because of the shading effect of the ridge and possibly because of air drainage. These similar soils are mapped together. Nutrients, water, and landscape position largely determine which tree species grows on a particular soil. For example, sugar maple-basswood forest is on soils that have the highest fertility levels and high moisture content. Beech grows on soils that have high moisture content and intermediate fertility levels.

ATTACHMENT 21.2.A

Chestnut oak-red maple forest is on soils that have low fertility levels and low moisture content. Scarlet oak-pine forest is on soils that have very low fertility levels and a very low moisture content.

TABLE 8.--WOODLAND MANAGEMENT AND PRODUCTIVITY

(Only the soils suitable for production of commercial trees are listed. Absence of an entry indicates that information was not available)

Soil name and map symbol	Management concerns				Potential productivity			Trees to plant
	Erosion hazard	Equipment limitation	Seedling mortality	Plant competition	Common trees	Site index	Volume*	
AgB---------- Allegheny	Slight	Moderate	Slight	Severe	Yellow poplar-------	93	95	Eastern white pine, yellow poplar, black walnut, shortleaf pine, white oak, white ash, northern red oak.
					Virginia pine-------	72	112	
					Sugar maple---------	---	---	
					Northern red oak----	---	---	
					Red maple-----------	---	---	
					Black oak-----------	78	60	
					White oak-----------	70	52	
AtF**:								
Alticrest----------	Moderate	Moderate	Moderate	Moderate	Scarlet oak---------	60	43	Shortleaf pine, Virginia pine, loblolly pine, eastern white pine.
					Virginia pine-------	60	91	
					Shortleaf pine------	60	88	
					Chestnut oak--------	---	---	
Totz----------	Severe	Severe	Moderate	Slight	Scarlet oak---------	60	43	Shortleaf pine, Virginia pine.
					Black oak-----------	52	36	
					Shortleaf pine------	52	72	
					Virginia pine-------	52	73	
					Chestnut oak--------	54	38	
					White oak-----------	54	38	
Helechawa----------	Severe	Severe	Moderate	Moderate	Scarlet oak---------	70	52	White oak, shortleaf pine.
					Chestnut oak--------	65	47	
					White oak-----------	65	47	
					Virginia pine-------	65	100	
Bo---------- Bonnie	Slight	Severe	Severe	Severe	Pin oak-------------	96	93	American sycamore, sweetgum, pin oak.
					Sweetgum------------	101	142	
					American sycamore---	---	---	
					Red maple-----------	---	---	
CgF**:								
Cloverlick----------	Severe	Severe	Slight	Severe	Northern red oak----	85	67	Yellow poplar, white ash, northern red oak, shortleaf pine, eastern white pine.
					Sugar maple---------	---	---	
					Yellow poplar-------	110	124	
					American basswood---	---	---	
					Black locust--------	---	---	
					Yellow buckeye------	---	---	
Guyandotte----------	Severe	Severe	Moderate	Severe	Northern red oak----	85	67	Black walnut, eastern white pine, northern red oak.
					American basswood---	---	---	
					Yellow poplar-------	104	114	
					Black cherry--------	---	---	
					Black locust--------	---	---	
Highsplint----------	Moderate	Severe	Moderate	Moderate	Yellow poplar-------	100	107	Northern red oak, eastern white pine, yellow poplar.
					Sugar maple---------	---	---	
					Chestnut oak--------	---	---	
Cr**:								
Craigsville----------	Slight	Slight	Moderate	Moderate	Northern red oak----	80	62	Eastern white pine, yellow poplar.
					Yellow poplar-------	95	98	
					Eastern white pine--	90	166	
					American sycamore---	---	---	

See footnotes at end of table.

TABLE 8.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Management concerns				Potential productivity			Trees to plant
	Erosion hazard	Equipment limitation	Seedling mortality	Plant competition	Common trees	Site index	Volume*	
Cr**:								
Philo	Slight	Slight	Slight	Severe	Northern red oak	86	68	Eastern white pine, yellow poplar, white ash, shortleaf pine, black walnut.
					Yellow poplar	102	110	
					Virginia pine	74	114	
					Black oak	85	67	
					White oak	74	56	
CsC	Slight	Slight	Slight	Moderate	Shortleaf pine	60	88	Shortleaf pine, loblolly pine, eastern white pine, northern red oak.
Crossville					Virginia pine	60	91	
					Northern red oak	60	43	
					Hickory	---	---	
					Chestnut oak	---	---	
CsD	Moderate	Moderate	Slight	Moderate	Shortleaf pine	60	88	Shortleaf pine, loblolly pine, eastern white pine, northern red oak.
Crossville					Virginia pine	60	91	
					Northern red oak	60	43	
					Hickory	---	---	
					Chestnut oak	---	---	
FbC**:								
Fairpoint	Slight	Slight	Moderate	Moderate	Loblolly pine	74	100	Eastern white pine, black locust, loblolly pine, shortleaf pine, white ash.
					Yellow poplar	85	81	
					Eastern white pine	85	155	
					Black locust	---	---	
					Sweetgum	88	101	
Bethesda	Slight	Slight	Moderate	Moderate	Loblolly pine	69	101	Eastern white pine, shortleaf pine, black locust, loblolly pine.
					Shortleaf pine	63	95	
					Chestnut oak	73	55	
					Black locust	---	---	
FbF**:								
Fairpoint (warm aspect)	Severe	Severe	Moderate	Moderate	Loblolly pine	74	100	Eastern white pine, black locust, loblolly pine, shortleaf pine, white oak.
					White pine	85	155	
					Yellow poplar	85	81	
					Scarlet oak	72	54	
					Black locust	---	---	
Bethesda (warm aspect)	Severe	Severe	Moderate	Moderate	Loblolly pine	69	91	Eastern white pine, black locust, loblolly pine, shortleaf pine, white oak.
					Shortleaf pine	63	95	
					Black oak	73	55	
					Black locust	---	---	
FbF**:								
Fairpoint (cool aspect)	Severe	Severe	Moderate	Moderate	Loblolly pine	82	114	Eastern white pine, loblolly pine, shortleaf pine, yellow poplar, black locust, white oak.
					White pine	95	176	
					Northern red oak	75	57	

e footnotes at end of table.

TABLE 8.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Management concerns				Potential productivity			Trees to plant
	Erosion hazard	Equipment limitation	Seedling mortality	Plant competition	Common trees	Site index	Volume*	
FbF**:								
Bethesda (cool aspect)	Severe	Severe	Moderate	Moderate	Loblolly pine	80	110	Eastern white pine, black locust, loblolly pine, shortleaf pine, yellow poplar, white oak.
					Yellow poplar	95	98	
					American sycamore	77	73	
					Red maple	---	---	
					Black locust	---	---	
					Chestnut oak	---	---	
GsC**:								
Gilpin	Slight	Slight	Slight	Moderate	White oak	75	57	Shortleaf pine, eastern white pine, northern red oak, yellow poplar, white oak.
					Yellow poplar	90	90	
					Chestnut oak	80	62	
					Virginia pine	71	110	
					Scarlet oak	76	58	
					Black oak	80	62	
Shelocta	Slight	Slight	Slight	Severe	White oak	79	61	Yellow poplar, black walnut, eastern white pine, shortleaf pine, white ash, white oak, northern red oak.
					Shortleaf pine	77	124	
					Yellow poplar	107	110	
					Cucumbertree	---	---	
					American beech	---	---	
					Black oak	79	61	
					Red maple	---	---	
GsD**:								
Gilpin (warm aspect)	Moderate	Moderate	Moderate	Moderate	White oak	61	44	Shortleaf pine, white oak, loblolly pine.
					Black oak	74	56	
					Scarlet oak	72	54	
					Chestnut oak	68	50	
					Shortleaf pine	60	88	
Shelocta (warm aspect)	Moderate	Moderate	Moderate	Moderate	Black oak	70	52	Shortleaf pine, white oak, eastern white pine.
					White oak	65	47	
					Scarlet oak	68	50	
					Yellow poplar	92	93	
					American beech	---	---	
					Red maple	---	---	
					Chestnut oak	68	50	
GsD**:								
Gilpin (cool aspect)	Moderate	Moderate	Slight	Moderate	White oak	75	57	Northern red oak, eastern white pine, yellow poplar, white oak.
					Yellow poplar	90	90	
					Chestnut oak	80	62	
					Scarlet oak	76	58	
					Black oak	80	62	
Shelocta (cool aspect)	Moderate	Moderate	Slight	Severe	White oak	79	61	Yellow poplar, black walnut, eastern white pine, white oak, northern red oak.
					Yellow poplar	102	110	
					Cucumbertree	---	---	
					American beech	---	---	
					Black oak	79	61	
					Red maple	---	---	
GtF**:								
Gilpin (warm aspect)	Severe	Severe	Moderate	Moderate	White oak	61	44	Shortleaf pine, white oak, loblolly pine.
					Black oak	74	56	
					Scarlet oak	72	54	
					Chestnut oak	68	50	
					Shortleaf pine	60	80	

See footnotes at end of table.

TABLE 8.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Management concerns				Potential productivity			Trees to plant
	Erosion hazard	Equipment limitation	Seedling mortality	Plant competition	Common trees	Site index	Volume*	
GtF**:								
Shelocta (warm aspect)-	Severe	Severe	Moderate	Moderate	Black oak	70	52	Shortleaf pine, white oak, eastern white pine.
					White oak	65	47	
					Scarlet oak	68	50	
					Yellow poplar	92	93	
					Blackgum	---	---	
					Red maple	---	---	
					Chestnut oak	68	50	
Sequoia (warm aspect)--	Severe	Severe	Severe	Moderate	Northern red oak	70	52	Loblolly pine, shortleaf pine, eastern white pine, white oak.
					Shortleaf pine	68	95	
					Virginia pine	71	110	
GtF**:								
Gilpin (cool aspect)---	Severe	Severe	Slight	Moderate	White oak	75	57	Shortleaf pine, eastern white pine, northern red oak, yellow poplar, white oak.
					Yellow poplar	90	90	
					Chestnut oak	80	62	
					Scarlet oak	76	58	
					Black oak	80	62	
[illegible]cta (cool aspect)-	Severe	Severe	Slight	Severe	White oak	79	61	Yellow poplar, black walnut, eastern white pine, shortleaf pine, white ash, white oak, northern red oak.
					Yellow poplar	102	110	
					American beech	---	---	
					Northern red oak	79	61	
					Sugar maple	---	---	
Sequoia (cool aspect)--	Severe	Severe	Slight	Moderate	Northern red oak	70	52	Loblolly pine, white oak, shortleaf pine, eastern white pine.
					White oak	63	45	
					Chestnut oak	---	---	
					Sugar maple	---	---	
HeF**:								
Helechawa (warm aspect)	Moderate	Severe	Moderate	Moderate	Scarlet oak	70	52	White oak, shortleaf pine.
					Chestnut oak	65	47	
					White oak	65	47	
					Virginia pine	65	100	
Varilla (warm aspect)--	Moderate	Severe	Severe	Moderate	White oak	65	47	White oak, shortleaf pine.
					Scarlet oak	70	52	
					Virginia pine	---	---	
					Red maple	---	---	
Jefferson (warm aspect)	Severe	Severe	Moderate	Moderate	White oak	70	52	Shortleaf pine, white oak.
					Shortleaf pine	65	99	
					Virginia pine	70	100	
					Chestnut oak	63	46	
					Black oak	---	---	
					Pitch pine	---	---	

[illegible]e footnotes at end of table.

TABLE 8.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Management concerns				Potential productivity			Trees to plant
	Erosion hazard	Equipment limitation	Seedling mortality	Plant competition	Common trees	Site index	Volume*	
HeF**:								
Helechawa (cool aspect)	Moderate	Severe	Moderate	Moderate	White oak	75	57	Yellow poplar, white oak, eastern white pine, shortleaf pine.
					Chestnut oak	---	---	
					Yellow poplar	85	81	
					Virginia pine	75	115	
					Cucumbertree	---	---	
Varilla (cool aspect)--	Moderate	Severe	Moderate	Moderate	White oak	75	57	Yellow poplar, white oak, shortleaf pine, eastern white pine.
					Yellow poplar	95	98	
					Eastern hemlock	---	---	
					American beech	---	---	
Jefferson (cool aspect)	Severe	Severe	Slight	Moderate	White oak	84	66	Yellow poplar, eastern white pine, shortleaf pine, eastern white pine.
					Yellow poplar	102	110	
					Chestnut oak	82	64	
					Red maple	---	---	
HgD----------Highsplint	Slight	Moderate	Moderate	Moderate	Yellow poplar	95	98	Yellow poplar, eastern white pine, shortleaf pine, yellow poplar.
					White oak	---	---	
					Sugar maple	---	---	
					Scarlet oak	---	---	
HsF**:								
Highsplint----------	Moderate	Severe	Moderate	Moderate	Yellow poplar	100	107	Northern red oak, eastern white pine, yellow poplar.
					Northern red oak	---	---	
					Sugar maple	---	---	
					Chestnut oak	---	---	
Cloverlick----------	Moderate	Severe	Moderate	Severe	Northern red oak	85	67	Yellow poplar, white ash, northern red oak, shortleaf pine, eastern white pine.
					Sugar maple	---	---	
					Chestnut oak	---	---	
					Red maple	---	---	
Guyandotte----------	Severe	Severe	Moderate	Severe	Northern red oak	85	67	Black walnut, white ash, eastern white pine, northern red oak.
					American basswood	---	---	
					Yellow poplar	104	114	
					Black cherry	---	---	
					Black locust	---	---	
					Sugar maple	---	---	
JfD----------Jefferson	Moderate	Moderate	Slight	Severe	White oak	84	66	Yellow poplar, eastern white pine, shortleaf pine.
					Yellow poplar	102	110	
					Shortleaf pine	80	130	
					Chestnut oak	82	64	
					Red maple	---	---	
KmD----------Kimper	Slight	Slight	Slight	Severe	Sugar maple	---	---	Yellow poplar, white ash, northern red oak, white oak, eastern black walnut.
					Sweet birch	---	---	
					Chestnut oak	70	57	
					Black cherry	---	---	
					Red maple	---	---	

See footnotes at end of table.

TABLE 8.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Management concerns				Potential productivity			Trees to plant
	Erosion hazard	Equipment limitation	Seedling mortality	Plant competition	Common trees	Site index	Volume*	
KrF**:								
Kimper	Severe	Severe	Slight	Severe	Yellow poplar	107	119	Yellow poplar, white ash, northern red oak, white oak, eastern white pine, black walnut.
					Sugar maple	---	---	
					American basswood	---	---	
					American beech	---	---	
					Sweet birch	---	---	
					Northern red oak	75	57	
Renox	Severe	Severe	Slight	Severe	Yellow poplar	94	97	White oak, white ash, northern red oak, eastern white pine, yellow poplar, black walnut.
					Black walnut	---	---	
					American beech	---	---	
					Sweet birch	---	---	
					Sugar maple	---	---	
					Hickory	---	---	
					Red maple	---	---	
Sharondale	Severe	Severe	Slight	Severe	Yellow poplar	107	119	Yellow poplar, black walnut, northern red oak, white oak, eastern white pine.
					Black locust	---	---	
					American basswood	---	---	
					Northern red oak	---	---	
					Cucumbertree	---	---	
					Black watnut	---	---	
					Sugar maple	---	---	
Ph	Slight	Slight	Slight	Severe	Northern red oak	86	68	Eastern white pine, yellow poplar, white ash, shortleaf pine, black walnut.
Philo					Yellow poplar	102	110	
					Virginia pine	74	114	
					Black oak	85	67	
					White oak	74	56	
Po	Slight	Slight	Slight	Severe	Yellow poplar	96	100	Eastern white pine, yellow poplar, black walnut, white oak, northern red oak, white ash, shortleaf pine.
Pope					American beech	---	---	
					White oak	80	62	
					Blackgum	---	---	
					American sycamore	---	---	
					Northern red oak	---	---	
					Eastern hemlock	---	---	
Sb	Slight	Slight	Slight	Severe	Yellow poplar	110	124	Yellow poplar, black walnut, eastern white pine, northern red oak, white oak, sweetgum, white ash.
Shelbiana					Sweetgum	---	---	
					Black walnut	---	---	
					Green ash	---	---	
					American sycamore	---	---	
					Black cherry	---	---	
					Boxelder	---	---	
SeB, SeC	Slight	Slight	Slight	Severe	White oak	78	61	Yellow poplar, black walnut, eastern white pine, shortleaf pine, white ash, oak, northern red oak.
Shelocta					Yellow poplar	102	110	
					American beech	---	---	
					Red maple	---	---	
					Black oak	79	61	
					Shortleaf pine	77	124	
					Sugar maple	---	---	

See footnotes at end of table.

TABLE 8.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Management concerns				Potential productivity			Trees to plant
	Erosion hazard	Equipment limitation	Seedling mortality	Plant competition	Common trees	Site index	Volume*	
SgE**:								
Shelocta (warm aspect)	Moderate	Moderate	Moderate	Severe	Black oak	70	52	Shortleaf pine, white oak, eastern white pine.
					White oak	65	47	
					Scarlet oak	68	50	
					Yellow poplar	92	93	
					American beech	---	---	
					Red maple	---	---	
					Chestnut oak	---	---	
Gilpin (warm aspect)	Moderate	Moderate	Moderate	Moderate	Black oak	74	56	Shortleaf pine, white oak.
					White oak	61	44	
					Scarlet oak	72	54	
					Chestnut oak	68	50	
					Shortleaf pine	60	88	
SgE**:								
Shelocta (cool aspect)	Moderate	Moderate	Slight	Severe	White oak	79	61	Yellow poplar, black walnut, eastern white pine, shortleaf pine, white ash, white oak, northern red oak.
					Yellow poplar	102	110	
					American beech	---	---	
					Northern red oak	---	---	
					Red maple	---	---	
					Black oak	79	61	
					Sugar maple	---	---	
Gilpin (cool aspect)	Moderate	Moderate	Slight	Moderate	Black oak	80	62	Shortleaf pine, eastern white pine, yellow poplar, white oak.
					Yellow poplar	90	90	
					White oak	75	57	
					Scarlet oak	76	58	
					Chestnut oak	80	62	
					Sugar maple	---	---	
ShF**:								
Shelocta	Severe	Severe	Moderate	Severe	Black oak	70	52	Shortleaf pine, white oak, eastern white pine.
					White oak	65	47	
					Scarlet oak	68	50	
					Yellow poplar	92	93	
					American beech	---	---	
					Red maple	---	---	
					Chestnut oak	---	---	
Highsplint	Moderate	Severe	Severe	Moderate	Yellow poplar	90	90	White oak, shortleaf pine, eastern white pine.
					White oak	---	---	
					American beech	---	---	
					Chestnut oak	---	---	
					Red maple	---	---	
SkF**:								
Shelocta	Severe	Severe	Slight	Severe	White oak	79	61	Yellow poplar, black walnut, eastern white pine, shortleaf pine, white ash, oak, northern red oak.
					Yellow poplar	102	110	
					Cucumbertree	---	---	
					American beech	---	---	
					Northern red oak	---	---	
					Red maple	---	---	
					Chestnut oak	79	61	
					Eastern hemlock	---	---	
					Sugar maple	---	---	

See footnotes at end of table.

TABLE 8.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Management concerns				Potential productivity			Trees to plant
	Erosion hazard	Equipment limitation	Seedling mortality	Plant competition	Common trees	Site index	Volume*	
SkF**:								
Kimper	Severe	Severe	Slight	Severe	Yellow poplar	107	119	Yellow poplar, white ash, northern red oak, white oak, eastern white pine, black walnut.
					Sugar maple	---	---	
					American basswood	---	---	
					American beech	---	---	
					Sweet birch	---	---	
					Northern red oak	75	57	
					White oak	72	54	
Cloverlick	Severe	Severe	Slight	Severe	Northern red oak	85	67	Yellow poplar, white ash, northern red oak, shortleaf pine, eastern white pine.
					Sugar maple	---	---	
					Yellow poplar	---	---	
					American beech	---	---	
SmF**:								
Shelocta	Severe	Severe	Slight	Severe	Northern red oak	65	50	Northern red oak, black cherry.
					Yellow poplar	99	105	
					Cucumbertree	---	---	
					Red maple	---	---	
					Chestnut oak	---	---	
					Sugar maple	---	---	
Kimper	Severe	Severe	Slight	Severe	Yellow poplar	107	119	Northern red oak, black cherry.
					Sugar maple	---	---	
					Sweet birch	---	---	
					Northern red oak	70	52	
Cutshin	Severe	Severe	Slight	Severe	Yellow poplar	106	114	Eastern white pine, northern red oak, black cherry.
					Northern red oak	75	57	
					Cucumbertree	---	---	
					Sweet birch	---	---	
					Sugar maple	---	---	
					Red maple	---	---	
					Black cherry	---	---	
VrD Varilla	Slight	Severe	Moderate	Moderate	White oak	65	47	White oak, yellow poplar, eastern white pine, shortleaf pine.
					Scarlet oak	70	52	
					Yellow poplar	85	81	
					Red maple	---	---	

* Volume is the yield in cubic feet per acre per year calculated at the age of culmination of mean annual increment for fully stocked natural stands.

