

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

Friday, May 05, 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 WILLIAMS 213

47-091-01332-00-00

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: WILLIAMS 213 Farm Name: WILLIAMS, WILLIAM C.

U.S. WELL NUMBER: 47-091-01332-00-00

Horizontal 6A / New Drill

Date Issued: 5/5/2017

Promoting a healthy environment.

API Number:	
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PERMIT CONDITION\$709101352

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. <u>Failure to adhere to the specified permit conditions may result in enforcement action.</u>

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.

API Number:	

PERMIT CONDITIONS4709101332

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.



April 11, 2017

Office of Oil and Gas 601 57th Street SE Charleston, WV 25304

Dear Mr. Brewer:

Please find enclosed the Williams 213 permit forms that required the new company name change. We have changed the company name from Mountaineer Keystone, LLC to Arsenal Resources.

Please let me know if you have any questions or need any additional information.

Thanks,

Kelly Eddy Permitting Specialist

1-304-517-8743 mobile 1-724-940-1218 office

keddy@arsenalresources.com

Office of Oil and Gas

APR 1 1 2017

WV Department of Environmental Protection WW-6B (04/15)

API NO. 47	
OPERATO	R WELL NO. 213
Well Pad	Name: Williams

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

1) Well Operator: Arsen	al Resources	494519412	Taylor	Fetterma	Gladesville 7.5'
		Operator ID	County	District	Quadrangle
2) Operator's Well Numb	er: 213	Well P	ad Name: Wi	lliams	
3) Farm Name/Surface O	wner: Williams C Wi	lliams Public Ro	oad Access: V	Vhiteday Rd	
4) Elevation, current grou	nd: 1804	Elevation, propose	d post-constru	ction: 1800	
5) Well Type (a) Gas Other	X Oil	Un	derground Sto	rage	
(b)If Gas	Shallow X Horizontal X	Deep	-		
6) Existing Pad: Yes or N	100111111111111111111111111111111111111				
7) Proposed Target Forma Marcellus Shale, 7744ft		the state of the s	The second second	l Pressure(s):	
8) Proposed Total Vertica	l Depth: 7826ft				
9) Formation at Total Ver		us Shale			
10) Proposed Total Measu	ired Depth: 14553f	t			
11) Proposed Horizontal I	Leg Length: 5960ft				
12) Approximate Fresh W	ater Strata Depths:	600ft			
13) Method to Determine	Fresh Water Depths:	Offsetting wells reported w	rater depths (091-002	264, 091-00576, 091-0	1265, 091-01267, 091-01269)
14) Approximate Saltwate	er Depths: 910'				
15) Approximate Coal Se	am Depths: Bakerstown - 115	, Brush Creek – 216', Upper Freeport – 2	83', Lower Freeport – 340 L	lace Kittenning – 405°, Middle F	Kittanning – 455', Lower Kittanning – 487'
16) Approximate Depth to			None know	Oil and Ga	8
17) Does Proposed well lo directly overlying or adjace		9 Yes	APR	1 1 2017 No. None kno	wn
(a) If Yes, provide Mine	Info: Name:		renonment	ariment of al Protection	
	Depth:			CIIOP)
	Seam:				
	Owner:				

WW-6B	
(04/15)	

API NO. 47	
OPERATOR WELL NO. 213	
Well Pad Name: Williams	

18)

CASING AND TUBING PROGRAM

ТҮРЕ	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#	14,553'	14,553'	TOC @ 1,450'
Tubing							
Liners							

Termed I Spyrolde 4-10-17

ТҮРЕ	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"	0.38"	2730	0	Class A, 3% CaCl2	1.20
Coal							
Intermediate	9.625"	12.25"	0.395"	3950psi	0	Class A, 2% CaCl2	1.29
Production	5.5"	8.5-8.75	0.361"	12,640psi	9500	Type 1	1.64/1/32
Tubing					5000		
Liners					N/A		

