



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

Jim Justice , Governor
Austin Caperton , Cabinet Secretary
www.dep.wv.gov

Wednesday, May 24, 2017
WELL WORK PERMIT
Horizontal 6A / New Drill

ARSENAL RESOURCES LLC (A)
6031 WALLACE ROAD EXTENSION SUITE 300

WEXFORD, PA 15090

Re: Permit approval for COALQUEST 2 211H
47-091-01336-00-00

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: COALQUEST 2 211H
Farm Name: COALQUEST DEVELOPMENT LLC
U.S. WELL NUMBER: 47-091-01336-00-00
Horizontal 6A / New Drill
Date Issued: 5/24/2017

Promoting a healthy environment.

05/26/2017

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. 24 hours prior to the initiation of the completion process the operator shall notify the Chief or his designee.
8. During the completion process the operator shall monitor annular pressures and report any anomaly noticed to the chief or his designee immediately.
9. 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.
10. 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.

PERMIT CONDITIONS

11. 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.

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

1) Well Operator: Arsenal Resources 494519412 Taylor Courthouse Grafton
Operator ID County District Quadrangle

2) Operator's Well Number: 211 Well Pad Name: Coalquest 2

3) Farm Name/Surface Owner: Coalquest Development, LLC Public Road Access: Wendell Road CR 36

4) Elevation, current ground: 1265 Elevation, proposed post-construction: 1266

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

Other _____

(b) If Gas Shallow Deep _____

Horizontal

6) Existing Pad: Yes or No NO

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus 7692ft (TVD Heel) - 7692ft (TVD Toe), 98ft, 0.5 psi/ft, Base of Marcellus, 7790ft (TVD Heel) - 7790ft (TVD Toe)

8) Proposed Total Vertical Depth: 7,779'

9) Formation at Total Vertical Depth: Marcellus Shale

10) Proposed Total Measured Depth: 15,436'

11) Proposed Horizontal Leg Length: 6,983'

12) Approximate Fresh Water Strata Depths: 400ft

13) Method to Determine Fresh Water Depths: Offsetting wells reported water depths (091-00707, 091-00708, 091-00740, 091-00761, 091-00763)

14) Approximate Saltwater Depths: 1,110'

15) Approximate Coal Seam Depths: Bakerstown - 544', Brush Creek - 645', Upper Freeport - 707', Lower Freeport - 743', Upper Kittanning - 837', Middle Kittanning - 871', Lower Kittanning - 902'

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

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

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

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WW-6B
(04/15)

API NO. 47- 91 - 01336
 OPERATOR WELL NO. 211
 Well Pad Name: Coalquest 2

18)

CASING AND TUBING PROGRAM

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.)/CTS
Conductor	24	New	H-40	94	80	80	CTS
Fresh Water	13.375	New	J-55	54.5	650	650	CTS
Coal							
Intermediate	9.625	New	J-55	40	1,600	1,600	CTS
Production	5.5	New	P-110	20	15,436	15,436	TOC @ 1,450 MD
Tubing							
Liners							

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	24	36			0	Type 1, 3% Calcium	1.20
Fresh Water	13.375	17.5	.38	2,730	0	Class A, 3% CaOZ	1.20
Coal					0		
Intermediate	9.625	12.25	.395	3,950	0	Class A, 3% CaOZ	1.29
Production	5.5	8.5-8.75	.361	12,640	9,500	Type 1	1.64/1.32
Tubing					5,000		
Liners					NA		

PACKERS

Kind:				
Sizes:				
Depths Set:				

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

The well will be started with a conductor rig drilling a 36" hole to Conductor programmed depth then running 24" casing and grout cement back to surface. The conductor rig will move out and the drilling rig will move in and rig up. The drilling rig will then spud a 17 1/2" hole and drill to fresh water casing (Surface) to the programmed depth, Run 13- 3/8" casing and cement to surface. The rig will continue drilling a 12- 1/4" intermediate hole to the programmed depth, run 9- 5/8" casing and cement to surface. The rig will then continue to drill a 8- 3/4" hole to a designed KOP and then start drilling the curve and lateral section to the programmed total measured depth, run 5 1/2" casing and cement according to the program.

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

The well will be completed using a plug and perforation method and stimulated with a slickwater and sand slurry. The anticipated maximum rate will be 90 bpm and the maximum pressure will be 9,500 psi.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 3.48

22) Area to be disturbed for well pad only, less access road (acres): 3.48

23) Describe centralizer placement for each casing string:

20"- No centralizers 13 3/8" – one bow spring centralizer on every other joint 9 5/8" – one bow spring centralizer every third joint from TD to surface 5 1/2" – one semi rigid centralizer on every joint from TD of casing to end of curve. Then every other joint to KOP. Every third joint from KOP to 1,600'; there will be no centralizers from 1,700' to surface.

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

24" will be grouted from surface. The 13-3/8" casing will be cemented to surface with Class A cement and no greater than 3% CaCl (calcium chloride). The 9-5/8" casing will be cemented to surface with Type 1 cement, & no greater than 3% calcium chloride. The 5-1/2" production string will be cemented back to 1,450' (+/- 150' above the casing shoe for the 9-5/8") with Type 1 or Class A cement retarder (to extend pumpability) cellophane flaked for fluid loss, Bentonite gel as an extender (increased pumpability and fluid loss), a defoaming agent to decrease cement foaming during mixing to insure the cement is of proper weight to placement and possibly a gypsum gas blocking additive to aid in blocking/gas migration (in combination with other additive mentioned here, helps cement achieve a "right-angle" set) during the plastic phase of the cement set-up.

25) Proposed borehole conditioning procedures:

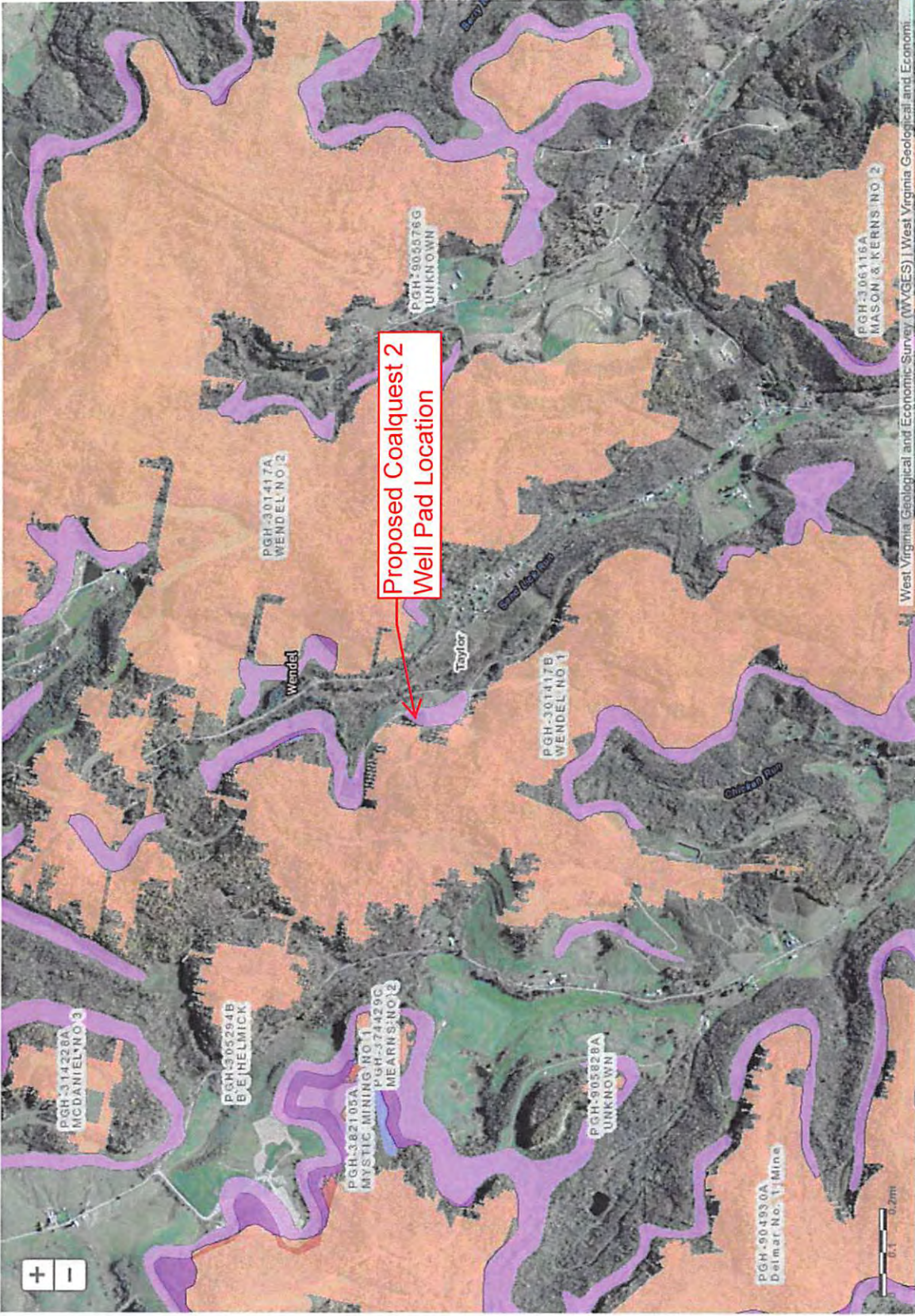
Top holes will be drilled with fresh water to KOP. At KOP, the wellbore will be loaded with synthetic oil based mud, barite-weighted mud system with such properties as to build a filter-cake on the face to the bore-hole. This will provide lubricity as well as stabilizing the well bore. We will begin rotating the drill string and mud will be circulated upon reaching TD until no further cuttings are observed coming across the shaker screens. Once clean mud is circulated back to surface, we will pull three stands of drill pipe, load the hole, pull three stands and load the hole. The weight indicator on the rig will be monitored for any occurrences of drag and if any are notices, we will **RECEIVED** **Office of Oil and Gas** pull the previous stand of pipe pulled across and circulate 2X bottoms up while watching the shakers for signs of cuttings. Once at the base of the curve, the string will be continuously rotated while pumping 2X bottoms up. We will pull three stands and fill the hole until we reach the vertical section of the well.

*Note: Attach additional sheets as needed.

APR 11 2017

Underground and Surface Coal Mines

Zoom in and click on mine outline to get further information.



West Virginia Geological and Economic Survey (WVGES) | West Virginia Geological and Economic Survey

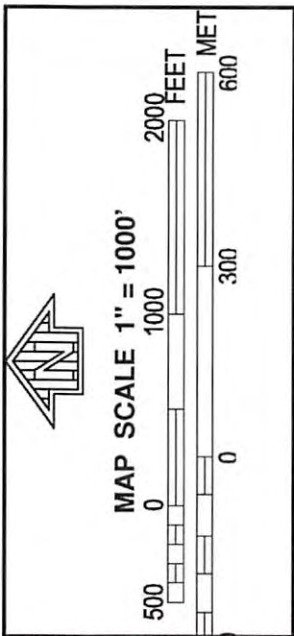
Layer/ Legend Tools Basemap

Use the slider bar to adjust transparency.

