west virginia department of environmental protection

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

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

September 20, 2013

WELL WORK PERMIT

Horizontal 6A Well

This permit, API Well Number: 47-3305770, issued to PDC MOUNTAINEER LLC, 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 all 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 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.

In addition to the applicable requirements of this permit, and the statutes and rules governing oil and gas activity in WV, this permit may contain specific conditions which must be followed. Permit conditions are attached to this cover letter.

Per 35CSR-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) 926-0499 ext. 1654.

James Martin
Chief

Operator's Well No: 5HM
Farm Name: DOMINECK PALETTA ESTATE
API Well Number: 47-3305770
Permit Type: Horizontal 6A Well
Date Issued: 09/20/2013

Promoting a healthy environment.

33-05770

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 (USACOE). Through this permit, you are hereby being advised to consult with USACOE 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 fifty (50) 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 fill material shall be within plus or minus 2% of the optimum moisture content as determined by the standard proctor density test, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort. Each lift must meet 95 % compaction of the optimum density based on results from the standard proctor density test of the actual soils used in specific engineered fill sites. 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.

33-05770

WW - 6B
(1/12)

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
W.VA. CODE §22-6A - WELL WORK PERMIT APPLICATION

33 0 488

1) Well Operator: PDC Mountaineer LLC	494494839	Harrison	Union	Mount Clare 7.5'
	Operator ID	County	District	Quadrangle

2) Operator's Well Number: 5 HM Well Pad Name: Paletta

3 Elevation, current ground: 1155' Elevation, proposed post-construction: 1161'

4) Well Type: (a) Gas ■ Oil _____
Other _____
(b) If Gas: Shallow ■ Deep _____
Horizontal ■

5) Existing Pad? Yes or No: No

SDW
5/30/2013

6) Proposed Target Formation(s), Depth(s), Anticipated Thicknesses and Associated Pressure(s):
Marcellus Shale, 7280' TVD, Approximately 100 feet thick, 7280' x 0.594 psi/ft = 4324 psi calculated reservoir pressure.

7) Proposed Total Vertical Depth: 7280'
8) Formation at Total Vertical Depth: Marcellus Shale
9) Proposed Total Measured Depth: 12,350'
10) Approximate Fresh Water Strata Depths: 61', 131', 196', 284', & 504'
11) Method to Determine Fresh Water Depth: Reported wells: 47-033-04739, 04575, 04599, 04407, 04629, & 05193.
12) Approximate Saltwater Depths: 842', 2022', 2335'
13) Approximate Coal Seam Depths: 53', 232', & 743'
14) Approximate Depth to Possible Void (coal mine, karst, other): Not Known.
15) Does land contain coal seams tributary or adjacent to, active mine? No
16) Describe proposed well work: Drill & stimulate a new horizontal Marcellus well following all State & Federal guidelines.
All casing used in the wellbore will be new casing. Centralizers will be used contingent upon final log of well. Production string cement will be at least 100 feet into the intermediate string. Cement will be API grade.

17) Describe fracturing/stimulating methods in detail:
Slick water frac, pumping 80 bbls minimum. Each stage to contain approximately 10,000 bbl of water and 40,000 pounds of sand.
Frac additives, chemical names, and CAS #'s are provided on the next page.

18) Total area to be disturbed, including roads, stockpile area, pits, etc, (acres): 33.1

19) Area to be disturbed for well pad only, less access road (acres): 9.48

Received
JUN 5 2013
Office of Oil and Gas
WV Dept. of Environmental Protection

33-05770

WW - 6B
(1/12)

20) **CASING AND TUBING PROGRAM**

TYPE	Size	New or Used	Grade	Weight per ft.	FOOTAGE: For Drilling	INTERVALS: Left in Well	CEMENT: Fill -up (Cu. Ft.)
Conductor	20"	New	H-40	94#	65'	65'	Cement to Surface
Fresh Water	13 3/8"	New	J-55	54.5#	550'	~~550'~~560'	Cement to Surface
Coal							
Intermediate	9 5/8"	New	J-55	40#	2600'	2600'	Cement to Surface
Production	5 1/2"	New	P-110	20#	12,350'	12,350'	2530 minimum
Tubing							
Liners							

SDW 5/30/2013

LKC

TYPE	Size	Wellbore Diameter	Wall Thickness	Burst Pressure	Cement Type	Cement Yield
Conductor	20"	24"	0.756	1500	1	1.06
Fresh Water	13 3/8"	17 1/2"	0.66	1730	1	1.18
Coal						
Intermediate	9 5/8"	12 1/4"	0.704	3520	1	1.18
Production	5 1/2"	8.5"/8.75"	0.722	12,460	H	1.18
Tubing						
Liners						

PACKERS

Kind:				
Sizes:				
Depths Set:				

Received
JUN 5 2013
Office of Oil and Gas
WV Dept. of Environmental Protection

33-05770

WW - 6B
(1/12)

21) Describe centralizer placement for each casing string.

Conductor: None

Surface 13 3/8": 1 Centralizer every 90' of pipe & 1 Basket

Intermediate 9 5/8": Centralizers every 7 joints & 1 Basket

Production 5 1/2": Centralizers every 12 joints in the vertical section & every 2 joints in the horizontal section.

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

See additional sheet for description of additives

Conductor: Type 1 Cement

Surface: Type 1 Cement + 2% CaCl + 1/4 #/sack Cello Flake.

Intermediate: Pre-Flush - Mud Clean 1 ahead of Type 1 cement + 2% CaCl + 1/4 #/sack Cello Flake.