	PACKERS	Office RECEIVED
Kind:		Office Of OII and Gas
Sizes:		140 1 1 2017
Depths Set:		Environmental protection
		rection

WW-6E	3
(10/14)	

API NO. 47	
OPERATOR	WELL NO. 213
Well Pad N	ame: Williams

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 with 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): 26.19
- 22) Area to be disturbed for well pad only, less access road (acres): 6.71

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 1,800', there will be no centralizers from 1,800' 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 the surface with Class A cement and no greater than 1% CaCl (calcium chloride). The 9-5/8" casing will be cemented to the surface with Type 1 cement, & no greater than 3% calcium chloride. The 5-1/2" producing styling styling be cemented back to 1,450' (+/- 200' above the casing shoe for the 9-5/8") with Type 1 or Class A cement retarder (to extend pumpability) cellophane fisked for fluid loss, Bentonite gel has an extender (increased pumpability and fluid loss), a defoaming agent to decrease cement foaming during mixing to ensure the cement is of proper weight to placement and possibility 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 estation. 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 freshwater to KOP. At KOP, the wellbore will be loaded with synthetic dill based mild, 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 strands 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 re-run 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.

R E K O	ENAL		Arsenal Resour Williams 213 Casing Desig Directional Plan #	3 n	
Other Names: Surface Location: Bottom Hole Location: Total Depth:	N/A TBD TBD 14,553 MD (ft) 7,826 TVD (ft)			County: State: AFE #: RKB:	Preston West Virginia XX API#: XX 21
Logs	Significant Formations (TVD)	Depth (ft) MD	Depth (ft) TVD	Ground Level: Hole Size	Casing and Mud Directional & Surveys Cement Drlg /Csg Point
None	Section 1		Drive Pipe		
		80	80	24" 94# H-40 STC	Vertical
None	Section 2		Floc	TOC	Floc Water Cement: Type 1 489 Sacks w/ 30% Excess : Surface (top off if needed)
Possible CBL after cement job		650	650	13 3/8" 54.5# J-55 STC	ment volumes are estimates Vertical
None	Section 3		Floc	TOC: Si	Floc Water Cement: Type 1 678 Sacks w/ 50% Excess urface (top off if needed) ment volumes are estimates
Possible CBL after cement job		1,600	1,600	9 5/8" 40# J-55 LTC	Vertical
	Section 4		Floc	Mud Data Floc Water Floc Water 11.5-12.0 ppg SOBM	From To 80 1600 1600 7,592 7,592 14,553
				Bit Data 17-1/2" & 12 1/4" PDC 8- 3/4" (PDC) 8- 1/2" (PDC) Directional Data	From To 80 1,000 1,000 8,592 8,592 14,553 See Directional Plan
			ОВМ		
	Big Lime		1,059		
	1st Elk Siltstone		4,499		
	Tully Lime		7,479		
	Purcell (Limestone) Lower Marcellus		7,775	Cement: Type 1 1.2 ft3/sack +10% Exs in 0	DH = 2516 sacks
	Lower marcenus				TOC: 1,450 ft ment volumes are estimates
	14,553 MD 7826 TVD				5 1/2" 20# P-110 VAR
Revision Date	Last Revised: 10-Apr-17 Jarrett Toms		Note: Not drawn to so	RECEIVE OF OIL	Cement Outside Casing Seal Assembly in Annulus

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Wv Department of Environmental Protection



Purpose

The purpose of this pad-specific Hydraulic Fracturing Monitoring Plan is to identify and notify conventional well operators near Arsenal Resources (ARSENAL RESOURCES) hydraulic fracturing in Preston County, WV prior to hydraulic fracturing at the following ARSENAL RESOURCES wells on the Williams 213 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 7800 'TVD) and existing conventional natural gas wells in partially-depleted, relatively high permeability reservoirs at depths shallower than the Marcellus.

