



west virginia department of environmental protection

Office of Oil and Gas
601 57th Street, S.E.
Charleston, WV 25304
(304) 926-0450
fax: (304) 926-0452

Earl Ray Tomblin , Governor
Randy C. Huffman , Cabinet Secretary
www.dep.wv.gov

Wednesday, November 09, 2016
WELL WORK PERMIT
Horizontal 6A / Horizontal 6A Well - 1

EQT PRODUCTION COMPANY
120 PROFESSIONAL PLACE
BUILDING II
BRIDGEPORT, WV 26330

Re: Permit approval for 513514
47-017-06752-00-00

This well work permit is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to any additional specific conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas Inspector.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days of completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

Per 35 CSR 4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926- 0450.


James A. Martin
Chief

Operator's Well Number: 513514
Farm Name: HAYES, SHIRLEY J.
U.S. WELL NUMBER: 47-017-06752-00-00
Horizontal 6A / Horizontal 6A Well - 1
Date Issued: 11/9/2016

Promoting a healthy environment.

11/11/2016

PERMIT CONDITIONS

West Virginia Code § 22-6A-8(d) allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

CONDITIONS

1. This proposed activity may require permit coverage from the United States Army Corps of Engineers (USACE). Through this permit, you are hereby being advised to consult with USACE regarding this proposed activity.
2. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6A-5a (12), which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than one hundred (100) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
3. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the moisture content of the fill material shall be within limits as determined by the Standard Proctor Density test of the actual soils used in specific engineered fill, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort, to achieve 95 % compaction of the optimum density. Each lift shall be tested for compaction, with a minimum of two tests per lift per acre of fill. All test results shall be maintained on site and available for review.
4. Operator shall install signage per § 22-6A-8g (6) (B) at all source water locations included in their approved water management plan within 24 hours of water management plan activation.
5. Oil and gas water supply wells will be registered with the Office of Oil and Gas and all such wells will be constructed and plugged in accordance with the standards of the Bureau for Public Health set forth in its Legislative rule entitled *Water Well Regulations*, 64 C.S.R. 19. Operator is to contact the Bureau of Public Health regarding permit requirements. In lieu of plugging, the operator may transfer the well to the surface owner upon agreement of the parties. All drinking water wells within fifteen hundred feet of the water supply well shall be flow tested by the operator upon request of the drinking well owner prior to operating the water supply well.
6. Pursuant to the requirements pertaining to the sampling of domestic water supply wells/springs the operator shall, no later than thirty (30) days after receipt of analytical data provide a written copy to the Chief and any of the users who may have requested such analyses.
7. If any explosion or other accident causing loss of life or serious personal injury occurs in or about a well or well work on a well, the well operator or its contractor shall give notice, stating the particulars of the explosion or accident, to the oil and gas inspector and the Chief, within 24 hours of said accident.
8. During the casing and cementing process, in the event cement does not return to the surface, the oil and gas inspector shall be notified within 24 hours.
9. The operator shall provide to the Office of Oil and Gas the dates of each of the following within 30 days of their occurrence: completion of construction of the well pad, commencement of drilling, cessation of drilling, completion of any other permitted well work, and completion of the well. Such notice shall be provided by sending an email to DEPOOGNotify@wv.gov.

09/3/15

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WELL WORK PERMIT APPLICATION

1) Well Operator: EQT Production Company
Operator ID 306686 County 017 District 5 Quadrangle 286

2) Operator's Well Number: 513514 Well Pad Name CPT10

3) Farm Name/Surface Owner: Shirley James and Marjorie Hayes Public Road Access: Co. Rt. 4

4) Elevation, current ground: 977.0 Elevation, proposed post-construction: 970.0

5) Well Type: (a) Gas Oil Underground Storage

Other _____

(b) If Gas: Shallow Deep

Horizontal

Michael Hoff
10-1-15

6) Existing Pad? Yes or No: no

7) Proposed Target Formation(s), Depth(s), Anticipated Thicknesses and Associated Pressure(s):

Target formation is Marcellus at a depth of 7020 with the anticipated thickness to be 50 feet and anticipated target pressure of 2951 PSI
Top of Marcellus 6998

8) Proposed Total Vertical Depth: 7020

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 10705

11) Proposed Horizontal Leg Length: 2,861

12) Approximate Fresh Water Strata Depths: 48, 100

13) Method to Determine Fresh Water Depth: By offset wells

14) Approximate Saltwater Depths: 763, 1212, 1442

15) Approximate Coal Seam Depths: 163, 202, 302, 307, 406, 607, 663, 707, 725

16) Approximate Depth to Possible Void (coal mine, karst, other): None reported

17) Does proposed well location contain coal seams directly overlying or adjacent to an active mine? Yes _____ No x

(a) If Yes, provide Mine Info: Name: _____
Depth: _____
Seam: _____
Owner: _____

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WV Department of
Environmental Protection
11/1/2015

WW - 6B
(4/15)

API NO. 47 - 017 - 06752
 OPERATOR WELL NO. 513514
 Well Pad Name: CPT10

CASING AND TUBING PROGRAM

18)

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill- up (Cu.Ft.)
Conductor	20	New	MC-50	81	40	40	38 C.T.S.
Fresh Water	13 3/8	New	J-55	54.5	358	358	333 C.T.S.
Coal	-	-	-	-	-	-	-
Intermediate	9 5/8	New	A-500	40	3,031	3,031	1,205 C.T.S.
Production	5 1/2	New	P-110	20	10,705	10,705	See Note 1
Tubing	2 3/8		J-55	4.6			May not be run, if run will be set 100' less than TD
Liners							

MAG
10-1-15

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	20	24	0.375	-	18	Construction	1.18
Fresh Water	13 3/8	17 1/2	0.38	2,730	2,184	* See Note 2	1.21
Coal							
Intermediate	9 5/8	12 3/8	0.395	3,950	3,160	* See Note 2	1.21
Production	5 1/2	8 1/2	0.361	12,640	10,112	-	1.27/1.86
Tubing							
Liners							

Packers

Kind:	N/A		
Sizes:	N/A		
Depths Set:	N/A		

Note 1: EQT plans to bring the TOC on the production casing cement job 1,000' above kick off point, which is at least 500' above the shallowest production zone, to avoid communication.

Note 2: Reference Variance 2014-17. (Attached)

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11/11/2016

19) Describe proposed well work, including the drilling and plugging back of any pilot hole:

Drill and complete a new horizontal well in the Marcellus formation. The vertical drill to go down to an approximate depth of 4826'.

Then kick off the horizontal leg into the Marcellus using a slick water frac.

20) Describe fracturing/stimulating methods in detail, including anticipated max pressure and max rate:

Hydraulic fracturing is completed in accordance with state regulations using water recycled from previously fractured wells and obtained from freshwater sources. This water is mixed with sand and a small percentage (less than 0.3%) of chemicals (including 15% Hydrochloric acid, gelling agent, gel breaker, friction reducer, biocide, and scale inhibitor), referred to in the industry as a "slickwater" completion. Maximum anticipated internal casing pressure is expected to average approximately 8500 psi, maximum anticipated treating rates are expected to average approximately 100 bpm. Stage lengths vary from 150 to 300 feet. Average approximately 200,000 barrels of water per stage. Sand sizes vary from 100 mesh to 20/40 mesh. Average approximately 200,000 pounds of sand per stage.

21) Total area to be disturbed, including roads, stockpile area, pits, etc. (acres):

29.06

22) Area to be disturbed for well pad only, less access road (acres):

24.16

23) Describe centralizer placement for each casing string.

- Surface: Bow spring centralizers – One at the shoe and one spaced every 500'.
- Intermediate: Bow spring centralizers– One cent at the shoe and one spaced every 500'.
- Production: One spaced every 1000' from KOP to Int csg shoe

24) Describe all cement additives associated with each cement type.

Surface (Type 1 Cement): 0-3% Calcium Chloride

Used to speed the setting of cement slurries.

0.4% flake. Loss Circulation Material (LCM) is used to combat the loss of the cement slurry to a thief zone.

Intermediate (Type 1 Cement): 0-3% Calcium Chloride. Salt is used in shallow, low temperature formations to speed the setting of cement slurries. 0.4% flake. Loss Circulation Material (LCM) is used to combat the loss of whole drilling fluid or cement slurry (not filtrate) to a thief zone.

Production:

Lead (Type 1 Cement): 0.2-0.7% Lignosulfonate (Retarder). Lengthens thickening time.

0.3% CFR (dispersant). Makes cement easier to mix.

Tail (Type H Cement): 0.25-0.40% Lignosulfonate (Retarder). Lengthens thickening time.

0.2-0.3% CFR (dispersant). This is to make the cement easier to mix.

60 % Calcuim Carbonate. Acid solubility.

0.4-0.6% Halad (fluid loss). Reduces amount of water lost to formation.

25) Proposed borehole conditioning procedures. Surface: Circulate hole clean (Approximately 30-45 minutes) rotating & reciprocating

one full joint until cuttings diminish at surface. When cuttings returning to surface diminish, continue to circulate an additional 5

minutes. To ensure that there is no fill, short trip two stands with no circulation. If there is fill, bring compressors back on

and circulate hole clean. A constant rate of higher than expected cuttings volume likely indicates washouts that will not clean up.

Intermediate: Circulate hole clean (Approximately 30-45 minutes) rotating & reciprocating one full joint until cuttings diminish at

surface. When cuttings returning to surface diminish, continue to circulate an additional 5 minutes. If foam drilling, to enhance

hole cleaning use a soap sweep or increase injection rate & foam concentration.

Production: Pump marker sweep with nut plug to determine actual hole washout. Calculate a gauge holes bottoms up volume.

Perform a cleanup cycle by pumping 3-5 bottoms up or until the shakers are clean. Check volume of cuttings coming across

the shakers every 15 minutes.

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DDK
6/17/16

JUN 28 2016

*Note: Attach additional sheets as needed.

17-0675R

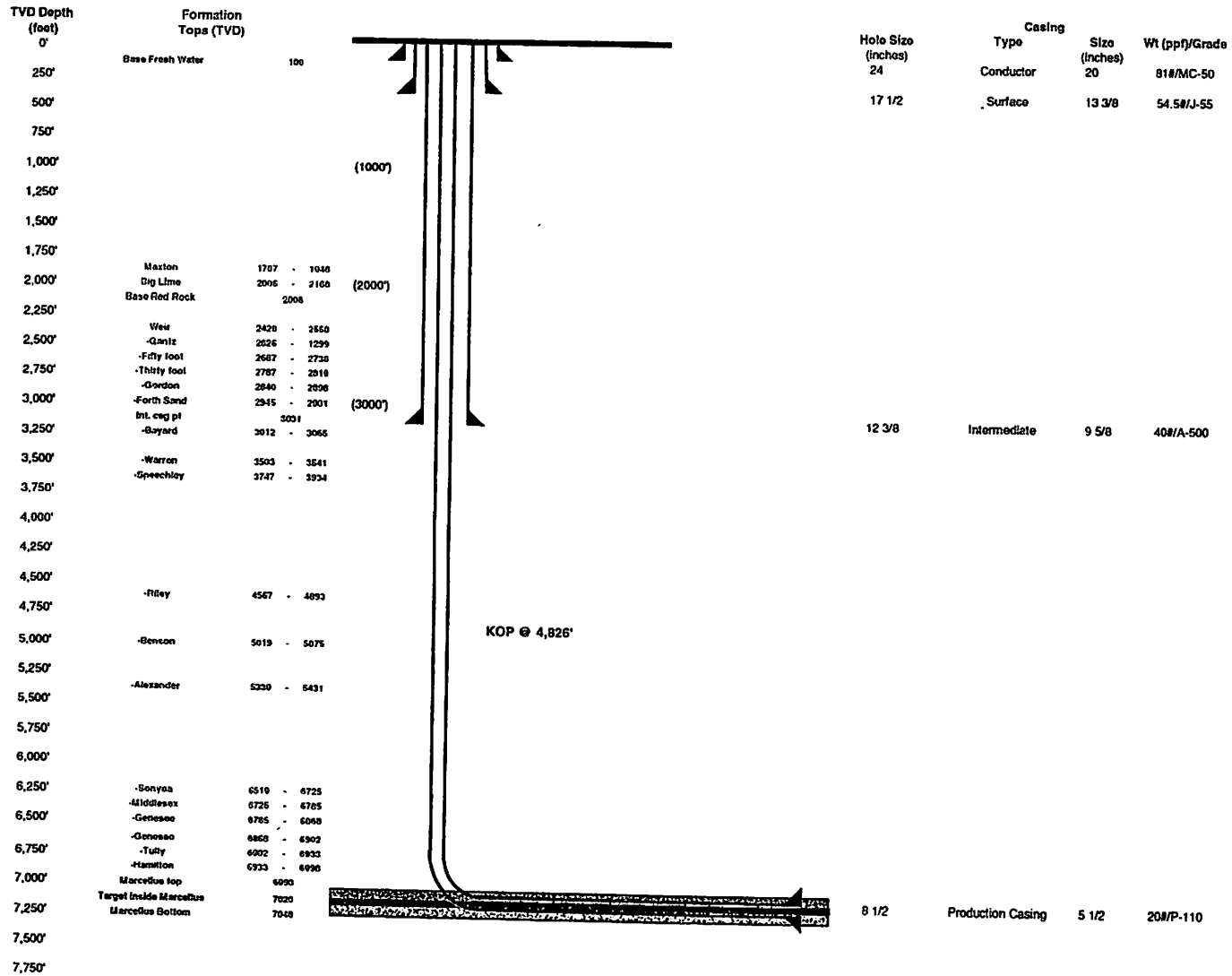
Well 17-0675R (CPT10H2)

EQT Production

Combs Point
Doddridge

West Virginia

Azimuth
Vertical Section



Proposed Well Work:

Drill and complete a new horizontal well in the Marcellus formation. The vertical drill to go down to an approximate depth of 4826'. Then kick off the horizontal log into the Marcellus using a slick water frac.



MAG
10-1-15

EQT Production
Hydraulic Fracturing Monitoring Plan
Pad ID: CPT10
Doddridge County, WV

8/1/16

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AUG 09 2016
WV Department of
Environmental Protection

Purpose

The purpose of this pad-specific Hydraulic Fracturing Monitoring Plan is to identify and notify conventional well operators near EQT hydraulic fracturing in Doddridge County, WV prior to hydraulic fracturing at the following EQT wells on the CPT10 pad: 513513, 513514, 513515, 513516

Due to the apparent presence of unique geological conditions, the potential for communication between deep geologic zones exists in this area. This potential communication, via natural gas, water, or both, may occur between hydraulically fractured wells in the Marcellus formation (approximately 6,900' TVD) and existing conventional natural gas wells in the partially-depleted, relatively high permeability Alexander formation (approximately 5,300' TVD).

The plan is being implemented as an additional safety measure to be utilized in conjunction with existing best management practices and emergency action plans for the site. These additional measures include pre-notification of conventional well operators of the timing and location of the hydraulic fracturing, establishment of measures conventional well operators should implement, and assurance that the OOG is notified of the timeline, as well as any issues that may arise during fracturing.

1. Communications with Conventional Well Operators

EQT, using available data (WV Geological Survey, WVDEP website, and IHS data service), has identified all known conventional wells and well operators within 500 feet of this pad and the lateral sections. A map showing these wells along with a list of the wells and operators is included in **Attachment A**.

Upon approval of this plan, EQT will notify these operators, via letter, of the hydraulic fracturing schedule for these wells. A copy of this letter is included in **Attachment B**.

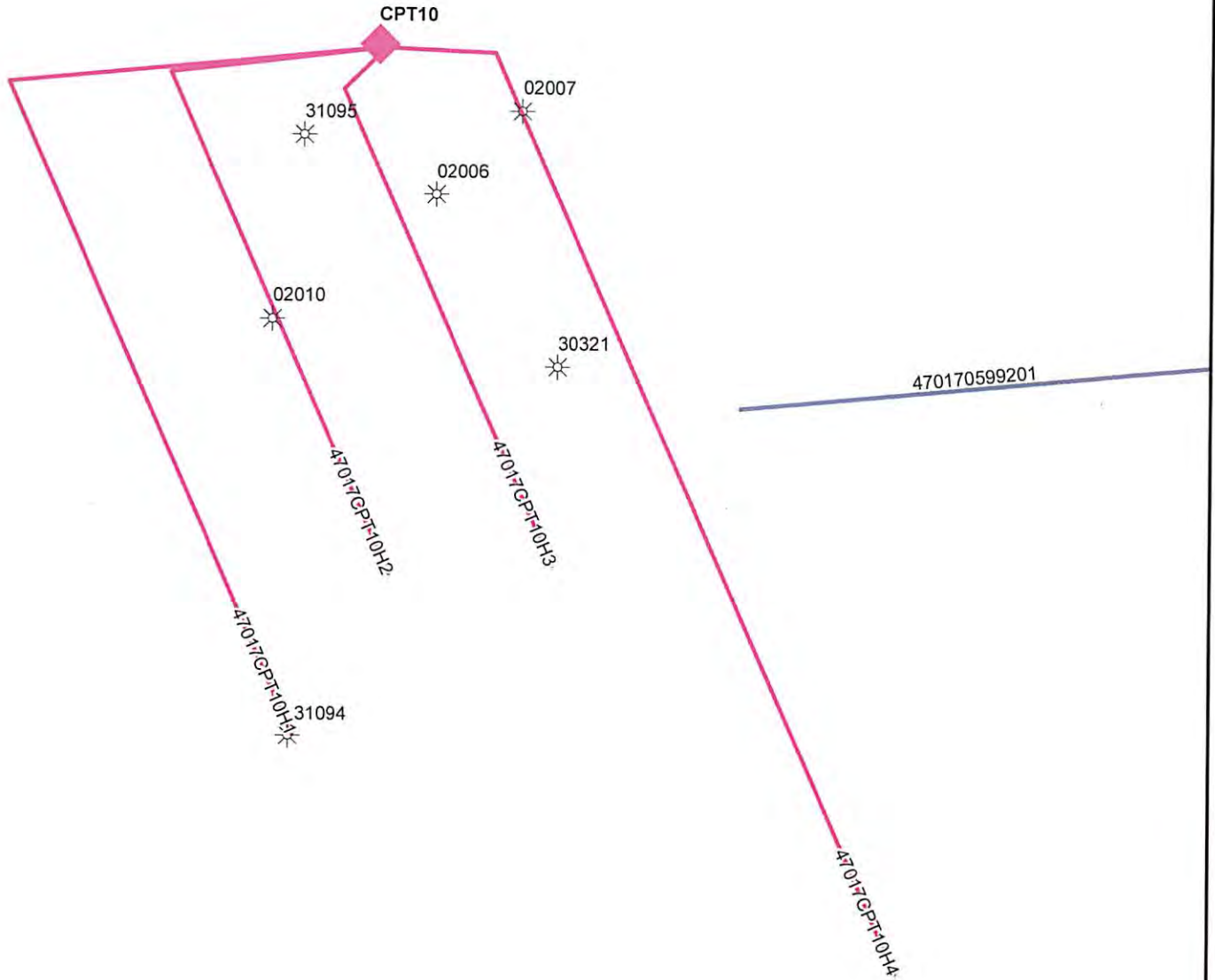
The letter provides recommendations to these conventional operators to 1) increase their monitoring of their wells during that time period, 2) ensure that their well head equipment is sound, and 3) provide immediate notification to EQT and the OOG in the event of any changes in their well conditions.

Specifically, the letter recommends that conventional well operators conduct the following activities during and after fracturing operations:

1. Inspect their surface equipment prior to fracturing to establish integrity and establish pre-frac well conditions
2. Observe wells closely during and after fracturing and monitor for abnormal increases in water, gas or pressure
3. Inspect or install master valves rated to 3,000 psi or other necessary equipment for wellhead integrity
4. Notify the OOG and EQT if any changes in water, gas production, pressure, or other anomalies are identified

2. Reporting

EQT will provide information relating to the hydraulic fracturing schedule, communication with conventional operators, and ongoing monitoring of the work upon request of OOG or immediately in the event of any noted abnormalities.



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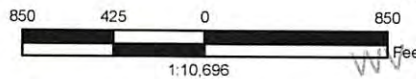


EQT Corporation
625 Liberty Avenue
Pittsburgh, PA 15222

CPT10 Offset Wells

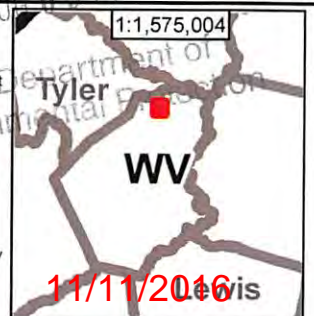
Vertical Offsets and
Foreign Laterals
within 500'

- Legend
- CPT10 Offsets
 - Genesee Spud
 - Marcellus Spud
 - Middlesex Spud
 - Utica Spud
 - GENESOO
 - MARCELLUS
 - MIDDLESEX
 - POINT PLEASANT
 - UTICA



Disclaimer:

This map is confidential and is to be used only for the express informational purposes for which it was created. Unauthorized use, copying, or dissemination is strictly prohibited. EQT does not warrant the accuracy of the location of any items shown on this map, including, but not limited to, any structures, well or pipeline facilities, property boundaries, topography, roadways, or waterways. The items shown on the map may not have been placed on the map using survey lines or GPS coordinates. The specific location of any of the map items should be determined by a field survey performed by a licensed surveyor upon consultation with EQT.



4701706752

WellID	WellStatus	Comp Date	Permit	Operator	Longitude	Latitude	Datum Eleva	SS Depth	Total Depth
4701702006	O&G	5/10/1919	02006	EPC	-80.6598	39.4114	0.0000	-2667.0000	2667.0000
4701702007	OIL	7/16/1920	02007	EPC	-80.6582	39.4126	0.0000	-1993.0000	1993.0000
4701702010	O&G	10/6/1925	02010	EPC	-80.6628	39.4096	0.0000	-1979.0000	1979.0000
4701730321	GAS		30321	WILLIAM MOSES	-80.6575	39.4089	925.0000	-1890.0000	2815.0000
4701731094	OIL	3/21/1939	31094	CARNEGIE NAT GAS	-80.6625	39.4036	825.0000	-1216.0000	2041.0000
4701731095	OIL	6/25/1920	31095	CARNEGIE NAT GAS	-80.6622	39.4122	1133.0000	-1085.0000	2218.0000



(date)

[Conventional Well Operator]
[address]
[state]

RE: Doddridge County Hydraulic Fracturing Notice

Dear Sir/Madam,

EQT has developed a Marcellus pad (Centerpoint 10 pad) located in Doddridge County, WV. As an owner or operator of conventional natural gas wells in this area, we are requesting your assistance in this matter.

Due to the apparent presence of unique geological conditions, the potential for communication between deep geologic zones exists in this area. This potential communication, via natural gas, water, or both, may occur between hydraulically fractured wells in the Marcellus formation (approximately 6,900' TVD) and existing conventional natural gas wells in the partially-depleted, relatively high permeability, Alexander formation (approximately 5,300' TVD).

EQT anticipates conducting hydraulic fracturing at the Centerpoint 10 pad during the [first,second, third,fourth] quarter of [year]. We have identified conventional natural gas wells operated by your company within 500' (lateral distance) of our new/planned laterals. Plats for each well on this pad are attached.

We recommend that conventional well operators conduct the following activities before, during, and after fracturing operations:

1. Inspect surface equipment, prior to fracturing, to establish integrity and establish well conditions.
2. Observe wells closely during and after fracturing and monitor for abnormal increases in water, gas, or pressure.
3. Inspect or install master valves rated to 3,000 psi or other necessary equipment for wellhead integrity.
4. Notify the OOG and EQT if any changes in water, gas production, pressure, or other anomalies are identified.

Please feel free to contact me at 412-395-3305 with any questions or comments. You may also contact the West Virginia Office of Oil and Gas at 304-926-0440.

Sincerely,
EQT Production

John Centofanti
Corporate Director, Environmental Affairs

cc: James Martin, WV Office of Oil and Gas

11/11/2016

WW-9
(2/15)

Page 1 of 2
API No. 47 - 017 - 06752
Operator's Well No. 513514

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
Fluids/Cuttings Disposal & Reclamation Plan

Operator Name EQT Production Company OP Code 306686

Watershed (HUC10) Broad Run of McElroy Creek Quadrangle Center Point

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes x No

Will a pit be used? Yes: X No:

If so please describe anticipated pit waste: flowback water & residual solids

Will a synthetic liner be used in the pit? Yes X No If so, what ml.? 60

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection (UIC Permit Number 0014, 8462, 4037)
- Reuse (at API Number Various)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain)

Will closed loop system be used? Yes. The closed loop system will remove drill cuttings from the drilling fluid. The drill cuttings are then prepared for transportation to an off-site disposal facility.

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc.

Air is used to drill the top-hole sections of the wellbore (surface, intermediate, and pilot). Water based mud may be necessary depending on hole conditions to stabilize and drill the intermediate section. The pilot hole, curve, and lateral sections will be drilled with either air, water based mud, or oil based mud

- If oil based, what type? Synthetic, petroleum, etc Synthetic mud

Additives to be used in drilling medium? Air - biodegradable oil lubricant , detergent, defoaming, water Water based mud - Bante, viscosifer, alkalinity control, lime, filtration control, deflocculates, biodegradable oil lubricant , defoaming, walnut shell, salt, x-cide, carbonates.
Oil based mud - synthetic base oil, emulsifier, salt, lime, viscosifer, alkalinity control, filtration control, deflocculates, biodegradable oil lubricant , defoaming, carbonates.

Drill-cuttings disposal method? Leave in pit, landfill, removed offsite, etc. Landfill

- If left in pit and plan to solidify what medium will be used? (Cement, Lime, sawdust) n/a
- Landfill or offsite name/permit number? See Attached List

Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

Company Official Signature [Signature]
Company Official (Typed Name) Victoria J. Reark
Company Official Title Permitting Supervisor

*DAS
6/17/16*

Subscribed and sworn before me this 16 day of June, 2016

[Signature]
Notary Public

My commission expires 8-24-22

RECEIVED
Office of Oil and Gas
OFFICIAL SEAL
STATE OF WEST VIRGINIA
NOTARY PUBLIC
Parriela Sykes
EQT Production
PO Box 280
Bridgport, WV 26330
My Commission Expires 08/24/2022
Department of Environmental Protection

17-06752

**EQT Production Water plan
Offsite disposals for Marcellus wells**

CWS TRUCKING INC.
P.O. Box 391
Williamstown, WV 26187
740-516-3586
Noble County/Noble Township
Permit # 3390

BROAD STREET ENERGY LLC
37 West Broad Street
Suite 1100
Columbus, Ohio 43215
740-516-5381
Washington County/Belpre Twp.
Permit # 8462

LAD LIQUID ASSETS DISPOSAL INC.
226 Rankin Road
Washington, PA 15301
724-350-2760
724-222-6080
724-229-7034 fax
Ohio County/Wheeling
Permit # USEPA WV 0014

TRIAD ENERGY
P.O. Box 430
Reno, OH 45773
740-516-6021 Well
740-374-2940 Reno Office Jennifer
Nobel County/Jackson Township
Permit # 4037

TRI COUNTY WASTE WATER MANAGEMENT, INC.
1487 Toms Run Road
Holbrook, PA 15341
724-627-7178 Plant
724-499-5647 Office
Greene County/Waynesburg
Permit # TC-1009

KING EXCAVATING CO.
Advanced Waste Services
101 River Park Drive
New Castle, Pa. 16101
Facility Permit# PAR000029132

Waste Management - Meadowfill Landfill
Rt. 2, Box 68 Dawson Drive
Bridgeport, WV 26330
304-326-6027
Permit #SWF-1032-98
Approval #100785WV

Waste Management - Northwestern Landfill
512 E. Dry Road
Parkersburg, WV 26104
304-428-0602
Permit #SWF-1025 WV-0109400
Approval #100833WV

Received
Office of Oil & Gas
SEP 03 2015

17-06758

Form WW-9

Operator's Well No. 513514

Proposed Revegetation Treatment: Acres Disturbed 40.46 Prevegetation pH 6.2

Lime 3 Tons/acre or to correct to pH 6.5

Fertilize type Granular 10-20-20

Fertilizer Amount 13 lbs/acre (500 lbs minimum)

Mulch 2 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
KY-31	40	Orchard Grass	15
Alsike Clover	5	Alsike Clover	5
Annual Rye	15		

Attach:
Drawing(s) of road, location, pit and proposed area for land application.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: Michael Doff

Comments: Presseed & mulch any disturbed areas per WV DEP regulations. Maintain & upgrade E-n-S as necessary. May need to install sound control devices around pad during operations.

Title: Oil & Gas Inspector Date: 10-1-15

Field Reviewed? () Yes () No

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OCT 13 2015

WV Department of
Environmental Protection 11/19/2016

Proposed Revegetation Treatment: Acres Disturbed 29.06 Prevegetation pH 6.2

Lime 3 Tons/acre or to correct to pH 6.5

Fertilize type Granular 10-20-20

Fertilizer Amount 13 lbs/acre (500 lbs minimum)

Mulch 2 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
KY-31	40	Orchard Grass	15
Alsike Clover	5	Alsike Clover	5
Annual Rye	15		

Attach: Drawing(s) of road, location, pit and proposed area for land application.
Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: Daniel A. Fluck

Comments: Preseed and mulch any disturbed areas per WV DEP regs prior to rig being brought onto location. Maintain and upgrade E+S controls as necessary

Title: [Signature] Date: 6/17/16

Field Reviewed? () Yes () No

RECEIVED
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JUN 28 2016
WV Department of Environmental Protection
11/11/2016



17-06758

Where energy meets innovation.™

Site Specific Safety Plan

EQT CPT 10 Pad

Center Point Quadrant

Doddridge County, WV

For Wells:

513514

[Signature]
 EQT Production
[Signature]
 Permitting Supervisor
 Title
 8-27-15
 Date

Date Prepared:

August 11, 2015

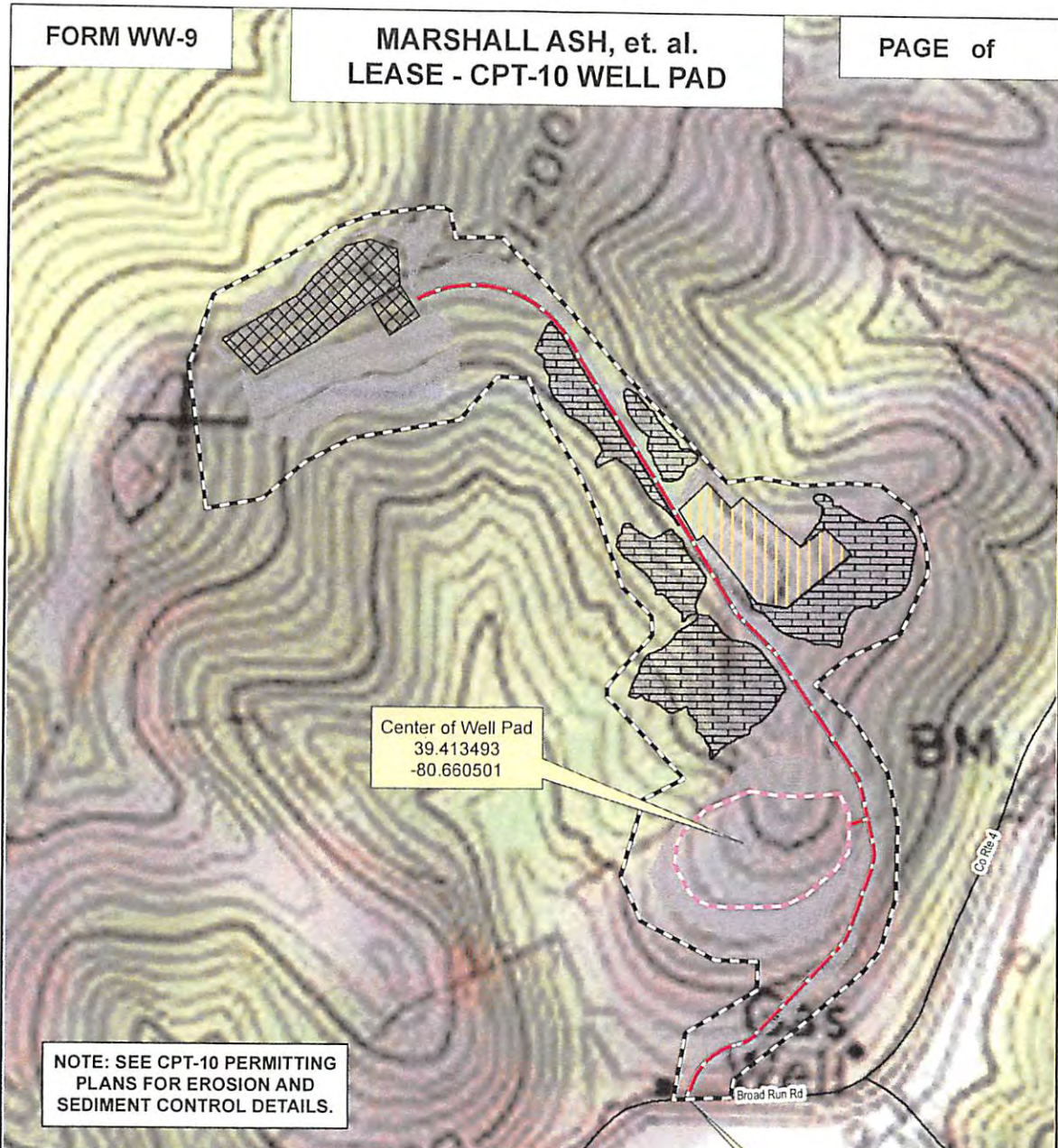
[Signature]
 WV Oil and Gas Inspector
 Title
 10-1-15
 Date

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Office of Oil and Gas

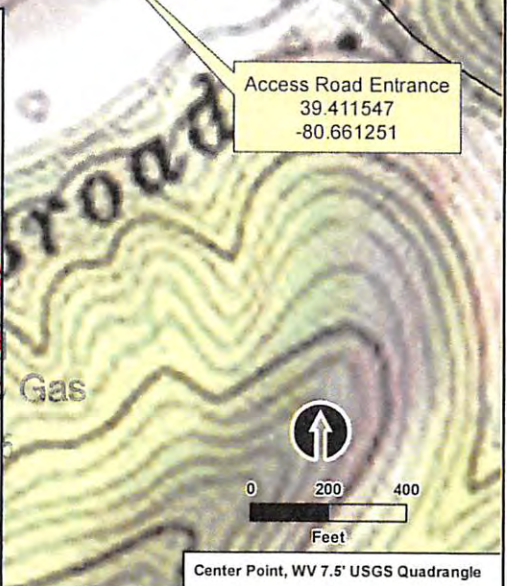
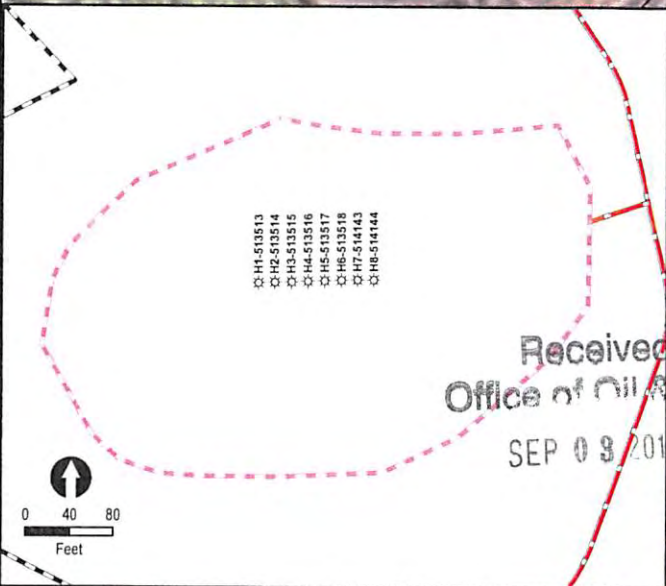
OCT 13 2015

WV Department of
Environmental Protection 11/11/2016

17-06758



NOTE: SEE CPT-10 PERMITTING
PLANS FOR EROSION AND
SEDIMENT CONTROL DETAILS.



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Center Point, WV 7.5' USGS Quadrangle



CPT-10 Well Pad
EQT Production Company
Doddridge County, WV

DRAWN: 4/24/2015	FILE NAME:
DRAWN BY: GHB	CPT10_FormWW9_v2.mxd

The information included on this graphic representation has been compiled from a variety of sources and is subject to change without notice. Information shown on this representation is approximate, subject to change, and to accuracy of computerized data. The user of this graphic representation shall be responsible for verifying the accuracy of the information contained on this graphic representation. This graphic representation is not a warranty, and the user shall be responsible for verifying the accuracy of the information contained on this graphic representation.

11/1/2016

10,050' LATITUDE: 39°25'00" TH

10,018' LATITUDE: 39°25'00" BH

WV 513514
EQT Production Company
Shirley J. Hayes
350.65 Acres

NO.	ADJACENT OWNER	NO.	SURFACE OWNER
1	WAYNE L & M CHRIST WOODS	22	ROBERT C & EILEEN ROSS
2	HUTZELL RONALD G & HOLLY	23	SAMUEL G & HARUYO ASH
3	KAREN L & JAMES L BOWERS	24	SHIRLEY & MARJORIE HAYES
4	CYNTHIA LAURIE YEATER	25	BW & CAROLYN RUDDERFORTH
5	BROOKS D YEATER	26	NANCY JUNE HAYES YEATER
6	BOOK D. YEATER	27	JAMES FERREBEE
7	PAUL A & KAREN HIGHBARGER	28	PAUL & KAREN HIGHBARGER
8	PAUL A & KAREN HIGHBARGER	29	ARBY GLASPELL
9	HAROLD K FERRETT ET AL	30	MARY L. GLASPELL
10	JERRY E & LOIS J BRAUN	31	JAMES K & ANNA RICHARDS
11	JERRY E & LOIS J BRAUN	32	PAUL & KAREN HIGHBARGER
12	MARY L GLASPELL	33	CONNIE L. HAYES ANDERSON
13	ARBY GLASPELL		
14	ARBY GLASPELL		
15	WARD SWEENEY		
16	MARY L GLASPELL		
17	MARY L GLASPELL		
18	JOHN MCCLASKEY		
19	MARGARET MCINTR WILLIAMS		
20	E F WADSWORTH EST		
21	COASTAL FOREST RESOURCES		

WV 513514 Well Point Coordinates

Top Hole Coordinates

NAD 27 S.P.C. (Ft.)	N: 334,814.30	E: 1,672,053.29
NAD 27 GEO	LAT: 39.413446	LONG: 80.660750
NAD 83 UTM 17N (M)	N: 4,362,723.00	E: 529,219.86
NAD 83 S.P.C. (Ft.)	N: 334,850.57	E: 1,640,612.50

Landing Point Coordinates

NAD 27 S.P.C. (Ft.)	N: 334,703.41	E: 1,670,933.12
NAD 27 GEO	LAT: 39.413102	LONG: 80.664709
NAD 83 UTM 17N (M)	N: 4,362,683.52	E: 528,879.16
NAD 83 S.P.C. (Ft.)	N: 334,739.66	E: 1,639,492.32

Bottom Hole Coordinates

NAD 27 S.P.C. (Ft.)	N: 332,069.94	E: 1,672,050.94
NAD 27 GEO	LAT: 39.405912	LONG: 80.660633
NAD 83 UTM 17N (M)	N: 4,361,886.91	E: 529,233.09
NAD 83 S.P.C. (Ft.)	N: 332,106.21	E: 1,640,610.15

LEGEND

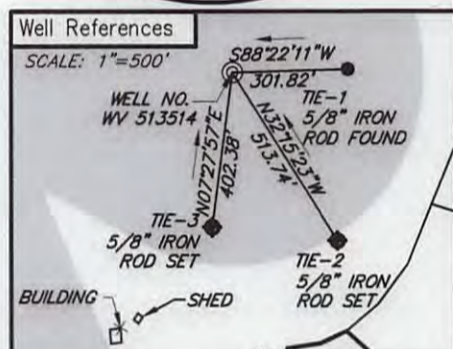
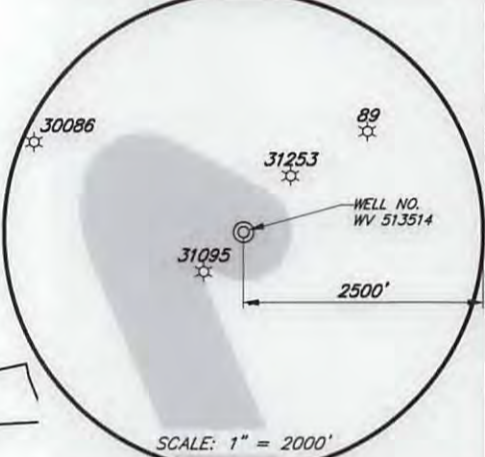
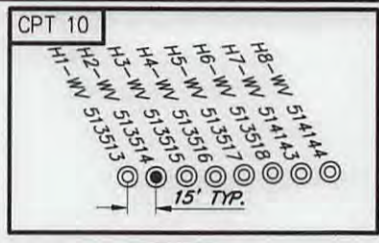
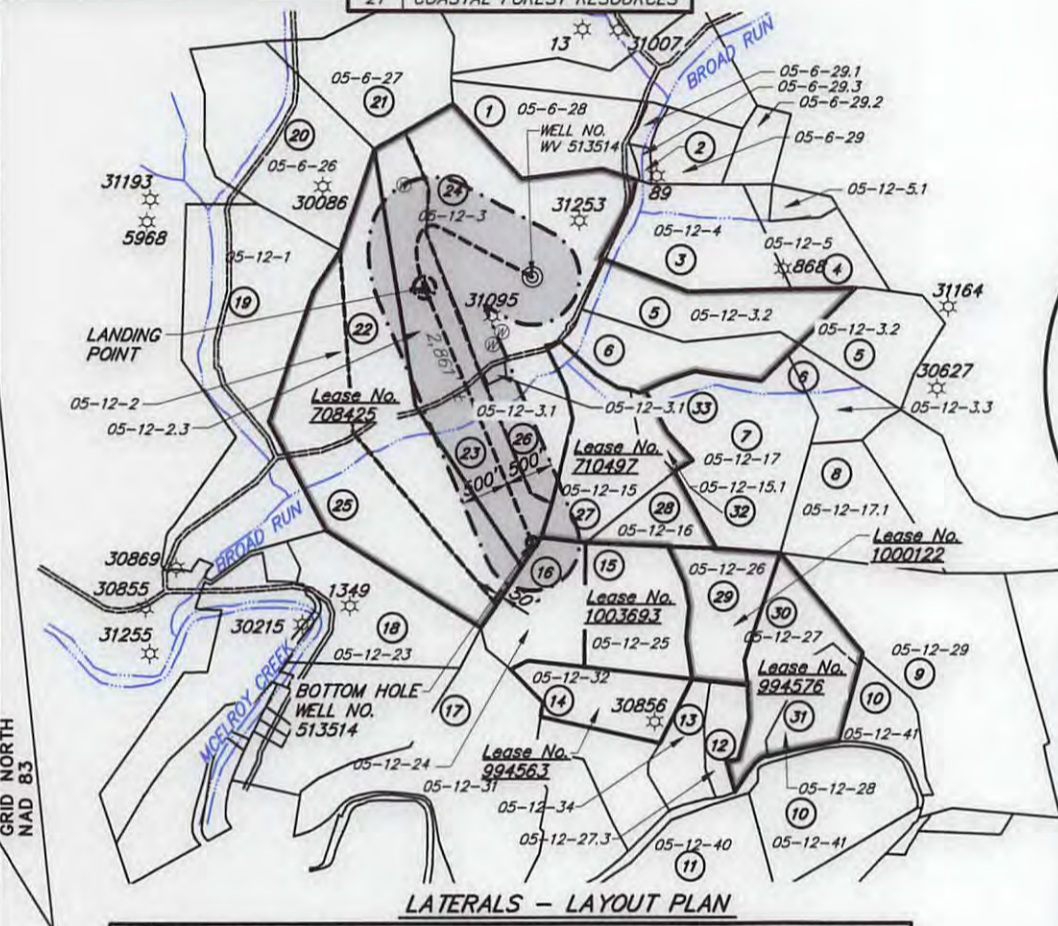
- ☆ EXISTING OIL/GAS WELL
- ⊙ WATER FEATURE
- ⊙ WELL HEAD TOP HOLE
- ▲ WELL LANDING POINT
- WELL BOTTOM HOLE
- REBAR FOUND
- WELL LATERAL LINE
- LEASE BOUNDARY
- PROPERTY LINE
- STREAM
- 500' LATERAL COLLECTION
- BUFFER

Lease No. Acres Owner

708425 350.65 Shirley J. Hayes

Lease No. Acres Owner

708425 350.65 Shirley J. Hayes



NOTES ON SURVEY

- TIES TO WELLS, CORNERS, AND REFERENCES ARE BASED ON GRID NORTH FOR THE WV STATE PLANE COORDINATE SYSTEM NORTH ZONE NAD 83.
- SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF DODDRIDGE COUNTY IN OCTOBER, 2013.
- WELL LAT./LONG. (NAD'27) ESTABLISHED BY GPS.
- THE LOCATION OF BOUNDARY LINES SHOWN HEREIN ARE BASED ON RECORD DEED, PLATS, AND TAX MAPS BEST FIT TO FOUND FIELD EVIDENCE AND AERIAL PHOTOS, UNLESS OTHERWISE NOTED.
- THIS PLAT DOES NOT REPRESENT AN ACTUAL BOUNDARY SURVEY OF THE INDIVIDUAL PARCELS.
- THERE ARE NO EXISTING WATER WELLS OR DEVELOPED SPRINGS WITHIN 250' OF PROPOSED WELL.
- CRITICAL POINTS (HARD LINES) WERE FIELD SURVEYED MAY 2014 AND APRIL 2015.