** See description of the map unit for composition and behavior characteristics of the map unit.

ATTACHMENT 21.3.A

EXISTING ADJACENT LAND USES

The existing uses of the land adjacent to this mining area consist of second growth forestland and mined lands. The mined lands are in a reclamation stage and the second growth forestland is areas that were once cut for timber but have since reforested.

There are no local land use classifications of the proposed permit area. The area to be disturbed is a second growth forestland.

ATTACHMENT 21.4.A

The plans for establishing the post-mining land use of Unmanaged Forestland are consistent with the wishes of the landowners and are compatible with adjacent land uses. Surrounding lands are a combination of forestland and other Wildlife Habitats. The proposed uses do not conflict with any local, state or federal land use policy or plan and do not require approval by any local, federal or land management agency.

ATTACHMENT 21.5.A

We have provided in this attachment comment from the agent of the legal owner of the land on which the mining operation proposed in this application is located. These comments express the land owner's wishes on what methods of reclamation and revegetation efforts should be administered by the permittee on they're land. The agent of the owner has expressed his desire that the post-mining land use be Forestland with permanent roads after all mining and reclamation activities have been completed.

MOLPUS

TIMBERLANDS®

MANAGEMENT, LLC

April 28, 2009

Kentucky Department for Natural Resources
Division of Mine Permits
#2 Hudson Hollow
Frankfort, Kentucky 40601

RE: Appolo Fuels, Inc.
Application Number 807-0368

TO WHOM IT MAY CONCERN:

Corrigan TLP, LLC ("Corrigan") owns the real property ("Property") to be affected by that certain permit referenced above ("Permit"), applied for by Appolo Fuels, Inc. ("Permittee"). Pursuant to the requirement for a letter stating our comments on the post mining land use proposed for the Property, please be advised that Corrigan requests that Permittee return the Property to a forestland post mining land use. We understand that all access roads will remain as permanent roadways to allow us future access to the Property as well as other lands owned by Corrigan. Corrigan will utilize any permanent roads for access and possible future development and will maintain any such roads after final bond release to the extent consistent with our land management plans.

It is our understanding that Permittee will comply with all state and federal laws, rules and regulations associated with this mining operation, including without limitation, those related to safety, reclamation and environmental.

This letter shall be valid for any renewals, amendments, revisions or supplements to the lease affected by the Permit and for any area encompassed thereby.

This letter shall be valid for Permittee, its associated companies, successors or assigns.

Sincerely,

Ken Sewell
Chief Operating Officer
Molpus Timberlands Management, LLC,
Property Manager for Corrigan TLP LLC

178 Bonhomie Road • Hattiesburg, Mississippi 39401 • Phone: 601 545-3063 • Facsimile: 601 545-2902
Located in Hattiesburg and Waynesboro, Mississippi; Birmingham, Alabama; Lake Charles and Monroe, Louisiana; Antlers, Oklahoma; Richmond, Kentucky; Saranac Lake, New York; Atlantic Mine, Michigan

ATTACHMENT 21.9.A

Previous pre-law and post-law mining Jellico, Stray, Poplar Lick, Sterling, Buckeye Springs, Hignite and Red Springs coal beds has occurred sporadically within the area of proposed permit boundary. The mining has included both auger and surface extraction methods.

21.10 Indicate the proposed postmining land use(s) of the permit area:

[**XX**] Forestland (40)	409.39 ac.	[ ] Developed Water Resources (53)	ac.
[ ] Pastureland (20)	ac.		
[ ] Cropland (21)	ac.	[ ] Residential (11)	ac.
[ ] Fish and Wildlife (01)	ac.	[ ] Industrial/ Commercial (13)	ac.
[ ] Recreation (02)	ac.		
[ ] Mined Lands (30)	ac.	[ ] Undeveloped (60)	ac.

**** - Includes 26.73 acres of permanent roads***

21.11 Describe how the proposed postmining land use(s) will be achieved and identify any necessary support or management activities which will be used. Submit as "Attachment 21.11.A".

See Attachment 21.11.A.

21.12 If the proposed postmining land use(s) represent a change from the existing or premining land use(s), provide the following information:

(a) A discussion of the feasibility, i.e. Suitability, capability, cost effectiveness of the proposed postmining land use(s). Submit as "Attachment 21.12.A".

(b) A schedule for achieving the proposed postmining land use(s). Submit as "Attachment 21.12.B".

(c) A discussion of how the proposed postmining land use(s) will be achieved within a reasonable time frame. Submit as "Attachment 21.12.C".

(d) A separate map showing the proposed postmining land use(s). Submit as "Attachment 21.12.D".

If section 21.12 is not applicable, check here [**XX**].

22. Vegetation Information

22.1 Provide as "Attachment 22.1.A", a map and narrative description of the existing vegetative types and plant communities within the proposed permit and any proposed reference area. This description shall include adequate information to predict the potential success for re-establishing vegetation on the proposed permit area.

See Attachment 22.1.A

ATTACHMENT 21.11.A

Achieving the Post Mining Land Use

Upon completion of all coal-mining activities, the support activities, all non-permanent facilities will be removed. Any and all disturbed areas will be graded to drain and vegetate with a variety of grasses, legumes and trees identified in the chart in item 22.2. Final grade will be established by minimizing tractor traffic, which minimizes compaction that will maximize the site's quality as forest area. Grading will be conducted to minimize compaction but to insure stability, as much organic debris will remain, an occasional small depression, hill, gully, mound, rock or rock pile or woody debris will remain in order to establish a more diverse native forest area.

The proposed post-mining land use of Unmanaged Forestland will be achieved by planting the variety of vegetation listed in item 22.2 of this application. Additional plantings will be made as necessary to insure that the site has an adequate stand of forage material. Much natural reforestation will occur on the permit area because of its close proximity to other heavily forested areas. All areas adjacent to the permit area currently support many vegetative species.

The revegetation plans proposed for this area is highly suitable for populations of white-tailed deer, and may also attract other species including ruffed grouse and some small furbearers and non-game birds. Although it is anticipated that the ponds located within the permit boundary will be removed in the future, the adjacent areas contain perennial streams with significant flow that will provide a water source for wildlife. Most of the animal species mentioned above do not require a daily source of open water; dew and succulent plants can easily provide their water requirements.

ATTACHMENT 21.11.A

In order to attract and maintain deer populations, an area must provide adequate food sources. Deer feed on a variety of fruits, mast and fungi, browse on woody material, and graze grasses and forbs. The area described in this application and the heavily-forested adjacent areas will provide sources of all these vegetative species. Adequate mast is provided by various types of oak, beech and hickory trees, all of which will be found within or adjacent to the permit area.

Fruit sources are provided by other various tree and shrub species, including dogwood and autumn olives. Browse material is provided by various species of pine, maple, poplar and locust trees. As with the mast sources, these species will be found within or adjacent to the permit area.

There will be grassy areas within the permit boundary that contain grasses and forbs that can provide grazing material for the deer. These species include ladino clover and orchard grass. These same species provide forage and cover material for other wildlife species.

Appolo Fuels, Inc.
Application No. 807-0368 NW
October 20, 2008

Application Item 21.11: Fish and Wildlife Enhancement Plan

Based on the Division's environmental review, it has been determined that the application **will** require a fish and wildlife enhancement plan, as specified in 405 KAR 8:030/040, Section 36(1). This plan must be submitted as an attachment to application item 21.11.

Note: The Indiana bat Protection and Enhancment Plan (PEP) referenced in application item 14.4 is considered a species-specific Fish & Wildlife Enhancement Plan and satisfies this requirement.

ATTACHMENT 22.1.A

As the pre-mining land use of the site was forestland, the areas immediately adjacent to the site are still forestland except for areas of active mining and areas that have been mined and are abandoned.

A "Vegetation Analysis Survey" using procedures and techniques described in "Vegetation Analysis Survey" by Dr. Pierre A. Allaire, December 1982, has been performed to provide the information required for this section. A walk-thru of the area adjacent to the proposed permit area has determined that the following habitat types exist within the proposed permit area : Upland Forest and Abandoned Mine Land.

UPLAND FOREST - For the purpose of definition, a forest is a block of wooded vegetation, with dominant species present being greater than 4 inches in diameter at chest height (dbh) (4.5ft above ground level) and comprised of an area less than 17 acres, it is considered to be a woodlot.

Upland forest is designated primarily by relative elevation - not specific elevations, and generally lies above the flood plain or river bottomland. This designation is unique to a particular drainage and is not a specific figure.

ABANDONED MINE LAND - To be designated on maps as AML.

A description of the plant types found within each habitat type follows:

HABITAT TYPE - UF

Species	Stratum Rank
Southern Red Oak (Quercus Falcata)	SR-6
Shagbark Hickory (Carya Ovata)	SR-3
Eastern White Pine (Pinus Strobus)	SR-4
Beech (Fagus Grandifolia)	SR-1
Yellow Poplar (Liriodendron Tulipifera)	SR-7
Dogwood (Cornus Florida)	SR-2
Holly (Ilex Opaca)	SR-1
Greenbriar (Smilax App.)	SR-3
Laurel (Kalmia Latifolia)	SR-4

ATTACHMENT 22.1.A

HABITAT TYPE - AML

Species	Stratum Rank
Fescue (Festuca)	SR-9
Lespedeza (Lespedeza)	SR-2

22.2 Complete the following table to describe the plan for revegetating the proposed permit area. If additional pages are necessary, identify as "Item 22.2 continued".

Proposed Postmining Land Use Unmanaged Forestland	Rate per Acre	Acreage	Planting Dates
Permanent Grass:(choose at least 2) Timothy Orchard grass Red-top Perennial rye	 5 lb 5 lb 3 lb 5 lb	382.66*	02/15-05/15 and 08/15-10/15
Legumes:(choose at least 2) Birdsfoot trefoil Ladino clover Kobe/Korean Lespedeza	3-5 lb	382.66*	02/15-05/15 and 08/15-10/15
Trees: Black Locust/White Pine White Ash Silver Maple White Oak	 50 100 100 100	382.66*	November Thru April
Temporary Plants: Annual rye	4 lb	382.66*	Anytime
Mulch: Straw or Hay	1.5 Tons	382.66*	As Needed
Small Grains:			

*** 409.39 - 26.73 (permanent road acreage) = 382.66 acres.**

22.3 Are alternate soil stabilizers in lieu of mulch being requested?
[ ] YES [***XX***] NO. If "YES", justify this proposal, identify acreage for which this variance is requested and describe the nature of the soil stabilizer. Provide as "Attachment 23.3.A".

22.4 Provide as "Attachment 22.4.A", detailed description of:
(a) The methods to be used in planting, seeding and mulching, including irrigation, pest and disease control measures.
(b) The measures to be used to determine the success of revegetation as required by 405 KAR 16:200 and 405 KAR 18:200.
(c) The soil testing plan for evaluating the results of topsoil handling and reclamation procedures related to revegetation.
See Attachment 22.4.A.

ATTACHMENT 22.4.A-C

Revegetation Information

A

As the surface mining activity proposed in this application is completed, final grade will be established on the backfilled areas of the mine bench. The site will be backfilled with spoil from the mine bench to complete reclamation of the mine site. The areas mined as a part of this application will be backfilled with all reasonably available spoil material eliminating as much of the highwall as technically possible. Alternate topsoil material will be the final layer of spoil material. The alternate topsoil will be spread over the site in uniform thickness and care will be taken to prevent unnecessary compaction of the alternate topsoil. The alternate topsoil will be scarified prior to the area being revegetated with a variety of species.

The best available growth medium on the permit area should be placed on the surface to depth of at least four feet, thus accommodation the needs of deeply rooted trees. Growth media with low to moderate levels of soluble salts, an Equilibrium pH of 5.0 to 7.0, low pyritic sulfur content, and texture conducive to proper drainage are preferred. However, for those sites where the best available material varies from the above recommendation, an equilibrium pH as low as 4.5 or as high as 8.0 is acceptable, so long as species tolerant of those conditions are selected and utilized. Seed mixtures to be used for revegetation are described in Item 22.2. These seed mixtures will contain one annual or short-lived perennial species for quick cover and erosion control and black locust seeds. The mixture will also contain long-lived perennial legumes and grasses for permanent cover. These perennial species will replace the annual plants as they die out. The perennial legumes are nitrogen fixers and help to eliminate the need to refertilize the area with additional nitrogen. All seed to be used during reclamation will

be pre-inoculated prior to purchase. The preferable time of year for this phase of revegetation would be early spring or early fall.

Seed mixtures will be applied using the direct seeding method. A hydroseeder may be utilized in the seeding process. The hydroseeder will be loaded with enough seed and water to cover one acre at a time to ensure proper coverage of the area to be reclaimed. In addition to the fertilizer to be mixed with the seed/water mixture, hydrated or agricultural lime will be added to prevent killing the inoculating bacterium in the seed. After the area has been seeded, the area will be mulched. The mulch material on the areas of 10% or greater will consist of straw or hay which will be applied at a rate of 1.5 tons per acre. This mulch material will be applied by hand or by a device that chops and blows the material into place. Alternate mulch that may be used is wood fiber that would be applied at a rate of 1,000 lbs. per acre and may be applied by using a hydroseeder.

No irrigation is anticipated as rain fall is adequate for irrigation effect.

No pest and/or disease control measures are anticipated. However, if the need should arise, the local County Soil Conservation agent will be contacted in order to achieve corrective measures.

B

The referenced methods as outlined in TRM#21 which references the administrative regulations 405 KAR 16:200 and 18:200 relating to revegetation of mine sites. This information shall be utilized to determine the success of revegetation as compared to the following standards. Areas planted only in herbaceous species shall sustain a vegetative ground cover of 80% (with 90% statistical confidence) for the last 3 years of the 5-year liability period. Also, areas planted with a mixture of herbaceous and woody species shall sustain an herbaceous ground cover of at least eighty (80) percent

with a statistical confidence of ninety (90) percent, with no sign of significant erosion as set forth in 405 KAR 16:190, Sect. 6. Each species of woody plant shall be at least 300 plants per acre, four (4) species of trees including one (1) hard mast, three (3) exfoliating bark species, 100 stems from pep list soft mast or shrub specie shall be present. Stocking densities of these species shall be at 450 spa of exfoliating bark species, with one being hard mast plus an additional 100 stems from the list or volunteers. Stocking density shall be determined with a statistical confidence of ninety percent (90%) and shall achieve 250spa @ bond release. Tree seedling survival shall be enhanced by planting seedlings during the first possible planting season following seeding of the grass species listed in Item 22.2. Stocking density of woody plants shall be at least 300 plants per acre. tree seedling survival shall be enhanced by planting seedlings during the first possible planting season following seeding of the grass species listed in Item 22.2. Tree seedlings will be planted using a dibble bar or mattock. Woody species shall be planted in a random pattern as shown on the attached planting pattern drawing. No more than 50 stems/acre will be black locust and no species will comprise less than twenty (20) percent of the total.

C

As detailed in Attachment 23.1.A of this application, alternate topsoil material would be placed at the sites indicated on the Mining and Reclamation Plan Map. This alternate topsoil material would be a blending of all salvaged topsoil and other suitable materials generated during the mining operation. After mining activity has been completed, alternate topsoil will be recovered from the storage area and will be redistributed over the mine site prior to revegetation of the site. Sixty (60) days prior to

the completion of mining, the alternate topsoil will be tested again to determine what nutrients should be applied to the redistributed topsoil.

Soil sampling would be conducted in general accordance with the procedures outlined in U.S. AGR-41 "Sampling Surface Mine Lands Before and After Mining" by Evangelou and Barnhisel. Soil testing would be conducted by an independent laboratory using the methods outlined in "Field and Laboratory Methods Applicable to Overburdens and Minesoils", by A.A. Sobek et al March 1978. (EPA report 600/2-78-054.)

23. Soil Resources Information

23.1 Is soil survey information for the proposed permit area available from the U.S. Soil Conservation Service? [***XX***] YES [ ] NO. If "YES", use the appropriate information to provide a description of existing soils that will be disturbed within the proposed permit area.
See Attachment 23.1.A.

23.2 Does the applicant propose to use selected overburden materials as a supplement or substitute for topsoil? [***XX***] YES [ ] NO. IF "YES", provide the following information:

(a) A geologic cross section of the proposed permit area identifying the proposed alternate material(s) to be used. Submit as "Attachment 23.2.A".
See Attachment 23.2.A.

(b) The results of chemical and physical analyses of the existing soils and the proposed alternate materials conducted in accordance with 405 KAR 16:050. Submit as "Attachment 23.2.B".
See Attachment 23.2.B

(c) Certification by a qualified soil scientist or agronomist that the alternate material is equal to, or more suitable than, the existing topsoil. Submit as "Attachment 23.2.C".
See Attachment 23.2.C.

23.3 Describe, as "Attachment 23.3.A", how topsoil or alternate topsoil materials will be removed, stored, stabilized, protected, and redistributed in the proposed permit area. Indicate on the MRP Map where topsoil and/or alternate topsoil stockpiles will be located.
See Attachment 23.3.A.

24. Surface Blasting Plan

24.1 Is surface blasting proposed for the permit area? [***XX***] YES [ ] NO.

24.2 Will blasting be conducted within 1000' of any building used as a dwelling, public building, school, church, commercial, community, or institutional building? [ ] YES [***XX***] NO. If "YES", submit as "Attachment 24.2.A", an anticipated blast design prepared and signed by a certified blaster with this application, or at a time prior to the blasting operation. If the design will be submitted after permit issuance, the design shall be provided thirty days prior to the anticipated blasting and such blasting may not be initiated until DSMRE approval is obtained.
See Attachment 24.2.A

24.3 Will blasting be conducted within 500' of an active or abandoned underground mine? [***XX***] YES [ ] NO. If "YES", attach the appropriate MSHA Blasting Approval Form as "Attachment 24.3.A".
See Attachment 24.3.A.

24.4 Describe in "Attachment 24.4.A", the blast warning, all-clear signals and site access control procedures to be used. Also, describe how all persons within one-half mile of the areas affected by surface operations or facilities will be notified of the meaning of the blast signals.
See Attachment 24.4.A.

ATTACHMENT 23.1.A

As part of this attachment we will identify and describe the general soil map units which are located within the permit area described in this application. Information provided in this attachment was obtained from the Soil Conservation Service in the "Soil Survey of Bell and Harlan Counties, Kentucky", issued December, 1992.

The soil types located in the proposed permit area are the Shelocta-Kimper-Cutshin complex, the Highsplint-Cloverlick-Guyandotte complex, the Cloverlick-Guyandotte-Highsplint complex, and the Fairpoint and Bethesda soils. A description of these soils is as follows:

SmF-Shelocta-Kimper-Cutshin complex, 20 to 55 percent slopes, very stony. These deep and very deep, well drained, steep and very steep slopes are on ridgetops, mountain crests, and the upper side slopes in the mountains. In most areas the elevations range from about 2,500 to 3,500 feet and are about 1,000 to 2,000 feet above the valley floor. The higher elevations have more snow and ice during the winter than the lower elevations and may receive more rainfall during the summer. Knolls and gaps are along the crest of the ridges. Steep-sided ravines near the head of drainageways incise the ridges. In places all that remains of the ridge is a sharp-crested ridgeline. Stones and boulders cover about 0.1 to 15.0 percent of the surface. Most areas are long and narrow and range from 40 to 1,600 acres in size.

In a typical area the composition is as follows: Shelocta and similar soils-35 percent; Kimper and similar soils-25 percent; Cutshin and similar soils-15 percent; and contrasting inclusions-25 percent. The Shelocta soil is throughout this map unit. Most areas of the Cutshin and Kimper soils are on North- and eastfacing slopes and at the head of drainageways. In places, they are on the summits. The soils in this unit occur as areas so closely intermingled that they could not be separated at the scale selected for mapping.

Typically, the Shelocta soil has a surface layer of silt loam about 8 inches thick. The upper part of this layer is dark grayish brown, and the lower part is yellowish brown. The subsoil is yellowish brown channery silt loam about 47 inches thick. Siltstone bedrock is at a depth of about 55 inches. In some areas the subsoil contains 35 to 50 percent rock

fragments. In a few areas the surface layer has a higher content of clay.

Typically, the Kimper soil has a surface layer of gravelly silt loam about 7 inches thick. The upper part of this layer is very dark grayish brown, and the lower part is dark yellowish brown. The subsoil is about 41 inches thick. It is yellowish brown. It is gravelly silty loam in the lower part. The substratum is yellowish brown and strong brown channery silt loam about 14 inches thick. Shale bedrock is at a depth of about 62 inches. In some areas the subsoil contains 35 to 50 percent rock fragments. In a few areas the surface layer has a higher content of clay.

Typically, the Cutshin soil has a surface layer of very dark gray silt loam about 9 inches thick. The subsurface layer is dark brown silt loam about 8 inches thick. The upper part of the subsoil is yellowish brown silt loam. The next part is yellowish brown gravelly loam. The lower part to a depth of about 60 inches is yellowish brown very gravelly loam. In some areas the subsoil contains 35 to 50 percent rock fragments. In a few areas the surface layer has a higher content of clay.

These soils are low in natural fertility. The organic matter content is moderate in the Shelocta soil and high in the Kimper and Cutshin soils. The available water capacity is high. Permeability is moderate in all three soils. The number of roots decreases gradually with increasing depth, and there are few roots below a depth of about 18 inches. The depth to bedrock is 40 inches or more in the Cutshin soil and 48 inches or more in the Kimper and Shelocta soils.