ARSENAL RESOURCES has determined there are no existing active or inactive wells within the 500' offset of the Williams 213 wellbore.

Office of Oil and Gas

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WV Department of Environmental Protection

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Operator's Well No. Williams 213

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) Whiteday Creek	Quadrangle Gladesville 7.5'
Do you anticipate using more than 5,000 bbls of water to comp	olete the proposed well work? Yes No
Will a pit be used? Yes No	
If so, please describe anticipated pit waste: Produce	ed Water
Will a synthetic liner be used in the pit? Yes √	No If so, what ml.? 60 mil
Proposed Disposal Method For Treated Pit Wastes:	
Land Application Underground Injection (UIC Perm Reuse (at API Number Various Off Site Disposal (Supply form WV Other (Explain	it Number) W-9 for disposal location)
	pop system will contain all of the drilling medium and cuttings on location and be taken to a landfill
Drilling medium anticipated for this well (vertical and horizon	tal)? Air, freshwater, oil based, etc. Vertical: Freshwater, Horizontal: oil based mud
-If oil based, what type? Synthetic, petroleum, etcS	
Additives to be used in drilling medium? Bentonite, Soap & Polyme	er Sticks, Soda Ash, Sodium Bicarbonate, Defoamer, Base Oil, Emulsifiers, Lime, & Barite
Drill cuttings disposal method? Leave in pit, landfill, removed	d offsite, etc. Landfill
-If left in pit and plan to solidify what medium will be	e used? (cement, lime, sawdust)_N/A
-Landfill or offsite name/permit number? Advanced D	isposal Services, Chestnut Valley Landfill
Permittee shall provide written notice to the Office of Oil and West Virginia solid waste facility. The notice shall be provide where it was properly disposed.	Gas of any load of drill cuttings or associated waste rejected at any d within 24 hours of rejection and the permittee shall also disclose
on August 1, 2005, by the Office of Oil and Gas of the West V provisions of the permit are enforceable by law. Violations	conditions of the GENERAL WATER POLLUTION PERMIT issued diriginia Department of Environmental Protection. I understand that the of any term or condition of the general permit and/or other applicable by examined and am familiar with the information submitted on this ed on my inquiry of those individuals immediately responsible for true, accurate, and complete. I am aware that there are significant with the product of the complete of the comple
	· · · · · · · · · · · · · · · · · · ·
Subscribed and sworn before me this 7th day of	
Kelly G. Eddy My commission expires September 18	Notary Public OFFICIAL SEAL Notary Public OFFICIAL SEAL STATE OF WEST VIRGINIA KELLY A, 2501Y AND LEW MY 1005 (000)

Field Reviewed?

V Yes

Proposed Revegetation Treatme	ent: Acres Disturbed 8.50	Prevegetation pH 6.8	average
	Tons/acre or to correct to pH		
Fertilizer type 10-20-	The second second second second second		
Fertilizer amount 500		s/acre	
Mulch 2	Tons/a		
	Seed	Mixtures	
Тетр	oorary	Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Annual Rye	40	Swisher Meadow Mix	100
Field Bromegrass	40		
Winter Rye	168		
provided). If water from the pit	will be land applied, include din	ation (unless engineered plans including the nensions (L x W x D) of the pit, and dimensions (L	nis info have been nsions (L x W), and
Attach: Maps(s) of road, location, pit an provided). If water from the pit acreage, of the land application Photocopied section of involved	ad proposed area for land applica will be land applied, include din area. 17.5' topographic sheet.	nensions (L x W x D) of the pit, and dimen	nis info have been nsions (L x W), and
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WILLIAMS #213 WELL PAD SITE SAFETY PLAN

Prepared For:
ARSENAL RESOURCES

Prepared By:

