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

API Number: 17-06752

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

WW - 6B
(4/15)

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

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

1) Well Operator: EQT Production Company

306686	017	5	286
Operator ID	County	District	Quadrangle

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 Doff
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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(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							

MDG
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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WW - 6B
(10/14)

4701706752

API NO. 47 - 017 - 6752
OPERATOR WELL NO. 513514
Well Pad Name: CPT10

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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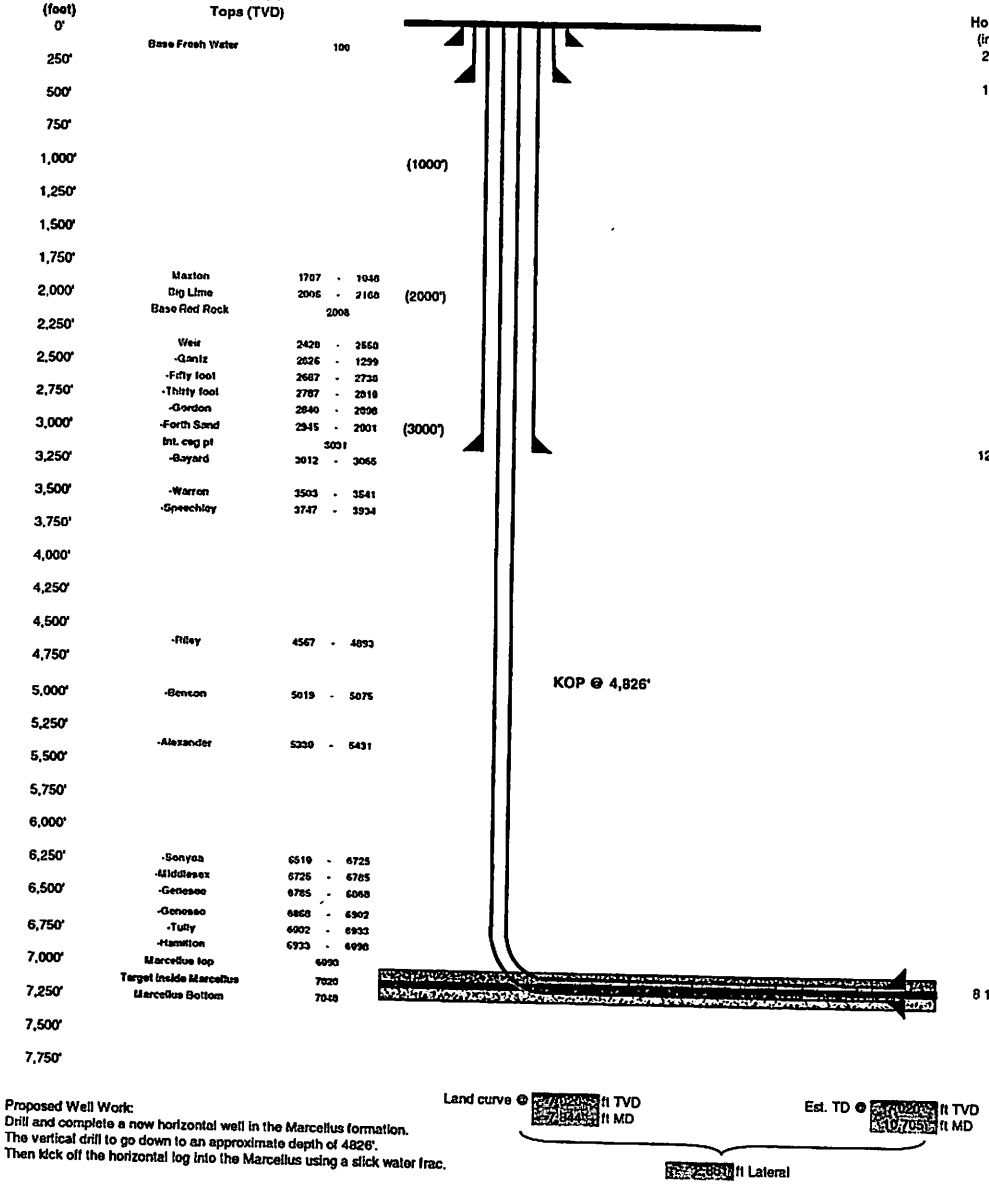
DPC 6/17/16

*Note: Attach additional sheets as needed.

17-0454

Well [redacted] (CPT10H2)
EQT Production
Centerpoint [redacted] West Virgina

Azimuth [redacted]
Vertical Section [redacted]



Hole Size (inches)	Casing Type	Casing Size (inches)	Wt (ppf)/Grade
24	Conductor	20	81#/MC-50
17 1/2	Surface	13 3/8	54.5#/J-55
12 3/8	Intermediate	9 5/8	40#/A-500
8 1/2	Production Casing	5 1/2	20#/P-110

Land curve @ [redacted] ft TVD
[redacted] ft MD

Est. TD @ [redacted] ft TVD
[redacted] ft MD

[redacted] ft Lateral

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 leg into the Marcellus using a slick water frac.

MDG
10-1-15

4701706752

EQT Production

Hydraulic Fracturing Monitoring Plan

Pad ID: CPT10

Doddridge County, WV

8/1/16

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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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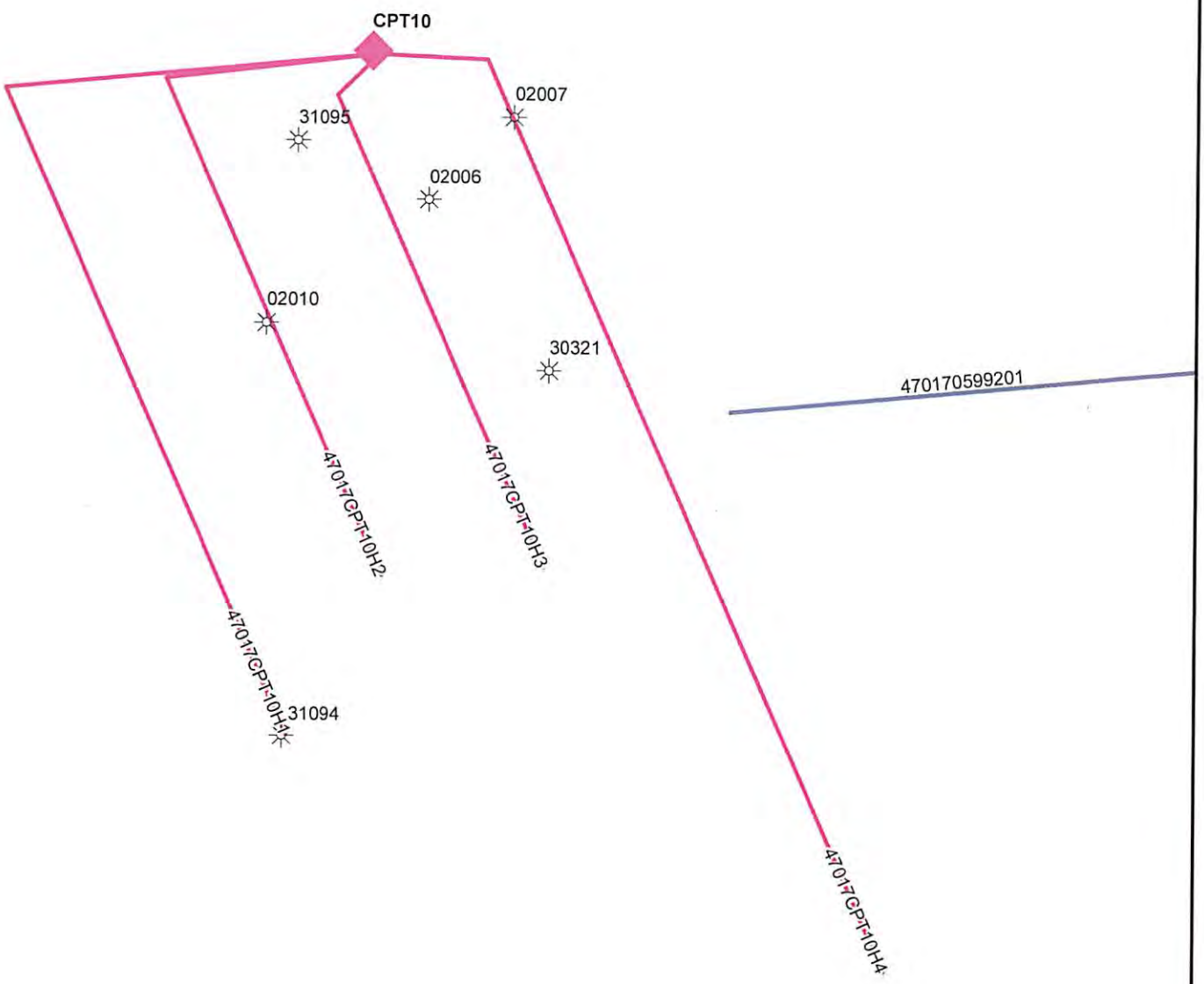

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EQT

EQT Corporation
625 Liberty Avenue
Pittsburgh, PA 15222

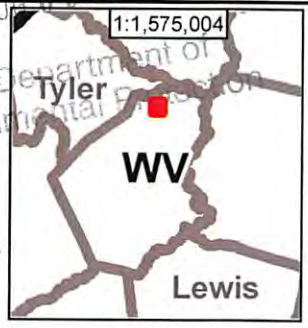
CPT10 Offset Wells

Vertical Offsets and Foreign Laterals within 500'

Legend
- CPT10 Offsets
- Geneseo Spud
- Marcellus Spud
- Middlesex Spud
- Utica Spud
- GENESEO
- MARCELLUS
- MIDDLESEX
- POINT PLEASANT
- UTICA

850 425 0 850 Feet
1:10,696

1:1,575,004



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.

Created By

Printed By: mearsR on 8/1/2016

Path: \\MDCFCS2\gisdept\GIS_Department\GIS_Users\MearsR\Scratch\Vertical Offsets\Foreign Well Working Map.mxd

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

4701706752

625 Liberty Ave, Suite 1700
Pittsburgh PA 15222
www.eqt.com

TEL: (412) 395-3305
FAX: (412) 395-2156

John Centofanti
Corporate Director,
Environmental Affairs

(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

SAMPLE

4701706752

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, Line, 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 _____
Company Official (Typed Name) Victoria J. Roark
Company Official Title Permitting Supervisor

DAF 6/17/16

Subscribed and sworn before me this 16 day of June, 20 16

_____ Notary Public

My commission expires 8-24-22

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Office of Oil and Gas
JUN 20 2016
WV Department of Environmental Protection

OFFICIAL SEAL
STATE OF WEST VIRGINIA
NOTARY PUBLIC
Pamela Sykes
EQT Production
PO Box 280
Bridgeport, WV 26330
My Commission Expires Aug. 24, 2022

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

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

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

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

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

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

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

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 1/3 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 Hoff

Comments: Preseed & mulch any disturbed areas per WVDEP 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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Environmental Protection

Form WW-9

Operator's Well No. 4701706752 513514

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 1/3 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. Flack

Comments: Preseed and mulch any disturbed areas per WVDEP 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
Office of Oil and Gas

JUN 28 2016

WV Department of
Environmental Protection

17-06758

Where energy meets innovation.™

Site Specific Safety Plan

EQT CPT 10 Pad

Center Point Quadrant

Doddridge County, WV

For Wells:

513514

Date Prepared: **August 11, 2015**

EQT Production

Permitting Supervisor
Title

8-27-15
Date

WV Oil and Gas Inspector

Title

10-1-15
Date

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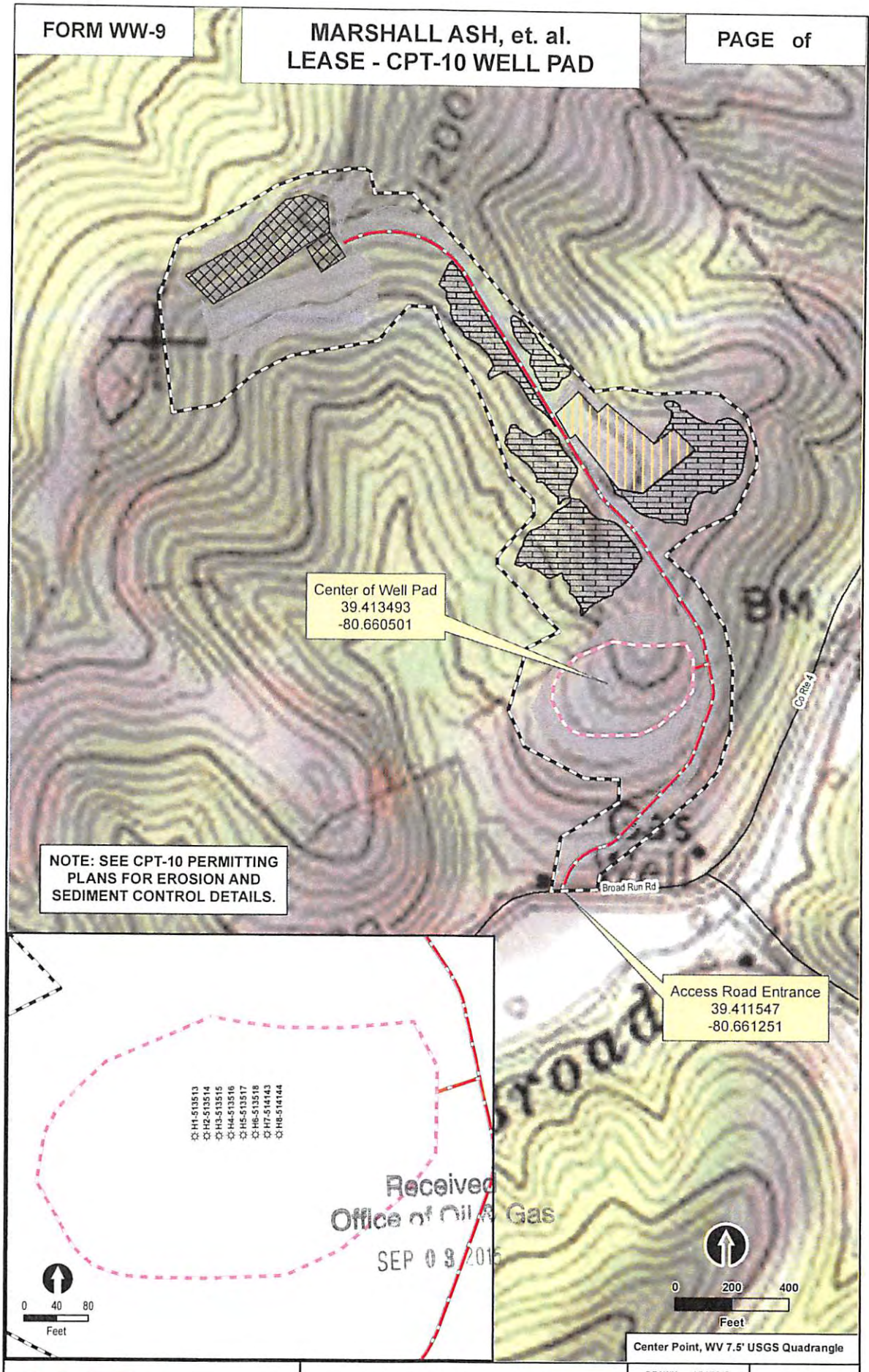
Office of Oil and Gas
OCT 13 2015
WV Department of
Environmental Protection

FORM WW-9

MARSHALL ASH, et. al.
LEASE - CPT-10 WELL PAD

PAGE of

n-06758



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SEP 0 9 2015

Center Point, WV 7.5' USGS Quadrangle

EQT Where energy meets innovation.

KLEINFELDER Bright People. Right Solutions.

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

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

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WV 513514
EQT Production Company
Shirley J. Hayes
350.65 Acres

10,050' LATITUDE: 39°25'00" TH

10,018' LATITUDE: 39°25'00" BH

3,887' LONGITUDE: 80°37'30" BH

1,143' LONGITUDE: 80°37'30" TH

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

NO.	ADJACENT OWNER
1	WAYNE L & M CHRIST WOODS
2	HUTZELL RONALD G & HOLLY
3	KAREN L & JAMES L BOWERS
4	CYNTHIA LAURIE YEATER
5	BROOKS D YEATER
6	BOOK D. YEATER
7	PAUL A & KAREN HIGHBARGER
8	PAUL A & KAREN HIGHBARGER
9	HAROLD K FERNETT ET AL
10	JERRY E & LOIS J BRAUN
11	JERRY E & LOIS J BRAUN
12	MARY L GLASPELL
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

NO.	SURFACE OWNER
22	ROBERT C & EILEEN ROSS
23	SAMUEL G & HARUYO ASH
24	SHIRLEY & MARJORIE HAYES
25	BW & CAROLYN RUDDERFORTH
26	NANCY JUNE HAYES YEATER
27	JAMES FERREBEE
28	PAUL & KAREN HIGHBARGER
29	ARBY GLASPELL
30	MARY L. GLASPELL
31	JAMES K & ANNA RICHARDS
32	PAUL & KAREN HIGHBARGER
33	CONNIE L. HAYES ANDERSON

WV 513514 Well Point Coordinates

Top Hole Coordinates

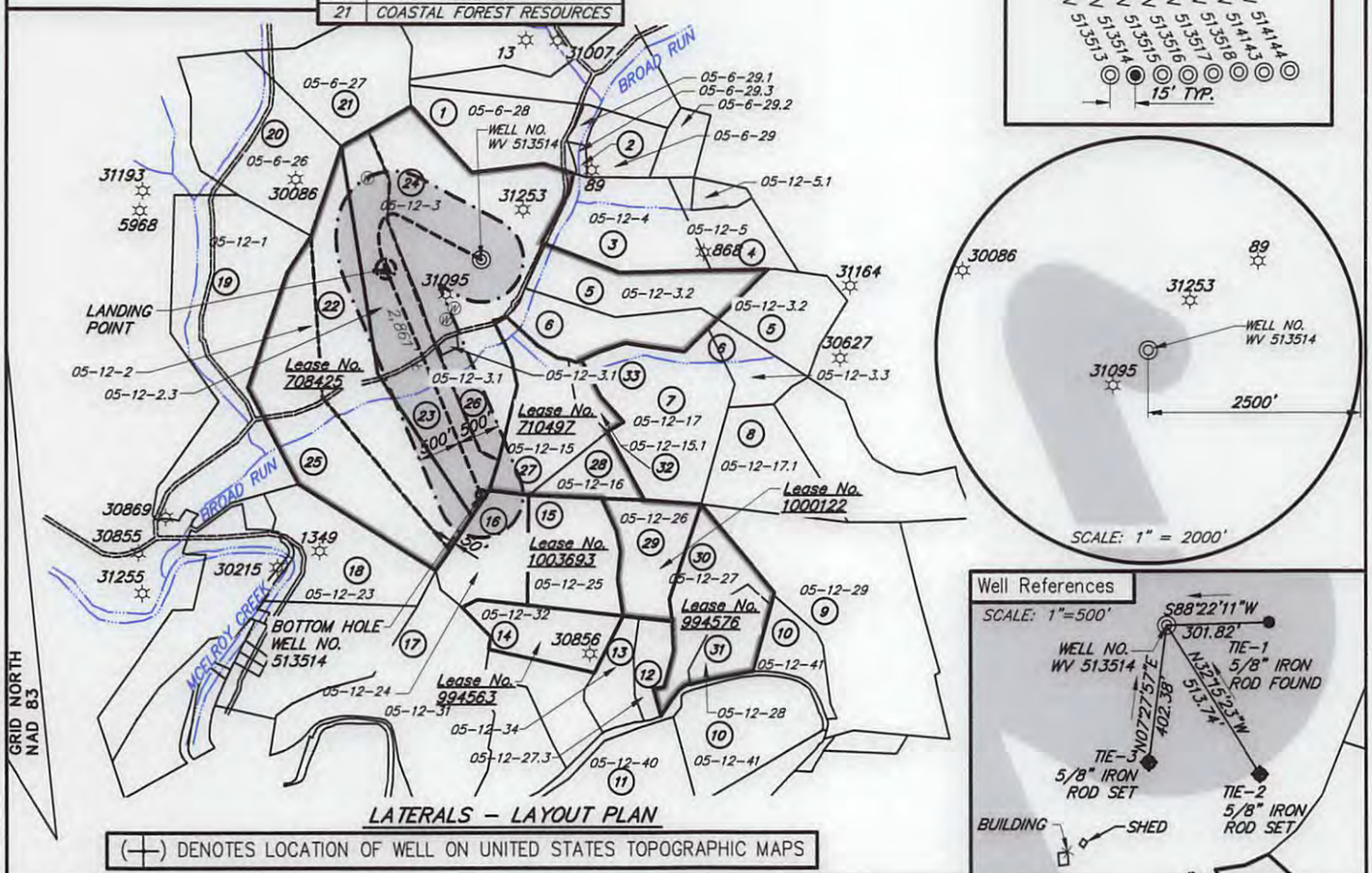
NAD 27 S.P.C. (Ft.)	N: 334,814.30	E: 1,672,053.29
NAD 27 GEO	LAT: 39.413446	LONG: 80.660750
NAD 83 UTM 17N (M)	N: 4,362,723.00	E: 529,219.86
NAD 83 S.P.C. (Ft.)	N: 334,850.57	E: 1,640,612.50

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



NOTES ON SURVEY

1. TIES TO WELLS, CORNERS, AND REFERENCES ARE BASED ON GRID NORTH FOR THE WV STATE PLANE COORDINATE SYSTEM NORTH ZONE NAD '83.
2. SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF DODDRIDGE COUNTY IN OCTOBER, 2013.
3. WELL LAT./LONG. (NAD'27) ESTABLISHED BY GPS.
4. 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.
5. THIS PLAT DOES NOT REPRESENT AN ACTUAL BOUNDARY SURVEY OF THE INDIVIDUAL PARCELS.
6. THERE ARE NO EXISTING WATER WELLS OR DEVELOPED SPRINGS WITHIN 250' OF PROPOSED WELL.
7. 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

WILLIAM J. WHITMAN, II LICENSED No. 2005 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

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 (STATE) 017 (COUNTY) 06757 (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
ADDRESS: 115 Professional Pl. P.O. Box 280, Bridgeport, WV 26330

DESIGNATED AGENT: Rex. C. Ray
ADDRESS: 115 Professional Pl. P.O. Box 280, Bridgeport, WV 26330

017-06751

WW-6A1
(5/13)

Operator's Well No. 513514

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
			Min 1/8 pd	
708425	Shirley J. Hayes	Carnegie Natural Gas Company		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

17-0675L

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

17-0675R

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: _____
Typed Name: V. G. Beghini
Title: Vice Chairman – Marathon Group

APPROVED AS TO FORM

EQUITABLE RESOURCES, INC.

By: _____
Typed Name: David L. Porges
Title: Senior Vice President and Chief Financial Officer

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Office of Oil & Gas
SEP 03 2015

WW-6AC
(1/12)

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:	WV	UTM NAD 83 Easting:	529,219.86
County:	Doddridge	UTM NAD 83 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		

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.

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: *PLEASE CHECK ALL THAT APPLY		OOG OFFICE USE ONLY
☐ NOTICE OF SEISMIC ACTIVITY or	☑ NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED	☐ RECEIVED/NOT REQUIRED
☐ NOTICE OF ENTRY FOR PLAT SURVEY or	☑ NO PLAT SURVEY WAS CONDUCTED	☐ RECEIVED
☑ NOTICE OF INTENT TO DRILL or	☐ NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED OR	☐ RECEIVED/NOT REQUIRED
	☐ WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)	
☑ NOTICE OF PLANNED OPERATION		☐ RECEIVED
☑ PUBLIC NOTICE		☐ RECEIVED
☑ NOTICE OF APPLICATION		☐ RECEIVED

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.

WW-6AC
(1/12)

17-06752

Certification of Notice is hereby given:

THEREFORE, I _____, 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	Address:	P.O. Box 280
By:	Victoria J. Roark		Bridgeport, WV 26330
Its:	Permitting Supervisor	Facsimile:	304-848-0040
Telephone:	304-848-0076	Email:	vroark@eqt.com

OFFICIAL SEAL
STATE OF WEST VIRGINIA
NOTARY PUBLIC
NOTARIAL SEAL Lisa L. Bumgardner
Rt. 1, Box 4
Liberty, WV 25124
My Commission Expires July 27, 2018

Subscribed and sworn before me this 1 day of SEPTEMBER ,2015

_____ 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.

Received
Office of Oil & Gas
SEP 03 2015

WW-6A
(9-13)

API NO. 47 - 017 - 06752
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
SEP 04 2015
WV Department of
Environmental Protection

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

Notice of:

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

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

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

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

☑ SURFACE OWNER(s) (Impoundments/Pits)
Name: Shirley James Hayes and Marjorie Hayes
Address: 881 Broad Run Rd.
Center Point, WV 26339
See attached for additional impoundment/pit owners

☑ COAL OWNER OR LESSEE
Name: The Winston Love Family Trust
Address: 402 Front Street
Marietta OH 45750
See attached for additional coal owners.