Included in this map unit are small areas of shallow or moderately deep, loamy soils. These soils are dominantly on convex spurs but occur throughout the unit. They make up about 18 percent of the unit. Also included, on ledges or cliffs, are areas of rock outcrop, which make up about 2 percent of the unit.

Most areas are used as woodland. These soils are suited to trees. Productivity is moderate. In an average stand that is fully stocked, northern red oak on the Shelocta soil can reach a height of 65 feet in 50 years. A similar stand on the Kimper and Cutshin soils can reach a height of 70 to 75 feet. Some of the more common tree species are northern red oak, chestnut oak, sugar maple, red maple, and black cherry. In some areas these species are mixed with birches, black locust, cucumber tree,

ATTACHMENT 23.1.A

American basswood, yellow buckeye, various hickories, and numerous species of minor extent. The most common understory plants are mountain laurel, sassafras, azalea, buffalo nut, American hornbeam, striped maple, vaccinium, hydrangea, and greenbrier and, in places, American chestnut. The herbaceous flora is luxuriant to sparse and includes numerous species.

The hazard of erosion, the equipment limitation, and plant competition are the major concerns in managing woodland. Erosion is a hazard along haul roads and skid trails. This hazard can be reduced by establishing a grade of less than 10 percent along the roads and trails and by limiting the area of surface disturbance to 10 percent or less. Permanent access roads can be protected by water breaks, culverts, and gravel. Because of the slope, crawler tractors or other specialized equipment generally is needed. Logs can be yarded to roads and trails built on the contour. Trees can be planted by hand or by direct seeding methods. Plant competition can be a problem because site conditions favor the growth of competing plants. A new forest crop can be established by managing the existing stand and by applying herbicides or cutting. Table 8 gives additional information about woodland management and productivity.

The potential for woodland wildlife habitat is good. The habitat can be maintained or improved by providing food, cover, nesting areas, and den sites. Brushy thickets can be established along logging roads and trails. The habitat in areas of native plants can be improved by disking and applying fertilizer. Den trees should not be harvested. Brush piles or other nesting sites are needed.

These soils generally are unsuitable for cultivated crops, pasture, and building site development because of the slope.

HsF-Highsplint-Cloverlick-Guyandotte complex, 35 to 75 percent slopes, very stoney. These deep and very deep, well drained very steep soils are on the south-and west-facing sides of mountains. The elevations range from about 3,000 feet near the mountain crest to 1,400 feet along the base of the mountain. The higher elevations have more snow and ice during the winter than the lower elevations and may receive more rainfall during the summer. The downward slope of the mountain is nearly linear, except where broken by small cliffs or benches. Only a slight flattening of the

slopes occurs near the top and bottom of the mountain. Across the mountain the slope is distinctly corrugated. Small streams in the grooves commonly begin near the mountain crest run almost to the base of the mountain before joining other streams. In most places the streams are 300 to 600 feet apart. Areas between the streams are characterized by sharp-crested ribs that have fairly smooth slopes. Stones and boulders generally cover 0.1 to 15.0 percent of the surface, but they cover as much as 70 percent of the surface in some ravines and in areas below cliffs. Most areas are nearly rectangular and range from about 60 to 2,500 acres in size.

In a typical area the composition is as follows: Highsplint and similar soils-53 percent; Cloverlick and similar soils-17 percent; Guyandotte and similar soils-10 percent; and contrasting inclusions-20 percent. The soils in this unit occur as areas so closely intermingled that they could not be separated at the scale selected for mapping.

Typically, the Highsplint soil has a surface layer of dark brown very channery silt loam about 4 inches thick. The upper part of the subsoil is yellowish brown very channery silt loam. The next part is yellowish brown very channery silty clay loam. The lower part to a depth of about 60 inches is yellowish brown very channery loam. In some areas the subsoil contains 20 to 35 percent rock fragments.

Typically, the Cloverlick soil has a surface layer of very dark grayish brown very flaggy loam about 5 inches thick. The subsurface layer is brown very flaggy loam about 6 inches thick. The subsoil to a depth of about 60 inches is dark yellowish brown and yellowish brown very flaggy loam. In some areas the subsoil contains 20 to 35 percent rock fragments. In a few areas the surface layer has a higher content of clay.

Typically, the Guyandotte soil has a surface layer of very dark grayish brown extremely flaggy silt loam about 6 inches thick. The subsurface layer is dark brown extremely flaggy silt loam about7 inches thick. The subsoil to a depth of about 60 inches is dark yellowish brown and yellowish brown extremely flaggy loam. In some areas the subsoil contains 20 to 35 percent rock fragments. In a few areas the surface layer has a higher content of clay.

These soils are low in natural fertility. The organic matter content is moderate in the Highsplint soil and high in the Cloverlick and Guyandotte soils. The available water

capacity is moderate in all three soils. Permeability is moderate or moderately rapid. The number of roots decreases gradually with increasing depth, and there are few roots below a depth of about 18 inches. The depth to bedrock is 48 inches or more in the Highsplint and Cloverlick soils and 60 inches or more in the Guyandotte soil.

Included in this map unit are small areas of loamy soils that are less than 30 inches deep over bedrock. These soils make up about 10 percent of the unit. Also included, on ledges or cliffs, are areas of rock outcrop, which make up less than 1 percent of the unit.

Most areas are used as woodland. A few areas adjacent to the stream valleys have been cleared and are used as unimproved pasture.

These soils are suited to trees. Productivity is high. In an average stand that is fully stocked, yellow poplar can reach a height of about 100 feet in 50 years. Under similar conditions, northern red oak can reach a height of 75 feet. Some of the more common tree species in coves and on the lower slopes are sugar
maple, yellow poplar, black locust, and northern red oak. In some areas these species are mixed with chestnut oak, red maple, cucumbertree, black cherry, magnolia, birches, and various hickories. Near the base of the mountain, American beech, eastern hemlock, and white oak are common. Many abandoned fields have reverted to nearly pure stands of yellow poplar. Some of the fields have been planted to eastern white pine or other pine species. The most common understory plants are mountain laurel, sourwood, sassafras, azalea, flowering dogwood, American hornbeam, vaccinium, hydrangea, and greenbrier. The herbaceous flora is abundant or luxuriant and includes numerous species.

The hazard of erosion, the equipment limitation, and plant competition are the major concerns in managing woodland. Erosion is a hazard along haul roads and skid trails. This hazard can be reduced by establishing a grade of less than 10 percent along the roads and trails and by limiting the area of surface disturbance to 10 percent or less. Permanent access roads can be protected by water breaks, culverts, and gravel. Because of the slope, crawler tractors or other specialized equipment generally is needed. Logs can be yarded to roads and trails built on the contour. Trees can be planted by hand or by direct seeding methods. Plant competition can be a problem because site

conditions favor the growth of competing plants. A new forest crop can be established by managing the existing stand and by applying herbicides or cutting.

The potential for woodland habitat is good. The habitat can be maintained or improved by providing food, cover, nesting areas, and den sites. Brushy thickets can be established by clearing small areas in large tracts of mature woodland. Food plots or areas of green browse can be established along logging roads and trails. The habitat in areas of native plants can be improved by disking and applying fertilizer. Den trees should not be harvested. Brush piles or other nesting sites are needed.

These soils are generally unsuitable for cultivated crops, pasture, and building site development because of the slope.

FbF-Fairpoint and Bethesda soils, 20 to 70 percent slopes. These very deep, well drained, steep to very steep soils are on ridges and mountains. Most areas have been surface mined for coal. Some have been altered by highway construction or other extensive earthmoving. The dominant slopes are 20 to 70 percent, but many areas have a narrow bench where the slopes are 0 to 20 percent. Stones and boulders cover about 0.01 to 3.0 percent of the surface in some areas. Most areas are long and narrow or are irregular in shape. They are 10 to 200 acres in size.

In a typical area, about 80 percent of the acreage is the Fairpoint soil, the Bethesda soil, or both and 20 percent is contrasting inclusions. Individual areas of each soil are large enough to be mapped separately. Because of the present and predicted uses, however, the soils were mapped as one unit. Many areas contain both soils, but some contain only one of the soils.

Typically, the Fairpoint soil has a surface layer of dark gray and dark grayish brown very channery silt loam about 11 inches thick. The substratum to a depth of about 60 inches is dark gray and dark grayish brown very channery silt loam. In some areas the substratum contains 15 to 35 percent rock fragments. In other areas the surface layer contains more clay or more sand.

Typically, the Bethesda soil has a surface layer of yellowish brown very channery loam about 5 inches thick. The subsurface layer is grayish brown very channery silt loam or extremely channery silt loam. In some areas the substratum contains 15 to 35 percent

rock fragments. In other areas the surface layer contains more clay or more sand.

These soils are low in natural fertility and in organic matter content. Permeability is moderately slow. The available water capacity is moderate. The depth to bedrock is 60 inches or more.

Included in this map unit are small areas of soils that have not been disturbed by surface mining. Also included are shallow, loamy soils in surface-mined areas; ponded or seepy areas; soils that have a pH of 3.0 to 3.6; and rock escarpments, mine dumps, and water. Included areas make up about 20 percent of the unit.

Most areas have been smoothed and seeded to various grasses, legumes, and trees. A few areas were not planted but have reverted to various grasses, forbs, and trees. A few areas are used as pasture.

These soils generally are unsuited to cultivated crops, such as corn and soybeans. The main limitations are the slope and the rock fragments in the surface layer.

These soils are suited to grasses and legumes. They are best suited to forage species that are tolerant of drought and a wide range of acidity. Tall fescue and sericea lespodeza have been grown successfully. In most areas the pH ranges from 4.8 to 6.5, but in places it is low as 3.6 or as high as 7.5. Where a higher pH is desired, lime can be added. Most areas require 2 to 5 tons of lime to raise the pH to about 6.5. The amount to be applied should be based on the results of soil tests and the quality of the lime. The supply of phosphorus generally is very low. This nutrient commonly is needed for successful seeding. Potassium levels generally are low or medium and commonly are adequate for cover mixtures. Other limitations affecting grasses and legumes are the slope, compacted layers, and a high content of rock fragments.

These soils are suited to trees. Productivity is moderate. In an average stand that is fully stocked, lobolly pine on the Fairpoint soil can reach a height of about 74 feet in 50 years. On the Bethesda soil, a similar stand can reach a height of 69 feet.

The hazard of erosion, the equipment limitation, and plant competition are the major concerns in managing woodland. Seedling mortality is an additional concern on the warm slopes. Erosion is a hazard along logging roads and trails. A protective plant cover is needed. Seeding herbaceous species along with the tree species helps to

control erosion. Mulching with straw or processed wood fiber also helps to control erosion. Because of the slope, hand seeding or special seeding equipment may be needed. In many areas the seed, fertilizer, and mulch are applied as a slurry. The tree species suitable for seeding are black locust, eastern white pine, loblolly pine, yellow poplar, and white oak. Table 8 gives additional information about woodland management and productivity.

The potential for openland wildlife habitat is very poor. The habitat can be improved by providing food, cover, water, nesting areas, and den sites. Rows of trees and shrubs can break up large open areas. Mixtures of grasses and legumes can be planted for food and cover. The habitat in areas of native plants can be improved by disking and applying fertilizer. Shallow water areas can be established. Also, seasonal pools can be established in depressions. Brush piles or other nesting sites are needed.

These soils generally are unsuited to urban development because of the slope and the hazards of uneven settling, landslides, and slumps.

CgF-Cloverlick-Guyandotte-Highsplint complex, 35 to 75 percent slopes, very stony. These deep and very deep, well drained soils are on the cool slopes on mountainsides. The elevations range from about 3,000 feet near the mountain crest to 1,400 feet along the base of the mountain. The higher elevations have more snow and ice during the winter than the lower elevations and may receive more rainfall during the summer. The downward slope of the mountain is nearly linear, except where broken by small cliffs or benches. Only a slight flattening of the slope occurs near the top and bottom of the mountain. Across the mountain the slope is distinctly corrugated. Small streams in the grooves commonly begin near the mountain crest and run almost to the base of the mountain before joining other streams. In most Places the streams are about 300 to 600 feet apart. Areas between the streams are characterized by sharp-crested ribs that have fairly smooth slopes. Stones and boulders generally cover about 0.1 to 15.0 percent of the surface. They cover as much as 70 percent of the surface, however, in some ravines and in areas below some cliffs. In places, sandstone layers form cliffs. Most areas are nearly rectangular and range from about 60 to 2,500 acres in size.

ATTACHMENT 23.1.A

In a typical area, the composition of this soil complex is as follows: Cloverlick and similar soils--45 percent; Guyandotte and similar soils--20 percent; Highsplint and similar soils--20 percent; and contrasting inclusions--15 percent. The soils in this unit occur as areas so closely intermingled that they could be separated as the scale selected for mapping.

Typically, the Cloverlick soil has a surface layer of very dark gray gravelly loam about 6 inches thick. The subsoil extends to a depth of about 70 inches. The upper part is brown and yellowish brown gravelly loam, the next part is yellowish brown gravelly loam, and lower part is yellowish brown very flaggy loam. In some areas the subsoil contains 20 to 35 percent rock fragments.

Typically, the Guyandotte soil has a surface layer of very channery loam about 17 inches thick. This layer is very dark grayish brown in the upper part and dark brown in the lower part. The upper part of the subsoil is dark yellowish brown very channery loam. The lower part to a depth of about 61 inches is yellowish brown very channery loam. In some areas the subsoil contains 20 to 35 percent rock fragments.

Typically the Highsplint soil has a surface layer of very dark grayish brown very channery loam about 3 inches thick. The subsoil to a depth of about 60 inches is yellowish brown very channery loam. In some areas the subsoil contains 20 to 35 percent rock fragments.

These soils are low in natural fertility. The organic matter content is high in the Cloverlick and Guyandotte soils and moderate in the Highsplint soil. The available water capacity is moderate in all three soils. The number of roots decreases gradually with increasing depth, and there are few roots below depths of about 18 inches. Permeability is moderate or moderately rapid in the Cloverlick and Guyandotte soils and moderate or moderately rapid in the Highsplint soil. The depth to bedrock is 48 to more than 60 inches in the Cloverlick and Highsplint soils and 60 inches or more in the Guyandotte soil.

Most areas are used as woodland. A few areas adjacent to the stream valleys have been cleared and are used as unimproved pasture.

The hazard of erosion, the equipment limitation, and plant competition are the major concerns in managing woodland. Erosion is a hazard along haul roads and skid

trails. This hazard can be reduced by establishing a grade of less than 10 percent along the roads and trails and by limiting the area of surface disturbance to 10 percent or less. Permanent access roads can be protected by water breaks, culverts, and gravel. Because of slope, crawler tractors or other specialized equipment generally is needed.

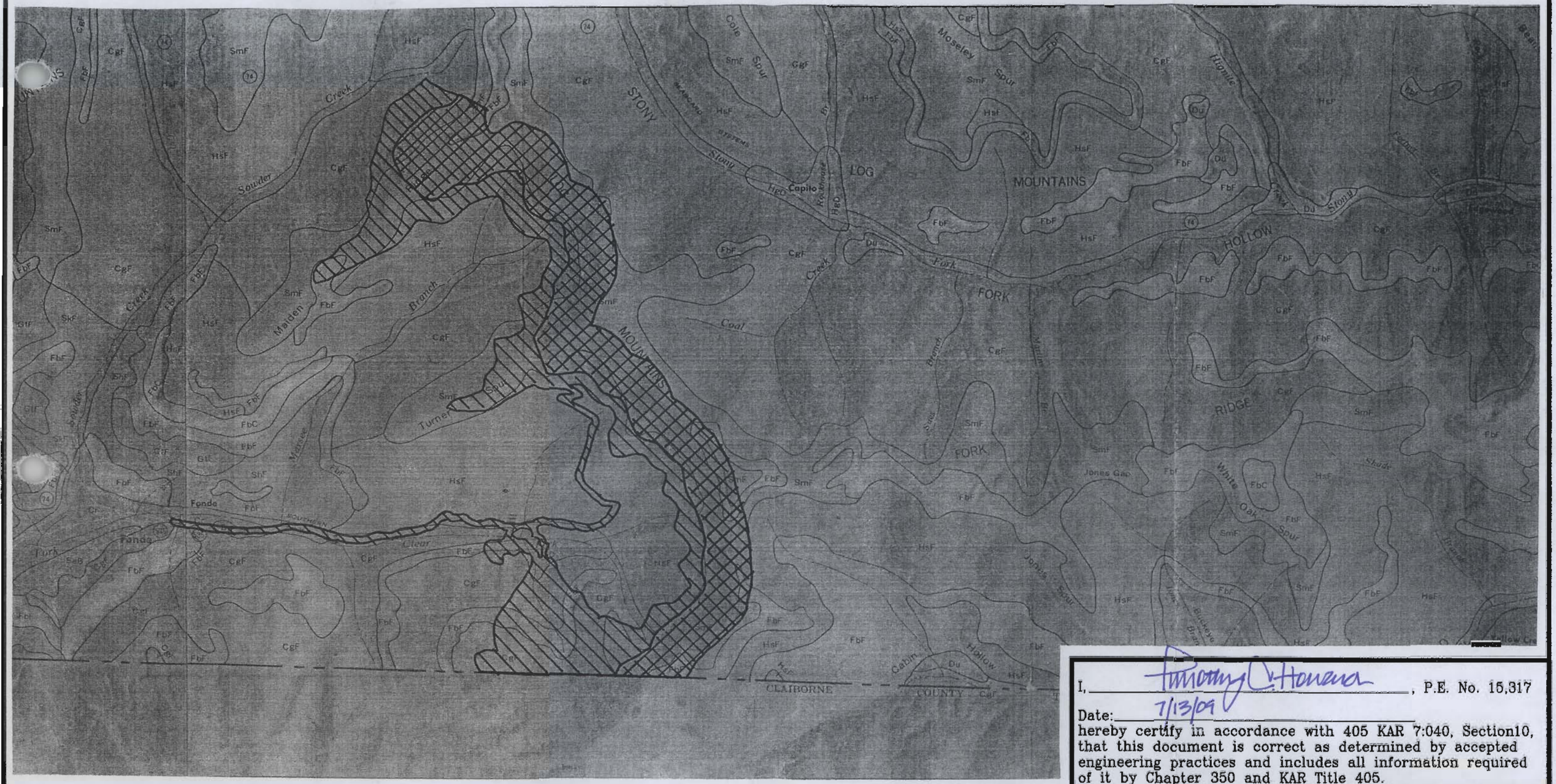
The potential for woodland wildlife habitat is good. The habitat can be maintained or improved by providing food, cover, nesting areas, and den sites. Brushy thickets can be established by clearing small areas in large tracts if mature woodland. Food plots or areas of green browse can be established along logging roads and trails. The habitat in areas of native plants can be improved by disking and applying fertilizer. Den trees should not be harvested. Brush piles or other nesting sites are needed. These soils generally are unsuitable for cultivated crops, pasture, and building site development because of the slope. **FbC-Fairpoint and Bethesda soils 2 to 20 percent slopes.** These very deep, well drained, gently sloping to moderately steep soils are on ridges and mountains. Most areas have been surface mined for coal. Highway construction or other extensive earthmoving has altered some. Stones and boulders cover about 0.01 to 3.0 percent of the surface in some areas. Most areas are long and narrow or are irregular in shape. They are 6 to 200 acres in size. In a typical area, about 90 percent of the acreage is the Fairpoint soil, the Bethesda soil, or both and 10 percent is contrasting inclusions. Individual areas of each soil are large enough to mapped separately. Because of the present and predicted uses, however, the soils were mapped as on unit. Many areas contain both soils, but some contain only one of the soils. Typically, the Fairpoint soil has a surface layer of dark olive gray channery silt loam about 3 inches thick. The subsurface layer is dark olive gray extremely channery silt loam about 7 inches thick. The substratum to a depth of about 60 inches is dark olive gray and olive gray extremely channery silt loam. In some areas the substratum contains 15 to 35 percent rock fragments. In other areas the surface layer contains more clay or more sand. Typically, the Bethesda soil has a surface layer of dark grayish brown very channery loam about 7 inches thick. The subsurface layer is grayish brown very channery silt loam about 5 inches thick. The substratum to a depth of about 60 inches is yellowish brown very channery loam and extremely channery silt loam. In

ATTACHMENT 23.1.A

some areas the substratum contains 15 to 35 percent rock fragments. In other areas the surface layer contains more clay or more sand. These soils are low in natural fertility and in organic matter content. Permeability is moderately slow. The available water capacity is moderate. The depth to bedrock is 60 inches or more. Included in this map unit are small areas of soils that have not been disturbed by surface mining. Also included are shallow, loamy soils in surface-mined areas; ponded or seepy areas; soils that have a pH of 3.0 to 3.6; rock escarpments, mine dumps, and water; and some areas where runoff concentrates and gullies form. Included areas make up about 10 percent of the unit. Most areas have been smoothed and seeded to various grasses, legumes, and trees. Some areas are used as pasture. These soils generally are unsuited to cultivated crops, such as corn and soybeans. main The limitations are the hazard of erosion and the rock fragments in the surface layer. These soils are suited to grasses and legumes. They are best suited to the forage species that are tolerant of drought and a wide range of acidity. Tall fescue and sericea lespedeza have been grown successfully. In most areas the pH ranges from 4.8 to 6.5, but in places it is as low as 3.6 or as high as 7.5. Where a higher pH is desired, lime can be added. Most areas require 2 to 5 tons of lime to raise the pH to about 6.5. The amount to be applied should be based on the results of soil tests and the quality of the lime. The supply of phosphorus generally is very low. This nutrient commonly is needed for successful seeding. Potassium levels generally are low or medium and commonly are adequate for cover mixtures. Other limitations affecting grasses and legumes are compacted layers and a high content of rock fragments. These soils suited to trees. Productivity is moderate. In an average stand that is fully stocked, loblolly pine on the Fairpoint soil can reach a height of about 74 feet in 50 years. On the Bethesda soil, a similar stand can reach a height of 69 feet. Seedling mortality and plant competition are the main management concerns. Erosion is a hazard unless the surface is protected by a plant cover. Seeding herbaceous species along with the tree species helps to control erosion. Mulching with straw or processed wood fiber also helps to control erosion. In many areas the seed, fertilizer, and mulch are applied as a slurry. The tree species suitable for seeding are black locust, eastern white pine, loblolly

pine, yellow poplar, and white oak. The potential for open land wildlife habitat is very poor. The habitat can be improved by providing food, cover, water, nesting areas, and den sites. Rows of trees and shrubs can break up large open areas. Mixtures of grasses and legumes can be planted for food and cover. The habitat in areas of native plants can be improved by disking and applying fertilizer. Shallow water areas can be established. Also, seasonal pools can be established in depressions. Brush piles or other nesting sites are needed.