Reference

- Political Boundaries
 - Tax Districts
 - Tax District Labels
 - Counties
 - County Labels
- Planning & Development Regions
- State Boundary
- Reference Quadrangles
- WV Coal Mining
 - Underground Mining Labels
 - Underground Mining
 - Surface Mining
 - Surface Mined
 - Auger Mined
 - Highway Mined

91-01336



NATIONAL FLOOD INSURANCE PROGRAM

NFIP

PANEL 0115D

FIRM

FLOOD INSURANCE RATE MAP

**TAYLOR COUNTY,
WEST VIRGINIA
AND INCORPORATED AREAS**

PANEL 115 OF 200
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
TAYLOR COUNTY	540188	0115	D
FLEMINGTON, TOWN OF	540189	0115	D

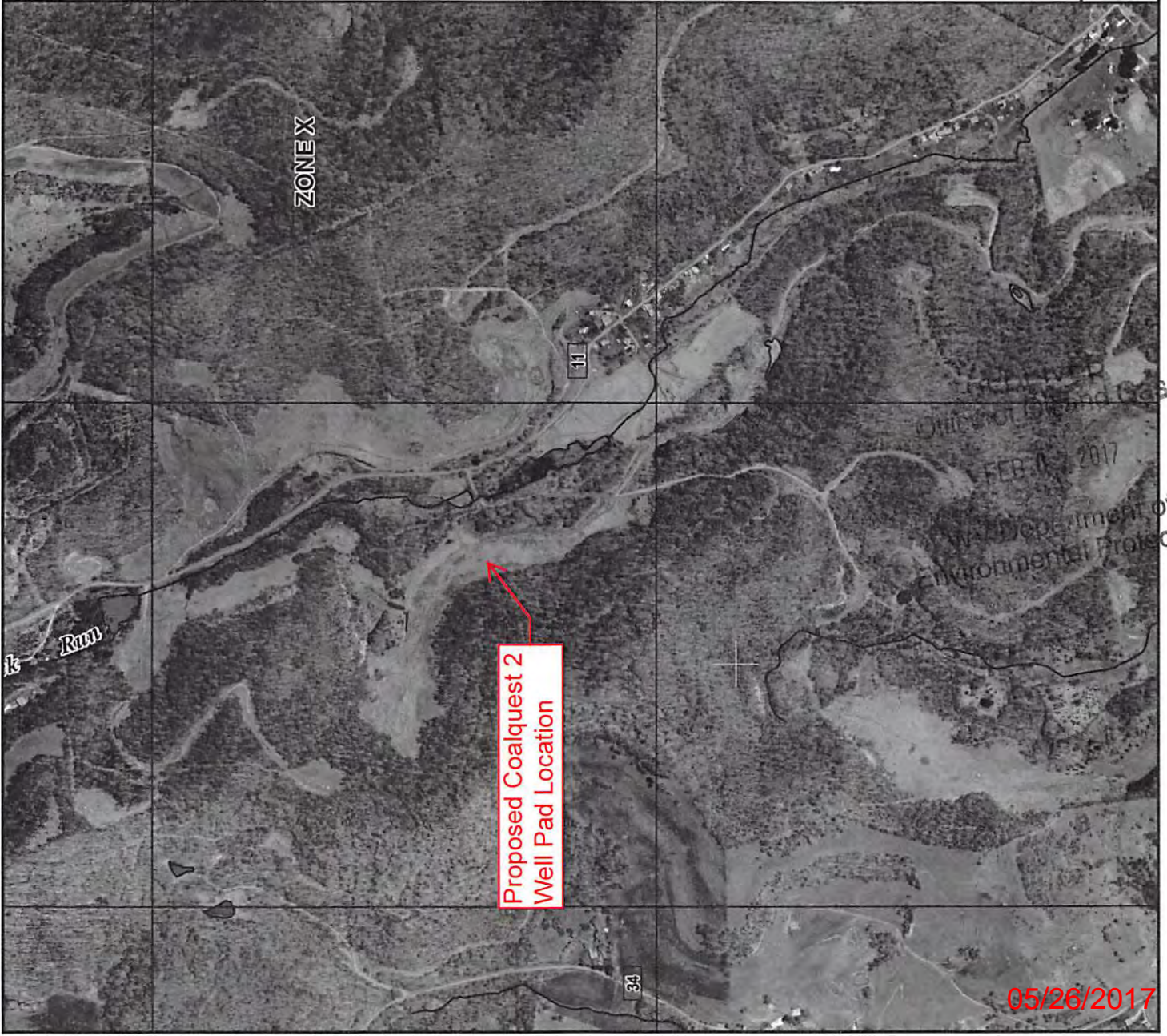
Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
54091C0115D

EFFECTIVE DATE
SEPTEMBER 25, 2009

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov



211 AREA OF REVIEW

Coalquest 2 211 Area of Review							
API	Operator	Status	Latitude	Longitude	Vertical TD	Producing Formation	Producing Zones Not Perforated
4709100763	Petroleum Development Corp.	Plugged	39.301522	-80.1102	0	Not Available	Not Available
4709100707	Alliance Petroleum Corporation	Completed	39.294336	-80.106791	4172	Greenland Gap Fm.	Not Available
4709101201	PDC Mountaineer, LLC	Permitted	39.29704	-80.110147	0	Not Available	Not Available
4709101206	Arsenal Resources	Completed	39.29693	-80.109809	7774	Marcellus Shale	Not Available
4709101251	Arsenal Resources	Completed	39.297102	-80.110175	7775	Marcellus Shale	Not Available
4709101252	Arsenal Resources	Completed	39.297137	-80.110204	7772	Marcellus Shale	Not Available
4709101287	Arsenal Resources	Permitted	39.297359	-80.110379	0	Marcellus Shale	Not Available
4709101288	Arsenal Resources	Permitted	39.297381	-80.110334	0	Marcellus Shale	Not Available

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 Wyoming Department of
 Environmental Protection

91-01336



Purpose

The purpose of this pad-specific Hydraulic Fracturing Monitoring Plan is to identify and notify conventional well operators near Arsenal Resources hydraulic fracturing in Taylor County, WV prior to hydraulic fracturing at the following ARSENAL RESOURCES wells on the Coalquest2 211 Pad.

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 7,800' TVD) and existing conventional natural gas wells in the partially-depleted, relatively high permeability Riley formation (approximately 4,720' TVD).

The plan is being implemented as an additional safety measure to be utilized in conjunction with best management practices and emergency action plans for this 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 Division of Oil and Gas is notified of the timeline, as well as any issues that may arise during fracturing.

1. Communications with Conventional Operators.

ARSENAL RESOURCES, 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, ARSENAL RESOURCES 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 ARSENAL RESOURCES 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 ARSENAL RESOURCES if any changes in water, gas production, pressure or other anomalies are identified.

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2. Reporting

ARSENAL RESOURCES 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 after any event of any noted abnormalities.

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WW-9
(4/16)

API Number 47 - 91 - 01336
Operator's Well No. 211

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Arsenal Resources OP Code 494519412

Watershed (HUC 10) Sandlick Run of Simpson Creek Quadrangle Grafton

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

Will a pit be used? Yes No

If so, please describe anticipated pit waste: _____

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

Proposed Disposal Method For Treated Pit Wastes:

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

Will closed loop system be used? If so, describe: Yes. The closed loop system will contain all of the drilling medium and drill cuttings on location to than be taken to a landfill _____

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. Vert. - Freshwater Horiz. - Synthetic Oil based mud _____

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

Additives to be used in drilling medium? Bentonite, soap and polymer sticks, soda ash, sodium bicarbonate, defoamer, base oil, emulsifiers, lime, and barite

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

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) NA

-Landfill or offsite name/permit number? Advanced Disposal Services, Chestnut Valley Landfill

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 *William Veigel*

Company Official (Typed Name) William Veigel

Company Official Title Designated Agent, Arsenal Resources

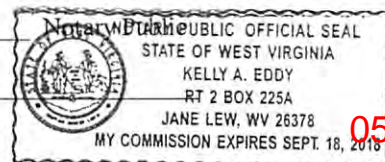
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WV Department of
Environmental Protection

Subscribed and sworn before me this 10th day of April, 2017

Kelly A. Eddy
My commission expires September 18, 2018



05/26/2017

Arsenal Resources

Proposed Revegetation Treatment: Acres Disturbed 1 Prevegetation pH _____

Lime 2.67 Tons/acre or to correct to pH 6.4

Fertilizer type 10-20-20

Fertilizer amount 1000 lbs/acre

Mulch 3-4 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Orchard Grass	129	Orchard Grass	129
Rye	93	Rye	93
Clover	24	Clover	24
Timothy	45	Timothy	45

Attach:

Maps(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided). If water from the pit will be land applied, include dimensions (L x W x D) of the pit, and dimensions (L x W), and area in acreage, of the land application area.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: The Thrasher Group, Inc

Samuel L. Reynolds 4-10-17

Comments: Pre-seed and mulch all disturbed areas as soon as reasonably possible per regulation.

Upgrade E and S controls where needed per WV DEP E and S Manual if necessary.

Title: OIL & GAS INSPECTOR

Date: 4-10-17

Field Reviewed? () Yes () No

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WV Department of Environmental Protection 05/26/2017

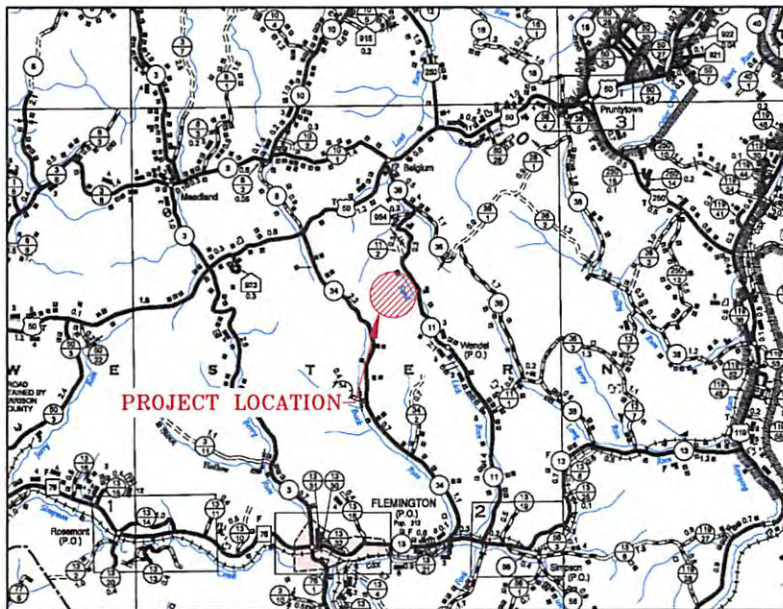
EXISTING PARCEL OWNER AND ADDRESS TABLE

ID	OWNER	ADDRESS	TAX MAP INFO		
			DISTRICT	MAP	PARCEL
1	COALQUEST DEVELOPMENT LLC	1 CITY PL STE 300, SAINT LOUIS, MO 63141	5	8	10.1
2	CAMPBELL RONALD JR (LIFE) & ADRIANNA WRIGHT	2248 WENDEL RD, FLEMINGTON, WV 26347	5	8A	2
3	LIPSCOMB AMY ANNA	P O BOX 24, FLEMINGTON, WV 26347	5	8A	3
4	LIPSCOMB EDDIE (HEIRS) C/O JUDY LIPSCOMB	2222 WENDEL RD, FLEMINGTON, WV 26347	5	8A	4
5	ROSS GARY L & MINNA LOUISE & SURV	2217 WENDEL RD, FLEMINGTON, WV 26347	5	8A	5
6	FLEMING RICKY L C/O IMOGENE FLEMING	2173 WENDEL RD, FLEMINGTON, WV 26347	5	8A	6
7	KETTERMAN NANCY E (LIFE) & JEFFREY L C/O NANCY E KETTERMAN	2186 WENDEL RD, FLEMINGTON, WV 26347	5	8A	7
8	FLEMING BILLY E (HEIRS)	2175 WENDEL RD, FLEMINGTON, WV 26347	5	8A	9
9	FLEMING RANDY E & MARSHA FLEMING IMOGENE (LIFE)	2173 WENDEL RD, FLEMINGTON, WV 26347	5	8A	10
10	FLEMING BILLY E (HEIRS)	2175 WENDEL RD, FLEMINGTON, WV 26347	5	8A	11
11	POLEN DELORIS C/O DELORIS QUICK	35 BURNT OAK LN, FREDERICKSBURG, VA 22405	5	8A	12
12	KETTERMAN JEFFREY LYNN	PO BOX 295, SIMPSON, WV 26354	5	8A	14
13	COALQUEST DEVELOPMENT LLC	1 CITY PL STE 300, SAINT LOUIS, MO 63141	5	8	26
14	EVANTO KEVIN GUY	78 STATION ST, SHINNSTON, WV 26431	5	8	8.1
15	COALQUEST DEVELOPMENT LLC	1 CITY PL STE 300, SAINT LOUIS, MO 63141	5	8	8
16	COALQUEST DEVELOPMENT LLC	1 CITY PL STE 300, SAINT LOUIS, MO 63141	5	8	9
17	KINSEY JAMES A OR BEVERLY A & SURV	2446 BUCK RUN RD, FLEMINGTON, WV 26347	5	13	1
18	EVANTO KEVIN GUY	78 STATION ST, SHINNSTON, WV 26431	5	13	28
19	COALQUEST DEVELOPMENT LLC	1 CITY PL STE 300, SAINT LOUIS, MO 63141	5	8	10
20	COALQUEST DEVELOPMENT LLC	1 CITY PL STE 300, SAINT LOUIS, MO 63141	5	8	10.2
21	COALQUEST DEVELOPMENT LLC	1 CITY PL STE 300, SAINT LOUIS, MO 63141	5	13	3