CIVIL & ENVIRONMENTAL CONSULTANTS, INC. BRIDGEPORT, WV

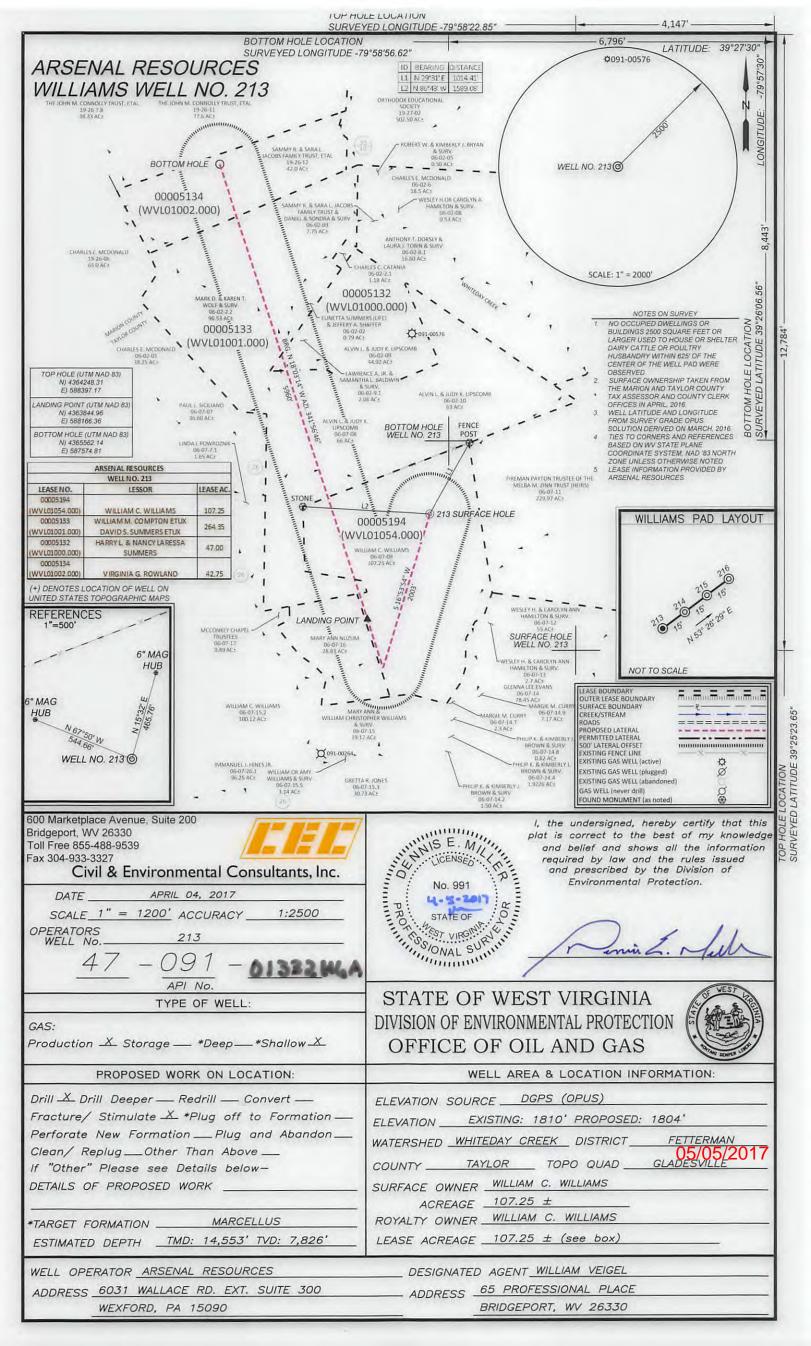
CEC Project 154-452

Office of Oil and Gas

APR 11 2017

APRIL 2017





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 List



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: Eddie Carder

Its: Permitting Manager

Letter Designation/Number Designation on Plat	Grantor, Lessor, Assignor, etc.	nor, etc. Grantee, Lessee, Assignee, etc.	Royalty	Book/Page	Acreage
00005194 (WVL01054.000)	William C. Williams, married, dealing in his sole and separate property	PDC Mountaineer, LLC	15.00%	64/659	107.25
	PDC Mountaineer, LLC	River Ridge Energy, LLC			
00005133 (WVL01001.000)	William M. Compton and Doris L. Compton, his wife (3/4 interest); David S. Summers and Eunetta J. Summers, his wife (3/4 interest)	Pepper Resources, Inc.	12.50%	42/595	264.35
	Pepper Resources, Inc.	Pepper Development, LLC		34/397 34/398	
	Penpecuevelopment, LLC	PDC Mountaineer, LLC		31/667 34/575	
	O Poc Mountaineer, LLP	River Ridge Energy, LLC			
00005132 (WVL01000.000)	Harry & Summers and Name Laressa Summers his wife	Pepper Resources, Inc.	12.50%	42/504	47
	Pepper Resources, Inc.	Pepper Development, LLC		34/397 34/398	
	Pepper Development, LLC	PDC Mountaineer, LLC		31/667	
	PDC Mountaineer, LLC	River Ridge Energy, LLC			
00005134 (WVL01002.000)	Virginia G. Rowland, widow	Pepper Resources, Inc.	12.50%		42.75
	Pepper Resources, Inc.	Pepper Development, LLC		34/397 34/398	
	Pepper Development, LLC	PDC Mountaineer, LLC		31/667	
	PDC Mountaineer, LLC	River Ridge Energy, LLC			

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

Name: Joel E. Symonds

Title: Vice President - Land

RIVER RIDGE ENERGY, LLC

Name: Joel E. Symonds

Title: Vice President - Land

RIVER RIDGE HOLDINGS, LLC

Name: Joel E. Symonds

Title: Vice President - Land



April 4, 2017

Mr. James Martin, Chief of Oil and Gas WV DEP 601 57th Street, SE Charleston, WV 25301

RE: Ownership of Roadways; Williams Pad

Mr. Martin:

In preparation of filing a permit application for the above referenced well, the Title Department of Arsenal Resources has conducted a thorough title examination in order to determine the ownership of the oil and gas underlying all roadways crossed by the proposed wells. The findings of the title examinations show that that the roadways crossed by the proposed wells are right of ways, with the oil and gas being owned and covered by the leaseholds identified on the plat for the proposed wells.