These soils generally are unsuited to urban development because of the hazards of uneven settling, landslides, and slumps.



Legend

Proposed Surface Permit Boundary

Proposed Auger/Highwall Mining Permit Boundary

STATE OF KENTUCKY
TIMOTHY C. HOWARD 15,317 LICENSED
PROFESSIONAL ENGINEER

I, Timothy C. Howard, P.E. No. 15,317

Date: 7/13/09

hereby certify in accordance with 405 KAR 7:040, Section10, that this document is correct as determined by accepted engineering practices and includes all information required of it by Chapter 350 and KAR Title 405.

Appolo Fuels, Inc.

#807-0368
SCS Soil Map
Attachment 23.1.A

Scale: 1" = 2000' | Page No. 1 of 1

Howard Engineering & Geology, Inc.

ATTACHMENT 23.2.A

Alternate Topsoil

As detailed previously in this application, the area proposed for mining as a part of this application has been subjected to surface disturbances from previous mining activity. It is anticipated that the clearing and grubbing of the mine site will cause a loss of much of the available topsoil on the site. The relatively steep slopes of the mine site included in this permit application and the large track-type equipment that will be used to clear and grub the site will cause the loss of much topsoil. In order to insure that there will be a minimum of 6" of material available to redistribute over the mine site during reclamation activities, it is proposed to utilize Alternate Topsoil as a growing medium for the revegetation of the mine site. The material that is proposed for use will include any available topsoil which is salvaged and used as topsoil with the unconsolidated materials and selected strata from the overburden generated from the surface mining operation.

A

As it is proposed to utilize the salvaged soils as an Alternate Topsoil Material, practically all of the geologic strata generated during the surface mining activity will be suitable for use in the Alternate Topsoil Material.

B

We have provided in this attachment results of chemical and physical analysis of the Alternate Topsoil Material, which were collected at each sample site.

C

We have provided in this attachment a statement from a soil scientist concerning the suitability of the proposed substitute topsoil material as a growing medium.

HW-1

0.50' (001) TOPSOIL/NATIVE SOIL

22.00' (001) SUBSOIL/ALTERNATE TOPSOIL

12.00' (124) DARK GRAY SHALE

40.00' (300) SANDY SHALE

28.00' (540) GRAY SANDSTONE

14.00' (300) SANDY SHALE

20.00' (124) DARK GRAY SHALE

3.15' (020) COAL (HIGNITE SEAM)
3.00' (124) DARK GRAY SHALE

15.00' (300) SANDY SHALE

2.35' (020) COAL (HIGNITE SEAM)

10.00' (540) GRAY SANDSTONE

HW-2

0.50' (001) TOPSOIL/NATIVE SOIL

23.15' (001) SUBSOIL/ALTERNATE TOPSOIL

14.50' (124) DARK GRAY SHALE

40.00' (300) SANDY SHALE

10.00' (124) DARK GRAY SHALE

14.00' (300) SANDY SHALE

21.00' (540) GRAY SANDSTONE

6.00' (124) DARK GRAY SHALE

4.50' (020) COAL (HIGNITE SEAM)
3.00' (124) DARK GRAY SHALE

23.00' (300) SANDY SHALE

2.15' (020) COAL (HIGNITE SEAM)

10.00' (300) SANDY SHALE

HW-4

0.75' (001) TOPSOIL/NATIVE SOIL

36.00' (001) SUBSOIL/ALTERNATE TOPSOIL

50.00' (300) SANDY SHALE

50.00' (540) GRAY SANDSTONE

33.00' (124) DARK GRAY SHALE

3.50' (020) COAL (HIGNITE SEAM)

25.00' (300) SANDY SHALE

1.75' (020) COAL (HIGNITE SEAM)

10.00' (540) GRAY SANDSTONE

HW-3

1.00' (001) TOPSOIL/NATIVE SOIL

25.75' (001) SUBSOIL/ALTERNATE TOPSOIL

15.00' (124) DARK GRAY SHALE

50.00' (540) GRAY SANDSTONE

4.25' (020) COAL (HIGNITE SEAM)
1.50' (124) DARK GRAY SHALE

23.50' (540) GRAY SANDSTONE

2.00' (020) COAL (HIGNITE SEAM)

10.00' (540) GRAY SANDSTONE

I, Timothy C. Howard, P.E. No. 15,317

Date: 7/13/09

hereby cerufy in accordance with 405 KAR 7:040, Section10, that this document is correct as determined by accepted engineering practices and includes all information required of it by Chapter 350 and KAR Title 405.

STATE OF KENTUCKY
TIMOTHY C. HOWARD
15,317
LICENSED PROFESSIONAL ENGINEER

Appolo Fuels, Inc.

#807-0366
Geologic Cross-Sections (Alternate Topsoil)
Attachment 23.2.A

Scale: 1" = 20' | Page No. 1 of 1

Prepared by:
Howard Engineering & Geology, Inc.

Appalachian Field Services Company

P.O. Box 373
Baxter, Kentucky 40806
Telephone (606) 573-0521

SAMPLE IDENTIFICATION : APPOLO FUELS INC.

PERMIT NUMBER : 807 - 0368
(HW - 1)
(SUBSOIL - ALTERNATE TOPSOIL MATERIAL)

SAMPLED BY : H.E.G.

SAMPLE DATE : 04/06/2009

REPORT DATE : 06/25/2009

PARAMETER		RESULT	
SOIL / WATER pH		*6.91*	*STD. UNITS*
BUFFER pH		*7.39*	*STD. UNITS*
LIME REQUIREMENT	*(67% RNV AGLIME to pH 6.80)*	*0.0*	*TONS / ACRE CaCO3*
LIME REQUIREMENT	*(HYDRATED LIME to pH 6.80)*	*0.0*	*TONS / ACRE CaCO3*
POTASSIUM		*280*	*POUNDS/ACRE*
PHOSPHORUS		*100*	*POUNDS/ACRE*
CLAY		*16.14*	*PERCENT*
SILT		*15.75*	*PERCENT*
SAND		*68.11*	*PERCENT*
COARSE FRAGMENTS		*25.85*	*PERCENT*
NEUTRALIZATION POTENTIAL		*19.13*	*TONS/CaCO3*
POTENTIAL ACIDITY		*6.28*	*TONS/CaCO3*
NET NP / PA		*12.85*	*TONS/CaCO3*

SUBMITTED BY : _____

Appalachian Field Services Company

P.O. Box 373
Baxter, Kentucky 40806
Telephone (606) 573-0521

SAMPLE IDENTIFICATION : APPOLO FUELS INC.

PERMIT NUMBER : 807 - 0368
(HW - 2)
(SUBSOIL - ALTERNATE TOPSOIL MATERIAL)

SAMPLED BY : H.E.G.

SAMPLE DATE : 04/06/2009

REPORT DATE : 06/25/2009

PARAMETER		RESULT	
SOIL / WATER pH		*6.93*	*STD. UNITS*
BUFFER pH		*7.35*	*STD. UNITS*
LIME REQUIREMENT	*(67% RNV AGLIME to pH 6.80)*	*0.0*	*TONS / ACRE CaCO3*
LIME REQUIREMENT	*(HYDRATED LIME to pH 6.80)*	*0.0*	*TONS / ACRE CaCO3*
POTASSIUM		*100*	*POUNDS/ACRE*
PHOSPHORUS		*110*	*POUNDS/ACRE*
CLAY		*9.58*	*PERCENT*
SILT		*12.77*	*PERCENT*
SAND		*77.65*	*PERCENT*
COARSE FRAGMENTS		*29.34*	*PERCENT*
NEUTRALIZATION POTENTIAL		*48.34*	*TONS/CaCO3*
POTENTIAL ACIDITY		*4.00*	*TONS/CaCO3*
NET NP / PA		*44.34*	*TONS/CaCO3*

SUBMITTED BY : _____

Appalachian Field Services Company

P.O. Box 373
Baxter, Kentucky 40806
Telephone (606) 573-0521

SAMPLE IDENTIFICATION : APPOLO FUELS INC.

PERMIT NUMBER : 807 - 0368
(HW - 3)
(SUBSOIL - ALTERNATE TOPSOIL MATERIAL)

SAMPLED BY : H.E.G.

SAMPLE DATE : 04/06/2009

REPORT DATE : 06/25/2009

PARAMETER		RESULT	
SOIL / WATER pH		*7.03*	*STD. UNITS*
BUFFER pH		*7.46*	*STD. UNITS*
LIME REQUIREMENT	*(67% RNV AGLIME to pH 6.80)*	*0.0*	*TONS / ACRE CaCO3*
LIME REQUIREMENT	*(HYDRATED LIME to pH 6.80)*	*0.0*	*TONS / ACRE CaCO3*
POTASSIUM		*72*	*POUNDS/ACRE*
PHOSPHORUS		*40*	*POUNDS/ACRE*
CLAY		*8.68*	*PERCENT*
SILT		*18.54*	*PERCENT*
SAND		*72.78*	*PERCENT*
COARSE FRAGMENTS		*46.10*	*PERCENT*
NEUTRALIZATION POTENTIAL		*47.86*	*TONS/CaCO3*
POTENTIAL ACIDITY		*5.69*	*TONS/CaCO3*
NET NP / PA		*42.17*	*TONS/CaCO3*

SUBMITTED BY : _____

Appalachian Field Services Company

P.O. Box 373
Baxter, Kentucky 40806
Telephone (606) 573-0521

SAMPLE IDENTIFICATION : APPOLO FUELS INC.

PERMIT NUMBER : 807 - 0368
(HW - 4)
(SUBSOIL - ALTERNATE TOPSOIL MATERIAL)

SAMPLED BY : H.E.G.

SAMPLE DATE : 04/06/2009

REPORT DATE : 06/25/2009

PARAMETER		RESULT	
SOIL / WATER pH		*6.02*	*STD. UNITS*
BUFFER pH		*7.01*	*STD. UNITS*
LIME REQUIREMENT	*(67% RNV AGLIME to pH 6.80)*	*2.0*	*TONS / ACRE CaCO3*
LIME REQUIREMENT	*(HYDRATED LIME to pH 6.80)*	*1.3*	*TONS / ACRE CaCO3*
POTASSIUM		*140*	*POUNDS/ACRE*
PHOSPHORUS		*72*	*POUNDS/ACRE*
CLAY		*23.51*	*PERCENT*
SILT		*19.92*	*PERCENT*
SAND		*56.57*	*PERCENT*
COARSE FRAGMENTS		*22.74*	*PERCENT*
NEUTRALIZATION POTENTIAL		*5.83*	*TONS/CaCO3*
POTENTIAL ACIDITY		*7.44*	*TONS/CaCO3*
NET NP / PA		*- 1.61*	*TONS/CaCO3*

SUBMITTED BY : _____

Howard D. York, Jr.
P.O. Box 1309
Harlan, Kentucky 40831

July 8, 2009

Division of Permits, DSMRE
Management Support Branch
Work Area B41
#2 Hudson Hollow Complex
Frankfort, Kentucky 40601

RE: Apollo Fuels Inc.

Permit #807-0368
Alternate Topsoil
Samples HW-1, 2, 3, & 4

Dear Sir:

I do hereby certify that the analyses performed by Appalachian Field Services Company, P.O. Box 373, Baxter, Kentucky 40806, on topsoil and alternate topsoil materials indicate the following:

1) Physical examination of the mine area revealed that the topsoil exists in an insufficient quantity on the permit area to cover the spoil and sustain adequate vegetation.

2) The alternate material analyzed was the best available material to use as alternate topsoil material.

3) Chemical analyses of the topsoil and alternate materials indicates that with the addition of 25 lbs./acre of K2O that the alternate material will be of equal quality to the topsoil sampled.

It is my recommendation that with the addition of the fertilizer listed in item 3 that the alternate materials be used as a substitute material or in combination with the topsoil in the post mining land use.

Respectfully submitted,

Howard D. York, Jr.

Howard D. York, Jr., Soil Scientist
P.O. Box 1309
Harlan, Kentucky 40831

ATTACHMENT 23.3.A

As detailed previously in this application, the area proposed for mining as a part of this application has been subjected to previous surface disturbances from mining activity. However, during the normal clearing and grubbing of the trees, brush and stumps, along with other herbaceous material, the relatively steep slope of the land along with equipment size limitations make it virtually impossible to remove brush, stumps and herbaceous material without significant amounts of topsoil loss. It is for this reason that it is proposed to utilize an Alternate Topsoil material. The Alternate Topsoil, which is proposed for use in this mining operation, will consist of soil material and blended with strata from the surface mining activity as indicated on the Stratigraphic columns provided in Attachment15.2.A. This Alternate Topsoil will not be stored, but as the mining activities progress, the top layer of spoil material will be utilized as the appropriate alternate topsoil material. A minimum of six (6) inches of topsoil and/or alternate topsoil will be re-distributed over all disturbed acreage.

Alternate Topsoil that will be distributed over previously backfilled and graded areas will be handled as follows:

1) Achieves an approximate uniform stable thickness consistent with the approved post-mining land uses, contours and surface water drainage system.
2) Prevents excessive compaction of the material.
3) Protects the material from wind and water erosion before and after it is seeded and planted.
4) Scarified prior to seeding and mulching to prevent slippage and Promote root penetration.

ATTACHMENT 24.2.A

Blasting within 1,000' of Utility Line and Communication Tower

The surface blasting activity included in this application will be conducted within 1,000 feet of four (4) powerline utility support structures and one (1) communication tower. Additional precautions, detailed in Attachment 24.8.A, will be undertaken by the certified blaster in charge to ensure that no flyrock will be thrown in violation of 405 KAR 16:120, Section 4 (5). The distance from the blasting site to each structure, structure type and description and owner is in the table included in the following table.

Map ID.	Owner	Description	Distance	Latitude	Longitude
FCC Tower	Crown Castle International	Steel tower w/guylines, concrete foundation, fenced	850'	36-37-05.17	83-51-08.98
Str 1	KU	Single pole wood	414'	36-36-31.35	83-51-06.50
Str. 2	KU	Two-pole wood	92'	36-36-34.36	83-50-56.33
Str. 3	KU	Two-pole wood	435'	36-36-37.80	83-50-43.62
Str. 4	KU	Single pole wood	688'	36-36-38.61	83-50-40.62

Each blasting area will be determined by the certified blaster in charge, using a combination of a hand-held GPS unit and the blasting map contained in this section to determine the limits of each blasting area taking into account criteria such as weather, direction of blast, geologic conditions, and orientation of blast site. The latitude and longitude of each structure within 1,000 feet of the blasting site has been recorded on the above table. The certified blaster in charge will record these coordinates into the hand held GPS to accurately determine the distance to each structure for determining which structures are to be included in each blasting area.

The locations of these structures, and/or facilities can be seen on the MRP map. The applicant does NOT propose to submit the Surface Blasting Design Form, SMP-61 since none of the structures within 1,000 feet are buildings used as a dwelling, public building, school, church, commercial, community, or institutional building. The method used to protect these structures from the potentially adverse impacts of air blast and ground vibrations will be the utilization of a seismograph in lieu of the scale-distance equations.

Since the proposed blasting will be within 500 feet of abandoned underground works (as detailed in Item 24.3), precautions listed in Item 24.8 should prevent any adverse impacts on the old works or old works on the blasting, and thus, the control criteria will be the distance to the structures listed in this item. A MSHA Joint Approval Form, SMP-60 is also NOT proposed since the underground workings within 500 feet of the proposed blasting are abandoned and sealed. Seismograph monitoring will be employed on all shots to ensure that

ATTACHMENT 24.2.A

the ground vibration limits found in Appendix B of 405 KAR 16:120 as stated below will not be exceeded at any regulated structure.

Appendix B of 405 KAR 16:120

Peak Particle Velocity Limits

Distance from the blasting site in feet	Maximum allowable peak particle velocity for ground vibration in inches per second
0 to 300	1.25
301 to 5,000	1 00
5,001 and beyond	0 75

A notification of the proposed blasting activities, rights to request a pre-blast survey and the blasting signals will be distributed to the Department for Natural Resources Middlesboro Regional Office, Bell County Fiscal Court and to each resident located within or regularly working within ½ mile of the permit area at least ten (10) days prior to but no more than thirty (30) days prior to the beginning of the blasting activity.

Access control of the blasting area will be maintained by blocking the access roads at a distance of at least 1,000 feet 10 minutes prior to the blast and by visual inspection of the area to insure clearance. Post detonation access to the area will be allowed only after inspection and determination that no hazard exists.

ATTACHMENT 24.3.A

Blasting within 500' of Abandoned Underground Works

As detailed previously in this application, the surface mining activity included in this application will be conducted within 500' of known abandoned underground mine workings in the Jellico (Bennetts Fork) coal seam. These abandoned underground workings were the result of the underground mining activity conducted prior to the 1960's.

The surface mining operation will strip within 0 feet of these abandoned underground mine workings. The mining planned by this operation will intersect the abandoned works located near Pond #3. The abandoned works in this area are extremely limited and only a few breaks deep. Additional more extensive abandoned works are located within 500 feet to the south of the proposed mining. It is not anticipated that the surface blasting activity which will be conducted as a part of the mining will be adversely affected by the abandoned underground workings. Also, it is not anticipated that the abandoned underground mine workings will have any adverse effects on the surface mining activity or the surface blasting activity. Due to the limited extents of the underground works to be intersected the potential for sudden release of water from the underground works during the contour stripping operation it not anticipated to be a problem.

Any drainage from the abandoned mines in the Jellico coal seam will be controlled by draining any discharge into the sediment ponds by maintaining the drainage on the bench with the use of berms and/or ditching. Discharge monitoring of the sediment ponds is conducted as required and this will provide an analysis of the mine discharge. No mine discharge opened by this operation will be allowed to leave the mine bench without first being passed through a sediment pond. Existing mine or other discharges which have not been opened by this operation will not be redirected to a pond until just prior to the discharge being affected by the mining operation. As the mining progresses along the contour, all areas in which the mining activities may intersect an existing mine will be probed using an excavator to determine if there is an actual underground mine to be intersected as indicated by the MRP map. When an underground mine area is encountered by the excavator, the area will be carefully opened by the operator and any discharge will be directed to the closest pond, or to a control ditch to be directed to the closest pond. The mine area will be allowed to drain. Once the mine area has been drained to the satisfaction of the job foreman the mine area will be visually inspected by the job foreman to determine as best as possible in a

ATTACHMENT 24.3.A

safe manner the amount of impounded water in the mine area that has been opened. At no time will the job foreman nor any personnel be allowed to enter any underground mine area opened by this operation. The mine opening will then be plugged to the maximum extent possible to prevent blasting from damaging any mine integrity that may still be in place.

Should the drill encounter an underground mine void while drilling holes in preparation for blasting, the job foreman and the certified blaster will be notified. The foreman and the certified blaster will inspect the hole to confirm the finding of the drill operator. The MRP map will then be reviewed for any mine workings shown. The drill hole will then be plugged and additional reference holes may be drilled to further locate the mine area or an excavator or a bulldozer may be used to open the underground mine suspect area. If an underground mine is located, it will be addressed as stated in the Pre-Drilling Precautions. The drill holes which penetrate any mine areas will be backfilled and not loaded. The holes which did not encounter any abandoned mine workings will be loaded and shot according to the blast design (SMP-61).

These additional precautions should be sufficient to prevent surges of water in the old works resulting in a sudden release of water from the outcrop.