LEGEND

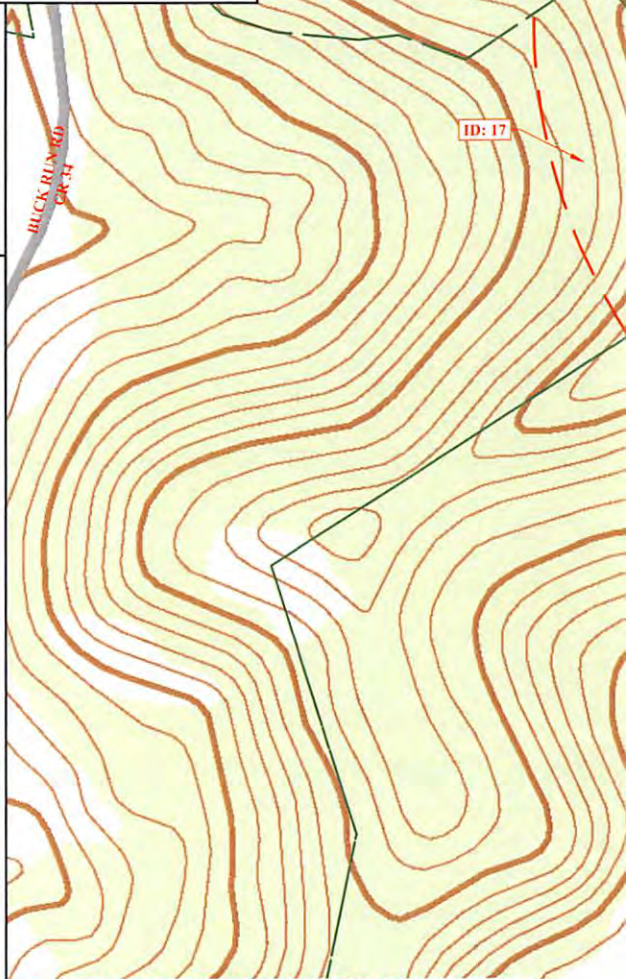
-  1,500-FT RADIUS FROM WELL PAD (AREAS INSIDE LIMITS WILL BE SAMPLED)
-  PROPOSED WELL PAD
-  PROPERTY LINE
-  PARCEL ID # (SEE TABLE)

TAYLOR COUNTY, WV HIGHWAY MAP



1 MILE 0 1 MILE 2 MILES

HIGHWAY MAP SCALE



GRAFTON AND ROSEMONT, WV QUAD MAPS

LAYOUT TAB: WaterSources
 CAD FILE: R:\030-3042-COALTRAIN IMPROVEMENTS-MK-\Drawing\Site Safety\3042-safety-plan.dwg
 PLOT DATE/TIME: 4/4/2017 6:41 PM

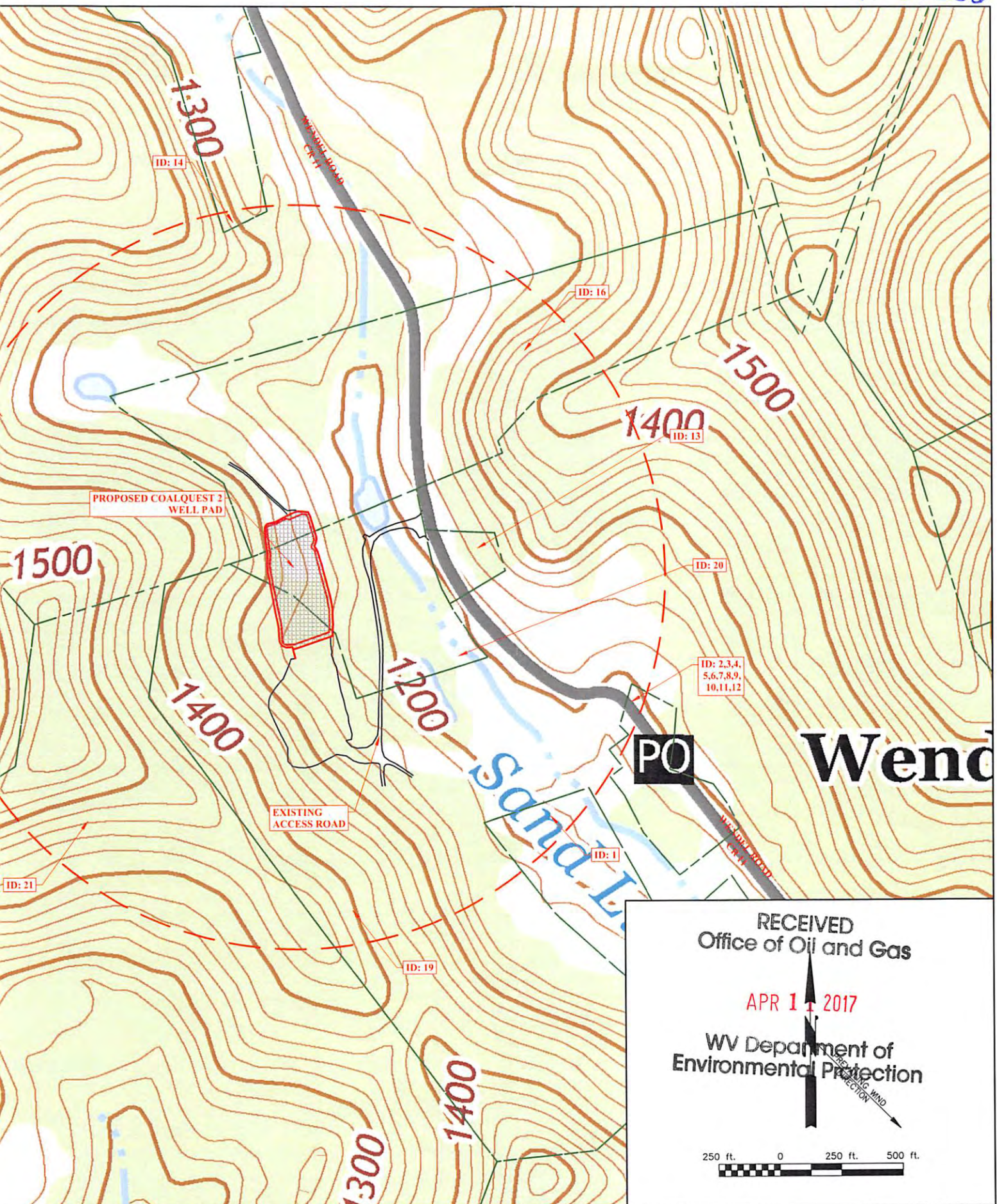
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NO.	BY	DATE	DESCRIPTION



SCALE:
 DRAWN:
 CHECKED:
 APPROVED:
 SURVEY DATE:
 SURVEY BY:
 FIELD BOOK No.:

05/26/2017



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250 ft. 0 250 ft. 500 ft.

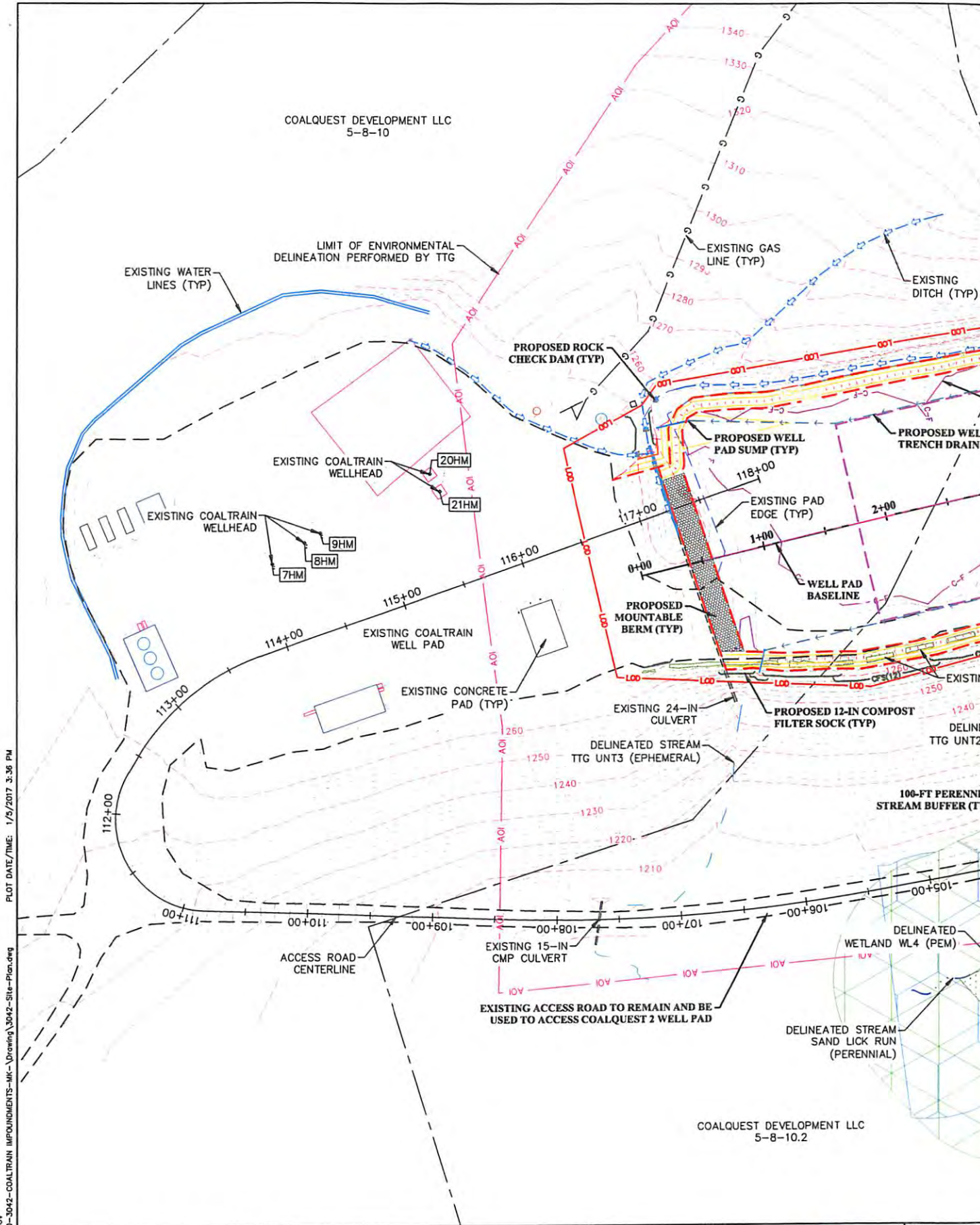
TE:
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THRASHER
THE THRASHER GROUP INC.
CIVIL • ENVIRONMENTAL • CONSULTING • FIELD SERVICES
600 WHITE OAKS BOULEVARD, BRIDGEPORT, WV 26330
PHONE (304) 624-4108 • FAX (304) 624-7831

PHASE No.
CONTRACT No.
PROJECT No.
101-030-3042

ARSENAL RESOURCES
SITE SAFETY PLAN FOR THE
COALQUEST 2 WELL PAD
TAYLOR COUNTY, WEST VIRGINIA
POTENTIAL WATER SOURCES

SHEET No.
W
05/26/2017



COALQUEST DEVELOPMENT LLC
5-8-10

COALQUEST DEVELOPMENT LLC
5-8-10.2

LAYOUT TAB: 03-04
CAD FILE: R:\030-3042-COALTRAIN IMPROVEMENTS-MK-VDrawing\3042-Site-Plan.dwg
PLOT DATE/TIME: 1/25/2017 3:36 PM