Production: Pre-Flush - Mud Clean 1 ahead of Lead Cement Type 1 + 0.4% bwoc R-3 + 0.3% bwoc CD-32 + 1% bwoc FL-62 + 0.15% bwoc ASA-301 + 50.5% Fresh Water & followed by a Tail Cement Class H + 0.1% bwoc R-3 CD-32 + 1.2% bwoc FL-62 +0.1% bwoc ASA-301+ 0.4% bwoc Sodium Metasilicate + 50.5% Fresh Water

23) Proposed borehole conditioning procedures.

Surface and intermediate holes are cleaned with air. Production hole is circulated with mud for at least 4 hours with high viscosity sweeps ran occasionally.

*Note: Attach additional sheets as needed.

Received
JUN 5 2013
Office of Oil and Gas
WV Dept. of Environmental Protection

33-05770

22) Description of Cement Additives (Continued)

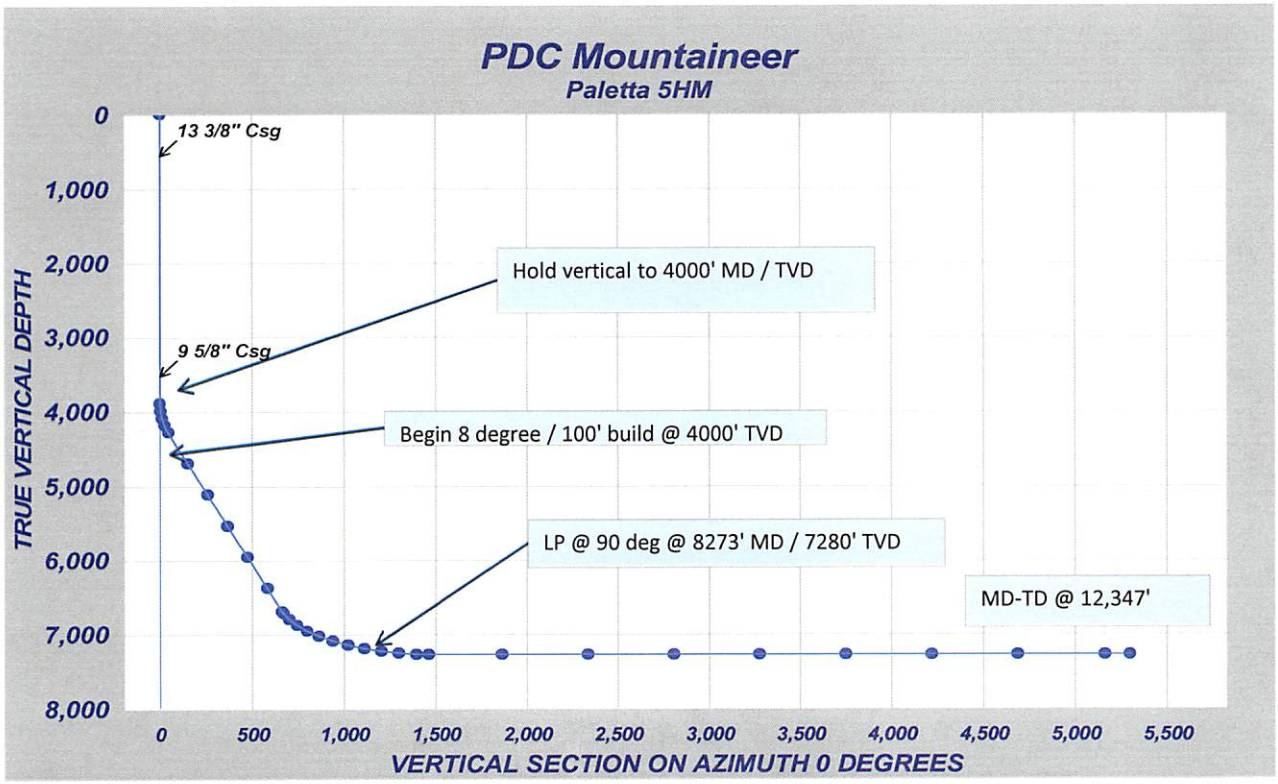
CaCl – Calcium Chloride – Accelerator
Cello Flake – Lost circulation control agent
R-3 – Retarder
CD-32 – Dispersant
FL-62 – Fluid – loss control agent
ASA-301 – Sodium Metasillicate – Free water control + Solid Suspension