☐ COAL OPERATOR
Name:
Address:

☑ SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s)
Name: Shirley James Hayes
Address: 881 Broad Run Road
Center Point WV 26339
See attached for additional water purveyors.

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

*Please attach additional forms if necessary

17-0675R

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
Garretsville 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 supplemented notices

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 03 2015

WW-6A
(8-13)

API NO. 47 - 017 - 0 6754
OPERATOR WELL NO. 513514
Well Pad Name: CPT10

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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17-06752

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(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:

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

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.

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

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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17-06758

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 or 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

Its: Permitting Supervisor

Subscribed and sworn before me this 1 day of SEPTEMBER, 2015

Notary Public

My Commission Expires 7/27/2018

OFFICIAL SEAL
STATE OF WEST VIRGINIA
NOTARY PUBLIC
Nicholas L. Bumgardner
Rt. 1, Box 4
Liberty, WV 25124
My Commission Expires July 27, 2018

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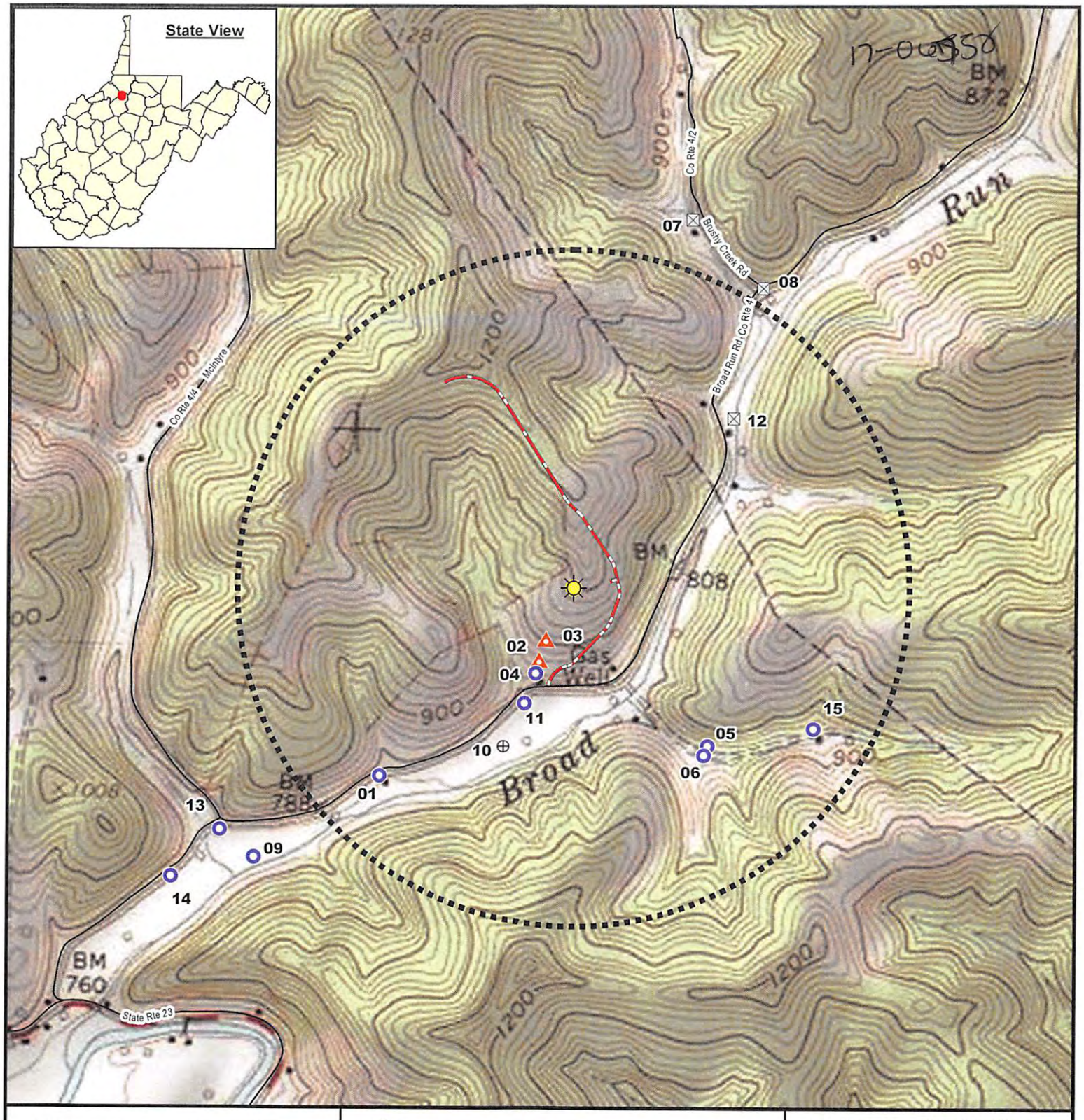
SEP 03 2015



Water Source Locations For Shirley J. Hayes Lease

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

KLEINFELDER
Bright People. Right Solutions.

- 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

0 500 1,000
Feet

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17-06782

WW-6A4
(1/12)

Operator Well No. 513514

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: WV
County: Doddridge
District: McClellan
Quadrangle: Center Point
Watershed: Broad Run of McElroy Creek

UTM NAD 83 Easting: 529,219.86
Northing: 4,362,723.00
Public Road Access: Co. Rt. 4
Generally used farm name: Shirley James and Marjorie Hayes

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

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SEP 03 2015

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

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.

17-06758

WW-6A4
(1/12)

Operator Well No. 513514

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

Name:
Address:

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

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SEP 03 2015

Notice is hereby given by:

Well Operator:	EQT Production Company	Authorized Representative:	Victoria Roark
Address:	115 Professional Place, P.O Box 280	Address:	115 Professional Place, P.O Box 280
	Bridgeport, WV 26330		Bridgeport, WV 26330
Telephone:	304-848-0076	Telephone:	304-848-0076
Email:	vroark@eqt.com	Email:	vroark@eqt.com
Facsimile:	304-848-0041	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 or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

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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 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:	WV	UTM NAD 83	Easting:	529,219.860000
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			

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

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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WV Department of
Environmental Protection

17-06752

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(1/12)

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

Name:
Address:

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:	WV	UTM NAD 83	Easting:	529,219.860000
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			

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

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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

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

17-06758

Anticipated Frac Additives
Chemical Names and CAS numbers

Material	Ingredient	CAS Number
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
1/14/2016

EQT
Where energy meets innovation.

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API# 1706751, 1706752, 1706753, 1706754

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
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ENGINEER OF RECORD
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CONTACT: JOSH FARLEY, PE
WV PE #020711
230 EXECUTIVE DRIVE, SUITE 122
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ENVIRONMENTAL/ DELINEATION BOUNDARY
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TOPO SURVEYOR
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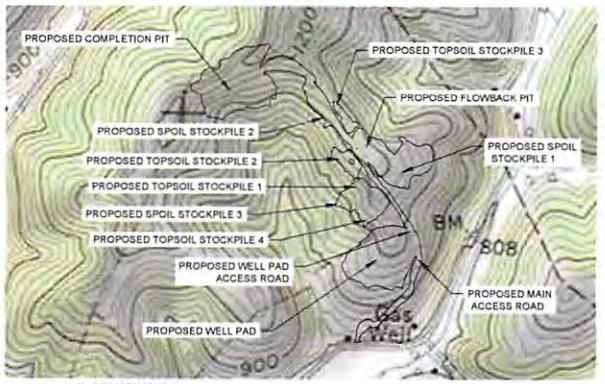
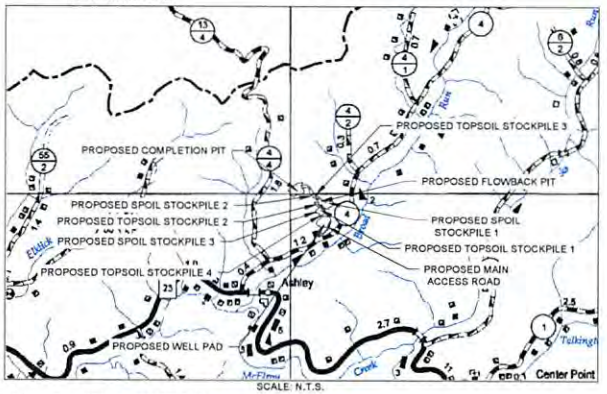


NORTH MERIDIAN REFERENCED TO NAD83 WEST VIRGINIA STATE PLANE NORTH ZONE

AFFECTED TAX PARCELS: SEE SHEET 2

CENTER POINT QUAD



SCALE: N.T.S.

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	529206.76
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

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	1640687.50	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
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3	NOTES
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5	OVERALL PLAN
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

FLOOD CONDITIONS	
DO SITE CONSTRUCTION ACTIVITIES TAKE PLACE IN FLOODPLAIN	NO
PERMIT NEEDED FROM COUNTY FLOODPLAIN COORDINATOR	NO
HEC-RAS STUDY COMPLETED	N/A
FLOODPLAIN SHOWN ON DRAWINGS	NO
FIRM MAP NUMBER FOR SITE	54017C0045C
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

811
Know what's below. Call before you dig.
THREE DAYS BEFORE YOU DIG
CALL PA ONE CALL SYSTEM TOLL FREE 811 OR 1-800-242-1776

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 §35-8.

MM-109 PERMIT
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www.kleinfelder.com

JOSHUA M. FARLEY 20711 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER

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

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

ISSUED FOR PERMITTING
NOT RELEASED FOR CONSTRUCTION

SCALE VERIFICATION
1 INCH
ADJUST SCALE ACCORDINGLY IF DISTANCE PLOTS DIFFERENTLY

0 500 1000 1500
SCALE: 1" = 500' SCALE IN FEET
ORIGINAL DRAWING SIZE IS 22 x 34

COVER PAGE & LOCATION MAP

CPT-10 WELL PAD
DODDRIDGE COUNTY
WEST VIRGINIA

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Where energy meets innovation.

PERMITTING

PROJECT NO.	137355
ISSUE DATE	09/29/2015
CURRENT REVISION	-
DESIGNED BY	AER
DRAWN BY	AER
CHECKED BY	JMF
APPROVED BY	JMF

SHEET 1 of 25

PLOTTED: 9/30/2015 4:47 PM BY: matt.mund
DATA: C:\Projects\project\137355\137355_CPT-10_Site Plan.dwg LAYOUT: 1 COVER

CPT-10 WELL PAD
SITE DESIGN & CONSTRUCTION PLAN, EROSION & SEDIMENT CONTROL PLANS
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JOSHUA M. FARLEY
REGISTERED
20711
STATE OF WEST VIRGINIA
PROFESSIONAL ENGINEER

Prepared by: JOSHUA M. FARLEY, W.V. P.E. # 20711

REVISIONS			
DESCRIPTION	DSN DWN	CHK APP	DATE
09-22-15 WVDEP COMMENTS	SAM	JMF	09-30-15

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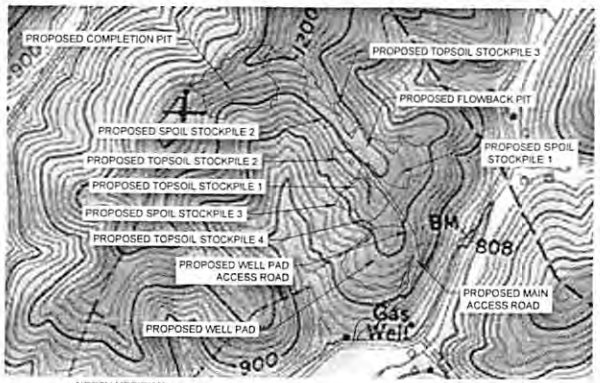
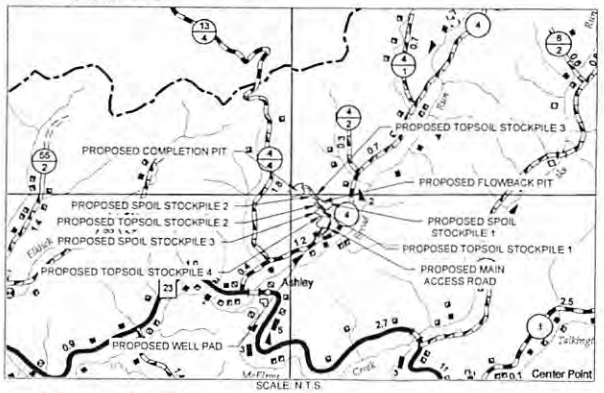


NORTH MERIDIAN REFERENCED TO NAD83 WEST VIRGINIA STATE PLANE NORTH ZONE

AFFECTED TAX PARCELS SEE SHEET 2

CENTER POINT QUAD



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FLOODPLAIN SHOWN ON DRAWINGS	NO
FIRM MAP NUMBER FOR SITE	54017C0045C
ACREAGE OF CONSTRUCTION IN FLOODPLAIN	N/A

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0 500 1000 1500
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ORIGINAL DRAWING SIZE IS 22 x 34

COVER PAGE & LOCATION MAP

CPT-10 WELL PAD
DODDRIDGE COUNTY
WEST VIRGINIA

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PERMITTING

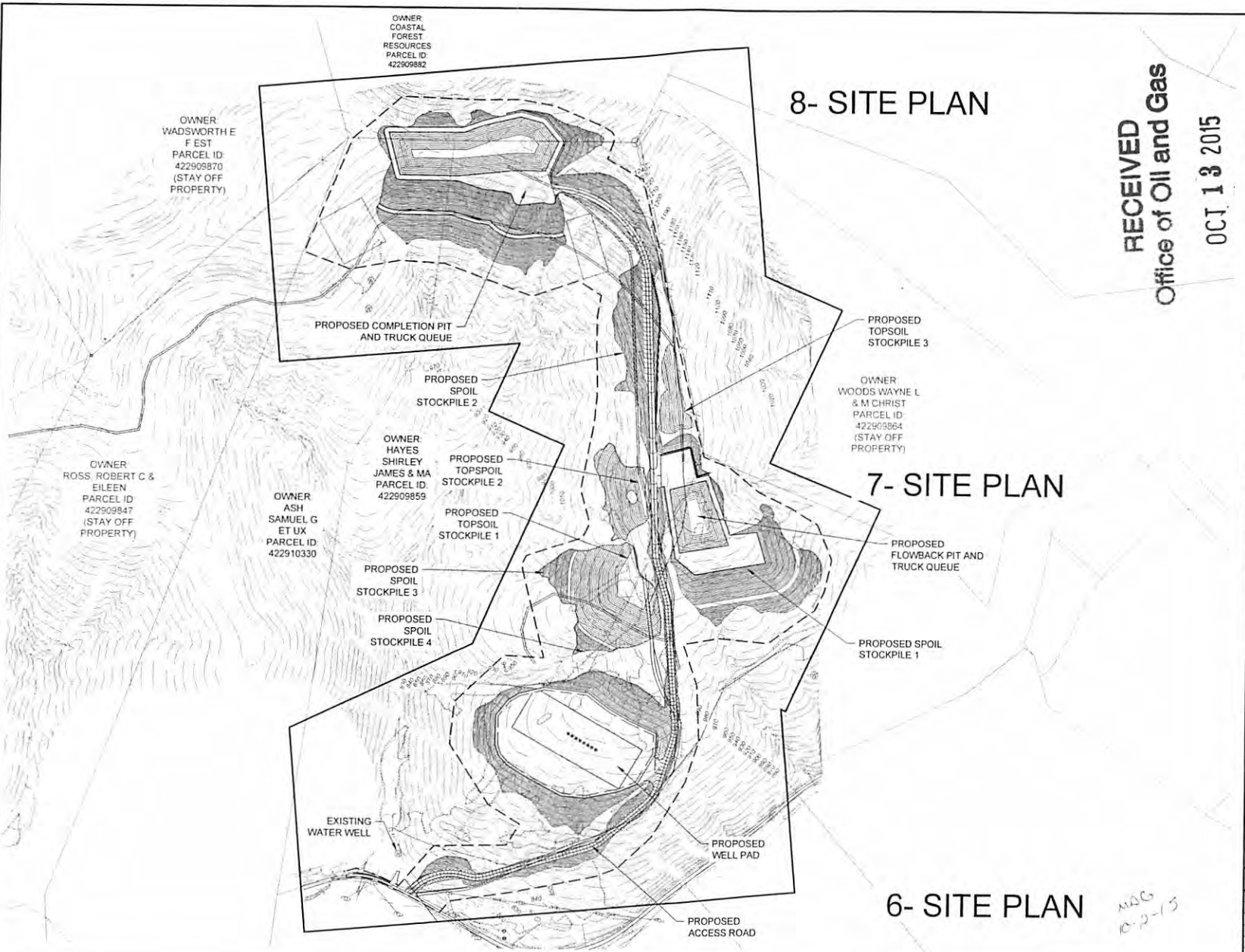
PROJECT NO.	137355
ISSUE DATE	09/28/2015
CURRENT REVISION	
DESIGNED BY	AER
DRAWN BY	AER
CHECKED BY	JMF
APPROVED BY	JMF

SHEET 1 of 25

1

Michael 10-2-15

API 47-017-05975



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OCT 13 2015

WV Department of
Environmental Protection

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Signed By: JOHN M. FARLEY, WV P.E. # 20711

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REV	DESCRIPTION	DSN / DWN	CHK / APP	DATE
1	10-2015 WVDEP COMMENTS	SAM	JMF	09-30-15
		SAM	JMF	

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SCALE VERIFICATION
1 INCH
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0 150 300 450
SCALE: 1" = 150' SCALE IN FEET
ORIGINAL DRAWING SIZE IS 22 x 34

OVERALL PLAN

CPT-10 WELL PAD
DODDRIDGE COUNTY
WEST VIRGINIA

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PERMITTING

PROJECT NO	137355
ISSUE DATE	09/28/2015
CURRENT REVISION	-
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DRAWN BY	AER
CHECKED BY	JMF
APPROVED BY	JMF

SHEET 5 of 25

5

NAD
10-2-15

4-0975(1)

4701706752

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

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JUN 27 2016
WV Department of Environmental Protection

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PROJECT CONTACTS

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EQT PRODUCTION COMPANY
CONTACT: CHRIS METZGAR
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BRIDGEPORT, WV 26330
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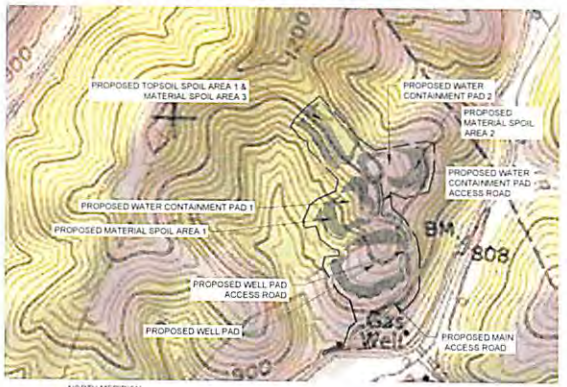
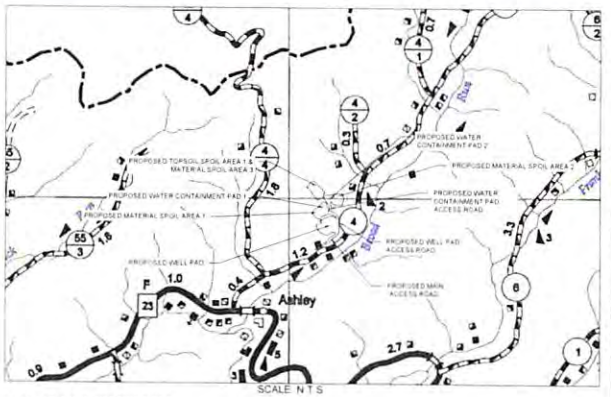


NORTH MERIDIAN REFERENCED TO NAD83 WEST VIRGINIA STATE PLANE NORTH ZONE

CENTER POINT QUAD



SCALE: N.T.S.

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H2-513514	334850.57	1640612.50	39.413530°	80.660572°
H3-513515	334850.57	1640627.50	39.413530°	80.660519°
H4-513516	334850.57	1640642.50	39.413531°	80.660466°
H5-513517	334850.57	1640657.50	39.413531°	80.660413°
H6-513518	334850.57	1640672.50	39.413532°	80.660359°
H7-514143	334850.57	1640687.50	39.413532°	80.660306°
H8-514144	334850.57	1640702.50	39.413533°	80.660253°

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 AND MASTER LEGEND
4	EXISTING CONDITIONS
5	TAX MAP
6 - 8	GEOTECH NOTES & DETAILS
9 - 10	SITE PLAN
11	WELL PAD CROSS SECTIONS & PROFILE
12	WATER CONTAINMENT PAD 1 CROSS SECTIONS & PROFILE
13	WATER CONTAINMENT PAD 2 CROSS SECTIONS & PROFILE
14 - 15	MAIN ACCESS ROAD CROSS SECTIONS AND PROFILE
16	TOPSOIL SPOIL AREA & MATERIAL SPOIL AREA CROSS SECTIONS & PROFILE
17	CULVERT PROFILES
18	CONSTRUCTION DETAILS
19	BERM DETAILS
20 - 21	STORMWATER DETAILS
22 - 23	EROSION AND SEDIMENT DETAILS
24 - 25	RECLAMATION PLAN

SITE LOCATION				
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	39.414844°	80.661147°	529159.80	4362868.68
CENTER OF WATER CONTAINMENT PAD 2	39.415742°	80.660074°	529261.79	4362965.69
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°	80.660394°	529234.75	4362834.07

FLOOD CONDITIONS	
DO SITE CONSTRUCTION ACTIVITIES TAKE PLACE IN FLOODPLAIN	NO
PERMIT NEEDED FROM COUNTY FLOODPLAIN COORDINATOR	NO
HEC RAS STUDY COMPLETED	N/A
FLOODPLAIN SHOWN ON DRAWINGS	NO
FIRM MAP NUMBER FOR SITE	54017C0045C
ACREAGE OF CONSTRUCTION IN FLOODPLAIN	N/A

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

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	

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 §35-8.

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.

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
- 625' 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

DPF 6/27/16

KLEINFELDER
Bright People. Right Solutions.
230 Executive Drive, Suite 122
Cranberry Township, PA 16066
Phone: 724.772.7072
www.kleinfelder.com

JOSHUA D. FREGOSI — 20261 — REGISTERED PROFESSIONAL ENGINEER — STATE OF WEST VIRGINIA

SIGNED BY: JOSHUA D. FREGOSI, WV PE # 20261

REVISIONS			
NO.	DESCRIPTION	BY	DATE

ISSUED FOR CONSTRUCTION

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

0 500 1000 1500
SCALE 1" = 500' SCALE IN FEET
ORIGINAL DRAWING SIZE IS 22 x 34

COVER PAGE & LOCATION MAP

CPT-10 WELL PAD
DODDRIDGE COUNTY
WEST VIRGINIA

Where energy meets innovation.