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APP NO.	BY	DATE	DESCRIPTION
1	BM	01/05/17	APPROVED FOR PERMITS

Mountaineer Keystone
LLC

05/26/2017

SCALE:
DRAWN:
CHECKED:
APPROVED:
SURVEY DATE:
SURVEY BY:
FIELD BOOK No.:

91-01336

PLAN LEGEND

	AOI	ENVIRONMENTAL DELINEATION AREA OF INTEREST
		DELINEATED STREAM - PERENNIAL
		DELINEATED STREAM - EPHEMERAL
		DELINEATED WETLAND - PALUSTRINE EMERGENT (PEM)
		100-FT PERENNIAL STREAM BUFFER
		100-FT WETLAND BUFFER
	LOD	LIMIT OF DISTURBANCE
		PROPOSED CONTOURS
	C	PROPOSED CUT LIMIT
	F	PROPOSED FILL LIMIT
	C-F	APPROXIMATE CUT-FILL INTERFACE - ZERO CUT LINE
		PROPOSED EDGE OF WELL PAD

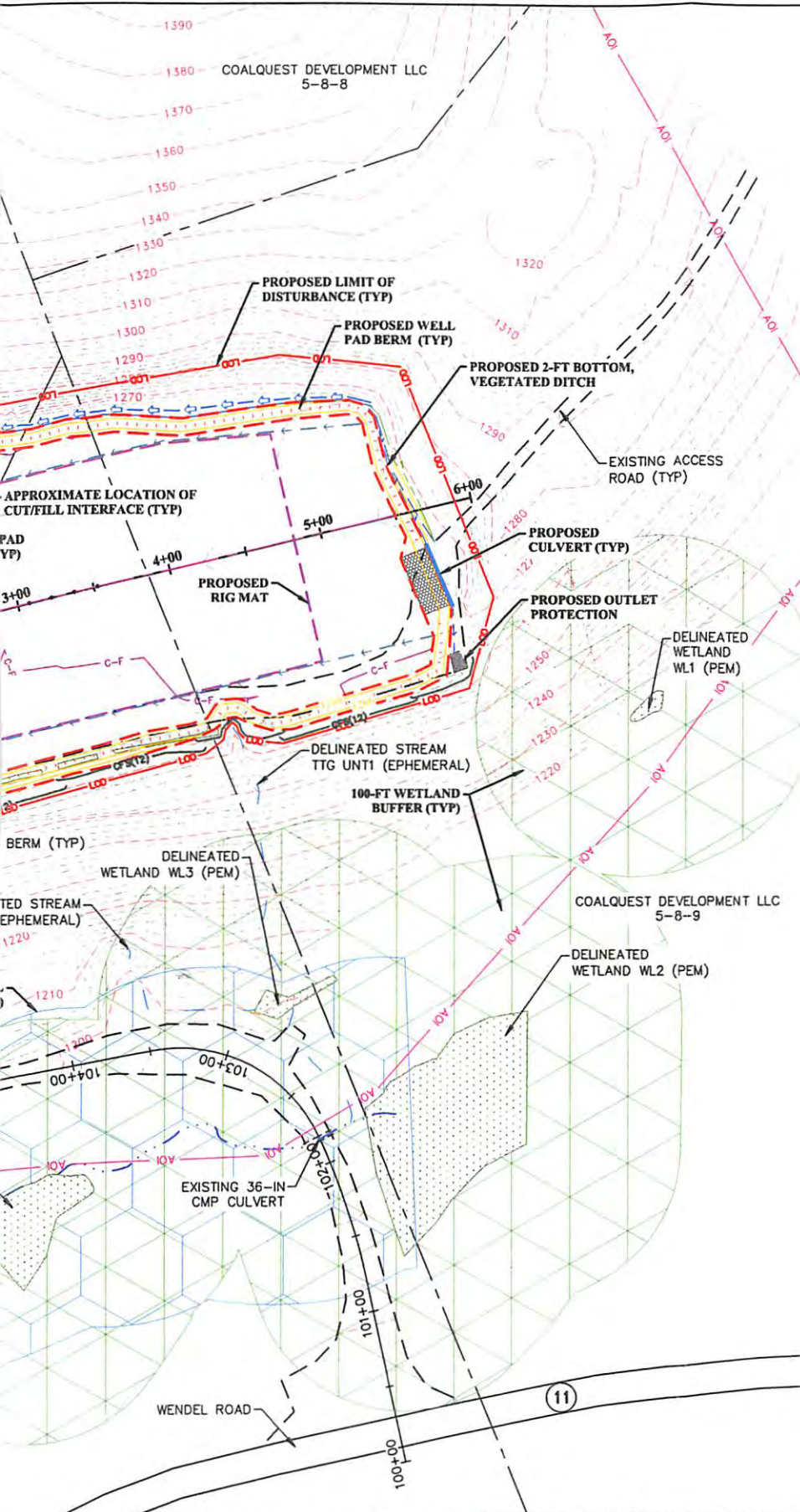
NOTES

- EXISTING FEATURES AND CONTOURS ARE BASED ON THRASHER FIELD SURVEY PERFORMED IN JUNE, JULY, AND AUGUST 2016.
- ENVIRONMENTAL DELINEATIONS WERE PERFORMED BY THRASHER IN JULY 2016.
- PROPERTY LINES SHOWN ARE A COMBINATION OF PROPERTY SURVEY PERFORMED BY THRASHER AND DEED PLOT.
- PROPOSED CONTOURS SHOWN INSIDE THE BERM REPRESENT THE SUBGRADE SURFACE. THE STONE SURFACE SHALL BE GRADED IN ACCORDANCE WITH THE DETAILS AND TYPICAL SECTIONS SHOWN WITHIN THESE PLANS.
- EXISTING DITCH ALONG THE WESTERN PAD EDGE SHALL BE CLEANED AND GRADED TO ENSURE POSITIVE DRAINAGE ALONG ITS ENTIRE LENGTH.
- THE EXISTING ACCESS ROAD IS TO REMAIN AND BE USED TO ACCESS THE COALQUEST 2 WELL PAD. THE CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN THE STONE SURFACE AS NEEDED AND TO ENSURE NO MUD OR SEDIMENT IS TRACKED OFF-SITE ONTO WENDEL ROAD (CR 11).

EARTHWORK SUMMARY

CUT (SWELL) FACTOR	100%
FILL (SHRINK) FACTOR	100%
TOTAL CUT	2,350 CY*
TOTAL FILL	2,350 CY
NET	0 CY*

* INCLUDES 150 CY FOR TRENCH DRAIN EXCAVATION.



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Environmental Protection



DATE:	
DATE:	
DATE:	

THRASHER
THE THRASHER GROUP INC.
CIVIL • ENVIRONMENTAL • CONSULTING • FIELD SERVICES
600 WHITE OAKS BOULEVARD, BRIDGEPORT, WV 26330
PHONE (304) 624-4108 • FAX (304) 624-7831

PHASE No.	
CONTRACT No.	
PROJECT No.	101-030-3042

MOUNTAINEER KEYSTONE, LLC
CONSTRUCTION PLANS FOR THE
COALQUEST 2 WELL PAD
TAYLOR COUNTY, WEST VIRGINIA
OVERALL SITE PLAN

SHEET No.	3
-----------	---

05/26/2017

91-01336



Goalquest 2 211 Site Safety Plan



ARSENAL
R E S O U R C E S

SITE SAFETY PLAN

Coalquest 2 Well Pad
211

Edward L. Reynolds
4-10-17

911 Address:

**2409 Wendel Road
Flemington, WV 26347**

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05/26/2017



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THE THRASHER GROUP, INC.
600 WHITE OAKS BLVD.
BRIDGEPORT, WV 26330
PHONE 304-624-4108

NOTES ON SURVEY

- COORDINATES SYSTEM IS UTM, NAD 83 DATUM, ZONE 17, U.S. FOOT AND WELL COORDINATES ESTABLISHED USING SURVEY GRADE GPS.
- SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND FIELD LOCATIONS.
- THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
- NO DWELLINGS AND BUILDINGS WITHIN 625 FEET OF PROPOSED OF CENTER OF PAD.
- NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF PROPOSED WELL.
- NO PERENNIAL STREAMS, LAKES, PONDS, RESERVOIRS OR WETLANDS WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE.
- NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.

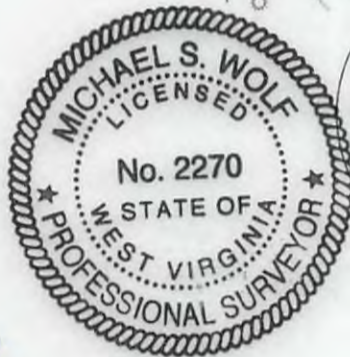
TRACT	ADJOINER SURFACE OWNER	TAX PARCEL
A	COALQUEST DEVELOPMENT, LLC.	5-13A-15.1
B	GERARD	5-13A-13
C	FOWLER	5-13-11
D	FOWLER	5-13-10
E	BARTLETT	5-13-9
F	COOK	5-13-7
G	ZBOSNIK	5-13-7.2
H	ZBOSNIK	5-13-7.1
I	ALVIL	5-13-5
J	ALVIL	5-13-5.3
K	ALVIL	5-13-5.2
L	PHILLIPS	5-13-5.1
M	CURRY	5-13-5.5
N	COALQUEST DEVELOPMENT, LLC.	5-8-10
O	FELTON	5-8-11.2
P	POLING	5-8-11.1
Q	POLING	5-8-11
R	KETTERMAN	5-8A-14
S	KETTERMAN	5-8A-7
T	LIPSCOMB	5-8A-4
U	LIPSCOMB	5-8A-3
V	CAMPBELL	5-8A-2
W	GREEN	5-8A-1
X	COALQUEST DEVELOPMENT, LLC.	5-8-26
Y	ROSS	5-8A-5
Z	FLEMING	5-8A-6
AA	COALQUEST DEVELOPMENT, LLC.	5-8-10.1

SURFACE HOLE LOCATION (SHL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,350,300.364 EASTING: 576,710.441
LANDING POINT LOCATION (LPL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,350,044.084 EASTING: 576,842.893
BOTTOM HOLE LOCATION (BHL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,352,056.423 EASTING: 576,149.855

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.