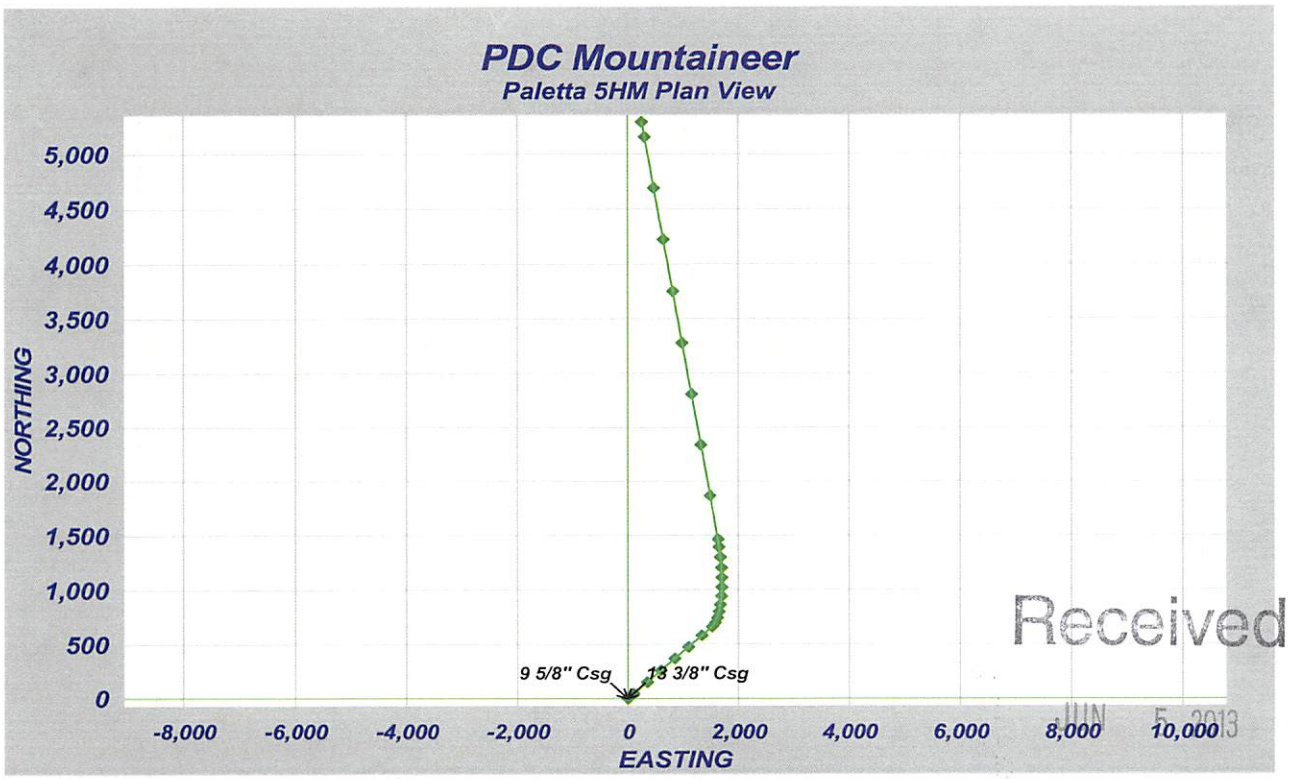
Received
JUN 5 2013
Office of Oil and Gas
WV Dept. of Environmental Protection

33-05770

PDC Mountaineer
Paletta 5HM Well Plan
Harrison County, WV

PDC MOUNTAINEER





Received
JUN 5 2013
Office of Oil and Gas
WV Dept. of Environmental Protection

WW-9
Rev. 1/12

API No. 47 - 033 - 05770
Operator's Well No. 5HM

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

CONSTRUCTION AND RECLAMATION PLAN AND SITE REGISTRATION APPLICATION FORM
GENERAL PERMIT FOR OIL AND GAS PIT WASTE DISCHARGE

Operator Name PDC Mountaineer, LLC. OP Code 494494839

Watershed West Fork River Quadrangle Mount Clare

Elevation Pad = 1161.4, Pit: Top = 1161.1, Bottom = 1146.4 County Harrison District Union

Description of anticipated Pit Waste: Flowback

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

Will a synthetic liner be used in the pit? Yes. If so, what mil.? 60

Proposed Disposal Method For Treated Pit Wastes:

SDW
5/30/2013

_____ Land Application
_____ Underground Injection (UIC Permit Number _____)
_____ Reuse (at API Number _____)
■ Off Site Disposal (Supply form WW-9 for disposal location)
_____ Other (Explain _____)

Drilling medium anticipated for this well? Air, freshwater, oil based, etc. Synthetic Mud
-If oil based, what type? Synthetic, petroleum, etc. NA
Additives to be used? No
Will closed loop system be used ? Yes
Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. Landfill
-If left in pit and plan to solidify what medium will be used? Cement, lime, NA
-Landfill or offsite name/permit number? Meadowfill Landfill, Bridgeport, WV Profile#100678WV

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) Jamie Haga

Company Official Title Designated Agent

Subscribed and sworn before me this 25th day of April, 20 13

Rachel Wyckoff Notary Public

My commission expires March 14, 2022

Received
APR 29 2013
Office of Oil and Gas

OFFICIAL SEAL
Notary Public, State Of West Virginia
RACHEL WYCKOFF
120 Genesis Boulevard
Bridgeport, WV 26330
My Commission Expires March 14, 2022

33-05770

Disposal Well Information Sheet

(*Including Lat./Long. , Operator, and API #)*

DISPOSAL WELL NAME	API WELL #	STATE	COUNTY	TWP
Ohio Oil Gathering Corp. – Bells Run	34-167-2-9395	Ohio	Washington	Newport
Long Run Disposal Well	34-167-2-9658	Ohio	Washington	Newport
Newell Run Disposal Well	34-167-2-9685	Ohio	Washington	Newport

Operator: Ohio Oil Gathering Corp.

DISPOSAL WELL NAME	API WELL #	STATE	COUNTY	TWP
BW # 4	47-073-02523	WV	Pleasants	
Greens Run	47-073-02540	WVV	Pleasants	

Operator: Appalachian Oil Purchasers

Coordinates	Lat /Long
Ohio Oil Gathering Corp.-Bells Run	39.387 N, -81.289 W
Long Run Disposal Well	39.391 N, -81.317 W
Newell Run Disposal Well	39.399 N, -81.273 W
BW# 4	39 22'20.55 N, -81 14'47.70"
Greens Run	