CONSTRUCTION

PROJECT NO.	137355
ISSUE DATE	06.08.2016
CURRENT REVISION	0
DESIGNED BY	AER
DRAWN BY	CRH
CHECKED BY	JDF
APPROVED BY	MJA
SHEET	1 of 25

1

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 C125BN	116	SY
	4.1.D - NORTH AMERICAN GREEN SC250	3,300	SY
	4.1.E - NORTH AMERICAN GREEN C350	170	SY
	4.1.F - NORTH AMERICAN GREEN P550	331	SY
	4.1.G - R-3 RIP RAP (DITCH CHECKS)	19	TONS
5.1 - AGGREGATE SURFACING			
	5.1.A.1 - WELL PAD #3 - #6 LIMESTONE (6" THICK)	3,913	TONS
		1,611	TONS
	5.1.A.3 - WELL PAD GEOTEXTILE FABRIC (TERRA TEX HPG-37)	15,342	SY
	5.1.B.1 - ACCESS ROADS #3 - #6 LIMESTONE (6" THICK)	1,209	TONS
	5.1.B.2 - ACCESS ROADS 0.75" OR 1.5" CRUSHER RUN LIMESTONE (2" THICK)	499	TONS
	5.1.B.3 - ACCESS ROADS GEOTEXTILE FABRIC (TERRA TEX HPG-37)	4,735	SY
	5.1.C.1 - WATER CONTAINMENT PAD 1 - #3 - #6 LIMESTONE (6" THICK)	1,004	TONS
	5.1.C.2 - WATER CONTAINMENT PAD 1 - 0.75" OR 1.5" CRUSHER RUN LIMESTONE (2" THICK)	414	TONS
	5.1.C.3 - WATER CONTAINMENT PAD 1 - GEOTEXTILE FABRIC (TERRA TEX HPG-37)	3,937	SY
	5.1.D.1 - WATER CONTAINMENT PAD 2 - #3 - #6 LIMESTONE (6" THICK)	1,507	TONS
	5.1.D.2 - WATER CONTAINMENT PAD 2 - 0.75" OR 1.5" CRUSHER RUN LIMESTONE (2" THICK)	621	TONS
	5.1.D.3 - WATER CONTAINMENT PAD 2 - GEOTEXTILE FABRIC (TERRA TEX HPG-37)	5,909	SY
6.1 - SEED & MULCH			
	6.1.A - SITE SEEDING (LIME, FERTILIZER, SEECING, AND HYDRO MULCH w/TACK (HYC 2 OR EQUAL))	0.8	AC
	6.1.B - HYDRO SEEDING - HYDRA CM	6,550	SY
	6.1.C - HYDRO SEEDING - HYDRA CK	52,038	SY
7.1 - EXCAVATION			
	7.1.A - TOPSOIL (ESTIMATED AT 12" DEEP)	28,039	CY
	7.1.B - WELL PAD EXCAVATION (CUT TO FILL)	39,736	CY
	7.1.C - WELL PAD EXCAVATION (EXPORT TO SPOIL AREA)	55,353	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)	29,789	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 - SUMPS - (SEE "SUMP SYSTEM DETAIL")	5	EA
	8.1.C - 4" PVC SUMP DRAIN PIPE - (SEE "SUMP 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	220	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
		5,226	SY
	10.1.C - #57 STONE	80	TONS
11.1 - MOBILE WATER CORRAL			
	11.1.A - 40,000 BBL MOBILE WATER CORRAL	1	EA
	11.1.B - 60,000 BBL MOBILE WATER CORRAL	1	EA
12.1 - GEOTECH			
	12.1.A - PRIMARY GEOGRID (MIRAGRID 15XT)	110,608	SY
	12.2.A - SECONDARY GEOGRID (MIRAGRID 2XT)	28,853	SY
	TOE KEY EXCAVATION	32,984	CY
	BONDING BENCH COLLUVIUM EXCAVATION	57,277	CY
	AASHTO #57 STONE (INCLUDES BENCH DRAIN & OUTLET DRAINS) - TOE KEY/BONGING BENCH	5,339	TON
	6 OZ MIRAFI 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 or R3 STONE)	34	TON

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	Z:1
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 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	95089	39736	55353	N/A	N/A	N/A
WATER CONTAINMENT PAD 1	26914	4653	22261	N/A	N/A	N/A
WATER CONTAINMENT PAD 2	39580	9791	29789	N/A	N/A	N/A
MAIN ACCESS ROAD	14385	2851	11533	N/A	17.00%	130
WATER CONTAINMENT ACCESS ROAD	5781	0	5781	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
MATERIAL SPOIL AREA 1	2901	36249	N/A	33349	N/A	N/A
MATERIAL SPOIL AREA 2	2546	30997	N/A	28451	N/A	N/A
MATERIAL SPOIL AREA 3	3066	41880	N/A	38814	N/A	N/A
TOTALS	194209	194197	128664	128653	N/A	N/A
*INCLUDES 5% SWELL	TOTAL EXPORT (CY)			12		

CPT-10 Well Pad Utility Conflict Information (Ticket #1421253047)
One Call Placed on 07-31-2014

Utility No.	Type	Owner	Contact Person	Owner Phone	Owner Address	Distance of Utility in 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 26554					
2	Gas	Columbia Gas Transmission - Clarksburg		1-800-835-7191 (Corporate)	445 W Main St. Clarksburg, WV 26301					
3	Gas	EQT Gathering, LLC		412-553-5700 (Corporate)	625 Liberty Ave #1700, Pittsburgh, PA 15222	395 feet, 21' (8" gas line)		Gas Line 1 - Enters LOD near STA 1+00, continues ENE and crosses Well Pad Access Road at ~STA 4+00, and ends approximately 95 feet past the access road. 4" Gas Line 2 - enters LOD at Ditch 9 along CO Route 4		
4	Electric	FirstEnergy Corp.		724-284-9536 (Corporate)	501 Hansen Ave. Butler, PA 16001	321 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	

PAF 6/17/16

RECEIVED
Office of Oil and Gas
JUN 17 2016
WV Department of
Environmental Protection

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Phone: 724-772-7572
www.kleinfelder.com

REGISTERED PROFESSIONAL ENGINEER
23261
STATE OF WEST VIRGINIA
JOSHUA D. FREGOS
SIGNED BY: JOSHUA D. FREGOS, W.V. PE #23261

REV.	DESCRIPTION	DRAWN	DATE
	NO REVISIONS		

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

ORIGINAL DRAWING SIZE IS 22 x 34

SCHEDULE OF QUANTITIES

CPT-10 WELL PAD
DODDRIDGE COUNTY
WEST VIRGINIA

EQT
Where energy meets innovation.

CONSTRUCTION

PROJECT NO.	137.855		
ISSUE DATE	06-08-2016		
CURRENT REVISION	0		2
DESIGNED BY	AER		
DRAWN BY	CRH		
CHECKED BY	JDF		
APPROVED BY	MJA	SHEET	2 of 29

EASTFILE: C:\Projects\EQT\CPT-10 Doddridge\CPT-10 Plans.dwg - LAYOUT: 2 (SCHEDULE OF QUANTITIES) - PLOTTED: 6/8/2016 8:38 AM BY: amy.mckee

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GENERAL NOTES

1. EQT PRODUCTION COMPANY WILL OBTAIN AN DRIVEWAY 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 DRAWINGS OR SPECIFICATIONS SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER, IN WRITING, WHO SHALL PROMPTLY ADDRESS SUCH PROBLEMS. WORK DONE BY THE CONTRACTOR AFTER THE DISCOVERY OF SUCH DISCREPANCIES, INCONSISTENCIES, OR AMBIGUITIES SHALL BE DONE AT THE CONTRACTOR'S RISK.
3. WORK ON THIS PROJECT SHALL CONFORM TO THE LATEST EDITIONS OF THE WVDEP BEST MANAGEMENT PRACTICE MANUAL. IN THE EVENT OF CONFLICT BETWEEN THE DESIGN SPECIFICATIONS OR PLANS, THE MOST STRINGENT WILL GOVERN.
4. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL PUBLIC OR PRIVATE UTILITIES WHICH LIE IN OR ADJACENT TO THE CONSTRUCTION SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR, AT HIS OR HER EXPENSE, OF ALL EXISTING UTILITIES DAMAGED DURING CONSTRUCTION. FORTY EIGHT HOURS PRIOR TO ANY EXCAVATION THE CONTRACTOR SHALL CALL MISS UTILITY OF WEST VIRGINIA AT 1-800-245-4848.
5. INSTALLATION OF CONCRETE, CORRUGATED METAL OR HDPE STORM PIPE SHALL BE IN CONFORMANCE WITH THESE DRAWINGS.
6. ALL MATERIALS USED FOR FILL OR BACK FILL SHALL BE FREE OF WOOD, ROOTS, ROCKS, BOULDERS OR ANY OTHER NON-COMPACTABLE SOIL TYPE MATERIALS. UNSATISFACTORY MATERIALS ALSO INCLUDE MAN MADE FILLS AND REFUSE DEBRIS DERIVED FROM ANY SOURCE.
7. MATERIALS USED TO FILL AROUND DRAINAGE STRUCTURES IN UTILITY TRENCHES OR ANY OTHER DEPRESSION REQUIRING FILL OR BACK FILL SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY AS DETERMINED BY THE STANDARD PROCTOR TEST AS SET FORTH IN ASTM STANDARD D-698. THE MOISTURE CONTENT WILL BE CONTROLLED IN ACCORDANCE WITH THE LIMITS OF THE STANDARD PROCTOR TEST RESULTS. SOME SOILS CANNOT BE COMPACTED TO 95% OF THE STANDARD PROCTOR OUTSIDE OF PLUS OR MINUS 4% MOISTURE CONTENT. THE CONTRACTOR OR GEOTECHNICAL REPRESENTATIVE SHALL PRIOR TO ANY OPERATIONS INVOLVING FILLING OR BACK FILLING, SUBMIT THE RESULTS OF THE PROCTOR TEST TOGETHER WITH A CERTIFICATION THAT THE SOIL TESTED IS REPRESENTATIVE OF THE MATERIALS TO BE USED ON THE PROJECT. THE TESTS SHALL BE CONDUCTED BY A CERTIFIED MATERIALS TESTING LABORATORY AND THE CERTIFICATIONS MADE BY A LICENSED PROFESSIONAL ENGINEER REPRESENTING THE LABORATORY. THE CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH THESE TESTS AND THEIR SUBMITTALS.
8. FILL SHALL BE PLACED IN LIFTS AT A MAXIMUM UNCOMPACTED DEPTH OF 12" WITH SOIL FREE FROM AGGREGATES EXCEEDING 6" IN DIAMETER.
9. 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.
10. A PRE-CONSTRUCTION CONFERENCE SHALL BE HELD PRIOR TO THE START OF CONSTRUCTION.
11. SATISFACTORY MATERIALS FOR USE AS FILL FOR PAD AREAS INCLUDE MATERIALS CLASSIFIED IN ASTM D-2487 AS GW, GP, GM, GC, SW, SP, SM, SC, ML AND CL GROUPS. THE MOISTURE CONTENT SHALL BE CONTROLLED WITHIN PLUS OR MINUS 4% OF THE OPTIMUM TO FACILITATE COMPACTION. GENERALLY, UNSATISFACTORY MATERIALS INCLUDE MATERIALS CLASSIFIED IN ASTM D-2487 AS PT, CH, MH, OL, OH AND ANY SOIL TOO WET TO FACILITATE COMPACTION. CH AND MH SOILS MAY BE USED SUBJECT TO APPROVAL OF THE ENGINEER. SOILS SHALL HAVE A MINIMUM DRY DENSITY OF 92 LB/CF PER ASTM D-698 AND SHALL HAVE A PLASTICITY INDEX LESS THAN 17.
12. CONTRACTOR SHALL DEVELOP A GENERIC GROUNDWATER PROTECTION PLAN (GPP). SUBMITTAL TO WVDEP IS NOT REQUIRED. THE GROUNDWATER PROTECTION PLAN SHALL BE ADHERED TO DURING CONSTRUCTION.
13. NO ROCK FILL LIFTS SHALL BE GREATER THAN 36".

EROSION & SEDIMENT CONTOL NARRATIVE & NOTES

1. PROJECT DESCRIPTION: THE PURPOSE OF THIS PROJECT IS TO GRADE AND INSTALL EROSION AND SEDIMENT CONTROL MEASURES IN PREPARATION FOR THE CONSTRUCTION OF A WELL PAD IN DODDRIDGE COUNTY, WEST VIRGINIA. THE CONSTRUCTION INCLUDES THREE ACCESS ROADS, ONE WELL PAD, TWO WATER CONTAINMENT PADS, ONE TOPSOIL SPOIL AREA, FOUR MATERIAL SPOIL AREAS, STORM WATER CONTROLS AND INCIDENTAL WORK.
2. EXISTING SITE CONDITIONS: THE EXISTING SITE IS PREDOMINATELY WOODS. NO EROSION IS NOTICED ON SITE OR IN ANY NATURAL DRAINAGE WAYS.
3. ADJACENT PROPERTY: THE SITE IS BORDERED BY WOODS.
4. OFF SITE AREAS: THERE SHALL BE NO BORROW AREA OUTSIDE OF THE PROPOSED GRADING AND CONSTRUCTION AREA.
5. CLEARING OF VEGETATION SHOULD BE KEPT TO THE MINIMUM NECESSARY FOR CONSTRUCTION PLUS THE INSTALLATION OF SEDIMENT CONTROLS.
6. CRITICAL EROSION AREAS MAINTENANCE: ALL 3:1 SLOPES AND STEEPER, DITCHES AND OTHER CONTROLS SHALL BE CONSIDERED CRITICAL EROSION AREAS. THESE AREAS SHALL BE MONITORED & MAINTAINED DAILY AND AFTER EACH RAINFALL OF 0.5 INCH OR GREATER. THE LOCAL GOVERNING AUTHORITY WILL HAVE THE AUTHORITY TO RECOMMEND THE PLACEMENT OF ADDITIONAL EROSION CONTROL MEASURES IN THESE AREAS IF IT BECOMES EVIDENT DURING CONSTRUCTION THAT THE ONES IN PLACE ARE NOT FUNCTIONING SUFFICIENTLY.
7. EROSION AND SEDIMENT CONTROL MEASURES: UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE CURRENT WVDEP BEST MANAGEMENT PRACTICE MANUAL. THE CONTRACTOR SHALL OBTAIN A COPY OF THIS MANUAL FROM THE WVDEP WEBSITE AND CONSTRUCT ALL DEVICES BASED ON THIS MANUAL OR A HANDBOOK THAT IS COMPARABLE OR EXCEEDS THE SPECIFICATIONS OF THE WEST VIRGINIA MANUAL. THE MINIMUM STANDARDS OF THIS MANUAL SHALL BE ADHERED TO UNLESS OTHERWISE WAIVED OR APPROVED BY A VARIANCE. SEE PLANS FOR ALL PROPOSED EROSION AND SEDIMENT CONTROL MEASURES.
8. STRUCTURAL PRACTICES:
   - DIVERSION DITCHES WILL BE CONSTRUCTED AS SHOWN ON THE PLANS.
   - DIVERSION BERMS WILL BE CONSTRUCTED AS SHOWN ON THE PLANS.
   - OUTLET PROTECTION WILL BE CONSTRUCTED AS SHOWN ON THE PLANS.
   - FILTER SOCK/SUPER SILT FENCE WILL BE CONSTRUCTED AS SHOWN ON THE PLANS.
9. VEGETATIVE PRACTICE TOPSOILING: TOPSOIL WILL BE STRIPPED FROM THE SITE AND STOCKPILED AS SHOWN ON THE PLANS. UPON THE COMPLETION OF THE PROJECT, TOPSOIL WILL BE PLACED ON ALL DISTURBED AREAS AT A MINIMUM DEPTH OF 4 INCHES. TEMPORARY SEEDING: ALL DISTURBED AREAS LEFT DORMANT FOR MORE THAN 21 DAYS SHALL BE SEEDED WITH A FAST GERMINATING SEED. THE TIME OF YEAR WILL BE THE BASIS FOR THE SEED MIXTURE. PERMANENT SEEDING: ALL SEEDED AREAS WILL BE RESEEDED, MULCHED AND FERTILIZED AS NEEDED TO OBTAIN AN ADEQUATE STAND OF GRASS. PERMANENT SEEDING SHALL BE PLACED WITHIN SEVEN DAYS UPON ACHIEVING FINAL GRADE. WATER, MULCH, AND RESEED AS NECESSARY TO OBTAIN AN ADEQUATE STAND OF VEGETATION.
10. MANAGEMENT STRATEGIES: CONSTRUCTION WILL BE SEQUENCED SO THAT GRADING OPERATIONS WILL BEGIN AND END AS SOON AS POSSIBLE. THE JOB SUPERINTENDENT SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL MEASURES. AFTER ACHIEVING ADEQUATE STABILIZATION THE TEMPORARY EROSION AND SEDIMENT CONTROLS SHALL BE REMOVED AND ANY AREAS DISTURBED DURING THIS PROCESS SHALL BE STABILIZED.
11. PERMANENT STABILIZATION: ALL AREAS LEFT UNCOVERED BY EITHER BUILDINGS OR PAVEMENT SHALL BE STABILIZED WITH PERMANENT SEEDING IMMEDIATELY FOLLOWING FINISH GRADING AND WITHIN 7 DAYS. AT NO TIME SHALL LAND LAY DORMANT FOR LONGER THAN 21 DAYS.
12. MAINTENANCE AND OTHER CONSIDERATIONS AND GROUND WATER PROTECTION: ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE CHECKED DAILY AND AFTER EACH RAINFALL OF 0.5 INCH OR MORE. THEY WILL BE INSPECTED FOR UNDERMINING, DETERIORATION, EROSION AND EXCESS DEPOSITED MATERIAL. ALL DEFICIENCIES WILL BE CORRECTED IMMEDIATELY. EXCESS MATERIAL WILL BE SPREAD ON THE SITE IN A MANNER WHERE IT IS NOT LIKELY TO ERODE IN THE FUTURE. CLEANING PROCEDURES WILL BE COMPLETED AT REGULAR INTERVALS AND AT LEAST WHEN SEDIMENT REACHES 33% OF CAPACITY, OR AS SHOWN ON APPLICABLE DETAILS. RECORDS OF CLEANING AND CORRECTIONS WILL BE MAINTAINED BY THE CONTRACTOR. THE "GENERIC GROUNDWATER PROTECTION PLAN FOR CONSTRUCTION SITES" (GPP) WILL BE USED AND AVAILABLE ON SITE AT ALL TIMES. AN AREA WILL BE PROVIDED FOR VEHICLE AND EQUIPMENT MAINTENANCE. MOBILE FUEL TRUCKS WITH APPROVED TANKS WILL BE USED ON THE SITE. PORTABLE SANITARY FACILITIES WILL BE AVAILABLE FOR EMPLOYEES. IF CONCRETE IS USED, EXCESS CONCRETE WILL BE DISPOSED OF PROPERLY AND NOT ALLOWED TO REMAIN ON THIS SITE. MACHINERY WILL NOT BE ALLOWED IN LIVE STREAMS. FLUIDS SUCH AS DIESEL FUEL, GAS, OIL OR ANTIFREEZE WILL BE KEPT IN PROPER CONTAINERS AND ANY SPILLAGE WILL BE CLEANED AND TAKEN OFF SITE TO A PROPER FACILITY. SOLID OR HAZARDOUS WASTES WILL BE DISPOSED IN ACCORDANCE WITH APPROPRIATE STATE AND FEDERAL REGULATIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAKE CHANGES AND NOTIFY ODNR ON ANY CHANGES TO GPP. A FINAL INSPECTION WILL BE MADE AT THE CONCLUSION OF THE PROJECT AND ALL CORRECTIONS MADE BEFORE SIGN OFF OF THE PROJECT SITE.
13. THE CONTRACTOR SHALL ARRANGE FOR A PRE-CONSTRUCTION CONFERENCE WITH THE APPROPRIATE EROSION AND SEDIMENT CONTROL INSPECTOR 48 HOURS PRIOR TO BEGINNING WORK.
14. ALL DRAIN INLETS SHALL BE PROTECTED FROM SILTATION. INEFFECTIVE PROTECTION DEVICES SHALL BE IMMEDIATELY REPLACED AND THE INLET CLEANED. FLUSHING IS NOT AN ACCEPTABLE METHOD OF CLEANING.
15. DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING DEVICES.
16. SEDIMENT BASINS AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE.
17. STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS IMPOUNDMENTS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.
18. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE ENGINEER. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.
19. NO SEDIMENT TRACKING ON THE ROADWAY IS ALLOWED. IN THE EVENT THAT SEDIMENT IS INADVERTENTLY TRACKED ONTO THE ROAD, THE ROAD SHALL BE CLEANED THOROUGHLY BY THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM ROADS BY SHOVELING OR PICKUP SWEEPING AND SHALL BE TRANSPORTED TO A CONTROLLED SEDIMENT DISPOSAL AREA. STREET WASHING OF SEDIMENTS TO THE STORM DRAIN SYSTEM IS NOT ALLOWED. IF STREET WASH WASTEWATER CAN BE CONTROLLED FROM ENTERING THE STORM DRAINAGE SYSTEM, THEN IT SHALL BE PUMPED BACK ONTO THE SITE, CONTAINED AND DISPOSED OF PROPERLY.
20. ALL DISTURBED AREAS NOT PAVED OR BUILT UPON SHALL BE SEEDED, MULCHED, AND FERTILIZED AS SHOWN ON THE EROSION AND SEDIMENT CONTROL SHEETS. PERFORM PERMANENT TOP SOILING, SEEDING AND FERTILIZING AS SOON AFTER FINISH GRADING AS POSSIBLE. SEEDING SHALL COMPLY WITH THE FOLLOWING:
   - TOPSOIL: 4 INCH MINIMUM FOR PERMANENT TURF
   - FERTILIZER: 500 LBS. PER ACRE OF 10-20-20 FERTILIZER OR EQUIVALENT POUNDAGE OF DIFFERENT ANALYSIS. WORK INTO SOIL PRIOR TO SEEDING
   - LIME (PERMANENT SEEDING): AGRICULTURAL LIME SPREAD AT RATE OF 4 TONS PER ACRE. WORK INTO SOIL PRIOR TO SEEDING
   - MULCH OR EROSION CONTROL BLANKET (ECB): WOOD FIBER OR CHOPPED STRAW AT RATE OF 2 TONS PER ACRE. HYDRO MULCH AT RATE OF 80 BALES PER ACRE. ECB SHALL BE PER PLANS
   - SEED: 45 LBS. PER ACRE TALL FESCUE AND 20 LBS. PER ACRE PERENNIAL RYE GRASS. TO BE SEEDED WITH HYDROSEEDER
21. INSTALL PROPOSED THREE ACCESS ROADS, WELL PAD, TWO WATER CONTAINMENT PADS, ONE TOPSOIL SPOIL AREA, AND FOUR MATERIAL SPOIL AREAS.
22. CULVERT INLET AND OUTLET PROTECTION SHALL BE CONSTRUCTED IMMEDIATELY UPON PLACEMENT OF INLETS AND CULVERTS. INSTALLATION OF MATTING AND/OR RIP RAP TO OCCUR ONCE DITCHES ARE CONSTRUCTED.
23. RIPRAP USED AS OUTLET PROTECTION MUST BE HARD, ANGULAR AND OF A QUALITY RESISTANT TO WEATHERING AND DISINTEGRATION. RIPRAP 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.
24. SIDE SLOPE STABILIZATION MATTING AND STABILIZATION SHALL OCCUR AS SOON AS POSSIBLE.
25. AT THE END OF EACH WORK DAY, WHERE THE PARCEL HAS BEEN GRADED (INCLUDING ANY STRIPPING, STUMPING, LEVELING, 2:1 SIDE SLOPES, ETC.) BMPS ARE TO BE INSTALLED. IN NO CASE IS THE CONTRACTOR TO LEAVE THE JOB SITE AT THE END OF THE WORK DAY WITHOUT TEMPORARY OR PERMANENT BMPS BEING INSTALLED.
26. PHOTOGRAPHIC DOCUMENTATION SHALL BE TAKEN BY THE CONTRACTOR AND PROVIDED TO THE ENGINEER OF THE FOLLOWING ACTIVITIES:
   - SITE AFTER CLEARING AND GRUBBING
   - THE SITE AFTER TOPSOIL REMOVAL
   - TOE KEY AND INSPECTION TRENCH CONSTRUCTION
   - DAILY PHOTOS OF CUT AND FILL OPERATIONS
   - PROOF ROLLING TESTS
27. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH A COMPLETE BINDER THAT INCLUDES ALL PHOTO DOCUMENTATION, ALL COMPACTION TEST REPORTS, RESULTS AND MAPS, AND A REPORT OF ALL CUT AND FILL VOLUMES IN CUBIC YARDS.
28. WHEN FINAL GRADE IS ACHIEVED, TOPSOIL TO BE PLACED ON ALL DISTURBED AREAS NOT LINED. SEED ALL DISTURBED AREAS AS REQUIRED. A SOIL SAMPLE SHOULD BE TAKEN AND TESTED TO DETERMINE RECOMMENDED RATES. IF NO SOILS SAMPLE IS TAKEN, THE FOLLOWING RATES SHOULD BE APPLIED AS A MINIMUM: LIME AT A RATE OF 4 TONS PER ACRE, FERTILIZE AT A RATE OF 500 LBS OF 10-20-20 PER ACRE. SEED WITH 45 LBS. PER ACRE OF TALL FESCUE AND 20 LBS. PER ACRE OF PERENNIAL RYE GRASS.
29. LIME, FERTILIZER, AND SEED WILL BE APPLIED. HYDRO MULCH PRODUCTS SHALL BE MIXED AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS, OR EROSION CONTROL BLANKET SHALL BE INSTALLED PER PLANS & SPECIFICATIONS.
30. FINAL SEEDING MUST OCCUR WITHIN 7 DAYS OF FINAL GRADING.
31. WHEN SITE IS STABILIZED, ALL EROSION AND SEDIMENT CONTROL MEASURES CAN BE REMOVED AND THESE AREAS CAN BE REPAIRED/STABILIZED IN ACCORDANCE WITH STATE STANDARDS.
32. 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 DEVIATE SLIGHTLY FROM THE STAGING OF PERMANENT SITE IMPROVEMENTS, BUT NO DEVIATION FROM THE RELATIVE ORDER OF EROSION AND SEDIMENTATION CONTROL MEASURES WILL BE ALLOWED.