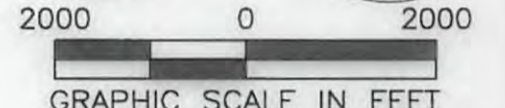
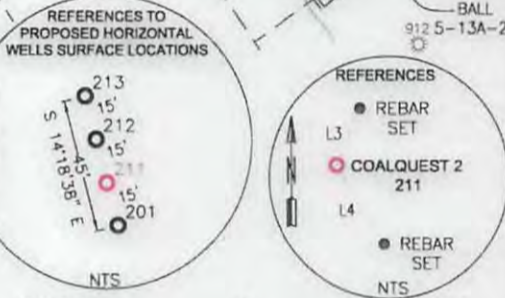
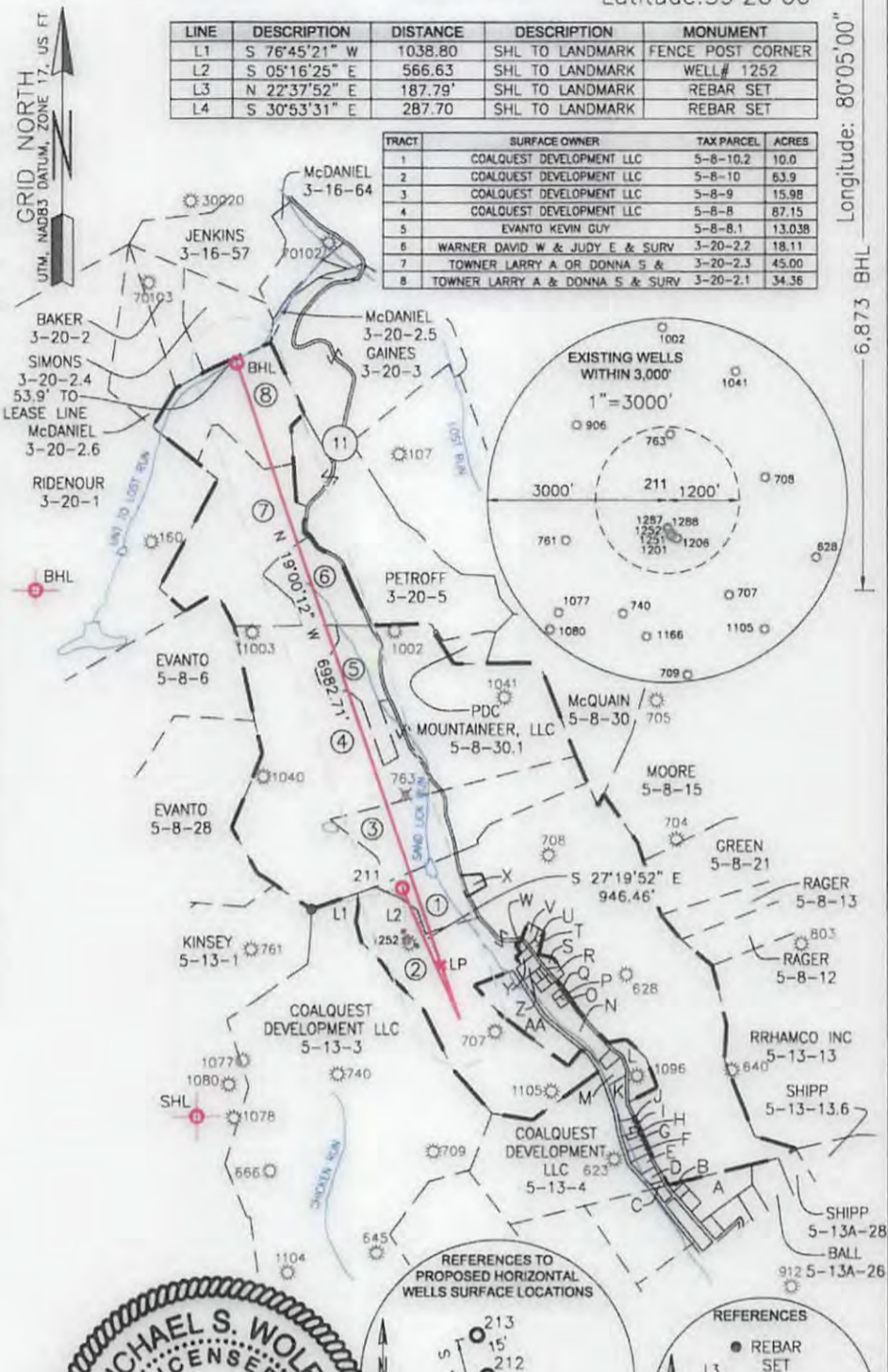
P.S. 2270

M.S.W. 4/7/17



LINE	DESCRIPTION	DISTANCE	DESCRIPTION	MONUMENT
L1	S 76°45'21" W	1038.80	SHL TO LANDMARK	FENCE POST CORNER
L2	S 05°16'25" E	566.63	SHL TO LANDMARK	WELL# 1252
L3	N 22°37'52" E	187.79	SHL TO LANDMARK	REBAR SET
L4	S 30°53'31" E	287.70	SHL TO LANDMARK	REBAR SET

TRACT	SURFACE OWNER	TAX PARCEL	ACRES
1	COALQUEST DEVELOPMENT LLC	5-8-10.2	10.0
2	COALQUEST DEVELOPMENT LLC	5-8-10	63.9
3	COALQUEST DEVELOPMENT LLC	5-8-9	15.98
4	COALQUEST DEVELOPMENT LLC	5-8-8	87.15
5	EVANTO KEVIN GUY	5-8-8.1	13.038
6	WARNER DAVID W & JUDY E & SURV	3-20-2.2	18.11
7	TOWNER LARRY A OR DONNA S &	3-20-2.3	45.00
8	TOWNER LARRY A & DONNA S & SURV	3-20-2.1	34.36



<p>(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS</p> <p>WVDEP OFFICE OF OIL & GAS 601 57TH STREET CHARLESTON, WV 25034</p>	<p>MINIMUM DEGREE OF ACCURACY: 1/200</p> <p>PROVEN SURVEY SOURCE OF GRADE GPS ELEVATION: (NAVD 88, US FT)</p>	<p>OPERATOR'S WELL #: 211</p> <p>API WELL #: 47</p>	<p>COALQUEST 2</p> <p>91</p> <p>H6A 01336</p>
	<p>STATE COUNTY PERMIT</p>	<p>STATE COUNTY PERMIT</p>	<p>STATE COUNTY PERMIT</p>
<p>WELL TYPE: OIL WASTE DISPOSAL PRODUCTION DEEP GAS <input checked="" type="checkbox"/> LIQUID INJECTION STORAGE SHALLOW <input checked="" type="checkbox"/></p> <p>WATERSHED: SAND LICK RUN OF SIMPSON CREEK ELEVATION: 1266.0</p> <p>DISTRICT: COURTHOUSE COUNTY: TAYLOR QUADRANGLE: GRAFTON</p> <p>SURFACE OWNER: COALQUEST DEVELOPMENT LLC ACREAGE: 10.00</p> <p>OIL & GAS ROYALTY OWNER: PATRIOT MINING, INC. ACREAGE: 10.00</p> <p>DRILL DRILL DEEPER REDRILL FRACTURE OR STIMULATE <input checked="" type="checkbox"/> PLUG OFF OLD FORMATION PERFORATE NEW FORMATION</p> <p>CONVERT PLUG & ABANDON CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY)</p> <p>TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 7,779 TVD 15,436 TMD</p>			
<p>WELL OPERATOR: ARSENAL RESOURCES ADDRESS: 6031 WALLACE ROAD EXTENSION #300 CITY: WEXFORD STATE: PA ZIP CODE: 15090</p>		<p>DESIGNATED AGENT: WILLIAM VEIGEL ADDRESS: 65 PROFESSIONAL PLACE, SUITE 200 CITY: BRIDGEPORT STATE: WV ZIP CODE: 26330</p>	
<p>LEGEND: PROPOSED SURFACE HOLE / BOTTOM HOLE EXISTING / PRODUCING WELLHEAD ABANDONED WELL PLUGGED & ABANDONED WELL CUT CONDUCTOR LEASE BOUNDARY 500' DHP BUFFER DOWN HOLE PATH DHP BUFFER</p>		<p>REVISIONS:</p> <p>DATE: 04-04-2017</p> <p>DRAWN BY: K. POTH</p> <p>SCALE: 1" = 2000'</p> <p>DRAWING NO: 030-3042</p> <p>WELL LOCATION PLAT</p>	

91-01336



Coalquest 2 211H Site Safety Plan



SITE SAFETY PLAN

Coalquest 2 Well Pad 211H

911 Address:
2409 Wendel Road
Flemington, WV 26347

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Lennet L. Reynolds
1-17-17

05/26/2017

West Virginia Secretary of State — Online Data Services

Business and Licensing

Online Data Services Help

Business Organization Detail

NOTICE: The West Virginia Secretary of State's Office makes every reasonable effort to ensure the accuracy of information. However, we make no representation or warranty as to the correctness or completeness of the information. If information is missing from this page, it is not in the The West Virginia Secretary of State's database.

RIVER RIDGE ENERGY, LLC

Organization Information								
Org Type	Effective Date	Established Date	Filing Date	Charter	Class	Sec Type	Termination Date	Termination Reason
LLC Limited Liability Company	11/3/2009		11/3/2009	Foreign	Profit			

Organization Information			
Business Purpose	2111 - Mining, Quarrying, Oil & Gas Extraction - Oil and Gas Extraction - Crude Oil and Natural Gas Extraction		Capital Stock
Charter County		Control Number	99H90
Charter State	DE	Excess Acres	
At Will Term	A	Member Managed	MBR
At Will Term Years		Par Value	
Authorized Shares			

Addresses	
Type	Address
Designated Office Address	65 PROFESSIONAL PLACE SUITE 200 BRIDGEPORT, WV, 26330
Mailing Address	6031 WALLACE ROAD EXTENSION SUITE 300 WEXFORD, PA, 15090 USA
Notice of Process Address	CORPORATION SERVICE COMPANY 209 WEST WASHINGTON STREET CHARLESTON, WV, 25302
Principal Office	6031 WALLACE ROAD EXTENSION SUITE 300

05/26/2017

1/31/2017

WV SOS - Business and Licensing - Corporations - Online Data Services

Address	WEXFORD, PA, 15090 USA
Type	Address

Officers	
Type	Name/Address
Member	PDC MOUNTAINEER HOLDINGS, LLC 6031 WALLACE ROAD EXTENSION, SUITE 300 WEXFORD, PA, 15090
Type	Name/Address

Name Changes	
Date	Old Name
1/12/2017	PDC MOUNTAINEER, LLC
Date	Old Name

Date	Amendment
1/12/2017	NAME CHANGE: FROM PDC MOUNTAINEER, LLC
6/13/2016	AMEND FILED TO CHNGE MGR TO MBR MANAGED & RMV ALL MBRS AND ADD PDC KA2
Date	Amendment

Annual Reports	
Date filed	
6/20/2016	
6/30/2015	
5/27/2014	
6/21/2013	
6/21/2012	
6/15/2011	
5/5/2010	
Date filed	

For more information, please contact the Secretary of State's Office at 304-558-8000.

Tuesday, January 31, 2017 — 1:29 PM

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05/26/2017

WW-6A1
(5/13)

Operator's Well No. 211

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
see attached				

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: Arsenal Resources
 By: William Veigel
 Its: Designated Agent

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Page 1 of 1

Attachment to WW-6A1, CoalQuest 2 - 211

Letter Designation/Number Designation on Plat	Grantor, Lessor, Assignor, etc.	Grantee, Lessee, Assignee, etc.	Royalty	Book/Page	Acreage
00005004	Patriot Mining Company, Inc.	PDC Mountaineer, LLC	0.155	62/595	19.1
	PDC Mountaineer, LLC	River Ridge Energy, LLC			
00003426	Coaltrain Corporation	Petroleum Development Corporation	0.125	42/260 44/134	212
	Petroleum Development Corporation	PDC Mountaineer, LLC		30/698	
	PDC Mountaineer, LLC	River Ridge Energy, LLC			
00003751	Glenn C. Larew and Jarrell S. Larew, his wife; B. Keith Larew and Susan Larew, his wife; Thomas A. Willis and Pamela Willis, his wife	Petroleum Development Corporation	0.125	46/559 48/231 49/416	192
	Petroleum Development Corporation	PDC Mountaineer, LLC		1440/364	
	PDC Mountaineer, LLC	River Ridge Energy, LLC			
00006649	Harry E. Baker and Nancy B. Baker, his wife, and James E. Baker	PDC Mountaineer, LLC	0.15	65/206	50.27
	PDC Mountaineer, LLC	River Ridge Energy, LLC			
00006650	Larry A. Towner and Donna S. Towner, his wife	PDC Mountaineer, LLC	0.125	65/210	79.36
	PDC Mountaineer, LLC	River Ridge Energy, LLC			

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Attachment to WW-6A1, Coalquest 2 211

Letter Designation/Number Designation on Plat	Grantor, Lessor, Assignor, etc.	Grantee, Lessee, Assignee, etc.	Royalty	Book/Page	Acreage
00006622 (WVL03143.000)	Ira Pritt and Laura E. Pritt, Husband and Wife	Carrizo (Marcellus) LLC	15.00%	1448 / 804 1579/26	92.06
	Carrizo (Marcellus) LLC	ACP II Marcellus LLC and Carrizo (Marcellus) LLC		1460/1083	
	Carrizo (Marcellus) LLC and ACP II Marcellus LLC	PDC Mountaineer, LLC		1518/395	
	PDC Mountaineer, LLC	River Ridge Energy, LLC			
00003826 (WVL00289.001)	Stella P. Crim, widow	Union Carbide Corporation	12.50%	853/83	151
	Union Carbide Corporation	Creslenn Oil Company		897/286	
	Creslenn Oil Company	Delta Producing Corporation		925/629	
	Delta Producing Corporation	Petroleum Corporation of America		967/575 977/168	
	Petroleum Corporation of America	Petroleum Development Corporation		977/153	
	Petroleum Development Corporation	PDC Mountaineer, LLC		1440/364	
	PDC Mountaineer, LLC	River Ridge Energy, LLC			
00005198 (WVL01058.000)	Rebecca S. Tennant, Jeffery A. Morrison, Freddie F. Morrison, Russell L. Crouse, Roy A. Crouse, Ronald R. Crouse, Robert D. Crouse, Kathryn Caldwell, Margaret Crouse Smith	PDC Mountaineer, LLC	14.50%	1522/592	40.25
	PDC Mountaineer, LLC	River Ridge Energy, LLC			
00005011 (WVL00928.001)	James D. Barr	PDC Mountaineer, LLC	12.50%	1481/548 1582/1128	20.474
	PDC Mountaineer, LLC	River Ridge Energy, LLC			
00005012 (WVL00928.002)	Jeffery S. Barr	PDC Mountaineer, LLC	12.50%	1481/551 1582/1129	20.474
	PDC Mountaineer, LLC	River Ridge Energy, LLC			

