

**23. Soil Resources Information**

- 23.1 Is soil survey information for the proposed permit area available from the U.S. Soil Conservation Service?  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?  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?  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 [ ] 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.  
**N/A - No changes to the Blasting Plan approved in the Original Application.**
- 24.3 Will blasting be conducted within 500' of an active or abandoned underground mine? [ ] YES [ ] NO. If "YES", attach the appropriate MSHA Blasting Approval Form as "Attachment 24.3.A".  
**N/A - No changes to the Blasting Plan approved in the Original Application.**
- 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.  
**N/A - No changes to the Blasting Plan approved in the Original Application.**

- 24.5 Does the proposed surface mining operation include blasting operations using more than five (5) pounds of explosives?  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".  
**N/A - No changes to the Blasting Plan approved in the Original Application.**
- 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".  
**N/A - No changes to the Blasting Plan approved in the Original Application.**
- 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".  
**N/A - No changes to the Blasting Plan approved in the Original Application.**
- 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".  
**N/A - No changes to the Blasting Plan approved in the Original Application.**
- 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?  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".  
**N/A - No changes to the Blasting Plan approved in the Original Application.**

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**25. Backfilling and Grading Plan**

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- 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  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, remaining.

ATTACHMENT 25.1.A

Backfilling and grading shall be performed as the operation progresses by the contour method of mining around the Sterling and Poplar Lick coal seams and will be conducted as a continuous operation and as an integral part of the mining operation. After the spoil from a given cut or a series of cuts and pits is generated it will be transported by haulback trucks to return the mined areas to the approved final contour. The spoil will be transported, dumped and graded with dozers in order to obtain sufficient compaction of the backfilled material. After all auger/highwall miner holes or 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 and/or alternate 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 as well as the final configuration of the permit area. All highwall remnants will be stable and the slope of the backfill will be compatible with the proposed postmining landuse. Backfill material will be a minimum of four (4) feet above the coal seam.

Initially, highwall cuts will be made on the Sterling and Poplar Lick coal seam. It is anticipated that all coal encountered in this cut will be recovered as this cut is advanced. After one or two of these cuts is made on the coal seams, the coal seams will be auger mined with a highwall miner. It is anticipated that mining activity will advance around the bench with the excavations on the coal seam advancing ahead of the auger mining activity. If additional pits are made to meet production requirements, the mining activity will be conducted in a similar manner. Backfilling of the pits will not begin until coal removal by auger/highwall miner has been completed. It is anticipated that a waiver from contemporaneous reclamation requirements will be necessary for this operation for distance and time. An additional length of 3,000 feet of exposed wall in addition to the 1,500 feet of initial wall and a maximum time of 240 days is being proposed. This would allow enough room to operate the equipment in the various pits on the operation and aid in the auger/thin seam mining of the proposed coal seams. Additional Supplemental Assurance in the amount of Fifty Thousand Dollars for each 1,500 feet of additional highwall beyond the initial 1,500 feet is proposed for this operation. This will result in a total additional distance of 3,000 feet and One Hundred Thousand Dollars (100,000) of supplemental assurance. The supplemental assurance will be provided in Fifty Thousand

ATTACHMENT 25.1.A

Dollar (\$50,000) increments prior to each additional 1,500 feet of disturbance. A underground mine face-up is being added to this operation. The face-up area will not be reclaimed until all underground mining activities have been completed. Upon completion of all underground (deep) mining activities the mines face-up area will be reclaimed in accordance with the backfilling and grading plans. Material to reclaim the mine face-up area will be obtained from Appolo fuels, Inc. permit #807-0378. Reclamation of the mine face-up area has been addressed in Appolo Fuels, Inc. permit #807-0378.

Upon completion of all mining activities described in this application, all mining areas of the permit will be backfilled in accordance with the designs. The highwall will be eliminated and returned to as close as possible to AOC within the configuration provide on the proposed backfill and grading designs shown on the cross-section provided in this application. The backfilling operation would include the end-dumping of the spoil on the bench from temporary haulage ramps or from previously backfilled material. The spoil material would be end-dumped to its natural angle of repose, approximately 33° - 34 °. The spoil would then be bladed into its design configuration using a bulldozer. Final grade on the backfilled areas would be established using a bull dozer to smooth and grade the backfill. The dozer will track the material to aid in the stability and to prevent slippage and to scarify the surface prior to revegetation. Traffic on the backfill will be minimized to prevent excessive compaction. RAM 124 will be implemented in the backfilling process.

The mining area will be revegetated with a variety of grasses, legumes and trees to a post-mining land use of Unmanaged Forestland.

The MRP/ERI Map depicts the locations where cross-sections of the mining area were taken. Detailed cross-section drawings at each of these sites that detail the proposed cut and backfill at each cross-section have been included in this attachment. Complete spoil generation calculations, backfill calculations and coal recovery calculations are provided in Attachment 25.3.A. We have also provided complete stability analysis calculations are provided in Attachment 25.3.A.

Eleven additional slides have occurred below the lowest coal seam mined. All possible material from the slides has been brought back onto the permitted surface area. If the material is non-toxic and non-acid producing the material will be blended with the backfilling material and used for reclamation. The slides have been seeded and mulched and a vegetative growth will be established on the slide areas. Drainage

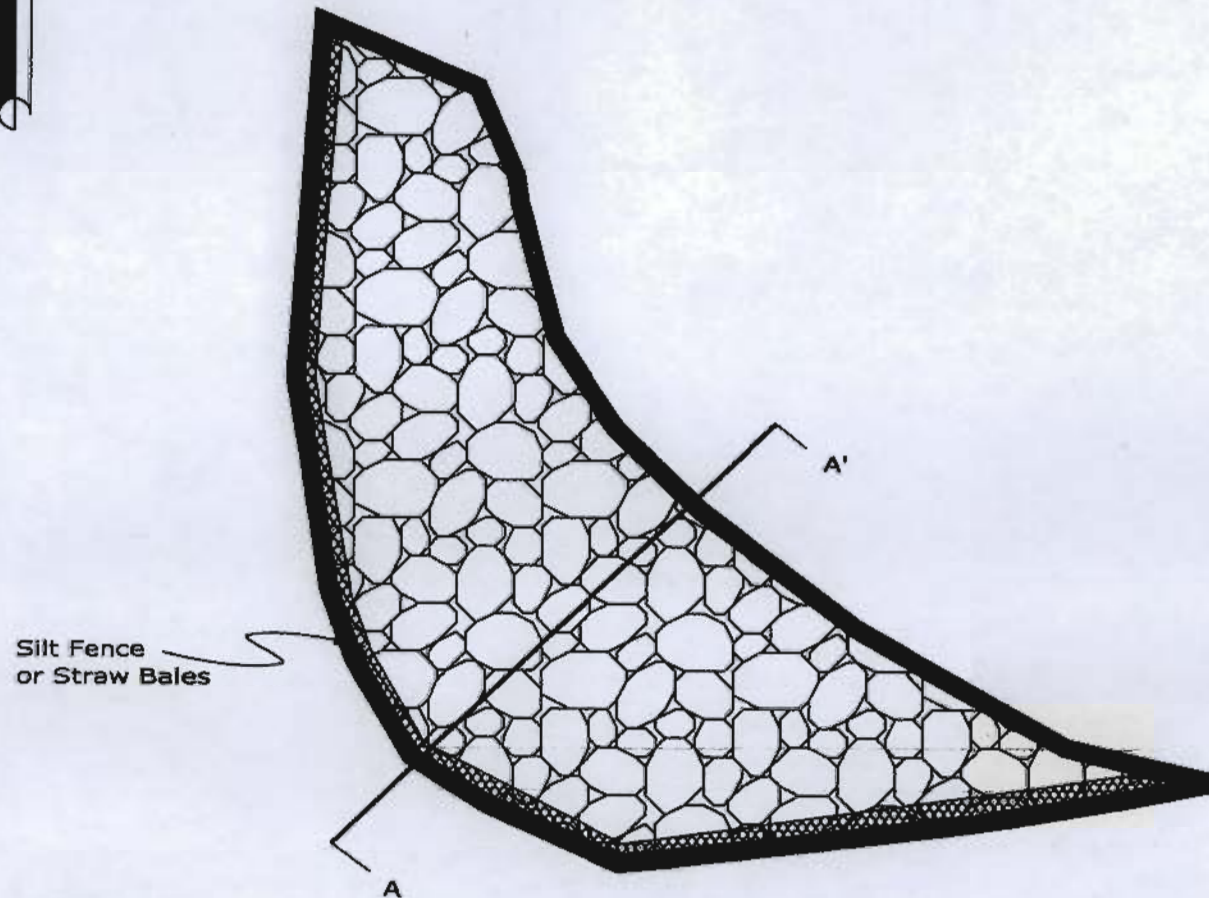
ATTACHMENT 25.1.A

has been diverted away from the slide areas to prevent runoff from flowing directly onto the disturbed area. Silt fence and or straw bales shall be used for sediment control around the toe of the slide areas. A plan view and cross-section of the slides has been provided in this attachment.



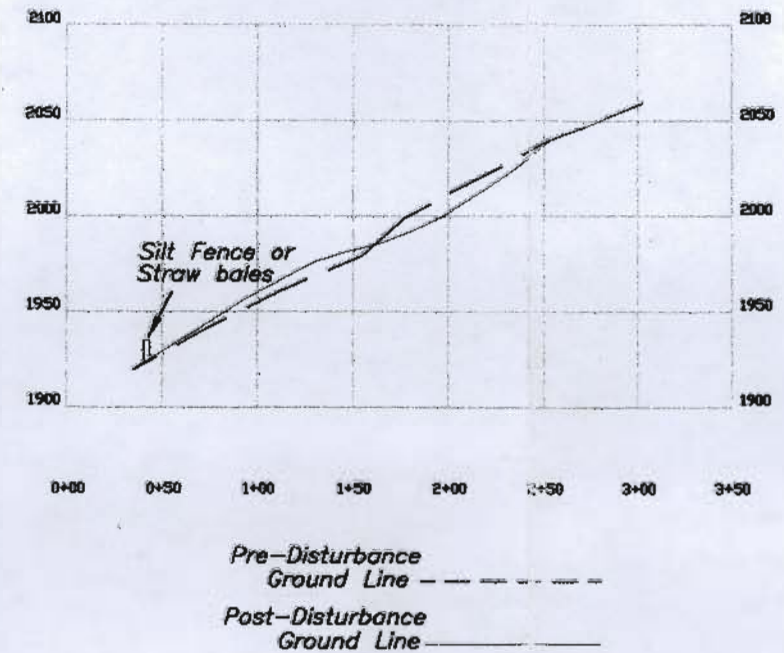


Area of Disturbance = 1.9 acres



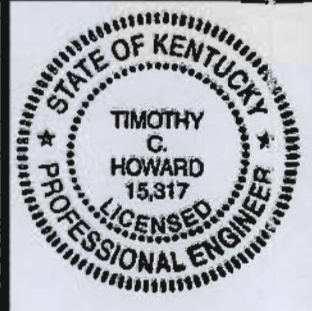
Plan View

### Section A - A'



200 JAN 002  
ENGINE PERM  
RECEIVED

I, Timothy C. Howard, P.E. No. 15,317  
 Date: 8/7/09  
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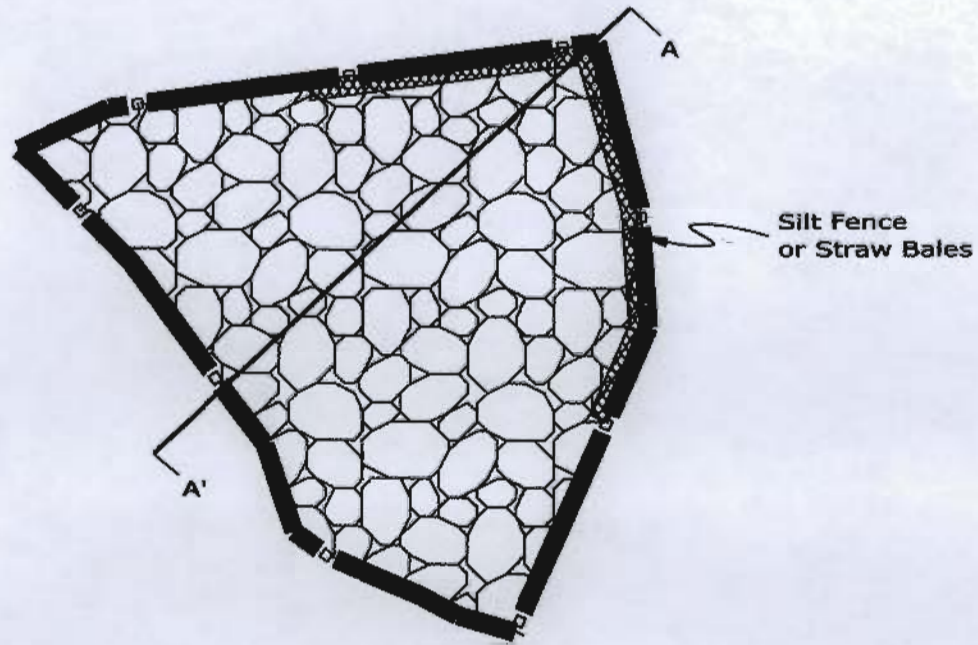


Appolo Fuels, Inc.	
Incidental Disturbance #3 Permit 807-0332 Am. #1 Attachment 25.1.A.	
	 <small>Engineering and Geology, Inc. PO Box 211 - 250 W Hwy 77 Suite 1 - Harlan, KY - 40321 (606) 426-4624 - http://www.howardeng.com</small>
Scale: 1" = 100'	Page No.



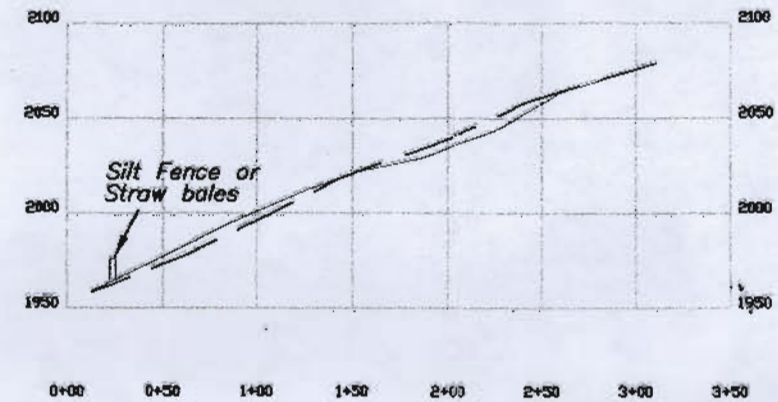


Area of Disturbance = 1.4 acres



Plan View

### Section A - A'



Pre-Disturbance  
Ground Line - - - - -

Post-Disturbance  
Ground Line —————

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 Date: 8/7/06  
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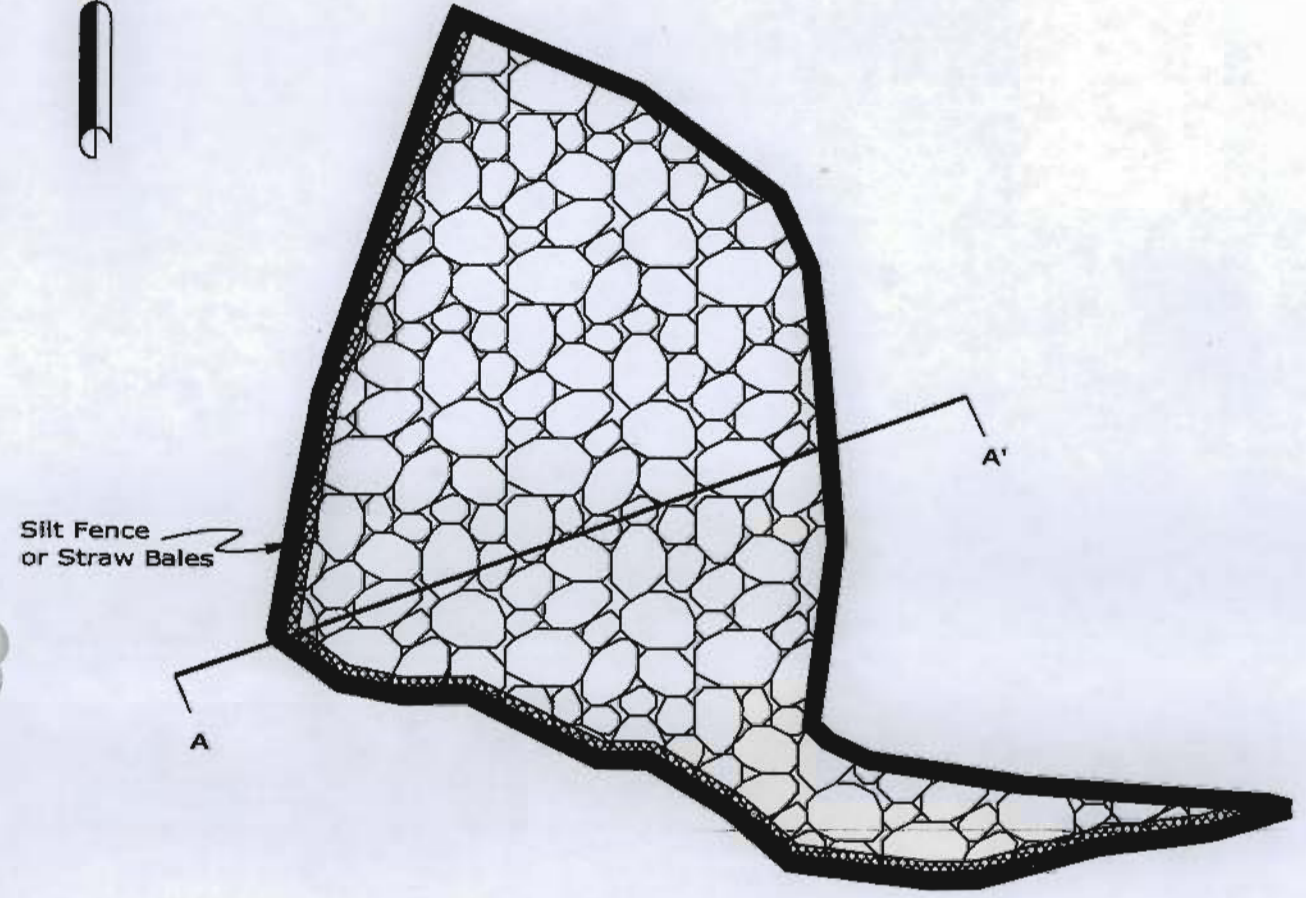


Appolo Fuels, Inc.	
Incidental Disturbance #4 Permit 807-0332 Am. #1 Attachment 25.1.A.	
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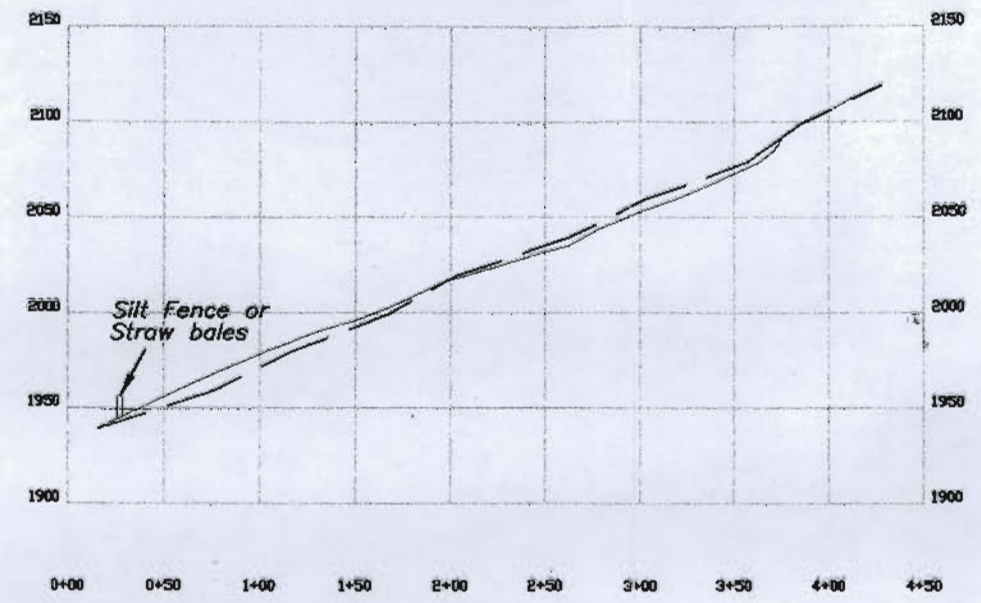


Area of Disturbance = 2.2 acres



Plan View

Section A - A'



Pre-Disturbance Ground Line - - - - -  
Post-Disturbance Ground Line ————

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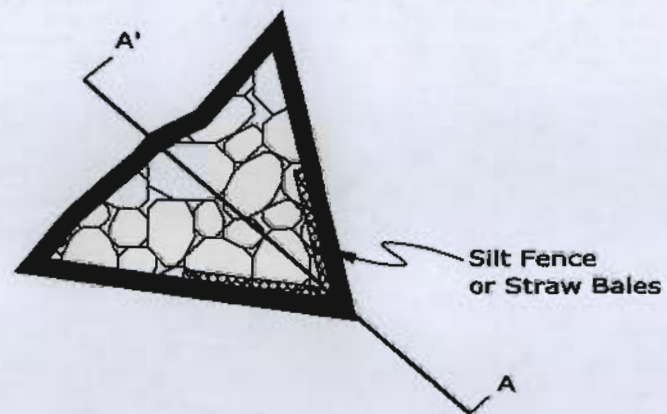


Appolo Fuels, Inc.	
Incidental Disturbance #5 Permit 807-0332 Am. #1 Attachment 25.1.A.	
Scale: 1" = 100'	Page No.