THE STAGING OF EARTHMOVING ACTIVITIES FOR THIS PROJECT IS A GENERAL DESCRIPTION OF THE WORK REQUIRED. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH COMPANY STANDARDS, THE WVDEP REGULATIONS AND ALL OTHER APPLICABLE FEDERAL, STATE OR LOCAL REQUIREMENTS.

THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN INCLUDING THE SOIL EROSION CONTROL DRAWINGS SHALL BE AVAILABLE ON SITE AT ALL TIMES DURING EARTH DISTURBANCE.

ALL BMPS SHALL BE INSPECTED AFTER EACH MEASURABLE RAINFALL RUNOFF EVENT. ANY NECESSARY REPAIRS MUST BE MADE IMMEDIATELY TO ENSURE EFFECTIVE AND EFFICIENT OPERATION.

1. A PRE-CONSTRUCTION CONFERENCE WILL BE HELD ON SITE WITH CONTRACTOR TO REVIEW THE CONSTRUCTION DRAWINGS AND PROVIDE ANY REQUESTED GUIDANCE.
2. THE THREE ACCESS ROADS, WELL PAD, TWO WATER CONTAINMENT PADS, ONE TOPSOIL SPOIL AREA, and FOUR MATERIAL SPOIL AREAS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS AND THE SCOPE OF WORK AND SHALL CONFORM GENERALLY WITH THE GRADES, BERMS, AND DIMENSIONS SHOWN.
3. STAKE/FLAG DISTURBED WORK AREA, CLEARLY IDENTIFYING WETLAND AND STREAM EDGES AND BUFFERS. INSTALL SIGNS TO DESIGNATE THE AREA AND ORANGE SAFETY FENCE TO IDENTIFY IMPORTANT PROJECT ATTRIBUTES SUCH AS APPROVED ACCESS ROADS, NO REFUELING ZONES, WETLAND/STREAM BOUNDS, ETC.
4. CONSTRUCT THE CONSTRUCTION ENTRANCE.
5. CONSTRUCT ALL PROPOSED SEDIMENT CONTROL DEVICES AS SOON AS CLEARING AND GRUBBING OPERATIONS ALLOW. DIVERSIONS AND SEDIMENT BASINS, IF USED, SHALL BE SEEDED AND MULCHED IMMEDIATELY. THE CONTRACTOR SHALL INSTALL FILTER SOCK AND SUPER SILT FENCE PRIOR TO CLEARING AND GRUBBING AS SHOWN ON THE DRAWINGS IN ACCORDANCE WITH WVDEP BEST MANAGEMENT PRACTICE MANUAL. SURFACE WATER SHALL BE DIVERTED AWAY FROM ALL EXCAVATIONS AND THE FACE OF ALL FILLS 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 BMPS ARE TO BE INSTALLED.
7. CLEAR AND GRUB: REMOVE TOPSOIL AND PLACE AS SHOWN ON THE PLANS. TOPSOIL STOCKPILE TO BE SEEDED AND MULCHED. E&S BMPS SHALL BE CONSTRUCTED AROUND TOPSOIL STOCKPILES AS SHOWN. CLEARING AND GRUBBING SHALL REMOVE ALL BRUSH, TREES, ROOTS, STUMPS, FENCES, SIGNS OR ANY OTHER MATERIAL THAT IS NOT TO BE REUSED FOR THE CONSTRUCTION. SOME STUMPS MAY REMAIN AT THE APPROVAL OF THE ENGINEER. NO CLEARING DEBRIS SHALL BE BURIED ON SITE. FOR CLEARING WITHIN PERMITTED LOD, STUMPS AND ROOTS LARGER THAN 2 INCHES IN DIAMETER SHALL BE COMPLETELY GRUBBED AND PROPERLY DISPOSED OF OFF-SITE. ALL TIMBER, TREETOPS, BRANCHES, STUMPS LESS THAN 2 INCHES IN DIAMETER, ETC., WILL BE CHIPPED, GROUND, AND/OR MULCHED AND USED AS SITE BMPS WITH THE REMAINDER BEING PROPERLY DISPOSED OF OFF-SITE. CLEARING TO BE COMPLETE ONLY AS NEEDED WITHIN THE LOD TO CONSTRUCT THE FACILITY AS DEPICTED.
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 NEEDED.
9. GRADING OPERATIONS AS REQUIRED. CUT SLOPES AND ALL SLOPES SHALL BE TOPSOILED AS NEEDED. DITCH LINES SHALL BE CLEANED. ALL DITCHES WILL HAVE AT LEAST GRASS LINING PROTECTION OR AS SPECIFIED IN SITE CALCULATIONS ON SHEET 22.
10. ALL FILL SHALL BE PLACED IN LOOSE LIFTS OF UP TO 12" AND SHALL BE COMPACTED TO AT LEAST 95% OF THE LABORATORY MAXIMUM DRY DENSITY AS DETERMINED BY THE STANDARD PROCTOR TEST METHOD (ASTM D 698). THE MOISTURE CONTENT WILL BE CONTROLLED IN ACCORDANCE WITH THE LIMITS OF THE STANDARD PROCTOR TEST RESULTS. SOME SOILS CANNOT BE COMPACTED TO 95% OF THE STANDARD PROCTOR OUTSIDE OF PLUS OR MINUS 4% MOISTURE CONTENT. CONTRACTOR OR GEOTECHNICAL REPRESENTATIVE IS RESPONSIBLE FOR THE ORIGINAL SOIL TEST AND PROVIDING A COPY OF THE RESULTS WITH MOISTURE-DENSITY CURVE TO THE ENGINEER. THE CONTRACTOR SHALL DO IN PLACE DENSITY TESTS EVERY THIRD LIFT OF SOIL. FIELD DENSITY TESTS FOR COMPACTION SHALL BE PERFORMED IN ACCORDANCE WITH ASTM D 2922 (NUCLEAR METHOD). RECORDS SHALL BE MAINTAINED OF TEST LOCATION AND RESULTS AND PROVIDED TO THE ENGINEER ON REQUEST. AREAS THAT FAIL FOR COMPACTION SHALL BE REMOVED, RE-COMPACTED AND RETESTED FOR COMPLIANCE. IN LIEU OF STANDARD PROCTOR TESTING, THE CONTRACTOR MAY PROOF-ROLL THE SOIL EVERY 24" OF SOIL LIFT WITH A LOADED 15 TON TANDEM DUMP TRUCK. SOIL THAT DEFLECTS UNDER THE REAR WHEELS GREATER THAN 1/2" SHALL BE REMOVED, RE-COMPACTED AND RETESTED. COMPACTION OF SOIL SHALL BE DONE WITH A 5 TON SMOOTH, SHEEPS FOOT, OR VIBRATORY ROLLER.
11. ON SITE FILL SHALL BE USED TO THE MAXIMUM EXTENT POSSIBLE. ANY IMPORTED FILL SHALL BE CERTIFIED BY THE CONTRACTOR TO BE CLEAR OF ALL HAZARDOUS SUBSTANCES OR MATERIALS. IF MATERIAL IS ENCOUNTERED THAT CANNOT BE RIPPED BY A CAT D8 WITH A SINGLE TOOTH RIPPER, THEN THE CONTRACTOR SHALL CONTACT THE ENGINEER WHO WILL VISIT THE SITE AND DETERMINE IF THE MATERIAL MAY BE USED AS IS OR MUST BE REMOVED BY OTHER MEANS. IF UNSUITABLE SOILS IN THE SUBGRADE ARE FOUND THEY SHALL BE REMOVED AND REPLACED WITH APPROPRIATE FILL AT THE ENGINEER'S DIRECTION.
12. IF SPRINGS OR SEEPS ARE ENCOUNTERED, SUBSURFACE DRAINAGE FEATURES SHALL BE INSTALLED PRIOR TO FILL PLACEMENT. CONTACT ENGINEER FOR EVALUATION AND RECOMMENDATION OF CORRECTIVE MEASURES.
13. THE FILL TOE KEYS FOR ALL EMBANKMENTS SHALL BE BENCHED OR KEYED INTO THE NATURAL SOIL. ALL FILL TOE KEYS SHALL BE SUPPORTED BY COMPETENT BEDROCK OR SOIL MATERIAL.
14. FILL PLACED AGAINST EXISTING SLOPES SHALL BE BENCHED INTO THE EXISTING MATERIAL PER DETAILS ON SHEET 7. DURING ALL PLACEMENT TO REDUCE THE POTENTIAL FOR DEVELOPMENT OF A SMOOTH INTERFACE BETWEEN THE FILL AND EXISTING SLOPE.
15. ANY SOFT AREAS SHALL BE OVER-EXCAVATED TO A FIRM MATERIAL AND BACKFILLED WITH A WELL COMPACTED STRUCTURAL FILL.
16. FILL REQUIRED TO OBTAIN DESIGN GRADES SHALL BE PLACED AS CONTROLLED, COMPACTED. ALL THE FILL SHALL BE FREE OF TRASH, WOOD, TOPSOIL, ORGANICS, COAL, COAL MINE REFUSE, FROZEN MATERIAL AND PIECES OF ROCK GREATER THAN 5" IN ANY DIMENSION.
17. DURING PLACEMENT OF MATERIAL, MOISTEN OR AERATE EACH LAYER OF FILL AS NECESSARY, TO OBTAIN THE REQUIRED COMPACTION. FILL SHOULD NOT BE PLACED ON SURFACES THAT ARE MUDDY OR FROZEN, OR HAVE NOT BEEN APPROVED BY PRIOR PROOF ROLLING. FREE WATER SHALL BE PREVENTED FROM APPEARING ON THE SURFACE DURING OR SUBSEQUENT TO COMPACTION OPERATIONS.
18. SOIL MATERIAL WHICH IS REMOVED BECAUSE IT IS TOO WET TO PERMIT PROPER COMPACTION MAY BE SPREAD AND ALLOWED TO DRY. DRYING CAN BE FACILITATED BY DISCING OR HARROWING UNTIL 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.
19. THE FILL OUTSLOPES SHALL BE OVERBUILT AND TRIMMED BACK TO DESIGN CONFIGURATIONS TO VERIFY PROPER COMPACTION.
20. THE ACCESS ROAD SHALL BE CONSTRUCTED UP TO THE PROPOSED PADS. THE ACCESS ROAD SHALL RECEIVE A STONE SURFACE.

CONSTRUCTION NOTES

1. THE CONSTRUCTION DOCUMENTS SHOW THE EXISTING AND PROPOSED GRADES THAT ALL CUT AND FILL ESTIMATES ARE BASED UPON. THE ENGINEER'S ESTIMATES OF THE QUANTITIES ARE ONLY ESTIMATES AND MAY CHANGE BASED ON ACTUAL FIELD CONDITIONS.
2. THE GRADES, BERMS, DEPTHS, AND DIMENSIONS MAY CHANGE BASED ON ACTUAL FIELD CONDITIONS. THE ENGINEER RESERVES THE RIGHT TO CHANGE GRADES, BERMS, DEPTHS AND DIMENSIONS AS 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 MONITORING AND TESTING OF MATERIAL WORKMANSHIP.
4. THE CONTRACTOR SHALL HAVE ON SITE AT ALL TIMES WHEN CONSTRUCTION IS IN PROGRESS A COMPETENT SUPERINTENDENT THOROUGHLY FAMILIAR WITH THE CONSTRUCTION OF EARTH BERMS AND EMBANKMENTS, THE COMPACTION OF SOILS AND E&S MEASURES.
5. 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 3 INCHES IN DIAMETER, ETC.) FROM THE TOPSOIL SPOIL AREA MATERIAL PRIOR TO PLACING IN LIFTS AND APPLYING A COMPACTIVE EFFORT.

MASTER LEGEND

EXISTING PROPERTY LINE	PROPOSED GRADE FOR PROFILES AND SECTION VIEWS (SHEETS 11 - 16)
EXISTING GAS LINE	PROP. FRENCH DRAIN (SEE DETAIL 5, SHEET 18)
EXISTING OVERHEAD ELECTRIC SERVICE	PROP. WELL HEAD
EXISTING UTILITY POLE	PROP. CELLAR SEE DETAIL 6, SHEET 18
EXISTING TREE LINE	PROP. PVC PIPE FOR SUMP SYSTEM (SEE DETAIL 1, SHEET 19)
EXISTING STRUCTURE	PROP. BREACHES (SEE DETAIL 2, SHEET 19)
EXISTING WATER WELL	PROP. DITCH (SEE DETAIL 1, SHEET 20)
EXISTING O&G WELL	PROP. OUTLET PROTECTION (SEE DETAIL 2, SHEET 20)
DELINEATED STREAM	PROP. RIP RAP APRON (SEE DETAIL 2, SHEET 20)
DELINEATED WETLAND	PROP. CULVERT (SEE DETAIL 3, SHEET 20)
DELINEATED DRAINAGE FEATURE FEMA FLOODPLAIN (N/A)	PROP. TOP OF SLOPE BERM (SEE DETAIL 4, SHEET 20)
EXISTING ROAD	PROP. INLET PROTECTION (SEE DETAIL 3, SHEET 21)
EXISTING FENCE	PROP. EARTHEN LEVEL SPREADERS WITH TURNOUT (SEE DETAILS 4 & 5, SHEET 21)
1360 EXISTING MAJOR CONTOUR (10')	(SSF) PROP. SUPER SILT FENCE (SEE DETAIL 2, SHEET 22)
EXISTING MINOR CONTOUR (2')	(FS) PROP. FILTER SOCK (SEE DETAIL 3, SHEET 22)
1360 PROPOSED MAJOR CONTOUR (10')	24 SUPER SILT FENCE AND FILTER SOCK INDICATION (SEE SHEET 22 FOR SUPER SILT FENCE AND FILTER SOCK TABLE)
PROPOSED MINOR CONTOUR (2')	(CE) PROP. ROCK CONSTRUCTION ENTRANCE (SEE DETAIL 5, SHEET 22)
PROP. LIMITS OF DISTURBANCE	(RFO) PROP. ROCK FILTER OUTLET (SEE DETAIL 1, SHEET 23)
GAS PROP. CPT-10 WELL LINE	(MT1) PROP NAG HYDRA CM HYDROSEED (SEE DETAIL 4, SHEET 23)
PROP. PAD & ROAD EDGE	(MT2) PROP. NAG HYDRA CX HYDROSEED (SEE DETAIL 5, SHEET 23)
PROP. PAD PERIMETER SUMP	
B-1 BORING LOCATION	
PROP. TOE BENCH (SEE DETAILS ON SHEET 7)	
FES FLARED END SECTION (SEE SITE PLAN, SHEETS 9 - 10)	
LS EARTHEN LEVEL SPREADER W/ TURN OUT (SEE SITE PLAN, SHEETS 9 - 10)	
AREA IN FILL FOR SECTION VIEWS (SHEETS 11 - 16)	
AREA IN CUT FOR SECTION VIEWS (SHEETS 11 - 16)	
EXISTING GRADE FOR PROFILES AND SECTION VIEWS (SHEETS 11 - 16)	

KLEINFELDER
Bright People. Right Solutions.
230 Executive Drive, Suite 122
Cranberry Township, PA 16066
Phone: 724.772.7072

JOSHUA D. FREGOSI REGISTERED 20261 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER

SIGNED BY: JOSHUA D. FREGOSI, WV P.E. #20261

RECEIVED
Office of Oil and Gas
JUN 2 ... 2016
WV Department of Environmental Protection

REVISIONS

REV	DESCRIPTION	DWN	CHK	APP	DATE

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 IS 22 x 34

NOTES AND MASTER LEGEND

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	AER
DRAWN BY	CRH
CHECKED BY	JCF
APPROVED BY	MJA

SHEET 3

3 of 25

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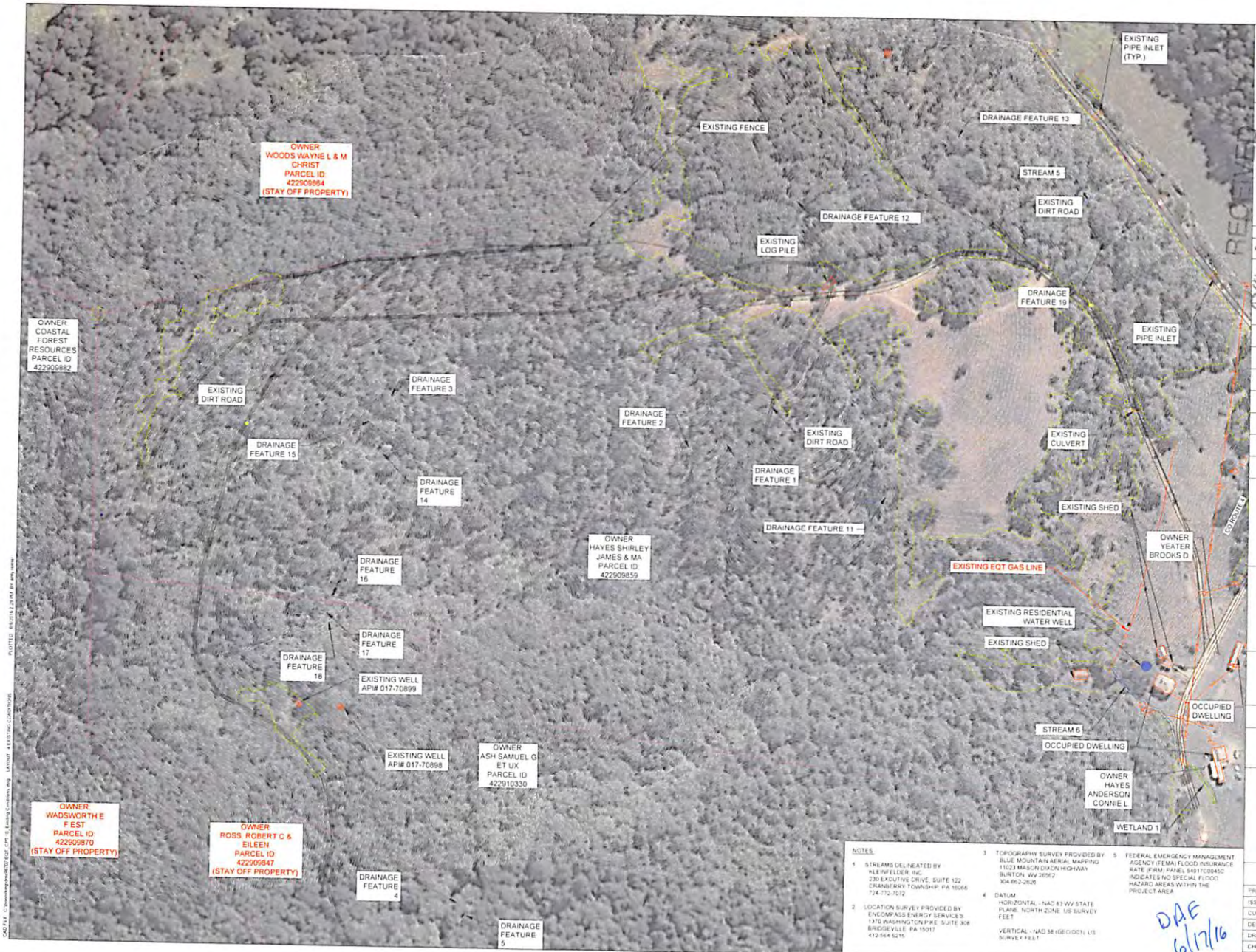

NOTES

1. STREAMS DELINEATED BY KLEINFELDER, INC. 230 EXCUTIVE DRIVE, SUITE 122 CRANBERRY TOWNSHIP, PA 16066 724.772.7072
2. LOCATION SURVEY PROVIDED BY ENCOMPASS ENERGY SERVICES 1370 WASHINGTON PIKE, SUITE 308 BRIDGEVILLE, PA 15017 412.564.6215
3. TOPOGRAPHY SURVEY PROVIDED BY BLUE MOUNTAIN AERIAL MAPPING 11023 MASON DIXON HIGHWAY BURTON, WV 26562 304.662.2505
4. DATUM HORIZONTAL - NAD 83 WV STATE PLANE, NORTH ZONE, US SURVEY FEET VERTICAL - NAD 88 (GEOID03) US SURVEY FEET
5. FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE (FIRM) PANEL 54017C0045C INDICATES NO SPECIAL FLOOD HAZARD AREAS WITHIN THE PROJECT AREA

DAE 6/17/16

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JOSHUA D FREGOSI
20251
STATE OF WEST VIRGINIA
PROFESSIONAL ENGINEER

SIGNED BY: JOSHUA D. FREGOSI, WV P.E. # 20251

REVISIONS				
REV	DESCRIPTION	BY	CHK / APP	DATE

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WV Department of
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SCALE VERIFICATION

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SCALE 1" = 100' — SCALE IN FEET

ORIGINAL DRAWING SIZE 15.22 x 34

EXISTING CONDITIONS

CPT-10 WELL PAD
DODDRIDGE COUNTY
WEST VIRGINIA

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Where energy meets innovation.

CONSTRUCTION

PROJECT NO.	137355
ISSUE DATE	06.08.2016
CURRENT REVISION	0
DESIGNED BY	AER
DRAWN BY	CRH
CHECKED BY	JDF
APPROVED BY	MJA

SHEET 4

4 of 25

CAD FILE: C:\projects\graphics\TEQT CPT-10_Existing Conditions.dwg LAYOUT: 4 EXISTING CONDITIONS PLOTTED: 6/8/2016 2:29:57 PM BY: amy.miller

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

OWNER:
COASTAL FOREST
RESOURCES
PARCEL ID: 422909882

OWNER:
ASH SAMUEL G ET UX
PARCEL ID: 422910330

OWNER:
HAYES SHIRLEY
JAMES & MA
PARCEL ID: 422909859

MATERIAL
SPOIL AREA 1

WATER
CONTAINMENT PAD 1

OWNER:
HAYES ANDERSON
CONNIE L.

TOPSOIL SPOIL AREA
1 & MATERIAL SPOIL
AREA 3

OWNER:
YEATER
BROOKS D.