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

encompass

[Signature]



FILE NO.: EES-60681

DRAWING NO.: CPT10_Well Plat

SCALE: 1" = 2000'

MINIMUM DEGREE OF ACCURACY: ±3'

PROVEN SOURCE OF ELEVATION: GPS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

DATE JULY 19, 20 16

OPERATORS WELL NO. WV 513514

API WELL NO. H6A

47 017 06752

STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL (IF GAS) PRODUCTION: STORAGE DEEP SHALLOW LOCATION, ELEVATION: 977' (Ground) 970' (Prop.) WATERSHED: Broad Run of McElroy Creek QUADRANGLE: CENTER POINT

DISTRICT: McCLELLAN COUNTY: DODDRIDGE

SURFACE OWNER: SHIRLEY J. HAYES ACREAGE: 177.0± AC/172.4± AC

ROYALTY OWNER: SHIRLEY J. HAYES LEASE NO.: 708425 ACREAGE: 350.7± AC

PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION

PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____

PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus ESTIMATED DEPTH: 6998'

WELL OPERATOR: EQT Production Company DESIGNATED AGENT: Rex. C. Ray

ADDRESS: 115 Professional Pl. P.O. Box 280 ADDRESS: 115 Professional Pl. P.O. Box 280
Bridgeport, WV 26330 Bridgeport, WV 26330

**INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE
Chapter 22, Article 6A, Section 5(a)(5)
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)**

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that –

- (1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;
- (2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
<u>708425</u>	Shirley J. Hayes	Carnegie Natural Gas Company	Min 1/8 pd	LB41/433
	Carnegie Natural Gas Company	Carnegie Production Company		LB186/61
	Carnegie Production Company/USX	Equitable Resources Inc.		See attached
	Equitable Resources Inc.	Equitable Production Company		DB274/471
	Equitable Production Company	EQT Production Company		DB281/346

Upon information and belief, Operator's lease and/or other real property rights permit it to conduct drilling operations for the subject well in the location shown on the plat, including under any public roads that the well lateral crosses.

**Acknowledgement of Possible Permitting/Approval
In Addition to the Office of Oil and Gas**

The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- WV Division of Water and Waste Management
- WV Division of Natural Resources WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or nullifies the need for other permits/approvals that may be necessary and further affirms that all needed permits/approvals should be acquired from the appropriate authority before the affected activity is initiated.

Well Operator: EQT Production Company
 By: 
 Its: Permitting Supervisor

PURCHASE AND SALE AGREEMENT

PURCHASE AND SALE AGREEMENT, dated as of May 27, 1999 (this "Agreement"), by and between USX CORPORATION, a Delaware corporation, ("USX") and EQUITABLE RESOURCES, INC., a Pennsylvania corporation (hereinafter referred to as "Buyer").

WHEREAS, USX owns directly or indirectly all of the outstanding capital stock or other evidence of an equity interest of the following companies (each a "Carnegie Company" and collectively the "Carnegie Companies"), which are involved in one or more of the production, gathering, transportation, treatment, distribution and sale of natural gas: (i) Carnegie Natural Gas Company, a Pennsylvania corporation, ("Carnegie"), (ii) Carnegie Interstate Pipeline Company, a Delaware corporation, ("CIPCO"), (iii) Carnegie Production Company, a Pennsylvania corporation, ("CPC"), (iv) Carnegie Natural Gas Sales, Inc., a Delaware corporation, ("CNGS") and (v) Carnegie Gas Storage, LLC, a Delaware limited liability company, ("CGS"); and

WHEREAS, USX desires to sell to Buyer and Buyer desires either for itself and/or one or more designated subsidiaries to purchase from USX one hundred percent (100%) of the capital stock and other evidence of equity interest in the Carnegie Companies;

NOW, THEREFORE, for and in consideration of the premises and the representations, warranties, covenants and agreements herein set forth and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto, intending to be legally bound, agree as follows:

ARTICLE I
DEFINITIONS

Unless otherwise specifically stated in the text of this Agreement, the following terms shall have the following meanings:

Section 1.1 The "1935 Act" shall mean the Public Utility Holding Company Act of 1935, as amended.

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Office of Oil & Gas
SEP 03 2015

Section 12.6 Names, Trademarks, Etc. USX and its Affiliates will discontinue use of the Carnegie and Apollo Names as promptly as practicable after the Closing.

IN WITNESS WHEREOF, the undersigned have cause this Agreement to be subscribed by their respective representatives duly authorized as of the date first above written.

USX CORPORATION

By: [Signature]
Typed Name: v. G. Reghini
Title: Vice Chairman - Marathon Group

APPROVED
AS TO FORM
[Signature]

EQUITABLE RESOURCES, INC.

By: [Signature]
Typed Name: David L. Forges
Title: Senior Vice President and Chief Financial Officer

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SEP 03 2015

**STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE CERTIFICATION**

Date of Notice Certification: _____

API No. 47 - 017 - 0679
 Operator's Well No. 513514
 Well Pad Name: CPT10

Notice has been given:

Pursuant to the provisions in West Virginia Code § 22-6A, the Operator has provided the required parties with the Notice Forms listed below for the tract of land as follows:

State: <u>WV</u>	UTM NAD 83 Easting: <u>529,219.86</u>
County: <u>Doddridge</u>	UTM NAD 83 Northing: <u>4,362,723.00</u>
District: <u>McClellan</u>	Public Road Access: <u>Co. Rt. 4</u>
Quadrangle: <u>Center Point</u>	Generally used farm name: <u>Shirley James and Marjorie Hayes</u>
Watershed: <u>Broad Run of McElroy Creek</u>	

Pursuant to West Virginia Code § 22-6A-7(b), every permit application filed under this section shall be on a form as may be prescribed by the secretary, shall be verified and shall contain the following information: (14) A certification from the operator that (i) it has provided the owners of the surface described in subdivisions (1), (2) and (4), subsection (b), section ten of this article, the information required by subsections (b) and (c), section sixteen of this article; (ii) that the requirement was deemed satisfied as a result of giving the surface owner notice of entry to survey pursuant to subsection (a), section ten of this article six-a; or (iii) the notice requirements of subsection (b), section sixteen of this article were waived in writing by the surface owner; and Pursuant to West Virginia Code § 22-6A-11(b), the applicant shall tender proof of and certify to the secretary that the notice requirements of section ten of this article have been completed by the applicant.

<p>Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following:</p> <p>*PLEASE CHECK ALL THAT APPLY</p> <p><input type="checkbox"/> NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED</p> <p><input type="checkbox"/> NOTICE OF ENTRY FOR PLAT SURVEY or <input checked="" type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED</p> <p><input checked="" type="checkbox"/> NOTICE OF INTENT TO DRILL or <input type="checkbox"/> NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED OR</p> <p><input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)</p> <p><input checked="" type="checkbox"/> NOTICE OF PLANNED OPERATION</p> <p><input checked="" type="checkbox"/> PUBLIC NOTICE</p> <p><input checked="" type="checkbox"/> NOTICE OF APPLICATION</p>	<p>OOG OFFICE USE ONLY</p> <p><input type="checkbox"/> RECEIVED/NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED/NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p>
--	---

*Received
Office of Oil & Gas
SEP 03*

Required Attachments:

The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication date verification or the associated Affidavit of Publication. The attached Notice Forms and Certifications of Notice shall serve as proof that the required parties have been noticed as required under West Virginia Code § 22-6A. Pursuant to West Virginia Code § 22-6A-11(b), the Certification of Notice to the person may be made by affidavit of personal service, the return receipt card or other postal receipt for certified mailing.

11/11/2016

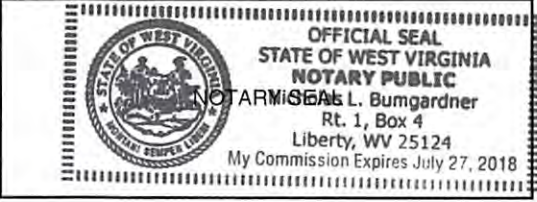
17-0675A

Certification of Notice is hereby given:

THEREFORE, I [Signature], have read and understand the notice requirements within West Virginia Code § 22-6A. I certify that as required under West Virginia Code § 22-6A, I have served the attached copies of the Notice Forms, identified above, to the required parties through personal service, by registered mail or by any method of delivery that requires a receipt or signature confirmation. I certify under penalty of law that I have personally examined and am familiar with the information submitted in this Notice Certification and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Well Operator: EQT Production Company
By: Victoria J. Roark
Its: Permitting Supervisor
Telephone: 304-848-0076

Address: P.O. Box 280
Bridgeport, WV 26330
Facsimile: 304-848-0040
Email: vroark@eqt.com



Subscribed and sworn before me this 1 day of SEPTEMBER, 2015
[Signature] Notary Public
My Commission Expires 7/27/2018

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

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Office of Oil & Gas
SEP 03 2015

WW-6A
(9-13)

API NO. 47 - 017 - 0 *675R*
OPERATOR WELL NO. 513514
Well Pad Name: CPT10

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF APPLICATION

RECEIVED
Office of Oil and Gas

Notice Time Requirement: notice shall be provided no later than the filing date of permit application.

Date of Notice: SEP 02 2015 Date Permit Application Filed: SEP 02 2015

SEP 04 2015

Notice of:

- PERMIT FOR ANY WELL WORK
- CERTIFICATE OF APPROVAL FOR THE CONSTRUCTION OF AN IMPOUNDMENT OR PIT

WV Department of Environmental Protection

Delivery method pursuant to West Virginia Code § 22-6A-10(b)

- PERSONAL SERVICE
- REGISTERED MAIL
- METHOD OF DELIVERY THAT REQUIRES A RECEIPT OR SIGNATURE CONFIRMATION

Pursuant to W. Va. Code § 22-6A-10(b) no later than the filing date of the application, the applicant for a permit for any well work or for a for the construction of an impoundment or pit as required by this article shall deliver, by personal service or by registered mail or by any requires a receipt or signature confirmation, copies of the application, the erosion and sediment control plan required by section seven of plat to each of the following persons: (1) The owners of record of the surface of the tract on which the well is or is proposed to be located; the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used disturbance as described in the erosion and sediment control plan submitted pursuant to subsection (c), section seven of this article; (3) The lessee, in the event the tract of land on which the well proposed to be drilled is located [sic] is known to be underlain by one or more coal record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to construction, enlargement, alteration, repair, removal or abandonment of any impoundment or pit as described in section nine of this water purveyor who is known to the applicant to have a water well, spring or water supply source located within one thousand five which is used to provide water for consumption by humans or domestic animals; and (6) The operator of any natural gas storage field work activity is to take place. (c)(1) If more than three tenants in common or other co-owners of interests described in subsection (b) of in the lands, the applicant may serve the documents required upon the person described in the records of the sheriff required to be article one, chapter eleven-a of this code. (2) Notwithstanding any provision of this article to the contrary, notice to a lien holder is not unless the lien holder is the landowner. W. Va. Code R. § 35-8-5.7.a requires, in part, that the operator shall also provide the Well Site the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

- Application Notice
- WSSP Notice
- E&S Plan Notice
- Well Plat Notice is hereby provided to:

SURFACE OWNER(s)
Name: Shirley James Hayes and Marjorie Hayes
Address: 881 Broad Run Rd.
Center Point, WV 26339

COAL OWNER OR LESSEE
Name: The Winston Love Family Trust
Address: 402 Front Street
Marietta OH 45750

Name: _____
Address: _____

COAL OPERATOR
Name: _____
Address: _____

SURFACE OWNERS(s) (Road and/or Other Disturbance)
Name: Shirley James Hayes and Marjorie Hayes
Address: 881 Broad Run Rd.
Center Point, WV 26339

SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s)
Name: Shirley James Hayes
Address: 881 Broad Run Road
Center Point WV 26339

Name: Samuel Glen Ash and Haruyo Ash
Address: 3616 Fox Glen PKWY
Las Vegas, NV 89108

See attached for additional water purveyors.

SURFACE OWNER(s) (Impoundments/Pits)
Name: Shirley James Hayes and Marjorie Hayes
Address: 881 Broad Run Rd.
Center Point, WV 26339

OPERATOR OF ANY NATURAL GAS STORAGE FIELD
Name: _____
Address: _____

See attached for additional impoundment/pit owners

*Please attach additional forms if necessary

11/11/2016

17-06757

WW6-A

Additional Pit/ Impoundment Owners

Samuel Glen Ash and Haruyo Ash ✓
3616 Fox Glen PKWY
Las Vegas, NV 89108

Coastal Forest Resources Company dba ✓
Coastal Timberlands Company
1772 Brushy Fork Road
Buckhannon WV 26201

Additional Coal Owners

Marcella Ash ✓
10854 Windham Parkman Road
Garrettsville OH 44231

Brooks Yeater ✓
442 Harmon Creek Road
Colliers WV 26035

Samuel G. Ash ✓
3616 Fox Glen Parkway
Las Vegas NV 89108

Betsy R. Faulkner ✓
11919 Hickory Creek Dr.
Fredericksburg VA 22407

Mildred J. Worstell ✓
127 Bartley Road
Burgettstown PA 15021-2255

Dawn Nelson, Heir of Martha Fife ✓
121 Schwartz Street
Weirton WV 26062

Shirley James Hayes ✓
881 Broad Run Road
Center Point WV 26339

Lawrence Underwood Jr.
Address Unknown

Deeta E. Burris
Address Unknown

Rosemary Underwood
Address Unknown

See Supplemental notices la

Additional Water Purveyors

Norman and Marilyn Ferrebee ✓
152 Whipor Wheel Ln.
Center Point WV 26339

Samuel G. Ash et ux ✓
3616 Fox Glen Parkway ✓
Las Vegas NV 89108

June Hayes and Nancy Yeater ✓
35 Ricks Dr.
Center Point WV 26339

Received
Office of Oil & Gas
SEP 09 2015

Notice is hereby given:

Pursuant to West Virginia Code § 22-6A-10(b), notice is hereby given that the undersigned well operator has applied for a permit for well work or for a certificate of approval for the construction of an impoundment or pit.

This Notice Shall Include:

Pursuant to W. Va. Code § 22-6A-10(b), this notice shall include: (1) copies of the application; (2) the erosion and sediment control plan required by section seven of this article; and (3) the well plat.

Pursuant to W. Va. Code § 22-6A-10(f), this notice shall include: (1) a statement of the time limits for filing written comments; (2) who may file written comments; (3) the name and address of the secretary for the purpose of filing the comments and obtaining additional information; and (4) a statement that the persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

Pursuant to W. Va. Code R. § 35-8-5.7.a, the operator shall provide the Well Site Safety Plan to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

Pursuant to W. Va. Code R. § 35-8-15.2.c, this notice shall: (1) contain a statement of the surface owner's and water purveyor's right to request sampling and analysis; (2) advise the surface owner and water purveyor of the rebuttable presumption for contamination or deprivation of a fresh water source or supply; advise the surface owner and water purveyor that refusal to allow the operator to conduct a pre-drilling water well test constitutes a method to rebut the presumption of liability; (3) advise the surface owner and water purveyor of his or her independent right to sample and analyze any water supply at his or her own expense; advise the surface owner and water purveyor whether or not the operator will utilize an independent laboratory to analyze any sample; and (4) advise the surface owner and or water purveyor that he or she can obtain from the Chief a list of water testing laboratories in the subject area capable of and qualified to test water supplies in accordance with standard acceptable methods.

Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Well Location Restrictions

Pursuant to W. Va. Code § 22-6A-12, Wells may not be drilled within two hundred fifty feet measured horizontally from any existing water well or developed spring used for human or domestic animal consumption. The center of well pads may not be located within six hundred twenty-five feet of an occupied dwelling structure, or a building two thousand five hundred square feet or larger used to house or shelter dairy cattle or poultry husbandry. This limitation is applicable to those wells, developed springs, dwellings or agricultural buildings that existed on the date a notice to the surface owner of planned entry for surveying or staking as provided in section ten of this article or a notice of intent to drill a horizontal well as provided in subsection (b), section sixteen of this article was provided, whichever occurs first, and to any dwelling under construction prior to that date. This limitation may be waived by written consent of the surface owner transmitted to the department and recorded in the real property records maintained by the clerk of the county commission for the county in which such property is located. Furthermore, the well operator may be granted a variance by the secretary from these distance restrictions upon submission of a plan which identifies the sufficient measures, facilities or practices to be employed during well site construction, drilling and operations. The variance, if granted, shall include terms and conditions the department requires to ensure the safety and protection of affected persons and property. The terms and conditions may include insurance, bonding and indemnification, as well as technical requirements. (b) No well pad may be prepared or well drilled within one hundred feet measured horizontally from any perennial stream, natural or artificial lake, pond or reservoir, or a wetland, or within three hundred feet of a naturally reproducing trout stream. No well pad may be located within one thousand feet of a surface or ground water intake of a public water supply. The distance from the public water supply as identified by the department shall be measured as follows: (1) For a surface water intake on a lake or reservoir, the distance shall be measured from the boundary of the lake or reservoir. (2) For a surface water intake on a flowing stream, the distance shall be measured from a semicircular radius extending upstream of the surface water intake. (3) For a groundwater source, the distance shall be measured from the wellhead or spring. The department may, in its discretion, waive these distance restrictions upon submission of a plan identifying sufficient measures, facilities or practices to be employed during well site construction, drilling and operations to protect the waters of the state. A waiver, if granted, shall impose any permit conditions as the secretary considers necessary. (c) Notwithstanding the foregoing provisions of this section, nothing contained in this section prevents an operator from conducting the activities permitted or authorized by a Clean Water Act Section 404 permit or other approval from the United States Army Corps of Engineers within any waters of the state or within the restricted areas referenced in this section. (d) The well location restrictions set forth in this section shall not apply to any well on a multiple well pad if at least one of the wells was permitted prior to the effective date of this article. (e) The secretary shall, by December 31, 2012, report to the Legislature on the noise, light, dust and volatile organic compounds generated by the drilling of horizontal wells as they relate to the well location restrictions regarding occupied dwelling structures pursuant to this section. Upon a finding, if any, by the secretary that the well location restrictions regarding occupied dwelling structures are inadequate or otherwise require alteration to address the items

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SEP 11 2016

17-06752

WW-6A
(8-13)

API NO. 47 - 017 - 0
OPERATOR WELL NO. 513514
Well Pad Name: CPT10

examined in the study required by this subsection, the secretary shall have the authority to propose for promulgation legislative rules establishing guidelines and procedures regarding reasonable levels of noise, light, dust and volatile organic compounds relating to drilling horizontal wells, including reasonable means of mitigating such factors, if necessary.

Water Well Testing:

Pursuant to West Virginia Code § 22-6A-10(d), notification shall be made, with respect to surface landowners identified in subsection (b) or water purveyors identified in subdivision (5), subsection (b) of this section, of the opportunity for testing their water well. The operator shall provide an analysis to such surface landowner or water purveyor at their request.

Water Testing Laboratories:

Pursuant to West Virginia Code § 22-6A-10(i), persons entitled to notice pursuant to subsection (b) of this section may contact the department to ascertain the names and locations of water testing laboratories in the subject area capable and qualified to test water supplies in accordance with standard accepted methods. In compiling that list of names the department shall consult with the state Bureau for Public Health and local health departments. A surface owner and water purveyor has an independent right to sample and analyze any water supply at his or her own expense. The laboratory utilized by the operator shall be approved by the agency as being certified and capable of performing sample analyses in accordance with this section.

Rebuttable Presumption for Contamination or Deprivation of a Fresh Water Source or Supply:

W. Va. Code § 22-6A-18 requires that (b) unless rebutted by one of the defenses established in subsection (c) of this section, in any action for contamination or deprivation of a fresh water source or supply within one thousand five hundred feet of the center of the well pad for horizontal well, there is a rebuttable presumption that the drilling and the oil or gas well or either was the proximate cause of the contamination or deprivation of the fresh water source or supply. (c) In order to rebut the presumption of liability established in subsection (b) of this section, the operator must prove by a preponderance of the evidence one of the following defenses: (1) The pollution existed prior to the drilling or alteration activity as determined by a predrilling or prealteration water well test. (2) The landowner or water purveyor refused to allow the operator access to the property to conduct a predrilling or prealteration water well test. (3) The water supply is not within one thousand five hundred feet of the well. (4) The pollution occurred more than six months after completion of drilling or alteration activities. (5) The pollution occurred as the result of some cause other than the drilling or alteration activity. (d) Any operator electing to preserve its defenses under subdivision (1), subsection (c) of this section shall retain the services of an independent certified laboratory to conduct the predrilling or prealteration water well test. A copy of the results of the test shall be submitted to the department and the surface owner or water purveyor in a manner prescribed by the secretary. (e) Any operator shall replace the water supply of an owner of interest in real property who obtains all or part of that owner's supply of water for domestic, agricultural, industrial or other legitimate use from an underground or surface source with a comparable water supply where the secretary determines that the water supply has been affected by contamination, diminution or interruption proximately caused by the oil or gas operation, unless waived in writing by that owner. (f) The secretary may order the operator conducting the oil or gas operation to: (1) Provide an emergency drinking water supply within twenty-four hours; (2) Provide temporary water supply within seventy-two hours; (3) Within thirty days begin activities to establish a permanent water supply or submit a proposal to the secretary outlining the measures and timetables to be used in establishing a permanent supply. The total time in providing a permanent water supply may not exceed two years. If the operator demonstrates that providing a permanent replacement water supply cannot be completed within two years, the secretary may extend the time frame on case-by-case basis; and (4) Pay all reasonable costs incurred by the real property owner in securing a water supply. (g) A person as described in subsection (b) of this section aggrieved under the provisions of subsections (b), (e) or (f) of this section may seek relief in court... (i) Notwithstanding the denial of the operator of responsibility for the damage to the real property owner's water supply or the status of any appeal on determination of liability for the damage to the real property owner's water supply, the operator may not discontinue providing the required water service until authorized to do so by the secretary or a court of competent jurisdiction.

Written Comment:

Pursuant to West Virginia Code § 22-6A-11(a), all persons described in subsection (b), section ten of this article may file written comments with the secretary as to the location or construction of the applicant's proposed well work within thirty days after the application is filed with the secretary. All persons described in West Virginia Code § 22-6A-10(b) may file written comments as to the location or construction of the applicant's proposed well work to the Secretary at:

Chief, Office of Oil and Gas
Department of Environmental Protection
601 57th St. SE
Charleston, WV 25304
(304) 926-0450

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Office of Oil & Gas
SEP 03 2016

Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.
NOTE: YOU ARE NOT REQUIRED TO FILE ANY COMMENT.

11/11/2016

17-06750

Time Limits and Methods for Filing Comments.

The law requires these materials to be served on or before the date the operator files its Application. You have THIRTY (30) DAYS after the filing date to file your comments. Comments must be filed in person or received in the mail by the Chief's office by the time stated above. You may call the Chief's office to be sure of the date. Check with your postmaster to ensure adequate delivery time or to arrange special expedited handling. If you have been contacted by the well operator and you have signed a "voluntary statement of no objection" to the planned work described in these materials, then the permit may be issued at any time.

Pursuant to West Virginia Code § 22-6A-11(c)(2), Any objections of the affected coal operators and coal seam owners and lessees shall be addressed through the processes and procedures that exist under sections fifteen, seventeen and forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article. The written comments filed by the parties entitled to notice under subdivisions (1), (2), (4), (5) and (6), subsection (b), section ten of this article shall be considered by the secretary in the permit issuance process, but the parties are not entitled to participate in the processes and proceedings that exist under sections fifteen, seventeen or forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article

Comment Requirements

Your comments must be in writing and include your name, address and telephone number, the well operator's name and well number and the approximate location of the proposed well site including district and county from the application. You may add other documents, such as sketches, maps or photographs to support your comments.

Disclaimer: All comments received will be placed on our web site <http://www.dep.wv.gov/oil-and-gas/Horizontal-Permits/Pages/default.aspx> and the applicant will automatically be forwarded an email notice that such comments have been submitted. The applicant will be expected to provide a response to comments submitted by any surface owner, water purveyor or natural gas storage operator noticed within the application.

Permit Denial or Condition

The Chief has the power to deny or condition a well work permit. Pursuant to West Virginia Code § 22-6A-8(d), the permit may not be issued or be conditioned, including conditions with respect to the location of the well and access roads prior to issuance if the director determines that:

- (1) The proposed well work will constitute a hazard to the safety of persons;
- (2) The plan for soil erosion and sediment control is not adequate or effective;
- (3) Damage would occur to publicly owned lands or resources; or
- (4) The proposed well work fails to protect fresh water sources or supplies.

A permit may also be denied under West Virginia Code § 22-6A-7(k), the secretary shall deny the issuance of a permit if the secretary determines that the applicant has committed a substantial violation of a previously issued permit for a horizontal well, including the applicable erosion and sediment control plan associated with the previously issued permit, or a substantial violation of one or more of the rules promulgated under this article, and in each instance has failed to abate or seek review of the violation within the time prescribed by the secretary pursuant to the provisions of subdivisions (1) and (2), subsection (a), section five of this article and the rules promulgated hereunder, which time may not be unreasonable.

Pursuant to West Virginia Code § 22-6A-10(g), any person entitled to submit written comments to the secretary pursuant to subsection (a), section eleven of this article, shall also be entitled to receive from the secretary a copy of the permit as issued or a copy of the order modifying or denying the permit if the person requests receipt of them as a part of the written comments submitted concerning the permit application. Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

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SEP 03 2015

17-06750

Notice is hereby given by:

Well Operator: EQT Production Company Address: 115 Professional Place P.O. Box 280
 Telephone: 304-848-0082 Bridgeport, WV 26330
 Email: Vroark@eqt.com Facsimile: 304-848-0041

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use of your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete.



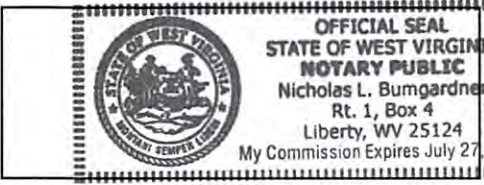
By: Victoria Roark

Is: Permitting Supervisor

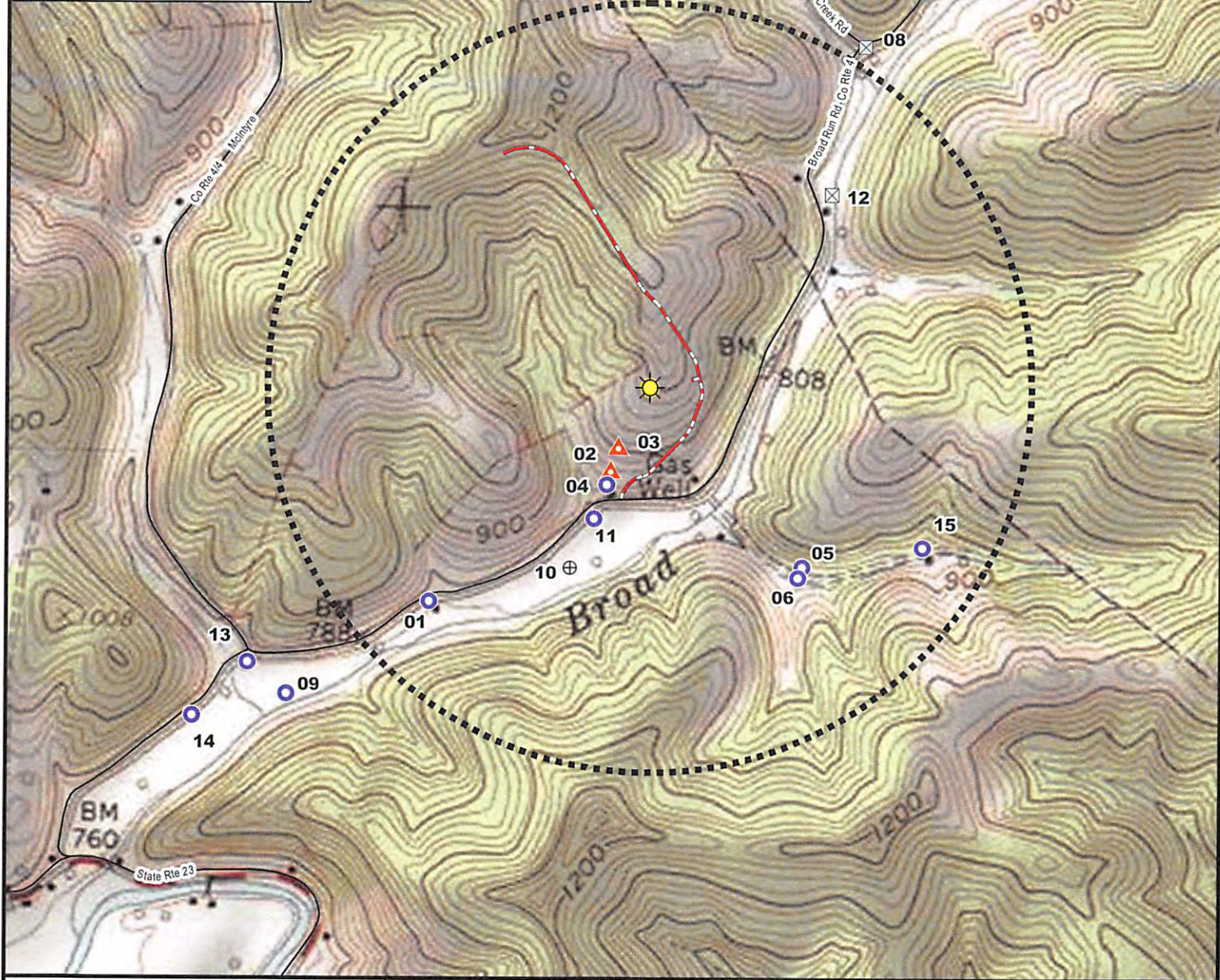
Subscribed and sworn before on 1 day of SEPTEMBER, 2015

Nicholas L. Bumgardner Notary Public

My Commission Expires 7/27/2018



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**Water Source Locations
For Shirley J. Hayes Lease**

CPT-10 Well Pad
EQT Production Company
Doddridge County, WV

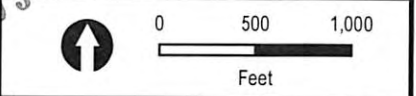


- Proposed Gas Well
- 2,500' Proposed Gas Well Radius
- Well
- Spring
- Unknown (Dwelling Present)
- Unknown (Abandoned Dwelling)
- Proposed Access Road
- Existing Road

Center Point, WV 7.5' USGS Quadrangle

PROJECT #:	00137335.001A
DRAWN:	8/25/2015
DRAWN BY:	GHB
CHECKED BY:	MA
FILE NAME:	WaterSourceID.mxd

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11/1/2016

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF INTENT TO DRILL

Pursuant to W. Va. Code § 22-6A-16(b), the Notice of Intent to Drill is only required if the notice requirements of W. Va. Code § 22-6A-10(a) have NOT been met or if the Notice of Intent to Drill requirement has NOT been waived in writing by the surface owner.

Notice Time Requirement: Notice shall be provided at least TEN (10) days prior to filing a permit application.

Date of Notice: 8/12/2015 **Date Permit Application Filed:** 8/22/15

Delivery method pursuant to West Virginia Code § 22-6A-16(b)

HAND DELIVERY **CERTIFIED MAIL RETURN RECEIPT REQUESTED**

Pursuant to W. Va. Code § 22-6A-16(b), at least ten days prior to filing a permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner notice of its intent to enter upon the surface owner's land for the purpose of drilling a horizontal well: Provided, That notice given pursuant to subsection (a), section ten of this article satisfies the requirements of this subsection as of the date the notice was provided to the surface owner: Provided, however, That the notice requirements of this subsection may be waived in writing by the surface owner. The notice, if required, shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative.

Notice is hereby provided to the SURFACE OWNER(s):

Name: Shirley James Hayes and Marjorie Hayes
Address: 881 Broad Run Rd.
Center Point, WV 26339

Name: Samuel Glen Ash and Haruyo Ash
Address: 3616 Fox Glen PKWY
Las Vegas NV 89108

Notice is hereby given:

Pursuant to West Virginia Code § 22-6A-16(b), notice is hereby given that the undersigned well operator has an intent to enter upon the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows:

State:	<u>WV</u>	UTM NAD 83	Easting	<u>529,219.86</u>
County:	<u>Doddridge</u>		Northing	<u>4,362,723.00</u>
District:	<u>McClellan</u>		Public Road Access:	<u>Co. Rt. 4</u>
Quadrangle:	<u>Center Point</u>		Generally used farm name:	<u>Shirley James and Marjorie Hayes</u>
Watershed:	<u>Broad Run of McElroy Creek</u>			

This Notice Shall Include:

Pursuant to West Virginia Code § 22-6A-16(b), this notice shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx

Notice is hereby given by:

Well Operator: EQT Production Company
Address: 115 Professional Place, P.O Box 280
Bridgeport, WV 26330
Telephone: 304-848-0076
Email: vroark@eqt.com
Facsimile: 304-848-0041

Authorized Representative: Victoria Roark
Address: 115 Professional Place, P.O Box 280
Bridgeport, WV 26330
Telephone: 304-848-0076
Email: vroark@eqt.com
Facsimile: 304-848-0041

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Office of Oil & Gas
SEP 03 2015

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

11/11/2016

**STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF INTENT TO DRILL**

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Notice Time Requirement: Notice shall be provided at least TEN (10) days prior to filing a permit application.

Date of Notice: 8/12/2015 **Date Permit Application Filed:** 8/22/15

Delivery method pursuant to West Virginia Code § 22-6A-16(b)

HAND DELIVERY **CERTIFIED MAIL RETURN RECEIPT REQUESTED**

Pursuant to W. Va. Code § 22-6A-16(b), at least ten days prior to filing a permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner notice of its intent to enter upon the surface owner's land for the purpose of drilling a horizontal well: Provided, That notice given pursuant to subsection (a), section ten of this article satisfies the requirements of this subsection as of the date the notice was provided to the surface owner: Provided, however, That the notice requirements of this subsection may be waived in writing by the surface owner. The notice, if required, shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative.

Notice is hereby provided to the SURFACE OWNER(s):

Name: Coastal Forest Resources Company dba Name: _____
Address: Coastal Timberlands Company Address: _____
1772 Brushy Fork Road
Buckhannon WV 26201

Notice is hereby given:

Pursuant to West Virginia Code § 22-6A-16(b), notice is hereby given that the undersigned well operator has an intent to enter upon the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows:

State: WV UTM NAD 83 Easting 529,219.86
County: Doddridge Northing 4,362,723.00
District: McClellan Public Road Access: Co. Rt. 4
Quadrangle: Center Point Generally used farm name: Shirley James and Marjorie Hayes
Watershed: Broad Run of McElroy Creek

This Notice Shall Include:

Pursuant to West Virginia Code § 22-6A-16(b), this notice shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx

Notice is hereby given by:

Well Operator: EQT Production Company
Address: 115 Professional Place, P.O Box 280
Bridgeport, WV 26330
Telephone: 304-848-0076
Email: vroark@eqt.com
Facsimile: 304-848-0041

Received
Office of Oil & Gas
Authorized Representative: Victoria Roark
Address: 115 Professional Place, P.O Box 280
SEP 03 2015 Bridgeport, WV 26330
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11/11/2016

SEP 04 2015

WW-6A5
(1/12)

WV Department of
Environmental Protection
STATE OF WEST VIRGINIA

Operator Well No. 513514

DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS

NOTICE OF PLANNED OPERATION

Notice Time Requirement: notice shall be provided no later than the filing date of permit application
Date of Notice: SEP 02 2015 Date Permit Application Filed: SEP 02 2015

Delivery method pursuant to West Virginia Code § 22-6A-16(c)

- CERTIFIED MAIL RETURN RECEIPT REQUESTED
- HAND DELIVERY

Pursuant to W. Va. Code § 22-6A-16(c), no later than the date for filing the permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner whose land will be used for the drilling of a horizontal well notice of the planned operation. The notice required by this subsection shall include: (1) A copy of this code section; (2) The information required to be provided by subsection (b), section ten of this article to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. (d) The notices required by this section shall be given to the surface owner at the address listed in the records of the sheriff at the time of notice.

Notice is hereby provided to the SURFACE OWNER(s)

(at the address listed in the records of the sheriff at the time of notice):

Name: Shirley James Hayes and Marjorie Hayes
Address: 881 Broad Run Rd.
Center Point, WV 26339

Name: Samuel Glenn and Haruyo Ash
Address: 3616 Fox Glen Pkwy.
Las Vegas NV 89108

Notice is hereby given:

Pursuant to West Virginia Code § 22-6A-16(c), notice is hereby given that the undersigned well operator has developed a planned operation on the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows:

State:	<u>WV</u>	UTM NAD 83	Easting:	<u>529,219.860000</u>
County:	<u>Doddridge</u>		Northing:	<u>4,362,723.000000</u>
District:	<u>McClellan</u>	Public Road Access:		<u>Co. Rt. 4</u>
Quadrangle:	<u>Center Point</u>	Generally used farm name:		<u>Shirley James and Marjorie Hayes</u>
Watershed:	<u>Broad Run of McElroy Creek</u>			

This Notice Shall Include:

Pursuant to West Virginia Code § 22-6A-16(c), this notice shall include: (1) A copy of this code section; (2) The information required to be provided by W. Va. Code § 22-6A-10(b) to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Well Operator:	<u>EQT Production Company</u>	Address:	<u>115 Professional Place, P.O. Box 280</u>
Telephone:	<u>304-848-0082</u>		<u>Bridgeport, WV 26330</u>
Email:	<u>vroark@eqt.com</u>	Facsimile:	<u>304-848-0040</u>

Oil and Gas Privacy Notice:

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SER. 0,4 2015

WW-6A5
(1/12)

WV Department of
Environmental Protection

Operator Well No. 513514

STATE OF WEST VIRGINIA

DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS

NOTICE OF PLANNED OPERATION

Notice Time Requirement: notice shall be provided no later than the filing date of permit application

Date of Notice: SEP 02 2015 Date Permit Application Filed: SEP 02 2015

Delivery method pursuant to West Virginia Code § 22-6A-16(c)

CERTIFIED MAIL HAND
RETURN RECEIPT REQUESTED DELIVERY

Pursuant to W. Va. Code § 22-6A-16(c), no later than the date for filing the permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner whose land will be used for the drilling of a horizontal well notice of the planned operation. The notice required by this subsection shall include: (1) A copy of this code section; (2) The information required to be provided by subsection (b), section ten of this article to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. (d) The notices required by this section shall be given to the surface owner at the address listed in the records of the sheriff at the time of notice.