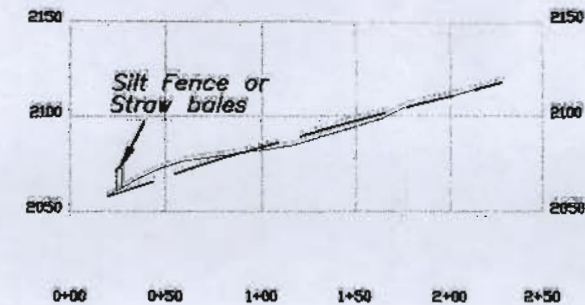


Area of Disturbance = 0.3 acres



Plan View

### Section A - A'



Pre-Disturbance  
Ground Line - - - - -

Post-Disturbance  
Ground Line - - - - -

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

Date: 8/7/08

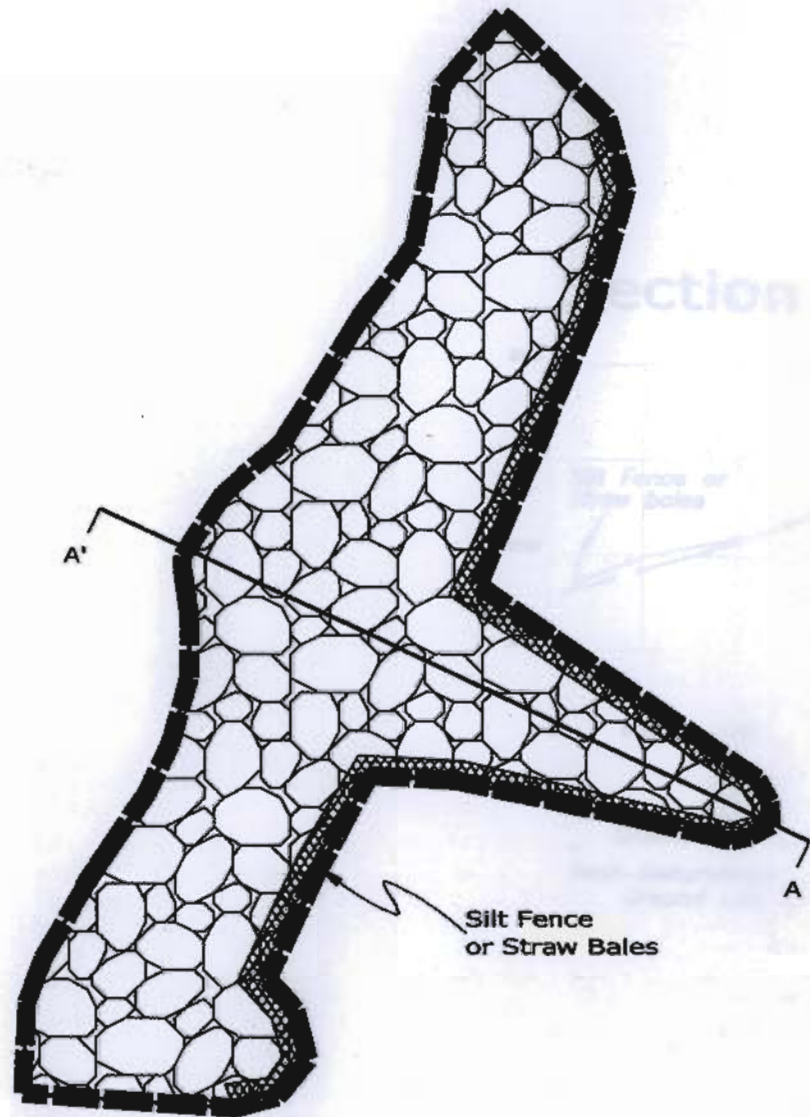
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Incidental Disturbance #6 Permit 807-0332 Am. #1 Attachment 25.1.A.	
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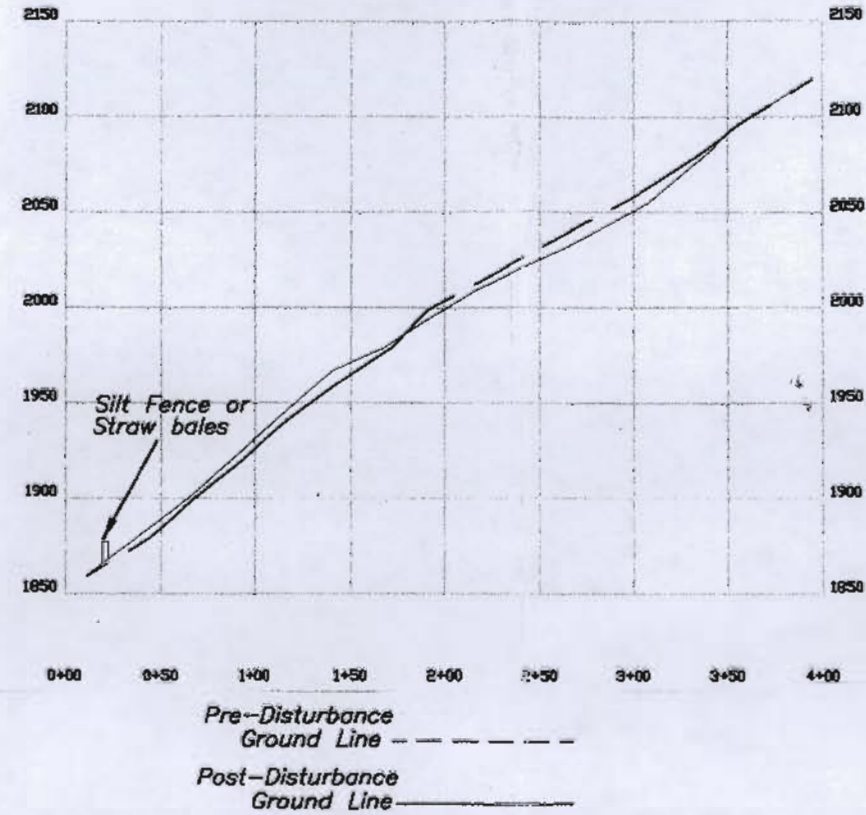


Area of Disturbance = 1.8 acres



Plan View

### Section A - A'



*[Signature]*  
 I, *[Signature]*, P.E. No. 15,317  
 hereby certify in accordance with 405 KAR 7:040, Section 10,  
 that this document is correct as determined by accepted  
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I, *[Signature]*, P.E. No. 15,317  
 Date: *8/7/09*  
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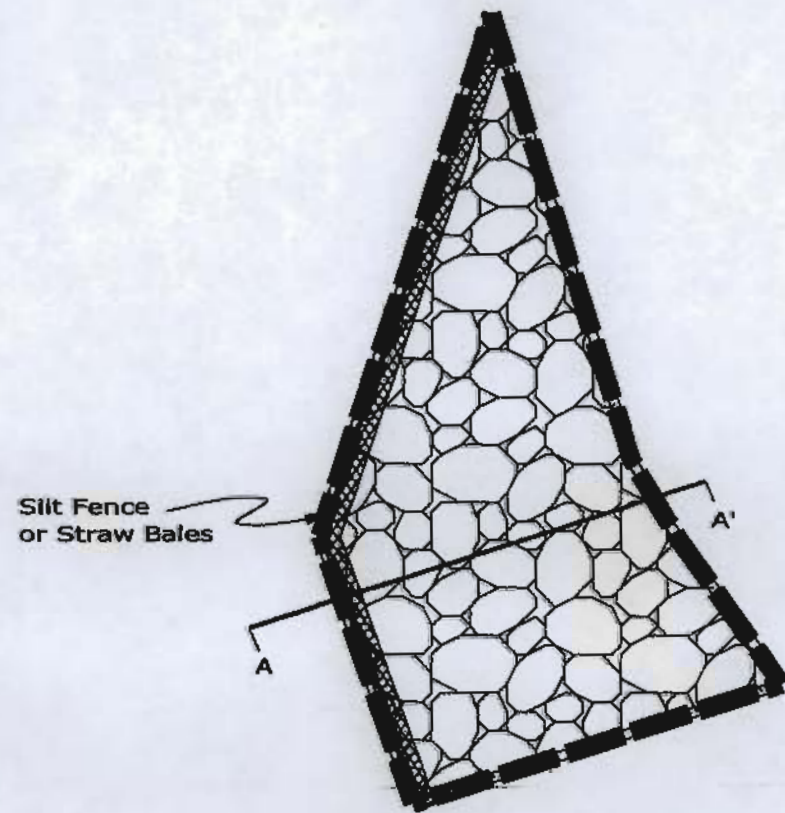
Appolo Fuels, Inc.  
 Incidental Disturbance #7  
 Permit 807-0332 Am. #1  
 Attachment 25.1.A.

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North arrow and Howard Engineering and Geology, Inc. logo.

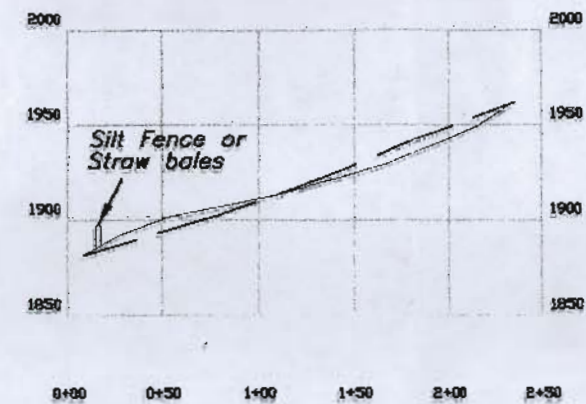


Area of Disturbance = 1.1 acres



Plan View

### Section A - A'



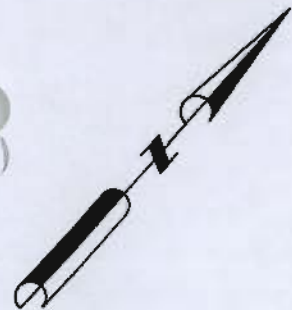
Pre-Disturbance Ground Line - - - - -  
Post-Disturbance Ground Line - - - - -

I, Timothy C. Howard, P.E. No. 15,317  
Date: 8/7/04  
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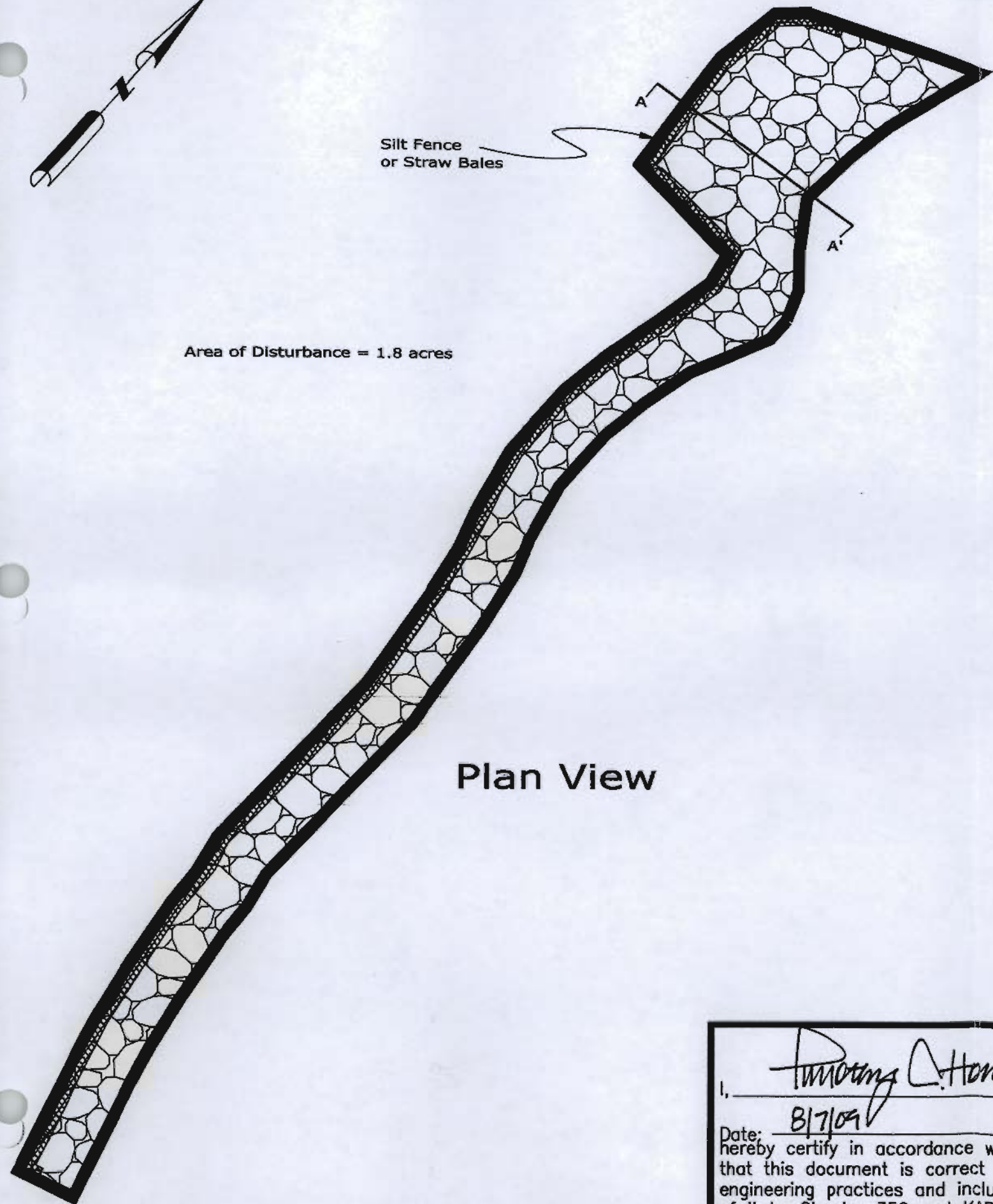
Appolo Fuels, Inc.	
Incidental Disturbance #8 Permit 807-0332 Am. #1 Attachment 25.1.A.	
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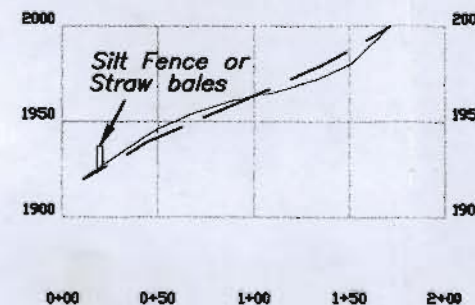
Silt Fence or Straw Bales

Area of Disturbance = 1.8 acres



Plan View

### Section A - A'



Pre-Disturbance Ground Line - - - - -  
Post-Disturbance Ground Line - - - - -

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Incidental Disturbance #9 Permit 807-0332 Am. #1 Attachment 25.1.A.	
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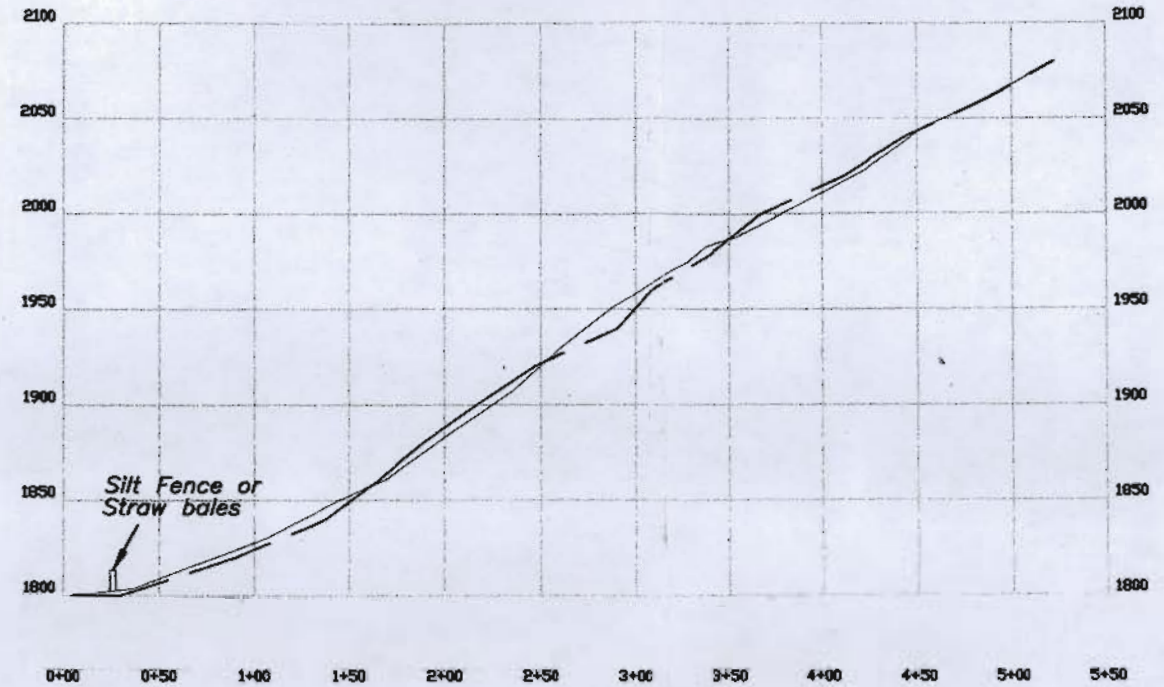


Area of Disturbance = 1.1 acres



Plan View

Section A - A'



Pre-Disturbance Ground Line - - - - -  
Post-Disturbance Ground Line - - - - -

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Incidental Disturbance #10 Permit 807-0332 Am. #1 Attachment 25.1.A.	
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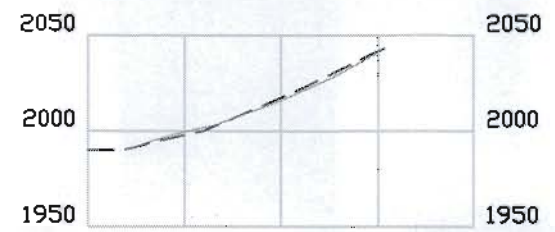


Area of Disturbance = 0.07 acres



Plan View

### Section A - A'



0+00 0+50 1+00 1+50 2+00

Pre-Disturbance Ground Line - - - - -  
Post-Disturbance Ground Line \_\_\_\_\_

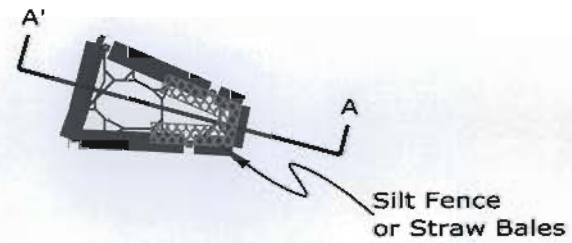
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Incidental Disturbance #11 Permit 807-0332 Am. #1 Attachment 25.1.A.	
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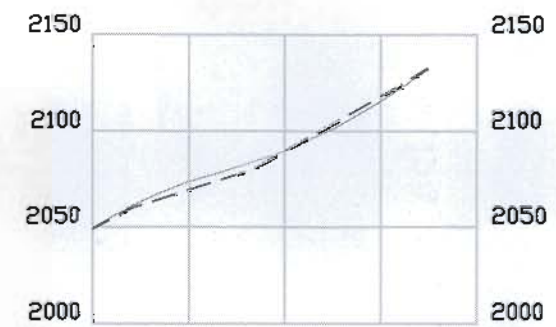


Area of Disturbance = 0.07 acres



Plan View

### Section A - A'



0+00 0+50 1+00 1+50 2+00

Pre-Disturbance  
Ground Line - - - - -  
Post-Disturbance  
Ground Line \_\_\_\_\_

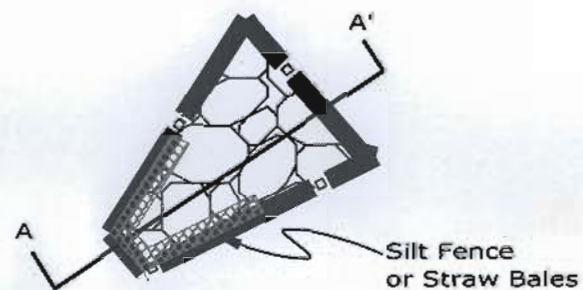
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Incidental Disturbance #12 Permit 807-0332 Am. #1 Attachment 25.1.A.	
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 Engineering and Geology, Inc. PO Box 271 - 2850 W Hwy 72 Suite 1 - Norton, KY - 40057 (800) 573-8524 - <a href="http://www.howardeng.com">http://www.howardeng.com</a>	Page No.