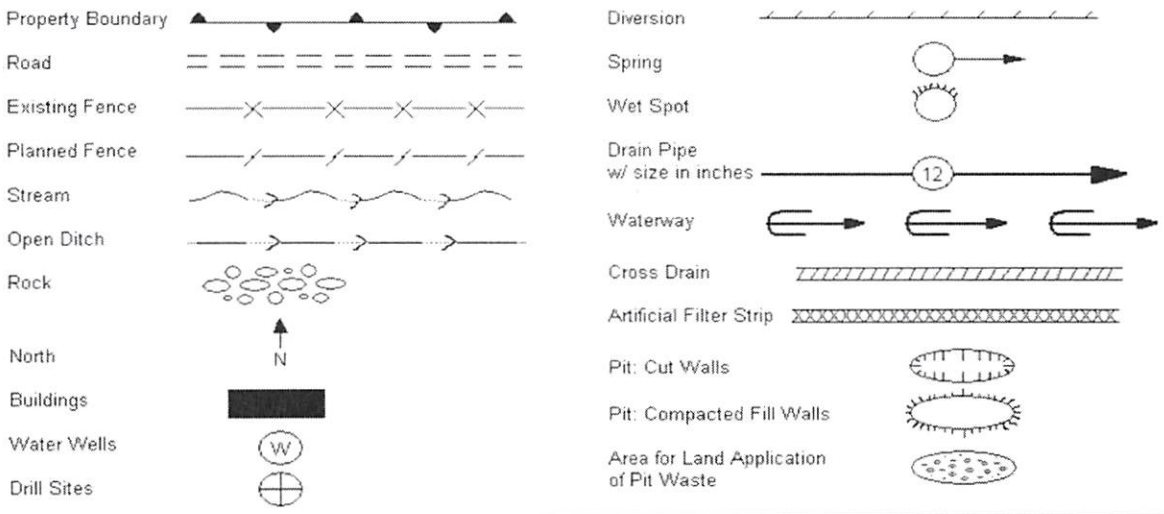
Received

JUN 5 2013

Office of Oil and Gas
WV Dept. of Environmental Protection

WW-9
Rev. 1/12

API No. 47 - 033 - 05770
Operator's Well No. 5HM



Proposed Revegetation Treatment: Acres Disturbed 33.1 Prevegetation pH _____

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer (10-20-20 or equivalent) 10-20-10 @ 1000 lbs/acre (500 lbs minimum)

Mulch 2 Tons/acre

Seed Mixtures

Area I		Area II	
Seed Type	lbs/acre	Seed Type	lbs/acre
KY-31 Tall Fescue	50		
Timothy Grass	40		
Orchard Grass	15		
Red top Clover	5		

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

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: [signature]

Comments: Pre-seed/mulch all disturbed areas as soon as reasonably possible.
Upgrade E+S as necessary

Title: Oil + Gas Inspector Date: 5/30/2013

Field Reviewed? (✓) Yes ( ) No

Received
JUN 5 2013
Office of Oil and Gas
WV Dept. of Environmental Protection

Water Management Plan:
Primary Water Sources

WMP- 01389	API/ID Number:	047-033-05770	Operator:	PDC Mountaineer
		Paletta 5HM		

Important:

For each proposed primary water source (including source intakes for purchased water sources) identified in your water management plan, and summarized herein, DEP has made an evaluation concerning water availability over the specified date range. DEP's assessment is based on the following considerations:

- Statistical analysis of historical USGS stream gauge data (transferred to un-gauged locations as necessary);
- Identification of sensitive aquatic life (endangered species, mussels, etc.);
- Quantification of known existing demands on the water supply (Large Quantity Users);
- Minimum flows required by the Army Corps of Engineers; and
- Designated stream uses.

Based on these factors, DEP has provided, for each intake location (and origination point for purchased water), a reference gauge location and discharge flow reading which must be surpassed prior to withdrawals. Additionally, DEP has established a minimum passby flow at the withdrawal location which must also be surpassed prior to withdrawals. These thresholds are considered terms of the permit and are enforceable as such.

DEP is aware that some intake points will be used for mutiple wells and well sites. In these cases, the thresholds set by the Water Management Plan are to be interepreted as total withdrawal limits for each location over the specified date range regardless of how many wells are supported by that intake.

For all purchased water intakes, determinations of water availability are made at the original source intake location. It is the responsibility of the Oil and Gas Operator, not the seller, to cease withdrawal of water from the seller when flows are less than the minimum gauge reading at the stream gauge referenced by the Water Management Plan in order to protect stream uses.

Note that the determinations made herein are based on the best available data, but it is impossible to predict water availability in the future. While the DEP has carefully established these minimum withdrawal thresholds, it remains the operator's responsibility to protect aquatic life at all times. Approval to withdrawal is contingent upon permission from the land owner. It is the responsibility of the operator to secure and maintain permission prior to any withdrawals.

The operator is reminded that 24-48 hours prior to withdrawing (or purchasing) water, DEP must be notified by email at DEP.water.use@wv.gov.

APPROVED AUG 2 2 2013

Source Summary

WMP- 01389	API Number:	047-033-05770	Operator:	PDC Mountaineer
		Paletta 5HM		

Stream/River

- Source **West Fork River @ Lynch Farms, LLC Withdrawal Site** Harrison Owner: **WBM Heirs Properties**

Start Date	End Date	Total Volume (gal)	Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
6/30/2015	6/30/2016	5,880,000		39.223184	-80.374736

☑ Regulated Stream? Stonewall Jackson Dam Ref. Gauge ID: 3061000 WEST FORK RIVER AT ENTERPRISE, WV

Max. Pump rate (gpm): 2,000 **Min. Gauge Reading (cfs): 175.94** **Min. Passby (cfs) 111.68**

DEP Comments: This location has been previously referred to as "West Fork River @ WBM Heirs Properties Withdrawal Site"

- Source **Tygart Valley River @ Hart Withdrawal Site** Taylor Owner: **James & Lori Hart**

Start Date	End Date	Total Volume (gal)	Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
6/30/2015	6/30/2016	5,880,000		39.341057	-80.042391

☑ Regulated Stream? Tygart Valley Dam Ref. Gauge ID: 3057000 TYGART VALLEY RIVER AT COLFAX, WV