Notice is hereby provided to the SURFACE OWNER(s)

(at the address listed in the records of the sheriff at the time of notice):

Name: Coastal Forest Resources Company dba Coastal Timberlands Co.
Address: 1772 Brushy Fork Rd.
Buckhannon WV 26201

Name: _____
Address: _____

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County: Doddridge Northing: 4,362,723.000000
District: McClellan Public Road Access: Co. Rt. 4
Quadrangle: Center Point Generally used farm name: Shirley James and Marjorie Hayes
Watershed: Broad Run of McElroy Creek

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Well Operator: EQT Production Company
Telephone: 304-848-0082
Email: vroark@eqt.com

Address: 115 Professional Place, P.O. Box 280
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Facsimile: 304-848-0040

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17-06752



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

1900 Kanawha Boulevard East • Building Five • Room 110
Charleston, West Virginia 25305-0430 • (304) 558-3505

Earl Ray Tomblin
Governor

Paul A. Mattox, Jr., P. E.
Secretary of Transportation/
Commissioner of Highways

September 1, 2015

James A. Martin, Chief
Office of Oil and Gas
Department of Environmental Protection
601 57th Street, SE
Charleston, WV 25304

Subject: DOH Permit for the CPT10 Well Site, Doddridge County

513513 CPT10H1	513514 CPT10H2	513515 CPT10H3	513516 CPT10H4
513517 CPT10H5	513518 CPT10H6	514143 CPT10H7	514144 CPT10H8
514145 CPT10H9	514146 CPT10H10	516403 CPT10H11	516404 CPT10H12

Dear Mr. Martin,

This well site will be accessed from Permit # 04-2015-0842 applied for by EQT Production Company for access to the State Road for a well site located off of Doddridge County Route 4 SLS.

The operator has signed a STATEWIDE OIL AND GAS ROAD MAINTENANCE BONDING AGREEMENT and provided the required Bond. This operator is currently in compliance with the DOH OIL AND GAS POLICY dated January 3, 2012.

Very Truly Yours,

Gary K. Clayton, P.E.
Regional Maintenance Engineer
Central Office O&G Coordinator

Cc: Nick Bumgardner
EQT Production Company
CH, OM, D-4
File

Received
Office of Oil & Gas
SEP 03 2015

Anticipated Frac Additives
Chemical Names and CAS numbers

<u>Material</u>	<u>Ingredient</u>	<u>CAS Number</u>
Water		
Sand	Hydrotreated light petroleum distillate	14808-60-7
Friction Reducer	Tributyl tetradecyl phosphonium chloride	64742-47-8
Biocide	Ammonium chloride	81741-28-8
Scale Inhibitor	Hydrochloric Acid	12125-02-9
15% Hydrochloric Acid	Propargyl Alcohol	7647-01-0
Corrosion Inhibitor	Methanol	107-19-7
Corrosion Inhibitor	Guar Gum	67-56-1
Gelling Agent	Sodium Persulfate	9000-30-0
Oxidizing Breaker	Potassium Carbonate	7775-27-1
Buffering Agent		584-08-7

Received
Office of Oil & Gas
SEP 03 2015



CPT-10 WELL PAD SITE DESIGN & CONSTRUCTION PLAN, EROSION & SEDIMENT CONTROL PLANS

EQT PRODUCTION COMPANY

**APPROVED
WVDEP OOG**
[Signature]
1/14/2016



PLAN REPRODUCTION WARNING
THE PLANS HAVE BEEN CREATED ON ANSI D (22" x 34") SHEETS. FOR REDUCTIONS, REFER TO GRAPHIC SCALE.

THE PLANS HAVE BEEN CREATED FOR FULL COLOR PLOTTING. ANY SET OF THE PLANS THAT IS NOT PLOTTED IN FULL COLOR SHALL NOT BE CONSIDERED ADEQUATE FOR CONSTRUCTION PURPOSES.

WARNING INFORMATION MAY BE LOST IN COPYING AND/OR GRAY SCALE PLOTTING

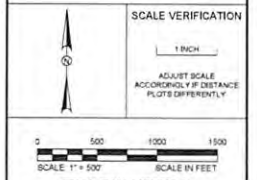
API# 1706751, 1706752, 1706753, 1706754



Signed By: JOSHUA M. FARLEY, W.V. P.E. # 20711

REVISIONS				
REV	DESCRIPTION	DWN	CHK	DATE
1	09-22-2015 WVDEP COMMENTS	RAM	JMF	09-30-15

ISSUED FOR PERMITTING
NOT RELEASED FOR CONSTRUCTION



COVER PAGE & LOCATION MAP

CPT-10 WELL PAD
DODDRIEGH COUNTY
WEST VIRGINIA



PERMITTING	
PROJECT NO.	137955
ISSUE DATE	09/20/15
CURRENT REVISION	1
DESIGNED BY	AERL
DRAWN BY	AERL
CHECKED BY	JMF
APPROVED BY	JMF
SHEET	1 of 25

PROJECT CONTACTS

PROJECT OWNER
EQT PRODUCTION COMPANY
CONTACT: CHRIS METZGAR
115 PROFESSIONAL PLACE
BRIDGEPORT, WV 26330
304.848.0075 OFFICE

LOCATION SURVEYOR
ENCOMPASS ENERGY SERVICES, LLC
CONTACT: TYLER HASTINGS
1376 WASHINGTON PIKE, SUITE 308
BRIDGEVILLE, PA 15017
412.564.5215 OFFICE

ENGINEER OF RECORD
KLEINFELDER
CONTACT: JOSH FARLEY, PE
WV PE #20711
230 EXECUTIVE DRIVE, SUITE 122
CRANBERRY TOWNSHIP, PA 16096
724.772.7072 OFFICE
724.772.7079 FAX

**ENVIRONMENTAL/
DELINEATION BOUNDARY**
KLEINFELDER
CONTACT: MATTHEW ALBRIGHT
230 EXECUTIVE DRIVE, SUITE 122
CRANBERRY TOWNSHIP, PA 16096
724.772.7072 OFFICE
724.772.7079 FAX

TOPO SURVEYOR
BLUE MOUNTAIN AERIAL MAPPING
CONTACT: CRAIG FRY
11023 MASON DIXON HIGHWAY
BURTON, WV 25662
304.662.2828 OFFICE
304.815.4890 CELL

DESCRIPTION	SITE LOCATION NAD 83 (DEGREES)		UTM ZONE 17N NAD 83 (M)	
	LATITUDE (N)	LONGITUDE (W)	NORTHING	EASTING
CENTER OF WELL PAD	39.413493° N	80.660501° W	4362718.95	529225.97
CENTER OF COMPLETION PIT	39.417796° N	80.664784° W	4363195.12	528855.49
CENTER OF FLOWBACK PIT	39.415813° N	80.660713° W	4362976.36	529206.76
MAIN ACCESS ROAD ENTRANCE	39.411547° N	80.661251° W	4362502.75	529162.22
WELL PAD ACCESS ROAD ENTRANCE	39.413638° N	80.659453° W	4362735.39	529316.13

FLOOD CONDITIONS	
DO SITE CONSTRUCTION ACTIVITIES TAKE PLACE IN FLOODPLAIN	NO
PERMIT NEEDED FROM COUNTY FLOODPLAIN COORDINATOR	NO
HIGHWAY STUDY COMPLETED	N/A
FLOODPLAIN SHOWN ON DRAWINGS	NO
FIRM MAP NUMBER FOR SITE	5457C00402
ACREAGE OF CONSTRUCTION IN FLOODPLAIN	N/A

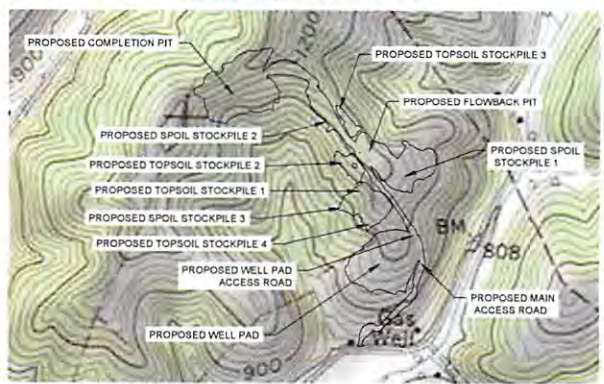
ACCESS ROAD LENGTH (FEET)	
DESCRIPTION	FEET
MAIN ACCESS ROAD	3,100
PAD ACCESS ROAD	24
TOTAL	3,124

DESIGN CERTIFICATION
THE DRAWINGS, CONSTRUCTION NOTES, AND REFERENCE DIAGRAMS ATTACHED HERETO HAVE BEEN PREPARED IN ACCORDANCE WITH THE WEST VIRGINIA CODE OF STATE RULES, DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS §35-4-21 AND §35-5.

811
New smart before
Call before you dig.
THREE DAYS BEFORE
YOU DIG

CALL PA ONE CALL
SYSTEM TOLL FREE
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OR
1-800-242-1776

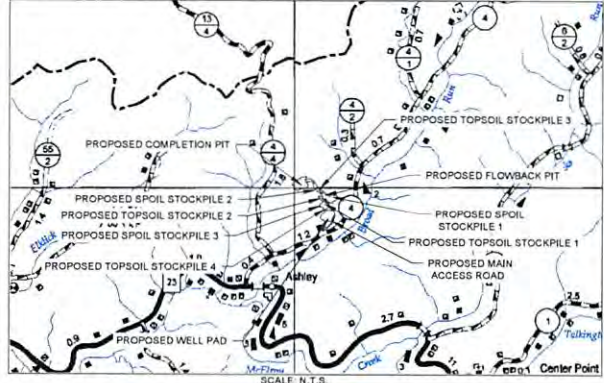
MM-109 PERMIT
EQT PRODUCTION COMPANY WILL OBTAIN AN ENCROACHMENT PERMIT (MM-109) FROM THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION, DIVISION OF HIGHWAYS, PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES.



NORTH MERIDIAN REFERENCED TO NAD83
WEST VIRGINIA STATE PLANE NORTH ZONE

AFFECTED TAX PARCELS:
SEE SHEET 2

CENTER POINT QUAD



WELL LOCATION RESTRICTIONS
WELL PAD IS TO COMPLY WITH WELL LOCATION RESTRICTIONS OF WV CODE 22-6A-12. THE PADS COMPLY WITH THE FOLLOWING RESTRICTIONS:

- 250' FROM AN EXISTING WELL OR DEVELOPED SPRING USED FOR HUMAN OR DOMESTIC ANIMALS TO WELL BEING DRILLED
- 825' FROM AN OCCUPIED DWELLING OR BARN GREATER THAN 2500 SF USED FOR POULTRY OR DAIRY MEASURED FROM THE CENTER OF THE PAD
- 100' FROM EDGE OF DISTURBANCE TO WETLANDS, PERENNIAL STREAMS, NATURAL OR ARTIFICIAL LAKE, POND OR RESERVOIR
- 300' FROM EDGE OF DISTURBANCE TO NATURALLY REPRODUCING TROUT STREAMS
- 1000' FROM EDGE OF DISTURBANCE TO ANY SURFACE OR GROUND WATER INTAKE TO A PUBLIC WATER SUPPLY

WELL HEAD LAYOUT				
WELL HEAD	WV STATE PLANE NAD 83 (FT)		NAD 83 (DEGREES)	
	NORTHING	EASTING	LATITUDE (N)	LONGITUDE (W)
H1-513513	334850.57	1640597.50	39.413529° N	80.660625° W
H2-513514	334850.57	1640612.50	39.413530° N	80.660572° W
H3-513515	334850.57	1640627.50	39.413530° N	80.660519° W
H4-513516	334850.57	1640642.50	39.413531° N	80.660466° W
H5-513517	334850.57	1640657.50	39.413531° N	80.660413° W
H6-513518	334850.57	1640672.50	39.413532° N	80.660359° W
H7-514143	334850.57	1640697.50	39.413532° N	80.660306° W
H8-514144	334850.57	1640702.50	39.413533° N	80.660253° W

WELL HEAD LAYOUT				
WELL HEAD	WV STATE PLANE NAD 27 (FT)		UTM ZONE 17N NAD 83 (M)	
	NORTHING	EASTING	NORTHING	EASTING
H1-513513	334814.30	1672038.29	4362723.13	529215.29
H2-513514	334814.30	1672053.29	4362723.15	529219.86
H3-513515	334814.30	1672068.29	4362723.17	529224.43
H4-513516	334814.30	1672083.29	4362723.18	529229.00
H5-513517	334814.30	1672098.29	4362723.20	529233.57
H6-513518	334814.30	1672113.29	4362723.22	529238.14
H7-514143	334814.30	1672128.29	4362723.46	529242.71
H8-514144	334814.30	1672143.29	4362723.47	529247.28

SHEET INDEX	
PAGE NO.	DESCRIPTION
1	COVER PAGE & LOCATION MAP
2	SCHEDULE OF QUANTITIES
3	NOTES
4	EXISTING CONDITIONS
5	OVERALL PLAN
6-8	SITE PLAN
9	WELL PAD CROSS SECTIONS AND PROFILE
10	FLOWBACK PIT CROSS SECTIONS AND PROFILE
11-12	COMPLETION PIT CROSS SECTIONS AND PROFILE
13-15A	MAIN ACCESS ROAD & STOCKPILE CROSS SECTIONS AND PROFILES
16	CULVERT PROFILES
17-22	DETAILS
23-25	RECLAMATION PLAN

CPT-10 WELL PAD SITE DESIGN & CONSTRUCTION PLAN, EROSION & SEDIMENT CONTROL PLANS EQT PRODUCTION COMPANY



Where energy meets innovation.

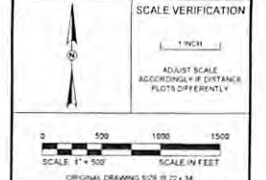
PLAN REPRODUCTION WARNING
THE PLANS HAVE BEEN CREATED ON ANS I D 22" x 34" SHEETS FOR REDUCTIONS. REFER TO GRAPHIC SCALE.
THE PLANS HAVE BEEN CREATED FOR FULL COLOR PLOTTING. ANY SET OF THE PLANS THAT IS NOT PLOTTED IN FULL COLOR SHALL NOT BE CONSIDERED ADEQUATE FOR CONSTRUCTION PURPOSES.
WARNING INFORMATION MAY BE LOST BY COPYING AND/OR GRAY SCALE PLOTTING.



REVISIONS

NO.	DESCRIPTION	DATE
1	ISSUED FOR PERMITTING	08-30-15

ISSUED FOR PERMITTING
NOT RELEASED FOR CONSTRUCTION

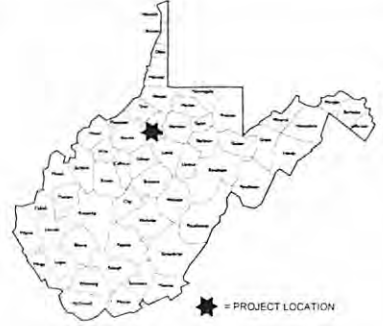


COVER PAGE & LOCATION MAP



PERMITTING

PROJECT NO.	137353
ISSUE DATE	08/26/2015
CURRENT REVISION	1
DESIGNED BY	AEF
DRAWN BY	AEF
CHECKED BY	JMF
APPROVED BY	JMF



PROJECT CONTACTS

PROJECT OWNER

EQT PRODUCTION COMPANY
CONTACT: CHRIS METZGAR
115 PROFESSIONAL PLACE
BRIDGEPORT, WV 26330
304.848.0075 OFFICE

LOCATION SURVEYOR

ENCOMPASS ENERGY SERVICES, LLC
CONTACT: TYLER HASTINGS
1370 WASHINGTON PIKE, SUITE 308
BRIDGEVILLE, PA 15017
412.584.5215 OFFICE

ENGINEER OF RECORD

KLEINFELDER
CONTACT: JOSH FARLEY, PE
WV PE #020711
230 EXECUTIVE DRIVE, SUITE 122
CRANBERRY TOWNSHIP, PA 16006
724.772.7072 OFFICE
724.772.7079 FAX

ENVIRONMENTAL/ DELINEATION BOUNDARY

KLEINFELDER
CONTACT: MATTHEW ALBRIGHT
230 EXECUTIVE DRIVE, SUITE 122
CRANBERRY TOWNSHIP, PA 16006
724.772.7072 OFFICE
724.772.7079 FAX

TOPO SURVEYOR

BLUE MOUNTAIN AERIAL MAPPING
CONTACT: CRAIG FRY
11023 MASON DIXON HIGHWAY
BURTON, WV 26562
304.662.2626 OFFICE
304.819.4890 CELL

SITE LOCATION

DESCRIPTION	NAD 83 (DEGREES)		UTM ZONE 17N NAD 83 (M)	
	LATITUDE (N)	LONGITUDE (W)	NORTHING	EASTING
CENTER OF WELL PAD	39 413493" N	80 660501" W	4362718.95	529225.97
CENTER OF COMPLETION PIT	39 417796" N	80 664784" W	4363195.12	528855.49
CENTER OF FLOWBACK PIT	39 415813" N	80 660713" W	4362976.36	529206.75
MAIN ACCESS ROAD ENTRANCE	39 411547" N	80 661251" W	4362502.75	529162.22
WELL PAD ACCESS ROAD ENTRANCE	39 413638" N	80 659453" W	4362735.39	529316.13

FLOOD CONDITIONS

DOES SITE CONSTRUCTION ACTIVITY TAKE PLACE IN FLOODPLAIN	NO
PERMIT NEEDED FROM COUNTY FLOODPLAIN COORDINATOR	NO
NEC HAS STUDY COMPLETE FILED	NA
FLOODPLAIN SHOWN ON DRAWINGS	NO
FROM MAP PLANNED FOR SITE	NEAREST TO SITE
ADJACENT TO CONSTRUCTION IN FLOODPLAIN	NA

ACCESS ROAD LENGTH (FEET)

DESCRIPTION	FEET
MAIN ACCESS ROAD	3,100
PAD ACCESS ROAD	24
TOTAL	3,124

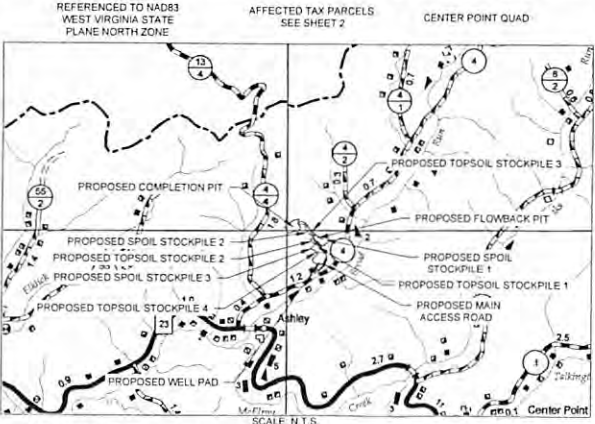
DESIGN CERTIFICATION

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MM-109 PERMIT

EQT PRODUCTION COMPANY WILL OBTAIN AN ENCROACHMENT PERMIT (MM-109) FROM THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION, DIVISION OF HIGHWAYS, PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES.

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- ### WELL LOCATION RESTRICTIONS
- WELL PAD IS TO COMPLY WITH WELL LOCATION RESTRICTIONS OF WV CODE 22-6A-12. THE PADS COMPLY WITH THE FOLLOWING RESTRICTIONS:
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 - 300' FROM EDGE OF DISTURBANCE TO NATURALLY REPRODUCING TROUT STREAMS
 - 1000' FROM EDGE OF DISTURBANCE TO ANY SURFACE OR GROUND WATER INTAKE TO A PUBLIC WATER SUPPLY

WELL HEAD LAYOUT

WELL HEAD	WV STATE PLANE NAD 83 (FT)		UTM ZONE 17N NAD 83 (M)	
	NORTHING	EASTING	NORTHING	EASTING
H1-513513	334850.57	1640597.50	4362723.13	529216.29
H2-513514	334850.57	1640612.50	4362723.15	529219.86
H3-513515	334850.57	1640627.50	4362723.17	529224.43
H4-513516	334850.57	1640642.50	4362723.18	529229.00
H5-513517	334850.57	1640657.50	4362723.20	529233.57
H6-513518	334850.57	1640672.50	4362723.22	529238.14
H7-514143	334850.57	1640687.50	4362723.45	529242.71
H8-514144	334850.57	1640702.50	4362723.47	529247.28

WELL HEAD LAYOUT

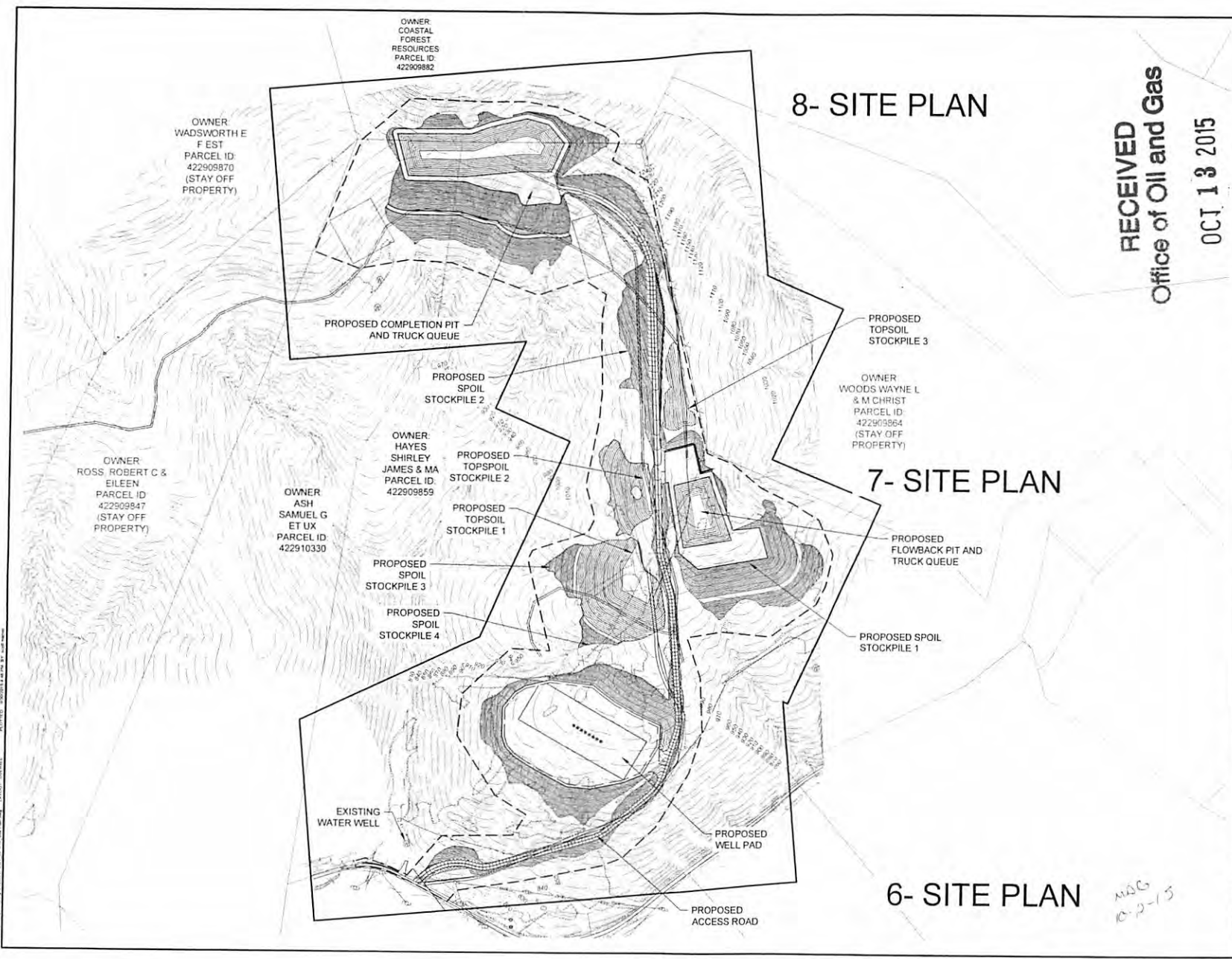
WELL HEAD	WV STATE PLANE NAD 27 (FT)		UTM ZONE 17N NAD 83 (M)	
	NORTHING	EASTING	NORTHING	EASTING
H1-513513	334814.30	1672038.29	4362723.13	529216.29
H2-513514	334814.30	1672053.29	4362723.15	529219.86
H3-513515	334814.30	1672068.29	4362723.17	529224.43
H4-513516	334814.30	1672083.29	4362723.18	529229.00
H5-513517	334814.30	1672098.29	4362723.20	529233.57
H6-513518	334814.30	1672113.29	4362723.22	529238.14
H7-514143	334814.30	1672128.29	4362723.45	529242.71
H8-514144	334814.30	1672143.29	4362723.47	529247.28

SHEET INDEX

PAGE NO.	DESCRIPTION
1	COVER PAGE & LOCATION MAP
2	SCHEDULE OF QUANTITIES
3	NOTES
4	EXISTING CONDITIONS
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6-8	SITE PLAN
9	WELL PAD CROSS SECTIONS AND PROFILE
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11-12	COMPLETION PIT CROSS SECTIONS AND PROFILE
13-15A	MAIN ACCESS ROAD & STOCKPILE CROSS SECTIONS AND PROFILES
16	CULVERT PROFILES
17-22	DETAILS
23-25	RECLAMATION PLAN

RECEIVED
 Office of Oil and Gas
 OCT 13 2015

17-06751



RECEIVED
Office of Oil and Gas
OCT 13 2015

KEINFELDER
 Bright People. Right Solutions.

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 Cranberry Township, PA 15066
 Phone: 724-732-7972
 www.keinfelder.com

REGISTERED PROFESSIONAL ENGINEER
 20711
 STATE OF WEST VIRGINIA

DR. WILLIAM FARLEY W.V. P.E. # 20711

REVISIONS			
NO.	DESCRIPTION	DSN	CHK
1	ISSUE FOR PERMITTING	DSN	CHK
		DWN	APP
		SAM	JMF
		SAM	JMF
		SAM	JMF

DATE: 09-30-15

ISSUED FOR PERMITTING
 NOT RELEASED FOR CONSTRUCTION

SCALE VERIFICATION

1 INCH

ADJUST SCALE ACCORDINGLY IF DISTANCE PLOTS DIFFERENTLY

0 150 300 450
 SCALE IN FEET

ORIGINAL DRAWING SIZE IS 12 x 18

OVERALL PLAN
 CPT-10 WELL PAD
 DODDRIDGE COUNTY
 WEST VIRGINIA



PERMITTING

PROJECT NO.	127355	5
ISSUE DATE	09/29/2015	
CURRENT REVISION	-	
DESIGNED BY	AEH	
DRAWN BY	AEH	
CHECKED BY	JMF	
APPROVED BY	JMF	SHEET

5 of 25

MAG
 10-2-15

17-06751

4701706752

CPT-10 WELL PAD SITE DESIGN & CONSTRUCTION PLAN, EROSION & SEDIMENT CONTROL PLANS EQT PRODUCTION COMPANY



Where energy meets innovation.



PROJECT CONTACTS

PROJECT OWNER

EQT PRODUCTION COMPANY
CONTACT CHRIS METZGAR
115 PROFESSIONAL PLACE
BRIDGEVILLE, WV 26330
304 848 0075 OFFICE

LOCATION SURVEYOR

ENDCOMPASS ENERGY SERVICES LLC
CONTACT TYLER HASTINGS
1370 WASHINGTON PIKE, SUITE 308
BRIDGEVILLE, PA 15017
412 564 5215 OFFICE

ENGINEER OF RECORD

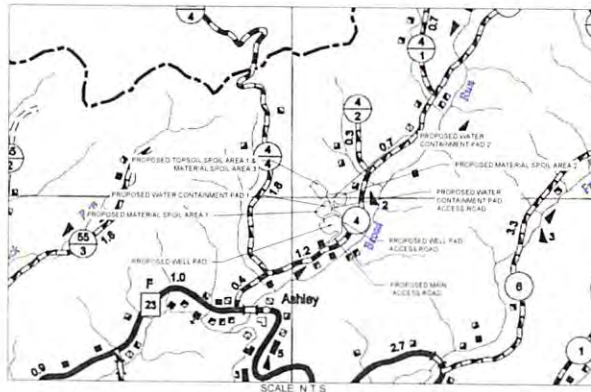
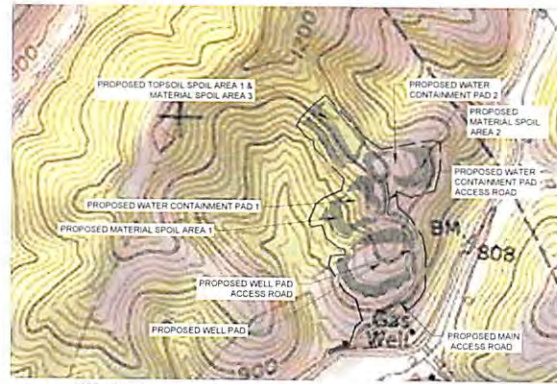
KLEINFELDER INC.
CONTACT JOSEPH D. FREGOSI, PE
WV PE #20061
230 EXECUTIVE DRIVE, SUITE 122
CRANBERRY TOWNSHIP, PA 16066
724 772 7072 OFFICE
724 772 7075 FAX

ENVIRONMENTAL/ DELINEATION BOUNDARY

KLEINFELDER INC.
CONTACT MATTHEW ALBRICHT
230 EXECUTIVE DRIVE, SUITE 122
CRANBERRY TOWNSHIP, PA 16066
724 772 7072 OFFICE
724 772 7075 FAX

TOPO SURVEYOR

BLUE MOUNTAIN AERIAL MAPPING
CONTACT CRAIG FRY
11023 BRADSHAW DR HIGHWAY
BLURTON, WV 26562
304 862 2633 OFFICE
304 815 4890 CELL



WELL LOCATION RESTRICTIONS
WELL PAD IS TO COMPLY WITH WELL LOCATION RESTRICTIONS OF WV CODE 22 6A 12. THE PADS COMPLY WITH THE FOLLOWING RESTRICTIONS:

- 250' FROM AN EXISTING WELL OR DEVELOPED SPRING USED FOR HUMAN OR DOMESTIC ANIMALS TO WELL BEING DRILLED
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PLAN REPRODUCTION WARNING
THE PLANS HAVE BEEN CREATED ON A 22" X 34" SHEETS FOR REDUCTIONS, REFER TO GRAPHIC SCALE.
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WARNING INFORMATION MAY BE LOST IN COPYING AND/OR GRAY SCALE PLOTTING

WELL HEAD	WV STATE PLANE NAD 83 (FT)		NAD 83 (DEGREES)	
	NORTHING	EASTING	LATITUDE (N)	LONGITUDE (W)
H1-513513	334850.57	164297.50	39 413529'	80 660253'
H2-513514	334850.57	164292.50	39 413530'	80 660572'
H3-513515	334850.57	164267.50	39 413530'	80 660519'
H4-513516	334850.57	164262.50	39 413531'	80 660466'
H5-513517	334850.57	164267.50	39 413531'	80 660413'
H6-513518	334850.57	164267.50	39 413532'	80 660359'
HT-514143	334850.57	164267.50	39 413532'	80 660306'
H8-514144	334850.57	164270.50	39 413533'	80 660253'

WELL HEAD	WV STATE PLANE NAD 27 (FT)		UTM ZONE 17N NAD 83 (M)	
	NORTHING	EASTING	NORTHING	EASTING
H1-513513	334814.30	1672038.29	4362723.13	529215.29
H2-513514	334814.30	1672053.29	4362723.15	529219.86
H3-513515	334814.30	1672068.29	4362723.17	529224.43
H4-513516	334814.30	1672083.29	4362723.18	529229.00
H5-513517	334814.30	1672098.29	4362723.20	529233.57
H6-513518	334814.30	1672113.29	4362723.22	529238.14
HT-514143	334814.30	1672128.29	4362723.46	529242.71
H8-514144	334814.30	1672143.29	4362723.47	529247.28

PAGE NO	SHEET INDEX	DESCRIPTION
1	1	COVER PAGE & LOCATION MAP
2	2	SCHEDULE OF QUANTITIES
3	3	NOTES AND MASTER LEGEND
4	4	EXISTING CONDITIONS
5	5	TAX MAP
6	6	GEOTECH NOTES & DETAILS
9	9	SITE PLAN
11	11	WELL PAD CROSS SECTIONS & PROFILE
12	12	WATER CONTAINMENT PAD 1 CROSS SECTIONS & PROFILE
13	13	WATER CONTAINMENT PAD 2 CROSS SECTIONS & PROFILE
14-15	14-15	MAIN ACCESS ROAD CROSS SECTIONS AND PROFILE
16	16	TOPSOIL SPOIL AREA & MATERIAL SPOIL AREA CROSS SECTIONS & PROFILE
17	17	CULVERT PROFILES
18	18	CONSTRUCTION DETAILS
19	19	BERM DETAILS
20-21	20-21	STORMWATER DETAILS
22-23	22-23	EROSION AND SEDIMENT DETAILS
24-25	24-25	RECLAMATION PLAN

DESCRIPTION	NAD 83 (DEGREES)		UTM ZONE 17N NAD 83 (M)	
	LATITUDE (N)	LONGITUDE (W)	NORTHING	EASTING
CENTER OF WELL PAD	39 413548'	80 660677'	529210.80	4362725.00
CENTER OF WATER CONTAINMENT PAD 1	39 414544'	80 661147'	529189.80	4362868.66
CENTER OF WATER CONTAINMENT PAD 2	39 415742'	80 660074'	529261.79	4362968.69
MAIN ACCESS ROAD ENTRANCE	39 411553'	80 661248'	529162.48	4362503.41
WELL PAD ACCESS ROAD ENTRANCE	39 413704'	80 659463'	529315.24	4362742.71
WATER CONTAINMENT PAD ACCESS ROAD	39 414530'	80 660234'	529224.75	4362834.07

FLOOD CONDITIONS	
DO SITE CONSTRUCTION ACTIVITIES TAKE PLACE IN FLOODPLAIN	NO
PERMIT NEEDED FROM COUNTY FLOODPLAIN COORDINATOR	NO
REC HAS STUDY COMPLETED	NA
FLOODPLAIN SHOWN ON DRAWINGS	NO
FIRM MAP NUMBER FOR SITE	54017C0404C
ACREAGE OF CONSTRUCTION IN FLOODPLAIN	NA

ACCESS ROAD LENGTH (FEET)	
DESCRIPTION	FEET
MAIN ACCESS ROAD	1,553
WELL PAD ACCESS ROAD	104
WATER CONTAINMENT PAD ACCESS ROAD	361
TOTAL	2,018

DESIGN CERTIFICATION

THE DRAWINGS, CONSTRUCTION NOTES, AND REFERENCE DIAGRAMS ATTACHED HERE TO HAVE BEEN PREPARED IN ACCORDANCE WITH THE WEST VIRGINIA CODE OF STATE RULES, DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS §35-4-21 AND §35-8

MM-109 PERMIT

EQT PRODUCTION COMPANY WILL OBTAIN AN ENCROACHMENT PERMIT (MM 109) FROM THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION, DIVISION OF HIGHWAYS, PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES.



KLEINFELDER
Bright People. Right Solutions.

Office of Oil and Gas

WV Department of Environmental Protection

RECEIVED

JUN 20 2018

230 Executive Drive, Suite 122
Cranberry Township, PA 16066
Phone: 724.772.7072
www.kleinfelder.com

APPROVED BY: [Signature]

REVISIONS:

DATE: []

APP: []

DATE: []

ISSUED FOR CONSTRUCTION

SCALE VERIFICATION

THIS BAR IS 1 INCH IN LENGTH OR ORIGINAL DRAWING

1" = 500'

SCALE IN FEET

ORIGINAL DRAWING SIZE IS 22" X 34"

COVER PAGE & LOCATION MAP

CPT-10 WELL PAD
DODDRIDGE COUNTY
WEST VIRGINIA

EQT
Where energy meets innovation.

CONSTRUCTION	
PROJECT NO	137305
ISSUE DATE	06-08-2018
CURRENT REVISION	3
DESIGNED BY	AKR
DRAWN BY	CRH
CHECKED BY	JDF
APPROVED BY	MJK SHEL 1

DR F. G. Gable

4701706752

SCHEDULE OF QUANTITIES		
CPT-10 WELL PAD		
ITEM DESCRIPTION	QUANTITY	UNIT
1.1 - MOBILIZATION		
	1	LS
2.1 - CLEARING		
2.1 A - CLEAR & GRUB (TREES, STUMPS, BRUSH)	19	AC
2.1 B - CLEAR FELLED TIMBER & GRUB	29	AC
3.1 - EROSION & SEDIMENT CONTROL		
3.1 A - 18" COMPOST FILTER SOCK	659	LF
3.1 B - SUPER SILT FENCE	4,333	LF
3.1 C - ROCK CONSTRUCTION ENTRANCE	1	EA
3.1 D - R 3 RIP RAP (ROCK FILTER OUTLETS)	22	TONS
3.1 E - AASHTO #57 STONE (ROCK FILTER OUTLETS)	11	TONS
3.1 F - R 3 RIP RAP (ROCK CHECK DAMS)	19	TONS
4.1 - DITCH LINING		
4.1 A - R 3 RIP RAP	1,052	TONS
4.1 B - R 4 RIP RAP	115	TONS
4.1 C - NORTH AMERICAN GREEN C125N	116	SY
4.1 D - NORTH AMERICAN GREEN S2250	3,350	SY
4.1 E - NORTH AMERICAN GREEN C350	170	SY
4.1 F - NORTH AMERICAN GREEN P350	331	SY
4.1 G - R 3 RIP RAP (DITCH CHECKS)	19	TONS
5.1 - AGGREGATE SURFACING		
5.1 A - WELL PAD #3 - #6 LIMESTONE (8" THICK)	3,913	TONS
5.1 A.3 - WELL PAD GEOTEXTILE FABRIC (TERRA TEX HPG 37)	1,611	TONS
5.1 B.1 - ACCESS ROADS #1 - #6 LIMESTONE (8" THICK)	15,342	SY
5.1 B.2 - ACCESS ROADS 0.75' OR 1.5' CRUSHER RUN LIMESTONE (2" THICK)	1,209	TONS
5.1 B.3 - ACCESS ROADS GEOTEXTILE FABRIC (TERRA TEX HPG 37)	499	TONS
5.1 C.1 - WATER CONTAINMENT PAD #1 - #6 LIMESTONE (8" THICK)	4,735	SY
5.1 C.2 - WATER CONTAINMENT PAD 1 - 0.75' OR 1.5' CRUSHER RUN LIMESTONE (2" THICK)	1,004	TONS
5.1 C.3 - WATER CONTAINMENT PAD 1 - GEOTEXTILE FABRIC (TERRA TEX HPG 37)	414	TONS
5.1 D.1 - WATER CONTAINMENT PAD 2 - #3 - #6 LIMESTONE (8" THICK)	3,937	SY
5.1 D.2 - WATER CONTAINMENT PAD 2 - 0.75' OR 1.5' CRUSHER RUN LIMESTONE (2" THICK)	1,507	TONS
5.1 D.3 - WATER CONTAINMENT PAD 2 - GEOTEXTILE FABRIC (TERRA TEX HPG 37)	621	TONS
5.1 E.1 - SEED & MULCH	9,809	SY
5.1 A - SITE SEEDING (LIME, FERTILIZER, SEEDING AND HYDRO MULCH w/TACK (HYC 2 OR EQUAL))	0.8	AC
5.1 B - HYDRO SEEDING - HYDRA CM	6,556	SY
5.1 C - HYDRO SEEDING - HYDRA CX	52,038	SY
7.1 - EXCAVATION		
7.1 A - TOPSOIL (ESTIMATED AT 12" DEEP)	28,539	CY
7.1 B - WELL PAD EXCAVATION (CUT TO FILL)	19,736	CY
7.1 C - WELL PAD EXCAVATION (EXPORT TO SPOIL AREA)	35,353	CY
7.1 D - WATER CONTAINMENT PAD 1 EXCAVATION (CUT TO FILL)	4,653	CY
7.1 E - WATER CONTAINMENT PAD 1 EXCAVATION (EXPORT TO SPOIL AREA)	22,261	CY
7.1 F - WATER CONTAINMENT PAD 2 EXCAVATION (CUT TO FILL)	9,791	CY
7.1 G - WATER CONTAINMENT PAD 2 EXCAVATION (EXPORT TO SPOIL AREA)	29,729	CY
7.1 H - ACCESS ROADS EXCAVATION (CUT TO FILL)	2,851	CY
7.1 I - ACCESS ROADS EXCAVATION (EXPORT TO SPOIL AREA)	21,261	CY
8.1 - PAD		
8.1 A - CONTAINMENT BERM	515	CY
8.1 B - SLUMPS (SEE "SLUMP SYSTEM DETAIL")	5	EA
8.1 C - 4" PVC SLUMP DRAIN PIPE (SEE "SLUMP SYSTEM DETAIL")	59	LF
8.1 D - PVC PIPE OUTLET PROTECTION - R 3 RIP RAP	357	TONS
9.1 - CROSS DRAIN CULVERTS		
9.1 A - 15' HDPE	270	LF
9.1 A - 24' HDPE	150	LF
9.1 B - FLARED END SECTION	5	EA
9.1 C - R 3 RIP RAP (INLETS/OUTLETS)	14	TONS
9.1 D - R 4 RIP RAP (INLETS/OUTLETS)	86	TONS
9.1 E - AASHTO #57 STONE (INLETS)	91	TONS
10.1 - FRENCH DRAINS		
10.1 A - 4" PERFORATED PIPE	871	LF
10.1 C - #57 STONE	5,228	SY
10.1 B - #6000 BBL MOBILE WATER CORRALS	1	EA
10.1 A - #6000 BBL MOBILE WATER CORRALS	1	EA
11.1 - MOBILE WATER CORRALS		
11.1 A - #6000 BBL MOBILE WATER CORRALS	1	EA
11.1 B - #6000 BBL MOBILE WATER CORRALS	1	EA
12.1 - GEOTECH		
12.1 A - PRIMARY GEOGRID (MIRAGRID 10XT)	130,608	SY
12.2 A - SECONDARY GEOGRID (MIRAGRID 2XT)	28,833	SY
TOE KEY EXCAVATION	30,984	CY
BONDING BENCH/COLLUVIUM EXCAVATION	37,271	CY
AASHTO #57 STONE (INCLUDES BENCH DRAIN & OUTLET DRAINS) - TOE KEY BONDING BENCH	5,335	TONS
6 OZ MIRAF 140N NON WOVEN GEOTEXTILE	15,311	SY
4" PERFORATED PVC PIPE	20,360	LF
4" SOLID PVC OUTLET PIPE	3,950	LF
TOE KEY / BONDING BENCH DRAIN OUTLET DIFFUSER (ODOT TYPE D @ R3 STONE)	34	TONS

GRADING	
CUT SLOPE	2:1*
FILL SLOPE	2:1*
SPOIL SWELL FACTOR	5%
WELL PAD RIG FOOT PRINT ELEVATION	969'
*UNLESS OTHERWISE NOTED	

CUT/FILL SLOPES	
EQUIPMENT PAD & ACCESS ROADS	2
MATERIAL SPOIL AREAS	2
TOPSOIL SPOIL AREA*	2

*THE TOPSOIL SPOIL AREA IS SHOWN AT 2H:1V SLOPE ANGLE AND WILL REQUIRE THE INSTALLATION OF GEOGRID REINFORCEMENT TO IMPROVE STABILITY. THE TOPSOIL MATERIAL IS EXPECTED TO BE HIGHLY VARIABLE AND DESPITE BENCHING, GEOGRID, AND DRAINAGE MAY EXHIBIT CHARACTERISTICS THAT RESULT IN SLOPE INSTABILITY. THE TOPSOIL SPOIL AREA MAY REQUIRE CONTINUED MAINTENANCE DURING AND AFTER CONSTRUCTION TO ADDRESS SLOPE STABILITY ISSUES. THE CONTRACTOR SHOULD BE DILIGENT TO REMOVE DELETERIOUS MATERIAL (I.E. STUMPS, ROOTS LARGER THAN 3 INCHES IN DIAMETER, ETC.) FROM THE TOPSOIL SPOIL AREA MATERIAL PRIOR TO PLACING IN LIFTS AND APPLYING A COMPACTIVE EFFORT.