If you have any questions, concerns or need further information, please do not hesitate to contact me at the address listed below.

Sincerely,

Coty Brandon
Sr. Title Attorney

Spandon

Environment of Store of the Sto

Date of Notice	Certification: 12/21/2016	A	API No. 47	'	
			-	Well No. 213	
	_	V	Vell Pad N	lame: Williams	
Notice has be		20 () 1			
below for the tr	provisions in West Virginia Code § ract of land as follows:	22-6A, the Operator has provid	ded the req	uired parties w	vith the Notice Forms listed
	West Virginia	F	Easting:	588397.17	
	Taylor		Northing:	4364248.31	
	Fetterman	Public Road Acces	•	Whiteday Road	
Quadrangle:	Gladesville 7.5	Generally used farm	n name:	Williams	
	Whiteday Creek				
it has provided information req of giving the s requirements o Virginia Code §	he secretary, shall be verified and shall the owners of the surface describ- quired by subsections (b) and (c), section and surface owner notice of entry to surface owner notice of entry to subsection (b), section sixteen of § 22-6A-11(b), the applicant shall te ave been completed by the applicant	ed in subdivisions (1), (2) and ction sixteen of this article; (ii) vey pursuant to subsection (a) this article were waived in winder proof of and certify to the	d (4), subs that the red), section to writing by	ection (b), sec quirement was en of this artic the surface ow	ction ten of this article, the deemed satisfied as a result cle six-a; or (iii) the notice yner; and Pursuant to West
that the Opera	Vest Virginia Code § 22-6A, the Operator has properly served the required CK ALL THAT APPLY		s Notice Co	ertification	OOG OFFICE USE ONLY
☐ 1. NOTI	CE OF SEISMIC ACTIVITY or	☐ NOTICE NOT REQUIRE SEISMIC ACTIVITY WAS			☐ RECEIVED/ NOT REQUIRED
☐ 2. NOTI	ICE OF ENTRY FOR PLAT SURV	EY or 🔳 NO PLAT SURVE	Y WAS CO	NDUCTED	☐ RECEIVED
■ 3. NOTI	ICE OF INTENT TO DRILL or	☐ NOTICE NOT REQUIRE NOTICE OF ENTRY FOR PLWAS CONDUCTED or			☐ RECEIVED/ NOT REQUIRED
		☐ WRITTEN WAIVER BY (PLEASE ATTACH)		CE OWNER	
■ 4. NOTI	ICE OF PLANNED OPERATION	PLEASE ATTACH)			☐ RECEIVED
■ 5. PUBL	LIC NOTICE		2		☐ RECEIVED
■ 6. NOTI	ICE OF APPLICATION				☐ 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 Classil 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.