Research to determine if any active underground works could be present within 500 feet of the proposed blasting was conducted. Specifically, permit number 807-5157, 807-5025 and 807-5179 were investigated for presence of active underground works and their proximity to the proposed blasting. Permit number 807-5157, Bell County Coal Corp. in the Buckeye Springs coal bed was investigated and it was determined that the elevation of the Buckeye Springs in this area is approximately 1940' to 1960'. The Hignite coal bed being mined by 807-0368 is at 2490' to 2510', which is over 500 feet vertically. The mining of other coal beds within the footprint of the hollow fill is well over 500 feet horizontally and there are no projections in the Buckeye Springs mine that would be within 500 feet of the proposed mining in the footprint of the hollow fill. Permit number 807-5179, Bell County Coal Corp. in the Strays coal bed has no active, or abandoned underground works at this time. Permit number 807-5025, Bell County Coal Corp. in the Poplar Lick coal bed is currently active from the face-up area adjacent to KY 74 shown on the MRP map. The current location of the active underground works and future projections are well over 500 feet, also there is a geologic anomaly in this seam that would prevent underground mining towards 807-0368.

ATTACHMENT 24.3.A

Since the underground mine workings were abandoned prior to the beginning of surface mining activity, it will not be necessary to provide a "MSHA Blasting Joint Approval Plan" at this time. The SMP-61 form will be submitted 30 days prior to blasting.

Provided in this section (24) is the "Public Notice of Blasting Schedule" which will appear in the local newspaper. This public notice will be published at least ten (10) days but no more than thirty (30) days prior to the beginning of the blasting activity.

The same public notice will be distributed to the Department for Natural Resources Middlesboro Regional Office, Bell County Fiscal Court and to each resident located within ½ mile of the permit area at least ten (10) days prior to but no more than thirty (30) days prior to the beginning of the blasting activity.

ATTACHMENT 24.4.A

Blast Warning Signal

WARNING SIGNAL - A one (1) minute series of long blasts from a siren five (5) minutes prior to the blast signal.

BLAST SIGNAL - A series of short blasts from a siren one (1) minute prior to the shot.

ALL CLEAR SIGNAL - A prolonged blast from a siren following the inspection of the blast area.

These signals will be audible within one-half mile of the blast site.

Access control of the blasting area will be maintained by blocking access roads to the area 10 minutes prior to the blast and by visual inspection of the area to insure clearance. Post detonation access to the area will be allowed only after inspection and determination that no hazard exists.

Persons within one-half mile of the permit area will be notified by mail and orally of the warning signals meaning. The meaning of the warning signals will also be included in the public notice of Blasting Schedule published in the newspaper.

24.5 Does the proposed surface mining operation include blasting operations using more than five (5) pounds of explosives? [***XX***] YES [ ] NO. If "YES", submit a sample copy of the blasting schedule to be published in a newspaper of general circulation in the locality of the blasting operation. Describe the procedure for circulating the schedule to the DSMRE regional office, local governments, public utilities, and to each resident within a one-half mile of areas affected by surface operations or facilities in accordance with 405 KAR 16:120, Section 3. Submit as "Attachment 24.5.A".

See Attachment 24.5.A

24.6 Describe how all residents within one-half mile of areas affected by surface operations or facilities will be informed about the procedure for requesting a preblast survey, and the procedures for recording and reporting to DSMRE the results of any requested preblast surveys. Submit this description as "Attachment 24.6.A".

See Attachment 24.6.A

24.7 Describe the procedures to be used for ensuring that airblasts are controlled in accordance with 405 KAR 16:120 or 18:120. Submit description as "Attachment 24.7.A".

See Attachment 24.7.A

24.8 Describe the procedures to be used to control flyrock and how prevention of adverse impacts of blasting will be ensured in accordance with 405 KAR 16:120 or 18:120. Submit this description as "Attachment 24.8.A".

See Attachment 24.8.A

24.9 Will blast monitoring equipment be utilized in lieu of the scaled distance equations presented in Appendix C of 405 KAR 16:120 or 405 KAR 18:120? [***XX***] YES [ ] NO. If "YES", provide a description of the types, capabilities, sensitivities and locations of the equipment proposed for use. Submit this description as "Attachment 24.9.A".

See Attachment 24.9.A

25. Backfilling and Grading Plan

25.1 Describe the methods to be used for backfilling and grading the proposed permit area, including soil stabilization and compaction practices. Provide a map and appropriate cross sections to illustrate and define the proposed postmining configuration of the permit area. If cross sections are used identify the location of the cross sections on the MRP map or other appropriate map. Provide this information as "Attachment 25.1.A".

See Attachment 25.1.A.

25.2 Is a variance requested from approximate original contour requirements for any portion of the proposed permit area? [ ] YES [***XX***] NO. If "YES", provide as "Attachment 25.2.A", the following information:

(a) A complete description, including location, of the area(s) for which a variance is requested.

(b) A detailed explanation of how the applicant meets the "criteria for approval" under one or more of the following regulations: (1) 405 KAR 8:050, Section 4, mountaintop removal; (2) 405 KAR 8:050, Section 6, steep slopes; (3) 405 KAR 16:190, Section 4, thin overburden; (4) 405 KAR 16:190, Section 5, thick overburden; (5) 405 KAR 16:190, Section 7, remining.

Notice of Blasting

We are providing a Public Notice of Blasting Schedule as Attachment 24.5.B which will be published in the Middlesboro Daily News, and Right to Request a Pre-Blast Survey as Attachment 24.6.B which will be distributed to the appropriate regional office, local governments, and to each resident and persons regularly working within a one-half (½) mile of the permit area.

(a) Copies of the Public Notice of Blasting Schedule and Right to Request a Pre-Blast Survey shall be distributed in accordance with the time frame specified (at least ten (10) days, but no more than thirty (30) days) to the appropriate department regional office, to local governments and public utilities, and to each residence and persons regularly working within one-half (½) mile of the permit area as described in the schedule.

(b)The permittee shall redistribute the schedule at least every twelve (12) months and revise and redistribute the schedule at least ten (10) days, but not more than thirty (30) days, before blasting whenever the area covered by the schedule changes, the actual time periods for blasting significantly differ from those identified in the prior announcement, or the permittee changes the types or patterns of warning or all-clear signals identified in the prior notification.

(c) All blasting shall be conducted between sunrise and sunset. The cabinet may specify more restrictive time periods based on public requests or other relevant information and according to the need to adequately protect the public from adverse noise and other impacts. Blasting may, however, be conducted between sunset and sunrise if:

1. A blast that has been prepared during the day must be delayed due to the occurrence of an unavoidable hazardous condition and cannot be delayed until the next day because a potential safety hazard could result that cannot be adequately mitigated;

2. Prior approval for conducting the blasting between sunset and sunrise is obtained from the Kentucky Office of Mine Safety and Licensing; and

3. A complete written report of blasting at night is filed by the permittee with the cabinet not later than three (3) days after the night blasting, not including Saturdays, Sundays, or legal holidays. The report shall include a detailed description of the reasons for the delay in blasting

including why the blast could not be held over to the next day, identification of the time at which the blast was actually conducted, a description of the warning notices given, and a copy of the blast record required by Section 6 of this administrative regulation.

(d) Unscheduled blasts may be conducted only where public or operator health and safety so require and for emergency blasting actions. When a permittee conducts an unscheduled blast, the permittee, using audible signals, shall notify all persons within one-half (1/2) mile of the blasting site and document the reason for the unscheduled blast in accordance with Section 6(20) of this administrative regulation.

The blasting signals will be as follows:

WARNING SIGNAL - A one (1) minute series of long blasts from a siren five (5) minutes prior to the blast signal.

BLAST SIGNAL - A series of short blasts from a siren one (1) minute prior to the shot.

ALL CLEAR SIGNAL - A prolonged blast from a siren following the inspection of the blast area.

In the event of an emergency situation arise, all safety precautions will be followed including but not limited to barricading all access roads no less than ten (10) minutes prior to the blast, following the warning signal, blast signal and the all clear signals as detailed in this attachment.

Appolo Fuels, Inc.
#807-0368

ATTACHMENT 24.5.B

PUBLIC NOTICE OF BLASTING SCHEDULE
Application Number: 807-0368

In accordance with Federal Regulations, 30 CFR 715.19, and State Regulation, 405 KAR 16:120, Section 3, Public Notice of Blasting Schedule, Appolo Fuels, Inc., P.O. Box 1727, Middlesboro, KY 40965, Telephone Number (606) 248-1535, will conduct blasting operations in Bell County at mining operations located approximately 1.56 miles northeast from KY 74's junction with KY 535 and 0.13 miles northeast of Fonde, KY. The Latitude is 36° 35' 36"N. The longitude is 83° 50' 15"W. Blasting activity will be conducted on approximately 409.39 surface acres. These blasting operations will begin within 30 days of issuance of the permit and will be conducted Monday through Saturday from sunrise to sunset.

Control of blasting area will be maintained by blocking public and access roads to the area 10 minutes prior to the blast. Post detonation access to the blasting area will be allowed only after an inspection determines that no hazards exist. The following is a list of the blasting signals.

WARNING SIGNAL - A one (1) minute series of long blasts from a siren five (5) minutes prior to the blast signal.

BLAST SIGNAL - A series of short blasts from a siren one (1) minute prior to the shot.

ALL CLEAR SIGNAL - A prolonged blast from a siren following the inspection of the blast area.

These blast signals will be audible within 1/2 mile of the blasting area.

Blasting may be conducted at times different from those announced in the blasting schedule when emergency situations arise where rain, lightning or other atmospheric conditions or the safety of the operation or the public requires unscheduled detonation. In the event of an emergency situation should arise, the aforementioned precautions will be followed.

ATTACHMENT 24.6.A

Notice of Pre-Blast Survey

At least thirty (30) days prior to the initiation of any blasting activity, the permittee shall notify, in writing, all residents or owners of dwellings or other structures located within ½ mile of the permit area of how to request a pre-blast survey. The notification to the resident or owner of the dwelling shall be made by certified mail, return receipt requested or by other acceptable means, i.e. hand delivery.

The resident or owner may request that a preblasting survey be conducted by notifying the permittee or the Cabinet in writing. Upon notification the permittee shall promptly conduct a pre-blasting survey of the dwelling or structure. If a structure is renovated, modified or added to subsequent to the original pre-blasting survey, then, the resident or owner can request an additional pre-blasting survey be conducted in accordance with the regulations.

A facsimile of the notification that will be provided to each resident or owner within ½ mile of the permit area has been included as Attachment 24.6.B. This notification is in the form of the letter provided in RAM 108.

Appolo Fuels, Inc.
#807-0368

ATTACHMENT 24.6.B

Notice of Your Right to Request a Preblasting Survey

Dear Resident,

Your home, school, church, shop or other manmade structure is located within 1/2 mile of the surface mining permit #807-0368 of Appolo Fuels, Inc. The mining operation is located near Fonde and Pruden in Bell County. The latitude is 36° 35' 36"N. The longitude is 83° 50' 15"W.

Federal and state laws and regulations (405 KAR 16:102/18:120, Section 2) require that the permittee notify residents or owners of any manmade structures within 1/2 mile of the permit area of their right to request a preblasting survey of the structure. This survey is conducted at no charge to the resident/owner and it is done at the resident's/owner's convenience.

It is not expected that the blasting will cause any problems or damage. However, a preblasting survey is offered and conducted for the protection of the resident's/owner's property. The survey will determine and document the existing condition of the structure(s), and any physical factors that could reasonably be affected by the blasting. If wells are used for the water supply, a water sample may be taken and included with the survey. In addition, the permittee should be notified (by the resident/owner) if any changes are made to the structure so the survey can be updated.

Upon completion of the survey, the original copy will be on file at the mine office, one copy will be sent to the regional office of the Department of Natural Resources (DNR), and one copy will be sent to the resident/owner. If the resident/owner disagrees with the results of the survey, he can notify (in writing) both the permittee and DNR. You can request the survey by writing either:

DNR Regional Office Address
Regional Office
1804 East Cumberland Avenue
Middlesboro, KY 40965
Telephone: 606-248-6166

Permittee Address Middlesboro
Appolo Fuels, Inc.
P.O. Box 1727
Middlesboro, KY 40965
Telephone: 606-248-1535

Please include your address, phone number and the following permit number in your request: #807-0368.

Appolo Fuels, Inc.
#807-0368

ATTACHMENT 24.7.A

Airblast Monitoring

Airblasts shall be controlled so that they do not exceed the values specified in the table below at any dwelling; school; church; or commercial community or institutional building; outside the permit area unless such structures are owned by the permittee and are not leased to another person. The leasee may sign a wavier relieving the permittee from meeting the airblast limitations. The permittee shall conduct periodic monitoring at least three (3) consecutive blasts during the period from January through June and three (3) consecutive blasts from July through December, to ensure compliance with the airblast standards.

AIRBLAST LIMITATIONS

Lower frequency limit of measuring system in Hz (±3dB)	Maximum level in dB
2 Hz or lower-flat response	133 peak
6 Hz or lower-flat response	129 peak

Equipment: Air blast monitoring will be conducted using a multi-function seismograph capable of monitoring air overpressures in Linear, or A-weight scales. Specifications for each scale shall be as follows:
Linear and Frequency Response 2 to 400 Hz
A-weight Range 100 to 148 dBA
A-weight Resolution 0.2 dBA

Procedure: Airblast monitoring will be conducted periodically during blasting hours. Monitoring will be conducted on all shots detonated in a period whether the shots occur singularly or consecutively. Results of the monitoring will be recorded on the blasting log and made part of the blasting record and kept for a period of five (5) years and supplied to the cabinet upon request.

Location: At the nearest control structure for each blast, or as requested by the Cabinet. Records of each air blast, along with associated blasting records will be kept at the company office for at least five (5) years according to 405 KAR 16:120 Section 6.

ATTACHMENT 24.8.A

Flyrock Control and Prevention of Adverse Impacts of Blasting

Flyrock, including blasted material traveling along the ground, will be controlled by proper blast design and proper blasting techniques being conducted by a certified blaster. Flyrock will not be cast outside of the permit boundary.

All blasting shall be conducted to prevent injury to persons, damage to public and private properties outside the permit area, adverse impacts on any underground within 500', changes in the courses, channels, and availability of surface waters outside the permit area, alterations of the groundwater flow systems and ground water availability outside the permit area.

General Measures taken to ensure compliance of the blasting operation include:

1. All blasting conducted by a certified blaster.
2. Following the blasting plans in this Section 24, Blast Design SMP-61, and utilizing the scale distance equation, and/or seismic monitoring.
3. Notifying the public through the newspaper advertisement.
4. Notifying the residents and persons regularly working within ½ mile of the permit area of pre-blast survey, blasting signals.
5. Notifying utilities and local government.
6. Controlling access to blasting area.
7. Maintaining a safety berm below the blasting area to prevent rock trundling.
8. Posting signs regarding blasting and signals.
9. Following the blasting precautions when encountering old works.
10. Following the communication plan between the driller and blaster, if different.
11. Following all state and federal regulations regarding storage, handling and detonation of explosive.

The certified blaster will be in charge of all blasting activities, and in charge of all determinations necessary to ensure a safe detonation. This includes, but it not limited to, determination of the bounds of the blast area and safety zones, location and identification of all structures to be protected and all measures necessary to protect structures and people, drilling patterns and blast orientation, blast design, blast-hole loading and determination of delay timing, and time of detonation and visually inspecting the blast-holes prior to loading. The certified blaster in charge will also take into careful consideration information such as location and condition of dwellings and other structures to be protected, the driller's log, blasthole deviation

data, laser-profile data, slant of the holes, blasthole loading data, condition of the highwall, presence of overhangs, back-breaks, voids, weathering and variations in the local geology, in controlling flyrock and preventing adverse impact of blasting. Also, unless it would result in a more potentially hazardous situation, all blasts will be designed by the certified blaster in charge so that the open face and delay pattern directs movement of overburden in a direction other than toward the direction of houses or roads. The certified blaster will make every reasonable effort to assure that each shot is configured and designed such that adequate burden relief is present so that swell will have sufficient space to expand with a minimum amount of vertical movement. Whenever possible, there will be a bench of sufficient size to catch and prevent any swell from moving off of the permitted site.

The driller will keep a log of each hole drilled that will indicate the depth, diameter and slant of each hole. The log will also include the type of rock encountered along with its consistency and thickness and any voids or any anomalies encountered. The certified blaster in charge of each blast after reviewing the driller's log, will inspect and determine the overall condition of the high-wall, checking for the presence of overhangs, irregularities and toe, back-breaks, voids, weathering and variations in the local geology prior to designing and loading all blasts in order to control flyrock and preventing adverse impacts of blasting. Explosives will be loaded in competent rock only. The driller will inform the blaster via written report, of which holes penetrated old works and at what depth. The driller will also inform the blaster if the old works contained water when penetrated. The method of determining if water is present in the old works will be completion of an electrical circuit on a water level indicator which will sound an alarm when contacted with water. Any holes that penetrate the old works will be completely backfilled to the surface and no explosives will be used in said holes. This precaution should prevent any adverse impacts to the old works or sudden release of any impounded water. Additional measures to determine if the old works contain water will include observance of accumulated water on existing benches and observance of auger holes for accumulations of water. Any blasts that have the potential of intersecting accumulations of water in old works will have their drainage diverted to an existing pond. In case of emergency release of large accumulations of water, the permittee will implement their SPCC and BMP plans and notify KDOW. Should water be encountered in any old works,

ATTACHMENT 24.8.A

backfilling will be performed in such a way as to prevent impounding of water in the old works. The method of preventing backfill from causing accumulations of water in the old works will include installation of a rock drain in the backfill at the lowest elevation of works encountered. The rock drain will extend from the old works to the toe of the backfill slope. The certified blaster in charge will make the driller's log a permanent part of the blast record.

The communication plan between the driller and blaster, if different, will include written communication informing the blaster of any old works, fractures, faults, mud seams or other changes in geology encountered during drilling. The driller will inform the blaster of which holes penetrated any of these phenomena, their characteristics and at what depth they are encountered. The certified blaster in charge will also inspect the condition of all holes prior to loading with explosives. Any drill holes that penetrate old mine works will be backfilled and not loaded with explosives.

The safety berm will be constructed and maintained below each mine bench within the proposed blasting areas. The berm can be the same berm required by 405 KAR 16:010, Section 4 if the barrier is exposed. If not, a berm will be constructed just below the proposed blast areas at a minimum height 3 feet as shown on the drawing in this item, or at any reasonable height requested by the Department.

Due to presence of several churches within ½ mile of permit area, no blasting will be conducted during normal times of religious services, which would be Wednesday evenings after 6 PM, Sunday mornings until noon and Sunday evenings after 6 PM.

All of the works within 500 feet of the proposed blasting area are assumed not to contain any significant amounts of impounded water due to the limited extent of the abandoned underground works.

All roads leading to or located within 1,000 feet of the blast area will be blocked by flagpersons a minimum of 1, 000 feet from the blast area prior to the Warning Signal and will remain closed until the All Clear Signal is given.

The proposed ground vibration limit for gas wells and lines within 1,000 feet of the blasting area is 4 in/sec. Seismograph monitoring will be used to ensure that this limit is not exceeded.

ATTACHMENT 24.8.A

The proposed blasting will be within 1,000 feet of several utility support structures owned by Eastern Kentucky Utilities. All of the support structures are two-pole wooden structures. The location of these structures have been indicated on the MRP map. No blasting will be conducted within 150 feet of the support structures for this line. Blasting mats will be used when blasting underneath the line or within 100 feet of the centerline of the line as shown on the MRP map. Since there are different types of controlling structures within the vicinity of the blasting areas, and occupied dwellings, at variable distances from the proposed blasting areas, the certified blaster should design each blast for the situation that yields the least amount of explosives per delay at the time of blasting.

Seismograph and airblast monitoring, if monitor is dual equipped, will be used on all blasts to ensure that ground vibration and airblast limits are not exceeded at any dwelling. The ground vibration limits will be as stated in 405 KAR 18:120, Appendix B as follows:

Appendix B of 405 KAR 18:120

Peak Particle Velocity Limits

Distance from the blasting site in feet	Maximum allowable peak particle velocity for ground vibration in inches per second
0 to 300	1.25
301 to 5,000	1.00
5,001 and beyond	0.75

The permittee will provide the certified blaster in charge with a complete copy of the approved blast plan contained in this permit application. Anytime a new blaster is placed in charge of blasting activities, the permittee will also ensure that the new blaster receives a complete copy of said plans.

ATTACHMENT 24.8.A

In the event of flyrock, the permittee will immediately notify the Division of Mine Reclamation and Enforcement pursuant to 405 KAR 7:040 and that the permittee will not disturb or remove the muck pile until an investigation by Department is concluded.