CPT-10 WELL PAD QUANTITIES							
DESCRIPTION	CUT (CY)	FILL (CY)	SPOIL (CY)	BORROW (CY)	MAX SLOPE	LENGTH OF SLOPE	
WELL PAD	35089	39736	55353	N/A	N/A	N/A	N/A
WATER CONTAINMENT PAD 1	29914	4653	22261	N/A	N/A	N/A	N/A
WATER CONTAINMENT PAD 2	39580	9791	29729	N/A	N/A	N/A	N/A
MAIN ACCESS ROAD	14385	2851	11533	N/A	17.00%	130	
WATER CONTAINMENT ACCESS ROAD	5781	0	9781	N/A	16.41%	228	
WELL PAD ACCESS ROAD	3947	0	3947	N/A	7.68%	51	
TOPSOIL SPOIL AREA 1	0	28039	N/A	28039	N/A	N/A	N/A
MATERIAL SPOIL AREA 1	2901	36249	N/A	33349	N/A	N/A	N/A
MATERIAL SPOIL AREA 2	2546	30997	N/A	28451	N/A	N/A	N/A
MATERIAL SPOIL AREA 3	3066	41880	N/A	38814	N/A	N/A	N/A
TOTALS	194209	194197	128664	128653	N/A	N/A	N/A
*INCLUDES 5% SWELL							
TOTAL EXPORT (CY)			12				

CPT-10 Well Pad Utility Conflict Information (Truck #021235047)										
One Call Pinned on 07-11-2014										
UTILITY No.	Type	Owner	Contact Person	Owner Phone	Owner Address	Distance of Utility to LOD	Planned Distance of Utility Relocation	Station Numbers Affected	Comments	Estimated Cost for Relocation
1	Phone	Frontier Communications (Formerly Verizon)		1-800-921-8101 (Corporate)	214 Monroe St. Fairmont, WV 26534					
2	Gas	Columbia Gas Transmission - Clarkburg		1-800-835-7191 (Corporate)	445 W Main St. Clarkburg, WV 26301					
3	Gas	EQT Gathering, LLC		412-551-5700 (Corporate)	625 Liberty Ave. #1700 Pittsburgh, PA 15222	995 feet, 21' (8" Gas Line)		Gas Line - Enters LOD near STA 1+00, continues ENE and crosses Well Pad Access Road at STA 4+00, and ends approximately 35 feet past the access road.		
4	Electric	FirstEnergy Corp.		724-284-9536 (Corporate)	501 Hansen Ave. Butler, PA 16001	821 feet		Enters LOD near STA 0+00, continues ENE and crosses Main Access Road at STA 0+20, continues ENE to power pole, splits and exits LOD.	Overhead Electric	

KLEINFELDER
Bright People. Right Solutions.

230 Executive Drive, Suite 102
Clarkburg, West Virginia, PA 26301
Phone: 248-751-5075
www.kleinfelder.com

RECEIVED
Office of Oil and Gas
Department of Environmental Protection

ISSUED FOR CONSTRUCTION

SCALE VERIFICATION
THIS DRAWING IS 1"=100' IN LENGTH OR ORIGINAL DRAWING
IF THIS DRAWING IS 1"=100' IN LENGTH OR ORIGINAL DRAWING, SCALES ACCORDING TO

ORIGINAL DRAWING SIZE IS 24" x 36"

SCHEDULE OF QUANTITIES

CPT-10 WELL PAD
DODDRIDGE COUNTY
WEST VIRGINIA

EQT
Where energy meets innovation.

CONSTRUCTION

PROJECT NO.	137305
ISSUE DATE	06-08-2016
CURRENT REVISION	0
DESIGNED BY	AEK
DRAWN BY	CRN
CHECKED BY	JLF
APPROVED BY	NJA

PAP
6/17/16

470 1706752

GENERAL NOTES

1. EBT PRODUCTION COMPANY WILL OBTAIN AN INTERIM PERMIT FROM WEST VIRGINIA DIVISION OF HIGHWAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.
2. ANY DISCREPANCIES FOUND BETWEEN THE DRAWINGS AND SPECIFICATIONS AND SITE CONDITIONS OR ANY INCONSISTENCIES OR AMBIGUITIES IN THE DRAWINGS SHALL BE MADE CLARIFYING BY THE ENGINEER. IN WRITING. ANY WORKS WHICH ARE NOT SPECIFICALLY ADDRESSED BY THIS DRAWING SHALL BE MADE BY THE CONTRACTOR AFTER THE ENGINEER'S WORKING DRAWINGS HAVE BEEN SUBMITTED TO THE STATE AND SHALL BE DONE AT THE CONTRACTOR'S RISK AND COST.
3. WORK ON THIS PROJECT SHALL CONFORM TO THE LATEST EDITIONS OF THE WISCONSIN BEST MANAGEMENT PRACTICE MANUAL. IN THE EVENT OF CONFLICT BETWEEN THE EROSION SPECIFICATIONS OR PLANS AND THE MOST STRINGENT WELL DEVELOPER'S REQUIREMENTS, THE CONTRACTOR SHALL FOLLOW THE MOST STRINGENT REQUIREMENTS. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL PUBLIC OR PRIVATE UTILITIES WHICH WILL BE AFFECTED BY THE CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR AT HIS OR HER EXPENSE OF ALL EXISTING UTILITIES WHICH ARE DAMAGED OR DISRUPTED AS A RESULT OF THE CONSTRUCTION. THE CONTRACTOR SHALL CALL MISS UTILITIES AT WEST VIRGINIA AT 1-800-243-4444.
4. INSTALLATION OF CONCRETE CURBED METAL EDGE FORMS SHALL BE IN CONFORMANCE WITH THE SITE DRAWINGS.
5. ALL MATERIALS USED FOR FILL OR BACKFILL SHALL BE FREE OF WEEDS, ROCKS, Boulders, DEBRIS OR ANY OTHER NON-COMPACTABLE SOLIDS.
6. MATERIALS USED TO FILL OR BACKFILL STRUCTURES, UTILITIES, TRENCHES OR ANY OTHER DEPRESSION REQUIRING FILL OR BACKFILL SHALL BE COMPACTED TO 90% OF MAXIMUM DENSITY AS DETERMINED BY THE STANDARD PROCTOR TEST AS SET FORTH IN ASTM STANDARD D1557. THE MOISTURE CONTENT WILL BE CONTROLLED IN ACCORDANCE WITH THE LIMITS OF THE STANDARD PROCTOR TEST RESULTS. SOME SOILS MAY NOT BE COMPACTED TO 90% OF THE STANDARD PROCTOR TEST RESULTS. CONTRACTOR SHALL SUBMIT FIELD TEST RESULTS TO THE ENGINEER FOR REVIEW. THE CONTRACTOR SHALL SUBMIT THE RESULTS OF THE PROCTOR TEST TOGETHER WITH A CERTIFICATION THAT THE SOIL TESTS IS REPRESENTATIVE OF THE MATERIALS TO BE USED ON THE PROJECT. THE TESTS SHALL BE CONDUCTED BY A CERTIFIED MATERIALS TESTING LABORATORY AND THE CERTIFICATION MADE BY A LICENSED PROFESSIONAL ENGINEER REPRESENTING THE LABORATORY. THE CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH THE TESTING AND THE SUBMITTALS.
7. FILL SHALL BE PLACED IN LIFTS AT A MAXIMUM UNCOMPACTED DEPTH OF 12" WITH SOIL FREE FROM AGGREGATES EXCEEDING 1/8" DIAMETER.
8. ALL TEST RESULTS SHALL BE SUBMITTED TO THE ENGINEER. FAILURE TO CONDUCT DENSITY TESTS SHALL BE CAUSE FOR NON-ACCEPTANCE OF THE FACILITY. TESTS SHALL BE CONDUCTED AT THE SOLE COST OF THE CONTRACTOR OR HIS AGENT.
9. A PRE-CONSTRUCTION CONFERENCE SHALL BE HELD PRIOR TO THE START OF CONSTRUCTION.
10. SATISFACTORY MATERIALS FOR USE AS FILL FOR PAD AREAS INCLUDE MATERIALS CLASSIFIED AS SM OR DM#1 AS SHOWN ON THE GEOTECHNICAL REPORT. THE MOISTURE CONTENT SHALL BE CONTROLLED WITHIN PLUS OR MINUS 1% OF THE OPTIMUM W/2. THE CONTRACTOR SHALL SUBMIT LABORATORY TEST RESULTS FOR ALL MATERIALS CLASSIFIED AS SM OR DM#1 AS SHOWN ON THE GEOTECHNICAL REPORT TO THE ENGINEER. SOILS SHALL HAVE A MINIMUM DENSITY OF 100 PCF PER ASTM D1557 AND SHALL HAVE A PLASTICITY INDEX LESS THAN 12.
11. CONTRACTOR SHALL DEVELOP A SOIL EROSION AND SEDIMENT CONTROL PLAN (SEMP) SUBMITTED TO WVDNR. IT SHOULD NOT BE REQUIRED. THE SOIL EROSION AND SEDIMENT CONTROL PLAN SHALL BE APPROVED BY WVDNR DURING CONSTRUCTION.
12. SOILWORK FILL PLANS SHALL BE GREATER THAN 300.

13. SEDIMENT BARRIERS AND TRAP PERIMETER DYES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED IMMEDIATELY UPON GRADING AND SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION. SEDIMENT TRAPPING AND DISPOSAL SHALL BE FACILITATED BY USING GRASS OR HAYBARRS. THE MOISTURE CONTENT IS REDUCED TO AN ACCEPTABLE LEVEL. WHEN THE SOIL IS TOO DRY WATER MAY BE UNIFORMLY APPLIED TO THE LAYER TO BE COMPACTED.
14. THE FILL CUTSLOPE SHALL BE OVERBUILT AND TRIMMED BACK TO THE DESIGN CONTOUR AFTER PROPER COMPACTION.
15. THE ACCESS ROAD SHALL BE CONSTRUCTED UP TO THE PROPOSED ROAD. THE ACCESS ROAD SHALL RECEIVE A STONE SURFACE.
16. INSTALL OVERBUILT THREE ACCESS ROADS: AREA PAD, TWO WATER CONTAINMENT PAD, ONE TOPSOIL, SPOIL AREA AND FOUR MATERIAL SPOIL AREAS.
17. GULCHES, SWALES AND COLLECTOR TRENCHES SHALL BE CONSTRUCTED IMMEDIATELY UPON PLACEMENT OF INFILTS AND COLLECTORS. INSTALLATION OF MATING AND ANCHOR BOLTS SHALL BE DONE BY THE CONTRACTOR.
18. REPAIR AND OUTLET PROTECTION SHALL BE HARD ANGLE AND OF A QUALITY RESISTANT TO WEATHER AND OF A QUALITY RESISTANT TO DAMAGE FROM TRUCKS. THE MAXIMUM TIRE DIAMETER SHALL NOT EXCEED 24 INCHES.
19. SIDE SLOPE STABILIZATION MATING AND STABILIZATION SHALL OCCUR AS SOON AS POSSIBLE.
20. AT THE END OF EACH WORK DAY WHERE THE FACILITY HAS BEEN GRADED INCLUDING ANY STREPPING, STUMPING, LEAVING OR INSTALLATION OF MATING AND ANCHOR BOLTS, THE CONTRACTOR TO LEAVE THE JOB SITE AT THE END OF THE WORK DAY IN A CLEAN AND ORDERLY MANNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH THE CLEANUP AND MAINTENANCE OF THE FACILITY.
21. PHOTOGRAPHIC DOCUMENTATION SHALL BE TAKEN BY THE CONTRACTOR AND PROVIDED TO THE ENGINEER OF THE FOLLOWING ACTIVITIES:
 - SITE AFTER CLEANING AND GRADING
 - THE SITE AFTER TOPSOIL REPAIR
 - THE TIE-IN AND PARALLEL TRENCH CONSTRUCTION
 - DAILY PROGRESS OF CUT AND FILL OPERATIONS
 - PROGRESSIVE SITE VISITS
22. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH A COMPLETE BINDER THAT INCLUDES ALL PHOTO DOCUMENTATION. ALL PHOTO DOCUMENTATION SHALL BE IN THE FORM OF ALL CUT AND FILL VOLUMES IN CUBIC YARDS.
23. WHEN A FILL OR GRAD IS ACHIEVED, TOPSOIL TO BE PLACED ON ALL DISTURBED AREAS NOT YET TO BE FULFILLED WITH FILL OR GRAD SHALL BE PLACED ON ALL DISTURBED AREAS AS SOON AS POSSIBLE. THE SOIL SAMPLES SHALL BE TAKEN IN ACCORDANCE WITH THE REQUIREMENTS OF THE WISCONSIN BEST MANAGEMENT PRACTICE MANUAL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH THE TESTING AND THE SUBMITTALS.
24. FERTILIZER AND SEED SHALL BE APPLIED TO ALL DISTURBED AREAS AS SOON AS POSSIBLE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH THE TESTING AND THE SUBMITTALS.
25. FINAL SITE INSPECTION.

SEQUENCE OF BMP INSTALLATION AND REMOVAL

CONSTRUCTION MUST BE IN ACCORDANCE WITH THE FOLLOWING SEQUENCE. THIS SEQUENCE IS DESIGNED TO MINIMIZE SOIL EROSION AND SEDIMENTATION. THE CONTRACTOR MAY VARY SEQUENCE FROM THE STATED ORDER OF BMP IMPLEMENTATION, BUT NO DEVIATION FROM THE RELATIVE ORDER OF EROSION AND SEDIMENTATION CONTROL MEASURES WILL BE ALLOWED.

THE SEQUENCE OF EROSION CONTROL MEASURES FOR THIS PROJECT IS AS GENERAL DESCRIPTION OF THE WORK REQUIRED. ALL WORK SHALL BE IN ACCORDANCE WITH THE WISCONSIN BEST MANAGEMENT PRACTICE MANUAL AND ALL OTHER APPLICABLE FEDERAL, STATE OR LOCAL REQUIREMENTS.

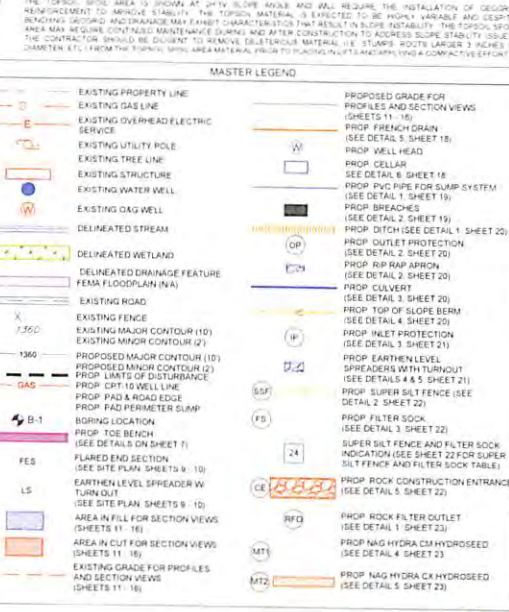
THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN IS LEGALLY THE SOLE BASIS FOR ALL EROSION AND SEDIMENTATION CONTROL MEASURES. ANY CHANGES TO THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN SHALL BE MADE IMMEDIATELY TO ENSURE EFFECTIVE AND EFFICIENT OPERATION.

1. A PRE-CONSTRUCTION CONFERENCE SHALL BE HELD ON SITE WITH CONTRACTOR TO REVIEW THE CONSTRUCTION DRAWINGS AND PROCEED ANY REQUIRED PERMITS.
2. THE THREE ACCESS ROADS: AREA PAD, TWO WATER CONTAINMENT PAD, ONE TOPSOIL, SPOIL AREA AND FOUR MATERIAL SPOIL AREAS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CONSTRUCTION SPECIFICATIONS AND THE SCOPE OF WORK AND SHALL BE CONFORMED TO ALL LOCAL, STATE AND FEDERAL REQUIREMENTS.
3. STATE-CLASSIFIED DISTURBED WORK AREAS: CLEAR, IDENTIFY THE VEGETATION AND STREAM EDGES AND BARRIERS. INSTALL SIGNS TO DESIGNATE THE AREAS TO BE CLEARED, IDENTIFY THE VEGETATION WHICH IS PROTECTED BY FEDERAL, STATE AND LOCAL REQUIREMENTS AND LOCAL REGULATIONS, ETC.
4. CONSTRUCT THE CONSTRUCTION ENTRANCE.
5. CONSTRUCT ALL PROPOSED SEDIMENT CONTROL DEVICES AS SOON AS CLEANING AND GRUBBING OPERATIONS ALLOW. DEVELOPMENT AND SEDIMENT BARRIERS SHOULD BE INSTALLED IMMEDIATELY. THE CONTRACTOR SHALL INSTALL WATER BEST MANAGEMENT PRACTICE MANUAL. SURFACE WATER SHALL BE DIVERTED AWAY FROM ALL EXCAVATIONS WITH CURBS OR DITCHES TO PREVENT FLOODING AND SOFTENING OF THE SUBGRADE OR COMPACTED MATERIALS.
6. PRIOR TO GRADING OR OTHER EARTH DISTURBANCE ON THE PARCEL, PERMANENT DOWN-SLOPE BARRIERS ARE TO BE INSTALLED.
7. CLEAR AND REMOVE TOPSOIL AND PLACE AS SHOWN ON THE PLANS. TOPSOIL STOCKPILE TO BE SEEDED AND MULCHED. EROSION CONTROL MATS SHALL BE INSTALLED IMMEDIATELY UPON CLEARING AND GRUBBING. ALL EXISTING TREES, SHRUBS AND PLANTS SHALL BE PRESERVED OR REMOVED IMMEDIATELY. THE CONTRACTOR SHALL REMOVE ALL EXISTING TREES, SHRUBS AND PLANTS WHICH ARE NOT TO BE PRESERVED. THE CONTRACTOR SHALL REMOVE ALL EXISTING TREES, SHRUBS AND PLANTS WHICH ARE NOT TO BE PRESERVED. THE CONTRACTOR SHALL REMOVE ALL EXISTING TREES, SHRUBS AND PLANTS WHICH ARE NOT TO BE PRESERVED. THE CONTRACTOR SHALL REMOVE ALL EXISTING TREES, SHRUBS AND PLANTS WHICH ARE NOT TO BE PRESERVED.
8. TOP SOIL SHALL BE STRIPPED AND STOCKPILED WITH APPROPRIATE STABILIZATION TO PREVENT EROSION. THE TOP SOIL SHALL BE REUSED DURING THE RECLAMATION PROCESS AS SHOWN.
9. GRADING OPERATIONS ARE REQUIRED. CUT SLOPES AND ALL SLOPES SHALL BE TOPSOILED AS NEEDED. DITCH LINES SHALL BE CLEANED. ALL DITCHES SHALL HAVE AT LEAST SMALL VEGETATION PROTECTION AND AS SHOWN ON THE PLANS.
10. ALL FILL SHALL BE PLACED IN LIFTS OF UP TO 12" AND SHALL BE COMPACTED TO AT LEAST 90% OF MAXIMUM DENSITY AS DETERMINED BY THE STANDARD PROCTOR TEST METHOD (ASTM D1557). THE MOISTURE CONTENT WILL BE CONTROLLED IN ACCORDANCE WITH THE LIMITS OF THE STANDARD PROCTOR TEST RESULTS. SOME SOILS CANNOT BE COMPACTED TO 90% OF THE STANDARD PROCTOR TEST RESULTS. CONTRACTOR SHALL SUBMIT FIELD TEST RESULTS TO THE ENGINEER FOR REVIEW. THE CONTRACTOR SHALL SUBMIT THE RESULTS OF THE PROCTOR TEST TOGETHER WITH A CERTIFICATION THAT THE SOIL TESTS IS REPRESENTATIVE OF THE MATERIALS TO BE USED ON THE PROJECT. THE TESTS SHALL BE CONDUCTED BY A CERTIFIED MATERIALS TESTING LABORATORY AND THE CERTIFICATION MADE BY A LICENSED PROFESSIONAL ENGINEER REPRESENTING THE LABORATORY. THE CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH THE TESTING AND THE SUBMITTALS.
11. ON-SITE FILL SHALL BE USED TO THE MAXIMUM EXTENT POSSIBLE. ANY IMPORTED FILL SHALL BE CERTIFIED BY THE CONTRACTOR OR WITH A SMALL TOOTH HAMMER. WHEN THE CONTRACTOR SHALL CONTACT THE ENGINEER AND WILL VISIT THE SITE AND DETERMINE IF THE MATERIAL MAY BE USED AS IS OR MUST BE REMOVED BY OTHER MEANS. IF UNUSUAL SOLIDS IN THE SUBGRADE ARE FOUND THEY SHALL BE IMMEDIATELY REMOVED AND REPAIRED WITH APPROPRIATE FILL AT THE ENGINEER'S DISCRETION.
12. IF SPRINGS OR SEEPS ARE ENCOUNTERED, SUBSURFACE DRAINAGE FEATURES SHALL BE INSTALLED PRIOR TO FINAL PLACEMENT. CONTACT ENGINEER FOR EVALUATION AND RECOMMENDATION OF DRAINAGE MEASURES.
13. THE FILL TO BE USED FOR ALL EMBANKMENTS SHALL BE BLENDED OR MIXED INTO THE NATURAL SOIL. ALL FILL TO BE USED SHALL BE SUPPORTED BY A COMPLETE RECORD OF SOIL MATERIAL.
14. FILL PLACED AGAINST EXISTING SLOPES SHALL BE BLENDED INTO THE EXISTING MATERIAL PER DETAILS ON SHEET 7. DURING ALL PLACEMENT TO REINFORCE THE POTENTIAL FOR DEBRIS OR FILL TO BE PLACED AT A SMOOTH INTERFACE BETWEEN THE FILL AND EXISTING SOIL.
15. ANY SOFT AREAS SHALL BE COVER EXCAVATED TO A FIRM MATERIAL AND BACKFILLED WITH A WELL COMPACTED STRUCTURAL FILL.
16. ALL REQUIRED TOPSOIL, DRAPES, SLOPE STABILIZATION, MULCH, PROTECTIVE MATERIALS AND REESES OF ROCK GREATER THAN 4" IN ANY DIMENSION.
17. DURING PLACEMENT OF MATERIAL, MOISTEN OR ABATE EACH LAYER OF FILL AS NECESSARY TO OBTAIN THE REQUIRED COMPACTION. FILL SHOULD BE PLACED AT THE RATE AND MOISTURE OR FILL OR HAVE NOT BEEN APPROVED BY THE CONTRACTOR OPERATIONS.
18. SOIL MATERIAL WHICH IS REMOVED BECAUSE IT IS TOO MOIST TO PERMIT PROPER COMPACTION SHALL BE SPREAD AND ALLOWED TO

19. DRY DRAYS CAN BE FACILITATED BY USING GRASS OR HAYBARRS. THE MOISTURE CONTENT IS REDUCED TO AN ACCEPTABLE LEVEL. WHEN THE SOIL IS TOO DRY WATER MAY BE UNIFORMLY APPLIED TO THE LAYER TO BE COMPACTED.
20. THE FILL CUTSLOPE SHALL BE OVERBUILT AND TRIMMED BACK TO THE DESIGN CONTOUR AFTER PROPER COMPACTION.
21. THE ACCESS ROAD SHALL BE CONSTRUCTED UP TO THE PROPOSED ROAD. THE ACCESS ROAD SHALL RECEIVE A STONE SURFACE.
22. INSTALL OVERBUILT THREE ACCESS ROADS: AREA PAD, TWO WATER CONTAINMENT PAD, ONE TOPSOIL, SPOIL AREA AND FOUR MATERIAL SPOIL AREAS.
23. GULCHES, SWALES AND COLLECTOR TRENCHES SHALL BE CONSTRUCTED IMMEDIATELY UPON PLACEMENT OF INFILTS AND COLLECTORS. INSTALLATION OF MATING AND ANCHOR BOLTS SHALL BE DONE BY THE CONTRACTOR.
24. REPAIR AND OUTLET PROTECTION SHALL BE HARD ANGLE AND OF A QUALITY RESISTANT TO WEATHER AND OF A QUALITY RESISTANT TO DAMAGE FROM TRUCKS. THE MAXIMUM TIRE DIAMETER SHALL NOT EXCEED 24 INCHES.
25. SIDE SLOPE STABILIZATION MATING AND STABILIZATION SHALL OCCUR AS SOON AS POSSIBLE.
26. AT THE END OF EACH WORK DAY WHERE THE FACILITY HAS BEEN GRADED INCLUDING ANY STREPPING, STUMPING, LEAVING OR INSTALLATION OF MATING AND ANCHOR BOLTS, THE CONTRACTOR TO LEAVE THE JOB SITE AT THE END OF THE WORK DAY IN A CLEAN AND ORDERLY MANNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH THE CLEANUP AND MAINTENANCE OF THE FACILITY.
27. PHOTOGRAPHIC DOCUMENTATION SHALL BE TAKEN BY THE CONTRACTOR AND PROVIDED TO THE ENGINEER OF THE FOLLOWING ACTIVITIES:
 - SITE AFTER CLEANING AND GRADING
 - THE SITE AFTER TOPSOIL REPAIR
 - THE TIE-IN AND PARALLEL TRENCH CONSTRUCTION
 - DAILY PROGRESS OF CUT AND FILL OPERATIONS
 - PROGRESSIVE SITE VISITS
28. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH A COMPLETE BINDER THAT INCLUDES ALL PHOTO DOCUMENTATION. ALL PHOTO DOCUMENTATION SHALL BE IN THE FORM OF ALL CUT AND FILL VOLUMES IN CUBIC YARDS.
29. WHEN A FILL OR GRAD IS ACHIEVED, TOPSOIL TO BE PLACED ON ALL DISTURBED AREAS NOT YET TO BE FULFILLED WITH FILL OR GRAD SHALL BE PLACED ON ALL DISTURBED AREAS AS SOON AS POSSIBLE. THE SOIL SAMPLES SHALL BE TAKEN IN ACCORDANCE WITH THE REQUIREMENTS OF THE WISCONSIN BEST MANAGEMENT PRACTICE MANUAL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH THE TESTING AND THE SUBMITTALS.
30. FERTILIZER AND SEED SHALL BE APPLIED TO ALL DISTURBED AREAS AS SOON AS POSSIBLE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH THE TESTING AND THE SUBMITTALS.
31. FINAL SITE INSPECTION.

CONSTRUCTION NOTATIONS

1. THE CONSTRUCTION DOCUMENTS SHOW THE EXISTING AND PROPOSED CONDITIONS THAT ALL CUT AND FILL ESTIMATES ARE BASED UPON. THE ENGINEER'S ESTIMATE OF THE QUANTITIES AND ONLY ESTIMATE AND MAY CHANGE BASED ON ACTUAL FIELD CONDITIONS.
2. THE GRADE, WEIGHT, DEPTH AND DIMENSIONS MAY VARY BASED ON ACTUAL FIELD CONDITIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE GRADE, WEIGHT, DEPTH AND DIMENSIONS AND NECESSARY TO MEET FIELD CONDITIONS.
3. THE CONTRACTOR SHALL PROVIDE THE ENGINEER ALL REASONABLE FACILITIES AND PROVIDE INFORMATION AND SAMPLES AS REQUIRED BY THE ENGINEER FOR PROPER MAINTENANCE AND TESTING OF MATERIALS. INFORMATION AND SAMPLES AS REQUIRED BY THE ENGINEER FOR PROPER MAINTENANCE AND TESTING OF MATERIALS. INFORMATION AND SAMPLES AS REQUIRED BY THE ENGINEER FOR PROPER MAINTENANCE AND TESTING OF MATERIALS.
4. THE CONTRACTOR SHALL HAVE ON SITE AT ALL TIMES WHEN CONSTRUCTION IS IN PROGRESS A COMPETENT SUPERVISOR WHO IS FAMILIAR WITH THE CONSTRUCTION OF EARTH RETENTION AND EMBANKMENTS. THE CONTRACTOR SHALL HAVE ON SITE AT ALL TIMES WHEN CONSTRUCTION IS IN PROGRESS A COMPETENT SUPERVISOR WHO IS FAMILIAR WITH THE CONSTRUCTION OF EARTH RETENTION AND EMBANKMENTS. THE CONTRACTOR SHALL HAVE ON SITE AT ALL TIMES WHEN CONSTRUCTION IS IN PROGRESS A COMPETENT SUPERVISOR WHO IS FAMILIAR WITH THE CONSTRUCTION OF EARTH RETENTION AND EMBANKMENTS.
5. THE TOPSOIL, SPOIL AREA IS SHOWN AT 24" VERTICAL SLOPE AND ALL AREAS SHALL REQUIRE THE INSTALLATION OF SEDIMENT BARRIERS, TRAP PERIMETER DYES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH THE TESTING AND THE SUBMITTALS.



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Cary, NC 27513
Phone: 704.772.1234
www.kleinfelder.com

REGISTERED PROFESSIONAL ENGINEER
STATE OF NORTH CAROLINA
No. 11626
EXPIRES 12/31/2021

Office of Oil and Gas

RECEIVED

Office of Oil and Gas

DESIGNED BY: JAMES R. FREED
CHECKED BY: JAMES R. FREED
DATE: 06/08/2016

WV Department of Environmental Protection

06/08/2016

APPROVED BY: M.A. SHEET 2 OF 2

ISSUED FOR CONSTRUCTION

SCALE VERIFICATION

THIS IS A 1" = 40' HORIZONTAL SCALE.

1" = 40'

1" = 40'

ORIGINAL DRAWING SIZE IS 11" x 17"

NOTES AND MASTER LEGEND

CPT-10 WELL PAD
DODD/RIDGE COUNTY
WEST VIRGINIA

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CONSTRUCTION

PROJECT NO.	17379
ISSUE DATE	06/08/2016
DRAWING REVISION NO.	2
DESIGNED BY	AEF
CHECKED BY	CAF
APPROVED BY	M.A.

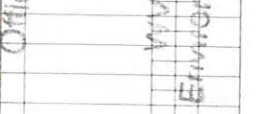
3

06/08/2016

4701706752



Office of Oil and Gas
DESIGNED BY: JOSHUA D. FROST, M.S., P.E.
REVISIONS: [table with 2 columns: NO., DESCRIPTION]
DATE: [table with 2 columns: NO., DATE]
DRAWN BY: [table with 2 columns: NO., NAME]
CHECKED BY: [table with 2 columns: NO., NAME]



ISSUED FOR CONSTRUCTION

SCALE VERIFICATION
THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING
IF IT'S NOT 1 INCH ON THIS SHEET ADJUST YOUR SCALES ACCORDINGLY

0 100 200 300
SCALE 1" = 100'
SCALE IN FEET
ORIGINAL DRAWING SIZE 15.22 x 34

EXISTING CONDITIONS
CPT-10 WELL PAD
DODDRIDGE COUNTY
WEST VIRGINIA

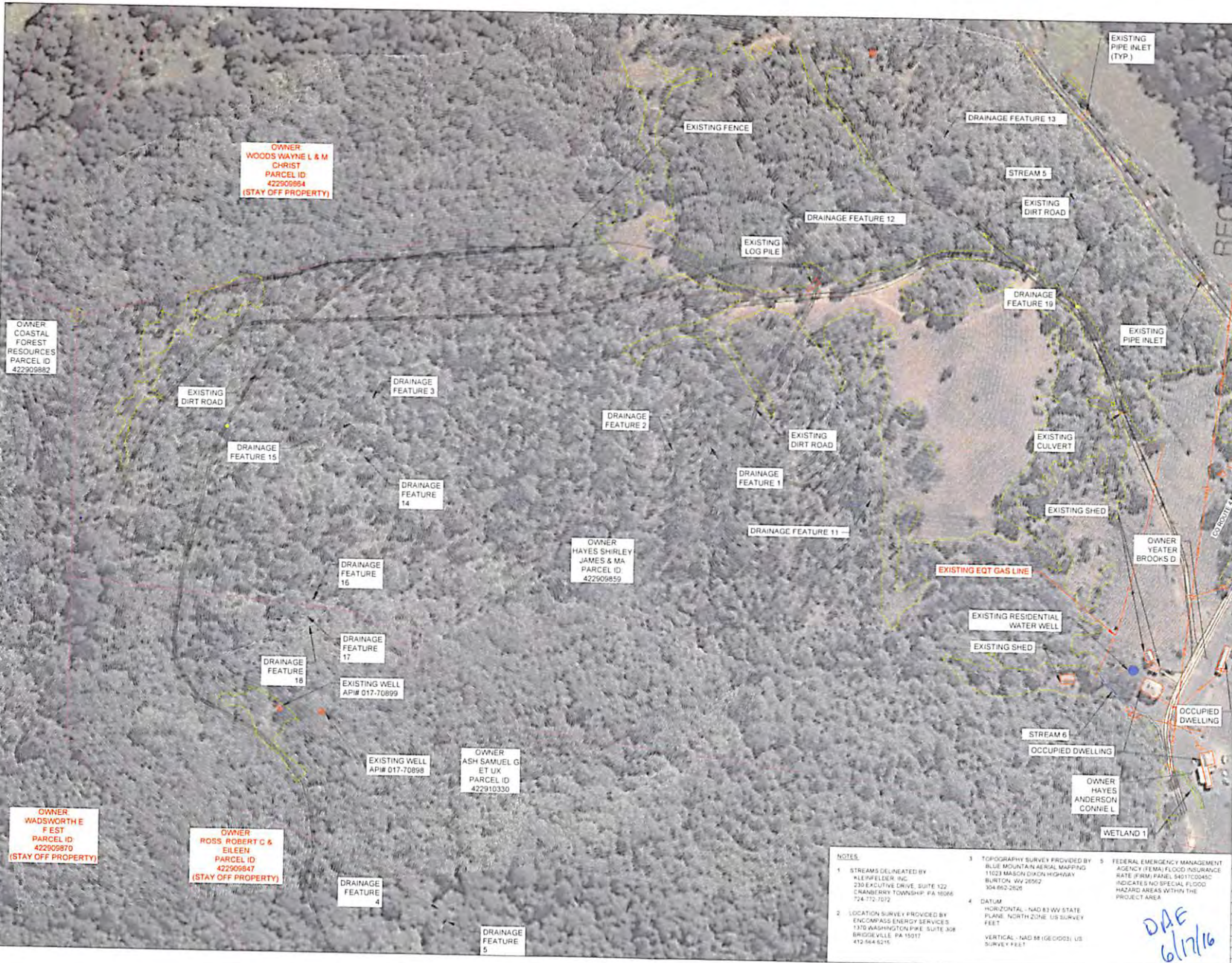


CONSTRUCTION	
PROJECT NO.	137355
ISSUE DATE	06/08/2016
CURRENT REVISION	0
DESIGNED BY	AEF
DRAWN BY	CRH
CHECKED BY	JCF
APPROVED BY	MJA
SHEET	4 OF 25

DAE
6/17/16

NOTES

1. STREAMS DELINEATED BY KLEINFELDER, INC. 230 EXECUTIVE DRIVE, SUITE 122 CHANBERS TOWNSHIP, PA 16066 174.772.1912
2. LOCATION SURVEY PROVIDED BY ENCOMPASS ENERGY SERVICES 1370 WASHINGTON PIKE, SUITE 308 BRIDGEVILLE, PA 15017 412.944.8215
3. TOPOGRAPHY SURVEY PROVIDED BY BLUE MOUNTAIN AERIAL MAPPING 11023 MASON DITCH HIGHWAY BUNTON, WV 25912 304.692.2008
4. DATUM HORIZONTAL - NAD 83 WV STATE PLANE NORTH ZONE US SURVEY FEET VERTICAL - NAD 83 BRIDGEVILLE US SURVEY FEET
5. FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE (FIRM) PANEL S40100040C INDICATES NO SPECIAL FLOOD HAZARD AREAS WITHIN THE PROJECT AREA



DATE: 6/17/16 10:00 AM
PROJECT: BRIDGEVILLE, WV
DRAWN BY: CRH
CHECKED BY: JCF
APPROVED BY: MJA

4701706752

LIMIT OF DISTURBANCE			
DESCRIPTION	AREA (ACRES)	AFFECTED TAX PARCELS	
WELL PAD	7.94	HAYES SHIRLEY JAMES & MA PARCEL ID: 422909859	
WATER CONTAINMENT PAD 1	2.38		
WATER CONTAINMENT PAD 2	2.42		
MAIN ACCESS ROAD	4.60		
WELL PAD ACCESS ROAD	0.30		
WATER CONTAINMENT PAD ACCESS ROAD	0.94		
MATERIAL SPOIL AREA 1	2.98		
MATERIAL SPOIL AREA 2	2.57		
MATERIAL SPOIL AREA 3	2.69		
TOPSOIL SPOIL AREA 1	2.24		
TOTAL	29.06		
TOTAL WOODED AREA	19.10		
TOTAL LINEAR FOOTAGE OF MAIN ACCESS ROAD	1553		
TOTAL LINEAR FOOTAGE OF WELL PAD ACCESS ROAD	104		
TOTAL LINEAR FOOTAGE OF WATER CONTAINMENT PAD ACCESS ROAD	361		

OWNER:
WADSWORTH E F EST
PARCEL ID: 422909870
(STAY OFF PROPERTY)

OWNER:
COASTAL FOREST
RESOURCES
PARCEL ID: 422909882

OWNER:
ROSS, ROBERT C & EILEEN
PARCEL ID: 422909847
(STAY OFF PROPERTY)

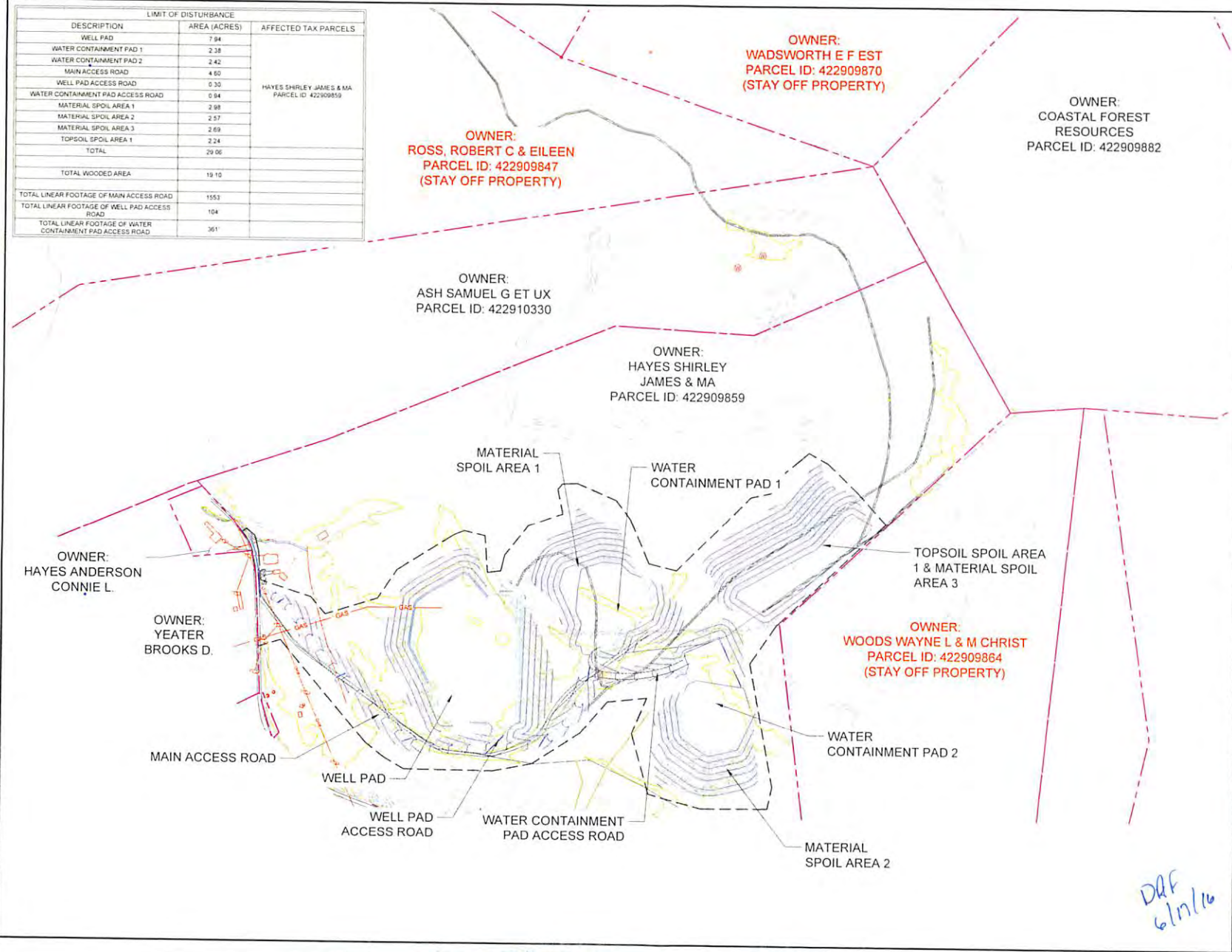
OWNER:
ASH SAMUEL G ET UX
PARCEL ID: 422910330

OWNER:
HAYES SHIRLEY
JAMES & MA
PARCEL ID: 422909859

OWNER:
HAYES ANDERSON
CONNIE L.