Area of Disturbance = 0.18 acres



Plan View

### Section A - A'

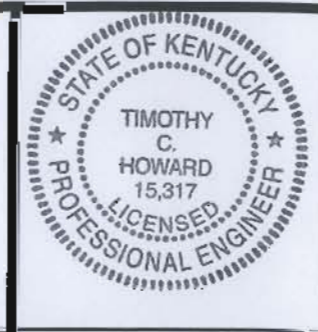


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Pre-Disturbance  
Ground Line = - - - - -

Post-Disturbance  
Ground Line = \_\_\_\_\_

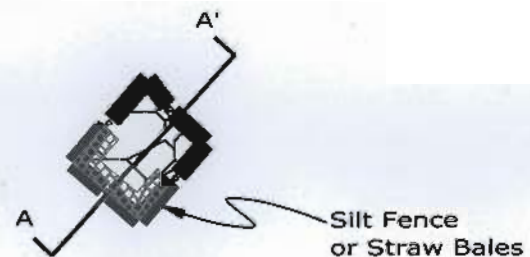
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Incidental Disturbance #13 Permit 807-0332 Am. #1 Attachment 25.1.A.	
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	Page No.

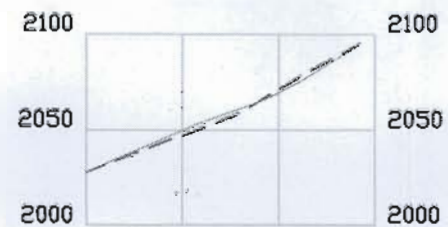


Area of Disturbance = 0.06 acres



Plan View

### Section A - A'



0+00 0+50 1+00 1+50

Pre-Disturbance  
Ground Line - - - - -  
Post-Disturbance  
Ground Line - - - - -

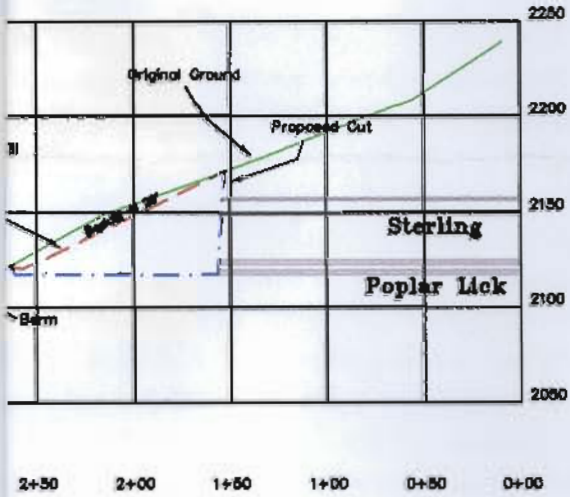
I, Timothy C. Howard, P.E. No. 15,317  
Date: 5/1/10  
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engineering practices and includes all information required  
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Incidental Disturbance #14 Permit 807-0332 Am. #1 Attachment 25.1.A.	
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THIS DOCUMENT IS A PLACEHOLDER. THE ORIGINAL HAS BEEN SENT FOR WIDE FORMAT SCANNING DUE TO SIZE LIMITATIONS. THE FULL DOCUMENT WILL BE INSERTED IN THIS LOCATION UPON ITS RETURN.



22+60

Legend

Original Ground: —————  
 Existing Ground: - - - - -  
 Proposed Ground: - - - - -

*Appolo Fuels, Inc.*

15,317  
 Section 10,  
 as amended  
 required



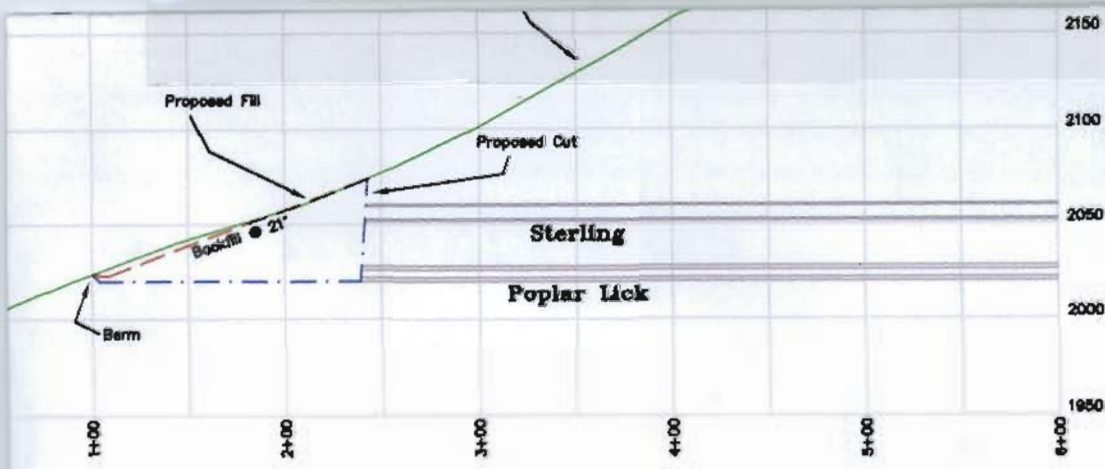
Permit #807-0332, Amendment #1  
 Backfilling and Grading  
 Cross Sections  
 Attachment 25.1.A

Scale: 1" = 100'

Page No. 1 of 1

Prepared by:  
**Howard Engineering & Geology, Inc.**

THIS DOCUMENT IS A PLACEHOLDER. THE ORIGINAL HAS BEEN SENT FOR WIDE FORMAT SCANNING DUE TO SIZE LIMITATIONS. THE FULL DOCUMENT WILL BE INSERTED IN THIS LOCATION UPON ITS RETURN.



sign drawings provided.  
is section drawings.

*Timothy C. Howard*

\_\_\_\_\_, P.E. No. 15,317

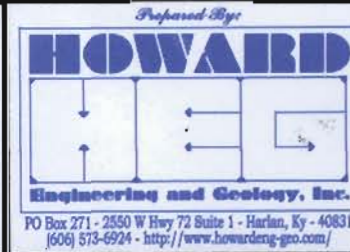
Date: 11/26/09

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Appolo Fuels, Inc.

Permit #807-0332 Amendment #1  
Backfilling and Grading  
Cross Sections  
Attachment 25.1.A



Scale:  
1" = 100'

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25.3 Provide complete calculations on spoil generation and disposal for the proposed permit area. Include a stability analysis to demonstrate that backfilled benches will meet a minimum static safety factor of 1.3. Submit this information as "Attachment 25.3.A".

**See Attachment 25.3.A.**

25.4 Describe the measures to be used to seal or manage mine openings, exploration holes, auger holes, bore holes, wells and other openings within the proposed permit area. Provide design specifications for ensuring stability of each each permanent entry seal and down slope barrier. Include all maps, drawings, etc., required to adequately support the description of the proposed measures. Submit this information as "Attachment 25.4.A".

**See Attachment 25.4.A.**

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**26. Disposal of Excess Spoil**

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26.1 Are any excess spoil disposal structures proposed for use in the permit area?  YES  NO. If "YES", provide the following information for each proposed structure:

Facility I.D.	Type of Fill	Storage Volume	Type of Underdrain	Natural Ground Slope	Latitude	Longitude

26.2 Did construction of any of the above structures start prior to January 18, 1983?  YES  NO. If "YES", provide the information required by 405 KAR 8:030, or 8:040 Sections 25 for existing structures. Submit this information as "Attachment 26.2.A".

**N/A - No spoil storage areas proposed this amendment.**

26.3 For each proposed excess spoil disposal structure provide a detailed plan (including, but not limited to, all engineering design calculations, cross-sections, maps and designs). Each plan shall meet the requirements of 405 KAR 8:030, Section 27; 405 KAR 8:040, Section 28; 405 KAR 16:130; and 405 KAR 18:130.

**N/A - No spoil storage areas proposed this amendment.**



**ATTACHMENT 25.3.A**

Additional mining areas are proposed as a part of this permitting action. The additional mining will consist of contour and strip with auger/highwall miner in the Poplar Lick and Sterling coal seams. Mining activities are currently active on this permitted operation using the advance mining and contemporaneous reclamation method of backfilling the mining areas. These additional mining areas will allow for the continuation of the current mining and reclamation of this operation.

The new mining areas will be used to continue the contemporaneous method of backfilling the mined areas. The material taken from the first cut of the proposed areas will be used to reclaim the last open pit and wall in a continuous manner as is currently in effect on this operation.

Additional excess spoil storage will not be necessary as all reasonably available spoil material will be used to backfill the previously mined pit and wall areas. This method of mining and reclamation will continue until the mining has been completed on this operation. Spoil generation calculations are not applicable to the mining areas proposed in this amendment application as all reasonably available spoil material will be used for pit and wall reclamation.

Worst Case Backfill.TXT

REAME (ROTATIONAL EQUILIBRIUM ANALYSIS OF MULTILAYERED EARTHWORKS)  
THIS 2008 VERSION IS LICENSED BY CIVIL ENGINEERING SOFTWARE CENTER TO

Howard Engineering and Geology, Inc.

INPUT FILE NAME -R:\worst Case Backfill.DAT

TITLE -worst Case 807-0332

NO. OF STATIC AND SEISMIC CASES (NCASE) = 2

NO. OF NONCIRCULAR FAILURE SURFACES (NNS) = 0

TWO-DIMENSIONAL ANALYSIS (THREED = 0)

ANALYSIS BY DETERMINISTIC METHOD (PROB = 0)

CASE NO. 1 SEISMIC COEFFICIENT (SEIC) = 0.000

NO. OF BOUNDARY LINES (NBL) = 2

NO. OF POINTS ON BOUNDARY LINE 1 = 5

1	X COORD.= 0	Y COORD.= 0
2	X COORD.= 10	Y COORD.= 5
3	X COORD.= 15	Y COORD.= 0
4	X COORD.= 150	Y COORD.= 0
5	X COORD.= 155	Y COORD.= 77

NO. OF POINTS ON BOUNDARY LINE 2 = 4

1	X COORD.= 0	Y COORD.= 0
2	X COORD.= 10	Y COORD.= 5
3	X COORD.= 18	Y COORD.= 4
4	X COORD.= 155	Y COORD.= 77

LINE NO. AND SLOPE OF EACH SEGMENT ARE:

1	0.500	-1.000	0.000	15.400
2	0.500	-0.125	0.533	

MIN. DEPTH OF TALLEST SLICE (DMIN) = 0

NO. OF RADIUS CONTROL ZONES (NRCZ) = 1

RADIUS DECREMENT (RDEC) FOR ZONE 1 = 0

NO. OF CIRCLES (NCIR) FOR ZONE 1 = 5

NO. OF BOTTOM LINES (NOL) FOR ZONE 1 = 1

LINE NO. (LINO)	BEG. NO. (NBP)	END NO. (NEP)
1	1	5

ENGLISH UNITS ARE USED WITH DISTANCE IN FEET AND FORCE IN POUND.

SOIL No.	ENVELOPE (TSSE)	COHESION (C)	FRIC. ANGLE (PHID)	UNIT WEIGHTT (G)
1	1	200.000	30.000	125.000

NO SEEPAGE

USE GRID

NO. OF SLICES (NSLI) = 10

NO. OF ADD. CIRCLES (NAC) = 3

ANALYSIS BY SIMPLIFIED BISHOP METHOD (MTHD=2)

NUMBER OF FORCES (NFO)= 0

SOFT SOIL NUMBER (SSN)= 0

INPUT COORD. OF GRID POINTS 1,2,AND 3



Worst Case Backfill.TXT

POINT 1 X COORD. = -20      Y COORD. = 185  
 POINT 2 X COORD. = -20      Y COORD. = 60  
 POINT 3 X COORD. = 80        Y COORD. = 60

X INCREMENT (XINC) = 12      Y INCREMENT (YINC) = 12  
 NO. OF DIVISIONS BETWEEN POINTS 1 AND 2 (ND12) = 5  
 NO. OF DIVISIONS BETWEEN POINTS 2 AND 3 (ND23) = 4  
 ONLY A SUMMARY TABLE IS PRINTED (NPRT = 0)  
 SLICES WILL BE SUBDIVIDED

AUTOMATIC SEARCH WILL FOLLOW AFTER GRID

FACTORS OF SAFETY BASED ON GRID

IN THE FOLLOWING TABLE WARNING INDICATES HOW MANY TIMES THE  
 MAXIMUM RADIUS IS LIMITED BY THE END POINTS OF GROUND LINES

CENTER X COORDINATE	CENTER Y COORDINATE	NO. OF CIRCLE		LOWEST F.S.	WARNING	
		TOTAL	CRITIC.	RADIUS		
-20.0	185.0	5	1	182.483	0.000	0
-20.0	160.0	5	1	157.877	3.302	0
-20.0	135.0	1	1	133.417	1000.000	0
-20.0	110.0	1	1	109.202	1000.000	0
-20.0	85.0	1	1	85.440	1000.000	0
-20.0	60.0	1	1	62.610	1000.000	0
5.0	185.0	5	1	180.069	1.553	0
5.0	160.0	5	1	155.081	1.642	0
5.0	135.0	5	1	130.096	1.793	0
5.0	110.0	5	1	105.119	2.110	0
5.0	85.0	5	1	80.156	3.153	0
5.0	60.0	1	1	55.227	1000.000	0
30.0	185.0	5	1	165.194	1.641	0
30.0	160.0	5	1	150.047	1.533	0
30.0	135.0	5	1	131.530	1.548	0
30.0	110.0	5	1	106.888	1.630	0
30.0	85.0	11	6	81.631	1.694	0
30.0	60.0	11	7	57.049	1.834	0
55.0	185.0	5	1	147.187	2.194	0
55.0	160.0	5	1	129.958	1.723	0
55.0	135.0	5	1	115.603	1.591	0
55.0	110.0	11	9	98.015	1.638	0
55.0	85.0	11	3	72.634	1.743	0
55.0	60.0	11	9	47.410	1.940	0
80.0	185.0	5	1	131.488	6.731	0
80.0	160.0	5	1	111.866	2.669	0
80.0	135.0	5	1	94.810	1.835	0
80.0	110.0	5	1	81.939	1.691	0
80.0	85.0	11	10	58.877	1.829	0
80.0	60.0	1	1	60.000	1000.000	0

*Timothy C. Howard*



GRID IS EXPANDED AS FOLLOWS SO MINIMUM FACTOR OF SAFETY FALLS WITHIN THE GRID

-20.0	210.0	5	1	207.184	1.819	0
5.0	210.0	5	1	200.472	1.579	0
30.0	210.0	5	1	182.521	1.942	0
55.0	210.0	5	1	166.400	3.662	0
80.0	210.0	1	1	152.689	1000.000	0
-45.0	210.0	5	1	212.250	7.281	0
-45.0	185.0	1	1	188.215	1000.000	0
-45.0	160.0	1	1	164.469	1000.000	0
-45.0	135.0	1	1	141.156	1000.000	0
-45.0	110.0	1	1	118.512	1000.000	0



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-45.0	85.0	1	1	96.177	1000.000	0
-45.0	60.0	1	1	75.000	1000.000	0

LOWEST FACTOR OF SAFETY AT EACH GRID POINT IS TABULATED BELOW

COORDINATE	-45.000	-20.000	5.000	30.000	55.000	80.000
210.000	7.281	1.819	1.579	1.942	3.662	1000.000
185.000	1000.000	0.000	1.553	1.641	2.194	6.731
160.000	1000.000	3.302	1.642	1.533	1.723	2.669
135.000	1000.000	1000.000	1.793	1.548	1.591	1.835
110.000	1000.000	1000.000	2.110	1.630	1.638	1.691
85.000	1000.000	1000.000	3.153	1.694	1.743	1.829
60.000	1000.000	1000.000	1000.000	1.834	1.940	1000.000

MINIMUM FACTORS OF SAFETY OCCUR AT THE FOLLOWING 2 CENTERS

FACTOR OF SAFETY = 0.000 AT (-20.000,185.000)  
 FACTOR OF SAFETY = 1.533 AT (30.000,160.000)

AUTOMATIC SEARCH WILL BE MADE ONLY ON THE CENTER WITH THE SMALLEST F.S.