VVV Department of Environmental Protection By:

Its:

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: Arsenal Resources

William Veigel

Designated Agent

Telephone: 724-940-1204 Address:

65 Professional Place, Suite 200

Bridgeport, WV 26330

Facsimile: 304-848-9134

Email: ecarder@arsenalresources.com

NOTARY SEAL NOTARY PUBLIC OFFICIAL SEAL STATE OF WEST VIRGINIA KELLY A. EDDY RT 2 BOX 225A

JANE LEW, WV 26378 AY COMMISSION EXPIRES SEPT. 18, 2018

Subscribed and sworn before me this 7th day of Apr

My Commission Expires

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.



WW-6A (9-13)

API NO. 47-			
OPERATOR WE	LL NO.	213	Ξ
Well Pad Name:	Williams		

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

Notice Time Requirement: notice sl	nall be provided no later	than the filin	g date of permit app	lication.	
Date of Notice: 12/21/2016 Date Peri	nit Application Filed: 1	12/22/2016			
PERMIT FOR ANY WELL WORK	CERTIFICATE OF A				
Delivery method pursuant to West	Virginia Code § 22-6A-	-10(b)			
☐ PERSONAL ☐ REGIST	TERED ME?	THOD OF DI	ELIVERY THAT RE	OUIRES A	
SERVICE MAIL			GNATURE CONFIR		
registered mail or by any method of deli- sediment control plan required by section the surface of the tract on which the we- oil and gas leasehold being developed by described in the erosion and sediment of operator or lessee, in the event the tract more coal seams; (4) The owners of reconsistency of the well work, if the surface tract is to be used impoundment or pit as described in sect have a water well, spring or water supplied provide water for consumption by human proposed well work activity is to take plus subsection (b) of this section hold interest records of the sheriff required to be main provision of this article to the contrary, and the contrary, and the contrary, and the contrary of the sheriff required to be main provision of this article to the contrary, and the contrary of the contrary	on seven of this article, and it is or is proposed to be long the proposed well work, ontrol plan submitted purso of land on which the well ord of the surface tract or sed for the placement, contion nine of this article; (5) y source located within or ans or domestic animals; a lace. (c)(1) If more than the lands, the application of the pursuant to section to the pursuant to section to the proposed in the lands of the pursuant to section to the proposed in the lands of the pursuant to section to the proposed in the propo	d the well pla ocated; (2) The , if the surface suant to subse proposed to letracts overlying struction, enlar) Any surface the thousand find (6) The opere tenants in the cant may serve the region of the control of	to each of the following owners of record of the tract is to be used for etion (c), section sever be drilled is located [sing the oil and gas lease argement, alteration, recowner or water purvey we hundred feet of the erator of any natural gas common or other co-ce the documents requires one, chapter eleven-allandowner, unless the Vell Site Safety Plan (*	ng persons: (1) The he surface tract or roads or other land of this article; (3) is known to be a hold being developair, removal or all or who is known to center of the well as storage field with the surface of this code. (2) Note that the left will be the surface of the surface of the surface of the surface of this code. (2) Note the surface of the	the owners of record of a tracts overlying the disturbance as a tracts overlying the disturbance as a tracts owner, underlain by one or ped by the proposed bandonment of any to the applicant to pad which is used to thin which the described in a described in the Notwithstanding any andowner. W. Va.
☐ Application Notice ☐ WSSP No	tice	ce 🛮 Well P	lat Notice is hereby	provided to:	
SURFACE OWNER(s)		COAL	OWNER OR LESSEI	187	
Name: William C. Williams		Name:		-0	20
Address: 3642 Cherry Run Road		Address:		- 10	_
Grafton, WV 26354		-		/	4
Name:			OPERATOR		0_
Address:		Name:			27.4
		Address:			100
SURFACE OWNER(s) (Road and/o	r Other Disturbance)	-			17.0
Name: William C. Williams			CE OWNER OF WA		5
Address: 3642 Cherry Run Road			WATER PURVEYO	R(s)	
Grafton, WV 26354			lliam C. Williams		_
Name:			3642 Cherry Run Road		
Address:			Grafton, WV 26354		- ven trans
- CLIDEL OF OUR ISSUE			TOR OF ANY NATI		RAGE FIELD
SURFACE OWNER(s) (Impoundme	ents or Pits)	Name:			ENEINER .
Name: William C. Williams		Address:		Oillies	et Oll and Gas
Address: 3642 Cherry Run Road			7 707		-
Grafton, WV 26354		*Please at	tach additional forms	if necessary	EC 2 8 2016
				D.	EC Z D EVIU