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

WATER
CONTAINMENT PAD 2

MAIN ACCESS ROAD

WELL PAD

WELL PAD
ACCESS ROAD

WATER CONTAINMENT
PAD ACCESS ROAD

MATERIAL
SPOIL AREA 2

DRF
6/1/16

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Phone: 724-772-7072
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JUN 6
WV Department of
Environmental Protection

JOSHUA D. FREGOSI
REGISTERED
20261
STATE OF WEST VIRGINIA
PROFESSIONAL ENGINEER

SIGNATURE: JOSHUA D. FREGOSI, W.V. P.E. # 20261
REGISTRATION

NO.	DESCRIPTION	DSN	CHK	DATE
		DWN	APP	

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

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

ORIGINAL DRAWING SIZE IS 22 x 34

TAX MAP

CPT-10 WELL PAD
DODDRIDGE COUNTY
WEST VIRGINIA

EQT
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CONSTRUCTION

PROJECT NO.	137355
ISSUE DATE	06.06.2016
CURRENT REVISION	0
DESIGNED BY	AER
DRAWN BY	CRH
CHECKED BY	JDF
APPROVED BY	MJA

SHEET 5 of 25

5

GEOTECHNICAL SPECIFICATIONS

1. 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 CONFORMATION OF SUBSURFACE MATERIALS TO BE ENCOUNTERED THE PRESENCE AND LOCATION OF SUBSURFACE UTILITIES THE CHARACTER OF 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 ACQUAINT 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

2. REFER TO BORING LOGS AND TESTING DATA ON SHEETS CONTAINED IN GEOTECHNICAL REPORT

3. 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

4. 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 ALL APPLICABLE FEDERAL STATE AND LOCAL LAWS AND REGULATIONS

5. 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

6. 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 START OF THE CONSTRUCTION

7. GENERAL LOAD BEARING FILL REQUIREMENTS

   GENERAL LOAD BEARING FILL SHALL CONSIST OF OR A COMBINATION OF GW GP GM GC SW SP SM SC ML MH CH AND CL MATERIALS AS CLASSIFIED BY ASTM D2487 THE ML MH CH 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 (ANY DIMENSION) SHALL BE EXCLUDED FROM GENERAL LOAD BEARING FILLS 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 LAID FLAT PARALLEL WITH THE GROUND SURFACE THERE IS A COVER OF AT LEAST 2 FEET OF FILL REMAINING AND CARE IS TAKEN TO PREVENT VOIDS FROM OCCURRING TO HELP PREVENT VOIDS FROM OCCURRING THE LARGE (GREATER THAN 8 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 COMPACTION REQUIREMENTS

8. 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 ONSITE SOILS ARE NOT EXPECTED TO MEET THE REQUIREMENTS OF DRAINABLE LOAD BEARING FILL WE RECOMMEND THAT AASHTO NO 57 STONE OR APPROVED EQUIVALENT BE CONSIDERED FOR USE DRAINABLE LOAD BEARING FILL LAYERS SHALL BE AT LEAST 12 INCHES THICK AND COVERED WITH GEOFABRIC TO SEPARATE THE DRAINABLE LOAD BEARING FILL FROM THE GENERAL OR SELECT LOAD BEARING FILL PLACED ON TOP OF IT WHEREVER DRAINABLE LOAD BEARING FILL IS USED IT MUST DAYLIGHT THROUGH THE TOE OF FILL SLOPE TO RELIEVE POTENTIAL BUILD UP OF HYDROSTATIC PRESSURE BEHIND FILL SLOPES SEE NOTE FOR COMPACTION REQUIREMENTS

9. 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

   9.1 MAXIMUM PARTICLE SIZE OF 24 INCHES (ANY DIMENSION)
   9.2 MAXIMUM LIFT THICKNESS 6 INCHES GREATER THAN THE MAXIMUM PARTICLE SIZE
   9.3 MAXIMUM SOIL CONTENT OF 20 PERCENT
   9.4 THE MATERIAL TYPE AND METHODS OF PLACEMENT COMPACTION AND EVALUATION WILL NEED TO BE DEVELOPED DURING CONSTRUCTION BY THE TEAM AND ADJUSTED AS NECESSARY TO ACHIEVE A STABLE FILL

10. IF IMPORTED FILLS ARE NECESSARY IMPORTED SOILS SHALL MEET THE REQUIREMENTS OF TABLE 6 AND BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO DELIVERY TO THE SITE

11. LOAD BEARING FILLS SHAL 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 BE LIMITED TO 8 INCHES IN CONFINED TRENCH

12. 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

13. FILL SLOPES MAY BE CONSTRUCTED AT SLOPE ANGLES OF NO STEEPER THAN 2H 1V IF CONSTRUCTED WITH LOAD BEARING FILL PERMANENT LOADS SHALL BE KEPT A MINIMUM OF 20 FEET FROM THE EDGE OF THE TOP OF FILL SLOPES

14. FILL PLACED AGAINST EXISTING SLOPES STEEPER THAN 4H 1V SHALL BE BENCHED INTO THE EXISTING SLOPES BENCH HEIGHTS SHALL BE LIMITED TO FIVE FEET AS FILLING PROGRESSES FROM THE BOTTOM UP

15. 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 GEOFABRIC SUCH AS MIRAFI 140N OR APPROVED EQUAL WITH SUFFICIENT OVERLAP TO PROVIDE AN ENVELOP AROUND THE PIPE TRENCH TO PREVENT THE MIGRATION OF FINES INTO THE FRENCH DRAIN THE FRENCH DRAIN SHALL DAYLIGHT BEYOND THE TOE OR SIDE OF THE SLOPE AND 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

16. 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 SHEEP'S FOOT OR SEGMENTED PAD ROLLER OF 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

17. THE CONTRACTOR SHALL CONTROL SURFACE DRAINAGE TO PREVENT FLOW OF WATER INTO THE EXCAVATIONS THE SITE SHALL BE GRADED TO PREVENT SURFACE WATER FROM PONDING IN CONSTRUCTION AREAS AND ACCUMULATING IN EXCAVATIONS IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROTECT ALL WORK AREAS FROM BEING DAMAGED BY SURFACE WATER GROUND WATER AND PRECIPITATION

18. 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 WELL THE CONTRACTOR SHALL BE PREPARED TO SCARIFY LET DRY AND RE-COMPACT SUBGRADE SOILS THAT ARE TOO WET IN PLACE AND/OR AFTER PRECIPITATION EVENTS AFTER PRECIPITATION EVENTS THE CONTRACTOR SHALL RE-PROOF ROLL SUBGRADE SOILS PRIOR TO PLACING FILL AND SHALL RE-PROOF ROLL PREVIOUSLY PLACED FILL PRIOR TO PLACING ADDITIONAL LIFTS OF FILL THIS RE-PROOF-ROLLING OPERATION SHALL BE OBSERVED BY THE ONSITE REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER TO EVALUATE WHETHER OR NOT THE PREVIOUSLY ESTABLISHED SUBGRADE HAS BECOME SOFT/UNSUITABLE AS A RESULT OF PRECIPITATION EVENTS IF SOFT/UNSUITABLE SOILS ARE OBSERVED DURING RE-PROOF-ROLLING THOSE SOILS WILL NEED TO BE SCARIFIED MOISTURE CONDITIONED AND RE-COMPACTED

19. 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

20. IF EVIDENCE OF A SEEP/SPRING IN A CUT SLOPE IS OBSERVED BY THE ONSITE GEOTECHNICAL ENGINEERING REPRESENTATIVE THE CONTRACTOR SHALL INSTALL A FRENCH DRAIN COORDINATE WITH THE ENGINEER FOR APPROPRIATE DISCHARGE POINT

21. 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

22. STOCKPILES SHALL BE COMPACTED AND SMOOTH DRUM ROLLED TO PROMOTE RUNOFF AND LIMIT INFILTRATION

23. IF THE CONTRACTOR PROPOSES TO UTILIZE A CHEMICAL STABILIZATION/MODIFICATION TECHNOLOGY TO DRY THE ONSITE SOILS TO ALLOW PROPER COMPACTION 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/BLENDING THE MATERIALS AND PREVIOUS EXPERIENCE USING THE TECHNOLOGY IN SIMILAR GEOLOGIC SETTINGS IN ORDER TO SUCCESSFULLY IMPLEMENT THESE TECHNOLOGIES THE END PRODUCT (E G DRYING MODIFICATION STABILIZATION) SHALL BE CLEARLY DEFINED CONSIDERING THE PROPERTIES OF THE ONSITE MATERIAL TO BE PROCESSED MANY CHEMICAL STABILIZATION TECHNOLOGIES ARE SPECIFIC TO CERTAIN GRAIN SIZES PHYSICAL PROPERTIES MOISTURE CONTENTS ARE SENSITIVE TO AMBIENT TEMPERATURES AND A 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

24. GEOGRID

   24.1 PRIMARY GEOGRID SHALL CONSIST OF MIRAGRID 10XT AS MANUFACTURED BY TC MIRAFI INC ALTERNATE GEOGRID MUST BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO DELIVERY
   24.2 SECONDARY GEOGRID SHALL CONSIST OF MIRAGRID 2XT AS MANUFACTURED BY TC MIRAFI INC ALTERNATE GEOGRID MUST BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO DELIVERY
   24.3 PRIMARY GEOGRID SHALL BE ORIENTED WITH THE HIGHEST STRENGTH AXIS PERPENDICULAR TO THE SLOPE FACE
   24.4 SECONDARY GEOGRID SHALL BE ORIENTED WITH THE HIGHEST STRENGTH AXIS PARALLEL TO THE SLOPE FACE WHERE ONE GEOGRID ENDS AND THEN NEXT BEGINS THERE SHALL BE A MINIMUM 12 IN OF OVERLAP
   24.5 THE GEOGRID SHALL BE LAID HORIZONTALLY ON COMPACTED BACKFILL THE GEOGRID SHALL BE PULLED TAUT FOLDS OR WRINKLES IN THE GEOGRID ARE NOT PERMITTED
   24.6 GEOGRID REINFORCEMENT SHALL BE CONTINUOUS THROUGHOUT THE EMBEDMENT LENGTHS AND PLACED SIDE-BY-SIDE TO PROVIDE 100 PERCENT COVERAGE AT EACH LEVEL SPLICED CONNECTIONS OF SHORTER PIECES OF GEOGRID ARE NOT PERMITTED
   24.7 TRACKED CONSTRUCTION EQUIPMENT SHALL NOT BE OPERATED DIRECTLY UPON THE GEOGRID REINFORCEMENT A MINIMUM FILL THICKNESS OF 6 INCHES IS REQUIRED BEFORE OPERATION OF TRACKED MOUNTED VEHICLES OVER THE GEOGRID TRACKED VEHICLE TURNING SHOULD BE KEPT TO A MINIMUM TO PREVENT TRACKS FROM DISPLACING THE FILL AND DAMAGING THE GEOGRID
   24.8 RUBBER TIRED EQUIPMENT MAY PASS OVER GEOGRID REINFORCEMENT AT SLOW SPEEDS LESS THAN 10 MPH SUDDEN BRAKING AND SHARP TURNING SHALL BE AVOIDED
   24.9 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 3 INCHES IN DIAMETER ETC) FROM THE TOPSOIL SPOIL AREA MATERIAL PRIOR TO PLACING IN LIFTS AND APPLYING A COMPACTIVE EFFORT

1 REINFORCED SOIL SLOPE DETAIL
N.T.S.

2 PRIMARY GEOGRID LAYOUT
N.T.S.

3 SECONDARY GEOGRID LAYOUT
N.T.S.

DAG 6/17/16

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RECEIVED
Office of Oil and Gas
JUN 2 2016
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REVISIONS

REV	DESCRIPTION	DWN	CHK	APP	DATE

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GEOTECH NOTES & DETAILS

CPT-10 WELL PAD
DODDRIDGE COUNTY
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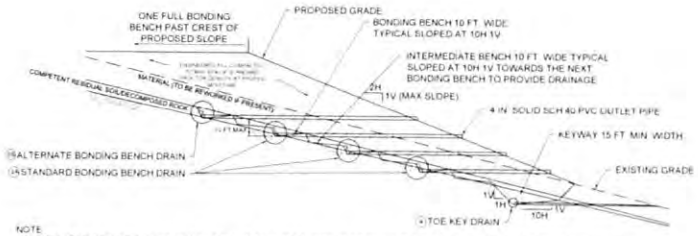
CONSTRUCTION

PROJECT NO	137355
ISSUE DATE	05-06-2016
CURRENT REVISION	0
DESIGNED BY	KER
DRAWN BY	DRH
CHECKED BY	JLP
APPROVED BY	MJA

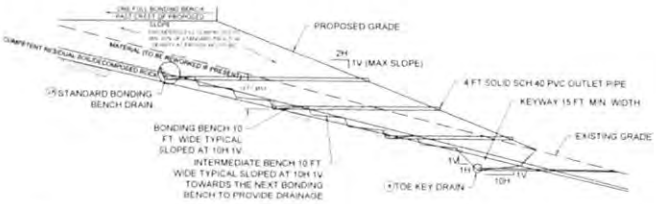
SHEET 6 (6 of 25)

4701706752



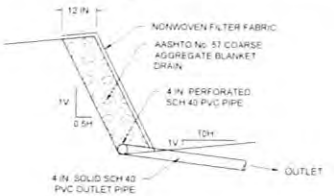
NOTE
1) TOE KEY EXCAVATIONS SHOULD BE A MINIMUM OF 15 FT. WIDE AND EXTEND THROUGH ALL COLLUVIUM AND/OR RESIDUAL SOIL TO BE FOUNDED ENTIRELY ON DECOMPOSED ROCK.
2) 4 IN. PERFORATED TOE KEY DRAIN SHOULD BE INSTALLED ALONG THE ENTIRE LENGTH OF THE TOE KEY WITH OUTLETS AT 100 FOOT CENTERS.
3) OUTLETS SHOULD CONSIST OF 4 IN. SCH 40 SOLID PVC PIPE AND OUTLET DIFFUSER STONE PLACED BENEATH END OF OUTLET.
4) DRAINAGE BOND BENCHES INSTALLED AT MAXIMUM SPACING OF 10 VERTICAL FEET FROM TOP OF THE REAR WALL OF KEYWAY EXCAVATION.
5) ALTERNATE BONDING BENCH DRAIN INSTALLED ON BENCH IMMEDIATELY BENEATH FINISHED SUBGRADE PER DETAIL 2B.
6) 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



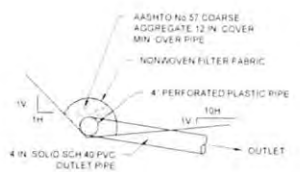
NOTE
1) TOE KEY EXCAVATIONS SHOULD BE A MINIMUM OF 15 FT WIDE AND EXTEND THROUGH ALL COLLUVIUM AND/OR RESIDUAL SOIL TO BE FOUNDED ENTIRELY ON DECOMPOSED ROCK.
2) 4 IN PERFORATED TOE KEY DRAIN SHOULD BE INSTALLED ALONG THE ENTIRE LENGTH OF THE TOE KEY WITH OUTLETS AT 100 FT CENTERS.
3) OUTLETS SHOULD CONSIST OF 4 IN. SCH 40 SOLID PVC PIPE.
4) 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



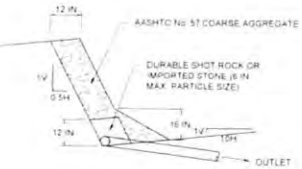
NOTE
1) OUTLETS AT 250 FT. CENTERS MAX. OR AS DEEMED NECESSARY.
2) CONTRACTOR TO VERIFY OUTLETS ARE INSTALLED WITH POSITIVE DRAINAGE TO FACE OF SLOPE.

2A STANDARD BONDING BENCH DRAIN DETAIL
NTS



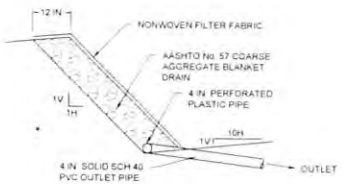
NOTE
1) OUTLETS AT 250 FT. CENTERS MAX. OR AS DEEMED NECESSARY.
2) CONTRACTOR TO VERIFY OUTLETS ARE INSTALLED WITH POSITIVE DRAINAGE TO FACE OF SLOPE.

2B BONDING BENCH DRAIN DETAIL
NTS



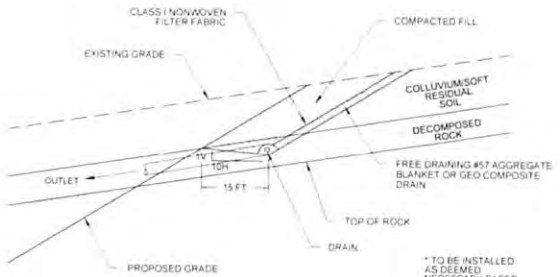
NOTE
1) THIS ALTERNATE TO BE USED ONLY IN TOE KEYS WHERE ACCESS BY PERSONNEL IS UNSAFE. INSTALLATION REQUIRES PRE-APPROVAL BY DESIGN ENGINEER.
2) OUTLETS AT 250FT. CENTERS MAX. OR AS DEEMED NECESSARY.
3) CONTRACTOR TO VERIFY OUTLETS ARE INSTALLED WITH POSITIVE DRAINAGE TO FACE OF SLOPE.

3 ALTERNATE TOE KEY DRAIN DETAIL
NTS



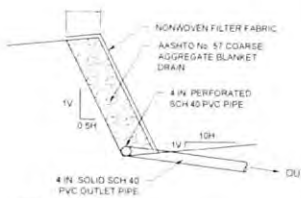
NOTE
1) OUTLETS AT 100 FT. CENTERS MAX. OR AS DEEMED NECESSARY.
2) CONTRACTOR TO VERIFY OUTLETS ARE INSTALLED WITH POSITIVE DRAINAGE TO FACE OF SLOPE.

4 TYPICAL TOE KEY DRAIN DETAIL
NTS



* TO BE INSTALLED AS DEEMED NECESSARY BASED ON ENCOUNTERED SITE CONDITIONS

5 TYPICAL SLOPE PROTECTION DETAIL
NTS



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

6 TYPICAL SEEP DRAINAGE
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DONALD FREDDO JR. REGISTERED 20261 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER
SIGNED BY: JOSHUA D. FREDDO, IN V. PE. # 20261

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ORIGINAL DRAWING SIZE: 15.22 x 34

GEOTECH NOTES & DETAILS

CPT-10 WELL PAD
DODDRIDGE COUNTY
WEST VIRGINIA

EQT
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CONSTRUCTION

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

SHEET 7
7 OF 25

C:\ACTIVE_1\planning\drawings\137355_CPT-10_Geotech.dwg LAYOUT: GEOTECH NOTES & DETAILS PLOTTED: 6/8/2016 8:36 PM By: amy.baker

4701706752

TABLE 1 - BORING SUMMARY

Boring	Approximate Existing Elevation (ft.)	Proposed Elevation (ft.)	Elevation Change (1) (ft.)	Depth to WR (2) (ft.)	Approximate Existing Elevation of WR (2) (ft.)	Depth to AR (3) (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	1,018.1	999.7	18.4	16.0	1,002.1	NE
CPT10-05	996.7	997.9	1.2	6.0	990.7	10
CPT10-06	1,030.9	1,030.9	0.0	4.5	1,026.4	NE
CPT10-07	1,104.5	1,081.3	23.2	2.5	1,102.0	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	7.0	1,087.7	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	30
CPT10-13	1,087.8	1,087.8	0.0	14.0	1,073.8	17.5
CPT10-14	1,090.4	1,090.4	0.0	8.0	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	984.8	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 3/4 in. Sieve (%)	Passing #4 Sieve (%)	Passing #200 Sieve (%)	LL	PL	PI	
CPT10-1	2.0	S2	SANDY SILT (ML)	18.5		99	66	32	26	6	
CPT10-2	2.0	S2	SILT WITH SAND (ML)	13.6		96	70	45	27	18	
CPT10-3	0.0	S1	LEAN CLAY (CL)	23			90	47	26	21	
CPT10-4	5.0	S2	LEAN CLAY (CL)	18.4			89	47	25	22	
CPT10-5	4.0	S3	LEAN CLAY WITH SAND (CL)	13.4			80	45	21	24	
CPT10-6	2.0	S2	GRAVELLY LEAN CLAY (CL)	19.5		78	64	46	24	22	
CPT10-7	0.0	S1	FAT CLAY WITH SAND (CH)	24.4			83	50	25	25	
CPT10-8	0.0	S1	SILT WITH SAND (ML)	15.3		98	75	49	28	21	
CPT10-9	2.0	S2	FAT CLAY WITH SAND (CH)	21		93	83	52	24	28	
CPT10-10	4.0	S3	CLAYEY SAND (SC)	12.8		87	44	41	22	19	
CPT10-11	9.5	S2	LEAN CLAY (CL)	16.4		98	89	41	19	22	
CPT10-12	0.0	S1	SANDY LEAN CLAY (CL)	9.2	100	89	59				Maximum Dry Unit Weight: 116.0 pcf; Optimum Water Content: 12.1%
CPT10-12	5.0	S2	GRAVELLY LEAN CLAY WITH SAND (CL)	6			53	33	22	11	
CPT10-13	8.0	S5	LEAN CLAY (CL)	13.5			99	43	21	22	
CPT10-14	10.0	S6	LEAN CLAY (CL)	13.2		74	89	44	21	23	
CPT10-15	0.0	S1	FAT CLAY (CH)	29.5			94	53	26	27	
CPT10-15	2.0		SANDY LEAN CLAY (CL)	11.4	100	89	58				
CPT10-16	0.0	S1	FAT CLAY WITH SAND (CH)	21.2		99	75	53	25	28	
CPT10-17	2.0	S2	SANDY LEAN CLAY WITH GRAVEL (CL)	10.2		83	54	34	21	13	
CPT10-3	14.5	RC2	CLAYSTONE								Unconfined Compressive Strength = 620 psi
CPT10-12	32.0	RC1	SANDSTONE								Unconfined Compressive Strength = 6,890 psi
CPT10-15	15.0	RC1	SANDSTONE								Unconfined Compressive Strength = 2,760 psi

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
	CPT10-02	2	5	4	15
3	CPT10-16	3	4.5	4	15
4	CPT10-06	3.5	4.5	4	15
5	CPT10-17	5	7	6	15
6	CPT10-09	11	12.5	12	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	5,383
2	SOUTH SIDE OF WELL PAD	985	5.0	10.5	15	7,495
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	4,691
6	SOUTHWEST SIDE OF MATERIAL SPOIL AREA 3	585	12.0	18.0	15	11,392
	TOTAL					32,984

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	3,008	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	1,050	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				16,995	57,277	

TABLE 6 - IMPORTED LOAD BEARING FILL GRADATION REQUIREMENTS

Fill Designation	Sieve Size / Percent Passing												
	6"	3"	2"	1 1/2"	1"	3/4"	1/2"	3/8"	#4	#8	#16	#100	#200
General Load Bearing Fill	100		70-100			50-100			25-75				0-49
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	3,008
2	SOUTH SIDE OF WELL PAD	985	271	1,029	5	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	3,950	15,311	57,277

DAF 6/17/16

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ORIGINAL DRAWING SIZE 15.22 x 34

GEOTECH NOTES & DETAILS

CPT-10 WELL PAD
DODDRIDGE COUNTY
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CONSTRUCTION

PROJECT NO.	197155
ISSUE DATE	06-08-2016
CURRENT REVISION	0
DESIGNED BY	AEH
DRAWN BY	CRH
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APPROVED BY	MJK

8

SHEET 8 of 25

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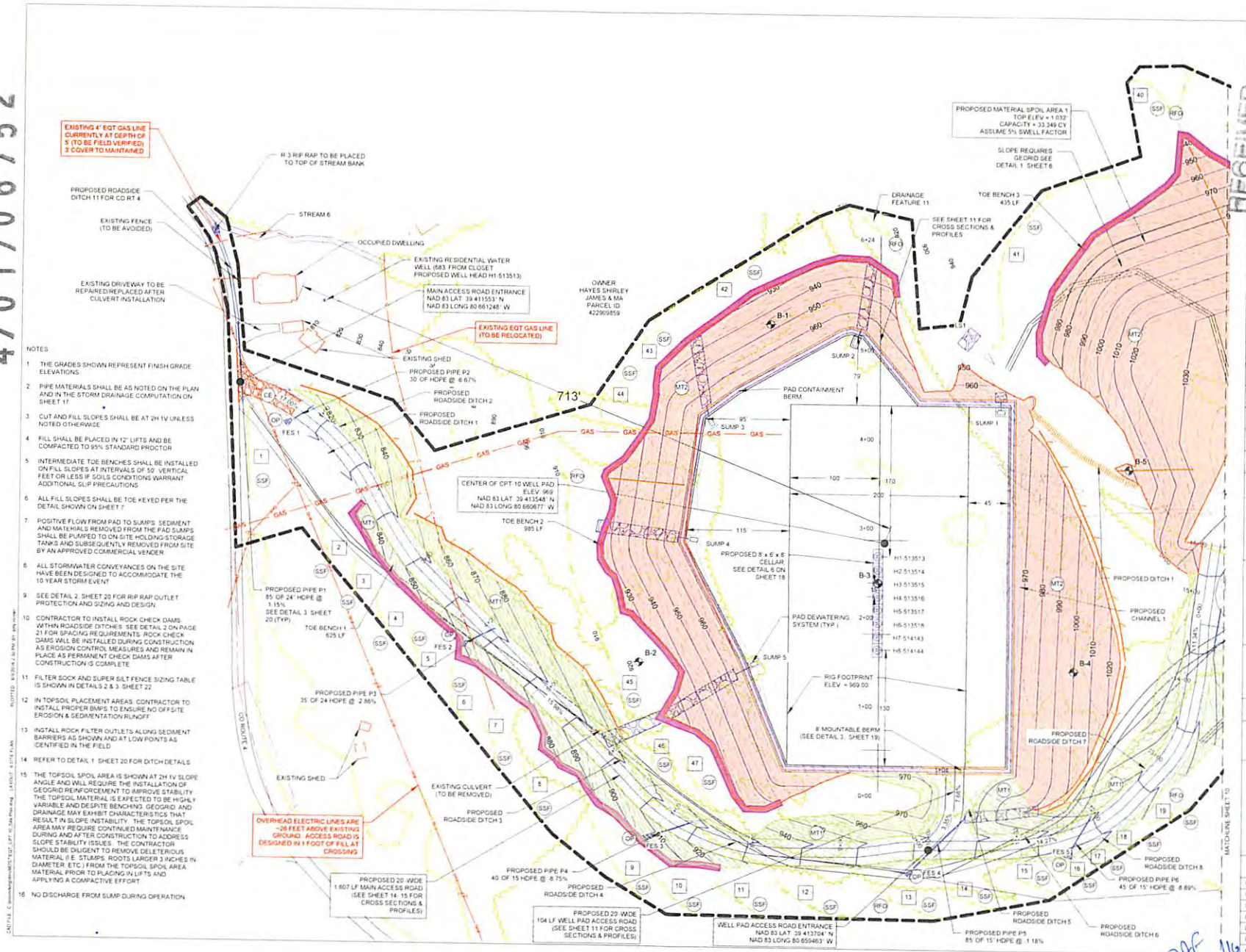

NOTES

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 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 SUMPS. SEDIMENT AND MATERIALS REMOVED FROM THE PAD SUMPS SHALL BE PUMPED TO ON-SITE HOLDING/STORAGE TANKS AND SUBSEQUENTLY REMOVED FROM SITE BY AN APPROVED COMMERCIAL VENDER.
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 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 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 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 SUMP DURING OPERATION.