AT POINT (-20.0 , 185.0) RADIUS 182.483  
 THE MINIMUM FACTOR OF SAFETY IS 0.000

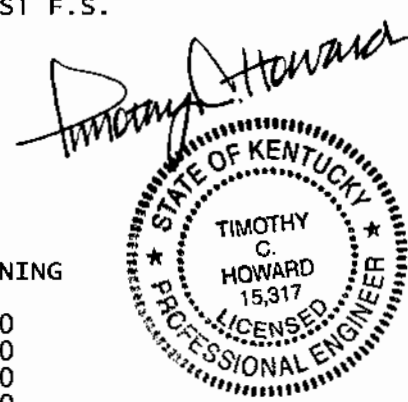
FACTORS OF SAFETY BASED ON SEARCH

IN THE FOLLOWING TABLE WARNING INDICATES HOW MANY TIMES THE  
 MAXIMUM RADIUS IS LIMITED BY THE END POINTS OF GROUND LINES

CENTER X COORDINATE	CENTER Y COORDINATE	NO. OF CIRCLE		LOWEST F.S.	WARNING
		TOTAL	CRITIC.	RADIUS	
-20.0	185.0	5	1	182.483	0
-8.0	185.0	5	1	180.898	0
4.0	185.0	5	1	180.100	0
16.0	185.0	5	1	176.026	0
28.0	185.0	5	1	166.712	0
16.0	197.0	5	1	183.633	0
16.0	173.0	5	1	168.107	0
16.0	161.0	5	1	156.115	0
28.0	173.0	5	1	159.201	0
4.0	173.0	5	1	168.107	0
19.0	173.0	5	1	166.469	0
13.0	173.0	5	1	168.027	0
16.0	176.0	5	1	170.652	0
16.0	179.0	5	1	172.409	0
19.0	176.0	5	1	168.217	0
13.0	176.0	5	1	171.026	0

AT POINT (16.0 , 176.0) RADIUS 170.652

THE MINIMUM FACTOR OF SAFETY IS 1.513



SUMMARY OF SLICE INFORMATION FOR MOST CRITICAL FAILURE SURFACE

SL. NO.	SOIL NO.	SLICE WIDTH	SLICE HEIGHT	WATER HEIGHT	BOTTOM SINE	TOTAL WEIGHT	EFFEC. WEIGHT	RESIS. MOMENT	DRIVING MOMENT
1	1	13.435	3.264	0.000	.067	.548E+04	.548E+04	.998E+06	.623E+05
2	1	13.435	8.990	0.000	.145	.151E+05	.151E+05	.194E+07	.374E+06
3	1	13.435	13.622	0.000	.224	.229E+05	.229E+05	.267E+07	.875E+06
4	1	13.435	17.108	0.000	.303	.287E+05	.287E+05	.318E+07	.148E+07
5	1	13.435	19.370	0.000	.382	.325E+05	.325E+05	.346E+07	.212E+07
6	1	13.435	20.288	0.000	.460	.341E+05	.341E+05	.350E+07	.268E+07
7	1	13.435	19.688	0.000	.539	.331E+05	.331E+05	.329E+07	.304E+07

Worst Case Backfill.TXT									
8	1	13.435	17.305	0.000	.618	.291E+05	.291E+05	.283E+07	.306E+07
9	1	13.435	12.725	0.000	.696	.214E+05	.214E+05	.215E+07	.254E+07
10	1	13.435	5.232	0.000	.775	.879E+04	.879E+04	.127E+07	.116E+07
								SUM	.253E+08 .174E+08

AT CENTER (16.000 , 176.000) WITH RADIUS 170.652 AND SEIS. COEFF. 0.00  
 FACTOR OF SAFETY BY NORMAL METHOD IS 1.453  
 FACTOR OF SAFETY BY SIMPLIFIED BISHOP METHOD IS 1.513

CASE NO. 2 SEISMIC COEFFICIENT (SEIC) =0.100

AUTOMATIC SEARCH WILL FOLLOW AFTER GRID

FACTORS OF SAFETY BASED ON GRID

IN THE FOLLOWING TABLE WARNING INDICATES HOW MANY TIMES THE MAXIMUM RADIUS IS LIMITED BY THE END POINTS OF GROUND LINES

CENTER X COORDINATE	CENTER Y COORDINATE	NO. OF CIRCLE		LOWEST F.S.	WARNING
		TOTAL	CRITIC.	RADIUS	
-20.0	185.0	5	1	182.483	0
-20.0	160.0	5	1	157.877	0
-20.0	135.0	1	1	133.417	0
-20.0	110.0	1	1	109.202	0
-20.0	85.0	1	1	85.440	0
-20.0	60.0	1	1	62.610	0
5.0	185.0	5	1	180.069	0
5.0	160.0	5	1	155.081	0
5.0	135.0	5	1	130.096	0
5.0	110.0	5	1	105.119	0
5.0	85.0	5	1	80.156	0
5.0	60.0	1	1	55.227	0
30.0	185.0	5	1	165.194	0
30.0	160.0	5	1	150.047	0
30.0	135.0	5	1	131.530	0
30.0	110.0	5	1	106.888	0
30.0	85.0	11	6	81.631	0
30.0	60.0	11	7	57.049	0
55.0	185.0	5	1	147.187	0
55.0	160.0	5	1	129.958	0
55.0	135.0	5	1	115.603	0
55.0	110.0	11	9	98.015	0
55.0	85.0	11	3	72.634	0
55.0	60.0	11	9	47.410	0
80.0	185.0	5	1	131.488	0
80.0	160.0	5	1	111.866	0
80.0	135.0	5	1	94.810	0
80.0	110.0	5	1	81.939	0
80.0	85.0	11	10	58.877	0
80.0	60.0	1	1	60.000	0

*Timothy C. Howard*



LOWEST FACTOR OF SAFETY AT EACH GRID POINT IS TABULATED BELOW

COORDINATE	-20.000	5.000	30.000	55.000	80.000
185.000	1.513	1.261	1.335	1.799	5.619
160.000	2.732	1.335	1.245	1.404	2.199
135.000	1000.000	1.462	1.259	1.294	1.498
110.000	1000.000	1.728	1.328	1.336	1.380
85.000	1000.000	2.607	1.382	1.424	1.497
60.000	1000.000	1000.000	1.500	1.592	1000.000

MINIMUM FACTORS OF SAFETY OCCUR AT THE FOLLOWING 2 CENTERS



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FACTOR OF SAFETY = 1.261 AT (5.000,185.000)  
 FACTOR OF SAFETY = 1.245 AT (30.000,160.000)

AUTOMATIC SEARCH WILL BE MADE ONLY ON THE CENTER WITH THE SMALLEST F.S.

AT POINT (30.0 , 160.0) RADIUS 150.047  
 THE MINIMUM FACTOR OF SAFETY IS 1.245

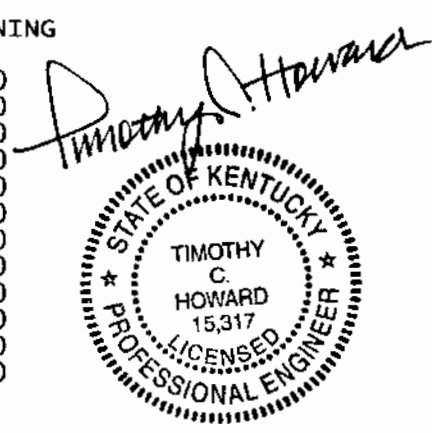
FACTORS OF SAFETY BASED ON SEARCH

IN THE FOLLOWING TABLE WARNING INDICATES HOW MANY TIMES THE  
 MAXIMUM RADIUS IS LIMITED BY THE END POINTS OF GROUND LINES

CENTER X COORDINATE	CENTER Y COORDINATE	NO. OF CIRCLE		LOWEST	WARNING	
		TOTAL	CRITIC.	F.S.		
30.0	160.0	5	1	150.047	1.245	0
42.0	160.0	5	1	140.207	1.295	0
18.0	160.0	5	1	155.206	1.243	0
6.0	160.0	5	1	155.052	1.324	0
18.0	172.0	5	1	166.715	1.227	0
18.0	184.0	5	1	173.833	1.254	0
30.0	172.0	5	1	157.003	1.273	0
6.0	172.0	5	1	167.048	1.287	0
21.0	172.0	5	1	164.259	1.236	0
15.0	172.0	5	1	167.075	1.234	0
18.0	175.0	5	1	168.443	1.232	0
18.0	169.0	5	1	164.195	1.229	0

AT POINT (18.0 , 172.0) RADIUS 166.715

THE MINIMUM FACTOR OF SAFETY IS 1.227



SUMMARY OF SLICE INFORMATION FOR MOST CRITICAL FAILURE SURFACE

SL. NO.	SOIL NO.	SLICE WIDTH	SLICE HEIGHT	WATER HEIGHT	BOTTOM SINE	TOTAL WEIGHT	EFFEC. WEIGHT	RESIS. MOMENT	DRIVING MOMENT
1	1	13.456	3.350	0.000	.055	.563E+04	.563E+04	.988E+06	.145E+06
2	1	13.456	9.230	0.000	.136	.155E+05	.155E+05	.191E+07	.601E+06
3	1	13.456	13.991	0.000	.216	.235E+05	.235E+05	.262E+07	.122E+07
4	1	13.456	17.582	0.000	.297	.296E+05	.296E+05	.310E+07	.191E+07
5	1	13.456	19.922	0.000	.378	.335E+05	.335E+05	.335E+07	.259E+07
6	1	13.456	20.889	0.000	.459	.351E+05	.351E+05	.336E+07	.317E+07
7	1	13.456	20.302	0.000	.539	.341E+05	.341E+05	.312E+07	.351E+07
8	1	13.456	17.883	0.000	.620	.301E+05	.301E+05	.266E+07	.348E+07
9	1	13.456	13.190	0.000	.701	.222E+05	.222E+05	.200E+07	.284E+07
10	1	13.456	5.449	0.000	.781	.917E+04	.917E+04	.120E+07	.129E+07
SUM								.243E+08	.208E+08

AT CENTER (18.000 , 172.000) WITH RADIUS 166.715 AND SEIS. COEFF. 0.10  
 FACTOR OF SAFETY BY NORMAL METHOD IS 1.172  
 FACTOR OF SAFETY BY SIMPLIFIED BISHOP METHOD IS 1.227

SUMMARY OF STABILITY ANALYSIS

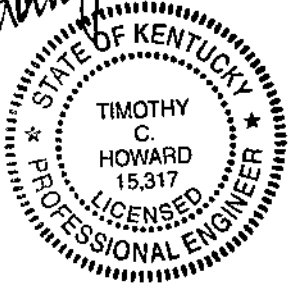
FACTOR OF SAFETY IS DETERMINED BY SIMPLIFIED BISHOP METHOD  
 NUMBER OF CASES = 2

CASE 1 SEISMIC COEFFICIENT = 0  
 FACTOR OF SAFETY = 1.513

CASE 2 SEISMIC COEFFICIENT = 0.1  
 FACTOR OF SAFETY = 1.227

Worst Case Backfill.TXT

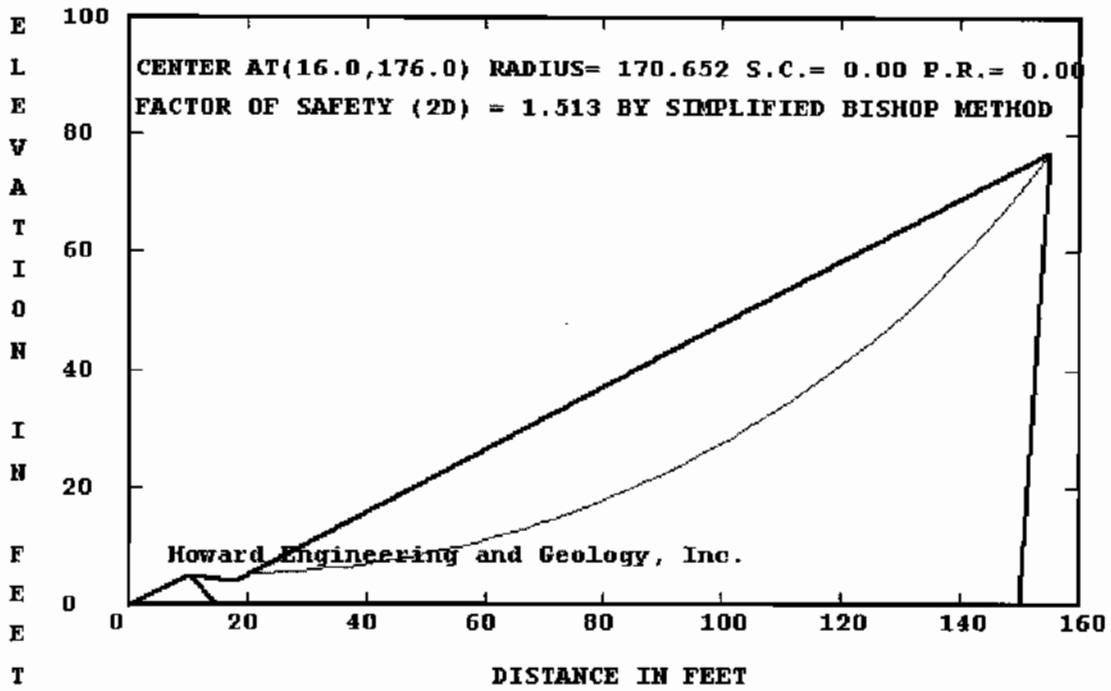
*Timothy C. Howard*



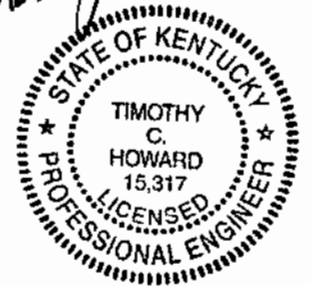
A circular professional seal for Timothy C. Howard, a Licensed Professional Engineer in the State of Kentucky. The seal features a double-line border with a dotted pattern. The text "STATE OF KENTUCKY" is at the top, "PROFESSIONAL ENGINEER" is at the bottom, and "TIMOTHY C. HOWARD 15,317" is in the center. Two small stars are positioned on the left and right sides of the seal.



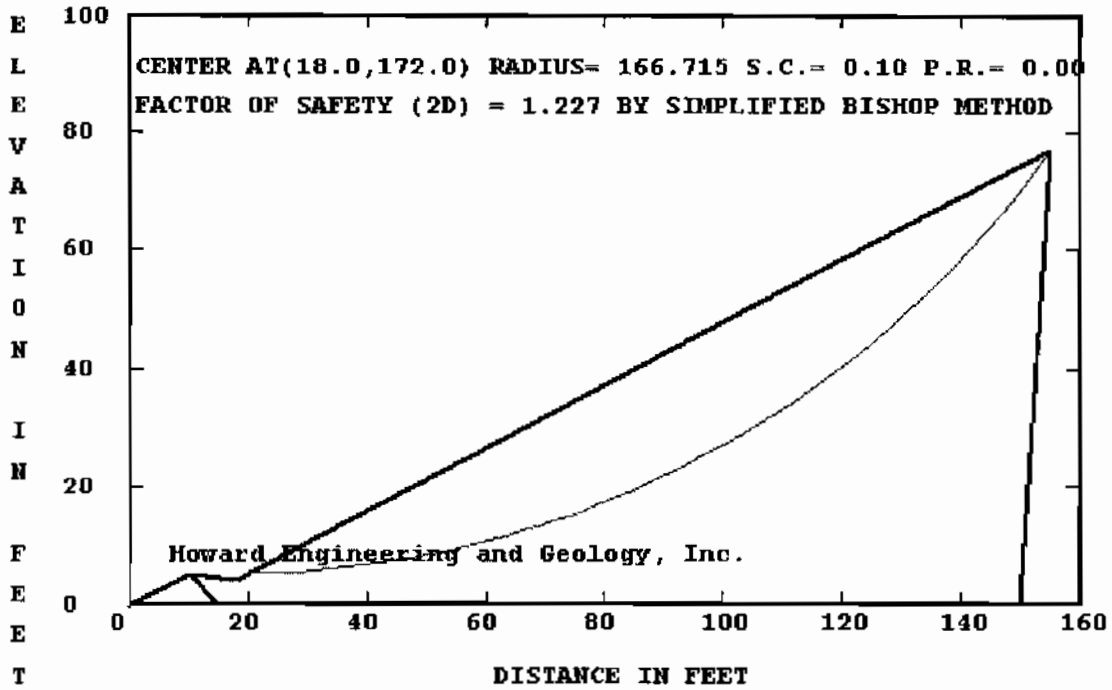
Worst Case 807-0332



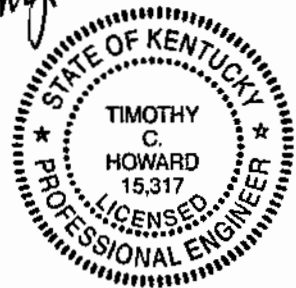
*Timothy C. Howard*



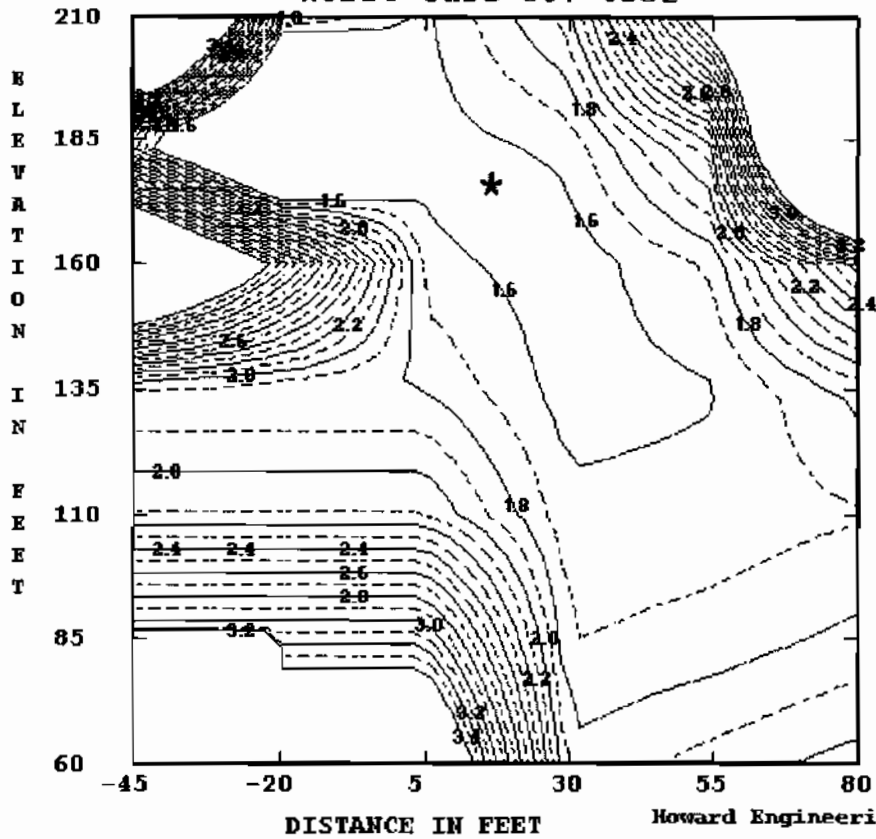
Worst Case 807-0332



*Timothy C. Howard*

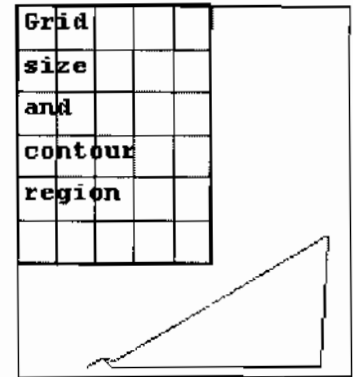


**Worst Case 807-0332**



F.S. (2D) = 1.513  
 by SIMPLIFIED BISHOP  
 SEISMIC COEF. = 0

Number on curves indicates factor of safety.  
 Graph below shows true shape and location of the contour region.



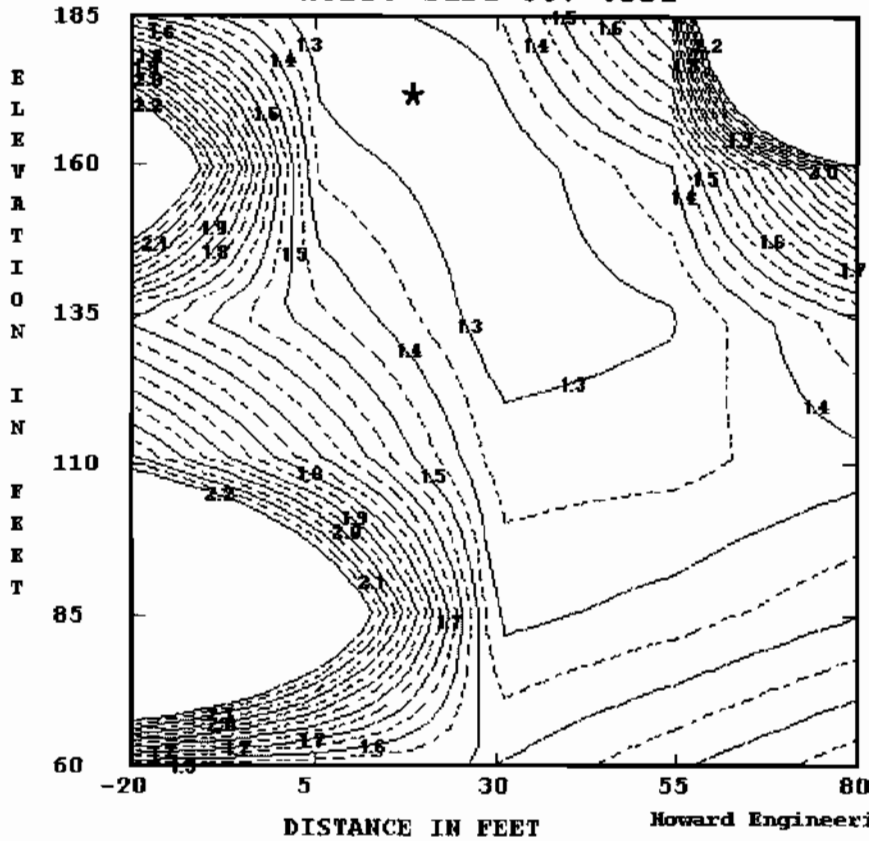
Howard Engineering and Geology, Inc.

*Timothy C. Howard*

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

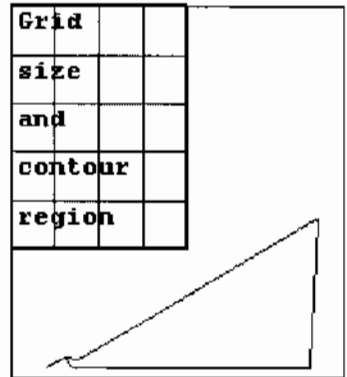


Worst Case 807-0332



F.S. (2D) = 1.227  
 by SIMPLIFIED BISHOP  
 SEISMIC COEF. = .1

Number on curves  
 indicates factor  
 of safety.  
 Graph below shows  
 true shape and  
 location of the  
 contour region.