Max. Pump rate (gpm): 2,000 **Min. Gauge Reading (cfs): 402.51** **Min. Passby (cfs) 397.66**

DEP Comments:

Source Detail

WMP- 01389 | API/ID Number: 047-033-05770 | Operator: PDC Mountaineer

Paletta 5HM

Source ID: 23049 | Source Name: West Fork River @ Lynch Farms, LLC Withdrawal Site
WBM Heirs Properties

Source Latitude: 39.223184
Source Longitude: -80.374736

HUC-8 Code: 5020002

Drainage Area (sq. mi.): 361.3 | County: Harrison

Anticipated withdrawal start date: 6/30/2015
Anticipated withdrawal end date: 6/30/2016
Total Volume from Source (gal): 5,880,000
Max. Pump rate (gpm): 2,000
Max. Simultaneous Trucks: 1
Max. Truck pump rate (gpm) 2000

- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] Trout Stream?
- [ ] Tier 3?
- [x] Regulated Stream?
- [ ] Proximate PSD?
- [x] Gauged Stream?

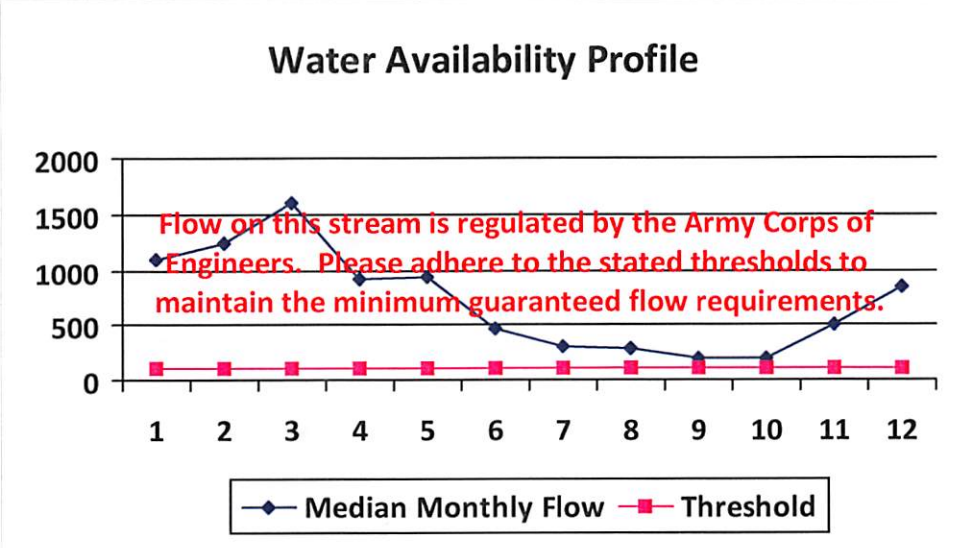
Stonewall Jackson Dam

Reference Gaug: 3061000 | WEST FORK RIVER AT ENTERPRISE, WV

Drainage Area (sq. mi.): 759.00

Gauge Threshold (cfs): 234

Month	Median monthly flow (cfs)	Threshold (+ pump	Estimated Available water (cfs)
1	1,107.13	-	-
2	1,246.52	-	-
3	1,605.57	-	-
4	918.24	-	-
5	942.54	-	-
6	472.28	-	-
7	305.99	-	-
8	292.17	-	-
9	203.29	-	-
10	199.31	-	-
11	500.16	-	-
12	853.92	-	-



Water Availability Assessment of Location

Base Threshold (cfs):	-
Upstream Demand (cfs):	25.23
Downstream Demand (cfs):	12.33
Pump rate (cfs):	4.46
Headwater Safety (cfs):	27.85
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

WMP- 01389 | API/ID Number: 047-033-05770 | Operator: PDC Mountaineer

Paletta 5HM

Source ID: 23050 | Source Name: Tygart Valley River @ Hart Withdrawal Site
James & Lori Hart

Source Latitude: 39.341057
Source Longitude: -80.042391

HUC-8 Code: 5020001

Drainage Area (sq. mi.): 1295.19 | County: Taylor

Anticipated withdrawal start date: 6/30/2015
Anticipated withdrawal end date: 6/30/2016
Total Volume from Source (gal): 5,880,000
Max. Pump rate (gpm): 2,000
Max. Simultaneous Trucks: 1
Max. Truck pump rate (gpm) 2000

- ☐ Endangered Species?
- ☐ Mussel Stream?
- ☐ Trout Stream?
- ☐ Tier 3?
- ☑ Regulated Stream?
- ☐ Proximate PSD?
- ☑ Gauged Stream?

Tygart Valley Dam

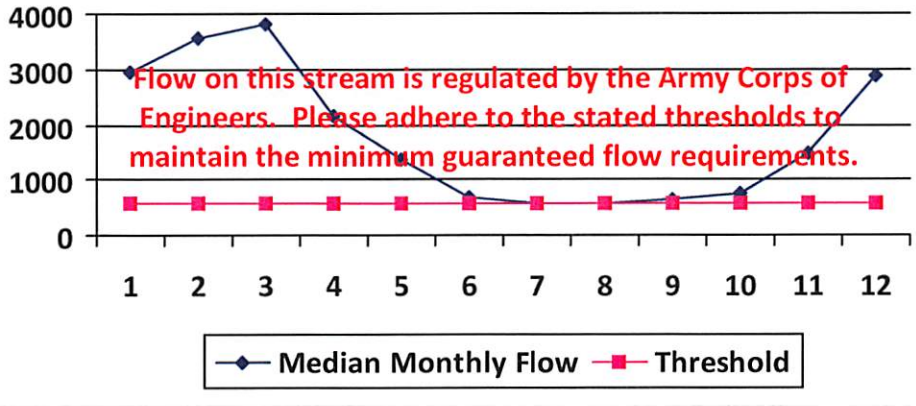
Reference Gaug: 3057000 TYGART VALLEY RIVER AT COLFAX, WV