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00003555 (WVL00103.000)	Lydia Drainer, widow	Union Carbide Corporation	12.50%	853/91	380
	Union Carbide Corporation	Creslenn Oil Company		897/286	
	Creslenn Oil Company	Delta Producing Corporation		925/629	
	Delta Producing Corporation	Petroleum Corporation of America		967/575 977/168	
	Petroleum Corporation of America	Petroleum Development Corporation		977/153	
	Petroleum Development Corporation	PDC Mountaineer, LLC		1440/364	
	PDC Mountaineer, LLC	River Ridge Energy, LLC			
00005712 (WVL002221.000)	John Stewart, Blanche Stewart, Hollie Stewart	Union Drilling, Inc. and Allerton Miller	12.50%	1101/790 (Harrison) 71/432 (Barbour)	100
	Allerton Miller	Union Drilling, Inc.		98/11 (Barbour) 1107/1040 (Harrison) 88/259 (Barbour)	
	Union Drilling, Inc.	Equitable Resources Exploration, Inc.		1189/1209 (Harrison) 325/171 (Barbour)	
	Equitable Resources Exploration, Inc.	Equitable Resources Energy Company		1199/642 (Harrison) 328/171 (Barbour)	
	Equitable Resources Energy Company	Fuel Resources Production and Development, Inc.		116/81 (Barbour)	
	Fuel Resources Production and Development Company, Inc.	The Houston Exploration Company		136/162 (Barbour) 383/187 (Barbour)	
	The Houston Exploration Company	Keyspan Natural Fuel, LLC.		1289/821	
	Keyspan Natural Fuel, LLC.	The Houston Exploration Company		1351/1260 (Harrison)	
	The Houston Exploration Company	Seneca-Upshur Petroleum, Inc.		1367/1084 (Harrison) 404/381 (Barbour) 139/48 (Barbour)	
	Seneca-Upshur Petroleum, Inc.	Seneca-Upshur Petroleum, LLC		1467/119 (Harrison) 59/1032 (Harrison) 447/129 (Barbour) 16/637 (Barbour)	

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 Environmental Protection

91-01336

Agreement to Drill, Complete and Operate Oil & Gas Wells

This Agreement to Drill, Complete and Operate Oil & Gas Wells (this "Agreement"), by and among Arsenal Resources LLC, a West Virginia limited liability company ("Arsenal"), River Ridge Energy, LLC, a Delaware limited liability company ("River Ridge"), and River Ridge Energy, Holdings, LLC, a Delaware limited liability company ("River Ridge Holdings"), is effective as of March 1, 2017. (the "Effective Date") and sets forth the terms pursuant to which Arsenal will drill, complete and operate the Wells (as defined below) on behalf of River Ridge and River Ridge Holdings. Arsenal, River Ridge, and River Ridge Holdings are each a "Party" and are collectively the "Parties". In consideration of the foregoing and the respective agreements hereinafter set forth and the mutual benefits to be derived therefrom, the Parties, intending to be legally bound, hereby agree as follows:

- 1. Term:** This Agreement is effective from the Effective Date until terminated by Arsenal on the one hand or River Ridge and River Ridge Holdings on the other hand with 30 days' written notice to the other Party or Parties, as applicable (the "Term").
- 2. Authorization to Operate:** River Ridge and River Holdings authorize Arsenal to undertake and perform, on River Ridge and River Ridge Holdings behalf, all operations, including without limitation permit applications, well pad preparation, drilling and completing wells, and marketing gas, oil and other hydrocarbons therefrom with respect to all oil and gas wells to be drilled on oil and gas leasehold acreage held by River Ridge or River Ridge Holdings. River Ridge, River Ridge Holdings and Arsenal are affiliates with a common parent. Arsenal was formed to operate oil and gas leasehold acreage held by River Ridge, River Ridge Holdings and certain other affiliates. Arsenal agrees that it shall, in a good and workmanlike manner and in accordance with industry standards as they prevail in the area, drill, complete and operate oil and gas wells on leasehold acreage owned by River Ridge or River Ridge Holdings from time to time as directed by River Ridge or River Ridge Holdings (collectively, the "Wells").
- 3. No Third Party Beneficiary:** This Agreement is for the benefit of the Parties and is not for the benefit of any third party.
- 4. Counterparts:** This Agreement may be simultaneously executed in several counterparts and via facsimile or similar electronic transmittal, each of which shall be deemed to be an original and taken together shall constitute one and the same instrument.

[Signature Page Follows]

IN WITNESS WHEREOF, Arsenal, River Ridge, and River Ridge Holdings have caused their duly authorized representatives to execute this Agreement as of the Effective Date.

ARSENAL RESOURCES LLC

By: Joel E. Symonds
Name: Joel E. Symonds
Title: Vice President - Land

RIVER RIDGE ENERGY, LLC

By: Joel E. Symonds
Name: Joel E. Symonds
Title: Vice President - Land

RIVER RIDGE HOLDINGS, LLC

By: Joel E. Symonds
Name: Joel E. Symonds
Title: Vice President - Land

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

Date of Notice Certification: 02/03/2017

API No. 47- 91 - 01336
Operator's Well No. 211
Well Pad Name: Coalquest 2

Notice has been given:

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

State: <u>West Virginia</u>	UTM NAD 83	Easting: <u>576710.441</u>
County: <u>Taylor</u>		Northing: <u>4350300.364</u>
District: <u>Court House</u>	Public Road Access: <u>(CR 11) Wendel Road</u>	
Quadrangle: <u>Grafton</u>	Generally used farm name: <u>Coalquest Development</u>	
Watershed: <u>Sand Lick Run of Simpson Creek</u>		

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

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
<input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED		<input type="checkbox"/> RECEIVED/ NOT REQUIRED
<input type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input checked="" type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED		<input type="checkbox"/> RECEIVED
<input checked="" type="checkbox"/> 3. NOTICE OF INTENT TO DRILL or <input type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or <input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)		<input type="checkbox"/> RECEIVED/ NOT REQUIRED
<input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION		<input type="checkbox"/> RECEIVED
<input checked="" type="checkbox"/> 5. PUBLIC NOTICE		<input type="checkbox"/> RECEIVED
<input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION		<input type="checkbox"/> RECEIVED

Required Attachments:

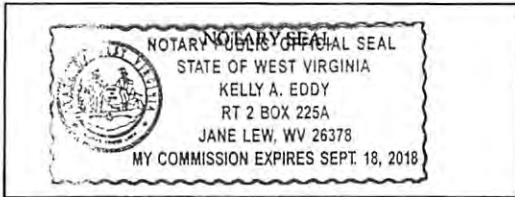
The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication 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.

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Certification of Notice is hereby given:

THEREFORE, I William Veigel, 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:	<u>Arsenal Resources</u>	Address:	<u>65 Professional Place</u>
By:	<u>William Veigel</u>		<u>Bridgeport, WV 26330</u>
Its:	<u>Designated Agent</u>	Facsimile:	<u>304-848-9134</u>
Telephone:	<u>724-940-1204</u>	Email:	<u>ecarder@arsenalresources.com</u>



Subscribed and sworn before me this 10th day of April 2017.
Kelley A. Eddy Notary Public
 My Commission Expires September 18, 2018

Oil and Gas Privacy Notice:

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

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WV Department of
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Agreement to Drill, Complete and Operate Oil & Gas Wells

This Agreement to Drill, Complete and Operate Oil & Gas Wells (this "Agreement"), by and among Mountaineer Keystone LLC, a West Virginia limited liability company ("Mountaineer Keystone"), PDC Mountaineer, LLC, a Delaware limited liability company ("PDC"), and PDC Mountaineer Holdings, LLC, a Delaware limited liability company ("PDC Holdings"), is effective as of **October 15, 2014**. (the "Effective Date") and sets forth the terms pursuant to which Mountaineer Keystone will drill, complete and operate the Wells (as defined below) on behalf of PDC and PDC Holdings. Mountaineer Keystone, PDC, and PDC Holdings are each a "Party" and are collectively the "Parties". In consideration of the foregoing and the respective agreements hereinafter set forth and the mutual benefits to be derived therefrom, the Parties, intending to be legally bound, hereby agree as follows:

1. **Term:** This Agreement is effective from the Effective Date until terminated by Mountaineer Keystone on the one hand or PDC and PDC Holdings on the other hand with 30 days' written notice to the other Party or Parties, as applicable (the "Term").
2. **Authorization to Operate:** PDC and PDC Holdings authorize Mountaineer Keystone to undertake and perform, on PDC and PDC Holdings behalf, all operations, including without limitation permit applications, well pad preparation, drilling and completing wells, and marketing gas, oil and other hydrocarbons therefrom with respect to all oil and gas wells to be drilled on oil and gas leasehold acreage held by PDC or PDC Holdings. PDC, PDC Holdings and Mountaineer Keystone are affiliates with a common parent. Mountaineer Keystone was formed to operate oil and gas leasehold acreage held by PDC, PDC Holdings and certain other affiliates. Mountaineer Keystone agrees that it shall, in a good and workmanlike manner and in accordance with industry standards as they prevail in the area, drill, complete and operate oil and gas wells on leasehold acreage owned by PDC or PDC Holdings from time to time as directed by PDC or PDC Holdings (collectively, the "Wells").
3. **No Third Party Beneficiary:** This Agreement is for the benefit of the Parties and is not for the benefit of any third party.
4. **Counterparts:** This Agreement may be simultaneously executed in several counterparts and via facsimile or similar electronic transmittal, each of which shall be deemed to be an original and taken together shall constitute one and the same instrument.

[Signature Page Follows]

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Environmental Protection

IN WITNESS WHEREOF, Mountaineer Keystone, PDC, and PDC Holdings have caused their duly authorized representatives to execute this Agreement as of the Effective Date.

MOUNTAINEER KEYSTONE LLC

By: [Signature]
Name: Robert Kozel
Title: CEO

PDC MOUNTAINEER, LLC

By: [Signature]
Name: Robert Kozel
Title: CEO

PDC MOUNTAINEER HOLDINGS, LLC

By: [Signature]
Name: Robert Kozel
Title: CEO

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

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

Date of Notice: 02/03/2017 **Date Permit Application Filed:** 02/06/2017

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 certificate of approval 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 method of delivery that requires a receipt or signature confirmation, copies of the application, the erosion and sediment control plan required by section seven of this article, and the well 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; (2) The owners of 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 be used for roads or other land disturbance as described in the erosion and sediment control plan submitted pursuant to subsection (c), section seven of this article; (3) The coal owner, operator or 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 seams; (4) The owners of 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 be used for the placement, construction, enlargement, alteration, repair, removal or abandonment of any impoundment or pit as described in section nine of this article; (5) Any surface owner or water purveyor who is known to the applicant to have a water well, spring or water supply source located within one thousand five hundred feet of the center of the well pad which is used to provide water for consumption by humans or domestic animals; and (6) The operator of any natural gas storage field within which the proposed well 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 this section hold interests in the lands, the applicant may serve the documents required upon the person described in the records of the sheriff required to be maintained pursuant to section eight, 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 notice to a landowner, 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 Safety Plan ("WSSP") 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.