Howard Engineering and Geology, Inc.

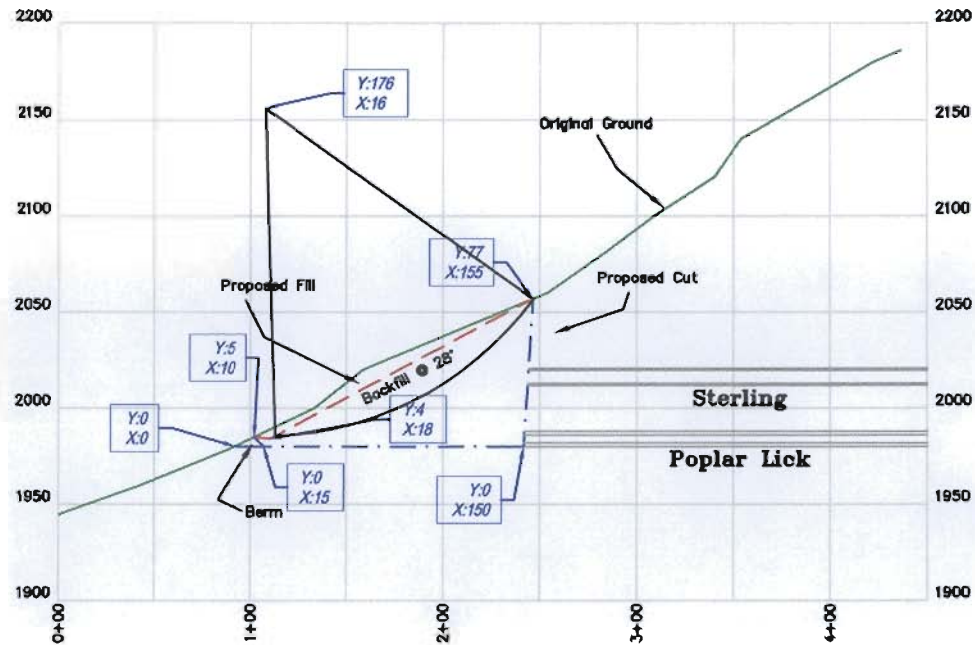
*Timothy C. Howard*



Center At (16.0, 176.0) Radius= 170.652 S.C.= 0.00 P.R.= 0.00  
 Factor of Safety (2D)= 1.513 by Simplified Bishop Method

# Section #1

## Worst Case

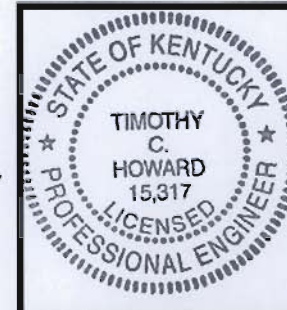


### Legend

Original Ground: —————  
 During Mining Ground: - - - - -  
 Post Mining Ground: - - - - -

*Timothy C. Howard*  
 \_\_\_\_\_ P.E. No. 15,317  
 Date: 1/16/09

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.



<b>Appolo Fuels, Inc.</b>	
Permit #807-0332 Amendment #1 Backfilling and Grading Worst Case REAME Drawing Attachment 25.1.A	
Scale: 1" = 100'	

ATTACHMENT 25.4.A

Core drill holes will be grouted with cement to prevent possible inflows into ground water systems. After all mining activity has been completed auger/highwall miner hole, well; core drill hole or other exploration hole will be sealed. This will prevent acid or other toxic drainage from entering the ground or surface waters and will protect the hydrologic balance.

The dip of the coal seam to be mined is to the northwest at 2%. With the general dip in this direction ground water flow will be away from the areas proposed for mining by this application. This will lessen the chance of encountering water in any deep mine openings or during the auger/highwall mining operation. It will also reduce the chances of any discharge from the mine openings encountered or any auger/highwall miner holes.

Any deep mine openings encountered during the proposed mining will be sealed by backfilling with the most impervious spoil material available. If necessary, a rock bleeder drain will be installed in the lowest elevation opening or mine portal prior to backfilling to route seepage and protect the integrity of the backfill.

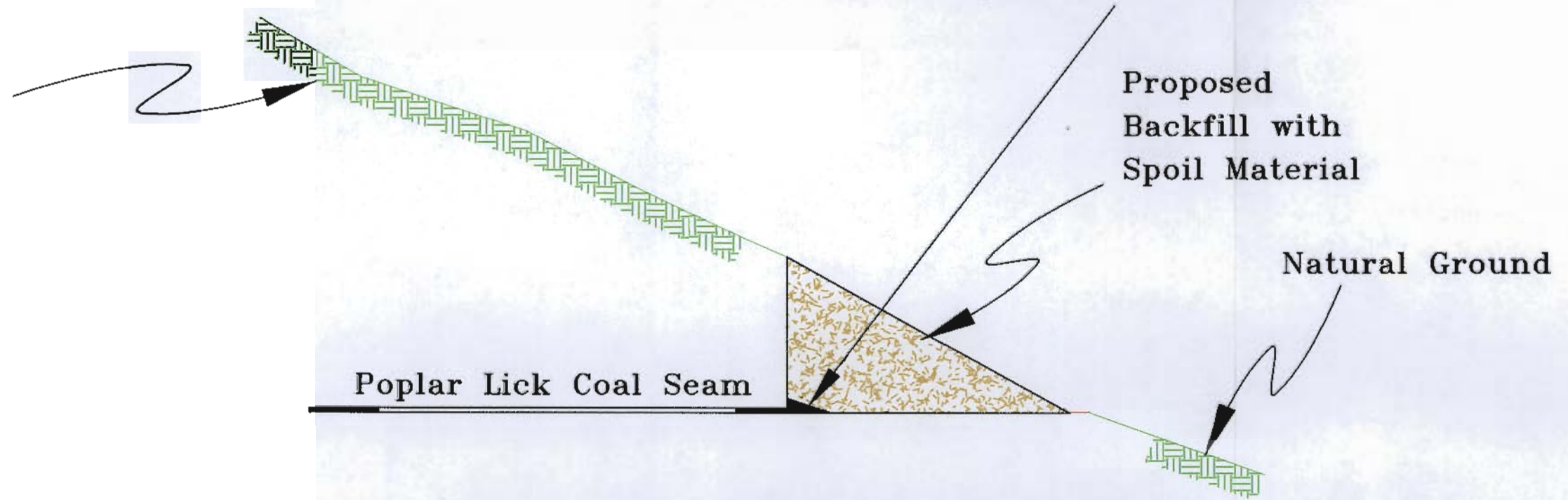
The auger/highwall miner holes will be sealed with the best available, non-combustible, non-permeable material available.

Two scenarios are proposed for the sealing of mine openings and/or auger/highwall miner holes as detailed in the drawings in this attachment. One is a dry seal to be used in areas where the drainage of the mine openings and/or auger/highwall miner holes is not deemed necessary and the other is a wet seal to be used in areas deemed necessary to allow for drainage of the auger/highwall miner holes. The application of one or the other seal will be made as conditions in the field warrant. The attached drawings detail the construction of these seals.



Natural Ground

Mine Plug, 4' Feet min. above seam,  
and a minimum of 20' into the workings  
To be installed prior to backfilling



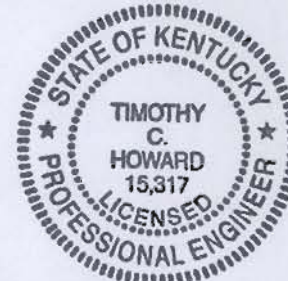
Poplar Lick Coal Seam

Proposed  
Backfill with  
Spoil Material

Natural Ground

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

Date: 1/16/09  
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.



*Appolo Fuels, Inc.*

Permit #807-0332, Amendment #1  
Typical Mine Opening Dry Seal  
After Contour Strip and Auger or Highwall Miner

Scale: 1" = 100'

Page No. 1 of 1

Prepared by:  
**Howard Engineering & Geology, Inc.**



Natural Ground

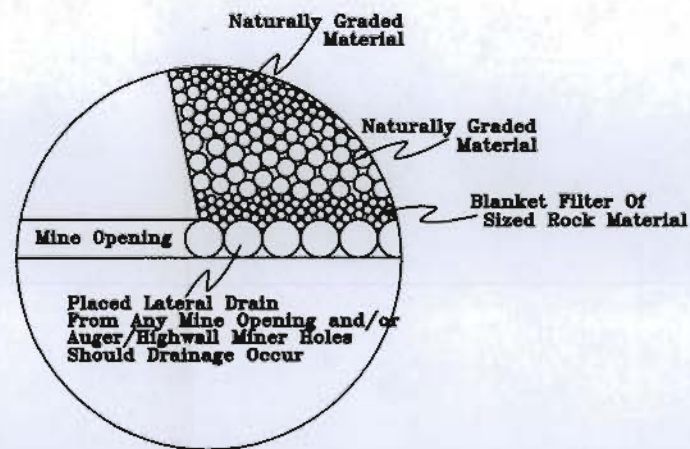
Proposed Backfill with Spoil Material

Natural Ground

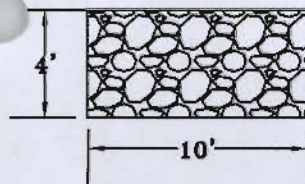
Poplar Lick Coal Seam

DETAIL "A"

Rock Bleeder Drain  
If Deemed Necessary  
4 Ft. High X 10 Ft. Wide



DETAIL "A"  
Not To Scale



Bleeder Drain Detail  
Scale: As Shown

Notes:

- I. Bleeders to be constructed in low spots as dictated by localized dip.
- II. Bleeders to be sloped 1 to 2% away from highwall.
- III. Bleeders to be constructed only of durable rock.
- IV. Bleeders will be routed to natural drainage courses as practical with dip of coal.
- V. Bleeders will be routed into sediment control structures.
- VI. Bleeders will be constructed prior to backfilling of the highwall.

I, Timothy C. Howard, P.E. No. 15,317  
 Date: 1/16/09  
 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.



**Appolo Fuels, Inc.**  
 Permit #807-0332, Amendment #1  
 Typical Mine Opening Wet Seal, If Deemed Necessary,  
 After Contour Strip and Auger or Highwall Miner

Scale: 1" = 100' | Page No. 1 of 1

Prepared by:  
**Howard Engineering & Geology, Inc.**

**27. Coal Mine Waste**

27.1 Will any coal processing waste or underground development waste be generated or disposed of within the proposed permit area?  YES  NO. If "YES", provide the following information for each disposal area:

Facility I.D.	Type	Storage Volume Cu. Yds.	Latitude	Longitude	Anticipated Construction Date

27.2 Did construction of any of the above structures begin prior to January 18, 1983?  YES  NO. If "YES", provide the information required by 405 KAR 8:030, or 8:040, Section 25 for existing structures. Submit this information as "Attachment 27.2.A".

27.3 Will any coal mine waste be disposed of in abandoned underground mines?  YES  NO. If "YES", provide as "Attachment 27.3.A", the information to satisfy the requirements of 405 KAR 8:040, Sections 27 and 28.

27.4 Will coal mine waste materials, from activities located outside the proposed permit area, be disposed of within the proposed permit area?  YES  NO. If "YES", provide as "Attachment 27.4.A", a detailed discussion (based on relevant hydrologic, geotechnical, physical, and chemical analyses) to make a showing in accordance with 405 KAR 16:140 or 18:140, Section 1, that the disposal of such waste will not:

- (a) Adversely affect water quality, water flow, or vegetation;
- (b) Create public health hazards; and
- (c) Cause instability in the disposal area(s).

27.5 Provide a detailed plan (including all engineering design calculations, cross-sections, maps and drawings) for each proposed structure. Each plan shall meet the applicable requirements of 405 KAR 8:030, Section 34, or 405 KAR 8:040, Section 34, as appropriate. The plan(s) shall be provided as "Attachment 27.5.A, 27.5.B., etc."

**N/A None Proposed.**



**28. Disposal of Waste Other Than Coal, Soil or Rock**

28.1 Provide as "Attachment 28.1.A", a description of the measures to be used for the temporary storage and final disposal of waste such as: grease, lubricants, paints, flammable liquids, garbage, abandoned machinery, timber, brush, and other combustibles generated during mining activities. Show all storage and/or disposal sites on the MRP Map.  
**See Attachment 28.1.A.**

**29. Toxic Materials Handling Plan**

29.1 Based on the results of the premining geologic sampling program, identify all acidic or toxic strata which will be encountered during the proposed mining operation:

**N/A - No Acidic Strata Identified.**

Site No.	Thickness	Lithology	Elevation	Potential Acidity	Neutralization Potential

29.2 Describe how acidic and/or toxic strata will be handled to avoid contamination of surface and ground water resources within, and adjacent to the proposed permit area, and to minimize adverse effects on plant growth and land uses. Submit the description, if applicable, as "Attachment 29.2.A".  
**See Attachment 29.2.A**

**30. Surface and Ground Water Monitoring**

30.1 Provide a detailed description of the in-stream surface water quality and quantity monitoring program to be used during the mining and reclamation operations. The description shall specifically address all of the following:

- (a) the location of each sampling point and the rationale for selection
- (b) the frequency of sample collection
- (c) the method(s) to be used for sample collection
- (d) the parameters to be tested
- (e) the procedures to be used for reporting the analytical results of the testing program to DSMRE

Submit the description as "Attachment 30.1.A", and show the location of all monitoring points on the MRP Map.  
**N/A - No changes proposed this amendment.**

ATTACHMENT 28.1.A

***Waste Disposal Plan***

All waste products which are generated during the normal operations of the surface mine, such as grease, lubricants, flammable liquids, trash, timber, wood or other combustible material will be temporarily stored within the proposed permit area. This material will be placed at a designated site within the permit area which is also located away from the mining operations. Locating this material away from the mine operations will prevent any possible danger of igniting the material. After this material is accumulated, it will be permanently disposed of by hauling this material to an approved public landfill where it would be disposed of with other similar waste products.

Abandoned machinery will be sold for scrap and removed from the site. Timber, brush, and other combustibles generated during the mining activities will either be placed in piles or burned out of the streams and natural drainage ways. Timber that is removed from the surface mining area will either be windrowed along the outcrop or will be buried in the backfill. The timber that will be buried in the backfill will be placed no closer than 10' to the highwall and will be placed above the level of the coal seam being mined within the spoil. The timber will be placed in layers and covered with the spoil material in the backfill. This should prevent excessive settlement of the spoil and will not cause any adverse stability problems.

ATTACHMENT 29.2.A

***Toxic Materials Handling Plan***

No toxic material has been identified by the pre-mining geologic sampling results. However, should any toxic material be encountered by the proposed mining operation, it will be segregated and buried under a minimum of four (4) feet of non-toxic, non-acidic spoil material.



30.2 Submit as "Attachment 30.2.A", a description of the applicant's proposed KPDES point source discharge monitoring program. Discharges from sediment ponds, underground mines and other similar discharge points within the proposed permit area shall be monitored. The description shall, at a minimum, address (a) the frequency of sample collection; (b) the parameters to be tested; and (c) the procedures to be used for reporting the analytical results of the laboratory tests. Show the location of all sampling points on the MRP Map.

**N/A - No changes proposed this amendment.**

30.3 Provide, as "Attachment 30.3.A", a detailed description of the ground water quality and quantity monitoring program to be used during the mining and reclamation operations. The description shall specifically address all the following:

- (a) the location of each sampling point and the rationale for selection
- (b) the frequency of sample collection
- (c) the method(s) to be used for sample collection
- (d) the parameters to be tested
- (e) the procedures to be used for reporting the results of the testing program to DSMRE

Show the location of all sampling points on the MRP Map.

**N/A - No changes proposed this amendment.**

30.4 Provide a detailed description of each monitoring point proposed for use in the ground water monitoring program. The description shall address:

- (a) the aquifer(s) to be monitored
- (b) the construction specifications of each monitoring point
- (c) the adequacy of each monitoring point, taking into account design, construction, and location to fulfill its intended use.

Submit the description as "Attachment 30.4.A".

**N/A - No changes proposed this amendment.**

30.5 Provide the following information for the surface and ground water monitoring locations. If additional pages are necessary, submit as "Item 30.5 continued".

I.D. Number	Pond Number if Applicable	Type Surface/Ground	Latitude	Longitude
<b>GW-A</b>	<b>N/A</b>	<b>Ground</b>	<b>36-35-48</b>	<b>83-47-42</b>
<b>GW-44</b>	<b>N/A</b>	<b>Ground</b>	<b>36-38-01</b>	<b>83-46-48</b>
<b>806</b>	<b>N/A</b>	<b>Surface</b>	<b>36-37-10</b>	<b>83-47-48</b>
<b>812</b>	<b>N/A</b>	<b>Surface</b>	<b>36-36-52</b>	<b>83-46-49</b>
<b>819</b>	<b>N/A</b>	<b>Surface</b>	<b>36-39-11</b>	<b>83-45-10</b>
<b>Pond 1</b>	<b>#1</b>	<b>KPDES</b>	<b>36-37-44</b>	<b>83-47-48</b>
<b>Pond 1A</b>	<b>#1A</b>	<b>KPDES</b>	<b>36-37-48</b>	<b>83-47-51</b>

**See Item 30.5 Continued**



30.6 List the name and address of the laboratory which will perform required testing of water samples.

Name Technical Water Laboratories, Inc.

Address P.O. Box 309, Bledsoe Kentucky 40810

**31. Sediment Ponds and Impoundments**

31.1 Complete the following table for each proposed sediment pond and impoundment. The numbers preceding the rows refer to the list of titles below the chart.

1	6A	23	24	25	10	19	
2	A	A	A	A	A	A	
3	31.90	19.10	32.10	51.07	27.94	30.92	
4	9.30	5.80	5.90	12.27	11.38	10.62	
5	0.676	0.677	0.677	1.77	0.265	0.174	
6	0.774	0.677	0.677	.500	0.403	0.707	
7	0.972	1.605	1.605	.618	0.818	1.450	
8	Dug-out	Dug-out	Dug-out	Dug-out	Dug-out	Dug-out	
9	1.121	2.208	2.208	.885	0.964	1.833	
10	Dug-out	Dug-out	Dug-out	Dug-out	Dug-out	Dug-out	
11	36-37-48	36-37-39	36-37-48	36-38-09	36-37-37	36-38-05	
12	83-47-51	83-48-03	83-48-11	83-45-54	83-46-40	83-46-21	

- 1.) Facility I.D. No.
- 2.) Hazard Classification (A, B, or C)
- 3.) Total Drainage Area (Acres)
- 4.) Disturbed Drainage Area (Acres)
- 5.) Sediment Storage Capacity (Acre-Feet)
- 6.) Storage Capacity at Principal Spillway (Acre-Feet)
- 7.) Storage Capacity at Emergency Spillway (Acre-Feet)
- 8.) Structure Height at Emergency Spillway Measured from Upstream Toe (Feet)
- 9.) Storage Capacity at Top of Dam (Acre-Feet)
- 10.) Structure Height at Top of Dam Measured from Downstream Toe (Feet)
- 11.) Latitude
- 12.) Longitude



1.2 Were any of the structures listed in chart 30.1, constructed prior to January 18, 1983? [ ] YES [XX] NO. If "YES", identify each structure and submit as "Attachment 31.2.A, 31.2.B", etc., the descriptions and compliance plan(s) required by 405 KAR 8:030, Section 25, or 405 KAR 8:040, Section 25, as appropriate.

31.3 For each proposed impoundment submit the applicable design plans and descriptions, including compliance demonstration documents, as required by 405 KAR 8:030 or 8:040, Section 34. Design plans and descriptions shall be submitted as "Attachment 31.3.A, 31.3.B," etc. Compliance demonstration documents shall be appropriately labeled and submitted in a separate document cover entitled "Sediment Ponds - Compliance Demonstration Documents". Put the applicant's name and the application number on the face of the document cover. If other state or federal agencies receive a copy of the permit application, a copy of the compliance demonstration documents shall also be provided to such agencies unless specifically waived. **See Compliance Demonstration.**

NOTE: If any proposed sediment ponds are to be retained as permanent impoundments, the applicant shall ensure that such structures have been designed to meet the requirements of 405 KAR 16:100 or 405 KAR 18:100 as appropriate.

31.4 Will water be chemically treated at any of the proposed or existing sediment structures? [ ] YES [XX] NO. If "YES", provide the following information.