OWNER:
YEATER
BROOKS D.

OWNER:
WOODS WAYNE L & M CHRIST
PARCEL ID: 422909864
(STAY OFF PROPERTY)



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JUN 11 2016
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SCALE VERIFICATION
THIS BAR IS 1 INCH IN LENGTH
(ON ORIGINAL DRAWING)

IF IT IS NOT 1 INCH ON THIS
SHEET AGAINST YOUR
SCALE'S ACCORDINGLY

0 150 300 450
SCALE 1" = 150' SCALE IN FEET

ORIGINAL DRAWING SIZE IS 22 x 34

TAX MAP
CPT. 10 WELL PAD
DODDRIDGE COUNTY
WEST VIRGINIA

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CONSTRUCTION	
PROJECT NO.	19730
ISSUE DATE	06/08/2016
CURRENT REVISION	5
DESIGNED BY	AJR
DRAWN BY	ERH
CHECKED BY	JDF
APPROVED BY	MJA

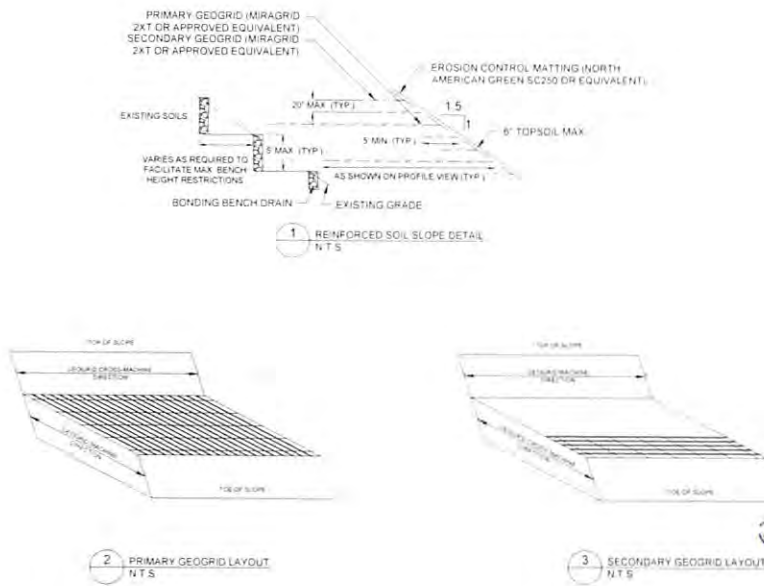
DGF
6/17/16

DATE: 06/08/2016 10:47:11 AM BY: JDF

GEOTECHNICAL SPECIFICATIONS

- THE CONTRACTOR ACKNOWLEDGES SATISFACTION AS TO THE NATURE AND LOCATION OF THE WORK, THE GENERAL AND LOCAL CONDITIONS, PARTICULARLY THOSE BEARING UPON TRANSPORTATION, DISPOSAL, HANDLING, AND STORAGE OF MATERIALS, AVAILABILITY OF LABOR, WATER, ELECTRIC POWER, ROADS AND UNCERTAINTIES OF WEATHER, GROUNDWATER TABLE, OR SIMILAR PHYSICAL CONDITIONS AT THE SITE, THE COMPOSITION OF SUBSURFACE MATERIALS TO BE EXCAVATED, THE PRESENCE AND LOCATION OF OBSTACLES, AND THE LOCATION OF UTILITIES, EQUIPMENT AND FACILITIES NEEDED PRIOR TO AND DURING THE PERFORMANCE OF THE WORK AND ALL OTHER MATTERS WHICH CAN IN ANY WAY AFFECT THE WORK OR THE COST THEREOF. UNDER THIS CONTRACT ANY FAILURE BY THE CONTRACTOR TO ACCQUANT ITSELF WITH ALL AVAILABLE INFORMATION OR CONDUCT INVESTIGATIONS TO ITS OWN SATISFACTION CONCERNING THESE CONDITIONS WILL NOT RELIEVE IT FROM RESPONSIBILITY FOR ESTIMATING PROPERLY THE DIFFICULTY OR COST OF SUCCESSFULLY PERFORMING THE WORK.
- REFER TO BORING LOGS AND TESTING DATA ON SHEETS CONTAINED IN GEOTECHNICAL REPORT
- CONTRACTOR SHALL DEMOLISH AND ALTER EXISTING FACILITIES, REMOVE SALVAGE, OR OTHERWISE DISPOSE OF MINOR SITE IMPROVEMENTS AS INDICATED ON DRAWINGS, AS SPECIFIED, AND AS DIRECTED BY ENGINEER
- EXISTING ENVIRONMENTAL CONTAMINATION IS NOT EXPECTED, HOWEVER, IF ENCOUNTERED, THE CONTRACTOR SHALL TRANSPORT AND DISPOSE OF ALL EXCAVATED SOIL/FILL AND WASTE MATERIAL IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS
- CONTRACTOR SHALL DESIGN, FURNISH, OPERATE, MAINTAIN, AND REMOVE TEMPORARY Dewatering SYSTEMS TO CONTROL GROUNDWATER (IF ENCOUNTERED) AND SURFACE WATER TO MAINTAIN STABLE, UNDISTURBED SUBGRADES AND PERMIT WORK TO BE PERFORMED UNDER DRY AND STABLE CONDITIONS
- CONTRACTOR SHALL DESIGN, FURNISH, AND INSTALL TEMPORARY EXCAVATION SUPPORT SYSTEMS AS REQUIRED TO MAINTAIN LATERAL SUPPORT PREVENT LOSS OF GROUND, LIMIT SOIL MOVEMENTS TO ACCEPTABLE LIMITS AND PROTECT FROM DAMAGE EXISTING AND PROPOSED IMPROVEMENTS, INCLUDING, BUT NOT LIMITED TO, PIPELINES, UTILITIES, STRUCTURES, ROADWAYS, AND OTHER FACILITIES. CONTRACTOR SHALL SUBMIT A TEMPORARY EXCAVATION SUPPORT PLAN STAMPED AND SIGNED BY A REGISTERED PROFESSIONAL ENGINEER AT LEAST TWO WEEKS PRIOR TO THE START OF THE CONSTRUCTION.
- GENERAL LOAD BEARING FILL REQUIREMENTS**
GENERAL LOAD BEARING FILL SHALL CONSIST OF OR A COMBINATION OF GW, DP, DM, GC, DW, SP, SM, SC, MI, MH, CH AND CL MATERIALS AS CLASSIFIED BY ASTM D 1586 AND CL CLASSIFICATIONS PERMIT THE USE OF SELECT ON SITE SOILS PROVIDED THE MOISTURE CONTENT IS WITHIN OR CONDITIONED TO BE WITHIN THE ALLOWABLE MOISTURE CONTENT RANGE. GENERAL LOAD BEARING FILL SHALL CONSIST OF INORGANIC AND READILY COMPACTABLE SITE SOILS, INERT RUBBLE, OR ROCK FRAGMENTS, GENERALLY, FRAGMENTS LARGER THAN EIGHT INCHES (AND DIMENSION) SHALL BE EXCLUDED FROM GENERAL LOAD BEARING FILL. AT THE DISCRETION OF THE ON SITE REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER, FLAT PIECES OF BROKEN ROCK LARGER THAN 8 INCHES IN LENGTH AND WIDTH MAY BE PLACED AS FILL, PROVIDED THE ROCK FRAGMENTS ARE LAIN FLAT PARALLEL WITH THE GROUND SURFACE, THERE IS A COVER OF AT LEAST 2 FEET OF FILL REMAINING, AND CARE IS TAKEN TO PREVENT FOGS FROM OCCURRING, TO PREVENT VOIDING FROM OCCURRING, THE LARGEST AT LEAST 1 INCHES ROCK PIECES MUST BE SURROUNDED BY SOIL. FULL TIME OBSERVATION BY THE GEOTECHNICAL ENGINEER IS REQUIRED WHERE LARGE ROCK FRAGMENTS ARE USED IN FILL. SEE NOTE 12 FOR COMPACTATION REQUIREMENTS.
- DRAINABLE LOAD BEARING FILL**
RECOMMENDED FOR FILLS WHERE SPRINGS AND/OR PERCHED GROUNDWATER IS OBSERVED. DRAINABLE LOAD BEARING FILL SHALL CONSIST OF OR A COMBINATION OF GW, GP, SW, AND SP MATERIALS AS CLASSIFIED BY ASTM 2487. ON-SITE SOILS ARE NOT EXPECTED TO MEET THE REQUIREMENTS OF DRAINABLE LOAD BEARING FILL. WE RECOMMEND THAT SANDSTONE 37 STONE OR APPROVED EQUIVALENT BE CONSIDERED FOR USE. DRAINABLE LOAD BEARING FILL LAYERS SHALL BE AT LEAST 12 INCHES THICK AND COVERED WITH GEOTEXTILE TO SEPARATE THE DRAINABLE LOAD BEARING FILL FROM THE GENERAL OR SELECT LOAD BEARING FILL PLACED ON TOP OF IT. WHENEVER DRAINABLE LOAD BEARING FILL IS USED IT MUST DRAIN LIGHT THROUGH THE TOE OF FILL SLOPE TO RELIEVE POTENTIAL BUILDUP OF HYDROSTATIC PRESSURE BEHIND FILL SLOPES. SEE NOTE 1 FOR COMPACTON REQUIREMENTS.
- OVER-SIZED FILL MATERIAL**
OVER SIZED MATERIALS CAN BE PLACED AS ROCK FILLS PROVIDED THERE IS CLOSE COLLABORATION BETWEEN THE OWNER, CONTRACTOR, AND GEOTECHNICAL ENGINEER TO IDENTIFY SUITABLE AREAS FOR PLACEMENT OF THE OVERSIZED MATERIAL AND TO ACHIEVE ADEQUATE PERFORMANCE OF THE FILL. THE FOLLOWING GENERAL FRAMEWORK IS RECOMMENDED REGARDING ROCK FILLS:
 - MAXIMUM PARTICLE SIZE OF 24 INCHES (ANY DIMENSION)
 - MAXIMUM LIFT THICKNESS 6 INCHES GREATER THAN THE MAXIMUM PARTICLE SIZE.
 - MAXIMUM SOIL CONTENT OF 20 PERCENT
 - THE MATERIAL, TYPE AND METHODS OF PLACEMENT, COMPACTON, AND EVALUATION WILL NEED TO BE DEVELOPED DURING CONSTRUCTION BY THE TEAM AND ADJUSTED AS NECESSARY TO ACHIEVE A STABLE FILL.
- IF IMPORTED FILLS ARE NECESSARY, IMPORTED SOILS SHALL MEET THE REQUIREMENTS OF TABLE B AND BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO DELIVERY TO THE SITE.
- LOAD BEARING FILLS SHALL BE PLACED ON A STABLE, NEAR LEVEL SUBGRADE PREPARED BY THE REMOVAL OF UNSUITABLE SOIL DEPOSITS AND APPROVED BY THE GEOTECHNICAL ENGINEER REPRESENTATIVE. THE LOAD BEARING FILLS SHALL BE PLACED IN LIFTS NOT EXCEEDING A LOOSE THICKNESS OF 12 INCHES. LIFT THICKNESS SHALL BE LIMITED TO 8 INCHES IN COMPACTED TRENCH.
- GENERAL LOAD BEARING FILL SHALL BE COMPACTED TO AT LEAST 95% OF THE MAXIMUM STANDARD PROCTOR DRY DENSITY AND A MOISTURE CONTENT CONTROLLED TO WITHIN APPROXIMATELY 4% OF OPTIMUM AS DETERMINED BY ASTM D 698.
- FILL SLOPES MAY BE CONSTRUCTED AT SLOPE ANGLES OF NO STEEPER THAN 2H V IN CONSTRUCTION WITH LOAD BEARING FILL. PERMANENT LOADS SHALL BE KEPT A MINIMUM OF 20 FEET FROM THE EDGE OF THE TOP OF FILL SLOPES.
- FILL PLACED AGAINST EXISTING SLOPES STEEPER THAN 4H V SHALL BE BENCHED INTO THE EXISTING SLOPES. BENCH HEIGHTS SHALL BE LIMITED TO FIVE FEET AS FILLING PROGRESSES FROM THE BOTTOM UP.
- WHERE SPRINGS OR SEEPS ARE ENCOUNTERED DURING CONSTRUCTION, DRAINABLE LOAD BEARING FILL AND PERFORATED PIPES (FRENCH DRAINS) SHALL BE INSTALLED TO PROVIDE A DRAINAGE PATH FOR SEEPAGE FROM THE EXISTING SLOPE. THE FRENCH DRAIN SHALL CONSIST OF A 4 INCH DIAMETER PERFORATED PIPE SURROUNDED BY DRAINABLE LOAD BEARING FILL, INSTALLED IN A 12 INCH WIDE BY 24 INCH DEEP TRENCH ALONG THE EXISTING DRAINAGE FEATURE OR SEEP. PRIOR TO DRAINABLE LOAD BEARING FILL PLACEMENT, THE TRENCH SHALL BE LINED WITH LAYER OF GEOTEXTILE SUCH AS MIRAFIB, 1400, OR APPROVED EQUAL, WITH SUFFICIENT OVERLAP TO PROVIDE AN ENVELOPE AROUND THE PIPE. TRENCH TO EXTEND UP TO THE CREST OF THE SLOPE TO FACILITATE DRAINAGE THROUGH THE FILL SECTION. THE EXISTING SLOPES SHALL BE OBSERVED PRIOR TO FILL PLACEMENT BY A REPRESENTATIVE OF THE ENGINEER OR TO DETERMINE THE PRESENCE OF EXISTING SPRINGS OR SEEPS. THE AS BUILT WIDTH OF THE FRENCH DRAIN SHALL BE A FUNCTION OF THE WIDTH OF THE SPRING OR SEEP OBSERVED DURING CONSTRUCTION. THE FRENCH DRAIN SHALL BE CONSTRUCTED TO SPAN THE ENTIRE WIDTH OF THE OBSERVED SPRING OR SEEP.
- THE SOIL SUBGRADES SCHEDULED TO RECEIVE LOAD BEARING FILL TO ACHIEVE PROPOSED GRADES AND SUBGRADES IN CUT AREAS SHALL BE PROOF ROLLED UNDER THE OBSERVATION OF A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER TO EVALUATE WHETHER OR NOT SUITABLE NON ORGANIC SOILS ARE PRESENT. THE PROOF ROLLING SHALL BE PERFORMED WITH A HEAVY DUTY, SMOOTH DRUM VIBRATORY ROLLER WITH A TOTAL APPLIED FORCE AT THE DRUM OF AT LEAST 20 TONS, DUE TO THE FINE-GRAINED NATURE OF THE ON-SITE SOILS. A SHEEPS FOOT OR SEGMENTED PAD ROLLER EQUIVALENT SIZE AND WEIGHT MAY BE SUBSTITUTED TO PERFORM PROOF ROLLING. PROOF ROLLING SHALL UNIFORMLY COVER THE SUBGRADE IN PERPENDICULAR DIRECTIONS IN ACCORDANCE WITH RECOMMENDATIONS BY THE REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER.
- THE CONTRACTOR SHALL CONTROL SURFACE DRAINAGE TO PREVENT FLOW OF WATER INTO THE EXCAVATIONS. THE SITE SHALL BE GRADED TO PREVENT SURFACE WATER FROM FLOODING IN CONSTRUCTION AREAS AND ACCUMULATING IN EXCAVATIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROTECT ALL WORK AREAS FROM BEING DAMAGED BY SURFACE WATER, GROUNDWATER AND PRECIPITATION.
- THE SUBSURFACE SOILS AT THIS SITE CONTAIN A SIGNIFICANT PERCENTAGE OF FINE GRAINED MATERIAL. SOILS THAT CONTAIN LARGE PERCENTAGES OF FINE GRAINED MATERIAL DO NOT DRAIN WATER. THE CONTRACTOR SHALL BE PREPARED TO SCARIFY DRY AND RE-COMPACT SUBGRADES SOILS THAT ARE TOO WET IN PLACE AND/OR AFTER PRECIPITATION EVENTS. AFTER PRECIPITATION EVENTS, THE CONTRACTOR SHALL RE-PROOF ROLL THAT ARE TOO WET IN PLACE AND/OR AFTER PRECIPITATION EVENTS. THE CONTRACTOR SHALL RE-PROOF ROLL PREVIOUSLY PLACED FILL PRIOR TO PLACING ADDITIONAL LIFTS OF FILL. THIS RE-PROOF ROLLING OPERATION SHALL BE OBSERVED BY THE ON-SITE REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER TO EVALUATE WHETHER OR NOT THE PREVIOUSLY ESTABLISHED SUBGRADE HAS BECOME SOFT/UNSTABLE AS A RESULT OF PRECIPITATION EVENTS. IF SOFT/UNSTABLE SOILS ARE OBSERVED DURING RE-PROOF ROLLING, THOSE SOILS WILL NEED TO BE SCARIFIED, MOISTURE CONDITIONED, AND RE-COMPACTED.
- EXCAVATIONS SHALL BE PERFORMED IN THE DRY AND KEPT FREE FROM STANDING WATER, SNOW AND ICE DURING CONSTRUCTION. FROZEN FILL SHALL NOT BE PLACED. FILL MATERIAL SHALL NOT BE PLACED IN WATER, ON FROZEN GROUND, ON SNOW, ON MUDDY SURFACES, OR ON ICE.

- IF EVIDENCE OF A SEEP SPRING IN A CUT SLOPE IS OBSERVED BY THE ON-SITE GEOTECHNICAL ENGINEER REPRESENTATIVE, THE CONTRACTOR SHALL INSTALL A FRENCH DRAIN COORDINATE WITH THE ENGINEER FOR APPROPRIATE DISCHARGE POINT.
- DURING COLD WEATHER CONDITIONS, CONTRACTOR SHALL CUT FROM SMALL AREAS FOR FILL TO MITIGATE FROST DEVELOPMENT ON FILL MATERIAL, AND CONTRACTOR SHALL FILL IN SMALL AREAS TO PREVENT FROST DEVELOPMENT BETWEEN LIFTS. CONTRACTOR SHALL NOT PLACE FILL DURING PERIODS OF SNOW.
- STOOPLES SHALL BE COMPACTED AND SMOOTH DRUM ROLLED TO PROMOTE RUNOFF AND LIMIT INFILTRATION.
- IF THE CONTRACTOR PROPOSES TO UTILIZE A CHEMICAL STABILIZATION/MODIFICATION TECHNOLOGY TO DRY THE ON-SITE SOILS TO ALLOW PROPER COMPACTON, THEY SHALL BE PREPARED TO COMPLETE A TESTING PROGRAM TO DETERMINE THE APPROPRIATE MIX DESIGN. ADEQUATE TIME SHALL BE ALLOWED TO CONDUCT THIS TESTING PRIOR TO THE START OF MASS EXCAVATION ACTIVITIES. IN ADDITION, THE CONTRACTOR SHALL SUBMIT A WORK PLAN THAT SUMMARIZES THEIR MIX DESIGN, CONSTRUCTION PROCEDURES FOR MIXING/BLENDED THE MATERIALS, AND PREVIOUS EXPERIENCE USING THE TECHNOLOGY IN SIMILAR GEOLOGIC SETTINGS. IN ORDER TO SUCCESSFULLY IMPLEMENT THESE TECHNOLOGIES, THE END PRODUCT (IE D DRYING, MODIFICATION, STABILIZATION) SHALL BE CLEARLY DEFINED CONSIDERING THE PROPERTIES OF THE ON-SITE MATERIAL TO BE PROCESSED. MANY CHEMICAL STABILIZATION TECHNOLOGIES ARE SPECIFIC TO CERTAIN GRAIN SIZES, PHYSICAL PROPERTIES, MOISTURE CONTENTS, AND SENSITIVE TO AMBIENT TEMPERATURES, AND HAVE SPECIFIC CURE TIMES. THE CONTRACTOR SHALL BE REQUIRED TO COMPLETE A TEST STRIP AT THE SITE TO DEMONSTRATE THE EFFECTIVENESS OF THE TECHNOLOGY FOR THE SPECIFIC SITE CONDITIONS.
- GEGRID**
 - PRIMARY GEGRID SHALL CONSIST OF MIRAGRID 10XT AS MANUFACTURED BY TC MIRAFIB, INC. ALTERNATE GEGRID MUST BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO DELIVERY.
 - SECONDARY GEGRID SHALL CONSIST OF MIRAGRID 2XT AS MANUFACTURED BY TC MIRAFIB, INC. ALTERNATE GEGRID MUST BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO DELIVERY.
 - PRIMARY GEGRID SHALL BE ORIENTED WITH THE HIGHEST STRENGTH AXIS PERPENDICULAR TO THE SLOPE FACE.
 - SECONDARY GEGRID SHALL BE ORIENTED WITH THE HIGHEST STRENGTH AXIS PARALLEL TO THE SLOPE FACE, WHERE ONE GEGRID ENDS AND THE NEXT BEGINS, THERE SHALL BE A MINIMUM 12 IN. OF OVERLAP.
 - THE GEGRID SHALL BE LAID HORIZONTALLY ON COMPACTED BACKFILL. THE GEGRID SHALL BE PULLED TAUT, FOLDS OR WRINKLES IN THE GEGRID ARE NOT PERMITTED.
 - GEGRID REINFORCEMENT SHALL BE CONTINUOUS THROUGHOUT THE EMBECCMENT LENGTHS AND PLACED SIDE BY SIDE TO PROVIDE 100 PERCENT COVERAGE AT EACH LEVEL. SPICED CONNECTIONS OF SHORTER PIECES OF GEGRID ARE NOT PERMITTED.
 - TRACKED CONSTRUCTION EQUIPMENT SHALL NOT BE OPERATED DIRECTLY UPON THE GEGRID REINFORCEMENT. A MINIMUM FILL THICKNESS OF 6 INCHES IS REQUIRED BEFORE OPERATION OF TRACKED MOULDED TIRE VEHICLES OVER THE GEGRID. TRACKED VEHICLE TURNING SHOULD BE KEPT TO A MINIMUM TO PREVENT TRACKS FROM DISPLACING THE FILL AND DAMAGING THE GEGRID.
 - RUBBER TRED EQUIPMENT MAY PASS OVER GEGRID REINFORCEMENT AT SLOW SPEEDS, LESS THAN 10 MPH. SLUGGEN BRAKING AND SHARP TURNING SHALL BE AVOIDED.
 - THE TOPSOIL SPILL AREA IS SHOWN AT 2H V SLOPE ANGLE AND WILL REQUIRE THE INSTALLATION OF GEGRID REINFORCEMENT TO IMPROVE STABILITY. THE TOPSOIL MATERIAL IS EXPECTED TO BE HIGHLY VARIABLE AND DEEPER BECOMING. GEGRID AND DRAINAGE MAY EXHIBIT CHARACTERISTICS THAT RESULT IN SLOPE INSTABILITY. THE TOPSOIL SPILL AREA MAY REQUIRE CONTINUED MAINTENANCE DURING AND AFTER CONSTRUCTION TO ADDRESS SLOPE STABILITY ISSUES. THE CONTRACTOR SHOULD BE DILIGENT TO REMOVE DELTA TERIOUS MATERIAL (IE STAMPS, ROOTS LARGER 3 INCHES IN DIAMETER, ETC.) FROM THE TOPSOIL SPILL AREA MATERIAL PRIOR TO PLACING IN FILL AND APPLYING A COMPACTIVE EFFORT.



KLEINFELDER
Bright People. Right Solutions.

Office of Oil and Gas

Office of Environmental Protection

DEPARTMENT OF ENVIRONMENTAL POLICY AND CULTURE

RECEIVED JUN 20 2021

APPROVED BY: [Signature]

REVISIONS: [Table]

ISSUED FOR CONSTRUCTION

SCALE VERIFICATION

THIS DRAWING IS 1"=40' IN LENGTH ON ORIGINAL DRAWING

1" = 40'

IF IT'S NOT 1"=40' ON THIS SHEET, ADJUST YOUR SCALES ACCORDINGLY.

GEOTECH NOTES & DETAILS

CPT-10 WELL PAD
DODDRIDGE COUNTY
WEST VIRGINIA



CONSTRUCTION

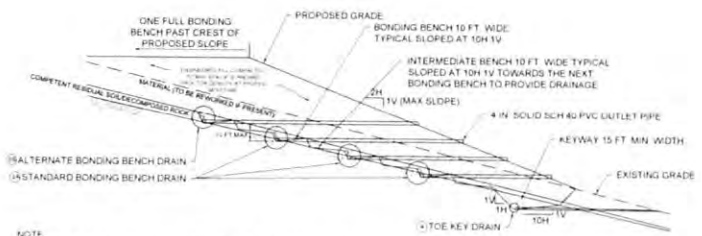
PROJECT NO.	137206
SHEET DATE	08-26-2019
CURRENT REVISION	5
DESIGNED BY	WJR
DRAWN BY	JRM
CHECKED BY	SM
APPROVED BY	MJR (SHEET)

6

4701706752

DATE PLOTTED: 08/26/2019 10:58:53 AM USERNAME: C:\ADMIN\KLEINFELDER\KLEINFELDER\KLEINFELDER

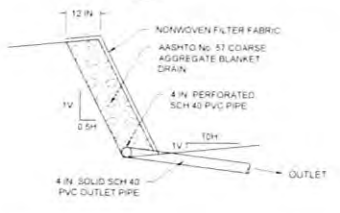
4701706752



NOTE

- TOE KEY EXCAVATIONS SHOULD BE A MINIMUM OF 15 FT. WIDE AND EXTEND THROUGH ALL COLLUVIUM AND/OR RESIDUAL SOIL TO BE FOUNDED ENTIRELY ON DECOMPOSED ROCK
- 4 IN. PERFORATED TOE KEY DRAIN SHOULD BE INSTALLED ALONG THE ENTIRE LENGTH OF THE TOE KEY WITH OUTLETS AT 100 FOOT CENTERS
- OUTLETS SHOULD CONSIST OF 4 IN. SCH 40 SOLID PVC PIPE AND OUTLET DIFFUSER STONE PLACED BENEATH END OF OUTLET
- DRAINAGE BOND BENCHES INSTALLED AT MAXIMUM SPACING OF 10 VERTICAL FEET FROM TOP OF THE REAR WALL OF KEYWAY EXCAVATION.
- ALTERNATE BONDING BENCH DRAIN INSTALLED ON BENCH IMMEDIATELY BENEATH FINISHED SUBGRADE PER DETAIL 2B
- BONDING BENCH DRAIN INSTALLED ON BENCH IMMEDIATELY BENEATH FINISHED SUBGRADE SHALL MAINTAIN MINIMUM 4 FOOT SEPARATION BETWEEN TOP OF DRAINAGE AND FINISHED SUBGRADE

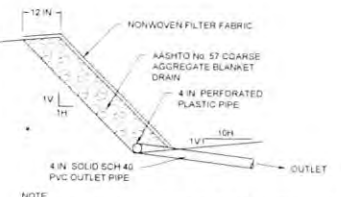
1A TYPICAL DRAINAGE BOND BENCH AND TOE KEY DETAIL
NTS



NOTE

- OUTLETS AT 250 FT. CENTERS MAX. OR AS DEEMED NECESSARY
- CONTRACTOR TO VERIFY OUTLETS ARE INSTALLED WITH POSITIVE DRAINAGE TO FACE OF SLOPE

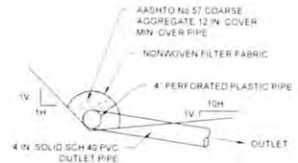
2A STANDARD BONDING BENCH DRAIN DETAIL
NTS



NOTE

- OUTLETS AT 100 FT. CENTERS MAX. OR AS DEEMED NECESSARY
- CONTRACTOR TO VERIFY OUTLETS ARE INSTALLED WITH POSITIVE DRAINAGE TO FACE OF SLOPE

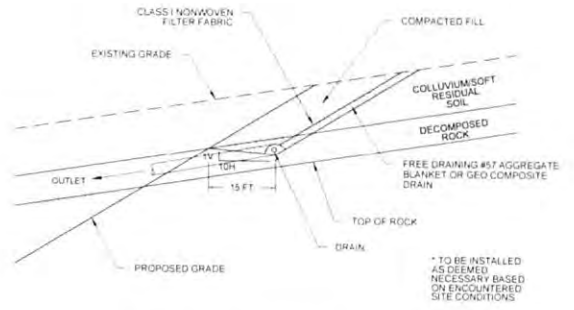
4 TYPICAL TOE KEY DRAIN DETAIL
NTS



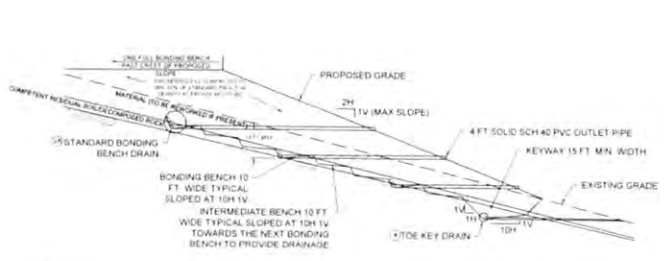
NOTE

- OUTLETS AT 250 FT. CENTERS MAX. OR AS DEEMED NECESSARY
- CONTRACTOR TO VERIFY OUTLETS ARE INSTALLED WITH POSITIVE DRAINAGE TO FACE OF SLOPE

2B BONDING BENCH DRAIN DETAIL
NTS



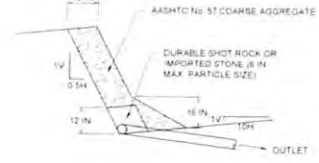
5 TYPICAL SLOPE PROTECTION DETAIL
NTS



NOTE

- TOE KEY EXCAVATIONS SHOULD BE A MINIMUM OF 15 FT. WIDE AND EXTEND THROUGH ALL COLLUVIUM AND/OR RESIDUAL SOIL TO BE FOUNDED ENTIRELY ON DECOMPOSED ROCK
- 4 IN. PERFORATED TOE KEY DRAIN SHOULD BE INSTALLED ALONG THE ENTIRE LENGTH OF THE TOE KEY WITH OUTLETS AT 100 FT. CENTERS
- OUTLETS SHOULD CONSIST OF 4 IN. SCH 40 SOLID PVC PIPE
- DRAINAGE BOND BENCHES INSTALLED AT MAXIMUM SPACING OF 15 VERTICAL FT FROM TOP OF THE REAR WALL OF KEYWAY EXCAVATION

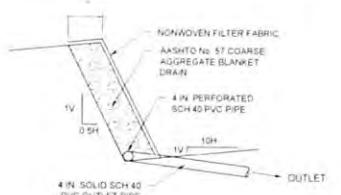
1B STOCKPILE DRAINAGE BOND BENCH AND TOE KEY DETAIL
NTS



NOTE

- THIS ALTERNATE TO BE USED ONLY IN TOE KEYS WHERE ACCESS BY PERSONNEL IS LONGER. INSTALLATION REQUIRES PRE-APPROVAL BY DESIGN ENGINEER
- OUTLETS AT 250 FT. CENTERS MAX. OR AS DEEMED NECESSARY
- CONTRACTOR TO VERIFY OUTLETS ARE INSTALLED WITH POSITIVE DRAINAGE TO FACE OF SLOPE

3 ALTERNATE TOE KEY DRAIN DETAIL
NTS



NOTE

- TO BE INSTALLED AS DEEMED NECESSARY AT SEEPAGE LOCATION POINTS IN AREAS OUTSIDE OF SPECIFIED FILL SLOPE DRAINAGE OR ON INTERMEDIATE BENCHES
- MINIMUM OF 1 OUTLET TO BE INSTALLED AT EACH SEEP DRAINAGE LOCATION
- CONTRACTOR TO VERIFY OUTLETS ARE INSTALLED WITH POSITIVE DRAINAGE TO FACE OF SLOPE
- SEEP DRAINAGE TO EXTEND HORIZONTALLY IN BOTH DIRECTIONS AT A MINIMUM OF 5 FEET FROM OBSERVED SEEP
- DRAINAGE TO BE INSTALLED TO A HEIGHT WHICH INTERSECTS OBSERVED SEEPAGE LOCATION

6 TYPICAL SEEP DRAINAGE
NTS

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Office of Oil and Gas

WV Department of Environmental Protection

230 Elmwood Drive, Suite 100
Charmers, Fairmont, WV 26030
Phone: 304-325-2522
www.kleinfelder.com

20251

JUN 24 2016

REVISED DRAWING

ORIGINAL DRAWING

NO.	DESCRIPTION	DATE	BY	DATE

ISSUED FOR CONSTRUCTION

SCALE VERIFICATION
THIS DRAWING IS 1" EQUAL LENGTH
ON ORIGINAL DRAWING
IF NOT NOTED OTHERWISE ON THIS SHEET ADJUST YOUR SCALES ACCORDINGLY.

ORIGINAL DRAWING SIZE 11.25" x 14"
GEOTECH NOTES & DETAILS
OPT-10 WELL PAD
DODDRIEDGE COUNTY
WEST VIRGINIA

EQT
Where energy meets innovation.

CONSTRUCTION

PROJECT NO.	137305	
ISSUE DATE	06-08-2016	
CURRENT REVISION	0	
DRAWN BY	AER	7
CHECKED BY	CRH	
APPROVED BY	MR	
DATE		
BY		
APPROVED BY	MR	SHEET 7 OF 25

DAF
6/17/16

DRAWN BY: AER, CRH, MR; CHECKED BY: CRH, MR; APPROVED BY: MR; DATE: 06/08/2016; PROJECT: OPT-10 WELL PAD; SHEET: 7 OF 25

4701706752

TABLE 1 - BORING SUMMARY

Boring	Approximate Existing Elevation (ft)	Proposed Elevation (ft)	Elevation Change (ft)	Depth to WR (ft)	Approximate Existing Elevation of WR (ft)	Depth to AR (ft)
CPT10-01	942.1	946.7	4.6	4.5	937.6	10
CPT10-02	924.1	924.1	0.0	5.0	919.1	NE
CPT10-03	987.0	969.0	-18.0	5.5	981.5	10
CPT10-04	1,016.1	999.7	-16.4	16.0	1,002.1	NE
CPT10-05	986.7	997.9	1.2	6.0	990.7	10
CPT10-06	1,020.9	1,020.9	0.0	4.5	1,026.4	NE
CPT10-07	1,024.5	1,023.3	-1.2	2.5	1,022.0	NE
CPT10-08	1,121.2	1,134.6	13.4	6.0	1,115.2	NE
CPT10-09	1,058.9	1,058.9	0.0	12.5	1,046.4	NE
CPT10-10	1,094.7	1,101.4	6.7	7.5	1,087.2	NE
CPT10-11	1,204.9	1,204.9	0.0	15.0	1,189.9	NE
CPT10-12	1,202.4	1,202.4	0.0	20.0	1,182.4	20
CPT10-13	1,087.6	1,087.6	0.0	14.0	1,073.6	17.5
CPT10-14	1,090.4	1,090.4	0.0	6.0	1,082.4	29
CPT10-15	1,180.0	1,180.0	0.0	10.0	1,170.0	15
CPT10-16	989.3	1,021.8	32.5	4.5	994.8	NE
CPT10-17	1,027.2	1,034.0	6.8	7.0	1,020.2	16

NE: Not Encountered
 (1) Positive values indicate fill depths and negative values indicate cut depths
 (2) WR indicates Weathered Rock
 (3) AR denotes Practical Auger Refusal

TABLE 2 - LABORATORY SUMMARY

Boring	Approx. Sample Depth (ft)	Sample No.	Sample Description	Moisture Content (%)	Sieve Analysis			Atterberg Limits			Additional Tests
					Passing #4 Sieve (%)	Passing #20 Sieve (%)	Passing #60 Sieve (%)	LL	PL	PI	
CPT10-1	2.0	52	SANDY SILT (ML)	16.5	99	66	32	26	6		
CPT10-2	2.0	52	SILT WITH SAND (ML)	13.6	96	70	45	27	18		
CPT10-3	0.0	51	LEAN CLAY (CL)	23		90	47	26	21		
CPT10-4	5.0	52	LEAN CLAY (CL)	18.8		89	47	25	22		
CPT10-5	4.0	53	LEAN CLAY WITH SAND (CL)	13.4		80	45	21	24		
CPT10-6	2.0	52	GRAVELLY LEAN CLAY (CL)	19.5	78	64	46	24	22		
CPT10-7	0.0	51	FAT CLAY WITH SAND (CH)	24.4		83	50	25	25		
CPT10-8	0.0	51	SILT WITH SAND (ML)	15.3		88	75	49	28	21	
CPT10-9	2.0	52	FAT CLAY WITH SAND (CH)	27		87	63	52	24	28	
CPT10-10	4.0	53	CLAYEY SAND (SC)	12.8		87	44	41	22	19	
CPT10-11	9.5	52	LEAN CLAY (CL)	16.4		98	60	41	19	22	
CPT10-12	0.0	51	SANDY LEAN CLAY (CL)	9.2	100	89	59				
CPT10-12	5.0	52	GRAVELLY LEAN CLAY WITH SAND (CL)	6		51	33	22	11	Maximum Dry Unit Weight = 118.0 pcf Optimum Water Content = 12.1%	
CPT10-13	8.0	55	LEAN CLAY (CL)	13.5		69	43	21	22		
CPT10-14	10.0	56	LEAN CLAY (CL)	13.2		74	69	44	21	23	
CPT10-15	0.0	51	FAT CLAY (CH)	29.5		84	53	26	27		
CPT10-15	2.0	51	SANDY LEAN CLAY (CL)	11.4	100	89	58				
CPT10-16	0.0	51	FAT CLAY WITH SAND (CH)	21.2		99	75	53	25	28	
CPT10-17	2.0	52	SANDY LEAN CLAY WITH GRAVEL (CL)	10.2		83	54	34	21	13	
CPT10-3	14.5	RC2	CLAYSTONE							Unconfined Compressive Strength = 620 psi	
CPT10-7	15.0	RC1	SANDSTONE							Unconfined Compressive Strength = 6,890 psi	
CPT10-12	32.0	RC2	CLAYSTONE							Unconfined Compressive Strength = 2,760 psi	
CPT10-15	15.0	RC1	SANDSTONE								

TABLE 3 - TOE KEY DEPTH SUMMARY

TOE BENCH NO.	BORING NUMBER	DEPTH TO DECOMPOSED ROCK (FT)	DEPTH TO WEATHERED ROCK (FT)	ANTICIPATED DEPTH OF MATERIAL TO BE REMOVED (FT)	MINIMUM WIDTH AT BOTTOM OF EXCAVATION (FT)
1				5	15
2	CPT10-01		4.5	5	15
3	CPT10-02	7	5	4	15
4	CPT10-16	3	4.5	4	15
5	CPT10-06	8.5	4.5	4	15
6	CPT10-12	5	7	5	15
6	CPT10-09	11	17.5	17	15

TABLE 4 - TOE KEY EXCAVATION QUANTITIES

TOE BENCH NO.	LOCATION	LENGTH (FT)	ANTICIPATED TOE KEY DOWNHILL DEPTH (FT)	ANTICIPATED TOE KEY UPHILL DEPTH (FT)	WIDTH AT BOTTOM OF TOE KEY (FT)	TOTAL OVEREXCAVATION VOLUME (TOE KEY) (CY)
1	ACCESS ROAD STA 2+00 - 7+50	625	5.0	11.5	15	5,381
2	SOUTH SIDE OF WELL PAD	985	9.0	10.5	15	7,465
3	WEST SIDE OF WATER CONTAINMENT PAD 1	435	4.0	9.5	15	2,770
4	SOUTH SIDE OF WATER CONTAINMENT PAD 2	210	4.0	9.0	15	1,253
5	EAST SIDE OF WATER CONTAINMENT PAD 2	525	6.0	11.5	15	4,681
6	SOUTHWEST SIDE OF MATERIAL SPOIL AREA 3	585	12.0	18.0	15	11,392
	TOTAL					32,944

TABLE 5 - INTERMEDIATE AND DRAINAGE BONDING BENCHES

TOE BENCH NO.	LOCATION	LENGTH (FT)	ESTIMATED NUMBER OF INTERMEDIATE BENCHES	ESTIMATED NUMBER OF DRAINAGE BOND BENCHES	ESTIMATED TOTAL LENGTH OF DRAINAGE BOND BENCH (FT)	ESTIMATED REWORK MATERIAL TO INSTALL BENCH DETAILS (CY)	DETAIL NUMBER
1	ACCESS ROAD STA 2+00 - 7+50	625	1	2	1,250	3,068	DETAIL 2A
2	SOUTH SIDE OF WELL PAD	985	4	4	3,940	12,641	DETAIL 2A
3	WEST SIDE OF WATER CONTAINMENT PAD 1	435	6	7	3,045	9,072	DETAIL 2A
4	SOUTH SIDE OF WATER CONTAINMENT PAD 2	210	4	5	1,950	3,032	DETAIL 2A
5	EAST SIDE OF WATER CONTAINMENT PAD 2	525	7	8	4,200	12,633	DETAIL 2A
6	SOUTHWEST SIDE OF MATERIAL SPOIL AREA 3	585	12	6	3,510	16,892	DETAIL 2B
	TOTAL				18,990	57,277	