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www.kleinfelder.com

PREPARED BY: JOSHUA J. FREGOSI, WV P.E. # 20261

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SITE PLAN

CPT-10 WELL PAD
DODDRIDGE COUNTY
WEST VIRGINIA

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CONSTRUCTION

PROJECT NO.	137355
ISSUE DATE	05-06-2016
CURRENT REVISION	0
DESIGNED BY	AER
DRAWN BY	CRH
CHECKED BY	JJF
APPROVED BY	MJA

SHEET 9 of 25

DAF 5/27/16

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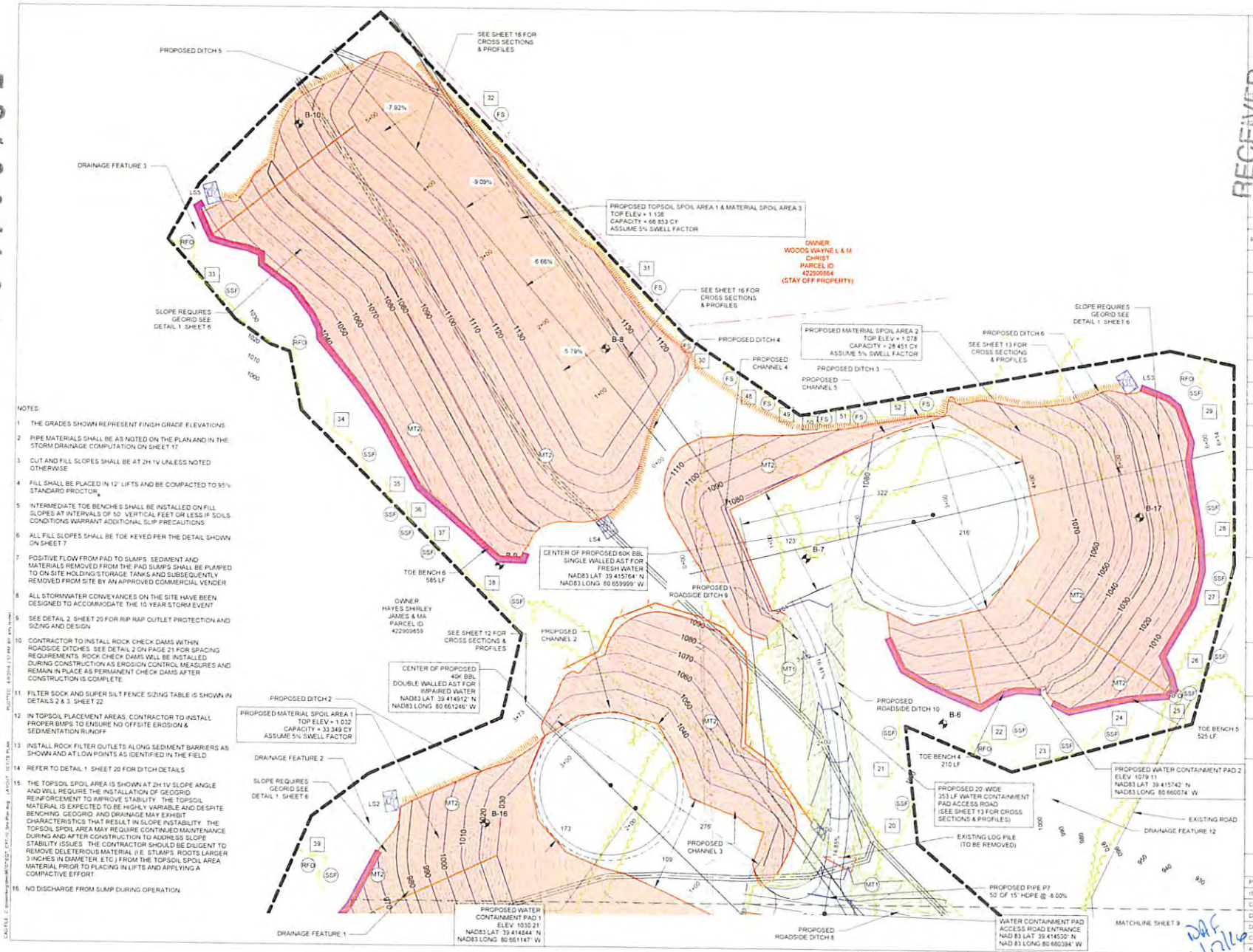

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SCALE: 1" = 50' — SCALE IN FEET

ORIGINAL DRAWING SIZE IS 22 x 34

SITE PLAN

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	JDF
APPROVED BY	MJA

SHEET 10

10 of 25

DAF 6/21/16

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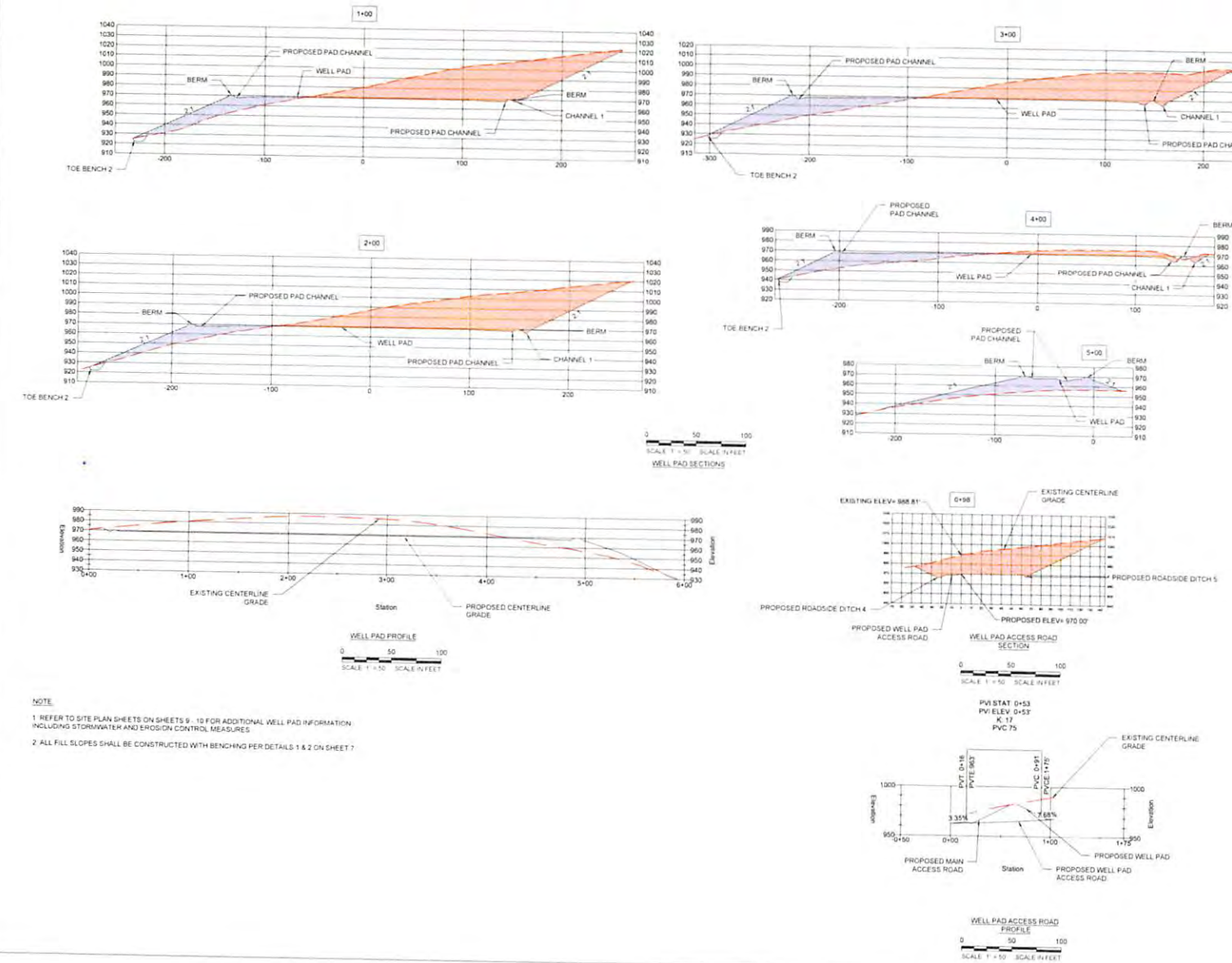

NOTE

1. REFER TO SITE PLAN SHEETS ON SHEETS 9 - 10 FOR ADDITIONAL WELL PAD INFORMATION INCLUDING STORMWATER AND EROSION CONTROL MEASURES.

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

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JOSHUA D. FREGOSI
REGISTERED
20251
STATE OF
WEST VIRGINIA
PROFESSIONAL ENGINEER

SIGNED BY: JOSHUA D. FREGOSI, W.V. P.E. # 20251

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WELL PAD CROSS SECTIONS & PROFILE

CPT-10 WELL PAD
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11

SHEET 11 of 25

DAF 6/17/16

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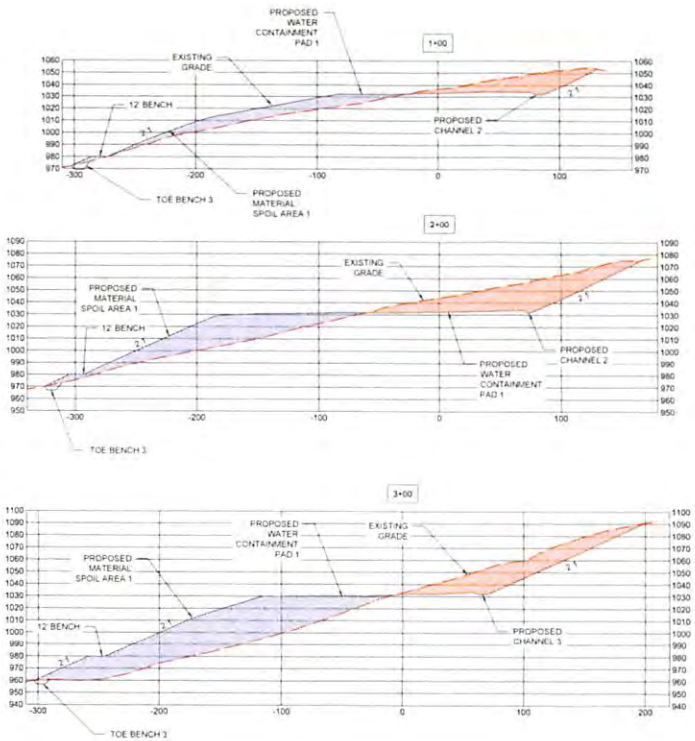
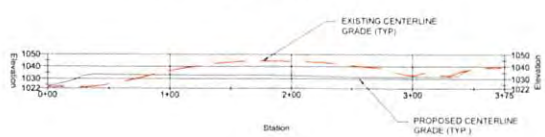


WATER CONTAINMENT PAD 1
SECTIONS

0 50 100 150
SCALE 1" = 50' SCALE IN FEET



WATER CONTAINMENT PAD 1
PROFILE

0 50 100 150
SCALE 1" = 50' SCALE IN FEET

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.

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WATER CONTAINMENT PAD 1 CROSS SECTIONS & PROFILE

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PROJECT NO.	137155
ISSUE DATE	06/08/2016
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12

SHEET 12 of 25

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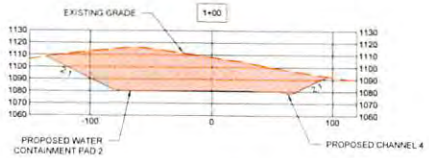
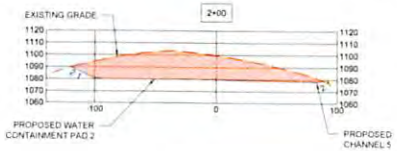
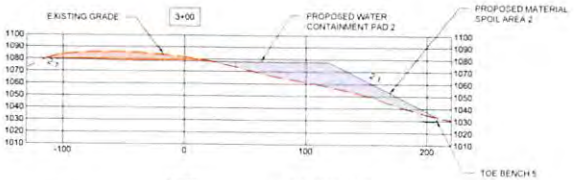
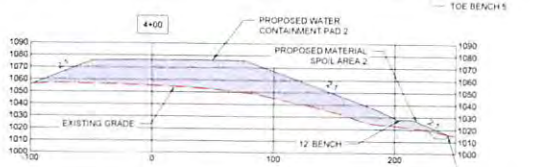
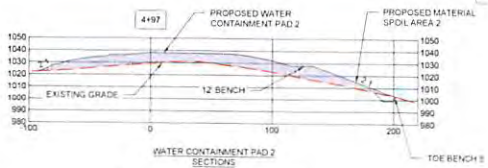


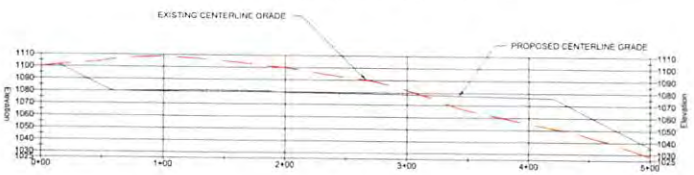




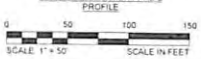


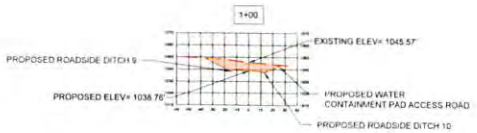


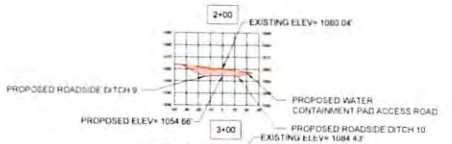
WATER CONTAINMENT PAD 2 SECTIONS

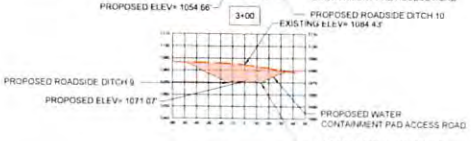


WATER CONTAINMENT PAD 2 PROFILE

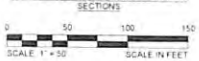


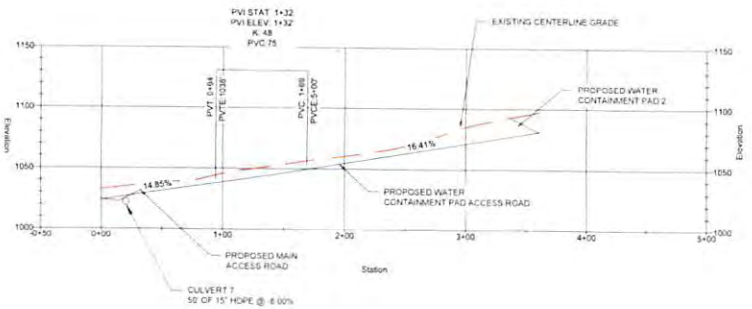




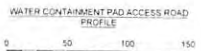


WATER CONTAINMENT PAD ACCESS ROAD SECTIONS





WATER CONTAINMENT PAD ACCESS ROAD PROFILE



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

DRF 6/21/16

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COMMONWEALTH OF PENNSYLVANIA REGISTERED 20251 PROFESSIONAL ENGINEER

SIGNED / SEALED AND DATED FREGOSI, W. E. # 20251

REVISIONS

REV.	DESCRIPTION	DSN	CHK	APP	DATE

RECEIVED
JUN 28 2016
Office of Oil & Gas
WV Department of Environmental Protection

ISSUED FOR CONSTRUCTION

SCALE VERIFICATION
THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING.
0 1"
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ORIGINAL DRAWING SIZE IS 22 x 34

WATER CONTAINMENT PAD 2 CROSS SECTIONS & PROFILE

CPT-10 WELL PAD
DODDRIDGE COUNTY
WEST VIRGINIA

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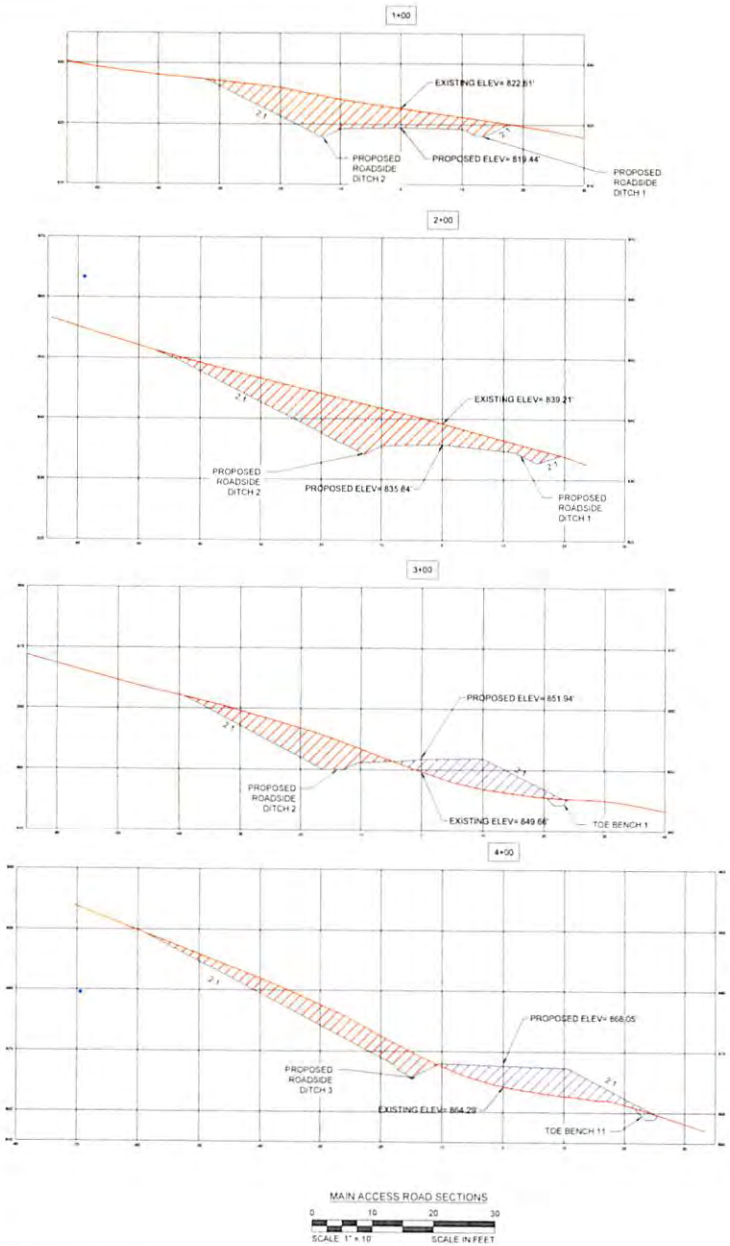
CONSTRUCTION

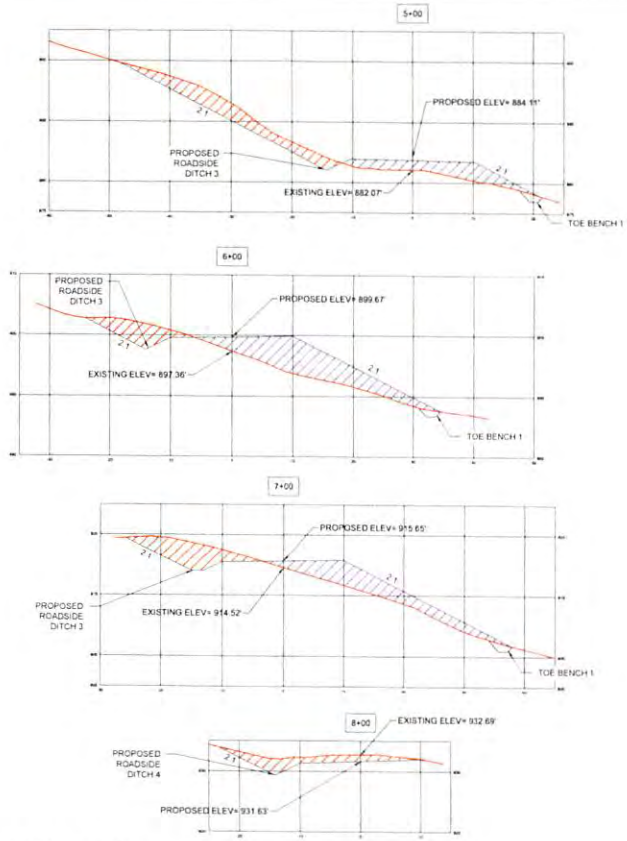
PROJECT NO.	137355
ISSUE DATE	06-09-2016
CURRENT REVISION	0
DESIGNED BY	AEH
DRAWN BY	CNH
CHECKED BY	JDF
APPROVED BY	MJA

13

SHEET 13 of 25

4701706752



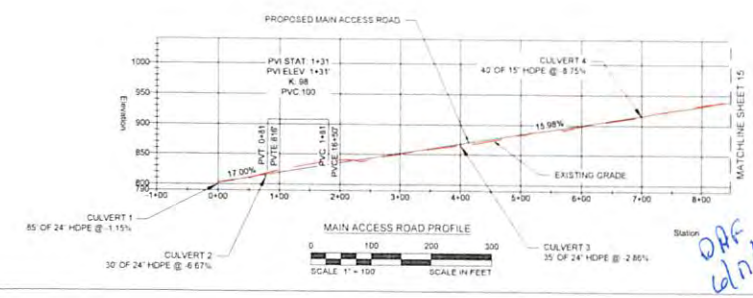


NOTE

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



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REVISIONS

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SCALE VERIFICATION

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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

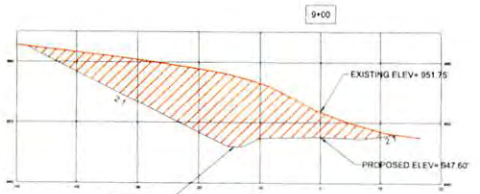
PROJECT NO.	137355
ISSUE DATE	06-08-2016
CURRENT REVISION	0
DESIGNED BY	AER
DRAWN BY	CRH
CHECKED BY	JDF
APPROVED BY	MJA

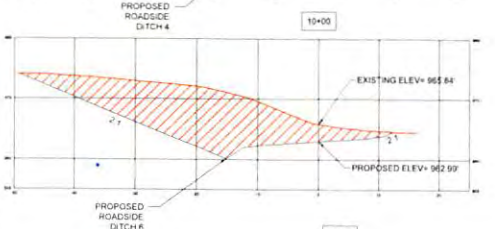
14

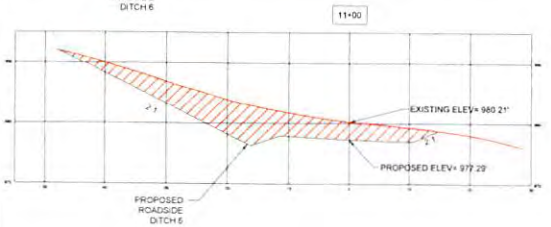
SHEET 14 of 25

DAF 6/7/16

4701706752



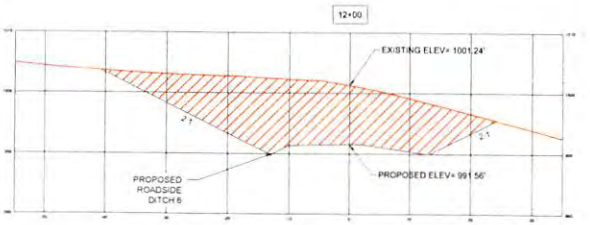


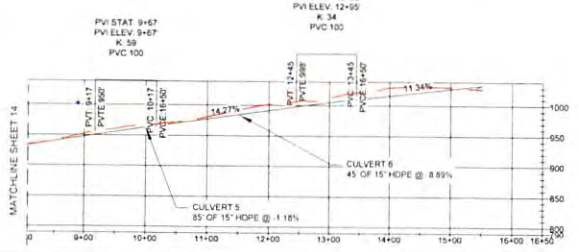


MAIN ACCESS ROAD SECTIONS

0 10 20 30

SCALE 1" = 10' SCALE IN FEET

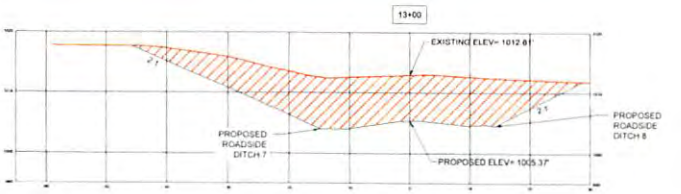


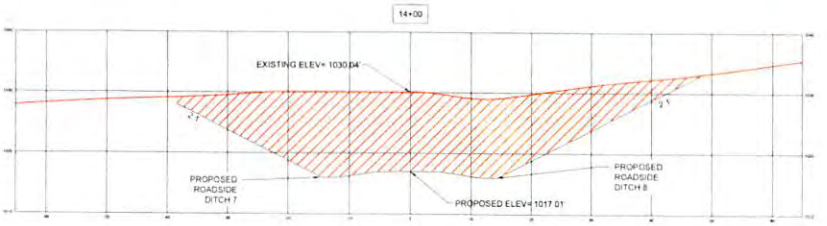


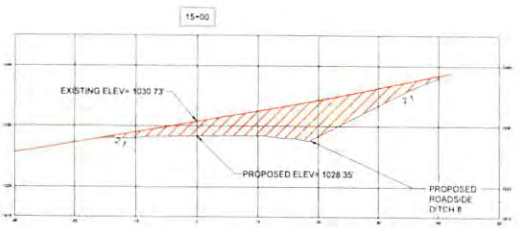
MAIN ACCESS ROAD PROFILE

0 100 200 300

SCALE 1" = 100' 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

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JOSHUA D. FREGOSI
02281
STATE OF WEST VIRGINIA
PROFESSIONAL ENGINEER