I.D. Number	TREATMENT CHEMICALS	Described the method of treatment application and special structures or facilities to be used

If additional pages are necessary, submit as "Item 31.4 continued". If special structures are to be utilized, submit as "Attachment 31.4.A, 31.4.B" etc., supporting engineering designs and calculations

ATTACHMENT 31.3

## Sediment Control

In order to provide sediment control for the mining activity described in this application, it will be necessary to construct three (3) additional dug-out sediment ponds. These dug-out ponds are designated as Sediment Pond #23, #~~28~~<sup>24 + w</sup> and #25 their locations are detailed on the Mining and Reclamation Plan Map in this application. These ponds have been designed using the SEDCAD 4 Design Method. The ponds have been designed to pass the discharge from a 10 year-24 hour rainfall event with a settleable solids discharge of 0.50 ml/l or less. Additionally as a part of this application existing sediment pond #6A has been redesigned to control the sub-watersheds that were previously controlled by pond #7. Pond #10 is being redesigned to control the areas previously controlled by pond #9. Ponds #7 and #9 are being deleted as part of this permitting action. The drainage ditch that previously routed water to pond #7 has been regarded to flow to the inlet end of pond #6A. All areas previously controlled by pond #7 have been reclaimed in excess of two (2) years and currently have a heavy growth of vegetative cover. All areas previously controlled by pond #9 have been reclaimed in excess of one (1) year and currently have a heavy growth of vegetative cover.

As mining advances, on-bench structures will be constructed to control the sediment runoff. It is to be understood that these proposed ponds are on-bench type construction 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. Operationally, all water runoff on the bench areas in advance of the last constructed pond shall be intercepted and controlled within the mine pit area and from this location either gravity drained or pumped back to the latest constructed sediment pond. No water from a

ATTACHMENT 31.3

mine pit shall be released from the mining area without flowing through a sediment pond. Silt fence and or straw bails shall be used when necessary to control any sediment runoff prior to the construction of the sediment pond .

Each sediment pond will provide the primary sediment control for the surface disturbance within the appropriate drainage area. As field conditions justify, secondary sediment control will be utilized in order to control water and sediment runoff. This secondary sediment control can be in the form of sumps, straw bales, and silt fence and can be freely installed 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.

No surface water discharge will be allowed to take place without first being passed thru a sediment pond. The pond will be constructed as soon as possible within each effected watershed. These ponds will be excavated into rock/natural ground. Side slopes of excavated ponds shall not be steeper then 2h:1v in earth and ¼h : 1v in solid rock. The ponds will be constructed primarily using a hydraulic excavator and backhoe. If necessary, explosives shall be used in the construction of the ponds. The spillways will be placed at their design elevation and size and configuration. The ponds will be inspected and the sediment elevation will be checked regularly to determine if clean-out is necessary. The principal spillway will be installed at its design elevation and slope. The outlet end of the principal spillway will be rip-rapped at the discharge point to protect the natural ground from erosion. Each emergency spillway will be rip-rapped from the inlet through the embankment all the way to natural ground to dissipate energy and prevent erosion. The rip-rap which will be used to line the spillways will be pit rock



ATTACHMENT 31.3

obtained from this job site or limestone purchased for a local quarry. It is anticipated that there will be adequate amounts of durable rock generated during the mining activity.

The ponds will be constructed under the supervision of a registered professional engineer or his designated inspector during all phases of construction. The ponds will be inspected after each significant rainfall event evaluate the integrity of the structure and to determine if the pond needs to be cleaned out. The sediment in the ponds will be removed when the sediment level reaches the designated sediment clean-out elevation as shown on the stage storage chart for each pond. This will ensure that the ponds will always produce an effluent which will meet the performance standards. Also, the sediment pond will be inspected by a registered professional engineer or his designated representative annually to certify that the ponds are maintained in such a manner that they always meet the performance standards.

These sediment ponds will not impound water to a height of 20' from the upstream toe to the crest of the emergency spillway or will impound a volume of 20 acre-ft at a height of 5' above the upstream toe, geotechnical evaluation or stability analysis will not be necessary to insure the safety of this structure.

We have provided the following information on this design in this attachment:

- 1) Watershed Map - This map details the drainage area served by the pond and its breakdown into subwatersheds.
- 2) Stage-Storage Curve
- 3) "SEDCAD" Computer Printout for the 10yr.-24hr. and 25yr-24hr storm events during Mining and Reclamation
- 7) Cumulative Impact Assessment - Pre-Mining computer run
- 8) Certified Design Drawing
- 9) Engineer's Certification of Design

ATTACHMENT 31.3

In addition, we are proposing to utilize alternate sediment control (silt fence and or straw bales) for any portion of the surface mining areas including slides which field conditions and/or the operator or the DNR field inspector deems necessary to control runoff from the site as per DSMRE regulations. The surface runoff will be controlled by berms around the perimeter of the site and the alternate sediment control will be either straw bales and/or silt fences.

The use of the proposed alternate sediment control measures are in addition to the sediment ponds included in this application and approved in previous applications to this permit number.

- 31.5 Provide a plan for the periodic maintenance of all sediment structures and discuss the proposed sediment clean-out schedule. Provide information as "Attachment 31.5.A".  
**See Attachment 31.5.A.**
- 31.6 Provide a removal plan for all temporary impoundments. Submit as "Attachment 31.6.A".  
**See Attachment 31.6.A.**

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**32. Diversions**

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- 32.1 Is authorization to conduct mining and reclamations or to construct mining related facilities within 100 feet of an intermittent or perennial stream being requested?  
 YES  NO. If "YES", provide the following information for all of the following.
- (a) A map showing the location(s) where such authorization is requested, and the proposed disturbance(s)/facility(ies) with an indication of the specific distance to the stream(s). Submit as "Attachment 32.1.A".
  - (b) Cross-sections and a longitudinal profile of the stream's premining and postmining configuration. Submit as "Attachment 32.1.B".
  - (c) A description, including maps, plans, drawings, etc., of the specific measures to be taken to protect the stream(s) during the mining and reclamation operation. Submit as "Attachment 32.1.C".  
**N/A - Road Only.**
- 32.2 Will the disturbances referenced in item 32.1 result in the temporary or permanent diversion of an intermittent or perennial stream?  
 YES  NO. If "YES", provide as "Attachment 32.2.A", the design calculations and other pertinent information to demonstrate compliance with 405 KAR 16:080, Section 2, or 405 KAR 18:080, Section 2, as appropriate.  
**N/A - Road Only.**
- 32.3 Complete the following chart for all diversions:

Diversion Number	Length of Diversion	Design Storm	Type of Channel	Design Velocity	Av. Slope	Erosion Control Methods

ATTACHMENT 31.5.A

***Sediment Pond Maintenance Plan***

The sediment ponds that will be constructed or used with this application will be inspected after each significant rainfall event to insure the integrity and stability of the pond and to insure that the spillways are clear and functioning properly. Also, the ponds will be inspected by a Registered Professional Engineer annually, at a minimum, to certify that the ponds are being maintained in such a manner that the effluent from the ponds will continue to meet the performance standards of the "Permanent Program".

The sediment ponds will be maintained such that the sediment level in the ponds will always be at an elevation less than the design sediment elevation detailed in Attachment 31.3. By maintaining the sediment at a level less than the design level, the pond designs provided will always produce an effluent which will meet the performance standards of the "Permanent Program".

When the sediment level reaches the level described, it will be removed from the ponds with a hydraulic excavator, crane or other suitable equipment. The sediment will be placed in a truck and will be hauled to the sediment disposal area. If the sediment should prove to be toxic by chemical analysis, it will be disposed of in a pit excavated on the mine bench. This disposal pit would be lined with four (4') feet of the best available impermeable material clay on all sides and the bottom. After the sediment is placed in the pit, the pit will be covered with an additional four (4') feet of clay material.

If the sediment should prove to be non-toxic, the material will be placed within the permitted area, be allowed to drain and be seeded and mulched.



ATTACHMENT 31.6.A

***Sediment Structure Removal Plan***

Prior to removal of any sediment structure on this operation, all water will be removed from the structure by pump or siphon. Removal of water by any means will be done in such a manner as to prevent excessive erosion to the surrounding areas. KPDES effluent limitations will be met and maintained during dewatering and the removal of all trapped sediment, backfill regarding and vegetation phases of the operation.

After all water has been removed from the structure, the remaining sediment will be allowed to dry. The rip-rap used for erosion control around the structure will be excavated and temporarily stored within the permit area for later use in the reclamation of the sediment structure sites.

Once the remaining sediment in the structure has dried thoroughly, the dried sediment material will be removed and mixed with the material being placed into the backfill of the mining operation or graded into the area surrounding the sediment pond. Should the sediment material be graded into the pond's surrounding terrain, the material will be tested to ensure no toxicity exists. If toxic material is found, the material will then be disposed of as described in Attachment 29.2 "Toxic Material Handling Plan" in the original application. The toxic material shall be covered by a minimum of four (4') feet of non-toxic/acid/combustible material. All dugout structures located on-bench will be filled in and a small depression of one (1) to two (2) feet in depth will be left to comply with the post mining land use. The sediment structure sites will be revegetated with a variety of grasses and legumes immediately after the structures have been removed and reclaimed.

ATTACHMENT 31.6.A

***Sediment Structure Removal Plan for Pond #9***

Prior to removal of the sediment structure noted above, all water will be removed from the structure by pump or siphon. The water will be pumped to adjacent Pond #10 and will not be discharged downslope of the pond. Removal of water by any means will be done in such a manner as to prevent excessive erosion to the surrounding areas. KPDES effluent limitations will be met and maintained during dewatering, reclamation and vegetation phases of the operation.

After all water has been removed from the structure, the remaining sediment will be allowed to dry. The rip-rap used for erosion control around the structure will be excavated and temporarily stored within the permit area for later use in the reclamation of the sediment structure site.

Once the remaining sediment in the structure has dried thoroughly, the dried sediment material will be removed and mixed with the material being placed into the backfill of the mining operation or graded into the area surrounding the sediment pond. Should the sediment material be graded into the pond's surrounding terrain, the material will be tested to ensure no toxicity exists. If toxic material is found, the material will then be disposed of as described in Attachment 29.2 "Toxic Material Handling Plan" in the original application. The toxic material shall be covered by a minimum of four (4') feet of non-toxic/acid/combustible material. The dugout structure site will be filled in and graded such that no water can be impounded. The sediment structure site will be revegetated with a variety of grasses and legumes immediately after the structure has been removed and reclaimed.

- 32.3 Are any of the proposed diversions to be retained as permanent facilities?  
 YES  NO. If "YES", list the identification numbers of those diversions. \_\_\_\_\_  
 Additionally, provide as "Attachment 32.3.A", detailed designs, cross-sections, calculations, and drawings for each proposed diversion ditch to demonstrate compliance with 405 KAR 16:080 or 18:080, Section 1, as appropriate.  
**N/A - No Diversions proposed by this amendment #1.**

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**33. Transportation Facilities Plan**

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- 33.1 Describe the transportation plan for the proposed permit area. The plan shall include a discussion of road maintenance, appropriate maps, cross sections, and specifications for each road width, gradient, surface, cut, fill embankment, culvert, bridge, drainage ditch, and drainage structure. Submit the description as "Attachment 33.1.A".  
**See Attachment 33.1.A.**
- 33.2 Are roads for which construction began prior to January 18, 1983 proposed for use within the permit area?  YES  NO. If "YES", clearly identify the extent of such roads on the MRP Map and submit the information required to demonstrate compliance with 405 KAR 8:030, Section 25, or 405 KAR 8:040, Section 25 as appropriate. Submit the information as "Attachment 33.2.A".
- 33.3 Will conveyors and/or rail systems be located within the proposed permit area?  
 YES  NO. If "YES", submit a description as "Attachment 33.3.A" and show on the MRP Map.
- 33.4 Does the applicant propose to use alternate specifications for any road or portions of road within the permit area?  YES  NO. If "YES", describe the specification to be modified and provide required justification. Submit as "Attachment 33.4.A".  
**See Attachment 33.4.A.**
- 33.5 Describe the measures to be used to ensure that interests of the public are protected if a waiver to conduct surface disturbances within 100' from the right-of-way of any public road or to relocate a public road is being requested. Submit this description as "Attachment 33.5.A".  
**N/A**

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**34. Air Pollution Control Plan**

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- 34.1 For proposed permit area, describe the fugitive dust control plan to be employed during site preparation, mining, and reclamation. When required, provide an air quality monitoring program and locate monitoring station(s) on the MRP Map. Submit this information as "Attachment 34.1.A".  
**See Attachment 34.1.A.**

ATTACHMENT 33.1.A

***TRANSPORTATION PLAN***

Access to and coal haulage from the proposed amendment mine site will be provided by three (3) additional roads. The roads are designated as Roads "S", "T" and "AA". Pond and Reclamation access for the amendment mining area will be provided by the same roads. Road "T" is existing and will require upgrading. Roads "S" and "AA" are new roads and will be constructed as a part of this application.

The haul roads will be maintained by grading, surfacing with durable material, revegetating side slopes, cut and fill slopes, watering for dust control, and minor reconstruction if necessary. The roads are proposed to be permanent structures, used for the support and achievement of the post-mining landuse. Cross-sections, profiles and drainage plans are included on the following pages.



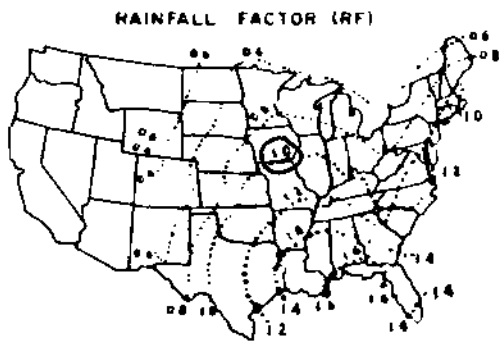
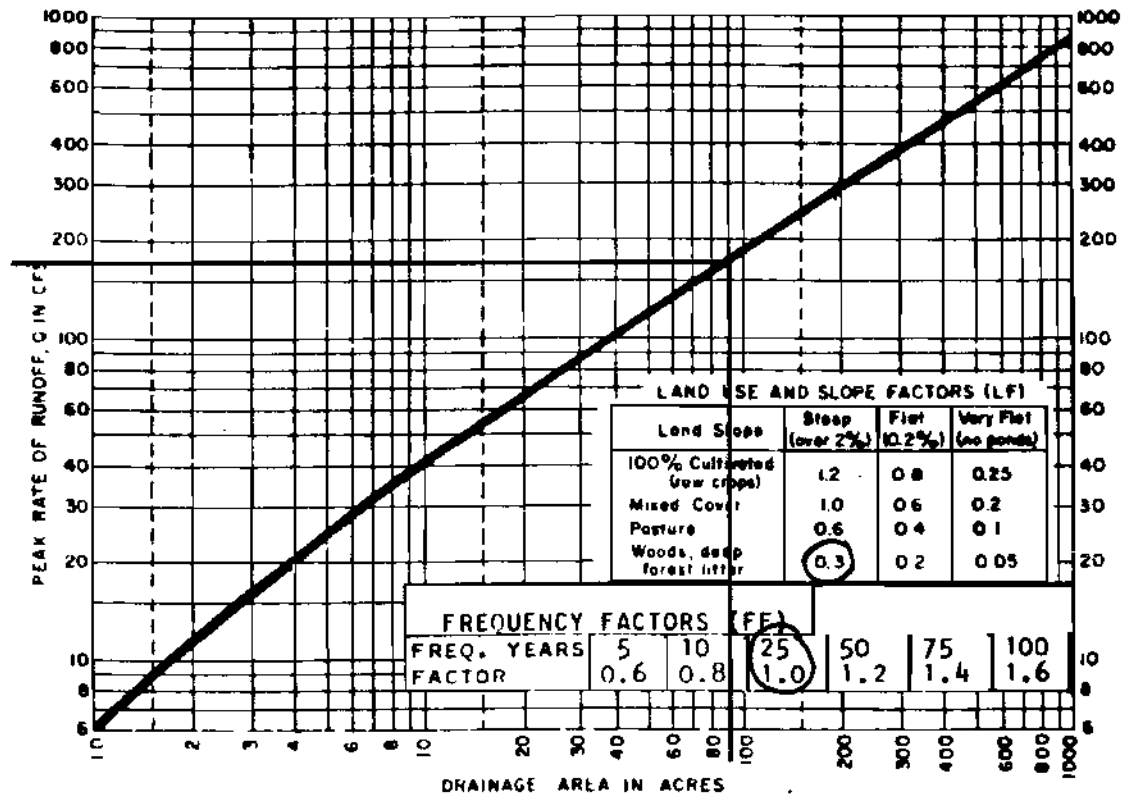
Company Name: Apollo FUELS, INC.

Project: Permit # 807-0332, Amd #1

Culvert @ Sta. 1+20, Road "S"

Date: 1-15-09 Scale: None Dwn By: JHM

170



FORMULA  
 $Q_{design} = RF \times LF \times FF \times Q$

$$1.0 \times 0.3 \times 1.0 \times 170 = 51 \text{ CFS}$$

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

PEAK RUNOFF METHOD FOR  
WATERSHEDS UNDER 1,000 ACRES

# Howard Engineering & Geology, Inc.

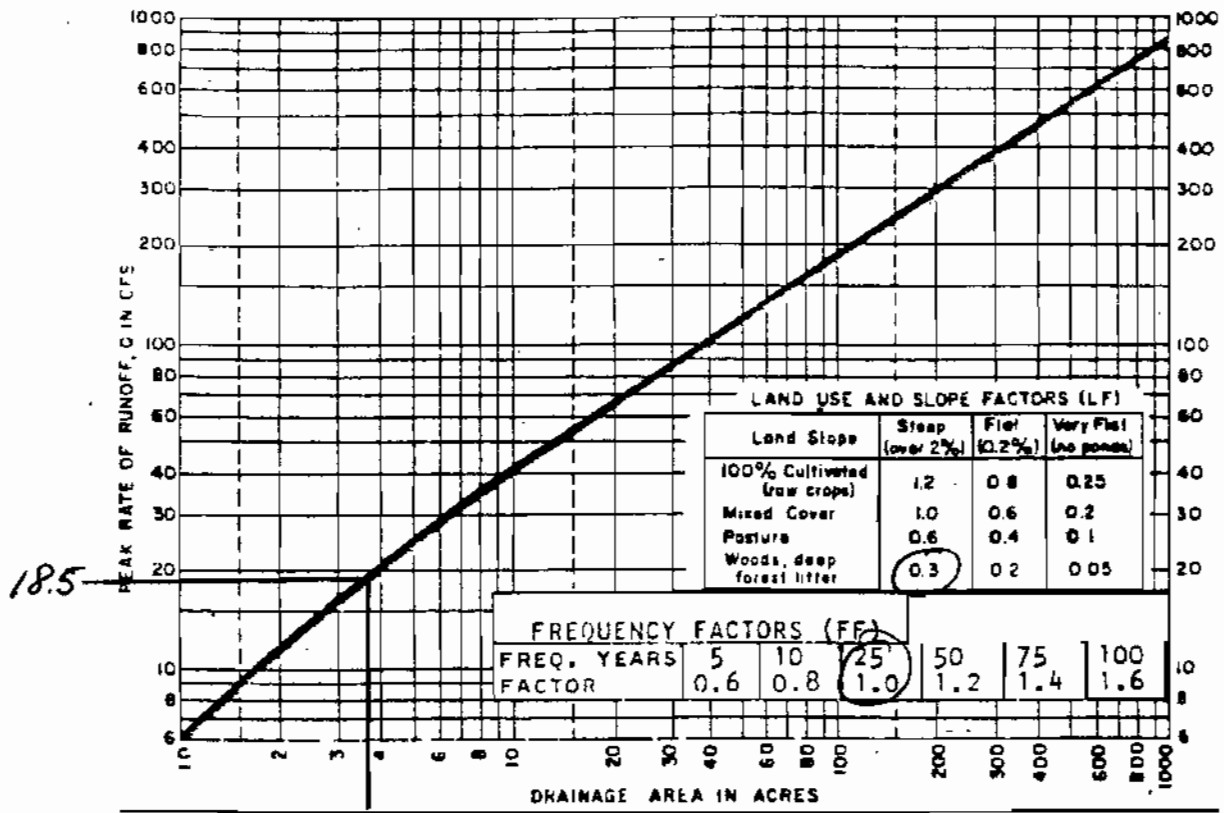
P.O. Box 271  
2550 W. Hwy. 72, Suite 1  
Harlan, KY 40831

Company Name: Appolo Fuels, Inc.