Drainage Area (sq. mi.) 1,363.00

Gauge Threshold (cfs): 624

Month	Median monthly flow (cfs)	Threshold (+ pump	Estimated Available water (cfs)
1	2,952.52	-	-
2	3,564.75	-	-
3	3,809.27	-	-
4	2,177.02	-	-
5	1,366.15	-	-
6	691.50	-	-
7	581.49	-	-
8	590.26	-	-
9	658.33	-	-
10	751.68	-	-
11	1,469.50	-	-
12	2,889.37	-	-

Water Availability Profile



Water Availability Assessment of Location

Base Threshold (cfs):	-
Upstream Demand (cfs):	19.30
Downstream Demand (cfs):	16.67
Pump rate (cfs):	4.46
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Water Management Plan:
Secondary Water Sources

WMP- 01389 | API/ID Number 047-033-05770 | Operator: PDC Mountaineer

Paletta 5HM

Important:

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Recycled Frac Water

Source ID: 23051 Source Name Various

Source start date: 6/30/2015

Source end date: 6/30/2016

Source Lat: Source Long: County

Max. Daily Purchase (gal) Total Volume from Source (gal): 5,880,000

DEP Comments:

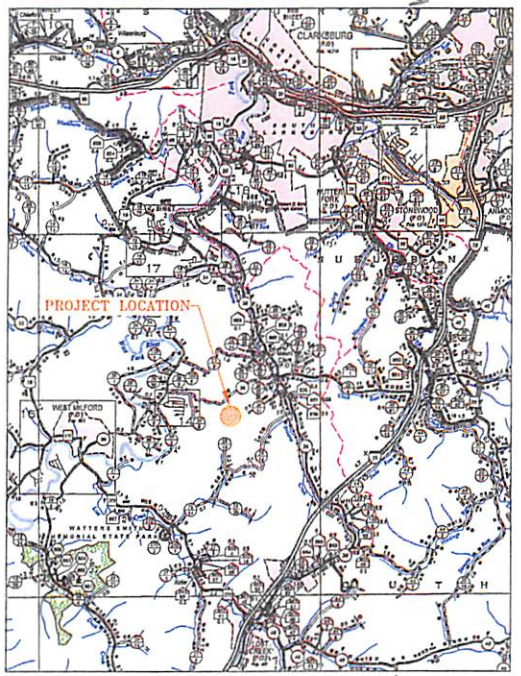
33-05770

LEGEND

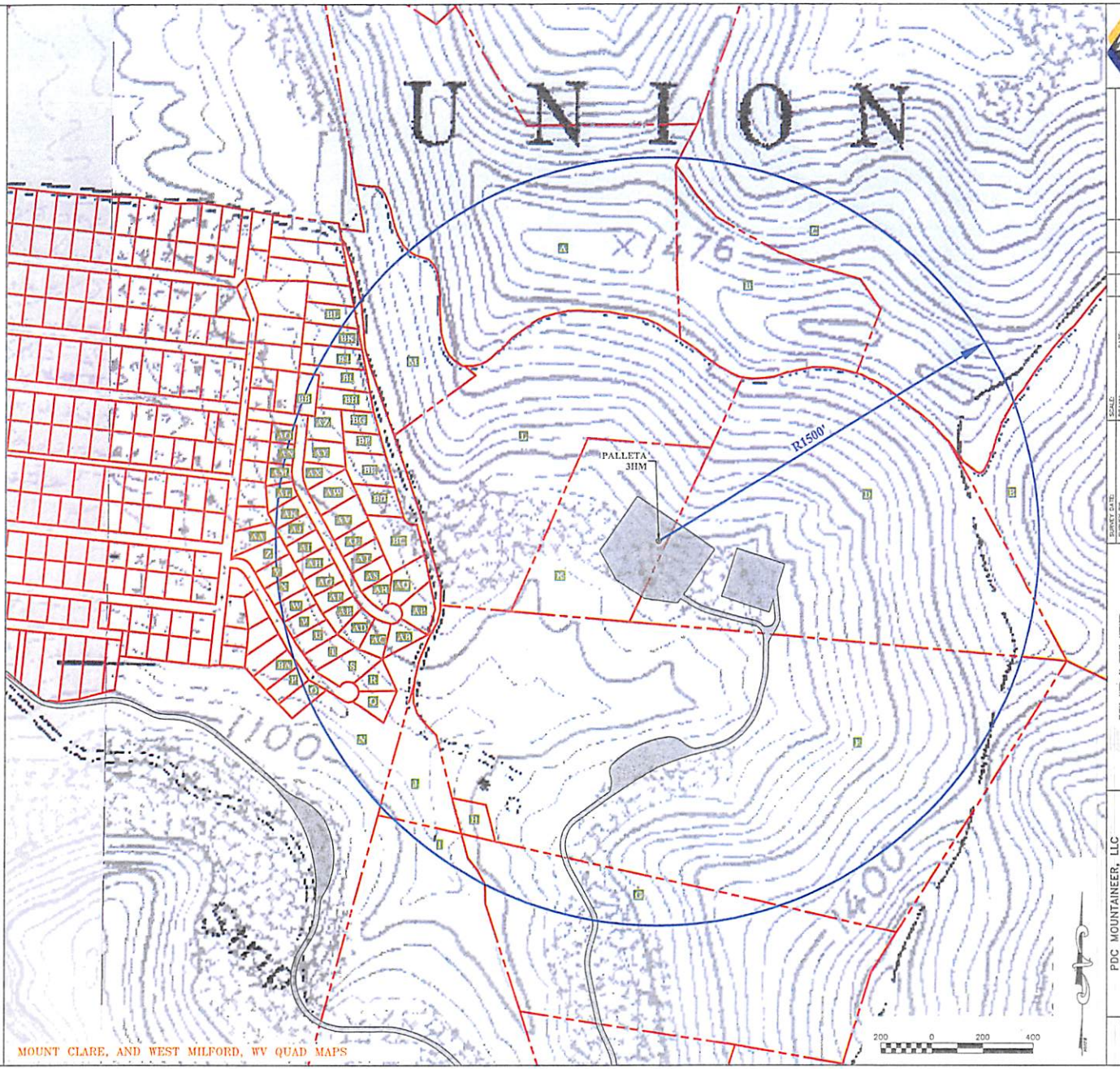
- EXISTING DWELLING
- EXISTING PROPERTY LINE (FROM TAX MAPS)
- EXISTING WATER WELLS
- EXISTING PONDS
- PROPERTY ID
- PROPOSED WELL PAD