ATTACHMENT 24.9.A

Ground Vibration

Type, capability, sensitivity and monitoring locations are as follows, or a comparable equivalent:

NOMIS 5400 - Operating Characteristics

Seismic

Trigger Level:
Programmable in steps of 0.01 IPS (.25 mm) from .02 IPS (.5 mm) to 4.0 IPS (102 mm)

Maximum Range:
4.0 IPS (102 mm/sec) standard
8.0 IPS (204 mm/sec) optional

Frequency Range:
2-500 (5-second graph)
2-250 (10-second graph)
2-150 (15-second graph)
1 Hz Geophones optional

Accuracy:
+/-3% of full scale at 160 Hz

Sample Rate:
1024 samples per sec per channel (for 5 sec record)

Transducer:
Three perpendicular oriented electrondynamic, normalized, Geophones, 2 Hz standard (1 Hz optional)

Sound

Weighting Scale:
F(Flat) and A scales

Measuring Range:
F: 100-140 dB peak (.000055 to .028 Psig)
F: 90-140 dB peak optional

Frequency Range:
2-500 Hz
F: -3 dB at 2 Hz

Accuracy:
+0.7 dB at reference point (127 dB peak, 250 Hz)

Trigger Level:
100-140 dB in 1 dB steps

General

Recording:
Thermal printer, dot matrix, 3.20 inches wide paper printout, 55+ events/roll

Internal Memory:
Internal memory standard - 100+ events capacity for 2 sec records

Date and Time Indication:

ATTACHMENT 24.9.A

Month, day, and year. Hours, minutes, and seconds (24-hour clock)

Measuring Time:

User selectable, 2,3,5,10,15 sec recording period, including .5 sec pre-trigger information

Total Cycle Time:

Approximately 2.5 minutes with long report; 1.5 minutes with printer off

Shielding:

Analog circuits shielded against interference

Temperature Range:

0-120 F

Graphical Printout:

USBM/OSM log plot of Peak Particle velocity vs Frequency (standard)
Particle velocity vs Time Graph - .25, .50, 1, 2, 4 IPS scales on seismic trace; (8.0 IPS optional) (auto-ranging)
100-120 dB, 100-140 dB scales (90-140 dB optional) on sound trace (auto-ranging)
Timing marks every 1/10 second
.000055 to .028 Psig on sound

LCD:

8 line by 40 column text & graphics display
Backlight for dim areas (optional)
(LCD viewing greatly reduces power use by turning off printer)

Storage:

Unit is self-contained in unbreakable plastic case

Weight:

16 lb. (7.3 kg)

Size:

7 x 10 x 11 in
178 x 154 x 279 mm

Power

Internal Batteries:

6v, 9Ah, gel-type rechargeable
Up to 30 days with printer off (Printer on - 20 days)

External Power:

AC Adapter; 9vDC @ 500mA
6v wet cell battery
Solar panels - optional

Location of Monitoring: Nearest structure or as requested by the Cabinet.

ATTACHMENT 25.1.A

Backfill and Grading Plan

Backfilling and grading shall be performed as the operation progresses by the contour method of mining around the Hignite coal seam and will be conducted as a continuous operation and as an integral part of the mining operation. It is proposed to begin mining in the general location of Hollow Fill #1. It is also proposed to contour the Buckeye Springs, Poplar Lick, Sterling and Strays coal seams in the footprint of Hollow Fill #1.

It is proposed by this application to surface and auger/highwall mine the coal seams encountered during the construction of Hollow Fill #1. The mining will consist of contour and 50% auger/highwall mining, as detailed in Item 35, of the Buckeye Springs, Poplar Lick, Sterling and Strays coal seams and any rider seams encountered. The coal seams will be mined as they are encountered during the construction of the hollow fill. Mining within the footprint of the hollow fill is anticipated to begin in the Buckeye Springs coal seam. As a result of this mining the highwall will be exposed until the construction of the hollow fill would encompass the exposed highwall. The next coal seam to be encountered in the construction of the fill would be the Poplar Lick coal seam. As a result of this mining the highwall will be exposed until the construction of the hollow fill would encompass the exposed highwall. With the fill already encompassing the mining of the Buckeye Springs seam the Poplar Lick coal seam would be the only exposed highwall. It should be noted that the close proximity of the Poplar Lick and the Sterling coal seams that the mining of the seams may be included in the same highwall. This mining would continue until all the coal seams within the footprint of the hollow were encountered. As only one seam will be mined at any given time the permittee proposes a variance to the limits of the contemporaneous reclamation. The variance is based on the greatest length of highwall to be exposed at a given time which would be during the mining of the Strays coal seam. The length of exposed highwall during the mining of this seam would be approximately 4000'. This contemporaneous reclamation variance is in addition to the contemporaneous reclamation variance requested for the mining of the Hignite coal seam. The variance for Hollow Fill #1 is described as follows: The permittee proposes a maximum total open highwall distance of 4,500 feet and a time of 180 calendar days. This total open highwall distance is understood to be the distance from the initial bench cut for blast drilling to the completed backfilling process that is ready for revegetation seeding.

ATTACHMENT 25.1.A

As part of the proposed variance, the permittee will post Additional Supplemental Assurance to the Cabinet in the amount of Fifty Thousand Dollars ($50,000.00) for each 1,500 feet of additional highwall. This will result in a total additional distance of 4,500 feet and One Hundred Thousand Dollars ($150,000.00) of supplemental assurance.

After the spoil from a given cut or a series of cuts and pits is placed within Hollow Fill #1, and when the appropriate spoil storage area has been filled, all remaining spoil will be transported by haulback trucks to return the mined areas to the approved final contour. Spoil will be placed in the spoil storage area and on the mining area simultaneously so that reclamation is kept current. The spoil will be transported, dumped and graded with dozers in order to obtain sufficient compaction of the backfilled material. After all auger holes and/or highwall mine openings have been covered and the area has been backfilled to the approved contour the area will be final graded and scarified to prevent slippage of topsoil and to aid in root penetration. Topsoil will then be replaced as described in the topsoil handling plan, fertilized, seeded and mulched as described in the revegetation plan. Cross-sections are included to show the excavation and backfill calculations as well as the final configuration of the permit area.

The proposed mining operation will consist of contour and auger/highwall mining. The removal of all coal will proceed as concurrently as possible and in a timely manner in order to minimize the time period in which disturbed areas are exposed prior to reclamation.

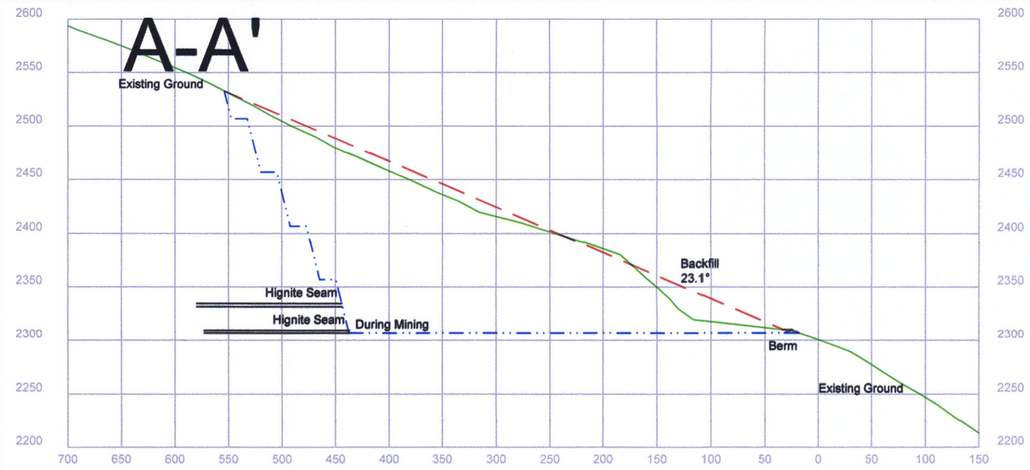
Since this permit proposes to utilize highwall type mining methods to maximize the recovery of coal reserves, it is essential that a variance for alternate contemporaneous reclamation be obtained for this permit. Approval of this variance will allow the permittee to expose sufficient coal bed outcrop to ensure continuous production from the highwall mining machine. Based upon the planning projections of the permittee, the highwall miner will mine and advance through approximately one hundred (100) linear feet of exposed highwall each production day. This assumption is based upon the highwall miner mining a hole width of ten (10) feet and an anticipated hole web width of ten (10) feet. In addition, it is anticipated that a twenty (20) feet barrier pillar will be left unmined after the completion of twenty (20) highwall miner holes. In addition to this daily mining rate, the highwall miner would require an operations area of approximately three-hundred (300) linear feet for coal stockpile, push beam storage, and other related ancillary equipment.

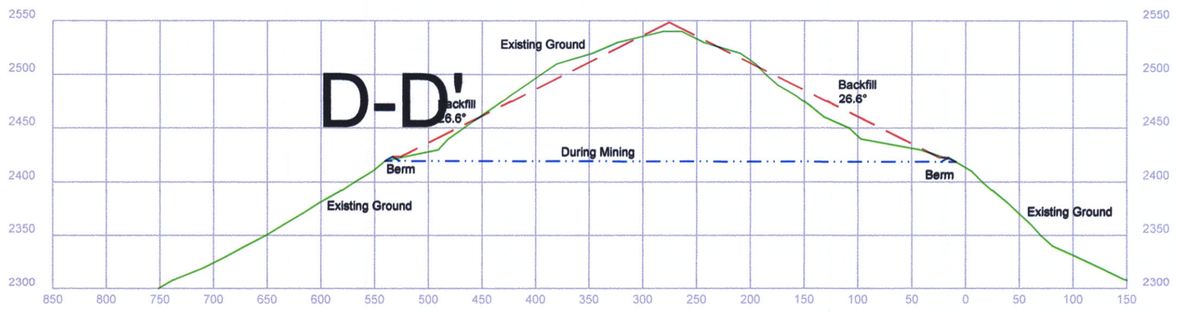
ATTACHMENT 25.1.A

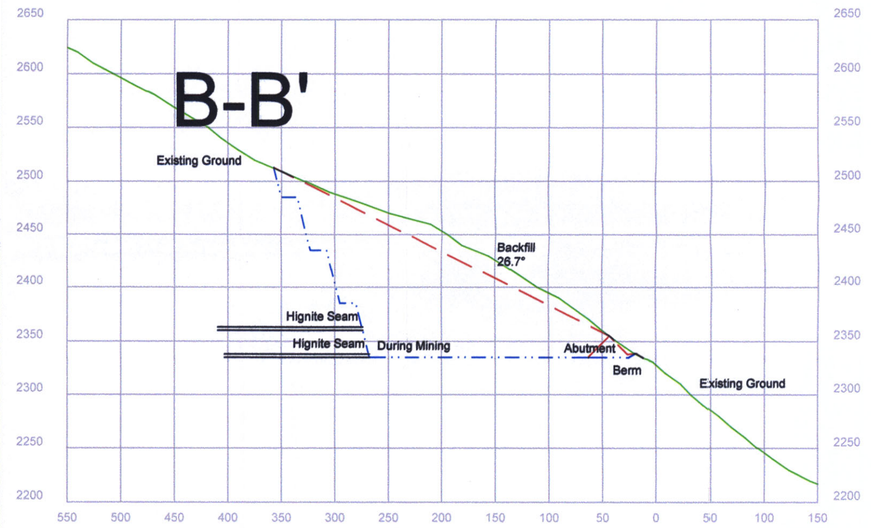
In order to ensure continuous availability of mining for the highwall miner, the permittee must plan this operation such that a sufficient length of highwall has been contour mined and available for the highwall miner to mine. Based upon the permittee's extensive experience in highwall mining, it has been determined that an optimum of thirty (30) days of highwall mining production needs to be excavated in advance of the highwall mining machine to ensure continuous mining production. Using our assumptions noted above, this would dictate that the highwall miner would require an optimum length of 3,300 feet of open highwall available for mining. Coupling this distance with the active surface mining pit and the backfilling process, it is clear that a variance is needed beyond the 1,500 feet limit for open highwall.

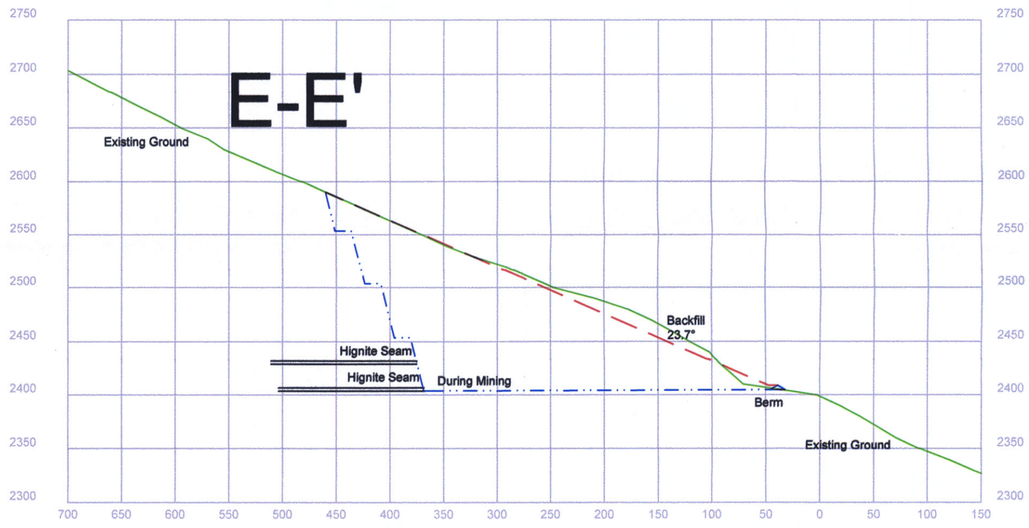
Based upon this evidence, this application proposes a variance to the limits of contemporaneous reclamation and this variance is described as follows: The permittee proposes a maximum total open highwall distance of 4,500 feet and a time of 180 calendar days. This total open highwall distance is understood to be the distance from the initial bench cut for blast drilling to the completed backfilling process that is ready for revegetation seeding. The applicant recognizes that the ***optimum*** open highwall length noted above is in excess of the requested 4,500 feet maximum length, however, this 4,500 feet limit will provide the applicant ample length to conduct the proposed surface mining.

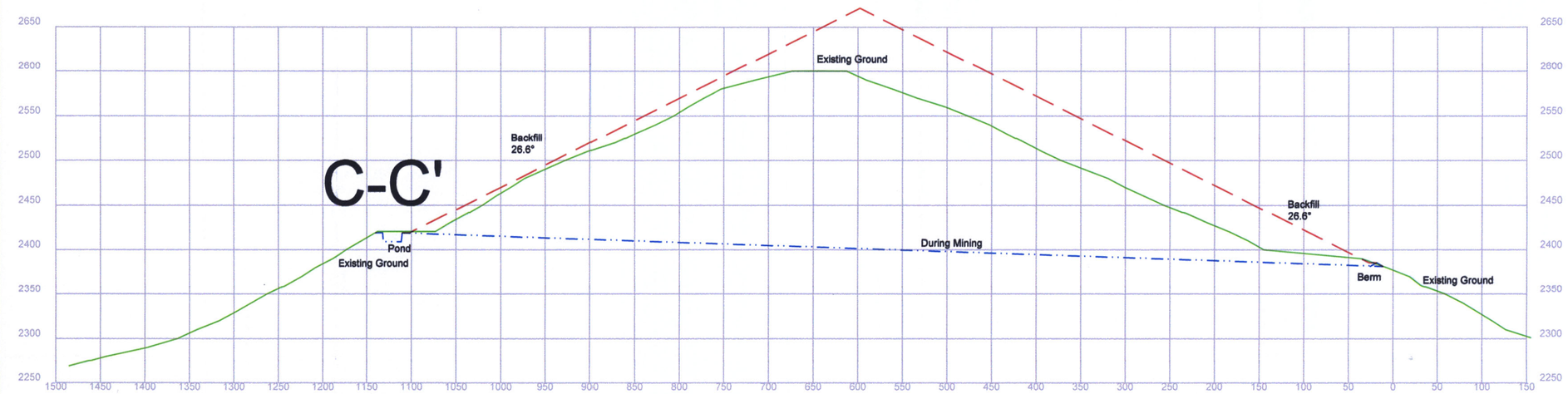
As part of the proposed variance, the permittee will post Additional Supplemental Assurance to the Cabinet in the amount of Fifty Thousand Dollars ($50,000.00) for each 1,500 feet of additional highwall beyond the initial 1,500 feet. This will result in a total additional distance of 3,000 feet and One Hundred Thousand Dollars ($100,000.00) of supplemental assurance. The permittee can opt to submit Supplement Assurance in 50,000.00 dollar increments and posting of the Supplement Assurance bond would not be required until the permittee has reached the maximum linear distance, i.e., 1,500 feet for the posting of Supplement Assurance #1 and 3,000 feet for the posting of Supplement Assurance #2. The permittee acknowledges that the requested 4,500 feet open highwall limit is slightly less than the calculated optimum limit noted above, but the proposed 4,500 feet limit should provide ample distance to conduct the surface mining proposed in this application and will eliminate the need to request a third Supplemental Assurance Bond for this permit.











LEGEND

Existing Ground

During Mining

Post Mining

I, _____, P.E. No. 15,317

Date: 7/17/09

hereby certify in accordance with 405 KAR 7:040, Section 10, that this document is correct as determined by accepted engineering practices and includes all information required of it by Chapter 350 and KAR Title 405.

Notes:

1. All highwall cuts shown are of typical design. Actual cut walls in field may vary from the typical design drawings provided.
2. Terraces may be constructed in the field at locations other than those shown on the provided cross section drawings.
3. Terraces may be used as access or haul roads within the permitted mining areas.

STATE OF KENTUCKY
TIMOTHY C. HOWARD 15,317 LICENSED
PROFESSIONAL ENGINEER

Appolo Fuels, Inc.

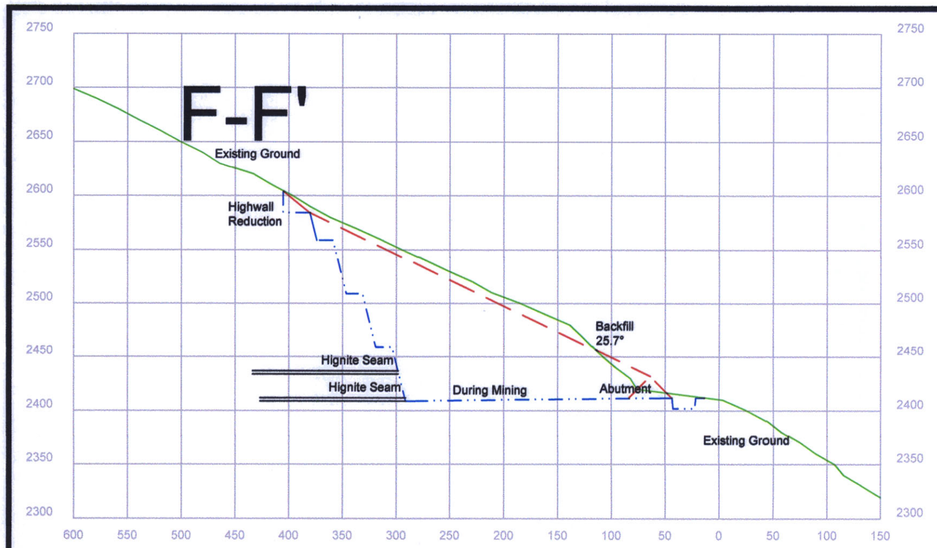
Permit No. 807-0368
Backfilling and Grading
Cross Sections (1 of 4)

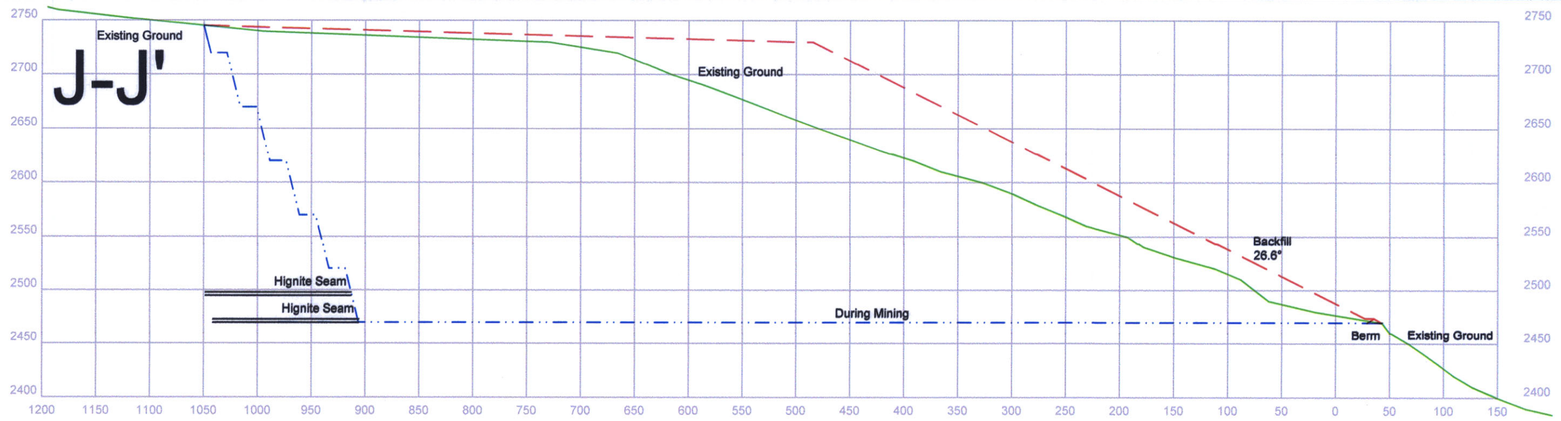
Prepared By:
HOWARD
Engineering and Geology, Inc.
PO Box 271 - 2550 W Hwy 72 Suite 1 - Harlan, Ky - 40831
(606) 573-6924 - http://www.howardeng-geo.com/