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

SURFACE OWNER(s)

Name: Coalquest Development LLC.
Address: 100 Tygart Drive
Grafton, WV 26354

Name: _____
Address: _____

SURFACE OWNER(s) (Road and/or Other Disturbance)

Name: Coalquest Development LLC
Address: 100 Tygart Drive
Grafton, WV 26354

Name: _____
Address: _____

SURFACE OWNER(s) (Impoundments or Pits)

Name: _____
Address: _____

COAL OWNER OR LESSEE

Name: Coalquest Development LLC.
Address: 100 Tygart Drive
Grafton, WV 26354

COAL OPERATOR

Name: Coalquest Development LLC.
Address: 100 Tygart Drive
Grafton, WV 26354

SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s)

Name: see attached list
Address: see attached list

OPERATOR OF ANY NATURAL GAS STORAGE FIELD

Name: _____
Address: _____

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*Please attach additional forms if necessary

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Arsenal Resources
Coalquest 2 211 Water Purveyors

Ronald Campbell
2248 Wendel Road
Flemington, WV 26347

Southwestern Water District
P.O. Box 98
Flemington, WV 26347

Amy Lipscomb
PO Box 24
Flemington, WV 26347

James Kinsey et ux
2246 Buck Run Road
Flemington, WV 26347

Eddie Lipscomb c/o Judy Lipscomb
2222 Wendel Road
Flemington, WV 26347

Gary & Minna Louise Ross
2217 Wendel Road
Flemington, WV 26347

Ricky L. Fleming c/o Imogene Fleming
2173 Wendel Road
Flemington, WV 26347

Nancy Ketterman
2186 Wendel Road
Flemington, WV 26347

Billy Fleming et al
2175 Wendel Road
Flemington, WV 26347

Randy E. & Marsha Fleming
2173 Wendel Road
Flemington, WV 26347

Deloris Quick
35 Burnt Oak Lane
Fredericksburg, VA 22405

Jeffrey Ketterman
PO Box 295
Simpson, WV 26354

Kevin G. Evanto
78 Station Street
Shinnston, WV 26431

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Environmental Protection

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API NO. 47- 91 - 01334
OPERATOR WELL NO. 211
Well Pad Name: Coalquest 2

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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 a well, foundation 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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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-11(a) may file written comments as to the location or construction of the applicant's proposed well work to the Secretary at:

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

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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.**

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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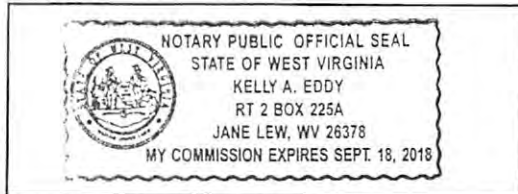
API NO. 47- 91 - 01330
OPERATOR WELL NO. 211
Well Pad Name: Coalquest 2

Notice is hereby given by: WWSRP
Well Operator: Arsenal Resources
Telephone: 724-940-1204
Email: ecarder@arsenalresources.com

Address: 6031 Wallace Road Extension 300
Wexford, PA 15090
Facsimile: 304-848-9134

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.



Subscribed and sworn before me this 10th day of April, 2017.
Kelly A. Eddy Notary Public
My Commission Expires September 18, 2018

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05/26/2017

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: 02/03/2017 **Date Permit Application Filed:** 02/06/2017

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: Coalquest Development LLC.
Address: 100 Tygart Drive
Grafton, WV 26354

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: <u>West Virginia</u>	UTM NAD 83	Easting: <u>576710.441</u>
County: <u>Taylor</u>		Northing: <u>4350300.364</u>
District: <u>Court House</u>	Public Road Access: <u>CR 11 (Wendel Road)</u>	
Quadrangle: <u>Grafton</u>	Generally used farm name: <u>Coalquest</u>	
Watershed: <u>Sand Lick Run of Simpson Creek</u>		

This Notice Shall Include:

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

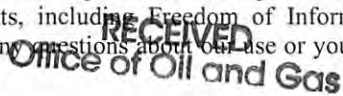
Notice is hereby given by:

Well Operator: Arsenal Resources
Address: 6031 Wallace Road Extension 300
Wexford, PA 15090
Telephone: 724-940-1204
Email: ecarder@arsenalresources.com
Facsimile: 304-848-9134

Authorized Representative: William Veigel
Address: 65 Professional Place
Bridgeport, WV 26330
Telephone: 724-940-1204
Email: bveigel@arsenalresources.com
Facsimile: 304-848-9134

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.



APR 11 2017

WV Department of Environmental Protection

05/26/2017

Mountaineer Keystone, LLC.
Coalquest 2 211H Water Purveyors

Ronald Campbell
2248 Wendel Road
Flemington, WV 26347

Kevin G. Evanto
78 Station Street
Shinnston, WV 26431

Amy Lipscomb
PO Box 24
Flemington, WV 26347

Southwestern Water District
P.O. Box 98
Flemington, WV 26347

Eddie Lipscomb c/o Judy Lipscomb
2222 Wendel Road
Flemington, WV 26347

James Kinsey et ux
2446 Buck Run Road
Flemington, WV 26347

Gary & Minna Louise Ross
2217 Wendel Road
Flemington, WV 26347

Ricky L. Fleming c/o Imogene Fleming
2173 Wendel Rd.
Flemington, WV 26347

Nancy Ketterman
2186 Wendel Road
Flemington, WV 26347

Billy Fleming et al
2175 Wendel Road
Flemington, WV 26347

Randy E. & Marsha Fleming
2173 Wendel Rd.
Flemington, WV 26347

Deloris Quick
35 Burnt Oak Lane
Fredericksburg, VA 22405

Jeffrey Ketterman
P.O. Box 295
Simpson, WV 26354

91-01336

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: 02/03/2017 **Date Permit Application Filed:** 02/06/2017

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: Coalquest Development LLC. Name: _____
Address: 100 Tygart Drive Address: _____
Grafton, WV 26354

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: West Virginia UTM NAD 83 Easting: 4350300.364
County: Taylor Northing: 576710.441
District: Court House Public Road Access: CR 11 (Wendel Road)
Quadrangle: Grafton Generally used farm name: Coalquest
Watershed: Sand Lick Run of Simpson 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/depull.aspx.

Notice is hereby given by:

Well Operator: Mountaineer Keystone, LLC.
Address: 6031 Wallace Road Extension 300
Wexford, PA 15090
Telephone: 724-940-1204
Email: ecarder@mkeystone.com
Facsimile: 304-848-9134

Authorized Representative: Nathan Skeen
Address: 65 Professional Place
Bridgeport, WV 26330
Telephone: 724-940-1200
Email: nskeen@mkeystone.com
Facsimile: 304-848-9134

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FEB 07 2017
WV Department of
Environmental Protection

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.

91-01330

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: 02/03/2017 Date Permit Application Filed: 02/06/2017

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: Coalquest Development LLC.
Address: 100 Tygart Drive
Grafton, WV 26354

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: West Virginia	UTM NAD 83	Easting: 4350300.364
County: Taylor		Northing: 576710.441
District: Court House	Public Road Access: CR 11 (Wendel Road)	
Quadrangle: Grafton	Generally used farm name: Coalquest	
Watershed: Sand Lick Run of Simpson 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: Mountaineer Keystone, LLC.
Telephone: 724-940-1204
Email: ecarder@mkeystone.com

Address: 6031 Wallace Road Extension 300
Wexford, PA 15090
Facsimile: 304-848-9134

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Office of Oil and Gas
FEB 07 2017
WV Department of Environmental Protection

Oil and Gas Privacy Notice:

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WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
Division of Highways

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

Jim Justice
Governor

Thomas J. Smith, P. E.
Secretary of Transportation/
Commissioner of Highways

February 3, 2017

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 Coalquest 2 Pad, Taylor County
Coalquest 2 - 211H

Dear Mr. Martin,

The West Virginia Division of Highways has issued Permit #04-2016-1039 for the subject site to Mountaineer Keystone, LLC for access to the State Road for the well site located off of Taylor County 11 SLS.

The operator has signed a DISTRICT WIDE OIL AND GAS ROAD MAINTENANCE BONDING AGREEMENT for DOH District 4 and provided the required Bond. This operator is currently in compliance with the DOH OIL AND GAS POLICY dated January 3, 2012.

RECEIVED
Office of Oil and Gas

FEB 07 2017

Very Truly Yours,

Gary K. Clayton
Regional Maintenance Engineer
Central Office Oil & Gas Coordinator

WV Department of
Environmental Protection

Cc: Mountaineer Keystone, LLC
CH, OM, D-4
File

91-01336

Coalquest 2 #211H			
FRACTURING ADDITIVES			
	PURPOSE	TRADE NAME	CAS #
Additive #1:	Friction Reducer	WFRA-405	Proprietary
Additive #2:	Scale Inhibitor	SI-1000	7440-21-3
Additive #3:	Biocide	BIOCLEAR 2000	25314-61-8
Additive #4:	Gelling Agent	LGC-15	9000-30-0
Additive #5:	Corrosion Inhibitor	AI-300	111-76-2
Additive #6:	Gel Breaker	AP-One	7727-54-0
Additive #7:	Acid	HCl - 7.5%	7647-01-0

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Office of Oil and Gas
FEB 07 2017
WV Department of
Environmental Protection

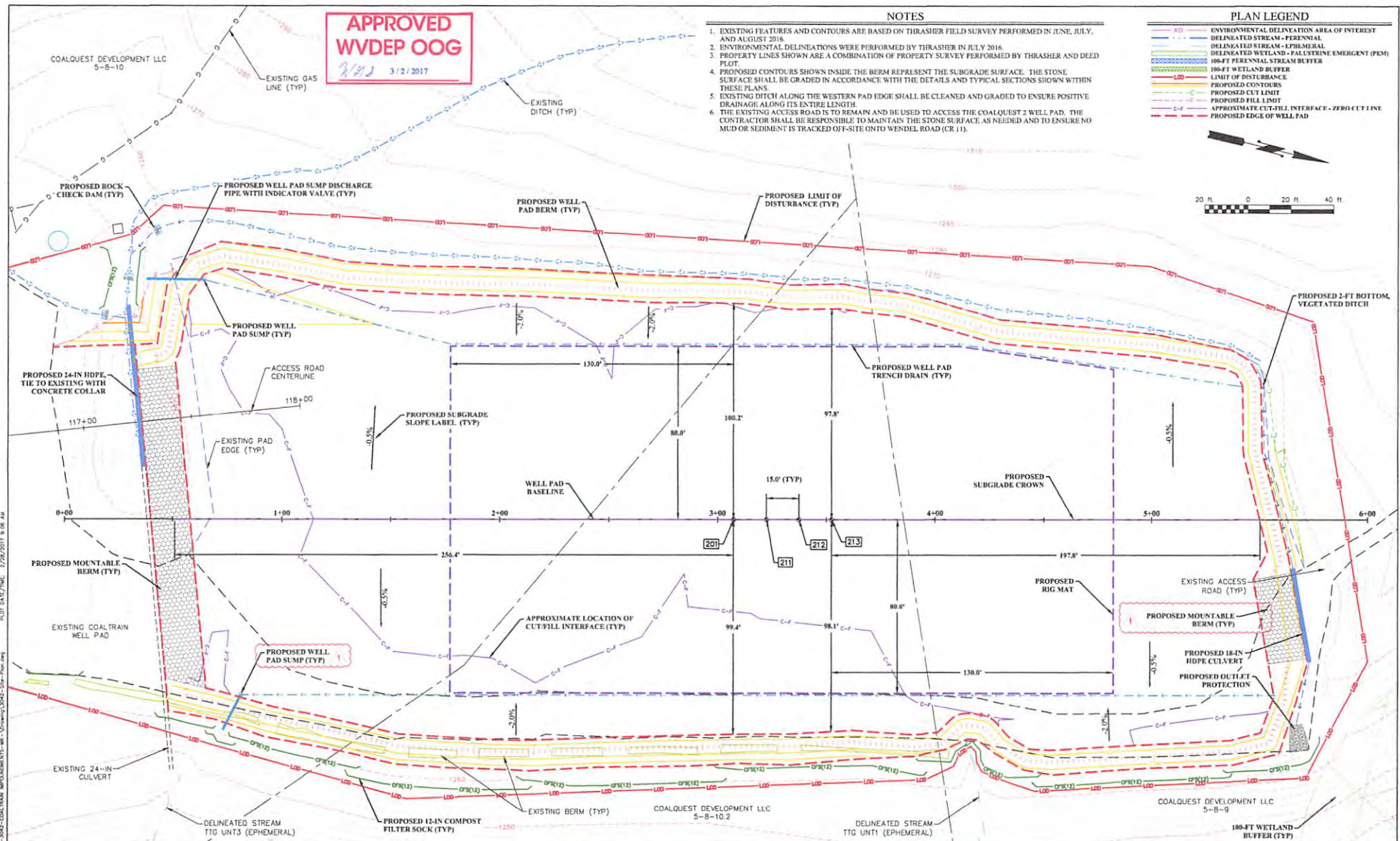
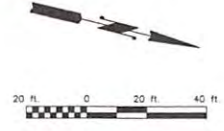
05/26/2017