Received
JUN 5 2013
Office of Oil and Gas
WV Dept. of Environmental Protection

HARRISON COUNTY, WV HIGHWAY MAP



1 MILE 0 1 MILE 2 MILES
HIGHWAY MAP SCALE



MOUNT CLARE, AND WEST MILFORD, WV QUAD MAPS

PDC MOUNTAINEER

NO.	BY	DATE	DESCRIPTION

SCALE:
DRAWN: DATE:
CHECKED: DATE:
LAYOUT TAB = FINAL

THE INFORMATION CONTAINED HEREIN IS THE SOLE PROPERTY OF THRASHER ENGINEERING PLLC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF THRASHER ENGINEERING PLLC IS PROHIBITED. COPYRIGHT © 2013 THRASHER ENGINEERING PLLC

SURVEY DATE:
SURVEY BY:
FIELD BOOK No.:
PROJECT No. 1-01-030-2292

THRASHER
PHONE (304) 624-4108 (FAX) (304) 624-7831
ENGINEERING PLLC
30 COLUMBIA BOULEVARD - CLARKSBURG, WV 26301

PDC MOUNTAINEER, LLC
CONSTRUCTION PLANS FOR THE
WATER WELL LOCATIONS
HARRISON COUNTY, WEST VIRGINIA
PALLETA 3HM (1500 FT RADIUS)

SHEET No.

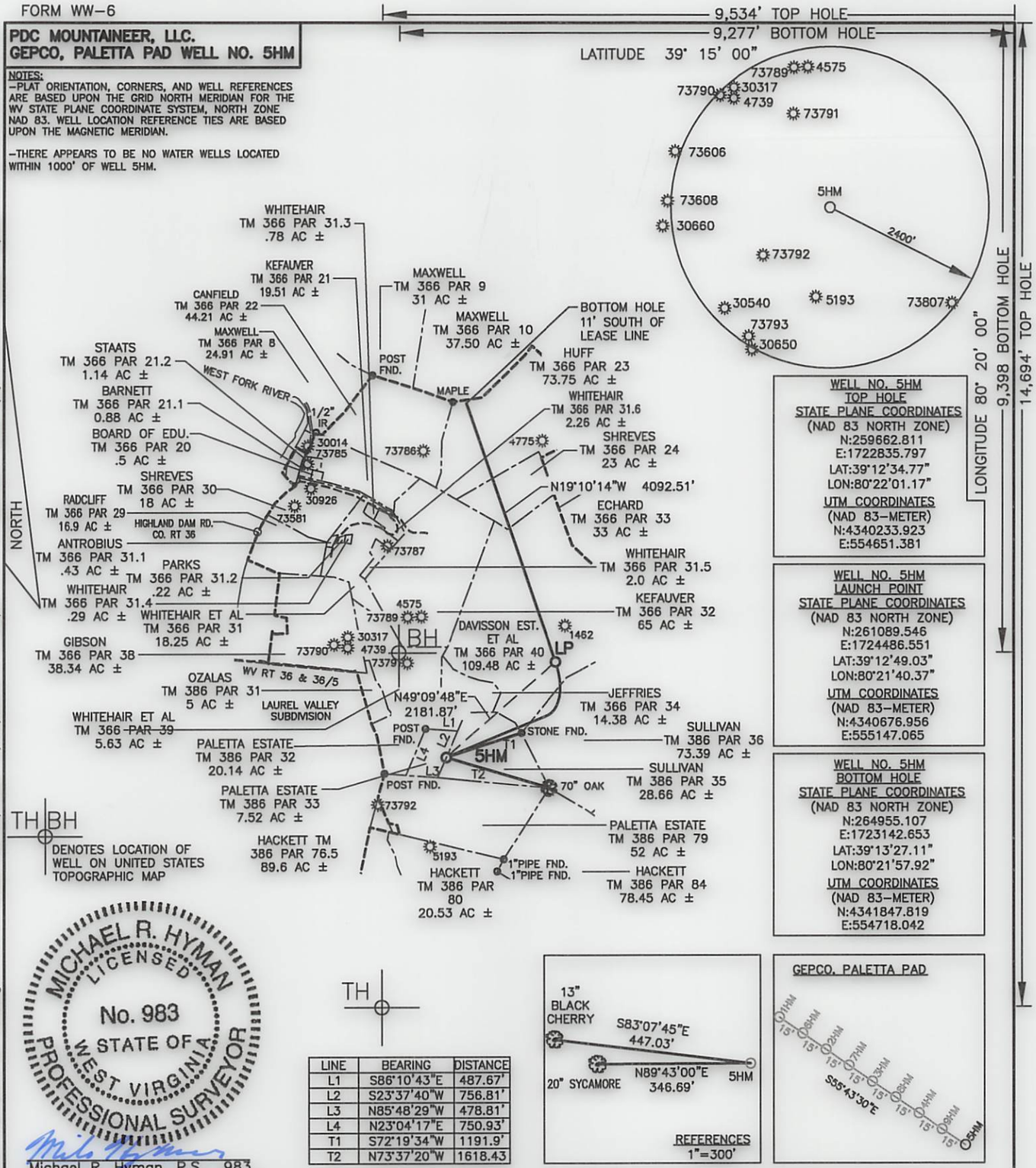
C:\0 FILE\ 1\1030-2292 PDC - Palleta Well Pad\Drawings\05 Water Samples.dwg PLOT DATE/TIME: 4/15/2013 11:58 AM