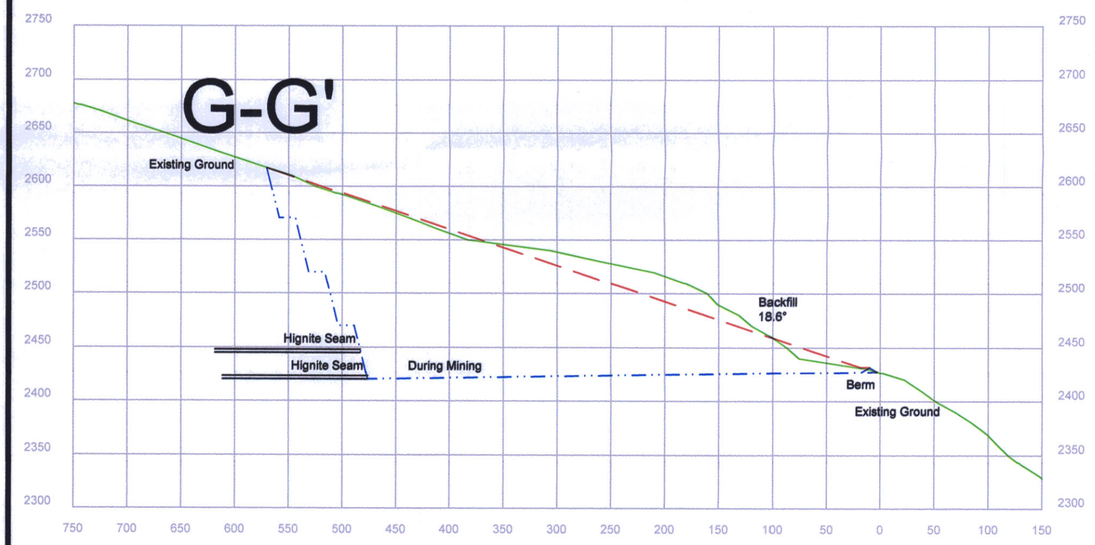
Sections
1" = 100'

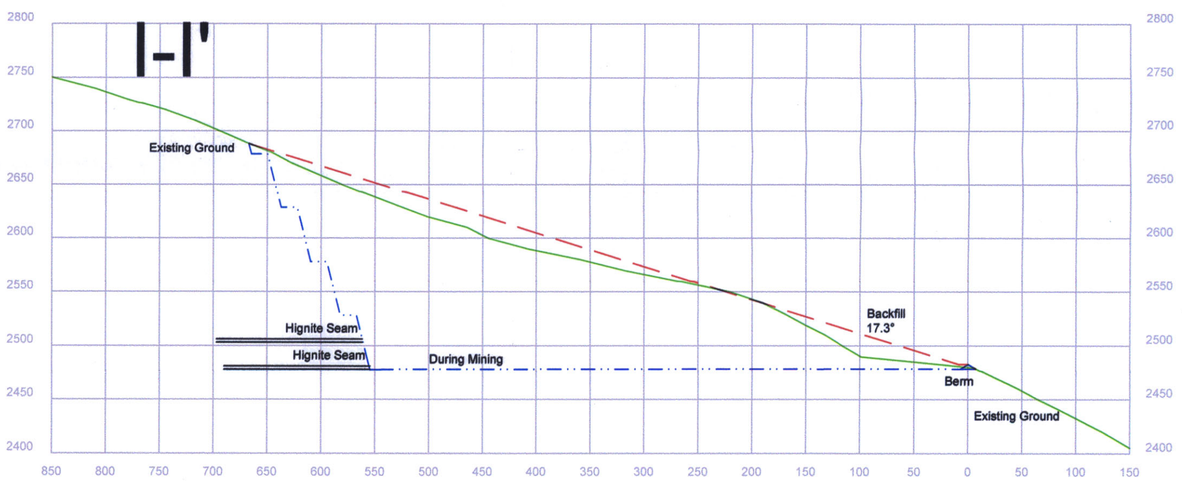
Attachment
25.1

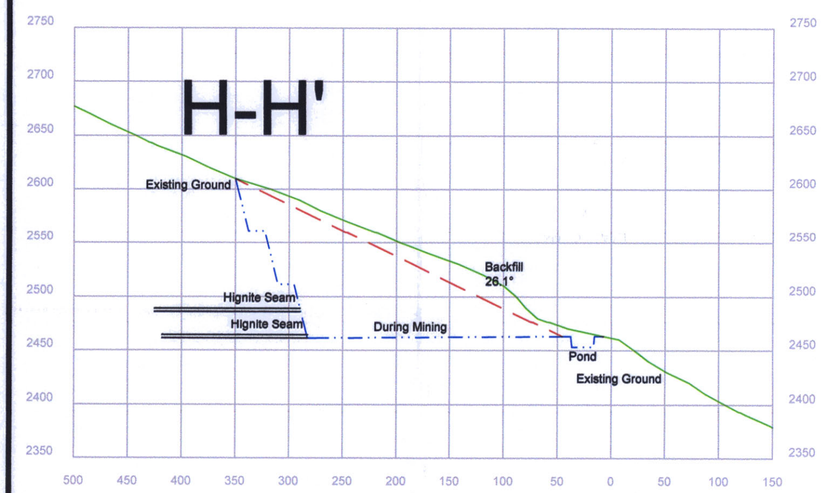
DWG FullPath: W:\CLIENTS\Appolo\Fuels\807-0368\Original\Comprehensive\BF2\Sections and Hollow Fill 2.dwg

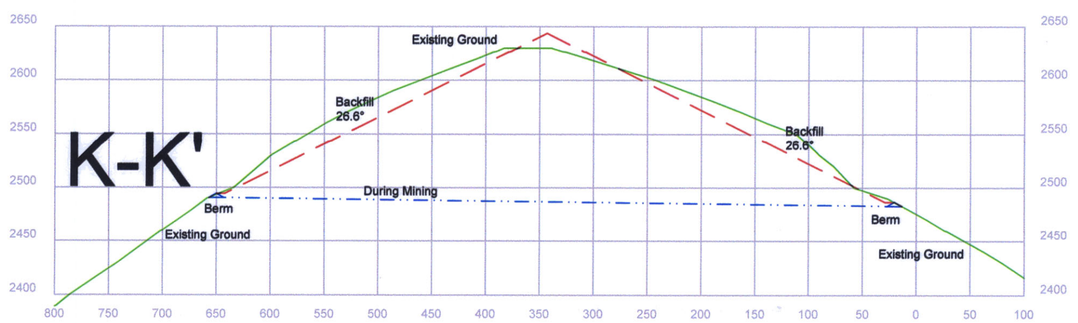












Notes:

1. All highwall cuts shown are of typical design. Actual cut walls in field may vary from the typical design drawings provided.
2. Terraces may be constructed in the field at locations other than those shown on the provided cross section drawings.
3. Terraces may be used as access or haul roads within the permitted mining areas.

LEGEND

- Existing Ground
- During Mining
- Post Mining

I, Timothy C. Howard, P.E. No. 15,317

Date: 7/17/04

hereby certify in accordance with 405 KAR 7:040, Section 10, that this document is correct as determined by accepted engineering practices and includes all information required of it by Chapter 350 and KAR Title 405.

STATE OF KENTUCKY ★ TIMOTHY C. HOWARD 15,317 LICENSED PROFESSIONAL ENGINEER ★

Appolo Fuels, Inc.

Permit No. 807-0368
Backfilling and Grading
Cross Sections (2 of 4)

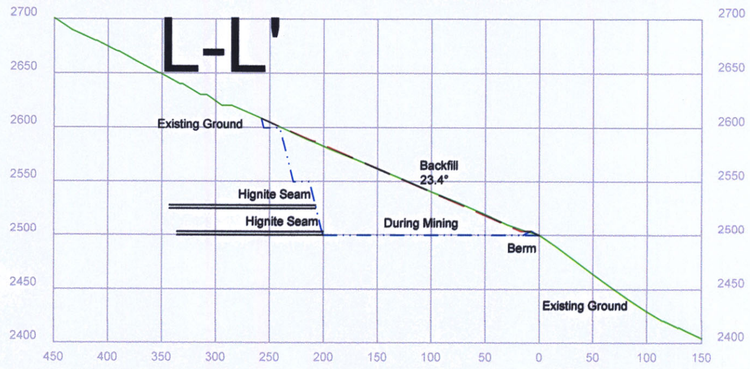
N W E S

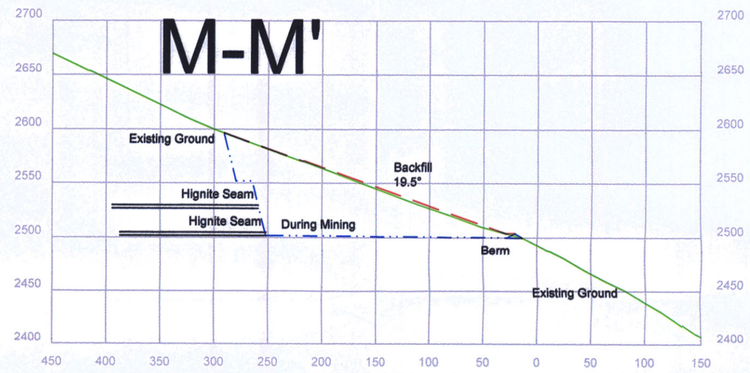
Prepared By:
HOWARD
Engineering and Geology, Inc.
PO Box 271 - 2550 W Hwy 72 Suite 1 - Harlan, Ky - 40831
(606) 573-6924 - http://www.howardeng-geo.com/

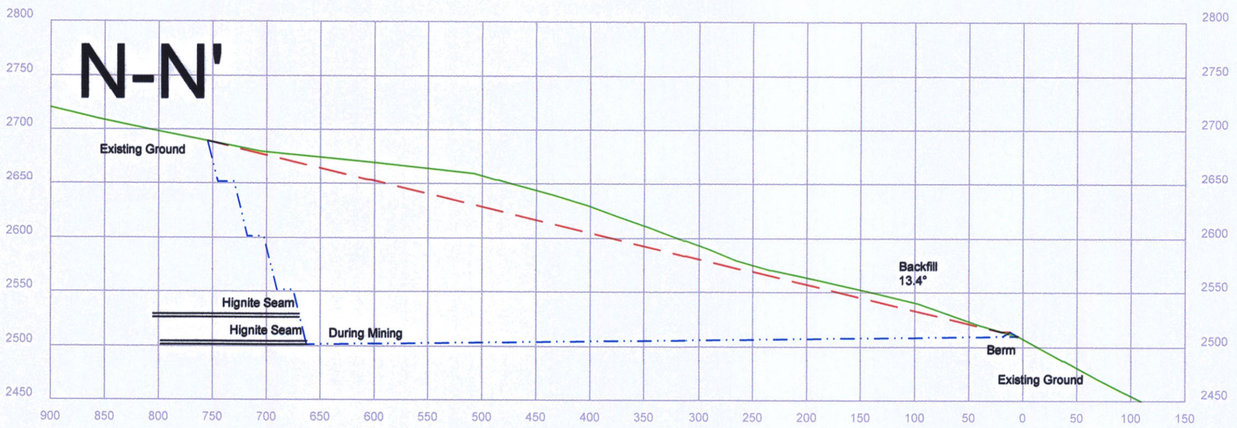
Sections 1" = 100'

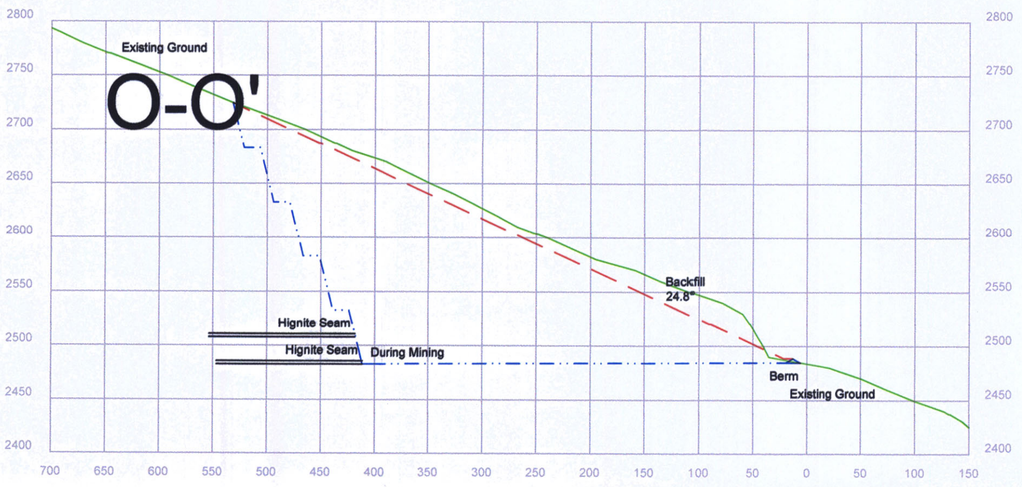
Attachment 25.1

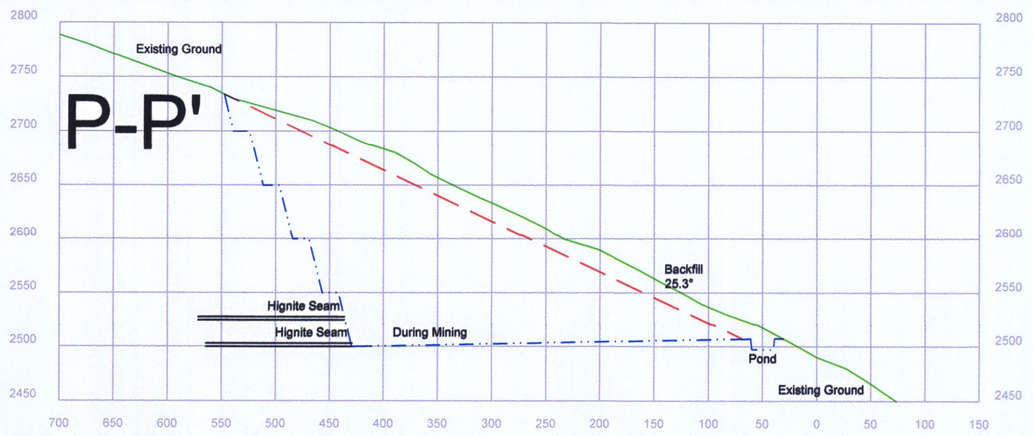
DWG FullPath: W:\CLIENTS\Appolo Fuels\807-0368\Original\Comprehensive\BF2\Sections and Hollow Fill 2.dwg

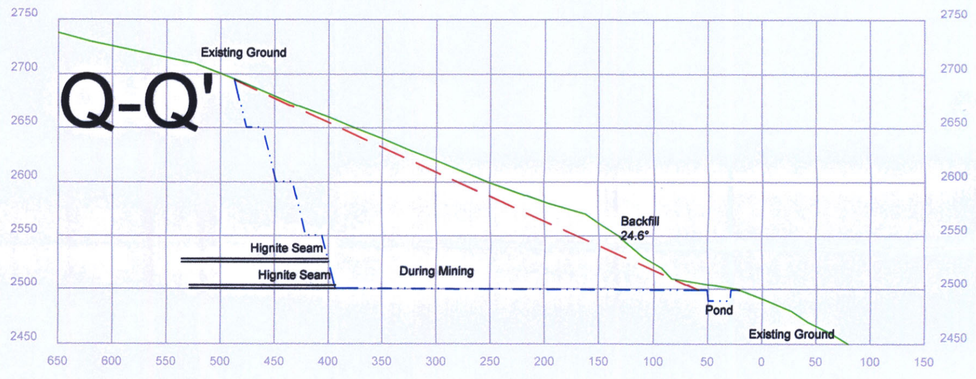


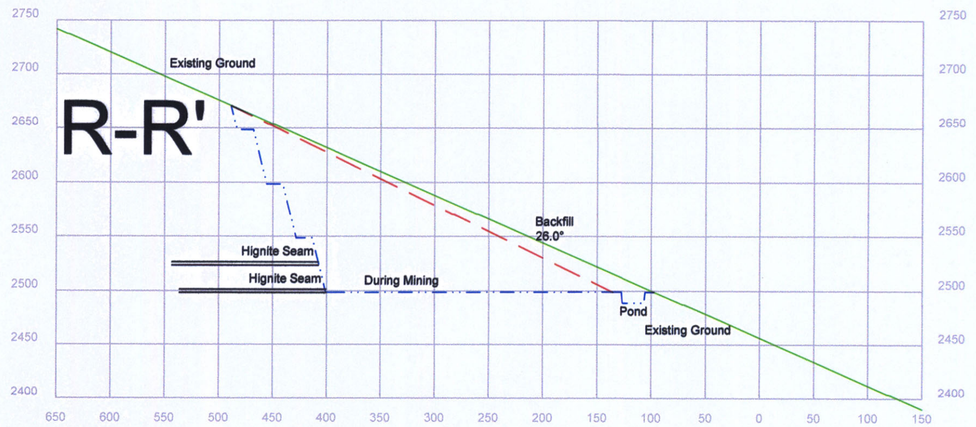












LEGEND

- Existing Ground
- During Mining
- Post Mining

Notes:

1. All highwall cuts shown are of typical design. Actual cut walls in field may vary from the typical design drawings provided.
2. Terraces may be constructed in the field at locations other than those shown on the provided cross section drawings.
3. Terraces may be used as access or haul roads within the permitted mining areas.

I, Timothy C. Howard, P.E. No. 15,317

Date: 7/17/09

hereby certify in accordance with 405 KAR 7:040, Section 10, that this document is correct as determined by accepted engineering practices and includes all information required of it by Chapter 350 and KAR Title 405.

STATE OF KENTUCKY * TIMOTHY C. HOWARD 15,317 LICENSED PROFESSIONAL ENGINEER *

Appolo Fuels, Inc.

Permit No. 807-0368
Backfilling and Grading
Cross Sections (3 of 4)

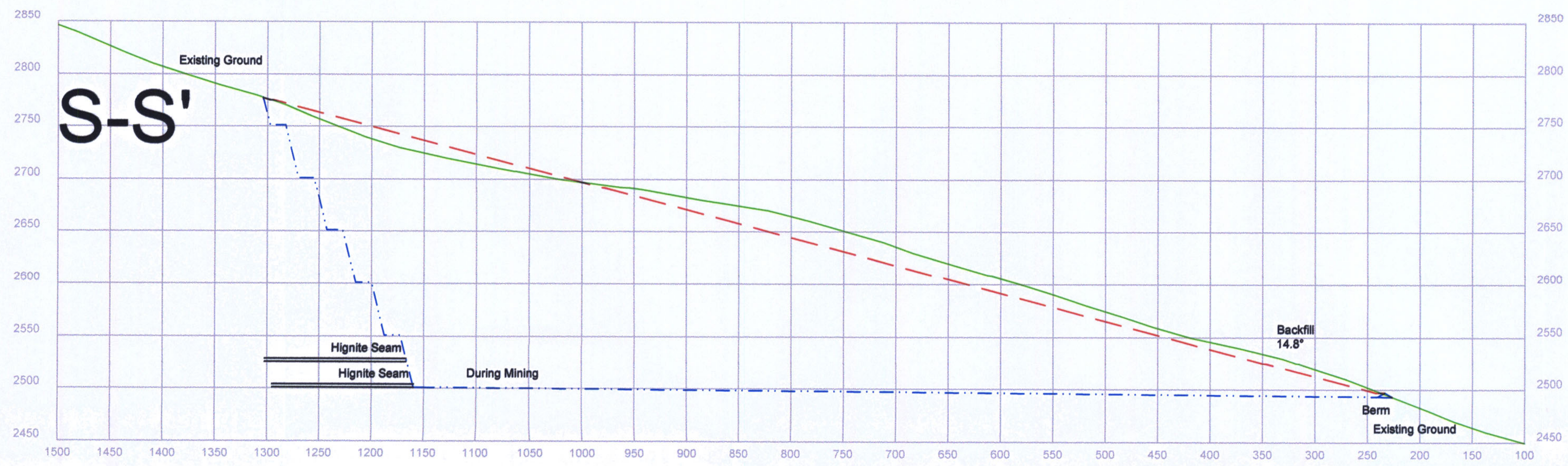
N W E S

Prepared By:
HOWARD Engineering and Geology, Inc.
PO Box 271 - 2550 W Hwy 72 Suite 1 - Harlan, Ky - 40831
(606) 573-6924 - http://www.howardeng-geo.com/

Sections
1" = 100'

Attachment
25.1

DWG FullPath: W:\CLIENTS\Appolo Fuels\807-0368\Original\Comprehensive\BF\Sections and Hollow Fill 2.dwg



LEGEND

- Existing Ground
- During Mining
- Post Mining

Notes:

1. All highwall cuts shown are of typical design. Actual cut walls in field may vary from the typical design drawings provided.
2. Terraces may be constructed in the field at locations other than those shown on the provided cross section drawings.
3. Terraces may be used as access or haul roads within the permitted mining areas.

I, Timothy C. Howard, P.E. No. 15,317

Date: 7/17/09

hereby certify in accordance with 405 KAR 7:040, Section 10, that this document is correct as determined by accepted engineering practices and includes all information required of it by Chapter 350 and KAR Title 405.

STATE OF KENTUCKY · TIMOTHY C. HOWARD · 15,317 · LICENSED PROFESSIONAL ENGINEER

Appolo Fuels, Inc.