TABLE 6 - IMPORTED LOAD BEARING FILL GRADATION REQUIREMENTS

Fill Designation	Sieve Size / Percent Passing												
	8"	3"	2"	1 1/2"	1"	3/4"	1/2"	3/8"	#4	#6	#16	#100	#200
General Load Bearing Fill	100		70-100			50-100			25-75				0-40
Drainable Load Bearing Fill				100	95-100		25-60	0-10	0-5				

TOE KEY, BENCHING, DRAINAGE QUANTITIES - AGGREGATE DRAINAGE OPTION

TOE BENCH NO.	LOCATION	LENGTH (FT)	NO. 57 STONE - TOE KEY (TONS)	NO. 57 STONE - DRAINAGE BOND BENCHES (TONS)	ODOT TYPE D OR R3 STONE - OUTLET DIFFUSER (TONS)	4-INCH PERFORATED PIPE (FT)	4-INCH SCH40 SOLID PIPE (FT)	NON-WOVEN GEOTEXTILE (SY)	ESTIMATED REWORK MATERIAL TO INSTALL BENCH DETAILS (CY)
1	ACCESS ROAD STA 2+00 - 7+50	625	172	286	4	1,875	410	1,343	3,036
2	SOUTH SIDE OF WELL PAD	985	271	1,029	8	4,925	940	3,721	12,641
3	WEST SIDE OF WATER CONTAINMENT PAD 1	435	120	786	6	3,480	670	2,603	9,072
4	SOUTH SIDE OF WATER CONTAINMENT PAD 2	210	58	262	3	1,260	290	925	3,032
5	EAST SIDE OF WATER CONTAINMENT PAD 2	525	144	1,093	7	4,725	860	3,551	12,633
6	SOUTHWEST SIDE OF MATERIAL SPOIL AREA 3	585	161	957	7	4,095	780	3,169	16,892
	TOTALS		925	4,414	34	20,360	3,990	15,311	57,277



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WV Department of Environmental Protection

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SCALE VERIFICATION
THIS BAR IS 1 INCH REPRESENTING 200 FEET ON ORIGINAL DRAWINGS

ORIGINAL DRAWING SIZE 18.25" x 34"

GEOTECH NOTES & DETAILS

CPT-10 WELL PAD
DODDRIEGE COUNTY
WEST VIRGINIA



CONSTRUCTION

PROJECT NO: 191366
 ISSUE DATE: 06/28/2019
 CURRENT REVISION: 0
 DESIGNED BY: ALM
 DRAWN BY: CRH
 CHECKED BY: JSP
 APPROVED BY: M.A. SHERET

DATE PLOTTED: 06/28/2019 10:07:01 AM BY: JSP

4701706752



230 E. Exchange Blvd. Suite 112
Columbia, PA 17246
PH: 717.762.1910
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Department of Environmental Protection

NO.	REVISIONS	DATE	BY	CHK.
1	ISSUED FOR CONSTRUCTION	06/28/2016	ALR	CHW

ISSUED FOR CONSTRUCTION

SCALE VERIFICATION
THIS BAR IS 1" INCH IN LENGTH OF ORIGINAL DRAWING
IF IT IS NOT 1" INCH ON THIS SHEET ADJUST YOUR SCALES ACCORDINGLY

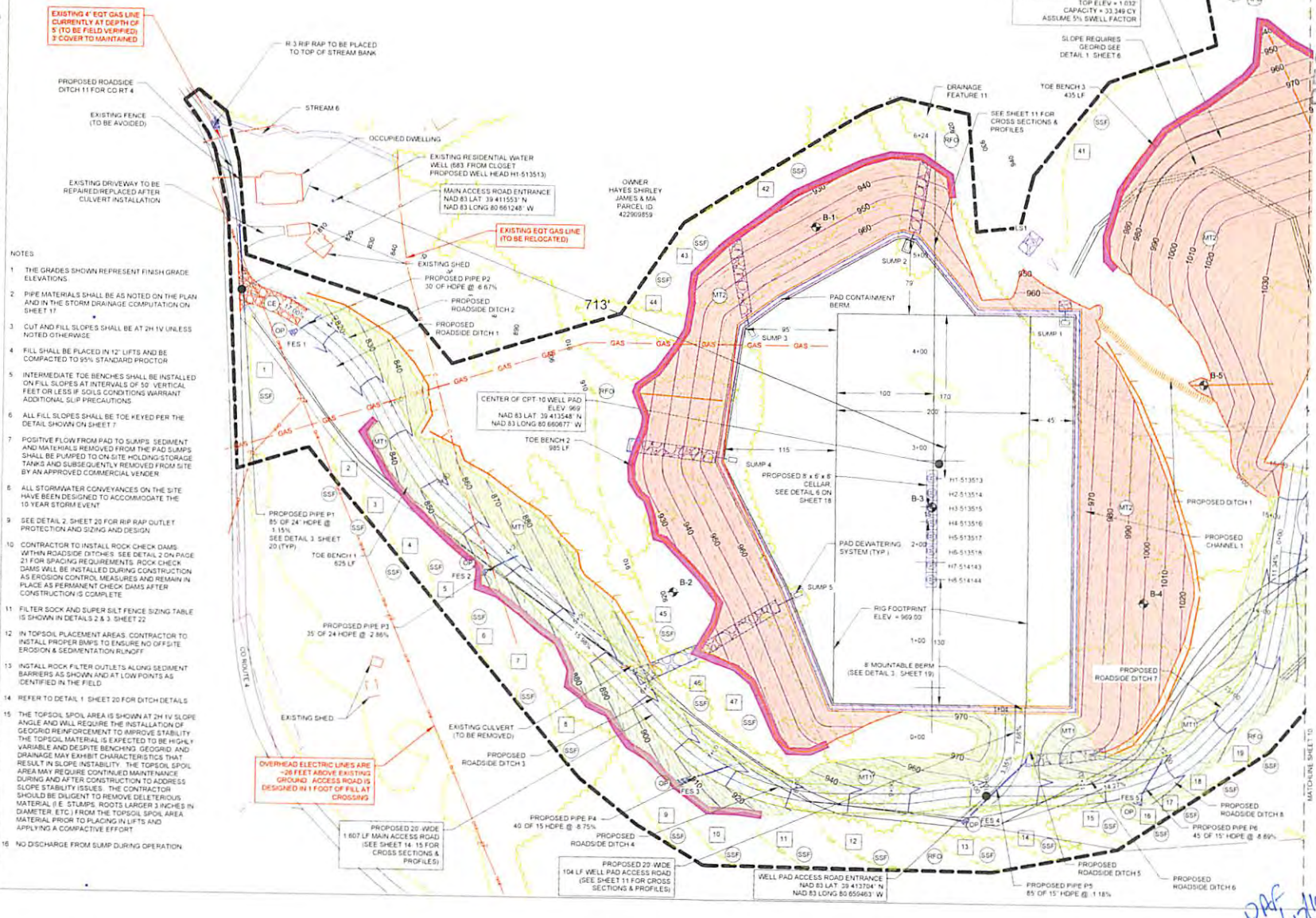
SCALE 1" = 50'
ORIGINAL DRAWING SIZE IS 22" x 34"

SITE PLAN
CPT-10 WELL PAD
DODDRIIDGE COUNTY
WEST VIRGINIA



CONSTRUCTION	
PROJECT NO.	137310
ISSUE DATE	06/28/2016
CURRENT REVISION	0
DESIGNED BY	ALR
DRAWN BY	CHW
CHECKED BY	JCF
APPROVED BY	MJA

9

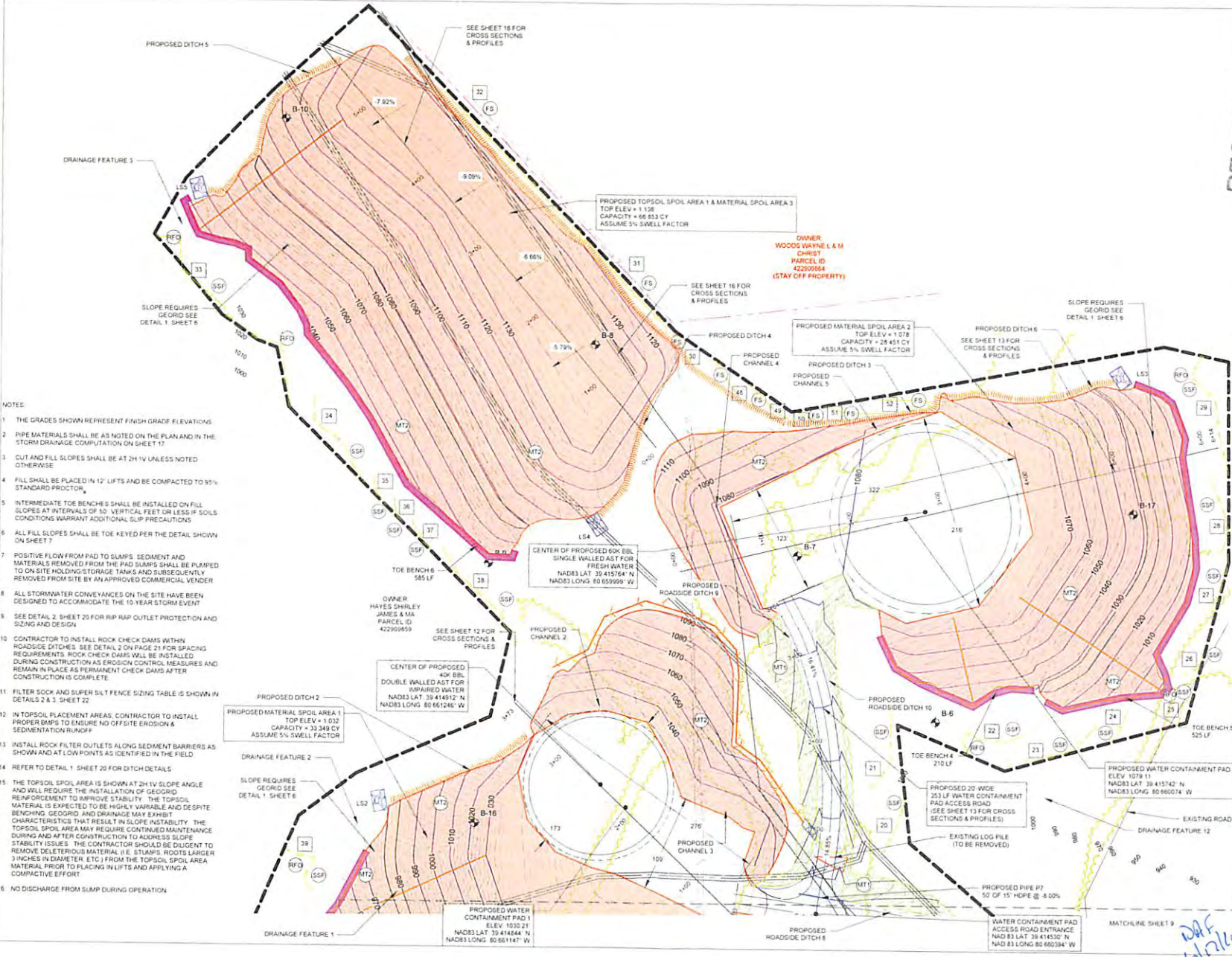


- NOTES
- 1 THE GRADES SHOWN REPRESENT FINISH GRADE ELEVATIONS
 - 2 PIPE MATERIALS SHALL BE AS NOTED ON THE PLAN AND IN THE STORM DRAINAGE COMPUTATION ON SHEET 11
 - 3 CUT AND FILL SLOPES SHALL BE AT 2H:1V UNLESS NOTED OTHERWISE
 - 4 FILL SHALL BE PLACED IN 12" LIFTS AND BE COMPACTED TO 95% STANDARD PROCTOR
 - 5 INTERMEDIATE TOE BENCHES SHALL BE INSTALLED ON FILL SLOPES AT INTERVALS OF 30' VERTICAL FEET OR LESS IF SOILS CONDITIONS WARRANT ADDITIONAL SLIP PRECAUTIONS
 - 6 ALL FILL SLOPES SHALL BE TOE KEYPED PER THE DETAIL SHOWN ON SHEET 7
 - 7 POSITIVE FLOW FROM PAD TO SLUMPS: SEDIMENT AND MATERIALS REMOVED FROM THE PAD SLUMPS SHALL BE PLUMBED TO ON-SITE HOLDING STORAGE TANKS AND SUBSEQUENTLY REMOVED FROM SITE BY AN APPROVED COMMERCIAL VENDOR
 - 8 ALL STORMWATER CONVEYANCES ON THE SITE HAVE BEEN DESIGNED TO ACCOMMODATE THE 10 YEAR STORM EVENT
 - 9 SEE DETAIL 2, SHEET 20 FOR RIP RAP OUTLET PROTECTION AND SIZING AND DESIGN
 - 10 CONTRACTOR TO INSTALL ROCK CHECK DAMS WITHIN ROADSIDE DITCHES. SEE DETAIL 2 ON PAGE 21 FOR BRACING REQUIREMENTS. ROCK CHECK DAMS WILL BE INSTALLED DURING CONSTRUCTION AS EROSION CONTROL MEASURES AND REMAIN IN PLACE AS PERMANENT CHECK DAMS AFTER CONSTRUCTION IS COMPLETE
 - 11 FILTER SOCK AND SUPER SILT FENCE SIZING TABLE IS SHOWN IN DETAILS 2 & 3, SHEET 22
 - 12 IN TOPSOIL PLACEMENT AREAS, CONTRACTOR TO INSTALL PROPER BMPs TO ENSURE NO OFF-SITE EROSION & SEDIMENTATION RUNOFF
 - 13 INSTALL ROCK FILTER OUTLETS ALONG SEDIMENT BARRIERS AS SHOWN AND AT LOW POINTS AS IDENTIFIED IN THE FIELD
 - 14 REFER TO DETAIL 1, SHEET 20 FOR DITCH DETAILS
 - 15 THE TOPSOIL SPOIL AREA IS SHOWN AT 2H:1V SLOPE ANGLE AND WILL REQUIRE THE INSTALLATION OF GEGRID REINFORCEMENT TO IMPROVE STABILITY. THE TOPSOIL MATERIAL IS EXPECTED TO BE HIGHLY VARIABLE AND DESPITE BENCHING, GEGRID AND DRAINAGE MAY EXHIBIT CHARACTERISTICS THAT RESULT IN SLOPE INSTABILITY. THE CONTRACTOR AREA MAY REQUIRE CONTINUED MAINTENANCE DURING AND AFTER CONSTRUCTION TO ADDRESS SLOPE STABILITY ISSUES. THE CONTRACTOR SHOULD BE DILIGENT TO REMOVE DELETERIOUS MATERIAL (IE STUMPS, ROOTS LARGER THAN 4" IN DIAMETER, ETC.) FROM THE TOPSOIL SPOIL AREA MATERIAL PRIOR TO PLACING IN LIFTS AND APPLYING A COMPACTIVE EFFORT
 - 16 NO DISCHARGE FROM SLUMP DURING OPERATION

OVERHEAD ELECTRIC LINES ARE 28 FEET ABOVE EXISTING GROUND. ACCESS ROAD IS DESIGNED IN 1 FOOT OF FALL AT CROSSINGS

DAF 7/1/16

4701706752



- NOTES:
- 1 THE GRADES SHOWN REPRESENT FINISH GRADE ELEVATIONS
 - 2 PIPE MATERIALS SHALL BE AS NOTED ON THE PLAN AND IN THE STORM DRAINAGE COMPLETION ON SHEET 17
 - 3 CUT AND FILL SLOPES SHALL BE AT 2H 1V UNLESS NOTED OTHERWISE
 - 4 FILL SHALL BE PLACED IN 12" LIFTS AND BE COMPACTED TO 95% STANDARD PROCTOR
 - 5 INTERMEDIATE TOE BENCHES SHALL BE INSTALLED ON FILL SLOPES AT INTERVALS OF 50' VERTICAL FEET OR LESS IF SOILS CONDITIONS WARRANT ADDITIONAL SLIP PRECAUTIONS
 - 6 ALL FILL SLOPES SHALL BE TOE KEYED PER THE DETAIL SHOWN ON SHEET 7
 - 7 POSITIVE FLOW FROM PAD TO SLUMPS: SEDIMENT AND MATERIALS REMOVED FROM THE PAD SLUMPS SHALL BE PUMPED TO ON-SITE HOLDING STORAGE TANKS AND SUBSEQUENTLY REMOVED FROM SITE BY AN APPROVED COMMERCIAL VENDOR
 - 8 ALL STORMWATER CONVEYANCES ON THE SITE HAVE BEEN DESIGNED TO ACCOMMODATE THE 10 YEAR STORM EVENT
 - 9 SEE DETAIL 2, SHEET 20 FOR RIP RAP OUTLET PROTECTION AND SIZING AND DESIGN
 - 10 CONTRACTOR TO INSTALL ROCK CHECK DAMS WITHIN ROADSIDE DITCHES: SEE DETAIL 3 ON PAGE 21 FOR SPACING REQUIREMENTS. ROCK CHECK DAMS WILL BE INSTALLED DURING CONSTRUCTION AS EROSION CONTROL MEASURES AND REMAIN IN PLACE AS PERMANENT CHECK DAMS AFTER CONSTRUCTION IS COMPLETE
 - 11 FILTER SOCK AND SUPER SILT FENCE SIZING TABLE IS SHOWN IN DETAILS 2 & 3, SHEET 22
 - 12 IN TOPSOIL PLACEMENT AREAS, CONTRACTOR TO INSTALL PROPER BMPs TO ENSURE NO OFF-SITE EROSION & SEDIMENTATION RUNOFF
 - 13 INSTALL ROCK FILTER OUTLETS ALONG SEDIMENT BARRIERS AS SHOWN AND AT LOW POINTS AS IDENTIFIED IN THE FIELD
 - 14 REFER TO DETAIL 1, SHEET 20 FOR DITCH DETAILS
 - 15 THE TOPSOIL SPOIL AREA IS SHOWN AT 2H 1V SLOPE ANGLE AND WILL REQUIRE THE INSTALLATION OF GEGRID REINFORCEMENT TO IMPROVE STABILITY. THE TOPSOIL MATERIAL IS EXPECTED TO BE HIGHLY VARIABLE AND DESPITE BENCHING, GEGRID AND DRAINAGE MAY EXHIBIT CHARACTERISTICS THAT RESULT IN SLOPE INSTABILITY. THE TOPSOIL SPOIL AREA MAY REQUIRE CONTINUED MAINTENANCE DURING AND AFTER CONSTRUCTION TO ADDRESS SLOPE STABILITY ISSUES. THE CONTRACTOR SHOULD BE DILIGENT TO REMOVE DELETERIOUS MATERIAL (I.E. STUMPS, ROOTS LARGER 3 INCHES IN DIAMETER, ETC.) FROM THE TOPSOIL SPOIL AREA MATERIAL PRIOR TO PLACING IN LIFTS AND APPLYING A COMPACTIVE EFFORT
 - 16 NO DISCHARGE FROM SLUMP DURING OPERATION

PROPOSED TOPSOIL SPOIL AREA 1 & MATERIAL SPOIL AREA 3
TOP ELEV = 1128
CAPACITY = 68,833 CY
ASSUME 5% SWELL FACTOR

OWNER:
WOODS WAYNE L & M
CHRIST
PARCEL ID
42299884
(STAY OFF PROPERTY)

OWNER:
HAYES SHIRLEY
JAMES & MA
PARCEL ID
42299859

CENTER OF PROPOSED
40K BBL
DOUBLE WALLED AST FOR
IMPAIRED WATER
NAD83 LAT: 39 41 57 64' N
NAD83 LONG: 80 65 99 99' W

PROPOSED WATER
CONTAINMENT PAD 1
ELEV 1030.21
NAD83 LAT: 39 41 48 44' N
NAD83 LONG: 80 66 11 67' W

PROPOSED MATERIAL SPOIL AREA 2
TOP ELEV = 1078
CAPACITY = 24,451 CY
ASSUME 5% SWELL FACTOR

PROPOSED WATER CONTAINMENT
PAD ACCESS ROAD
(SEE SHEET 13 FOR CROSS
SECTIONS & PROFILES)

WATER CONTAINMENT PAD
ACCESS ROAD ENTRANCE
NAD 83 LAT 39 41 45 30' N
NAD 83 LONG 80 66 03 04' W

RECEIVED
Office of Oil and Gas
KLEINFELDER
Bright People. Right Solutions.
230 E. Exchange Blvd. Suite 122
Cary, NC 27513
Phone: 919.721.1072
www.kleinfelder.com

DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
REVISIONS
BY: JOSHUA FREEDMAN, P.E. #2000
DATE: 06/28/2016
DESCRIPTION: CPT-10 WELL PAD
DODDRIERGE COUNTY
WEST VIRGINIA

ISSUED FOR
CONSTRUCTION



SITE PLAN
CPT-10 WELL PAD
DODDRIERGE COUNTY
WEST VIRGINIA



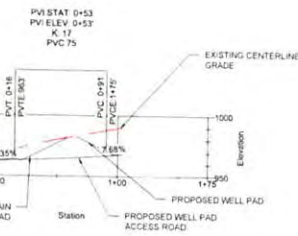
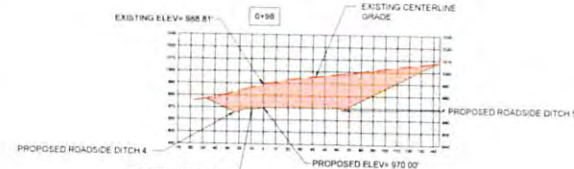
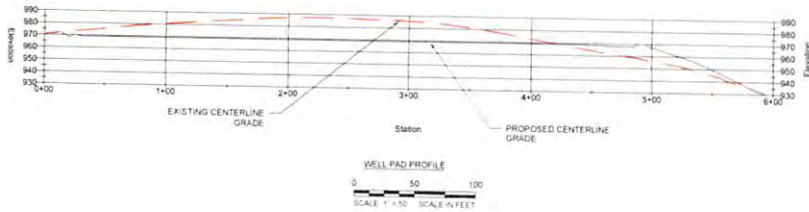
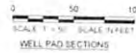
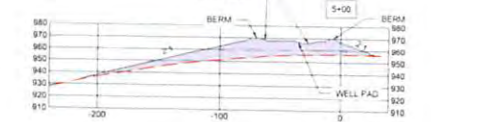
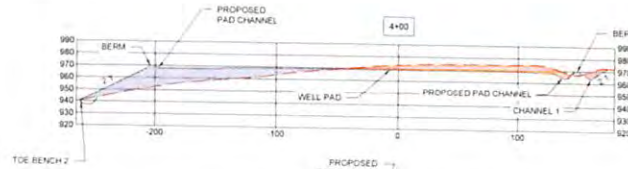
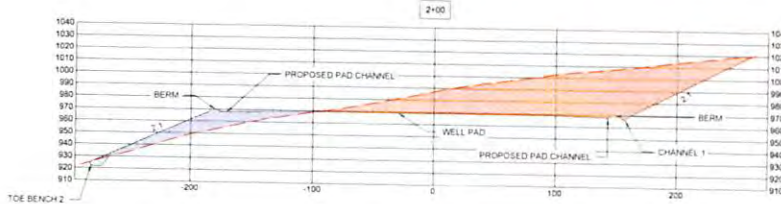
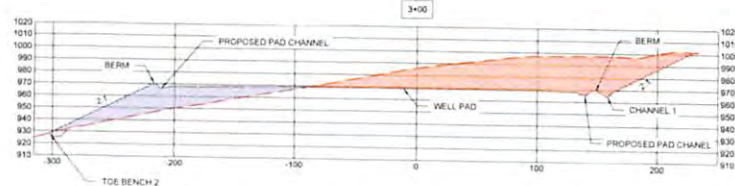
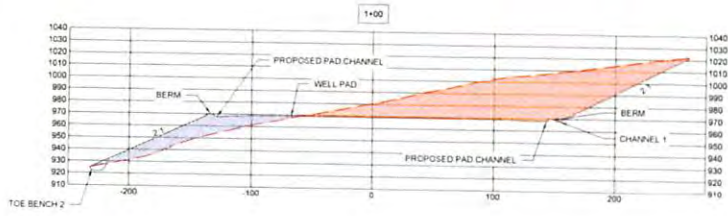
CONSTRUCTION

PROJECT NO	137355
ISSUE DATE	06/28/2016
CURRENT REVISION	0
DESIGNED BY	AKR
DRAWN BY	CRH
CHECKED BY	JEF
APPROVED BY	MJA

10
10 of 25

4701706752

CADDLE, C:\projects\4701706752\DWG\13\Cross Sections\Well Sections & Profile.dwg, LAYOUT: 11 - WELL AND DITCH SECTIONS & PROFILE, PLOTTED: 06/27/2016 09:48:48 AM



- NOTE
- REFER TO SITE PLAN SHEETS ON SHEETS 9 - 10 FOR ADDITIONAL WELL PAD INFORMATION INCLUDING STORMWATER AND EROSION CONTROL MEASURES
 - ALL FILL SLOPES SHALL BE CONSTRUCTED WITH BENCHING PER DETAILS 1 & 2 ON SHEET 7

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Charlottesville, VA 22904
Phone: (803) 733-3722
Fax: (803) 733-3723

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WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION

REV.	DESCRIPTION	DATE	BY	CHK

ISSUED FOR CONSTRUCTION

SCALE VERIFICATION

THIS BAR IS 1 INCH IN LENGTH OR ORIGINAL DRAWING

1" = 50'

IF IT'S NOT 1 INCH ON THIS SHEET, ADJUST YOUR SCALES ACCORDINGLY

ORIGINAL DRAWING SIZE IS 22 x 34

WELL PAD CROSS SECTIONS & PROFILE

CPT-10 WELL PAD
DODDRIDGE COUNTY
WEST VIRGINIA

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CONSTRUCTION

PROJECT NO.	137355
ISSUE DATE	06-08-2016
CURRENT REVISION	0
DESIGNED BY	AER
DRAWN BY	CRH
CHECKED BY	JCF
APPROVED BY	MJA

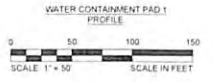
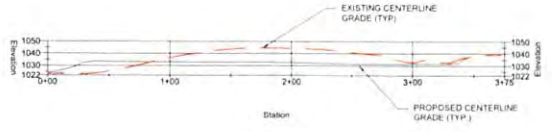
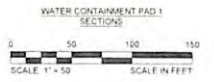
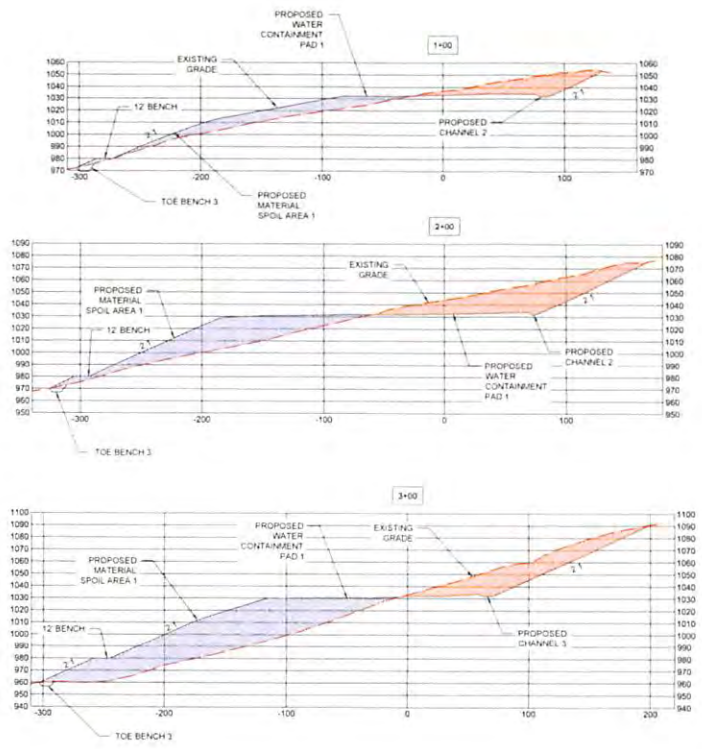
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11 of 25

DAK
6/17/16

4701706752

DATE PLOTTED: 08/26/2024 10:58:11 AM
 PLOTTER: HP DesignJet T1100PS
 PLOT SCALE: 1" = 50'
 PLOT SHEET: 12 OF 20
 PROJECT: CPT-10 WELL PAD DODDRIDGE COUNTY WEST VIRGINIA
 DRAWING: WATER CONTAINMENT PAD 1 CROSS SECTIONS & PROFILE



- NOTE**
- 1 REFER TO SITE PLAN SHEETS ON SHEETS 9 - 10 FOR ADDITIONAL WATER CONTAINMENT PAD 1 INFORMATION INCLUDING STORMWATER AND EROSION CONTROL MEASURES
 - 2 ALL FILL SLOPES SHALL BE CONSTRUCTED WITH BENCHING PER DETAILS 1 & 2 ON SHEET 7
 - 3 MATERIAL SPOIL AREA 1 SECTION IS INCLUDE ON THIS SHEET

*DAF
6/17/24*

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 Office of Oil and Gas
 West Virginia Department of Environmental Protection

REGISTERED PROFESSIONAL ENGINEER
 STATE OF WEST VIRGINIA
 EXPIRES 12/31/2025
 JOSEPH D. FARRIS, WV P.E. No. 10001

REV	DESCRIPTION	DATE	BY	CHK

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ORIGINAL DRAWING SIZE: 18.25" x 34"

WATER CONTAINMENT PAD 1 CROSS SECTIONS & PROFILE

CPT-10 WELL PAD
DODDRIDGE COUNTY
WEST VIRGINIA



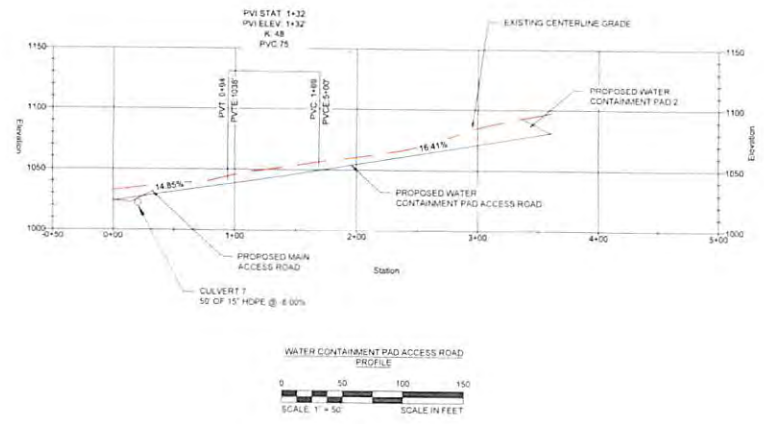
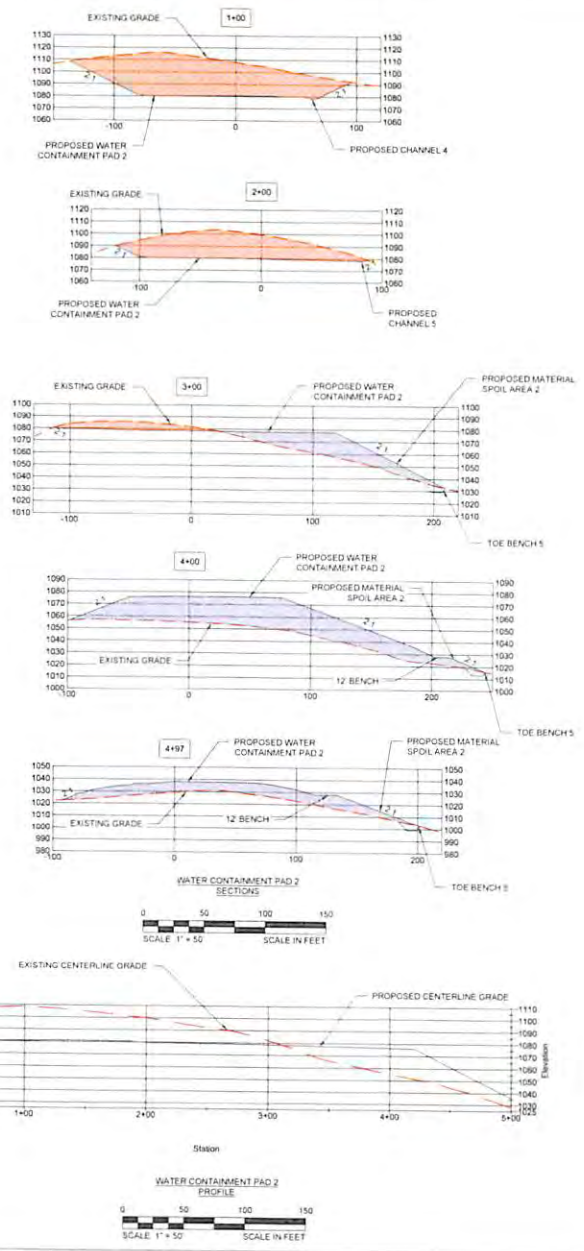
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PROJECT NO.	121305
ISSUE DATE	08/26/2024
CURRENT REVISION	0
DESIGNED BY	AKN
DRAWN BY	CRH
CHECKED BY	JEF
APPROVED BY	MJA

12

12 OF 20

4701706752

DATE: 06/08/2016 10:51:31 AM BY: J. W. WILSON
 PROJECT: CPT-10 WATER CONTAINMENT PAD 2 (SECTION 2) PROFILE
 DRAWN BY: J. W. WILSON
 CHECKED BY: J. W. WILSON
 APPROVED BY: J. W. WILSON



- NOTE**
- 1 REFER TO SITE PLAN SHEETS ON SHEETS 9 - 10 FOR ADDITIONAL WATER CONTAINMENT PAD 2 INFORMATION INCLUDING STORMWATER AND EROSION CONTROL MEASURES
 - 2 ALL FILL SLOPES SHALL BE CONSTRUCTED WITH BENCHING PER DETAILS 1 & 2 ON SHEET 7
 - 3 MATERIAL SPOIL AREA 2 SECTION IS INCLUDE ON THIS SHEET
 - 4 PROPOSED CULVERT IS TO SCALE IN PROFILE VIEW

KLEINFELDER
Bright People. Right Solutions.

230 East 10th Street, Suite 122
Charleston, WV 25301
Phone: 304.772.7072
Fax: 304.772.7073

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OFFICE OF THE REGISTERED PROFESSIONAL ENGINEER
STATE OF WEST VIRGINIA
JUN 28 2016

REGISTERED PROFESSIONAL ENGINEER #20261

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ORIGINAL DRAWING SIZE 18.25 x 36
WATER CONTAINMENT PAD 2 CROSS SECTIONS & PROFILE
 CPT-10 WELL PAD
 DODDRIEGE COUNTY
 WEST VIRGINIA



CONSTRUCTION

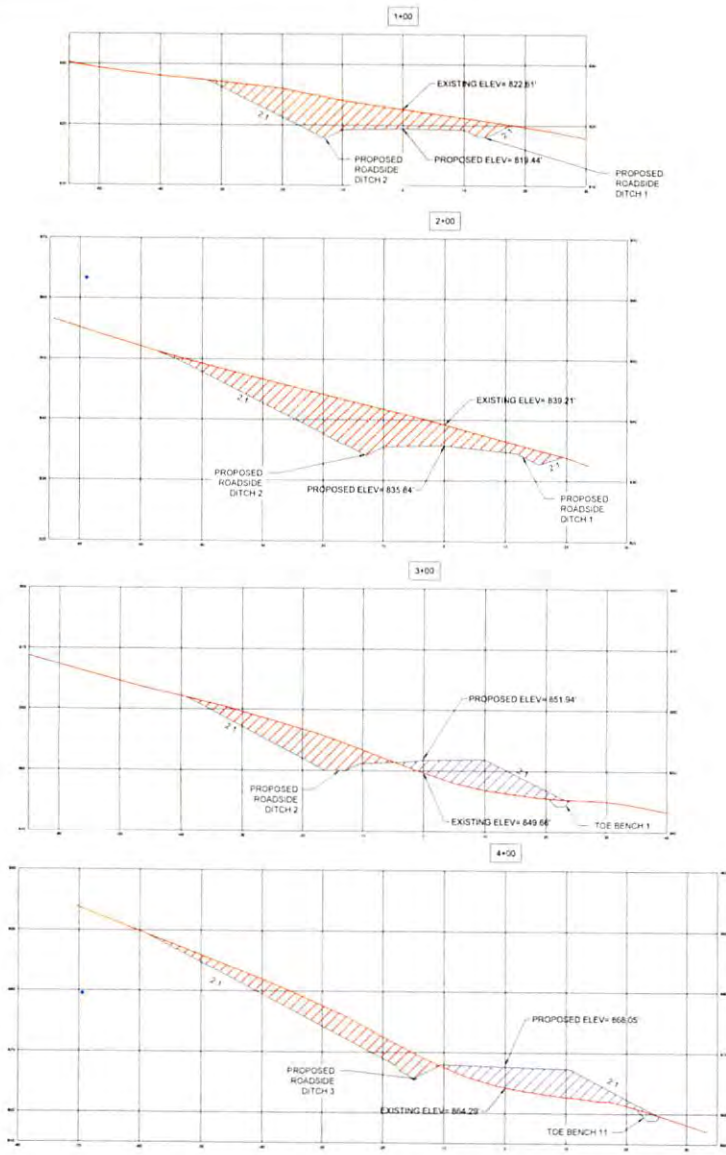
PROJECT NO.	137355
ISSUE DATE	06/08/2016
CURRENT REVISION	0
DESIGNED BY	AEH
DRAWN BY	JWW
CHECKED BY	JWW
APPROVED BY	MJA

13

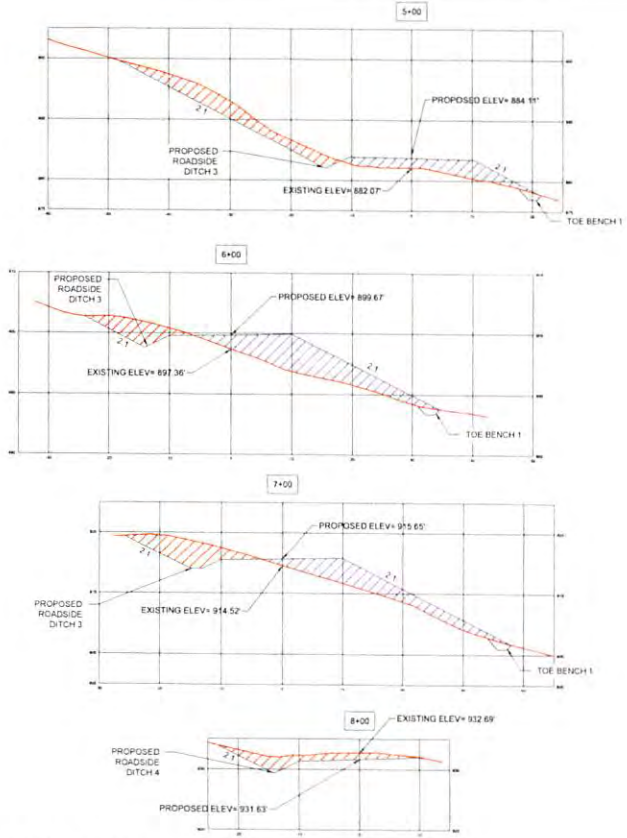
WV Department of Environmental Protection

4701706752

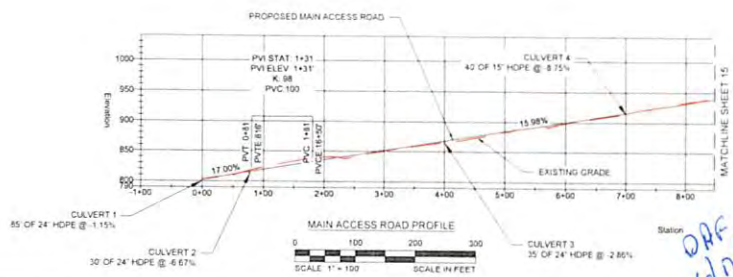
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MAIN ACCESS ROAD SECTIONS
 SCALE 1" = 10'
 SCALE IN FEET



- NOTE**
1. REFER TO SITE PLAN SHEETS ON SHEETS 9 - 10 FOR ADDITIONAL MAIN ACCESS ROAD INFORMATION INCLUDING STORMWATER AND EROSION CONTROL MEASURES
 2. ALL FILL SLOPES SHALL BE CONSTRUCTED WITH BENCHING PER DETAILS 1 & 2 ON SHEET 7
 3. PROPOSED CULVERTS ARE TO SCALE IN PROFILE VIEW



MAIN ACCESS ROAD PROFILE
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 WV Department of Environmental Protection

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 100 Executive Drive, Suite 122
 Petersburg, Virginia 24154
 Phone: 754.772.7872
 www.kleinfelder.com

PROJECT NO. 137355
 SHEET DATE 06/18/2016
 CURRENT REVISION 0
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JUL 10 2016

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 THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING
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ORIGINAL DRAWING SIZE IS 22 x 34
MAIN ACCESS ROAD CROSS SECTIONS AND PROFILE
 CPT-10 WELL PAD
 DODDRIDGE COUNTY
 WEST VIRGINIA

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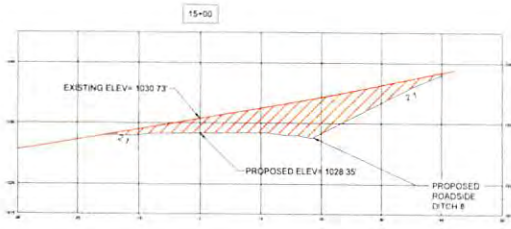
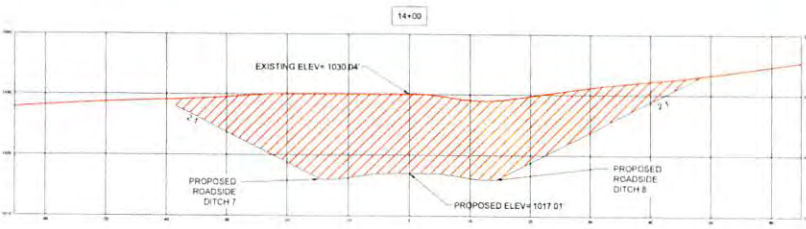
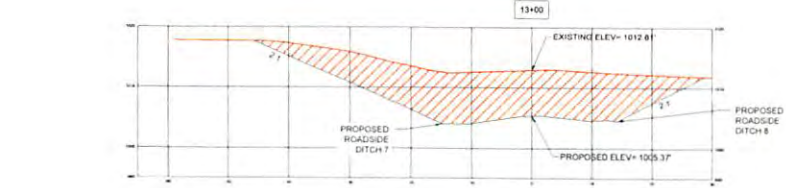
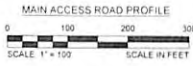
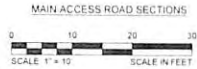
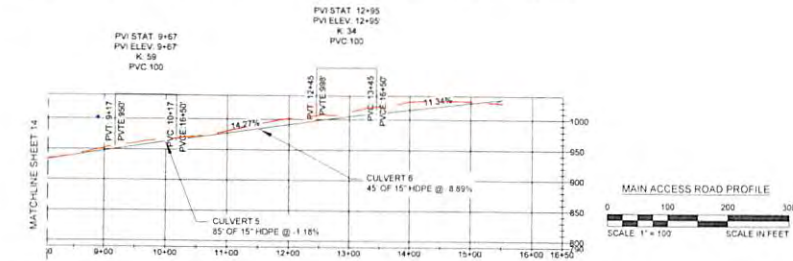
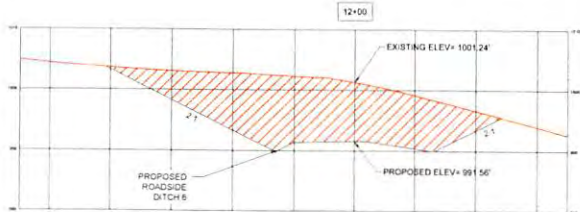
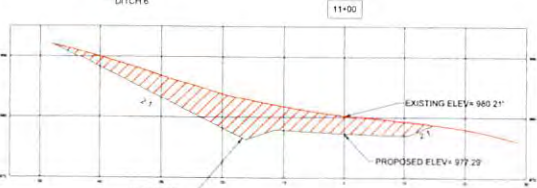
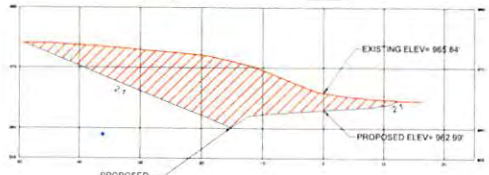
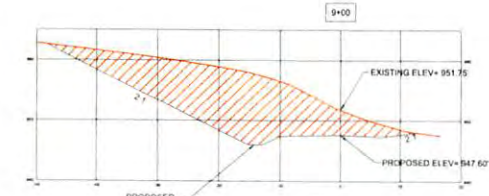
CONSTRUCTION

PROJECT NO. 137355
 SHEET DATE 06/18/2016
 CURRENT REVISION 0
 DESIGNED BY AER
 DRAWN BY CRH
 CHECKED BY JLP
 APPROVED BY MJA

SHEET 14 OF 25

4701706752

DATE PLOTTED: 06/08/2016 10:07:15 AM; PLOTTER: HP DesignJet 2445; PLOT SCALE: 1"=100'



- NOTE**
1. REFER TO SITE PLAN SHEETS ON SHEETS 9 - 10 FOR ADDITIONAL MAIN ACCESS ROAD INFORMATION INCLUDING STORMWATER AND EROSION CONTROL MEASURES
 2. ALL FILL SLOPES SHALL BE CONSTRUCTED WITH BENCHING PER DETAILS 1 & 2 ON SHEET 7
 3. PROPOSED CULVERTS ARE TO SCALE IN PROFILE VIEW.