SIGNED BY: JOSHUA D. FREGOSI W.V. P.E. 21281

REV	DESCRIPTION	DSN	DWN	CHK	APP	DATE

ISSUED FOR CONSTRUCTION

SCALE VERIFICATION

THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING

0 1"

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ORIGINAL DRAWING SIZE 15.22 x 34

MAIN ACCESS ROAD CROSS SECTIONS & PROFILE

CPT-10 WELL PAD
DODDRIDGE COUNTY
WEST VIRGINIA

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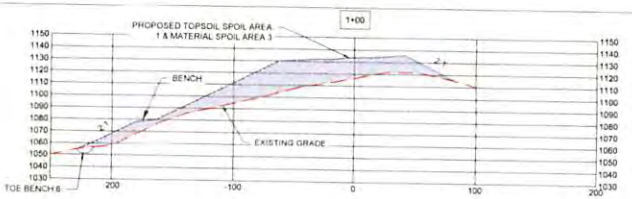
CONSTRUCTION

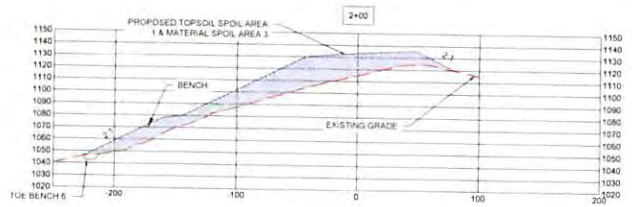
PROJECT NO	137355
ISSUE DATE	06.08.2016
CURRENT REVISION	0
DESIGNED BY	AER
DRAWN BY	CRH
CHECKED BY	JDF
APPROVED BY	MJA

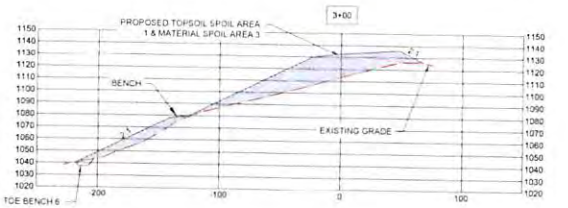
SHEET 15

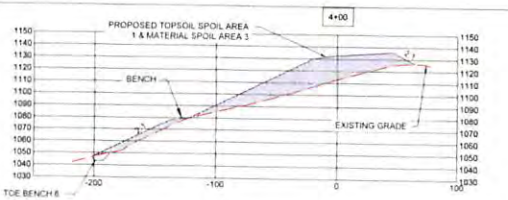
15 of 25

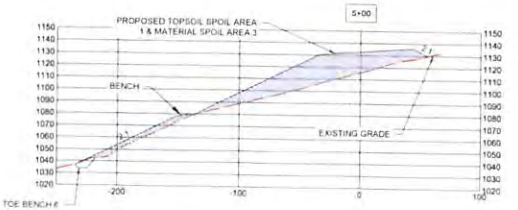
4701706752

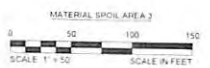


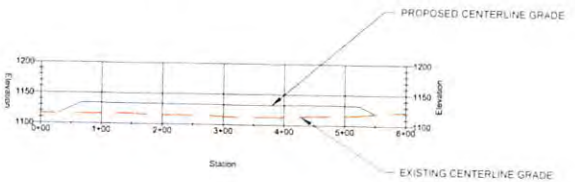


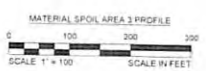












NOTE

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 ON SHEETS 12 & 11 RESPECTIVELY

DAF 6/17/16

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REV	DESCRIPTION	DSN / DWN	CHK	DATE

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SCALE VERIFICATION

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TOPSOIL SPOIL AREA & MATERIAL SPOIL AREA CROSS SECTIONS & PROFILE

CPT-10 WELL PAD
DODDRIDGE COUNTY
WEST VIRGINIA

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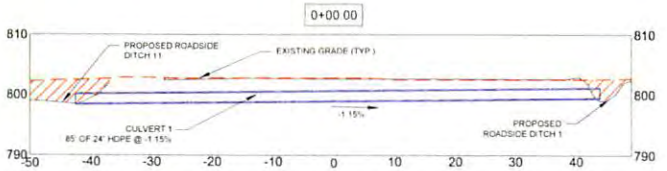
CONSTRUCTION

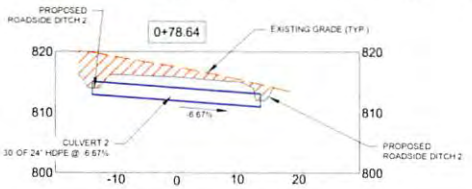
PROJECT NO	137356
ISSUE DATE	06-08-2016
CURRENT REVISION	0
DESIGNED BY	AER
DRAWN BY	CRH
CHECKED BY	JDF
APPROVED BY	MJA

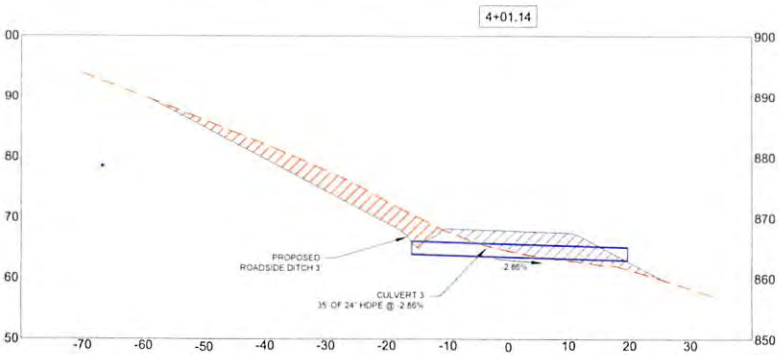
16

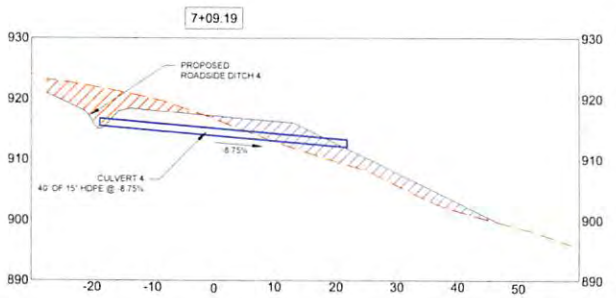
SHEET 16 of 25

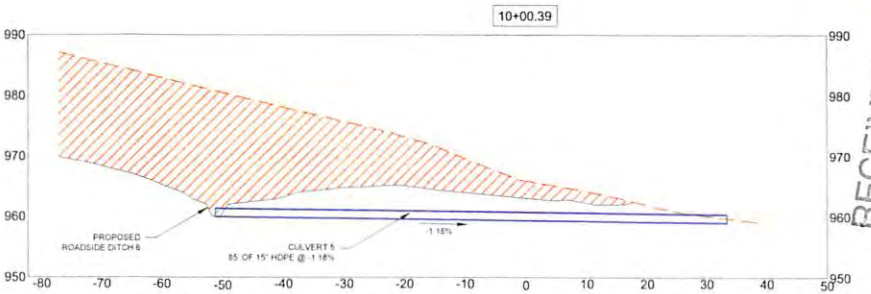
4701706752

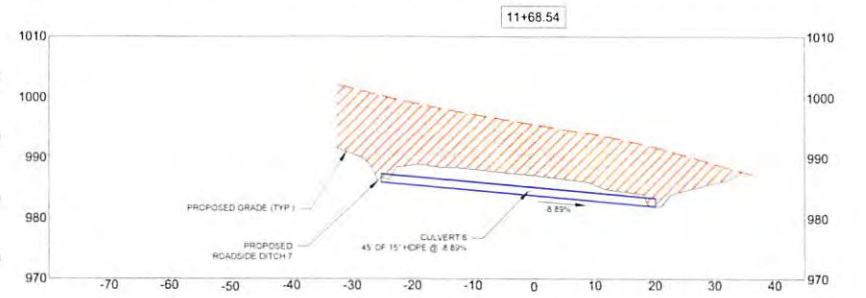


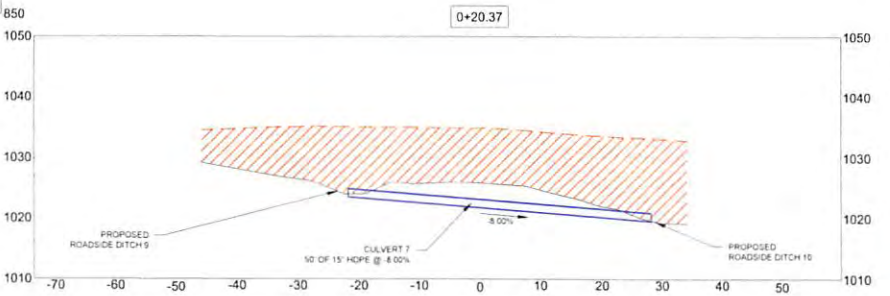












NOTE:

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

CULVERT SECTIONS

0 10 20

SCALE 1" = 10' SCALE IN FEET

CPT-10 STORM DRAINAGE COMPUTATIONS

ACCESS ROAD CROSS-DRAINS		Q TOTAL FLOW (cfs)	SLOPE (ft/ft)	SIZE	LENGTH (ft)	UPPER INVERT (ft)	LOWER INVERT (ft)	PIPE MATERIAL
PIPE	STATION							
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+69	1.93	0.0889	15"	45.00	986.00	982.00	HDPE
P7	0+46	4.45	0.0800	15"	50.00	1023.50	1019.50	HDPE

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REVISIONS

REV	DESCRIPTION	DSN	CHK	APP
		DWN		

ISSUED FOR CONSTRUCTION

SCALE VERIFICATION

THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING

0 1"

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CULVERT PROFILES

CPT-10 WELL PAD
DODDRIDGE COUNTY
WEST VIRGINIA

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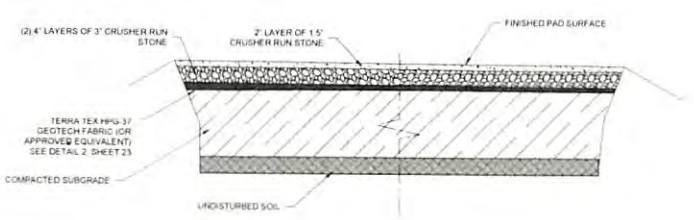
CONSTRUCTION

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

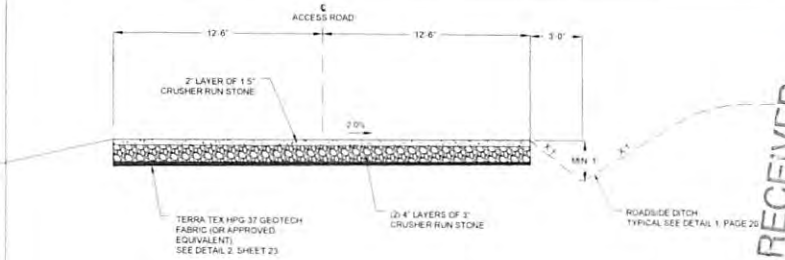
17

SHEET 17 of 25

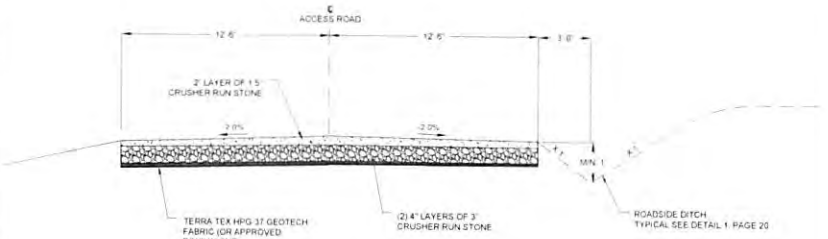
4701706752



1 / 18 TYPICAL PAD CROSS-SECTION DETAIL
NTS

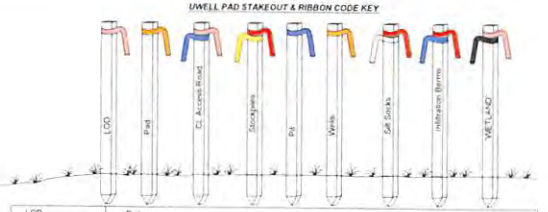


2 / 18 INSLOPED SECTION - SITE ACCESS DRIVE DETAIL
NTS



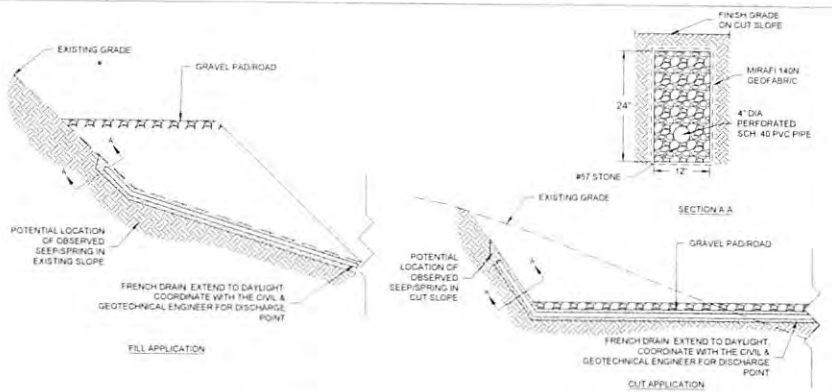
3 / 18 CROWNED ROAD SECTION - SITE ACCESS DRIVE DETAIL
NTS

UWELL PAD STAKEOUT & RIBBON CODE KEY

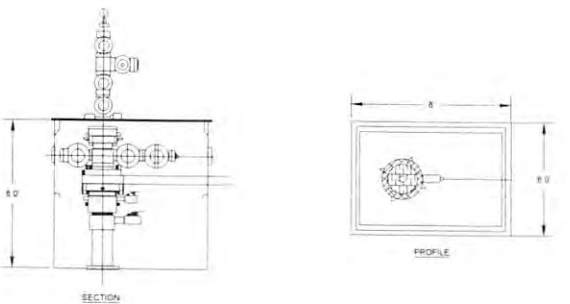


LOD	Pink
Pad	Orange
CL Access Road	Pink/Blue
Stockpiles	Red/Yellow
Pit	Blue
Wells	Orange
Silt Socks	Red/White
Infiltration Berms	Red/Blue
Wetlands	Pink/Black "WETLAND"

4 / 18 FLAGGING DETAIL
NTS



5 / 18 SEEP/SPRING FRENCH DRAIN DETAIL
NTS



6 / 18 CELLAR/ WELL HEAD DETAIL
NTS

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SIGNED BY JOSHUA D. FREDOSI, WV REG # 20261

REVISIONS

REV	DESCRIPTION	DSN	CHK	DWN	APP	DATE

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

ORIGINAL DRAWING SIZE IS 22 x 34

CONSTRUCTION DETAILS

CPT-10 WELL PAD
DODDRIDGE COUNTY
WEST VIRGINIA

EQT
Where energy meets innovation.

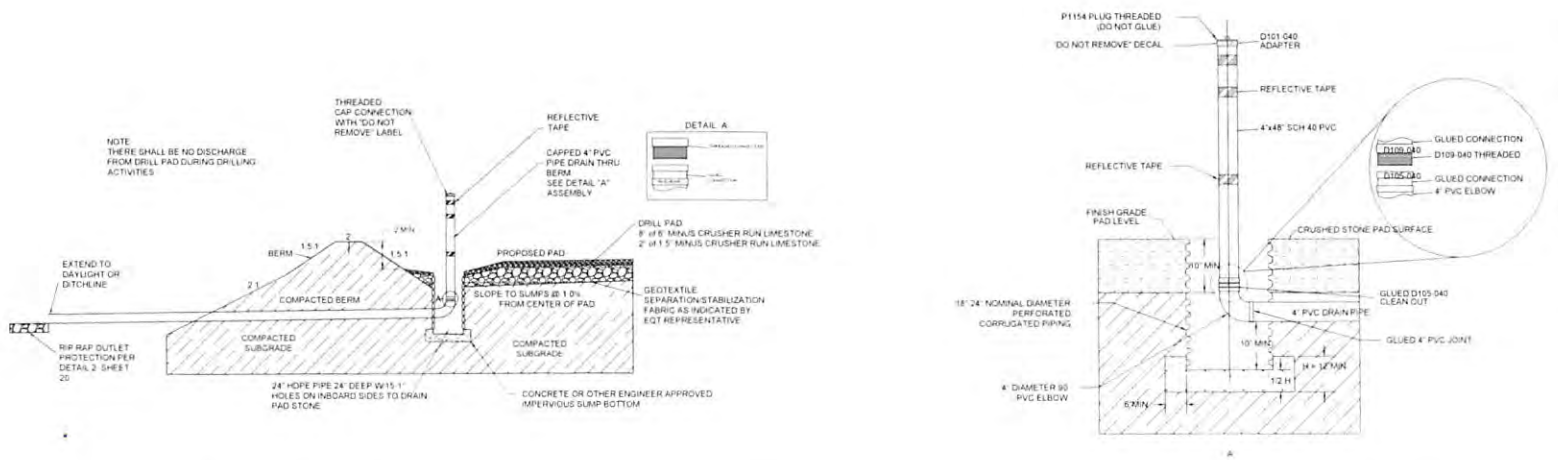
CONSTRUCTION

PROJECT NO.	137185
ISSUE DATE	06.08.2016
CURRENT REVISION	0
DESIGNED BY	AER
DRAWN BY	CRH
CHECKED BY	JDF
APPROVED BY	MJA

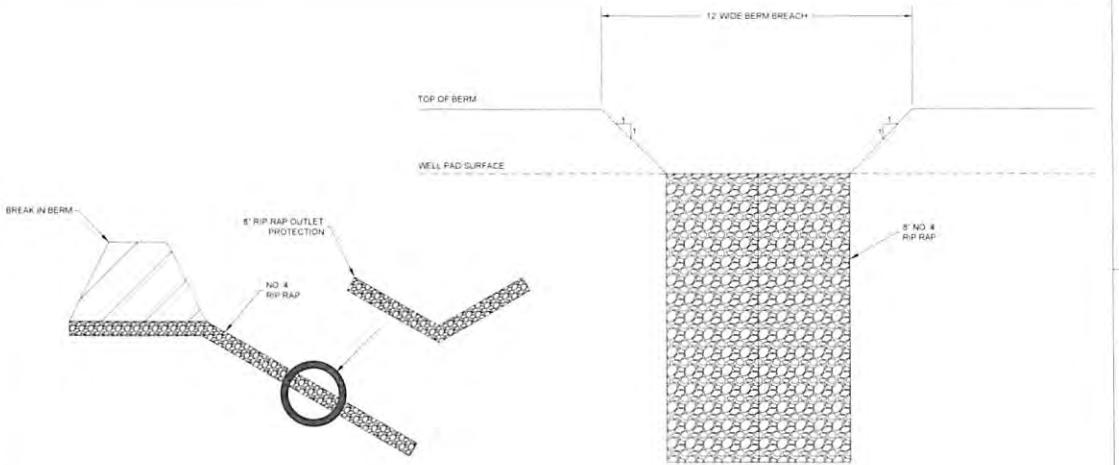
SHEET 18 OF 25

18

4701706752

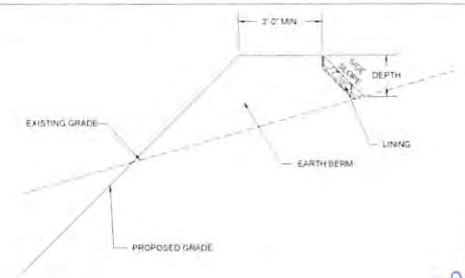


1 / 19 PAD SUMP TYPICAL DETAIL
NOT TO SCALE



2 / 19 TYPICAL BERM BREACH
NTS

3 / 19 MOUNTABLE BERM DETAIL
NTS



4 / 19 TYPICAL DRAINAGE BERM DETAIL
NTS

DRF 6/7/16

KLEINFELDER
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RECEIVED
Office of Oil and Gas
JUN 07 2016
WV Department of Environmental Protection

ISSUED FOR CONSTRUCTION

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BERM DETAILS

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	JDF
APPROVED BY	MJA

19

SHEET 19 of 25

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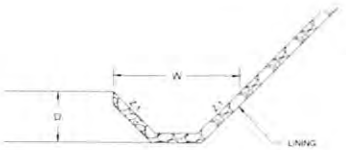
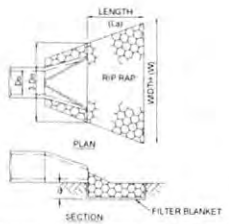


CPT-10 ROAD-SIDE DITCH & CHANNEL DESIGN AND LINING

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/ft)	TEMPORARY LINER	PERMANENT LINER
ROAD SIDE DITCH 1	0.71	02+00	00+00	200.00	TRIANGULAR		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	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	1.50	0.16	NAG SC250	NAG SC250
ROAD SIDE DITCH 4	3.57	10+00	07+10	290.00	TRIANGULAR		2.00	2.00	1.50	0.13	NAG SC250	NAG SC250
ROAD SIDE DITCH 5	0.75	01+04	00+00	104.00	TRIANGULAR		2.00	2.00	1.50	0.05	R-4	R-4
ROAD SIDE DITCH 6	0.69	11+90	10+35	155.00	TRIANGULAR		2.00	2.00	1.50	0.12	NAG C125BN	NAG C125BN
ROAD SIDE DITCH 7	1.95	15+75	11+90	385.00	TRIANGULAR		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	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	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	1.50	0.18	NAG SC250	NAG SC250
ROAD SIDE DITCH 11	2.65	N/A	N/A	142.00	TRIANGULAR		1.00	1.00	3.00	0.03	NAG SC250	NAG SC250
DITCH 1	2.78	N/A	N/A	152.00	TRIANGULAR		2.00	2.00	1.50	0.23	NAG SC250	NAG SC250
DITCH 2	1.79	N/A	N/A	171.00	TRIANGULAR		2.00	2.00	1.50	0.30	NAG SC250	NAG SC250
DITCH 3	2.25	N/A	N/A	752.00	TRIANGULAR		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	1.50	0.16	NAG SC250	NAG SC250
DITCH 5	2.64	N/A	N/A	228.00	TRIANGULAR		2.00	2.00	1.50	0.30	NAG P300	NAG P300
DITCH 6	5.25	N/A	N/A	222.00	TRIANGULAR		2.00	2.00	3.00	0.26	NAG P550	CLASS C VEGETATION
CHANNEL 1	1.52	N/A	N/A	500.00	TRIANGULAR		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	1.50	0.01	R-3	R-3
CHANNEL 3	1.21	N/A	N/A	228.00	TRIANGULAR		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	1.50	0.01	R-3	R-3
CHANNEL 5	0.20	N/A	N/A	157.00	TRIANGULAR		2.00	2.00	1.50	0.01	R-3	R-3

1/20 TYPICAL DRAINAGE CHANNEL DETAIL
NTS



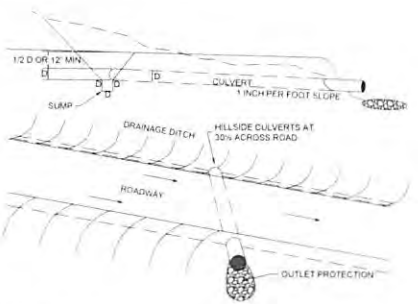
NOTES
1. IF FLARED END SECTION IS DISCHARGING INTO DITCH FROM THE SIDE, EXTEND RIP RAP UP DITCH BANK ON OFF SIDE A MINIMUM OF 4 FEET.
2. A SUITABLE NON WOVEN GEOTEXTILE FABRIC, USED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS, MAY BE SUBSTITUTED FOR FILTER BLANKET UNDER THE RIP RAP.
3. D = 1.5 TIMES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

OUTLET PROTECTION

OUTLET	Do (in.)	3Do (ft)	La (ft)	W (ft)	RIP RAP	d (in.)
FES 1	24	6	9	15.15	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

2/20 RIP RAP OUTLET PROTECTION DETAIL
NTS

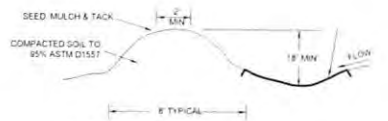
CONSTRUCTION SPECIFICATIONS
1. CULVERTS WITH OUTLETS ONTO LENGTHY FILL SLOPES MAY REQUIRE SLOPE DRAINS WITH OUTLET PROTECTION DEPENDING ON THE STEEPNESS OF THE OUTSLOPE
2. RIPRAP USED AS OUTLET PROTECTION MUST BE HARD, ANGULAR AND OF A QUALITY RESISTANT TO WEATHERING AND DISINTEGRATION. RIPRAP SHOULD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



3/20 DITCH RELIEF CULVERT DETAIL
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 N.A.G. 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.