Project: Permit #807-0332, Am #1

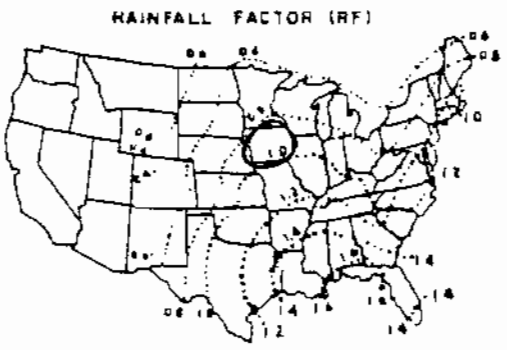
Road "S" Worst Case

Ditch Design



18.5

3.72 Ac.



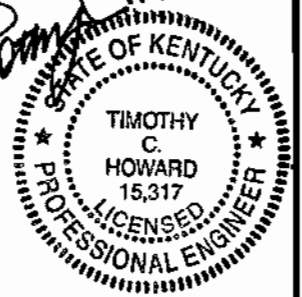
FORMULA:

$$Q_{\text{design}} = RF \times LF \times FF \times Q$$

$$= 1.0 \times 0.3 \times 1.0 \times 18.5$$

$$= 5.55 \text{ CFS}$$

*Timothy C. Howard*



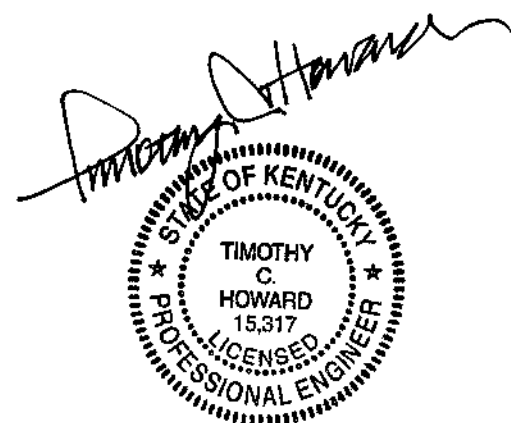
PEAK RUNOFF METHOD FOR  
WATERSHEDS UNDER 1,000 ACRES

Road "S" Worst Case Ditch Design  
Worksheet for Triangular Channel

Project Description	
Project File	c:\program files\flow master - haestead\fmw\0332-am1.fm2
Worksheet	Worst Case Ditch Designs
Flow Element	Triangular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data	
Mannings Coefficient	0.040
Channel Slope	1 %
Left Side Slope	0.33 H : V
Right Side Slope	3.00 H : V
Discharge	5.55 cfs

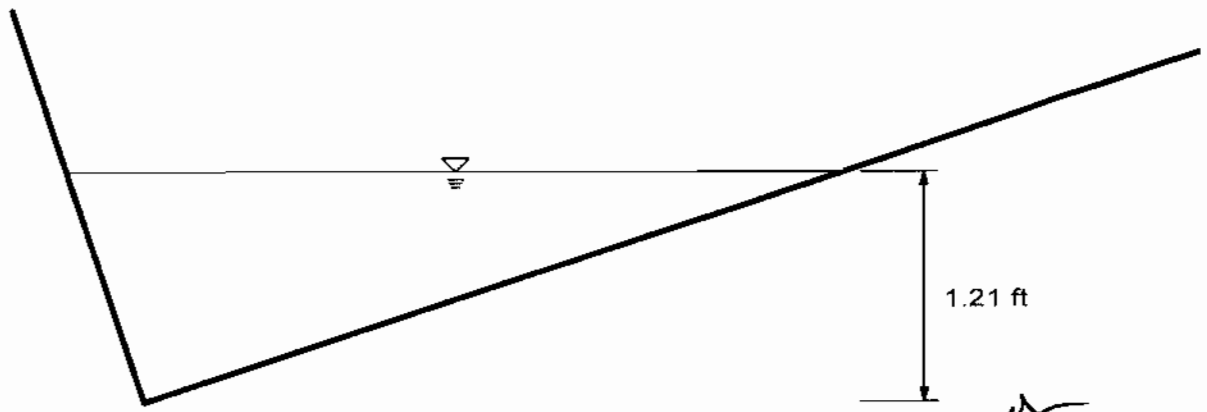
Results	
Depth	1.21 ft
Flow Area	2.44 ft <sup>2</sup>
Wetted Perimeter	5.11 ft
Top Width	4.03 ft
Critical Depth	0.93 ft
Critical Slope	0.041228 ft/ft
Velocity	2.27 ft/s
Velocity Head	0.08 ft
Specific Energy	1.29 ft
Froude Number	0.51
Flow is subcritical.	



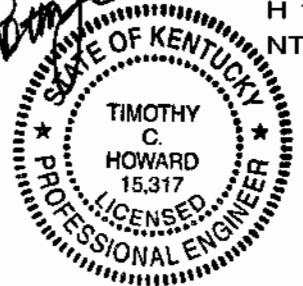
Road "S" Worst Case Ditch Design  
Cross Section for Triangular Channel

Project Description	
Project File	c:\program files\flow master - haestad\fmw\0332-am1.fm2
Worksheet	Worst Case Ditch Designs
Flow Element	Triangular Channel
Method	Manning's Formula
Solve For	Channel Depth

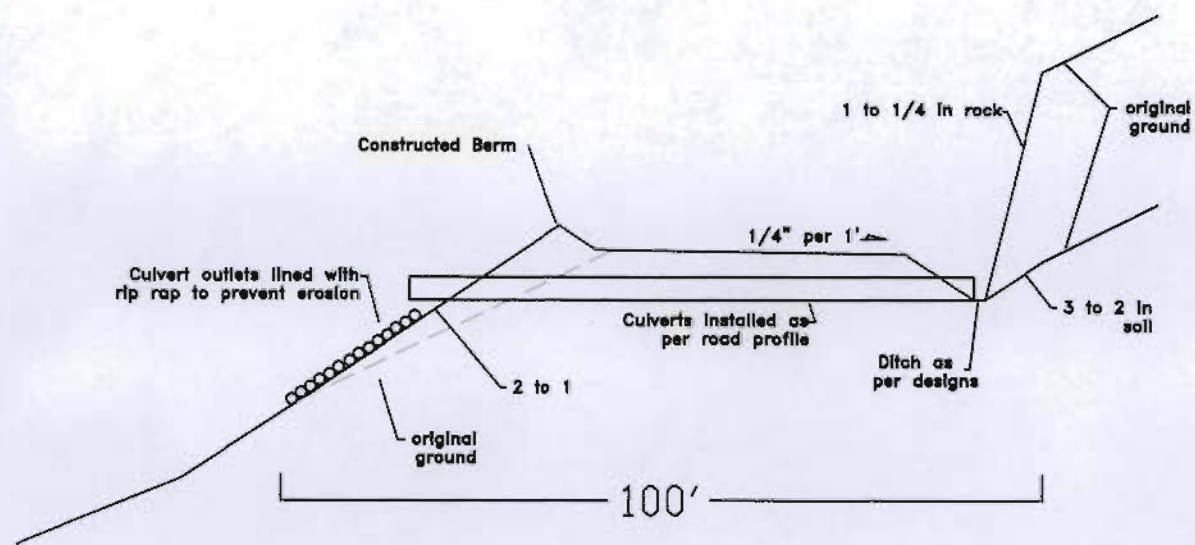
Section Data	
Mannings Coefficient	0.040
Channel Slope	1 %
Depth	1.21 ft
Left Side Slope	0.33 H : V
Right Side Slope	3.00 H : V
Discharge	5.55 cfs



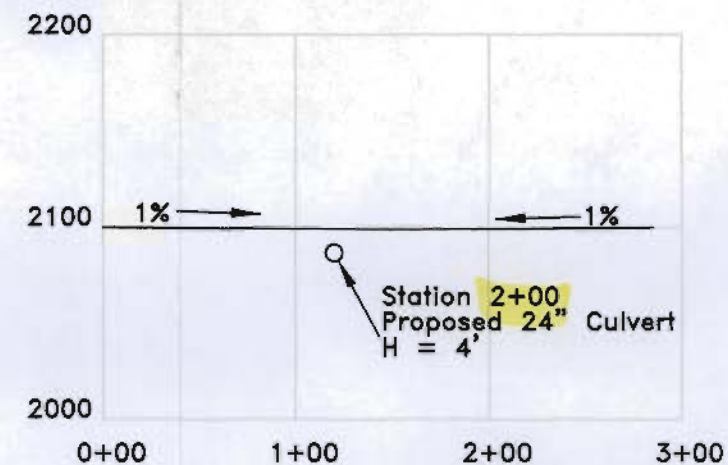
*Timothy C. Howard*  
1  
V  
H 1  
NTS







Average Permitted Width  
Not To Scale



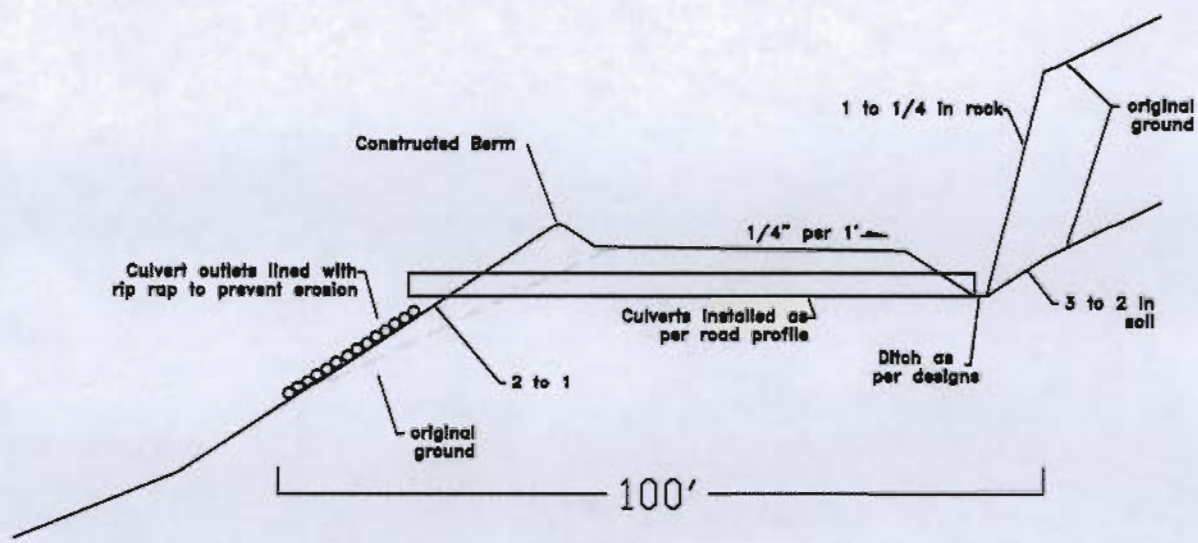
Note: Overall Slope 1%

I, Timothy C. Howard, P.E. No. 15,317  
 Date: 1/16/09  
 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.

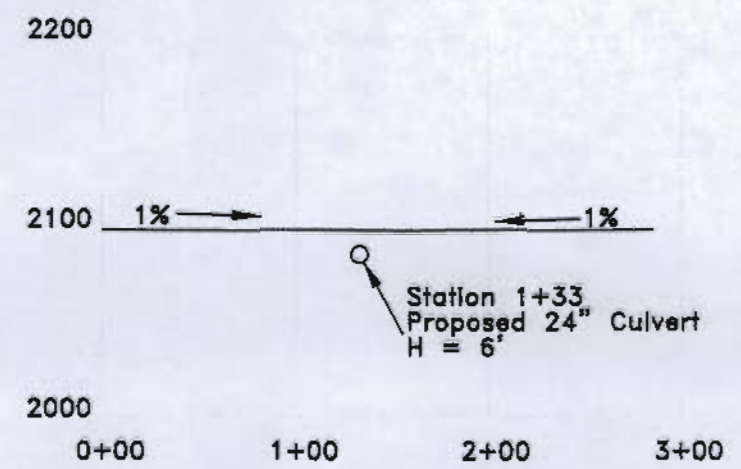


<b>Appolo Fuels, Inc</b>	
Permit #848-0332 Road "S" Profile & Typical Cross-Section Attachment 33.1.A	
Scale: 1" = 100'	Page No.
Prepared by: <b>Howard Engineering &amp; Geology, Inc.</b>	





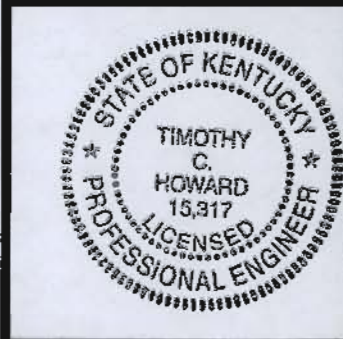
Average Permitted Width  
Not To Scale



Note: Overall Slope 1%

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

Date: 11/9/09  
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.



**Appolo Fuels, Inc**

Permit #848-0332  
Road "S"  
Profile & Typical Cross-Section  
Attachment 33.1.A

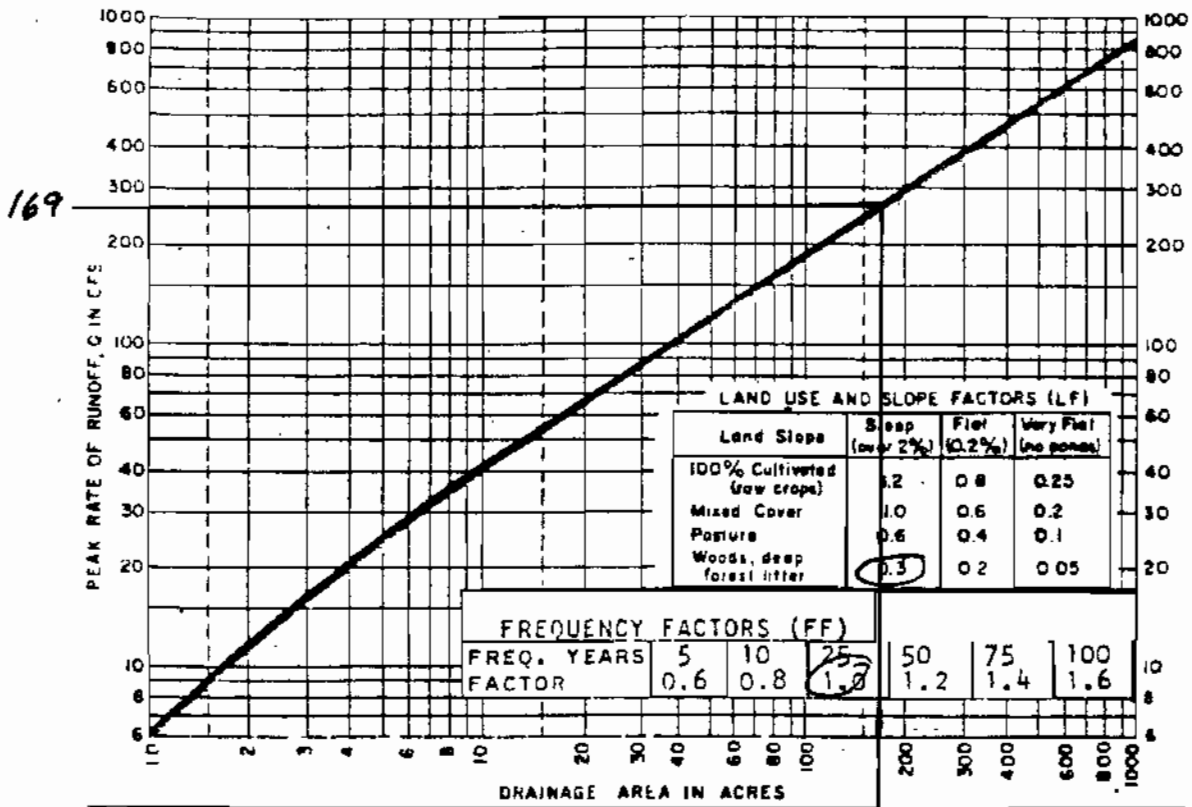
Scale: 1" = 100' Page No.

Prepared by:  
**Howard Engineering & Geology, Inc.**

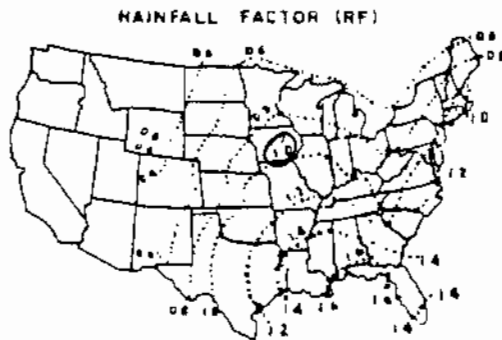
# Howard Engineering & Geology, Inc.

P.O. Box 271  
2550 W. Hwy. 72, Suite 1  
Harlan, KY 40831

Company Name: Appollo Fuels, Inc  
Project: Permit # 807-0332, Am #1  
Road "AA" Culvert @  
Station 12+00



171.69 Ac.



FORMULA:

$$Q_{\text{design}} = RF \times LF \times FF \times Q$$

$$= 1.0 \times 1.0 \times 0.3 \times 169$$

$$= 50.7 \text{ CFS}$$

*Timothy C. Howard*



PEAK RUNOFF METHOD FOR  
WATERSHEDS UNDER 1,000 ACRES

**Howard Engineering  
& Geology, Inc.**

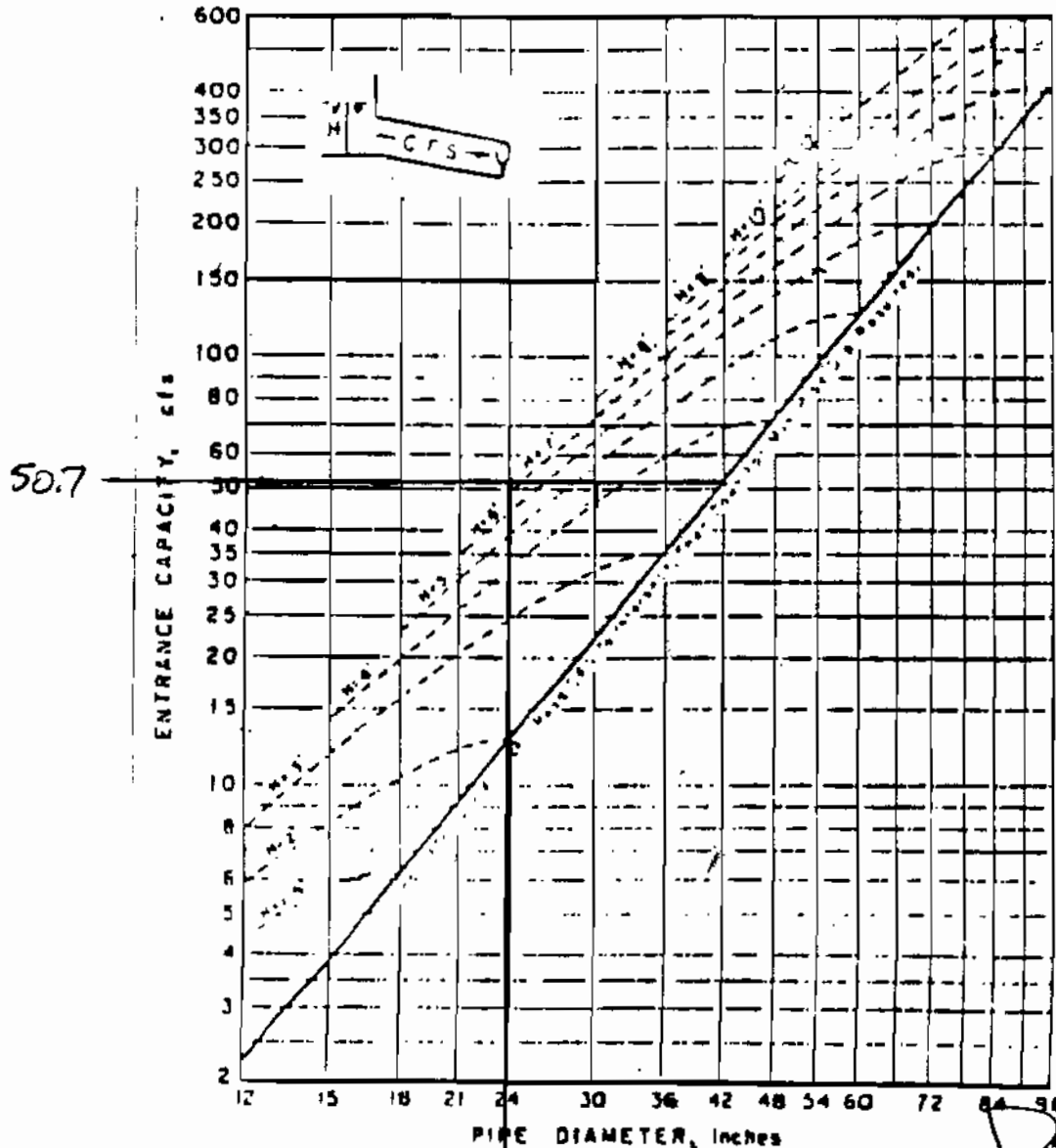
P.O. Box 271  
2550 W. Hwy. 72, Suite 1  
Harlan, KY 40831

Company Name: Appolo Fuels, Inc.