DAF 6/17/16



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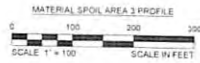
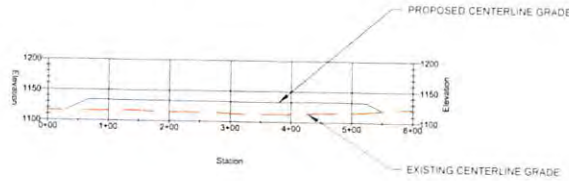
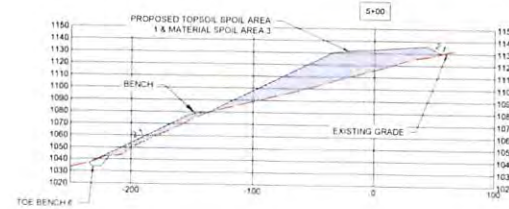
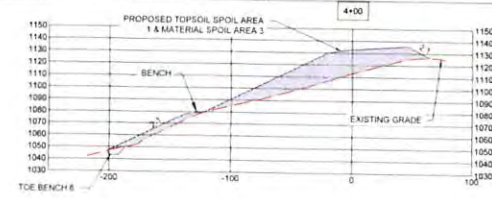
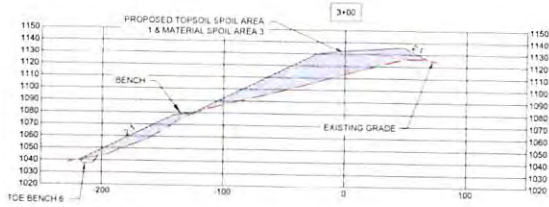
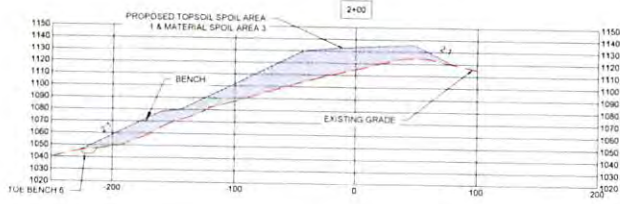
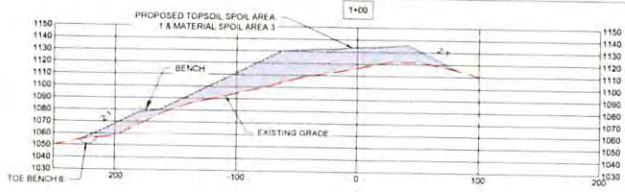
SCALE VERIFICATION
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ORIGINAL DRAWING SIZE: 36" x 36"
MAIN ACCESS ROAD CROSS SECTIONS & PROFILE
 CPT-10 WELL PAD
 DODDRIDGE COUNTY
 WEST VIRGINIA



CONSTRUCTION	
PROJECT NO.	137315
ISSUE DATE	06/08/2016
CURRENT REVISION	3
DESIGNED BY	AEK
DRAWN BY	CRH
CHECKED BY	ZSC
APPROVED BY	MJA

4701706752



NOTE

1. REFER TO SITE PLAN SHEETS ON SHEETS 9- 10 FOR ADDITIONAL TOPSOIL SPOIL AREA 1 & MATERIAL SPOIL AREA 3 INFORMATION INCLUDING STORMWATER AND EROSION CONTROL MEASURES
2. ALL FILL SLOPES SHALL BE CONSTRUCTED WITH BENCHING PER DETAILS 1 & 2 ON SHEET 7
3. MATERIAL SPOIL 1 & 2 SECTION VIEWS CAN BE FOUND ON SHEETS 12 & 11 RESPECTIVELY

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2021
APR 28 10 46 AM
STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SIGNED BY: [Signature]
TITLE: [Title]

REVISION	DESCRIPTION	DATE

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ORIGINAL DRAWING SIZE 18 22 x 34
TOPSOIL SPOIL AREA & MATERIAL SPOIL AREA CROSS SECTIONS & PROFILE

CPT-10 WELL PAD
DODDRIDGE COUNTY
WEST VIRGINIA



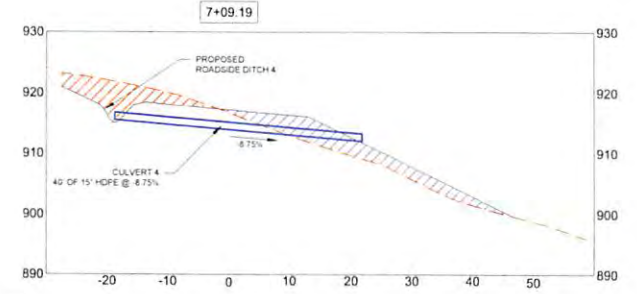
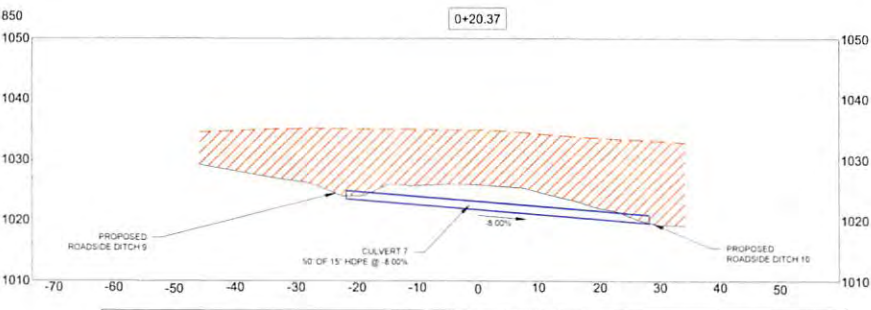
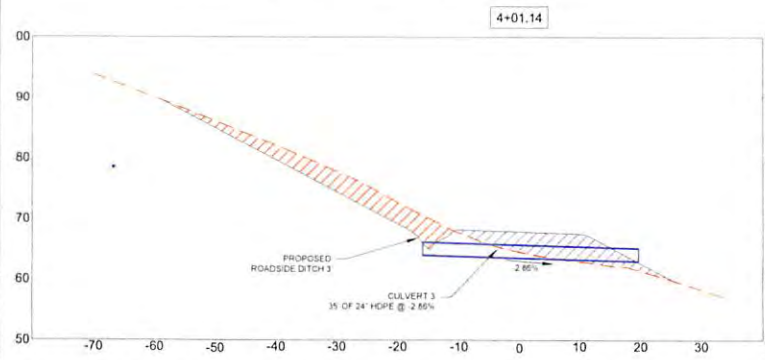
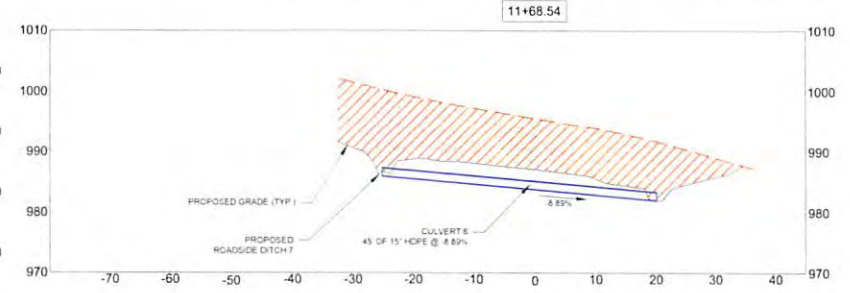
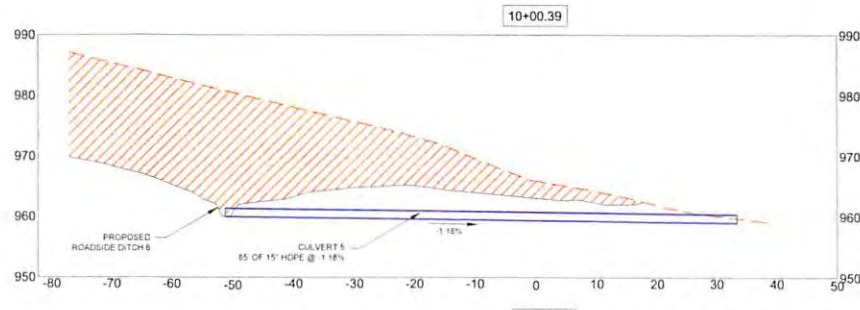
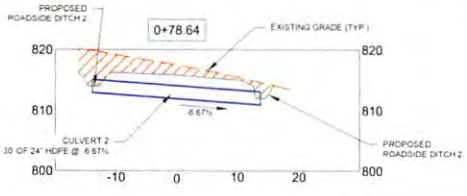
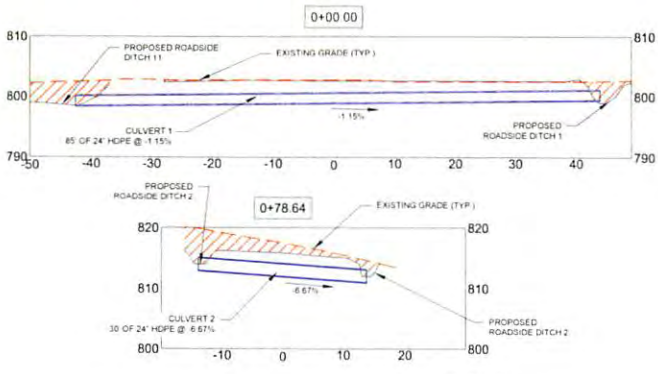
CONSTRUCTION	
PROJECT NO.	157315
ISSUE DATE	05-08-2018
CURRENT REVISION	3
DESIGNED BY	AER
DRAWN BY	CRW
CHECKED BY	JCF
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6/6/18*

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NOTE:
1 ALL FILL SLOPES SHALL BE CONSTRUCTED WITH BENCHING PER DETAILS 1 & 2 ON SHEET 7



CPT-10 STORM DRAINAGE COMPUTATIONS

ACCESS ROAD CROSS-DRAINS	STATION	Q TOTAL FLOW (cfs)	SLOPE (ft/ft)	SIZE	LENGTH (ft)	UPPER INVERT (ft)	LOWER INVERT (ft)	PIPE MATERIAL
P1	00+00	10.29	0.0115	24"	85.00	799.50	798.52	HDPE
P2	00+83	9.57	0.0667	24"	30.00	813.00	811.00	HDPE
P3	04+01	9.20	0.0286	24"	35.00	864.00	863.00	HDPE
P4	07+09	3.57	0.0875	15"	40.00	915.50	912.00	HDPE
P5	10+00	0.67	0.0118	15"	85.00	960.00	959.00	HDPE
P6	11+68	1.93	0.0668	15"	45.00	986.00	982.00	HDPE
P7	0+46	4.45	0.0800	15"	50.00	1023.50	1019.50	HDPE

ISSUED FOR CONSTRUCTION

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IF IT'S NOT 1 INCH ON THIS SHEET ADJUST YOUR SCALES ACCORDINGLY

ORIGINAL DRAWING SIZE: 18.25 x 34

CULVERT PROFILES
CPT-10 WELL PAD
DODDRIDGE COUNTY
WEST VIRGINIA



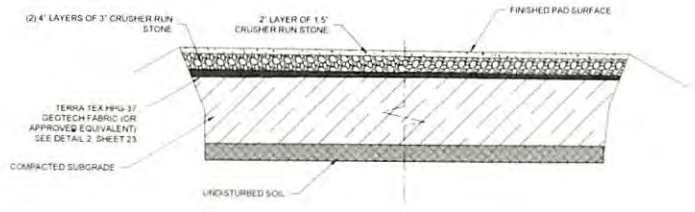
CONSTRUCTION

PROJECT NO: 13195
ISSUE DATE: 06/28/2014
CURRENT REVISION: 3
DESIGNED BY: AER
DRAWN BY: CRH
CHECKED BY: JCF
APPROVED BY: MJA

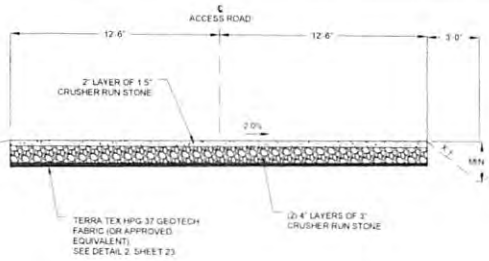
17

17 of 25

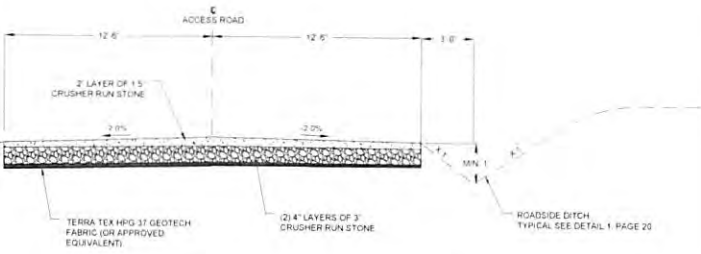
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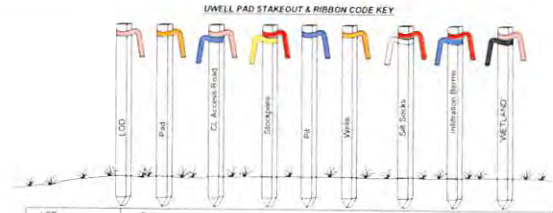
1 TYPICAL PAD CROSS SECTION DETAIL
18 NTS



2 INSLOPED SECTION SITE ACCESS DRIVE DETAIL
18 NTS

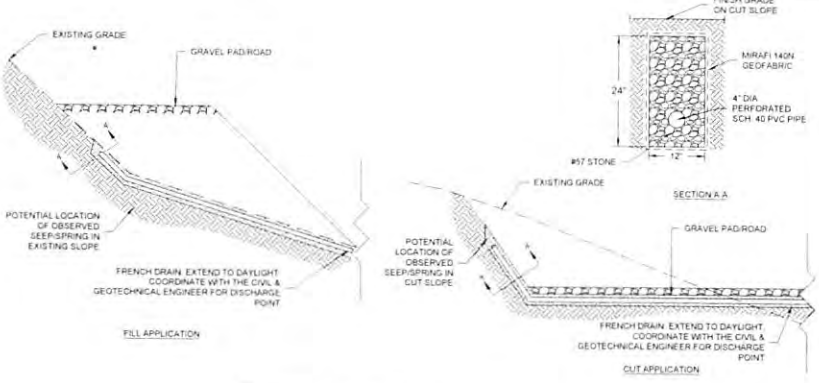


3 CROWNED ROAD SECTION - SITE ACCESS DRIVE DETAIL
18 NTS

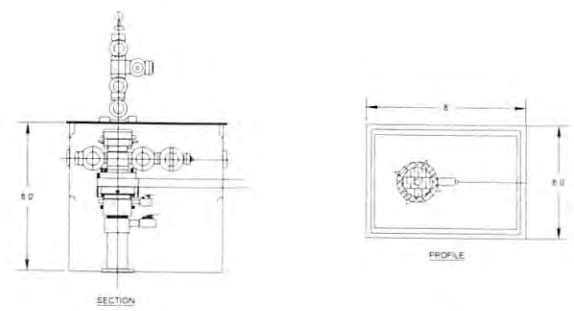


Item	Color
LOD	Pink
Pad	Orange
CL Access Road	Pink/Blue
Stakepins	Red/Yellow
Pts	Blue
Wells	Orange
Silt Socks	Red/White
Mitigation Berms	Red/Blue
Wetlands	Pink/Black "WETLAND"

4 FLAGGING DETAIL
18 NTS



5 SEEPSPRING FRENCH DRAIN DETAIL
18 NTS



6 CELLAR WELL HEAD DETAIL
18 NTS

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Office of Oil and Gas
UN 2016
2021
WV Environmental Protection

ISSUED FOR CONSTRUCTION

SCALE VERIFICATION
THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING
IF IT'S NOT 1 INCH ON THIS SHEET ADJUST YOUR SCALE'S ACCORDINGLY

ORIGINAL DRAWING SIZE IS 22 x 34
CONSTRUCTION DETAILS

CPT-10 WELL PAD
DODDRIDGE COUNTY
WEST VIRGINIA

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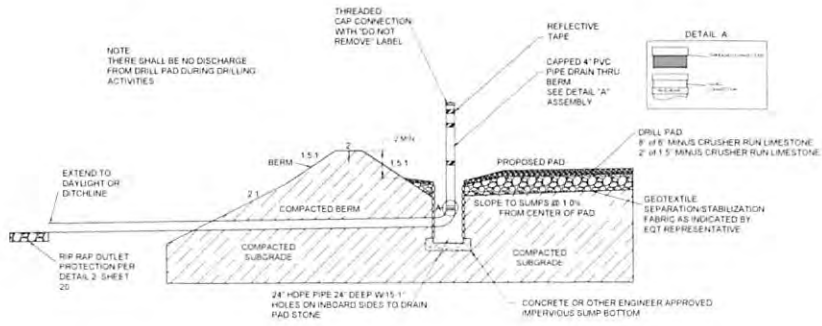
CONSTRUCTION

PROJECT NO.	137355
ISSUE DATE	06.08.2016
CURRENT REVISION	3
DESIGNED BY	AER
DRAWN BY	CRK
CHECKED BY	JF
APPROVED BY	M.A. SHEET

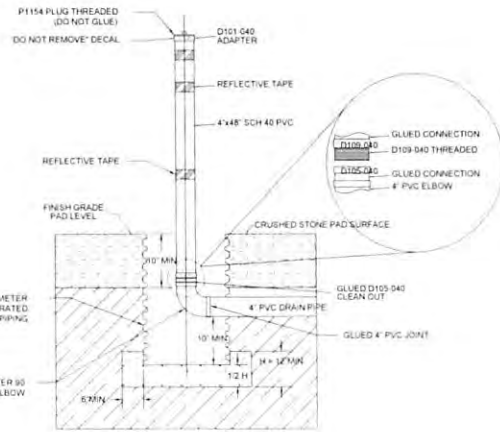
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DAF
6/16/16

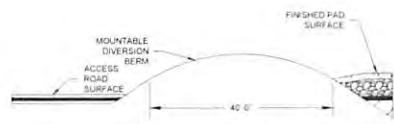
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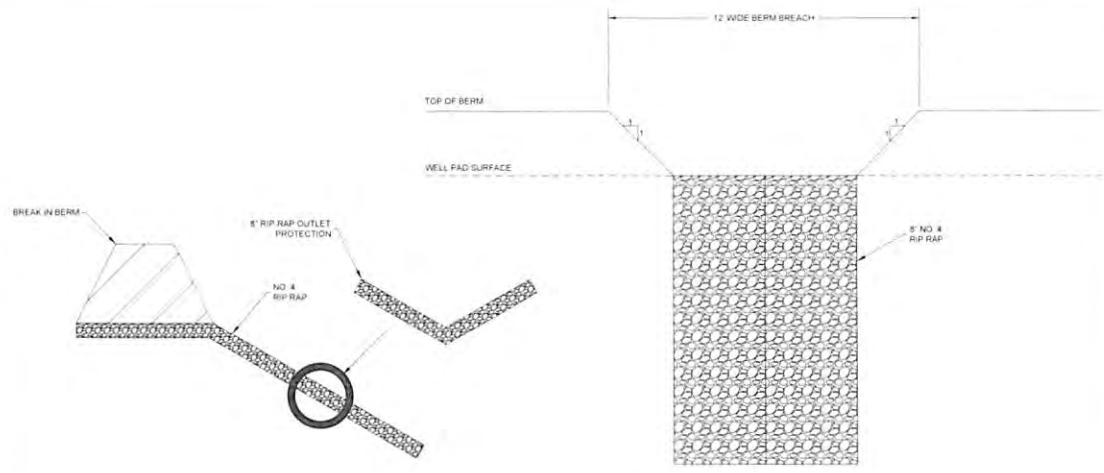
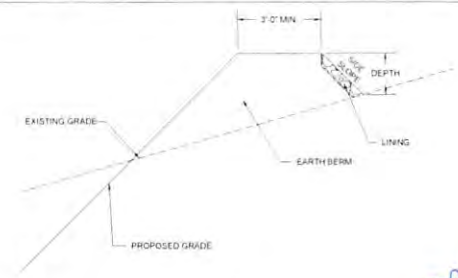
1
19
PAD SLUMP TYPICAL DETAIL
NOT TO SCALE



3
19
MOUNTABLE BERM DETAIL
NTS



4
19
TYPICAL DRAINAGE BERM DETAIL
NTS



2
19
TYPICAL BERM BREACH
NTS

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KLEINFELDER
Bright People. Right Solutions.

230 Eastbank Drive, Suite 1122
Martinsburg, West Virginia 26151
Tel: 304.263.1100
Fax: 304.263.1101
www.kleinfelder.com

APPROVED FOR CONSTRUCTION
JUN 16 2016

DESIGNED BY: J.A.D. FREDRICKS
DRAWN BY: KEVIN
CHECKED BY: J.A.D. FREDRICKS
DATE:

WV Department of Environmental Protection

ISSUED FOR CONSTRUCTION

SCALE VERIFICATION
THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING
0 1
IF IT'S NOT 1 INCH ON THIS SHEET ADJUST YOUR SCALES ACCORDINGLY

ORIGINAL DRAWING SIZE 18 22 x 34

BERM DETAILS

CPT-10 WELL PAD
DODDRIDGE COUNTY
WEST VIRGINIA

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CONSTRUCTION

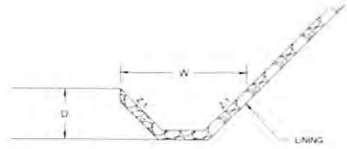
PROJECT NO.	137789
ISSUE DATE	06-28-2016
CURRENT REVISION	0
DESIGNED BY	AEK
DRAWN BY	JFH
CHECKED BY	JFK
APPROVED BY	MJA

19

*DRG
GALILEO*

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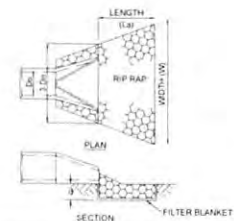
4701706752



CPT-10 ROAD-SIDE DITCH & CHANNEL DESIGN AND LINING

ROAD-SIDE DITCH / CHANNEL NAME	TOTAL RUNOFF, Q (cfs)	UPPER STATION	LOWER STATION	LENGTH (ft)	CHANNEL SECTION	BOTTOM WIDTH (ft)	LEFT SIDE SLOPE, Z:1 (ft)	RIGHT SIDE SLOPE, Z:1 (ft)	CHANNEL DEPTH (ft)	CHANNEL SLOPE (ft)	TEMPORARY LINER	PERMANENT LINER
ROAD-SIDE DITCH 1	0.71	02+00	00+00	200.00	TRIANGULAR	2.00	2.00	2.00	1.50	0.16	NAG SC250	NAG SC250
ROAD-SIDE DITCH 2	9.57	04+00	00+00	400.00	TRIANGULAR	2.00	2.00	2.00	1.50	0.16	NAG SC250	NAG SC250
ROAD-SIDE DITCH 3	9.21	07+10	04+00	310.00	TRIANGULAR	2.00	2.00	2.00	1.50	0.16	NAG SC250	NAG SC250
ROAD-SIDE DITCH 4	3.57	10+00	07+10	390.00	TRIANGULAR	2.00	2.00	2.00	1.50	0.11	NAG SC250	NAG SC250
ROAD-SIDE DITCH 5	0.75	11+04	00+00	104.00	TRIANGULAR	2.00	2.00	2.00	1.50	0.05	R 4	R 4
ROAD-SIDE DITCH 6	0.69	11+00	10+35	155.00	TRIANGULAR	2.00	2.00	2.00	1.50	0.12	NAG C125BN	NAG C125BN
ROAD-SIDE DITCH 7	1.93	15+75	11+00	385.00	TRIANGULAR	2.00	2.00	2.00	1.50	0.12	NAG SC250	NAG SC250
ROAD-SIDE DITCH 8	1.66	15+00	11+53	347.00	TRIANGULAR	2.00	2.00	2.00	1.50	0.12	NAG SC250	NAG SC250
ROAD-SIDE DITCH 9	4.47	03+81	00+20	341.00	TRIANGULAR	2.00	2.00	2.00	1.50	0.16	NAG SC250	NAG SC250
ROAD-SIDE DITCH 10	1.03	03+50	00+20	330.00	TRIANGULAR	2.00	2.00	2.00	1.50	0.16	NAG SC250	NAG SC250
ROAD-SIDE DITCH 11	2.85	N/A	N/A	142.00	TRIANGULAR	2.00	2.00	2.00	1.50	0.01	NAG SC250	NAG SC250
DITCH 1	2.78	N/A	N/A	152.00	TRIANGULAR	2.00	2.00	2.00	1.50	0.23	NAG SC250	NAG SC250
DITCH 2	1.75	N/A	N/A	171.00	TRIANGULAR	2.00	2.00	2.00	1.50	0.30	NAG SC250	NAG SC250
DITCH 3	2.25	N/A	N/A	132.00	TRIANGULAR	2.00	2.00	2.00	1.50	0.07	NAG SC250	NAG SC250
DITCH 4	0.88	N/A	N/A	138.00	TRIANGULAR	2.00	2.00	2.00	1.50	0.16	NAG SC250	NAG SC250
DITCH 5	2.64	N/A	N/A	228.00	TRIANGULAR	2.00	2.00	2.00	1.50	0.30	NAG P300	GLASS C VEGETATION
DITCH 6	1.25	N/A	N/A	322.00	TRIANGULAR	2.00	2.00	2.00	3.00	0.26	NAG P350	GLASS C VEGETATION
CHANNEL 1	3.52	N/A	N/A	500.00	TRIANGULAR	2.00	2.00	2.00	1.00	0.02	R 3	R 3
CHANNEL 2	1.24	N/A	N/A	145.00	TRIANGULAR	2.00	2.00	2.00	1.50	0.01	R 3	R 3
CHANNEL 3	1.21	N/A	N/A	228.00	TRIANGULAR	2.00	2.00	2.00	1.50	0.01	R 3	R 3
CHANNEL 4	2.24	N/A	N/A	254.00	TRIANGULAR	2.00	2.00	2.00	1.50	0.01	R 3	R 3
CHANNEL 5	0.20	N/A	N/A	187.00	TRIANGULAR	2.00	2.00	2.00	1.50	0.01	R 3	R 3

1 TYPICAL DRAINAGE CHANNEL DETAIL
20 NTS



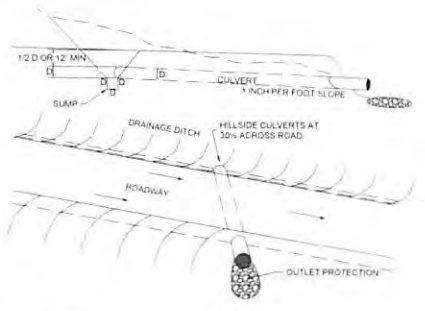
NOTES:
 1 IF FLARED END SECTION IS DISCHARGING INTO DITCH FROM THE SIDE EXTEND RIP-RAP UP DITCH BANK ON OFF SIDE A MINIMUM OF 4 FEET
 2 A SUITABLE NON-WOVEN GEOTEXTILE FABRIC, USED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS, MAY BE SUBSTITUTED FOR FILTER BLANKET UNDER THE RIP-RAP
 3 D = 1.5 TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN 6"

OUTLET PROTECTION

OUTLET	D ₅₀ (in)	10D ₅₀ (ft)	L (ft)	W (ft)	RIP-RAP	S (ft)
FES 1	24	6	9	1515	R 4	18
FES 2	24	6	9	10	R 4	18
FES 3	15	3.75	6	10	R 4	18
FES 4	15	3.75	6	10	R 4	18
FES 5	15	3.75	6	10	R 4	18

2 RIP-RAP OUTLET PROTECTION DETAIL
20 NTS

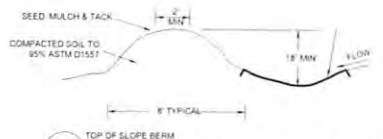
CONSTRUCTION SPECIFICATIONS
 1 CULVERTS WITH OUTLETS ONTO LENGTHY FILL SLOPES MAY REQUIRE SLOPE DRAINS WITH OUTLET PROTECTION DEPENDING ON THE STEEPNESS OF THE OUTSLOPE
 2 RIP-RAP USED AS OUTLET PROTECTION MUST BE HARD ANGLULAR AND OF A QUALITY RESISTANT TO WEATHERING AND DISINTEGRATION. RIP-RAP SHOULD BE GROUTED ON STEEP OR LENGTHY FILL SLOPES WITH A MINIMUM THICKNESS TWO TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN SIX INCHES



3 DITCH RELIEF CULVERT DETAIL
20 NTS

INSTALLATION
 1 WHEN CLEARING THE LOCATION FOR THE DIVERSION, ONLY CLEAR ENOUGH ROOM FOR CONSTRUCTION AND MAINTENANCE EQUIPMENT ACCESS. DO NOT CLEAR ANY ADDITIONAL AREA UNTIL ALL EROSION CONTROL DEVICES ARE IN PLACE.
 2 REMOVE ALL STUMPS, ROOTS AND OTHER DEBRIS AND DISPOSE OF THEM PROPERLY.
 3 INSTALL DIVERSION AND COMPACT AS SHOWN IN DETAIL. INSURE POSITIVE DRAINAGE DURING CONSTRUCTION OF BERM.
 4 SCARIFY, SEED, MULCH AND TACK DISTURBED AREAS IMMEDIATELY UPON COMPLETION OF BERM.
 5 INSTALL EROSION CONTROL MAT NAG C125BN PER MANUFACTURER'S RECOMMENDATIONS AND KEY INTO SIDES OF CHANNEL TO PREVENT WATER FROM UNDERMINING OR DAMAGING CHANNEL LINER.

MAINTENANCE
 INSPECT TEMPORARY DIVERSIONS ONCE A WEEK AND AFTER EVERY RAINFALL. IMMEDIATELY REMOVE SEDIMENT FROM THE FLOW AREA AND REPAIR THE DIVERSION RIDGE. CAREFULLY CHECK OUTLETS AND MAKE TIMELY REPAIRS AS NEEDED. WHEN THE AREA PROTECTED IS PERMANENTLY STABILIZED, REMOVE THE RIDGE AND THE CHANNEL TO BLEND WITH THE NATURAL GROUND LEVEL AND APPROPRIATELY STABILIZE IT.



4 TOP OF SLOPE BERM (FOR CONTRACTOR'S USE IF REQUIRED FOR MANAGEMENT OF WATER DURING CONSTRUCTION)
20 NTS

EROSION CONTROL MAT NORTH AMERICAN GREEN C125BN OR APPROVED EQUAL WITH BIODEGRADABLE STAPLES OR APPROVED EQUAL. REFER TO MANUFACTURER FOR INSTALLATION INSTRUCTIONS.

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Office of Oil and Gas

West Virginia Department of Environmental Protection

RECEIVED

JUN 20 2024

20261

REVISION

DESCRIPTION

DATE

ISSUED FOR CONSTRUCTION

SCALE VERIFICATION
 THIS BAR IS 1 INCH IN LENGTH (IN ORIGINAL DRAWING)
 1" = 100'

ORIGINAL DRAWING SIZE IS 22 x 34
STORMWATER DETAILS
 CPT-10 WELL PAD
 DODDRIDGE COUNTY
 WEST VIRGINIA

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CONSTRUCTION

PROJECT NO.	13705
ISSUE DATE	06/08/2019
CURRENT REVISION	C
DESIGNED BY	NER
DRAWN BY	LSM
CHECKED BY	JDF
APPROVED BY	MJA

20

20 of 21

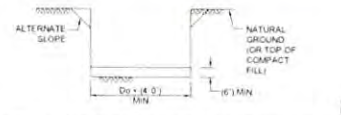
DPP
6/17/20

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PIPE INSTALLATION PROCEDURES

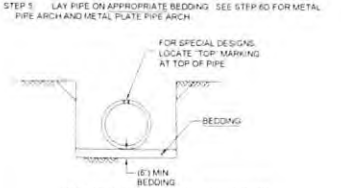
CONSTRUCTION DETAILS BELOW COVER THE FOLLOWING CONDITIONS
 A. PIPE LYING ON TOP OF THE NATURAL GROUND, ROCK OR COMPACTED (95% SPD) FILL
 B. THE EXISTING GROUND IS BETWEEN THE TOP AND THE BOTTOM OF THE PROPOSED PIPE AND THE PIPE IS TO BE COVERED WITH EARTH FILL
 C. THE TOP OF PIPE IS BELOW THE LEVEL OF THE NATURAL GROUND OR COMPACTED FILL TO MINIMUM 95% SPD AND TO BE COVERED WITH EARTH FILL TO HEIGHTS ABOVE THE NATURAL GROUND

- STEP 1 REMOVE TOPSOIL (COMPRESSIBLE LAYER OF ORGANIC MATERIAL) TO A WIDTH EQUAL TO 5 OUTSIDE DIAMETERS OF THE PIPE IN ALL FILL CONDITIONS ABOVE A, B & C. ALSO AS SPECIFIED ON THE CONTRACT DRAWINGS UNDERCUT FOR THE DEPTH BELOW THE BEDDING AS SHOWN BY DESIGN (MAKE MIN WIDTH 5 DIAMETERS OF PIPE). PAY AS CLASS 1 EXCAVATION.
- STEP 2 CONSTRUCT THE EMBANKMENT TO (4'-0") ABOVE THE TOP OF PIPE OR TO THE SUBGRADE ELEVATION, WHICHEVER IS LESS. FOR PIPE (72" OR GREATER SEE NOTE 1).
- STEP 3 EXCAVATE THE TRENCH TO THE WIDTH OF THE OUTSIDE DIAMETER OF THE PIPE BARREL PLUS (4'-0") AND CREATE AN APPROPRIATE BEDDING (6") DEEP.



STEP 4 FOR CONCRETE PIPE IF THIS EXCAVATION IS THROUGH ROCK OR HARD SHALE OR AREAS OF UNDERCUT PROVIDE (8"-12" HIGH) OF (2'-4" TO 2'-6") BELOW THE INTENDED BOTTOM ELEVATION OF THE PIPE (18" MAX).

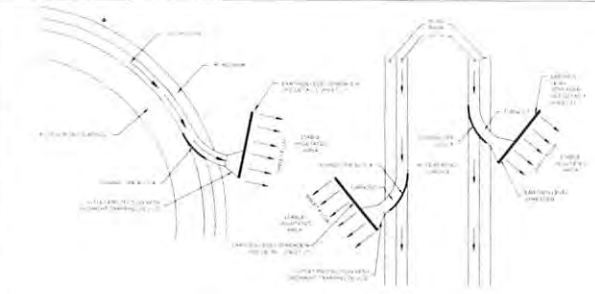
NOTE: IF UNSUITABLE MATERIAL IS FOUND UNDERCUT AS DIRECTED AND BACKFILL WITH SUITABLE MATERIAL TO BOTTOM OF BEDDING ELEVATION, UNLESS OTHERWISE SPECIFIED.



AASHTO #8 (UNCOMPACTED) - CONCRETE PIPE, CRUSHER RUN (UNCOMPACTED), METAL PIPE, CRUSHER RUN (UNCOMPACTED), THERMOPLASTIC PIPE

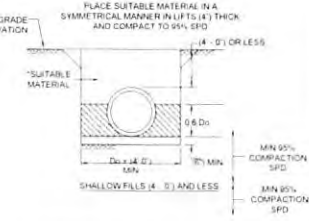
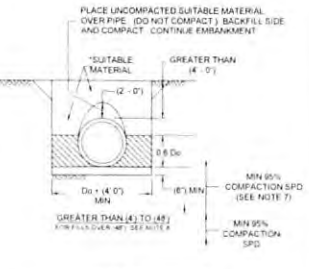
- LEGEND
- Aggregate for bedding (AASHTO #8)
 - Coarse aggregate (crusher run)

1 CIRCULAR PIPE INSTALLATION DETAIL
 21 NTS



4 TURN-OUT DETAIL
 21 NTS

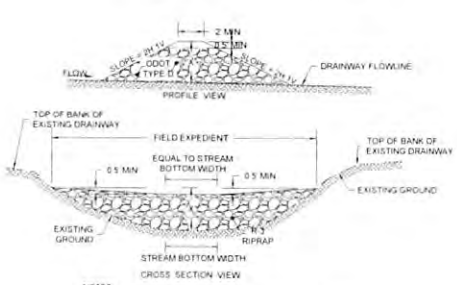
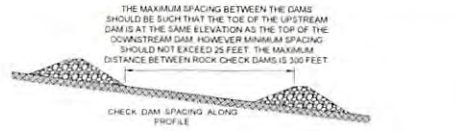
STEP 6 PLACE CRUSHER RUN COARSE AGGREGATE MATERIAL IN LIFTS (4" THICK) ADJACENT TO THE LOWER HAUNCHES TO A HEIGHT OF 0.8 D_o. COMPACT TO 95% SPD. TEST THE SIDE OF BACKFILL MATERIAL AND CONTINUE EMBANKMENT IN ACCORDANCE WITH PUBLICATION 408 SECTION 6E1.