91-01336

APPROVED
WVDEP OOG
3/2/2017

- NOTES**
1. EXISTING FEATURES AND CONTOURS ARE BASED ON THRASHER FIELD SURVEY PERFORMED IN JUNE, JULY, AND AUGUST 2014.
 2. ENVIRONMENTAL DELINEATIONS WERE PERFORMED BY THRASHER IN JULY 2016.
 3. PROPERTY LINES SHOWN ARE A COMBINATION OF PROPERTY SURVEY PERFORMED BY THRASHER AND DEED PLOT.
 4. PROPOSED CONTOURS SHOWN INSIDE THE BERM REPRESENT THE SUBGRADE SURFACE. THE STONE SURFACE SHALL BE GRADED IN ACCORDANCE WITH THE DETAILS AND TYPICAL SECTIONS SHOWN WITHIN THESE PLANS.
 5. EXISTING DITCH ALONG THE WESTERN PAD EDGE SHALL BE CLEANED AND GRADED TO ENSURE POSITIVE DRAINAGE ALONG ITS ENTIRE LENGTH.
 6. THE EXISTING ACCESS ROAD IS TO REMAIN AND BE USED TO ACCESS THE COALQUEST 2 WELL PAD. THE CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN THE STONE SURFACE AS NEEDED AND TO ENSURE NO MUD OR SEDIMENT IS TRACKED OFF-SITE ONTO WENDEL ROAD (CR 11).

- PLAN LEGEND**
- AD- ENVIRONMENTAL DELINEATION AREA OF INTEREST
 - D- DELINEATED STREAM - PERENNIAL
 - D- DELINEATED STREAM - EPHEMERAL
 - D- DELINEATED WETLAND - PERENNIAL
 - D- DELINEATED WETLAND - EPHEMERAL
 - D- DELINEATED WETLAND - PERENNIAL EMERGENT (PEM)
 - D- 100-FT PERENNIAL STREAM BUFFER
 - D- 100-FT WETLAND BUFFER
 - L- LIMIT OF DISTURBANCE
 - C- PROPOSED CONTOURS
 - C- PROPOSED CUT LIMIT
 - C- PROPOSED FILL LIMIT
 - C- APPROXIMATE CUT-FILL INTERFACE - ZERO CUTLINE
 - C- PROPOSED EDGE OF WELL PAD



LAYOUT DATE: 03/28/17
 CAD FILE: 16_1030-3042-COALTRAIN IMPROVEMENTS-MK-10166613340-2-16-17.dwg
 PLOT DATE/TIME: 2/28/2017 9:08:44

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APP	BY	DATE	DESCRIPTION
1	JM	03/28/17	ADDED PROPOSED MOUNTABLE BERM AND SUMP LABELS
2	BM	03/28/17	APPROVED FOR PERMITS



SCALE:	DATE:
DRAWN:	DATE:
CHECKED:	DATE:
APPROVED:	DATE:
SURVEY DATE:	
SURVEY BY:	
FIELD BOOK No.:	



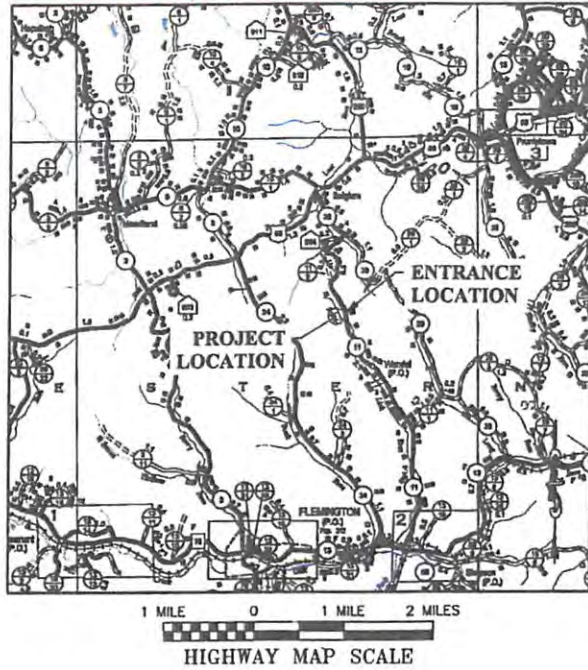
PHASE No.:	
CONTRACT No.:	
PROJECT No.:	101-030-3042

MOUNTAINEER KEYSTONE, LLC
CONSTRUCTION PLANS FOR THE
COALQUEST 2 WELL PAD
TAYLOR COUNTY, WEST VIRGINIA
WELL PAD PLAN

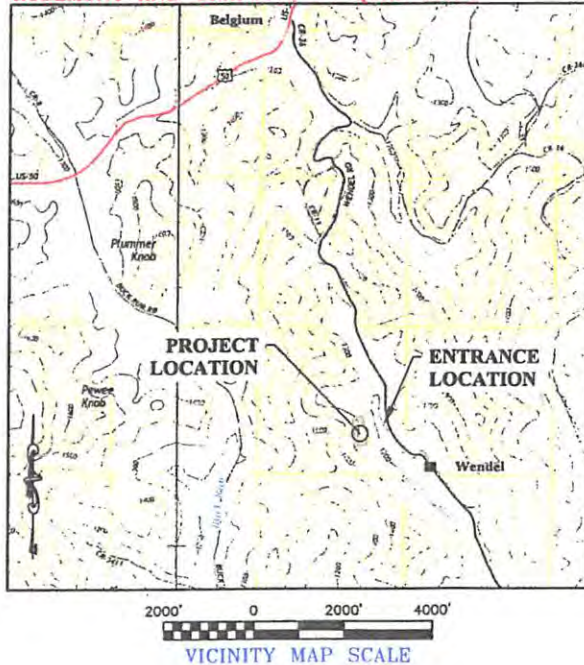
SHEET No. **7**

CAD FILE: R:\010-3042-COAL TRAIN IMPROVEMENTS-MK-Uraving\3042-Cover.dwg
 PLOT DATE/TIME: 1/5/2017 12:38 PM
 USER: brod r. messenger

TAYLOR COUNTY, WV HIGHWAY MAP



ROSEMONT AND GRAFTON, WV QUAD MAPS



ONE CALL UTILITY SYSTEM CONTACT INFO



CONTRACTOR SHALL NOTIFY THE ONE-CALL SYSTEM OF THE INTENDED EXCAVATION OR DEMOLITION NOT LESS THAN FORTY-EIGHT (48) HOURS, EXCLUDING SATURDAYS, SUNDAYS AND LEGAL FEDERAL OR STATE HOLIDAYS, NOR MORE THAN TEN (10) WORK DAYS PRIOR TO THE BEGINNING OF SUCH WORK.

MOUNTAIN CONSTRU COALQU COURT HOUSE DI J

DRIVING DIRECTIONS FROM GRAFTON, WV

1. FROM THE INTERSECTION OF US 119 AND US 50 TRAVEL WEST APPROXIMATELY 7.6 mi ON US 50.
2. TURN LEFT ONTO WENDEL ROAD (CR 36).
3. TRAVEL SOUTH APPROXIMATELY 0.5 mi ON CR 36.
4. BEAR RIGHT TO STAY ON WENDEL ROAD (ROUTE NUMBER CHANGES TO CR 11).
5. TRAVEL SOUTH APPROXIMATELY 1.6 mi ON CR 11.
6. TURN RIGHT ONTO EXISTING ACCESS ROAD.

DISTURBANCE SUMMARY

Property Owner (District - Tax Map - Parcel)	Well Pad Disturbance	Total Disturbance
Coalquest Development LLC (5-8-9)	0.68	0.68
Coalquest Development LLC (5-8-10)	1.30	1.30
Coalquest Development LLC (5-8-10.2)	1.50	1.50
Total Disturbance	3.48	3.48



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05/26/2017

THRASHER KEYSTONE, LLC

PROTECTION PLANS FOR THE

BEST 2 WELL PAD

DISTRICT, TAYLOR COUNTY, WV

JANUARY 2017



SITE COORDINATES

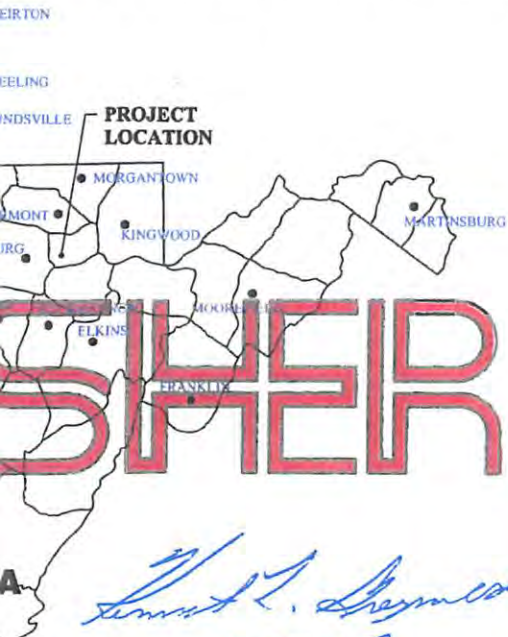
Coordinate Label	Well Pad Center	Access Road Beginning
WV83-N Latitude	N 39.298663°	N 39.299300°
WV83-N Longitude	W 80.110353°	W 80.108570°
WV83-N Northing	291481.608 ft	291710.144 ft
WV83-N Easting	1795773.809 ft	1796280.132 ft
UTM 83-17 Northing	4350297.585 m	4350369.779 m
UTM 83-17 Easting	576711.770 m	576864.874 m

SHEET INDEX

SHEET	DESCRIPTION
1	TITLE SHEET
2	EXISTING CONDITIONS
3	OVERALL SITE PLAN
4-6	EXISTING ACCESS ROAD PLAN AND PROFILE
7	WELL PAD PLAN
8	WELL PAD PROFILE
9-11	WELL PAD SECTIONS
12	GEOMETRIC LAYOUT
13	GEOMETRIC LAYOUT TABLES
14	RECLAMATION PLAN
15	GENERAL NOTES
16-17	TYPICAL SECTIONS
18-20	DETAILS

SURFACE HOLE COORDINATES

Coordinate Label	Well Number			
	201	211	212	213
WV83-N Latitude	N 39.298648°	N 39.298688°	N 39.298728°	N 39.298768°
WV83-N Longitude	W 80.110356°	W 80.110369°	W 80.110381°	W 80.110394°
WV83-N Northing	291476.210 ft	291490.805 ft	291505.401 ft	291519.997 ft
WV83-N Easting	1795773.007 ft	1795769.550 ft	1795766.093 ft	1795762.635 ft
UTM 83-17 Northing	4350295.936 m	4350300.365 m	4350304.795 m	4350309.224 m
UTM 83-17 Easting	576711.553 m	576710.426 m	576709.298 m	576708.171 m



RECEIVED
Office of Oil and Gas
FEB 07 2017
WV Department of Environmental Protection

- APPROVED FOR PERMITS DATE: 01/05/17 BY: RBM
- APPROVED FOR BID DATE: _____ BY: _____
- APPROVED FOR CONSTRUCTION DATE: _____ BY: _____

REVISION NUMBER	REVISED SHEETS	BY	DATE	DESCRIPTION

THRASHER
THE THRASHER GROUP, INC.
600 WHITE OAKS BOULEVARD - BRIDGEPORT, WV 26330
PHONE (304) 624-4108 • FAX (304) 624-7831

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