Project: Permit #807-0332, Am #1

Road "AA" Culvert @

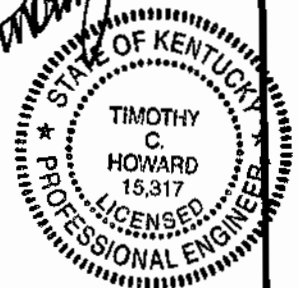
Station 12+00



Graph showing pipe culvert capacity

24" Culvert (GMP, Steel or Plastic)

w/6' Head

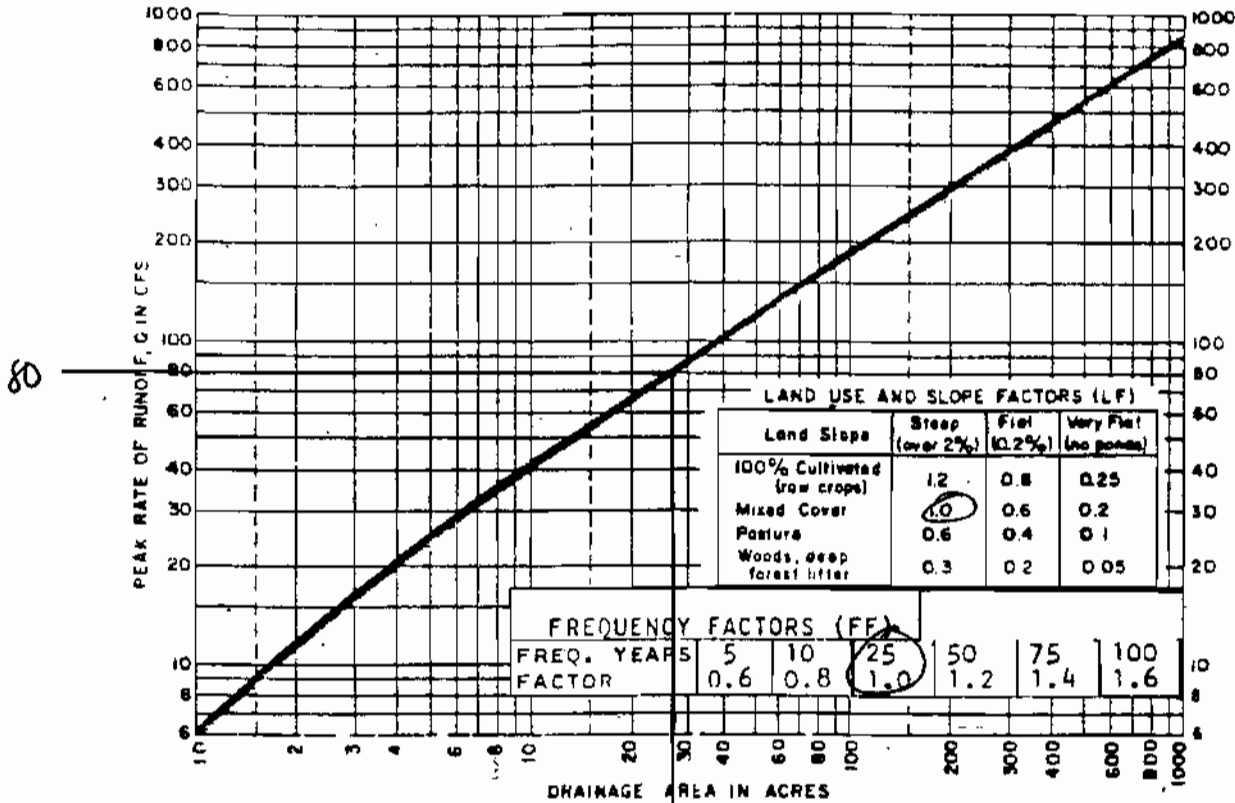




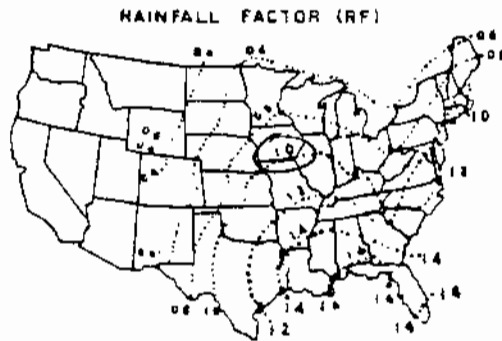
# Howard Engineering & Geology, Inc.

P.O. Box 271  
2550 W. Hwy. 72, Suite 1  
Harlan, KY 40831

Company Name: Appalo Fuels, Inc.  
Project: Permit # 807-0332, Am # 1  
Road "AA" Worst Case  
Ditch Design



27.76Ac.



FORMULA:

$$Q_{\text{design}} = RF \times LF \times FF \times Q$$

$$= 1.0 \times 1.0 \times 1.0 \times 80$$

$$= 80$$

*Timothy C. Howard*



PEAK RUNOFF METHOD FOR  
WATERSHEDS UNDER 1,000 ACRES

Road "AA" Worst Case Ditch Design  
Worksheet for Triangular Channel

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Project Description	
Project File	c:\program files\flow master - haestad\fmw\0332-am1.fm2
Worksheet	Worst Case Ditch Designs
Flow Element	Triangular Channel
Method	Manning's Formula
Solve For	Channel Depth

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Input Data	
Mannings Coefficient	0.040
Channel Slope	1 %
Left Side Slope	0.33 H : V
Right Side Slope	3.00 H : V
Discharge	80.00 cfs


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Results	
Depth	3.29 ft
Flow Area	18.07 ft <sup>2</sup>
Wetted Perimeter	13.89 ft
Top Width	10.97 ft
Critical Depth	2.70 ft
Critical Slope	0.028887 ft/ft
Velocity	4.43 ft/s
Velocity Head	0.30 ft
Specific Energy	3.60 ft
Froude Number	0.61
Flow is subcritical.	

---

*Timothy C. Howard*

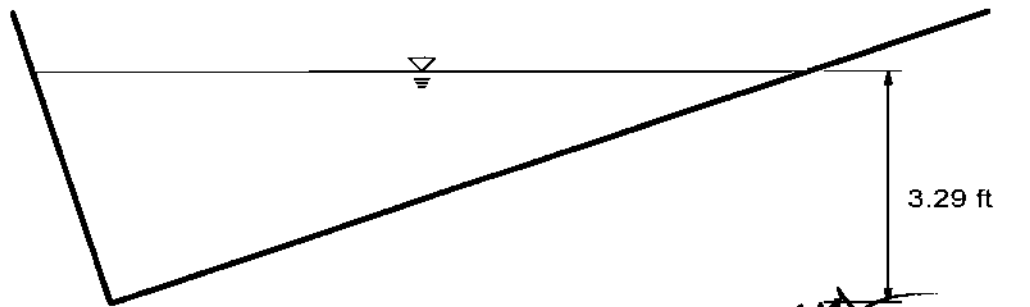


STATE OF KENTUCKY  
TIMOTHY  
C.  
HOWARD  
15,317  
PROFESSIONAL ENGINEER

Road "AA" Worst Case Ditch Design  
Cross Section for Triangular Channel

Project Description	
Project File	c:\program files\flow master - haestad\fmw\0332-am1.fm2
Worksheet	Worst Case Ditch Designs
Flow Element	Triangular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data	
Mannings Coefficient	0.040
Channel Slope	1 %
Depth	3.29 ft
Left Side Slope	0.33 H : V
Right Side Slope	3.00 H : V
Discharge	80.00 cfs



*Timothy C. Howard*

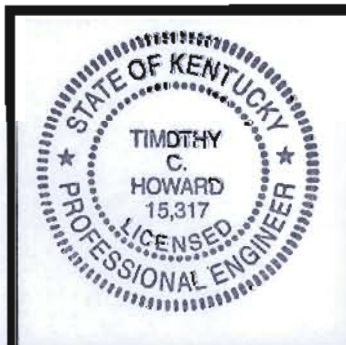
STATE OF KENTUCKY  
TIMOTHY C. HOWARD  
15,317  
LICENSED PROFESSIONAL ENGINEER

1  
V  
H 1  
NTS

THIS DOCUMENT IS A PLACEHOLDER. THE ORIGINAL HAS BEEN SENT FOR WIDE FORMAT SCANNING DUE TO SIZE LIMITATIONS. THE FULL DOCUMENT WILL BE INSERTED IN THIS LOCATION UPON ITS RETURN.

Note: Overall Slope 1%

I, Timothy C. Howard, P.E. No. 15,317  
Date: 11/4/09  
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.



*Appolo Fuels, Inc.*

Permit No. 807-0332, Amendment #1  
Road "AA"  
Profile & Typical Cross-Section  
Attachment 33.1.A

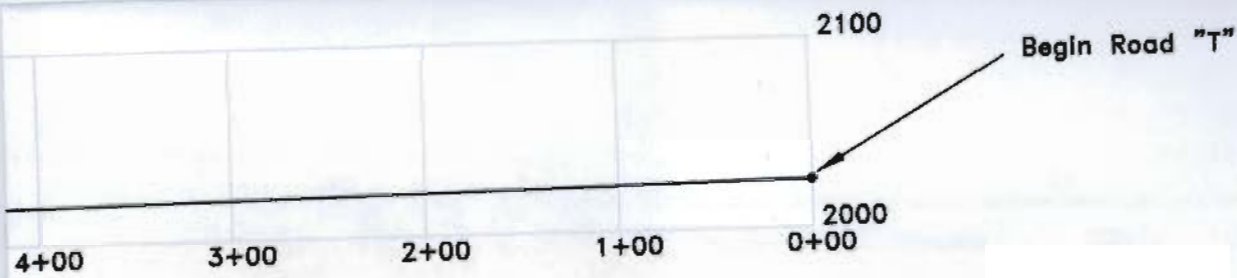
Scale: 1" = 100'

Page No.

Prepared by:  
*Howard Engineering & Geology, Inc.*



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I, Timothy C. Howard, P.E. No. 15,317  
Date: 11/21/09  
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.



**Appolo Fuels, Inc.**  
Permit No. 807-0332, Amendment #1  
Road "T"  
Profile & Typical Cross-Section  
Attachment 33.1.A  
Scale: 1" = 100' Page No.  
Prepared by:  
**Howard Engineering & Geology, Inc.**

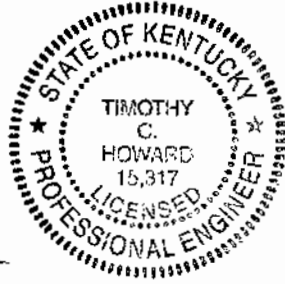
THIS DOCUMENT IS A PLACEHOLDER. THE ORIGINAL HAS BEEN SENT FOR WIDE FORMAT SCANNING DUE TO SIZE LIMITATIONS. THE FULL DOCUMENT WILL BE INSERTED IN THIS LOCATION UPON ITS RETURN.

	
<i>Timothy C. Howard</i> P.E. No. 15,317	
I, <u>Timothy C. Howard</u>	
Date: <u>11/21/09</u>	
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.	
<b>Appolo Fuels, Inc.</b>	
Permit No. 807-0332 Road Plan View Map	
Scale: 1" = 500'	Page No. 1 of 1
<small>Prepared by:</small> <b>Howard Engineering &amp; Geology, Inc.</b>	



**CERTIFICATION OF DESIGN**

I, Timothy C. Howard  
 (Signature)



(Engineer's Seal)

15,317  
 (Registration No.)

11/9/09  
 (Date Certified)

hereby certify, in accordance with 405 KAR 7:040, Section 10, that the design of each of the following facilities, whose design is included in this application, Application # 807-0332, Amendment #1 :

- a) is in accordance with accepted engineering practices and recognized professional standards:
- b) complies with the design requirements of KRS Chapter 350 and KAR Title 405; and
- c) provided that the facility is properly constructed, operated and maintained, is adequate for the facility to meet the applicable performance standards of KRS Chapter 350 and KAR Title 405 insofar as such performance can reasonably be predicted by accepted engineering practices.

FACILITY TYPE: Road (Permanent)

(One facility type only)

FACILITY ID #	HAZARD CLASS*	DATE OF DESIGN	FACILITY ID #	HAZARD CLASS*	DATE OF DESIGN
"S"		10/30/09	"T"		10/30/09
"AA"		10/30/09			

**TYPES OF FACILITIES:**

- sedimentation pond
- coal processing waste dam
- excess spoil disposal fill
- coal processing waste bank
- temporary water impoundment
- road
- permanent water impoundment
- postmining land use plan
- coal processing waste impoundment
- permanent ditches

\* Show hazard class, if applicable.

ATTACHMENT 33.4.A

## Alternate Road Specifications

As part of this application we are proposing to use alternate specifications for Roads "T" and "AA" which will be utilized for coal haulage on this permit. Culverts to be installed on roads "T" and "AA" will be installed based on the most appropriate filed locations. There will be no danger to the public health or safety as a result of the size and number of culverts to be installed and the proposed grades. These roads will be protected from access by unauthorized traffic with the installation of gates and/or a guard patrol during active mining of the permit area.

These roads are safe for use and will not pose any danger to the public health or safety as designed. The extents of the proposed roads are detailed on the MRP/ERI Map provided in this application.



Sincerely,

A handwritten signature in black ink that reads "Timothy C. Howard". The signature is written in a cursive style and is positioned above a horizontal line.

Timothy C. Howard, P.E.  
Howard Engineering & Geology, Inc.



ATTACHMENT 34.1.A

## **FUGITIVE DUST CONTROL PLAN**

Fugitive dust control shall be employed as necessary and practical during site preparation, mining, and reclamation activities as follows to minimize air pollution generated by surface mining activity:

- (1) Periodic watering of unpaved roads and haulways;
- (2) Revegetating, mulching, or otherwise stabilizing the surface of all areas adjoining roads that are a source of fugitive dust;
- (3) Restricting travel of vehicles on other than established roadways;
- (4) Minimizing the area of disturbed land;
- (5) Prompt stabilization and revegetation of disturbed land.

Due to the nature and location of the proposed permit area, no air monitoring program is proposed.

**35. Subsidence Control**

- 35.1 If this is an application which includes underground or auger mining, provide as "Attachment 35.1.A", the information required to demonstrate compliance with 405 KAR 8:040, Section 26.  
**See Attachment 35.1.A.**
- 35.2 Does the proposed method of operation include standard room and pillar mining?  
[ ] YES [XX] NO. If "YES", describe the thickness and engineering properties of clays and soft rock located immediately above and below the coal seam(s) to be mined. If none exists, briefly describe the stratum immediately above and below all coal seams to be mined with this method. Submit description and related information as "Attachment 35.2.A".
- 35.3 If this application is for a surface mine, indicate if any portion of the proposed permit area have been "undermined". [ ] YES [XX] NO. If "YES", provide a map showing the extent of the underground workings and describe the potential affects subsidence may have on structures such as dams, coal waste disposal areas, fills and other such structures. Submit this information as "Attachment 35.3.A".

**36. Applicant/Authorized Agent Signature**

36.1 The undersigned, being first duly sworn, states that he/she has read all the information provided in Form MPA-03 Technical Information for a Mining Permit, of this application and has found it to be true and correct. The undersigned further acknowledges that any information provided or omitted herein for the purpose of defrauding or misleading the Natural Resources and Environmental Protection Cabinet may result in criminal charges being instituted pursuant to applicable state laws.

Applicant Company Name Appolo Fuels, Inc.

Name of Applicant or Agent  
Whose Signature Appears Below Gary Asher

Signature of Applicant or Agent\* Gary Asher

Date of Signature 11/12/09

Subscribed and sworn to before me by Gary Asher

This the 11<sup>th</sup> Day of November, 20 09.

Notary Public D. R. C. [Signature]

My Commission Expires 2-13-10 State in which Commissioned Kentucky

\*NOTE: If signer is other than president or secretary of a corporation attach a notarized copy of power of attorney, or resolution of board of directors which grants signer the legal authority to represent the applicant in this application. (Does not apply to a single proprietorship or partnership.)

ATTACHMENT 35.1.A

The surface area overlying the auger mining areas included in this application has been delineated on the Mining and Reclamation Plan map. A subsidence survey of this area has been made to determine if there are any structures or renewable resources located on the surface area overlying the proposed augering. The results of this survey are as follows:

- (1) There are no dwellings, commercial or public buildings, nor other facilities such as pipelines, oil or gas wells, etc., located on the surface area overlying the proposed augering.
- (2) A reconnaissance was made of the area above the proposed augering. During this survey, it was determined that there were no aquifers located above the proposed augering which could be affected by subsidence.

As a result of this survey, it has been determined that there are no structures which could be affected by the mining activities proposed in this application.

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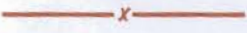







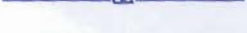

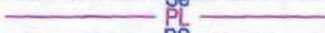






## MINING & RECLAMATION PLAN MAP ENVIRONMENTAL RESOURCES MAP

COMPANY: APPOLO FUELS, INC. ADDRESS: P.O. BOX 1727, MIDDLESBORO, KY. 40965  
 APPLICATION NUMBER: 807-0332 TYPE OF APPLICATION: AMENDMENT #1  
 LATITUDE: 36°36'52" LONGITUDE: 83°46'55" MAP SCALE: 1" = 500'  
 COUNTY: BELL CONTOUR INTERVAL: 20' QUADRANGLE: KAYJAY & FORK RIDGE  
 NEAREST NAMED STREAM: HIGNITE CREEK NEAREST PUBLIC ROAD INTERSECTION: 0.67 MILES  
 NORTHEAST OF THE JUNCTION OF KY 441 AND KY 74


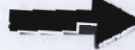





### ACTIVE/ABANDONED AREA DISCLAIMER

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.

### MAP LEGEND

OCCUPIED DWELLING		EXISTING SURFACE PERMIT	
EXISTING STRUCTURE		EXISTING UNDERGROUND PERMIT	
NON-EXISTING STRUCTURE		PROPOSED SURFACE PERMIT	
WELLS (type indicated)	  	PROPOSED UNDERGROUND PERMIT	
NOTE: NO KNOWN WELLS		COAL CROP LINES	 Hg  Se  PL  BS
GROUNDWATER MONITORING POINT			HIGNITE SEAM STERLING SEAM POPLAR LICK SEAM BUCKEYE SPRINGS SEAM
SURFACE WATER MONITORING POINT		POWER LINE	
		ACTIVE/ABANDONED MINE WORKS	

### ENVIRONMENTAL RESOURCES LEGEND

GEOLOGIC SAMPLE SITE		GROUNDWATER FLOW	
GROUNDWATER USER	G1	WATERSHED BOUNDARY	
SURFACE WATER USER	S1	WATERSHED LABEL ACREAGE	
SURFACE OR GROUND WATER DISCHARGE		EXISTING DISTURBANCE	
KPDES MONITORING POINT			

There are no known cultural or historic resources listed or eligible for listing on the National Register of Historic Places within or adjacent to the proposed permit area. There are no wetlands within or adjacent to the proposed permit area. There are no known surface water users within the vicinity of the proposed permit area. There are no National or State Parks, Forest Lands, Trails, Wild or Scenic Rivers, Recreation Areas or Wildlife Management Areas within or adjacent to the proposed permit area. There are no known threatened or endangered species within or adjacent to the proposed permit area.

### MINING & RECLAMATION PLAN LEGEND