D_o = OUTSIDE DIAMETER OF PIPE (INCHES)
 SPD = STANDARD PROCTOR DENSITY
 D_i = INSIDE DIAMETER

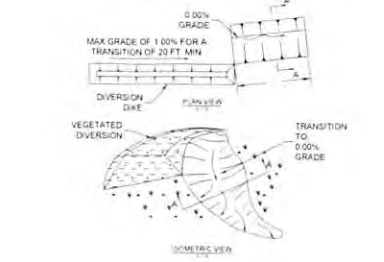
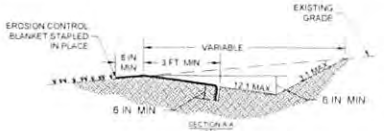
SUITABLE MATERIAL = MATERIAL CONTAINING NO DEBRIS, ORGANIC MATTER, FROZEN MATERIAL OR LARGE STONES WITH A DIAMETER GREATER THAN ONE HALF THE THICKNESS OF THE COMPACTED LAYERS BEING PLACED

2 ROCK CHECK DAM DETAIL
 21 NTS

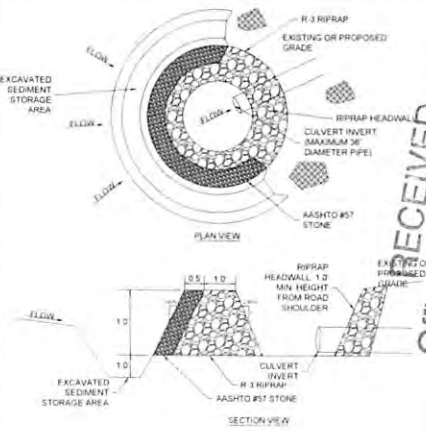


- NOTES
- X' DIMENSION AS DETAILED BY THE SPECIFICATIONS. FOR SEDIMENT CONTROL, THE MAXIMUM HEIGHT OF THE ROCK CHECK DAM IS 3 FEET. HOWEVER, ROCK CHECK DAMS CAN BE CONSTRUCTED IN SMALLER HEIGHTS. THE CENTER OF THE ROCK CHECK DAM SHALL BE 0'-6" LOWER THAN THE OUTER EDGES AS SHOWN.
 - ROCK CHECK DAMS ARE NORMALLY INSTALLED IN EXISTING DRAINAGE. THE TOP CROSS SECTION OF THE DAM SHOULD HAVE A LEVEL CENTER SECTION THE SAME WIDTH AS THE EXISTING CHANNEL BOTTOM AND 0'-6" LOWER THAN THE OUTER EDGES OF THE DAM. ROCK CHECK DAMS PLACED IN PROJECT CONSTRUCTED FLAT BOTTOM DITCHES SHALL HAVE SIMILAR DIMENSIONS.
 - THE CENTER OF ROCK CHECK DAMS CONSTRUCTED IN PROJECT CONSTRUCTED "VEE" SHAPED OR EXISTING "VEE" SHAPED DITCHES SHALL BE 0'-6" LOWER THAN AND SLOPED TO THE OUTER TOP EDGES OF THE DITCH SO HIGH FLOWS GO OVER THE TOP OF THE DAM AND NOT AROUND THE EDGES. ROCK CHECK DAMS SHALL BE REMOVED AFTER THE FIRST GROWING SEASON.

2 ROCK CHECK DAM DETAIL
 21 NTS



5 EARTHEN LEVEL SPREADER DETAIL
 21 NTS



- DESIGN CRITERIA AND CONSTRUCTION SPECIFICATIONS
- MINIMUM STONE HEIGHT SHOULD BE 1.0 WITH SIDE SLOPES NO STEEPER THAN 2:1. THE STONE "HORSESHOE" AROUND THE PIPE INLET SHOULD BE CONSTRUCTED OF R 3 RIPRAP WITH A MINIMUM CREST WIDTH OF 1.0. THE OUTSIDE FACE OF THE RIPRAP SHOULD BE COVERED WITH A 6" THICK LAYER OF #57 STONE.
 - THE EMBANKMENT OVER THE PIPE MUST BE PROTECTED FROM OVERTOPPING. THE TOP OF THE STONE SHOULD BE A MINIMUM OF 1.0 BELOW THE TOP OF THE FILL OVER THE PIPE AND 1.0 INTO THE FILL ON BOTH SIDES OF THE PIPE. THE INSIDE TOE OF THE RIPRAP SHOULD BE NO CLOSER THAN 2' FROM THE CULVERT OPENING TO ALLOW PASSAGE OF HIGH FLOWS.
 - THE SEDIMENT STORAGE AREA SHOULD BE EXCAVATED UPSTREAM OF THE ROCK PIPE INLET PROTECTION WITH A MINIMUM DEPTH OF 1.0 BELOW GRADE.
 - CLEAR THE AREA OF ALL DEBRIS THAT MIGHT HINDER EXCAVATION AND DISPOSAL OF SPOIL.
 - INSTALL THE R 3 RIPRAP IN A SEMI-CIRCLE AROUND THE PIPE INLET. THE STONE SHOULD BE BUILT UP HIGHER ON EACH END WHERE IT TIES INTO THE EMBANKMENT. ADJUST CREST AND BOTTOM WIDTH AS NECESSARY TO FACILITATE PLACEMENT WITHIN THE DITCH CHANNEL. THE MINIMUM HEIGHT SHOULD BE 1'-0" BUT ALSO LOWER THAN THE SHOULDER OF THE EMBANKMENT OR DIVERSIONS.
 - THE SEDIMENT STORAGE AREA SHOULD BE EXCAVATED AROUND THE OUTSIDE OF THE STONE HORSESHOE. THE MINIMUM HEIGHT SHOULD BE 1'-0" BUT ALSO LOWER THAN THE SHOULDER OF THE EMBANKMENT OR DIVERSIONS.
 - WHEN THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED, FILL DEPRESSION AND ESTABLISH FINAL GRADING ELEVATIONS, COMPACT AREA PROPERLY, AND STABILIZE WITH GROUND COVER.

3 ROCK PIPE INLET DETAIL
 21 NTS

OUTLET	LENGTH (FT)	WIDTH (FT)	DEPTH (FT)
LS 1	82	10	0.5
LS 2	40	10	0.5
LS 3	42	10	0.5
LS 4	12	10	0.5
LS 5	35	10	0.5

Office of Oil and Gas
 RECEIVED
 JUN 16 2021
 WV Department of Environmental Protection
 Kleinfelder
 Bright People. Right Solutions
 230 Executive Drive, Suite 102
 Charleston, West Virginia 25305
 (304) 770-1022
 www.kleinfelder.com

ISSUED FOR CONSTRUCTION

SCALE VERIFICATION
 THIS BAR IS 1" HIGH IN LENGTH OR ORIGINAL DIMENSIONS
 1" IS NOT 1" HIGH ON THIS SHEET UNLESS NOTED OTHERWISE

ORIGINAL DRAWINGS: 25' x 36" x 24"
 STORMWATER DETAILS
 CPT-10 WELL PAD
 DODDRIDGE COUNTY
 WEST VIRGINIA

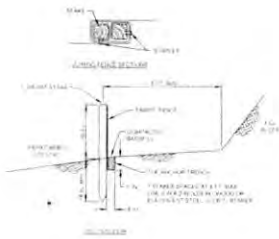
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CONSTRUCTION

PROJECT NO: 13758
 ISSUE DATE: 06-28-2018
 CURRENT REVISION: 3
 DESIGNED BY: AER
 DRAWN BY: CRH
 CHECKED BY: JER
 APPROVED BY: MJA

21
 21 of 25

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NOTES

FABRIC SHALL HAVE THE MINIMUM PROPERTIES

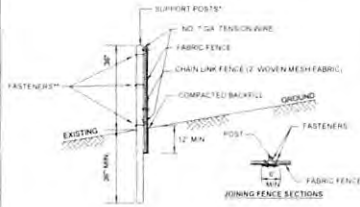
FABRIC WIDTH SHALL BE 30 IN MINIMUM. STAKES SHALL BE HARDWOOD OR EQUIVALENT STIFF, (1) OR (3) STAKES

SILT FENCE SHALL BE PLACED AT LEVEL EXISTING GRADE. BOTH ENDS OF THE FENCE SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT

SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH HALF THE ABOVE GROUND HEIGHT OF THE FENCE

ANY SECTION OF SILT FENCE WHICH HAS BEEN UNDERMINED OR TOPPED SHALL BE IMMEDIATELY REPLACED WITH A ROCK FILTER OUTLET DETAIL (1 SHEET 2)

FENCE SHALL BE REMOVED AND PROPERLY DISPOSED OF WHEN TRIBUTARY AREA IS PERMANENTLY STABILIZED



* POSTS SPACED @ 10' MAX. USE 2 1/2" DIA GALVANIZED OR ALUMINUM POSTS OR 4" x 4" POST

** CHAIN LINK FENCE SHALL BE FASTENED SECURELY TO THE FENCE POST WITH WIRE TIES OR STAPLES. GEOTEXTILE FABRIC SHALL BE FASTENED SECURELY TO THE CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTIONS

NO. 7 GA. TENSION WIRE INSTALLED HORIZONTALLY AT TOP AND BOTTOM OF CHAIN LINK FENCE

FILTER FABRIC FENCE SHOULD BE PLACED AS CLOSE TO THE CONTOUR AS POSSIBLE. NO SECTION OF SILT FENCE SHOULD EXCEED A GRADE OF 5 PERCENT FOR MORE THAN A DISTANCE OF 20 FEET

THE LENGTH OF SLOPE ABOVE THE FENCE SHALL NOT EXCEED 400 FEET IN STEEP TERRAIN. IN FLATTER AREAS THE LENGTH CAN BE EXTENDED WITH THE APPROVAL OF THE ENGINEER

SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH 1/2 THE ABOVE GROUND HEIGHT OF THE FENCE

ID#	LENGTH (LF)
1	105
2	73
3	44
4	52
5	75
6	83
7	64
8	10
9	130
10	74
11	88
12	107
13	95
14	58
15	50
16	34
17	27
18	54
19	64
20	72
21	120
22	150
23	150
24	39
25	43
26	36
27	110
28	93
29	153
30	23
31	277
34	122
35	38
36	29
37	43
38	135
39	60
40	127
41	303
42	340
43	49
44	107
45	340
46	44
47	107

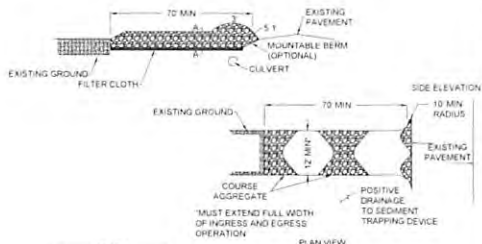
1 STANDARD SILT FENCE DETAIL (18" HIGH)
22 NTS

2 SUPER SILT FENCE DETAIL
22 NTS



NOTES
TRACKING SLOPES IS DONE BY RUNNING TRACKED MACHINERY UP AND DOWN THE SLOPE. LEAVING TREAD MARKS PARALLEL TO THE CONTOUR. IF A BULLDOZER IS USED THE BLADE SHOULD BE UP

4 BULLDOZER TRACKING DETAIL
22 NTS

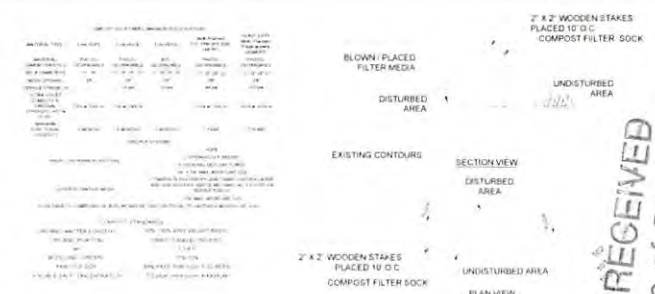


CONSTRUCTION SPECIFICATIONS
1 CLEAR THE ENTRANCE AND EXIT AREA OF ALL VEGETATION, ROOTS AND OTHER OBSTRUCTIONABLE MATERIAL AND PROPERLY GRADE IT
2 PLACE THE 3 INCH CRUSHED ROCK TO MATCH FINISHED GRADE AT THE ROADWAY AND SMOOTH IT
3 PROVIDE DRAINAGE WHERE NEEDED TO CARRY WATER TO A SEDIMENT TRAP OR OTHER SUITABLE OUTLET

MAINTENANCE
MAINTAIN THE GRAVEL PAD IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL 3 INCH CRUSHED ROCK. IMMEDIATELY REMOVE ALL OBSTRUCTIONABLE MATERIALS SPILLED, WASHED, OR TRACKED ONTO PUBLIC ROADWAYS

MAINTENANCE SHOULD BE PROVIDED DAILY, BUT AT A MINIMUM EVERY SEVEN DAYS AND AFTER EVERY RAIN OF 0.5 INCH OR GREATER

5 ROCK CONSTRUCTION ENTRANCE DETAIL
22 NTS



NOTES
1 SOCK FABRIC SHALL MEET STANDARDS OF TABLE SHOWN ABOVE. COMPOST SHALL MEET THE STANDARDS OF TABLE SHOWN ABOVE
2 COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE SOCK SHALL BE EXTENDED AT LEAST 3 FEET UP SLOPE AT 45 DEGREES TO THE MAIN SOCK ALIGNMENT. STAKES MAY BE INSTALLED IMMEDIATELY DOWN SLOPE OF THE SOCK IF SO SPECIFIED BY THE MANUFACTURER
3 TRAFFIC SHALL NOT BE PERMITTED TO CROSS FILTER SOCKS
4 ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE ABOVE-GROUND HEIGHT OF THE SOCK AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN
5 SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RAINFALL EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITH 24 HOURS OF INSPECTION
6 BIODEGRADABLE FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS. PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS
7 UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED IN THE LATER CASE. THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT

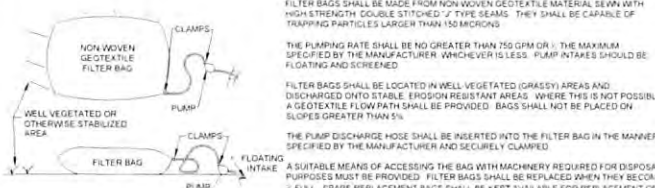
ID#	LENGTH (LF)	DIA (IN)
30	40	18
31	142	18
32	237	18
48	50	18
49	36	18
50	20	18
51	70	18
52	64	18

3 COMPOST FILTER SOCK DETAIL
22 NTS



NOTES
1 INSTALL CONCRETE WASHOUT PIT AT LOCATIONS SHOWN ON PLANS
2 LINE PIT WITH IMPERVIOUS FABRIC OR POLYETHYLENE SHEET. ANCHOR FABRIC INTO GROUND OUTSIDE PIT AS SHOWN
3 MAXIMUM WATER AND SEDIMENT DEPTH IS 12" PIT MUST BE EXCAVATED AND RE-LINED WHEN DEPTH OF SEDIMENT REACHES 12" OR COMBINED WATER SEDIMENT DEPTH EXCEEDS 12". FOLLOWING WASHOUT OF CONCRETE TRUCK
4 ALLOW WATER TO EVAPORATE COMPLETELY PRIOR TO EXCAVATING PIT
5 WASHOUT PIT MAY BE LOCATED NO CLOSER THAN 100' TO DRAIN INLETS OR SURFACE WATERS

6 CONCRETE WASHOUT PIT DETAIL
22 NTS



NOTES
1 FILTER BAGS MAY BE USED TO FILTER WATER PUMPED FROM EXCAVATIONS PRIOR TO DISCHARGING
2 FILTER BAGS SHALL BE MADE FROM NON WOVEN GEOTEXTILE MATERIAL SEAM WITH HIGH STRENGTH DOUBLE STITCHED 7" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS
3 THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM (DR). THE MAXIMUM SPECIFIED BY THE MANUFACTURER. WHICHEVER IS LESS. PUMP INTAKES SHOULD BE FLOATING AND SCREENED
4 FILTER BAGS SHALL BE LOCATED IN WELL VEGETATED (GRASSY) AREAS AND DISCHARGED INTO STABLE EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE A GEOTEXTILE FLOW PATH SHALL BE PROVIDED. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5%
5 THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE FILTER BAG IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED
6 A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES MUST BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME FULL. SPARE REPLACEMENT BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE 1/2 FULL
7 FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED

7 PUMPED WATER FILTER BAG DETAIL
22 NTS

RECEIVED
Office of Oil and Gas
KLEINFELDER
Bright People. Right Solutions.
200 Executive Drive, Suite 200
Charlottesville, VA 22902
Phone: 281-770-7000
Fax: 281-770-7001
www.kleinfelder.com
JUL 2 2016
MWD Department of Environmental Protection
SIGNED: [Signature]
DATE: 7/2/2016
DESCRIPTION: [Blank]
REVISION: [Blank]
DRAWN BY: [Blank]
CHECKED BY: [Blank]
DATE: [Blank]

ISSUED FOR CONSTRUCTION

SCALE VERIFICATION
THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING
0 1
IF IT'S NOT 1 INCH ON THIS SHEET, ADJUST YOUR SCALE ACCORDINGLY

ORIGINAL DRAWING SIZE: 8 1/2" x 14"
EROSION AND SEDIMENT DETAILS

CPT-10 WELL PAD
DODDRIDGE COUNTY
WEST VIRGINIA

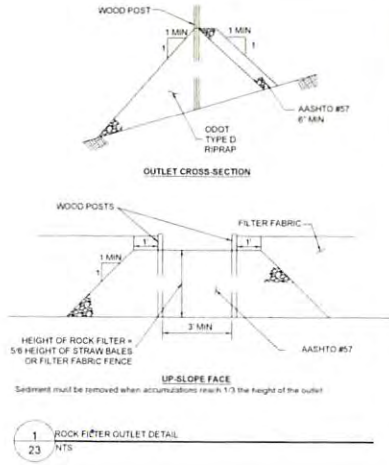
EQT
Where energy meets innovation.

CONSTRUCTION

PROJECT NO: 13735
ISSUE DATE: 06-28-2016
CURRENT REVISION: 8
DESIGNED BY: AEM
DRAWN BY: CMH
CHECKED BY: JEP
APPROVED BY: MJA
SHEET: 22 of 28

22

470 1706752



1 ROCK FILTER OUTLET DETAIL
NTS

ROLLMAX
POLYESTER NONWovens

TerraTex HPG-37
High Performance Geotextile

TerraTex HPG-37 is a polypropylene woven fabric. The engineered geotextile is stabilized to prevent degradation due to ultraviolet exposure. It is resistant to commonly encountered soil chemical, mildew and insects, and is non-biodegradable. Polypropylene is stable within a pH range of 2 to 13. Making it one of the most stable polymers available for geotextiles today. TerraTex HPG-37 is manufactured to meet the following minimum average test values:

Mechanical Properties	Test Method	Unit	Minimum	Average
Tensile Strength	AASHTO M330	kN/m	20.0	25.0
Compaction	AASHTO M293	%	95	98
Roll Shrink Tensile Strength	AASHTO M293	kN/m	15.0	18.0
Roll Shrink Compaction	AASHTO M293	%	95	98
Roll Shrink Tensile Strength	AASHTO M293	kN/m	15.0	18.0
Roll Shrink Compaction	AASHTO M293	%	95	98
Tensile Strength	AASHTO M330	kN/m	20.0	25.0
Compaction	AASHTO M293	%	95	98
Roll Shrink Tensile Strength	AASHTO M293	kN/m	15.0	18.0
Roll Shrink Compaction	AASHTO M293	%	95	98
Tensile Strength	AASHTO M330	kN/m	20.0	25.0
Compaction	AASHTO M293	%	95	98
Roll Shrink Tensile Strength	AASHTO M293	kN/m	15.0	18.0
Roll Shrink Compaction	AASHTO M293	%	95	98

Physical Properties:
Density: 0.95 g/cm³
Thickness: 2.5 mm
Weight: 150 g/m²

2 TERRATEX HPG 37
NTS

ROLLMAX
POLYESTER NONWovens

Specification Sheet - HyMax® C230® Turf Reinforcement Mat

DESCRIPTION
This product is a polypropylene woven fabric with a non-woven polypropylene fiber reinforcement mat. The mat is designed to provide additional stability and reinforcement to existing pavement surfaces. It is resistant to commonly encountered soil chemical, mildew and insects, and is non-biodegradable. Polypropylene is stable within a pH range of 2 to 13. Making it one of the most stable polymers available for geotextiles today. HyMax C230 is manufactured to meet the following minimum average test values:

Mechanical Properties	Test Method	Unit	Minimum	Average
Tensile Strength	AASHTO M330	kN/m	20.0	25.0
Compaction	AASHTO M293	%	95	98
Roll Shrink Tensile Strength	AASHTO M293	kN/m	15.0	18.0
Roll Shrink Compaction	AASHTO M293	%	95	98
Tensile Strength	AASHTO M330	kN/m	20.0	25.0
Compaction	AASHTO M293	%	95	98
Roll Shrink Tensile Strength	AASHTO M293	kN/m	15.0	18.0
Roll Shrink Compaction	AASHTO M293	%	95	98

3 NORTH AMERICAN GREEN C230 PERMANENT CONTROL MATTING (OR EQUIVALENT)
NTS

HYDRAMAX
HYDROLYZABLE POLYESTER NONWovens

Specification Sheet - HyMax® Extreme Slush Matrix

DESCRIPTION
This product is a polypropylene woven fabric with a non-woven polypropylene fiber reinforcement mat. The mat is designed to provide additional stability and reinforcement to existing pavement surfaces. It is resistant to commonly encountered soil chemical, mildew and insects, and is non-biodegradable. Polypropylene is stable within a pH range of 2 to 13. Making it one of the most stable polymers available for geotextiles today. HyMax Extreme Slush Matrix is manufactured to meet the following minimum average test values:

Mechanical Properties	Test Method	Unit	Minimum	Average
Tensile Strength	AASHTO M330	kN/m	20.0	25.0
Compaction	AASHTO M293	%	95	98
Roll Shrink Tensile Strength	AASHTO M293	kN/m	15.0	18.0
Roll Shrink Compaction	AASHTO M293	%	95	98
Tensile Strength	AASHTO M330	kN/m	20.0	25.0
Compaction	AASHTO M293	%	95	98
Roll Shrink Tensile Strength	AASHTO M293	kN/m	15.0	18.0
Roll Shrink Compaction	AASHTO M293	%	95	98

5 NORTH AMERICAN GREEN HYDRA CX
NTS

ROLLMAX
POLYESTER NONWovens

Specification Sheet - HyMax® C125N® Turf Reinforcement Mat

DESCRIPTION
This product is a polypropylene woven fabric with a non-woven polypropylene fiber reinforcement mat. The mat is designed to provide additional stability and reinforcement to existing pavement surfaces. It is resistant to commonly encountered soil chemical, mildew and insects, and is non-biodegradable. Polypropylene is stable within a pH range of 2 to 13. Making it one of the most stable polymers available for geotextiles today. HyMax C125N is manufactured to meet the following minimum average test values:

Mechanical Properties	Test Method	Unit	Minimum	Average
Tensile Strength	AASHTO M330	kN/m	20.0	25.0
Compaction	AASHTO M293	%	95	98
Roll Shrink Tensile Strength	AASHTO M293	kN/m	15.0	18.0
Roll Shrink Compaction	AASHTO M293	%	95	98
Tensile Strength	AASHTO M330	kN/m	20.0	25.0
Compaction	AASHTO M293	%	95	98
Roll Shrink Tensile Strength	AASHTO M293	kN/m	15.0	18.0
Roll Shrink Compaction	AASHTO M293	%	95	98

6 NORTH AMERICAN GREEN C125N PERMANENT CONTROL MATTING (OR EQUIVALENT)
NTS

ROLLMAX
POLYESTER NONWovens

Specification Sheet - HyMax® P300® Permanent Erosion Control Matting

DESCRIPTION
This product is a polypropylene woven fabric with a non-woven polypropylene fiber reinforcement mat. The mat is designed to provide additional stability and reinforcement to existing pavement surfaces. It is resistant to commonly encountered soil chemical, mildew and insects, and is non-biodegradable. Polypropylene is stable within a pH range of 2 to 13. Making it one of the most stable polymers available for geotextiles today. HyMax P300 is manufactured to meet the following minimum average test values:

Mechanical Properties	Test Method	Unit	Minimum	Average
Tensile Strength	AASHTO M330	kN/m	20.0	25.0
Compaction	AASHTO M293	%	95	98
Roll Shrink Tensile Strength	AASHTO M293	kN/m	15.0	18.0
Roll Shrink Compaction	AASHTO M293	%	95	98
Tensile Strength	AASHTO M330	kN/m	20.0	25.0
Compaction	AASHTO M293	%	95	98
Roll Shrink Tensile Strength	AASHTO M293	kN/m	15.0	18.0
Roll Shrink Compaction	AASHTO M293	%	95	98

7 NORTH AMERICAN GREEN P300 PERMANENT CONTROL MATTING (OR EQUIVALENT)
NTS

HYDRAMAX
HYDROLYZABLE POLYESTER NONWovens

Specification Sheet - HyMax® HydrA-Mat™ Turf Reinforcement Mat

DESCRIPTION
This product is a polypropylene woven fabric with a non-woven polypropylene fiber reinforcement mat. The mat is designed to provide additional stability and reinforcement to existing pavement surfaces. It is resistant to commonly encountered soil chemical, mildew and insects, and is non-biodegradable. Polypropylene is stable within a pH range of 2 to 13. Making it one of the most stable polymers available for geotextiles today. HyMax HydrA-Mat is manufactured to meet the following minimum average test values:

Mechanical Properties	Test Method	Unit	Minimum	Average
Tensile Strength	AASHTO M330	kN/m	20.0	25.0
Compaction	AASHTO M293	%	95	98
Roll Shrink Tensile Strength	AASHTO M293	kN/m	15.0	18.0
Roll Shrink Compaction	AASHTO M293	%	95	98
Tensile Strength	AASHTO M330	kN/m	20.0	25.0
Compaction	AASHTO M293	%	95	98
Roll Shrink Tensile Strength	AASHTO M293	kN/m	15.0	18.0
Roll Shrink Compaction	AASHTO M293	%	95	98

4 NORTH AMERICAN GREEN HYDRA CM
NTS

ROLLMAX
POLYESTER NONWovens

Specification Sheet - HyMax® P550® Permanent Erosion Control Matting

DESCRIPTION
This product is a polypropylene woven fabric with a non-woven polypropylene fiber reinforcement mat. The mat is designed to provide additional stability and reinforcement to existing pavement surfaces. It is resistant to commonly encountered soil chemical, mildew and insects, and is non-biodegradable. Polypropylene is stable within a pH range of 2 to 13. Making it one of the most stable polymers available for geotextiles today. HyMax P550 is manufactured to meet the following minimum average test values:

Mechanical Properties	Test Method	Unit	Minimum	Average
Tensile Strength	AASHTO M330	kN/m	20.0	25.0
Compaction	AASHTO M293	%	95	98
Roll Shrink Tensile Strength	AASHTO M293	kN/m	15.0	18.0
Roll Shrink Compaction	AASHTO M293	%	95	98
Tensile Strength	AASHTO M330	kN/m	20.0	25.0
Compaction	AASHTO M293	%	95	98
Roll Shrink Tensile Strength	AASHTO M293	kN/m	15.0	18.0
Roll Shrink Compaction	AASHTO M293	%	95	98

8 NORTH AMERICAN GREEN P550 PERMANENT CONTROL MATTING (OR EQUIVALENT)
NTS

KLEINFELDER
Bright People. Right Solutions.

Office of Oil and Gas

RECEIVED
JUN 28 2016
STAFF OFFICE
PERMITTING
2016

REVISIONS

REV	DESCRIPTION	DATE	CHK	APP

ISSUED FOR CONSTRUCTION

SCALE VERIFICATION
THIS BAR IS 1 INCH (1:625) ON ORIGINAL DRAWING.
IF IT'S NOT 1 INCH ON THIS SHEET, ADJUST YOUR SCALES ACCORDINGLY.

ORIGINAL DRAWING SIZE IS 22 x 34

EROSION AND SEDIMENT CONTROLS

CPT-10 WELL PAD
DODDRIDGE COUNTY
WEST VIRGINIA

EQT
Where energy meets innovation.

CONSTRUCTION

PROJECT NO. 137355
DATE 06-28-2016
CURRENT REVISION 0
DESIGNED BY AEW
DRAWN BY CRW
CHECKED BY JCF
APPROVED BY MJA SHEET 23 OF 28

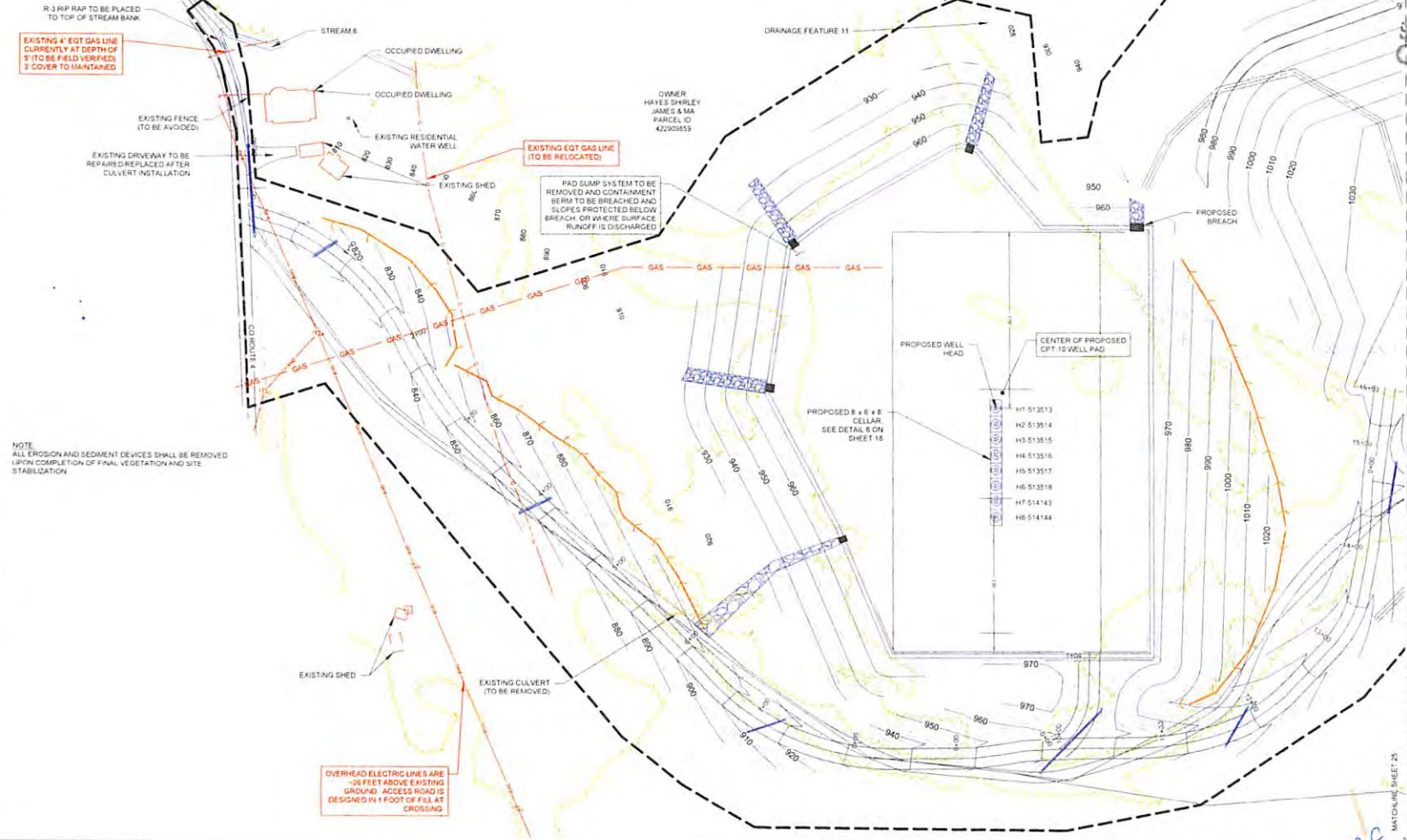
4701706752

SITE RECLAMATION NOTES

1. WATER CORRRALS MUST BE REMOVED PRIOR TO BACKFILLING THE WATER CONTAINMENT PAD. ANY REMAINING FLUID MUST BE DISPOSED OF IN AN APPROVED MANNER.
2. DRILL CUTTINGS, DRILLING MUD AND LINER FOR WELLS PERMITTED UNDER WV CODE 22.6A AND 35CSR 8 MUST BE REMOVED FROM SITE AND DISPOSED OF AT AN APPROVED SOLID WASTE FACILITY OR IF THE SURFACE OWNER CONSENTS THE DRILL CUTTINGS AND ASSOCIATED DRILLING MUD MAY BE MANAGED ON SITE IN A MANNER APPROVED BY THE SECRETARY.
3. THE OPERATOR SHALL GRADE OR TERRACE AND PLANT SEED OR SOO THE AREA DISTURBED THAT IS NOT REQUIRED IN PRODUCTION OF THE WELL IN ACCORDANCE WITH THE EROSION AND SEDIMENT CONTROL PLAN.
4. INSTALL ALL PERMANENT WATER DRAINAGE AND DIVERSION DITCHES. IN AREAS OF LONG SLOPES, IT MAY BE DESIRABLE TO INSTALL ANGLED DIVERSION DITCHES TO AID IN CONTROLLING WATER RUNOFF AND EROSION.
5. STOCKPILED TOPSOIL SHOULD BE RE SPREAD OVER DISTURBED AREA. TOPSOIL SHOULD NOT BE ADDED TO SLOPES STEEPER THAN 2:1 UNLESS GOOD BONDING TO THE SUB SOIL CAN BE ACHIEVED.
6. PRIOR TO SEEDING, SOIL SHOULD BE LOOSENEED BY DISKING, BULLDOZER TRACKING, ETC. NOTE THAT BULLDOZER TRACKING CAN COMPACT WET CLAY SOILS AND RESTRICT ESTABLISHMENT OF VEGETATION.
7. MAINTAINING SEDIMENT BARRIERS IS CRITICAL UNTIL VEGETATION IS REESTABLISHED. TEMPORARY SEDIMENT CONTROL DEVICES SUCH AS SUPER SILT FENCING SHALL BE REMOVED ALONG WITH SEDIMENT AFTER AT LEAST A 70% VEGETATIVE COVER IS ESTABLISHED.
8. DURING SITE RECLAMATION ALL FILL AREAS SHALL BE COMPACTED IN 24" MAXIMUM LIFT THICKNESS (12" RECOMMENDED) WITH A VIBRATING SHEEPSFOOT ROLLER TO 90% COMPACTION PER STANDARD PROCTOR DENSITY, ASTM D 698. MOISTURE CONTENT WILL BE CONTROLLED IN ACCORDANCE WITH THE STANDARD PROCTOR TEST (ASTM D 698) RESULTS.

NOTES

1. MUNICIPAL BOUNDARY LINES SHOWN ARE APPROXIMATE IN LOCATION, BASED ON MAPS BY OTHERS, AND MAY NOT CORRESPOND TO THE LEGAL LOCATION.
2. UTILITY LOCATIONS SHOWN ARE APPROXIMATE AND NOT GUARANTEED TO BE COMPLETE.
3. NO PERMANENT PUBLIC SANITARY SEWER NOR POTABLE WATER IS PROPOSED AT THE SITE.
4. NO BUFFER AREAS, PLANTINGS, OR LANDSCAPING ARE PROPOSED AT THE SITE. NO PERMANENT OPEN SPACE OR PUBLIC USE AREAS ARE PROPOSED AT THE SITE.
5. FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE (FIRM) PANEL 840120045C INDICATE NO SPECIAL FLOOD HAZARD AREAS WITHIN THE PROJECT AREA.
6. ALL PROPOSED SLOPES ARE 2H 1V EXCEPT WHERE NOTED.
7. FILL OVER 50 VERTICAL FEET ON SPOIL PAD NEEDS A 12 BENCH.
8. FILL SLOPES SHALL BE TOE KEYED PER THE DETAIL SHOWN ON SHEET 7.



NOTE:
ALL EROSION AND SEDIMENT DEVICES SHALL BE REMOVED UPON COMPLETION OF FINAL VEGETATION AND SITE STABILIZATION.

OVERHEAD ELECTRIC LINES ARE ~20 FEET ABOVE EXISTING GROUND. ACCESS ROAD IS DESIGNED IN 1 FOOT OF FILL AT CROSSINGS.

RECEIVED

Office of Oil and Gas

KLEINFELDER
Bright People. Right Solutions.

330 Executive Plaza, Suite 122
Cockeysville, PA 17015
Tel: 717-757-1572
www.kleinfelder.com

DESIGNED BY: M.A. DATE: 06/04/2016
DRAWN BY: C.M.H.
CHECKED BY: J.C.H.
APPROVED BY: M.A.

PROJECT NO: 137395
ISSUE DATE: 06-04-2016
CURRENT REVISION: 0
DESIGNED BY: AEB
DRAWN BY: CMH
CHECKED BY: JCH
APPROVED BY: MA

WV Department of Environmental Protection

ISSUED FOR CONSTRUCTION

SCALE VERIFICATION

THIS BAR IS 1/4" IN LENGTH ON ORIGINAL DRAWING.

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

SCALE: 1" = 50' SCALE IN FEET

ORIGINAL DRAWING SIZE: 36" x 24" x 14"

RECLAMATION PLAN

CPT-10 WELL PAD
DODDRIIDGE COUNTY
WEST VIRGINIA



CONSTRUCTION

PROJECT NO:	137395
ISSUE DATE:	06-04-2016
CURRENT REVISION:	0
DESIGNED BY:	AEB
DRAWN BY:	CMH
CHECKED BY:	JCH
APPROVED BY:	MA

4701706752

NOTE
 ALL EROSION AND SEDIMENT DEVICES SHALL BE REMOVED UPON COMPLETION OF FINAL VEGETATION AND SITE STABILIZATION

- NOTES**
- MUNICIPAL BOUNDARY LINES SHOWN ARE APPROXIMATE IN LOCATION, BASED ON MAPS BY OTHERS AND MAY NOT CORRESPOND TO THE LEGAL LOCATION
 - UTILITY LOCATIONS SHOWN ARE APPROXIMATE AND NOT GUARANTEED TO BE COMPLETE
 - NO PERMANENT PUBLIC SANITARY SEWER NOR POTABLE WATER IS PROPOSED AT THE SITE
 - NO BUFFER AREAS, PLANTINGS, OR LANDSCAPING ARE PROPOSED AT THE SITE. NO PERMANENT OPEN SPACE OR PUBLIC USE AREAS ARE PROPOSED AT THE SITE
 - FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE (FIRM) PANEL 540170045C INDICATE NO SPECIAL FLOOD HAZARD AREAS WITHIN THE PROJECT AREA
 - ALL PROPOSED SLOPES ARE 2H:1V EXCEPT WHERE NOTED
 - FILL OVER 50 VERTICAL FEET ON SPOIL PAD NEEDS A 12' BENCH
 - FILL SLOPES SHALL BE 2:1 KEYED PER THE DETAIL SHOWN ON SHEET 7

OWNER:
 WOODS WAYNE L & M
 CHRIST
 PARCEL ID
 42205854
 (STAY OFF PROPERTY)

SITE RECLAMATION NOTES

- WATER CORRALS MUST BE REMOVED PRIOR TO BACKFILLING THE WATER CONTAINMENT PAD. ANY REMAINING FLUID MUST BE DISPOSED OF IN AN APPROVED MANNER
- DRILL CUTTINGS, DRILLING MUD AND LINER, FOR WELLS PERMITTED UNDER WV CODE 22-6A AND 30CSR18, MUST BE REMOVED FROM SITE AND DISPOSED OF AT AN APPROVED SOLID WASTE FACILITY OR IF THE SURFACE OWNER CONSENTS THE DRILL CUTTINGS AND ASSOCIATED DRILLING MUD MAY BE MANAGED ON-SITE IN A MANNER APPROVED BY THE SECRETARY
- THE OPERATOR SHALL GRADE OR TERRACE AND PLANT, SEED OR SOD THE AREA DISTURBED THAT IS NOT REQUIRED IN PRODUCTION OF THE WELL IN ACCORDANCE WITH THE EROSION AND SEDIMENT CONTROL PLAN
- INSTALL ALL PERMANENT WATER DRAINAGE AND DIVERSION DITCHES. IN AREAS OF LONG SLOPES, IT MAY BE DESIRABLE TO INSTALL ANGLED DIVERSION DITCHES TO AID IN CONTROLLING WATER RUNOFF AND EROSION.
- STOCKPILED TOPSOIL SHOULD BE RE-Spread OVER DISTURBED AREA. TOPSOIL SHOULD NOT BE ADDED TO SLOPES STEEPER THAN 2:1 UNLESS GOOD BONDING TO THE SUB-SOIL CAN BE ACHIEVED
- PRIOR TO SEEDING, SOIL SHOULD BE LOOSENEED BY DISKING. BULLDOZER TRACKING, ETC. NOTE THAT BULLDOZER TRACKING CAN COMPACT WET CLAY SOILS AND RESTRICT ESTABLISHMENT OF VEGETATION
- MAINTAINING SEDIMENT BARRIERS IS CRITICAL UNTIL VEGETATION IS REESTABLISHED. TEMPORARY SEDIMENT CONTROL DEVICES SUCH AS SUPER SILT FENCING SHALL BE REMOVED ALONG WITH SEDIMENT AFTER AT LEAST A 75% VEGETATIVE COVER IS ESTABLISHED
- DURING SITE RECLAMATION ALL FILL AREAS SHALL BE COMPACTED IN 24" MAXIMUM LIFT THICKNESS (12" RECOMMENDED) WITH A VIBRATING SHEEPSFOOT ROLLER TO 90% COMPACTION PER STANDARD PROCTOR DENSITY. ASTM D 698. MOISTURE CONTENT WILL BE CONTROLLED IN ACCORDANCE WITH THE STANDARD PROCTOR TEST (ASTM D 698) RESULTS

OWNER:
 HAYES SHIRLEY
 JAMES & SIA
 PARCEL ID
 42205859

CENTER OF PROPOSED
 WATER CONTAINMENT PAD 1

CENTER OF PROPOSED
 WATER CONTAINMENT PAD 2

DRAINAGE FEATURE 2

EXISTING LOG PILE
 (TO BE REMOVED)

EXISTING ROAD

DRAINAGE FEATURE 12

MATCHLINE SHEET 24

RECEIVED
 Office of Oil and Gas
 WV Department of Environmental Protection

APPROVED BY: JOSHUA T. REGOL, WV PE #20063
 REVISIONS

NO.	DESCRIPTION	DATE	BY	CHK

ISSUED FOR CONSTRUCTION

SCALE VERIFICATION

THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING

IF IT'S NOT 1 INCH ON THIS SHEET ABOUT YOUR SCALES ACCORDINGLY

SCALE 1" = 50'

ORIGINAL DRAWING SIZE IS 24" x 34"

RECLAMATION PLAN

CPT-10 WELL PAD
 DODDRIEGE COUNTY
 WEST VIRGINIA

EQT

Where energy meets innovation.

CONSTRUCTION

PROJECT NO.	13795
ISSUE DATE	06-08-2019
CURRENT REVISION	2
DESIGNED BY	AEF
DRAWN BY	DRH
CHECKED BY	JCF
APPROVED BY	MJA

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SHEET 25 OF 25

DATE PLOTTED: 06/20/2019 10:52:00 AM BY: JCF