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

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

SPF 6/17/16

RECEIVED
JUN 20 2016
WV Department of Environmental Protection
Office of Oil and Gas

KLEINFELDER
Bright People. Right Solutions.
330 Executive Drive, Suite 100, Cranberry, PA 16066, 724.772.1972, www.kleinfelder.com

REGISTERED PROFESSIONAL ENGINEER, DAVID FREDERICK, 20261, STATE OF WEST VIRGINIA

SIGNED BY: DAVID FREDERICK, PE #20261

REV.	DESCRIPTION	DSN BY	DATE

ISSUED FOR CONSTRUCTION

SCALE VERIFICATION
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ORIGINAL DRAWING SIZE IS 22 x 34

STORMWATER DETAILS

CPT-10 WELL PAD
DODDRIDGE COUNTY
WEST VIRGINIA

EQT
Where energy meets innovation.

CONSTRUCTION

PROJECT NO.	137355
ISSUE DATE	06.08.2016
CURRENT REVISION	0
DESIGNED BY	AER
DRAWN BY	CWH
CHECKED BY	JDF
APPROVED BY	MJA

SHEET 20 20

20

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PIPE INSTALLATION PROCEDURES

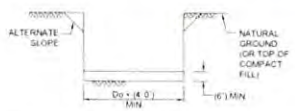
CONSTRUCTION DETAILS BELOW COVER THE FOLLOWING CONDITIONS

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 IF SPECIFIED ON THE CONTRACT DRAWING. 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 PIPES (72") OR GREATER SEE NOTE 1

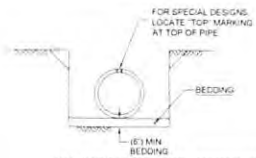
STEP 3 EXCAVATE THE TRENCH TO THE WIDTH OF THE OUTSIDE DIAMETER OF THE PIPE BARREL PLUS (4' - 0") AND CREATE AN APPROPRIATE BEDDING (6") DEEP



STEP 4 FOR CONCRETE PIPE, IF THIS EXCAVATION IS THROUGH ROCK OR HARD SHALE, OR IN AREAS OF UNDERCUT, PROVIDE (6" + 1/2" (INCH-FT) OF Do + (4' - 0") BELOW THE INTENDED BOTTOM ELEVATION OF THE PIPE. (16") MAX

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

STEP 5 LAY PIPE ON APPROPRIATE BEDDING. SEE STEP 6D FOR METAL PIPE ARCH AND METAL PLATE PIPE ARCH.



AASHTO NO. 8 (UNCOMPACTED) - CONCRETE PIPE
CRUSHER RUN (UNCOMPACTED) - METAL PIPE CRUSHER RUN (UNCOMPACTED) - THERMOPLASTIC PIPE

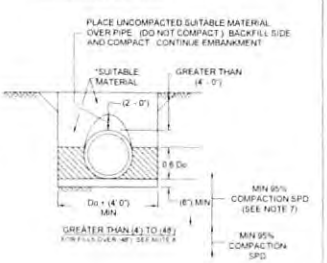
LEGEND

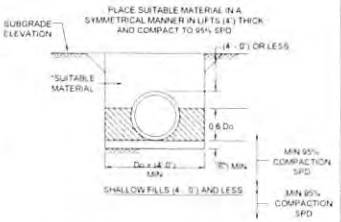
AGGREGATE FOR BEDDING (AASHTO NO. 8)

COARSE AGGREGATE (CRUSHER RUN)

1/21 CIRCULAR PIPE INSTALLATION DETAIL
NTS

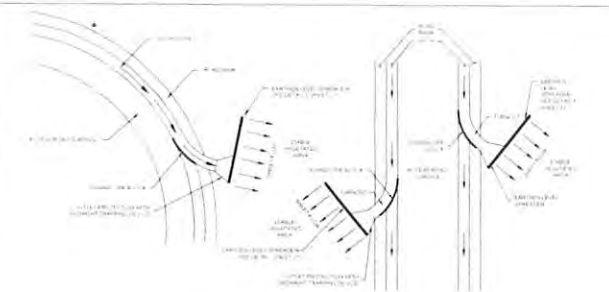
STEP 6 PLACE CRUSHER RUN COARSE AGGREGATE MATERIAL IN LIFTS (4") THICK, ADJACENT TO THE LOWER HAUNCHES TO A HEIGHT OF 0.6 Do. COMPACT TO 95% SPD. TEST THE SIDE OF BACKFILL MATERIAL AND CONTINUE EMBANKMENT IN ACCORDANCE WITH PUBLICATION 408, SECTION 601





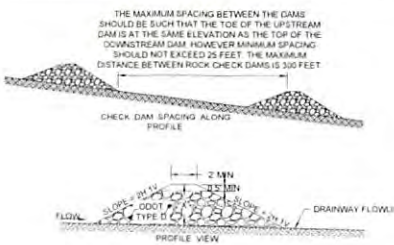
Do = OUTSIDE DIAMETER OF PIPE (INCHES)
SPD = STANDARD PROCTOR DENSITY
ID = INSIDE DIAMETER

*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



4/21 TURN OUT DETAIL
NTS

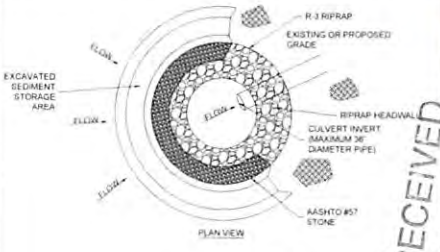
THE MAXIMUM SPACING BETWEEN THE DAMS SHOULD BE SUCH THAT THE TOE OF THE UPSTREAM DAM IS AT THE SAME ELEVATION AS THE TOP OF THE DOWNSTREAM DAM. HOWEVER MINIMUM SPACING SHOULD NOT EXCEED 25 FEET. THE MAXIMUM DISTANCE BETWEEN ROCK CHECK DAMS IS 300 FEET



NOTES

1. "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 DITCHES. THE CENTER OF THE ROCK CHECK DAM SHALL BE 0'-6" LOWER THAN THE OUTER EDGES AS SHOWN.
2. ROCK CHECK DAMS ARE NORMALLY INSTALLED IN EXISTING DRAINS AND 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.
3. 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.
4. ROCK CHECK DAMS SHALL BE REMOVED AFTER THE FIRST GROWING SEASON.

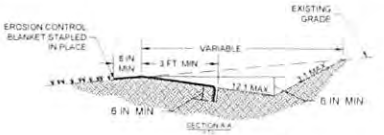
2/21 ROCK CHECK DAM DETAIL
NTS

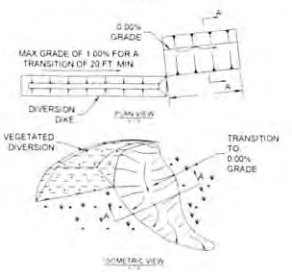


DESIGN CRITERIA AND CONSTRUCTION SPECIFICATIONS

1. 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.
2. 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 TIE 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.
3. THE SEDIMENT STORAGE AREA SHOULD BE EXCAVATED UPSTREAM OF THE ROCK PIPE INLET PROTECTION, WITH A MINIMUM DEPTH OF 1.0' BELOW GRADE.
4. CLEAR THE AREA OF ALL DEBRIS THAT MIGHT HINDER EXCAVATION AND DISPOSAL OF SPOIL.
5. 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 WITH AS NECESSARY TO FACILITATE PLACEMENT WITHIN THE DITCH/CHANNEL. THE MINIMUM HEIGHT SHOULD BE 1.0', BUT ALSO LOWER THAN THE SHOULDERS OF THE EMBANKMENT OR DIVERSIONS.
6. THE SEDIMENT STORAGE AREA SHOULD BE EXCAVATED AROUND THE OUTSIDE OF THE STONE HORSESHOE 1.0' BELOW NATURAL GRADE.
7. WHEN THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED, FILL DEPRESSION AND ESTABLISH FINAL GRADING ELEVATIONS. COMPACT AREA PROPERLY AND STABILIZE WITH GROUND COVER.

3/21 ROCK PIPE INLET DETAIL
NTS





LEVEL SPREADER			
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

5/21 EARTHEN LEVEL SPREADER DETAIL
NTS

DRF 6/27/16

RECEIVED
JUN 28 2016
WV Department of Environmental Protection
Office of Oil and Gas

KLEINFELDER
Bright People. Right Solutions.

230 Executive Drive, Suite 102
Cranberry Township, PA 16066
Phone: 724.772.1012

DONALD E. FREDERICK, P.E. #20261 REGISTERED PROFESSIONAL ENGINEER STATE OF WEST VIRGINIA

REVISIONS			
REV	DESCRIPTION	ESN DWN	DATE

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: 15 22 x 34

STORMWATER DETAILS

CPT-10 WELL PAD
DODDRIDGE COUNTY
WEST VIRGINIA

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CONSTRUCTION

PROJECT NO:	137305
ISSUE DATE:	06.28.2016
CURRENT REVISION:	0
DESIGNED BY:	AER
DRAWN BY:	CRH
CHECKED BY:	JDF
APPROVED BY:	MJA

SHEET 21 of 21

21

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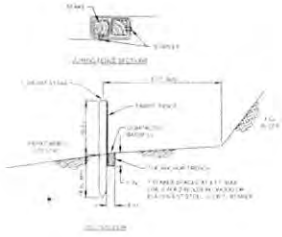


NOTES

FABRIC SHALL HAVE THE MINIMUM PROPERTIES

FABRIC WIDTH SHALL BE 30 IN. MINIMUM. STAKES SHALL BE HARDWOOD OR EQUIVALENT STEEL (U OR T) STAKES

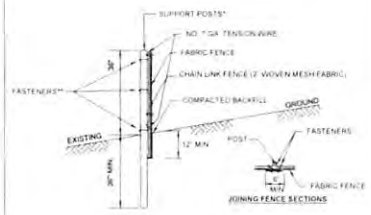
SILT FENCE SHALL BE PLACED AT LEVEL EXISTING GRADE. BOTH ENDS OF THE FENCE SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT.

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 25

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

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



* 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

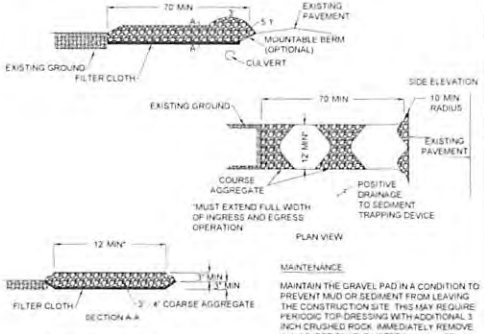
ID#	LENGTH (LF)
1	105
2	73
3	44
4	52
5	71
6	80
7	64
8	70
9	130
10	74
11	68
12	107
13	95
14	58
15	56
16	34
17	27
18	54
19	64
20	72
21	120
22	100
23	100
24	39
25	43
26	36
27	110
28	93
29	153
33	277
34	122
35	38
36	29
37	43
38	135
39	80
40	127
41	303
42	340
43	49
44	107
45	340
46	44
47	107

2 / 22 SUPER SILT FENCE DETAIL
NTS

DOZER TREADS CREATE GROOVES PERPENDICULAR TO THE SLOPE

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 / 22 BULLDOZER TRACKING DETAIL
NTS



CONSTRUCTION SPECIFICATIONS

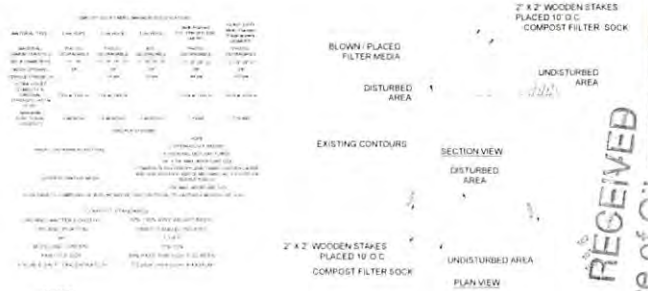
1. CLEAR THE ENTRANCE AND EXIT AREA OF ALL VEGETATION, ROOTS, AND OTHER OBJECTIONABLE MATERIAL AND PROPERLY GRADE IT.
2. PLACE THE 3 INCH CRUSHED ROCK TO MATCH FINISHED GRADE AT THE ROADWAY AND SMOOTH IT.
3. PROVIDE DRAINAGE WHERE NEEDED TO CARRY WATER TO A SEDIMENT TRAP OR OTHER SUITABLE OUTLET.

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 OBJECTIONABLE 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 / 22 ROCK CONSTRUCTION ENTRANCE DETAIL
NTS



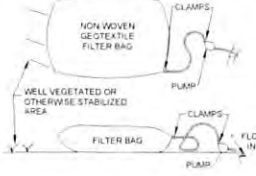
NOTES
1. SOCK FABRIC SHALL MEET STANDARDS OF TABLE SHOWN ABOVE. COMPOST SHALL MEET THE STANDARDS OF TABLE SHOWN ABOVE.
2. COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE SOCK SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN SOCK ALIGNMENT. STAKES MAY BE INSTALLED IMMEDIATELY DOWNSLOPE 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 RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 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 / 22 COMPOST FILTER SOCK DETAIL
NTS

NOTES
1. INSTALL CONCRETE WASHOUT PIT AT LOCATION(S) 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 DRAINS, INLETS, OR SURFACE WATERS.

6 / 22 CONCRETE WASHOUT PIT DETAIL
NTS



FILTER BAGS MAY BE USED TO FILTER WATER PUMPED FROM EXCAVATIONS PRIOR TO DISCHARGING.

FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS.

THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR ½ THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHOULD BE FLOATING AND SCREENED.

FILTER BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREAS AND DISCHARGED ONTO 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%.

THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE FILTER BAG IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED.

A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES MUST BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME ½ FULL. SPARE REPLACEMENT BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE ½ FULL.

FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

7 / 22 PUMPED WATER FILTER BAG DETAIL
NTS

P#1 6/17/16

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Office of Oil and Gas
JUN 29 2016
WV Department of
Environmental Protection

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230 Executive Drive, Suite 101
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Phone: 724.772.7572
www.kleinfelder.com

SIGNED BY: JOSHUA D. FREDERICK, PE #20251
REVISIONS

REV	DESCRIPTION	DRAWN BY	CHECKED BY	DATE

ISSUED FOR CONSTRUCTION

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

ORIGINAL DRAWING SIZE: 8.22 x 34

EROSION AND SEDIMENT DETAILS

CPT-10 WELL PAD
DODDRIDGE COUNTY
WEST VIRGINIA

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CONSTRUCTION

PROJECT NO.	137155
ISSUE DATE	06.09.2016
CURRENT REVISION	0
DESIGNED BY	AEB
DRAWN BY	CRH
CHECKED BY	JDF
APPROVED BY	MJA

SHEET 22

22 / 22

4701706752

OUTLET CROSS-SECTION

UP-SLOPE FACE

Sediment must be removed when accumulations reach 1/3 the height of the outlet

1/23 ROCK FILTER OUTLET DETAIL
NTS

TerraTex HPG-37

High Performance Geotextile

TerraTex HPG-37 is a polypropylene woven fabric. This engineered geotextile is stabilized to resist degradation due to ultraviolet exposure. It is resistant to commonly encountered soil chemicals, 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 roll values.

Mechanical Properties	Test Method	Unit	Minimum Average Roll Value MD	CD
Grab Tensile	ASTM D 4632	kN (lbs)	[illegible]	[illegible]
Grab Elongation	ASTM D 4632	%	15	6
Wide Width Tensile Strength (at ultimate)	ASTM D 4595	kN/m (lbs/ft)	[illegible]	[illegible]
Wide Width Tensile Strength (Elongation)	ASTM D 4595	%	15	10
Wide Width Tensile Strength (at 2% strain)	ASTM D 4595	kN/m (lbs/ft)	[illegible]	[illegible]
Wide Width Tensile Strength (at 5% strain)	ASTM D 4595	kN/m (lbs/ft)	[illegible]	[illegible]
Wide Width Tensile Strength (at 10% strain)	ASTM D 4595	kN/m (lbs/ft)	[illegible]	[illegible]
Flow Rate	ASTM D 4491	[illegible]	[illegible]	
Trap Tear	ASTM D 4533	kN (lbs)	[illegible]	[illegible]
Puncture	ASTM D 4833	kN (lbs)	[illegible]	
Permittivity	ASTM D 4491	sec⁻¹	[illegible]	
Apparent Opening Size (AOS)	ASTM D 4751	mm (U.S. Sieve)	[illegible]	
UV Resistance (at 500 hours)	ASTM D 4355	% strength retained	[illegible]	

Physical Properties	Unit	Typical Value
Roll Dimensions (width x length)	m/ft	[illegible]
Roll Area	m² (yd²)	[illegible]

2/23 TERRA TEX HPG-37
NTS

3/23 NORTH AMERICAN GREEN SC250 PERMANENT CONTROL MATTING (OR EQUIVALENT)
NTS

4/23 NORTH AMERICAN GREEN HYDRA CM
NTS

5/23 NORTH AMERICAN GREEN HYDRA CX
NTS

6/23 NORTH AMERICAN GREEN C125BN PERMANENT CONTROL MATTING (OR EQUIVALENT)
NTS

7/23 NORTH AMERICAN GREEN P300 PERMANENT CONTROL MATTING (OR EQUIVALENT)
NTS

8/23 NORTH AMERICAN GREEN P550 PERMANENT CONTROL MATTING (OR EQUIVALENT)
NTS

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SIGNED BY: JOSHUA D. FREGOSI WV PE #20261

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Office of Oil and Gas
JUN 28 2016
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REVISIONS

REV	DESCRIPTION	DSN / DWN	CHK / APP	DATE

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 IS 22 x 34

EROSION AND SEDIMENT DETAILS

CPT-10 WELL PAD
DODDRIDGE COUNTY
WEST VIRGINIA

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CONSTRUCTION

DAF 6/17/16

PROJECT NO	137355		
ISSUE DATE	06-08-2016		
CURRENT REVISION	0	23	
DESIGNED BY	AFR		
DRAWN BY	CRH		
CHECKED BY	JDF		
APPROVED BY	MJA	SHEET	23 of 25

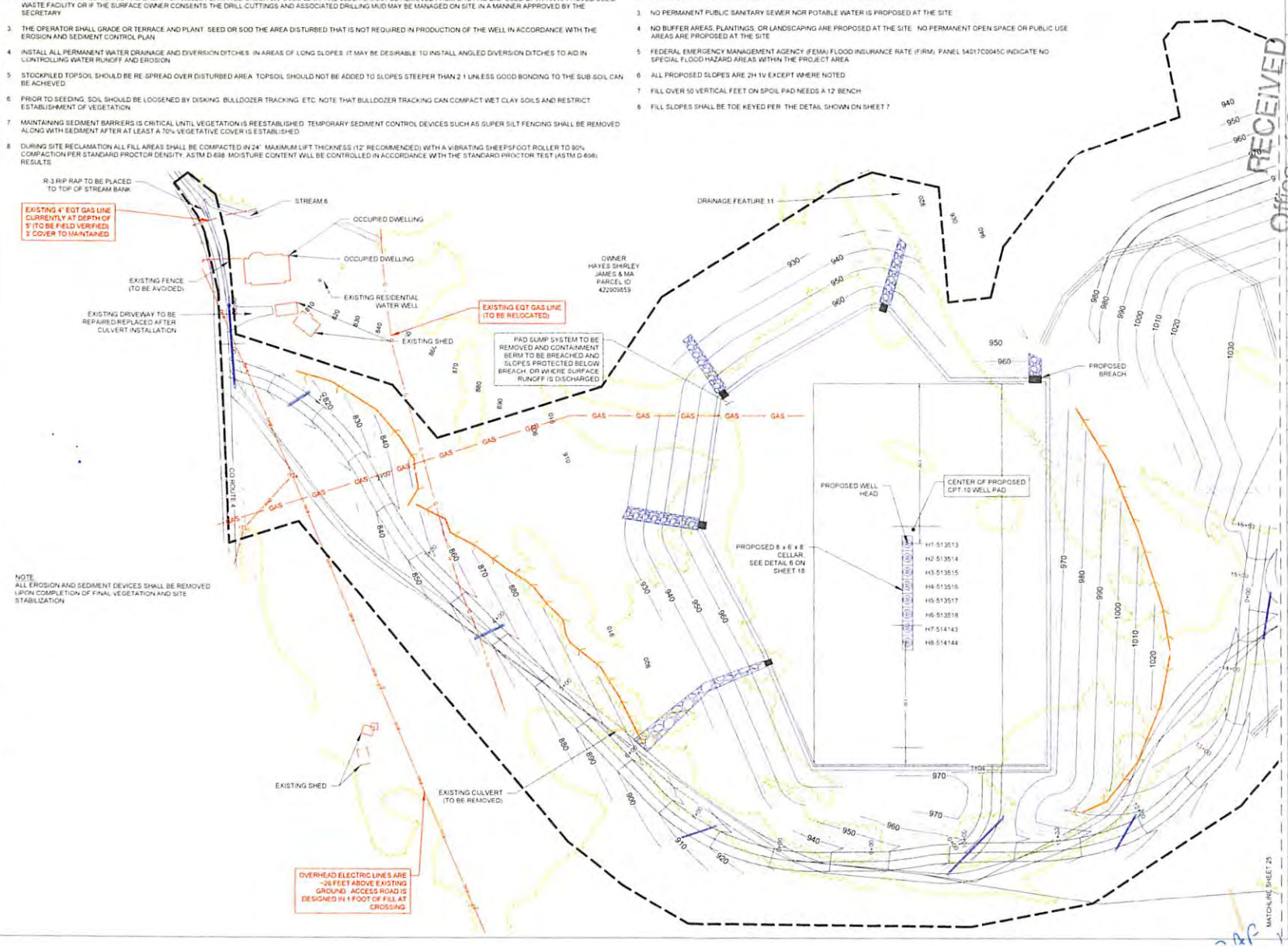
4701706752

SITE RECLAMATION NOTES

1. WATER CORRALS 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 SOD 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 LOOSENED 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 54017C0045C 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.



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www.kleinfelder.com

DONALD D. FREGOSO
REGISTERED
20261
STATE OF WEST VIRGINIA
PROFESSIONAL ENGINEER

SIGNED BY: DONALD FREGOSO, WV P.E. #20261

REVISIONS

NO.	DESCRIPTION	DSN. BY	CHK. BY	DATE

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 50 100 150
SCALE: 1" = 50 SCALE IN FEET

ORIGINAL DRAWING SIZE IS 22 x 34

RECLAMATION PLAN

CPT-10 WELL PAD
DODDRIDGE COUNTY
WEST VIRGINIA

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CONSTRUCTION

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

SHEET 24

24 of 25

4701706752

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

NOTES

1. MUNICIPAL BOUNDARY LINES SHOWN ARE APPROXIMATE IN LOCATION, BASED ON MAPS BY OTHERS, AND MAY NOT CORRESPOND TO THE LEGAL LOCATION
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8. FILL SLOPES SHALL BE TOE KEYED PER THE DETAIL SHOWN ON SHEET 7

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

OWNER
HAYES SHIRLEY JAMES & MA
PARCEL ID
422909859

CENTER OF PROPOSED WATER CONTAINMENT PAD 2

CENTER OF PROPOSED WATER CONTAINMENT PAD 1

DRAINAGE FEATURE 2

EXISTING LOG PILE (TO BE REMOVED)

EXISTING ROAD

DRAINAGE FEATURE 12

MATCHLINE SHEET 24

SITE RECLAMATION NOTES

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JOSHUA C. TREGOSI
20261
STATE OF WEST VIRGINIA
PROFESSIONAL ENGINEER

ISSUED BY: JOSHUA C. TREGOSI, W.V. P.E. # 20261

REVISIONS

REV	DESCRIPTION	DSN	CHK	DWN	APP	DATE

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

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

RECLAMATION PLAN

CPT-10 WELL PAD
DODDRIDGE COUNTY
WEST VIRGINIA

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CONSTRUCTION

PROJECT NO	137155
ISSUE DATE	06-08-2016
CURRENT REVISION	0
DESIGNED BY	AER
DRAWN BY	DRH
CHECKED BY	JCF
APPROVED BY	MJA

SHEET 25

25 of 25