FORM WW-6

PDC MOUNTAINEER, LLC.
GEPCO, PALETTA PAD WELL NO. 5HM

NOTES:
-PLAT ORIENTATION, CORNERS, AND WELL REFERENCES ARE BASED UPON THE GRID NORTH MERIDIAN FOR THE WV STATE PLANE COORDINATE SYSTEM, NORTH ZONE NAD 83. WELL LOCATION REFERENCE TIES ARE BASED UPON THE MAGNETIC MERIDIAN.

-THERE APPEARS TO BE NO WATER WELLS LOCATED WITHIN 1000' OF WELL 5HM.



TH BH
DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAP

TH

LINE	BEARING	DISTANCE
L1	S86°10'43"E	487.67'
L2	S23°37'40"W	756.81'
L3	N85°48'29"W	478.81'
L4	N23°04'17"E	750.93'
T1	S72°19'34"W	1191.9'
T2	N73°37'20"W	1618.43

Michael R. Hyman, P.S. 983

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 THE REGULATIONS ISSUED AND PRESCRIBED BY THE DIVISION OF ENVIRONMENTAL PROTECTION.

WELL NO. 5HM TOP HOLE STATE PLANE COORDINATES
(NAD 83 NORTH ZONE)
N:259662.811
E:1722835.797
LAT:39°12'34.77"
LON:80°22'01.17"
UTM COORDINATES
(NAD 83-METER)
N:4340233.923
E:554651.381

WELL NO. 5HM LAUNCH POINT STATE PLANE COORDINATES
(NAD 83 NORTH ZONE)
N:261089.546
E:1724486.551
LAT:39°12'49.03"
LON:80°21'40.37"
UTM COORDINATES
(NAD 83-METER)
N:4340676.956
E:555147.065

WELL NO. 5HM BOTTOM HOLE STATE PLANE COORDINATES
(NAD 83 NORTH ZONE)
N:264955.107
E:1723142.653
LAT:39°13'27.11"
LON:80°21'57.92"
UTM COORDINATES
(NAD 83-METER)
N:4341847.819
E:554718.042

FILE NO. 030-2292
SCALE: 1"=2000'
MINIMUM DEGREE OF ACCURACY: 1 in 2500
PROVEN SOURCE OF ELEVATION: OPUS, SURVEY GRADE GPS

STATE OF WEST VIRGINIA
DIVISION OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL & GAS

DATE APRIL 15 ,2013
OPERATOR'S WELL NO. GEPCO, PALETTA PAD NO. 5HM
API WELL NO.
47 - 033 - 05770H6A
STATE COUNTY PERMIT

WELL TYPE: OIL ☐ GAS ☒ LIQUID INJECTION ☐ WASTE DISPOSAL ☐ (IF "GAS"), PRODUCTION ☒ STORAGE ☐ DEEP ☐ SHALLOW ☒
LOCATION: ELEVATION: 1161.40 WATER SHED: WEST FORK RIVER
DISTRICT: UNION COUNTY: HARRISON
QUADRANGLE: MOUNT CLARE 7.5' ACREAGE: 7.52 AC±
SURFACE OWNER: DOMINECK PALETTA, ESTATE LEASE ACREAGE: 315.80 AC±
OIL & GAS ROYALTY OWNER: DOMINECK PALETTA ESTATE C/O TONY PALETTA, G. DIANE SULLIVAN
COAL ROYALTY OWNER: MIKE ROSS, INC. & W.J. SUTTON LEASE NO.
PROPOSED WORK: DRILL ☒ CONVERT ☐ DRILL DEEPER ☐ REDRILL ☐ FRACTURE OR STIMULATE ☒
PERFORATE NEW FORMATION ☐ PLUG OFF OLD FORMATION ☐ OTHER PHYSICAL CHANGE IN WELL (SPECIFY)
PLUG AND ABANDON CLEAN OUT AND REPLUG
TARGET FORMATION: MARCELLUS SHALE ESTIMATED DEPTH: 7,280' TVD / 12,350' MD

THRASHER ENGINEERING
OIL AND GAS DIVISION
30 COLUMBIA BLVD.
CLARKSBURG, WV 26301
PHONE 304-624-4108

WELL OPERATOR: PDC MOUNTAINEER, LLC.
ADDRESS: 120 GENESIS BOULEVARD
BRIDGEPORT, WV 26330

DESIGNATED AGENT: JAMIE HAGA
ADDRESS: 120 GENESIS BOULEVARD
BRIDGEPORT, WV 26330

CAD FILE: R:\030-2292 PDC - Palleta Well Pad\Survey\030-2292 PALETTA PLATS_4-9-13.dwg PLOT DATE/TIME: 4/15/2013 - 1:55pm LAYOUT: 5HM (2) USER: kpoth