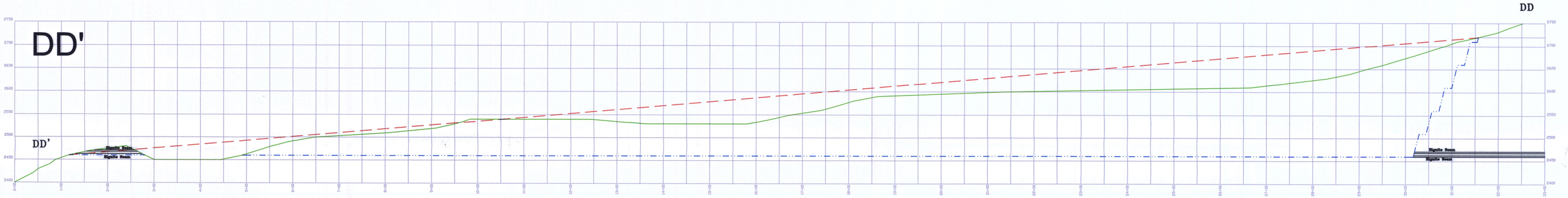
Permit No. 807-0368
Backfilling and Grading
Cross Sections (4 of 4)

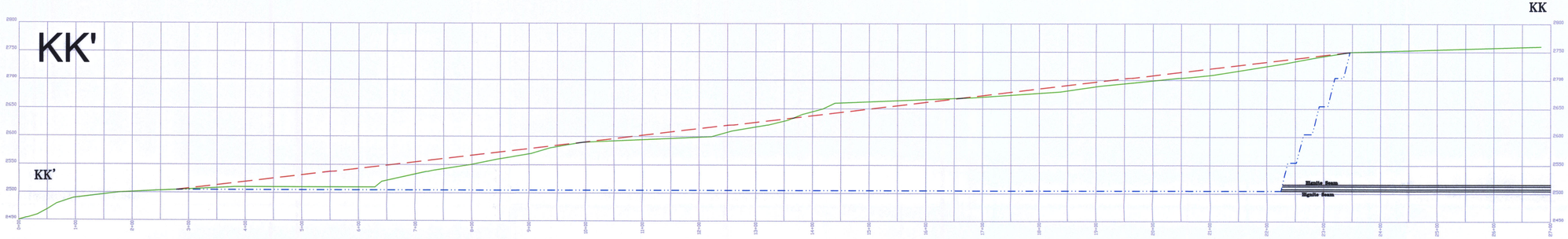
N S W E

Prepared By: HOWARD Engineering and Geology, Inc.
PO Box 271 - 2550 W Hwy 72 Suite 1 - Harlan, Ky - 40831 (606) 573-6924 - http://www.howardeng-geo.com/

Sections 1" = 100'

Attachment 25.1





LEGEND

Existing Ground	———
During Mining	·—·—·—·
Post Mining	— — — —

Notes:
1. All highwall cuts shown are of typical design. Actual cut walls in field may vary from the typical design drawings provided.
2. Terraces may be constructed in the field at locations other than those shown on the provided cross section drawings.
3. Terraces may be used as access or haul roads within the permitted mining areas.

I, Timothy C. Howard, P.E. No. 15,317
Date: 7/17/08
hereby certify in accordance with 405 KAR 7:040, Section 10, that this document is correct as determined by accepted engineering practices and includes all information required of it by Chapter 350 and KAR Title 405.

STATE OF KENTUCKY
TIMOTHY C. HOWARD 15,317
LICENSED PROFESSIONAL ENGINEER

Appolo Fuels, Inc.
Permit No. 807-0368
Backfilling and Grading
Cross Sections (1 of 1)

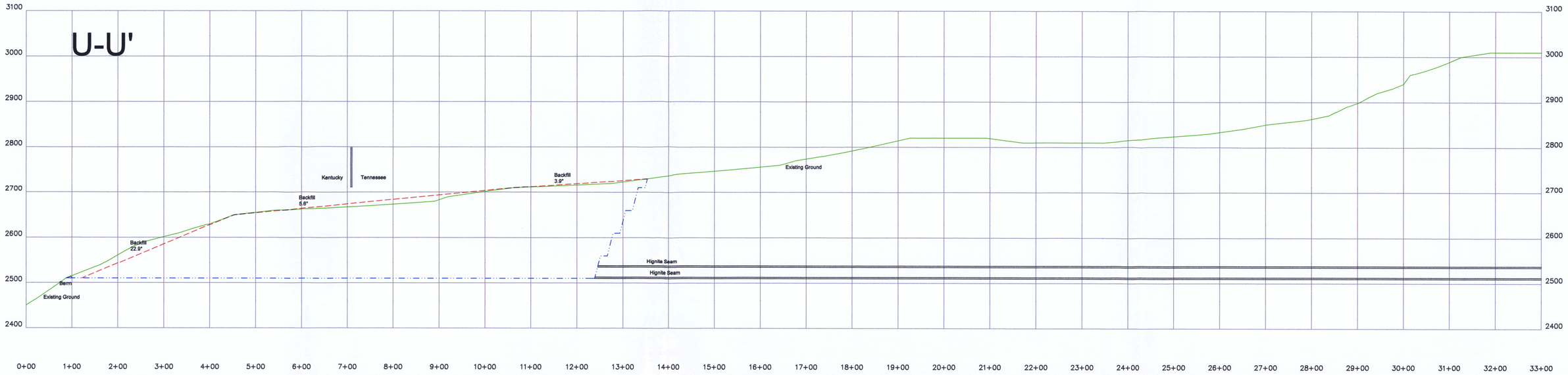
N W E S

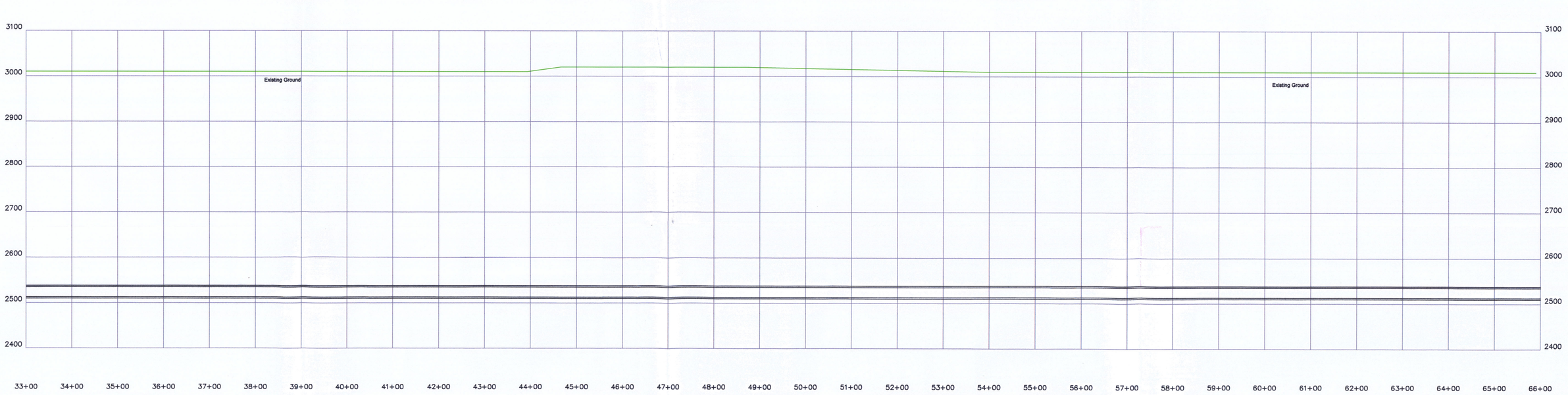
Professional Office
HOWARD Engineering and Geology, Inc.
PO Box 271 - 2050 W Hwy 72 Suite 1 - Harlan, Ky - 40831
(606) 573-4004 - http://www.howardeng.com/

Sections 1" = 100'

Attachment 25.1

U-U'





LEGEND

- Existing Ground
- During Mining
- Post Mining

Notes:

1. All highwall cuts shown are of typical design. Actual cut walls in field may vary from the typical design drawings provided.
2. Terraces may be constructed in the field at locations other than those shown on the provided cross section drawings.
3. Terraces may be used as access or haul roads within the permitted mining areas.

I, _____, P.E. No. 15,317

Date: 8/11/09

hereby certify in accordance with 405 KAR 7:040, Section 10, that this document is correct as determined by accepted engineering practices and includes all information required of it by Chapter 350 and KAR Title 405.

STATE OF KENTUCKY
TIMOTHY C. HOWARD
15,317
LICENSED
PROFESSIONAL ENGINEER

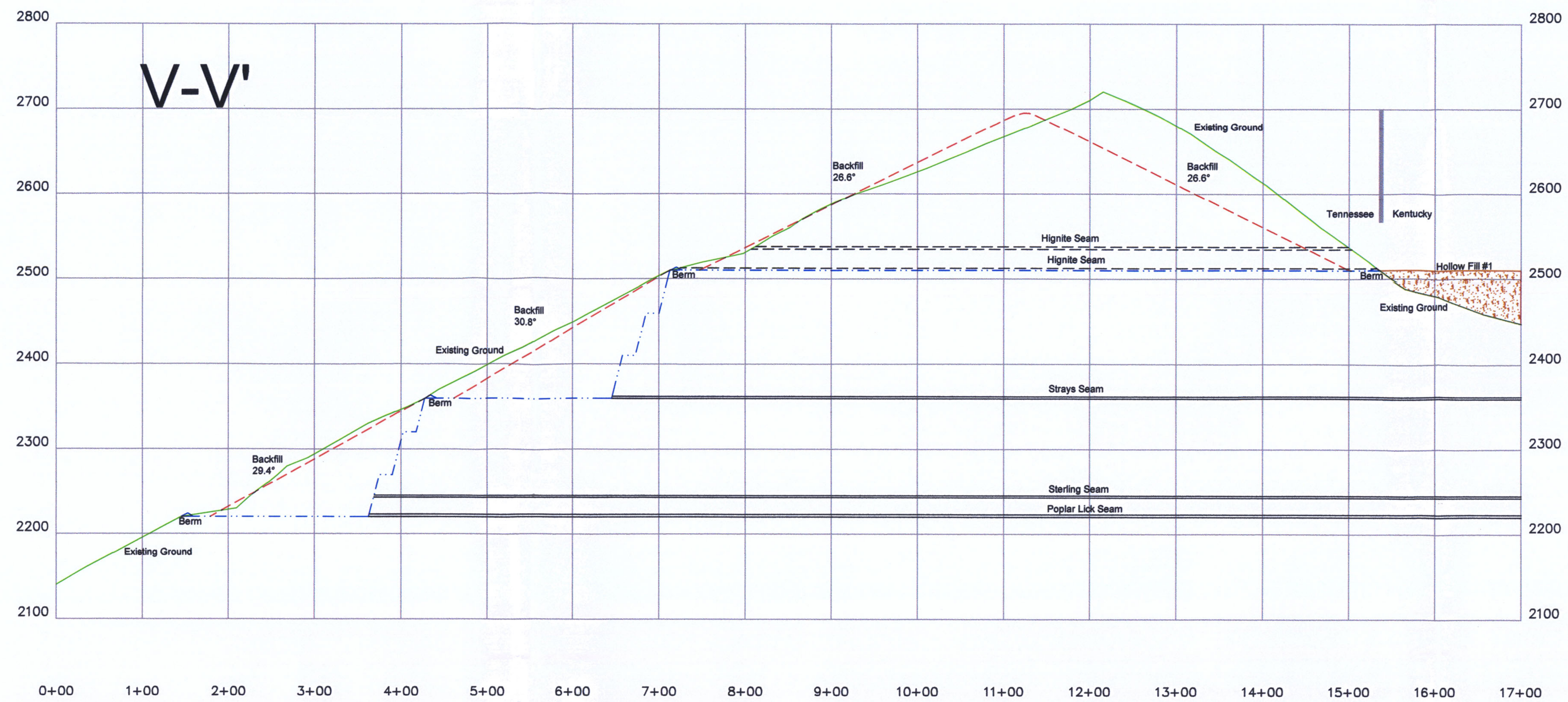
Appolo Fuels, Inc.

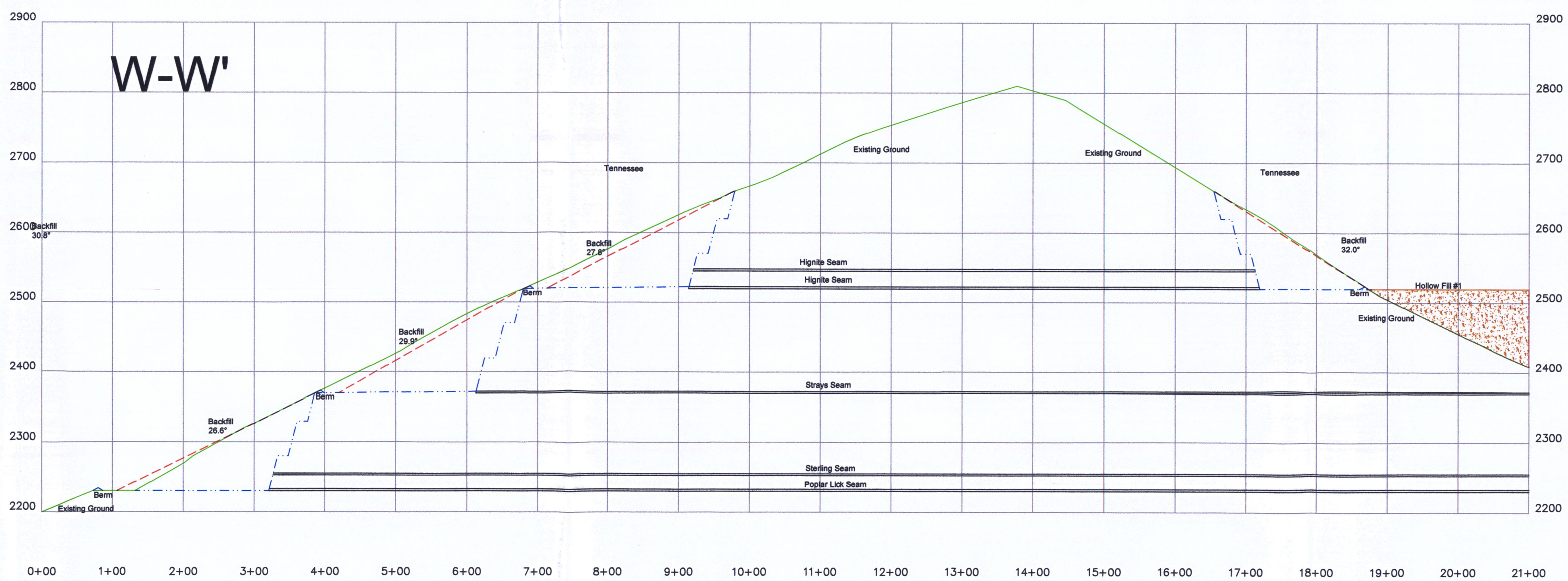
Permit #807-0368
Additional Cross-Sections
Near Hollow Fill #1
Attachment 25.1.A

N
W
E
S

Prepared By:
HOWARD
Engineering and Geology, Inc.
PO Box 271 - 2050 W Hwy 72 Suite I - Harlan, Ky - 40831
(606) 573-4558 - http://www.howardeng.com/

Scale:
1" = 100'





LEGEND

Existing Ground	(green solid line)
During Mining	(blue dash-dot line)
Post Mining	(red dashed line)

Notes:
1. All highwall cuts shown are of typical design. Actual cut walls in field may vary from the typical design drawings provided.
2. Terraces may be constructed in the field at locations other than those shown on the provided cross section drawings.
3. Terraces may be used as access or haul roads within the permitted mining areas.

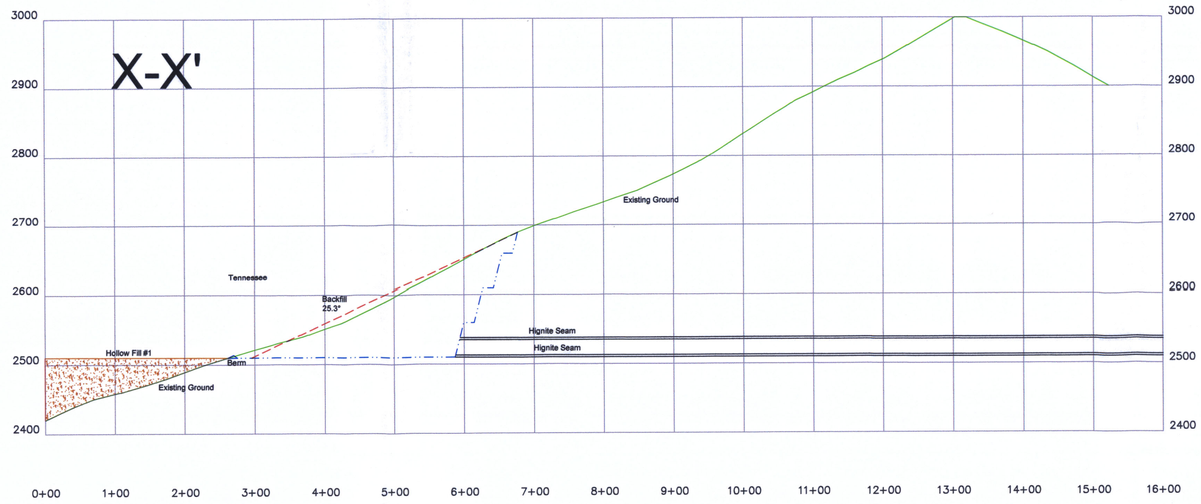
I, Timothy C. Howard, P.E. No. 15,317
Date: 8/11/09
hereby certify in accordance with 405 KAR 7:040, Section 10, that this document is correct as determined by accepted engineering practices and includes all information required of it by Chapter 350 and KAR Title 405.

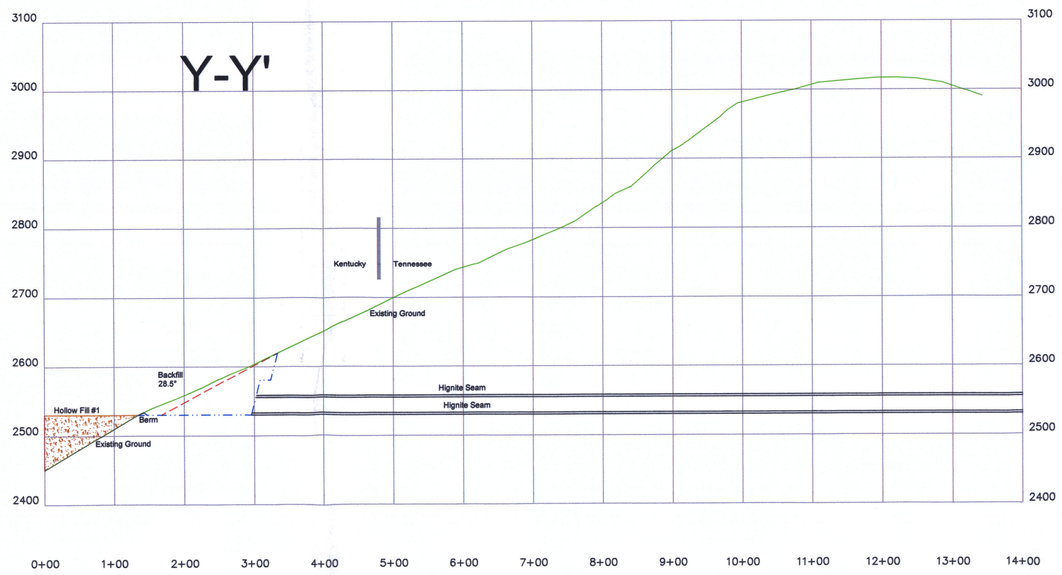
STATE OF KENTUCKY TIMOTHY C. HOWARD 15,317 LICENSED PROFESSIONAL ENGINEER

Appolo Fuels, Inc.
Permit #807-0368
Additional Cross-Sections
Near Hollow Fill #1
Attachment 25.1.A

Prepared By: HOWARD Engineering and Geology, Inc.
PO Box 271 - 2550 W Hwy 72 Suite 1 - Harlan, Ky - 40831
(606) 573-6924 - http://www.howardeng-geo.com/

Scale: 1" = 100'





LEGEND

- Existing Ground
- During Mining
- Post Mining

Notes:
1. All highwall cuts shown are of typical design. Actual cut walls in field may vary from the typical design drawings provided.
2. Terraces may be constructed in the field at locations other than those shown on the provided cross section drawings.
3. Terraces may be used as access or haul roads within the permitted mining areas.

I, _____, P.E. No. 15,317
Date: 8/11/09

hereby certify in accordance with 405 KAR 7:040, Section 10, that this document is correct as determined by accepted engineering practices and includes all information required of it by Chapter 350 and KAR Title 405.

STATE OF KENTUCKY
TIMOTHY C. HOWARD 15317 LICENSED PROFESSIONAL ENGINEER

Appolo Fuels, Inc.
Permit #807-0368
Additional Cross-Sections
Near Hollow Fill #1
Attachment 25.1.A

Scale: 1" = 100'

Prepared By:
HOWARD Engineering and Geology, Inc.
PO Box 371 - 2050 W Hwy 72 Suite I - Harlan, Ky - 40831
(606) 573-6924 - http://www.howeng-geo.com/