V/V Light thant of Eponemical 05/05/2017

API NO. 47-	
OPERATOR WE	ELL NO. 213
Well Pad Name:	Williams

Notice Time Requirement: notice shall be provi	ided no later than the filing date of permit application.
Date of Notice: 12/21/2016 Date Permit Applica Notice of:	tion Filed: 12/22/2016
PERMIT FOR ANY CERTIFI	ICATE OF APPROVAL FOR THE
	RUCTION OF AN IMPOUNDMENT OR PIT
Delivery method pursuant to West Virginia Co	ode § 22-6A-10(b)
☐ PERSONAL ☐ REGISTERED	METHOD OF DELIVERY THAT REQUIRES A
SERVICE MAIL	RECEIPT OR SIGNATURE CONFIRMATION
sediment control plan required by section seven of the surface of the tract on which the well is or is pro- oil and gas leasehold being developed by the proposition described in the erosion and sediment control plan is operator or lessee, in the event the tract of land on with more coal seams; (4) The owners of record of the surface tract is to be used for the plant impoundment or pit as described in section nine of the have a water well, spring or water supply source local provide water for consumption by humans or domest proposed well work activity is to take place. (c)(1) It is subsection (b) of this section hold interests in the lar records of the sheriff required to be maintained pursupprovision of this article to the contrary, notice to a licated R. § 35-8-5.7.a requires, in part, that the operation is the section in the contrary in the contrary.	quires a receipt or signature confirmation, copies of the application, the erosion and his article, and the well plat to each of the following persons: (1) The owners of record of posed to be located; (2) The owners of record of the surface tract or tracts overlying the red well work, if the surface tract is to be used for roads or other land disturbance as submitted pursuant to subsection (c), section seven of this article; (3) The coal owner, which the well proposed to be drilled is located [sic] is known to be underlain by one or reface tract or tracts overlying the oil and gas leasehold being developed by the proposed accement, construction, enlargement, alteration, repair, removal or abandonment of any his article; (5) Any surface owner or water purveyor who is known to the applicant to atted within one thousand five hundred feet of the center of the well pad which is used to tic animals; and (6) The operator of any natural gas storage field within which the former than three tenants in common or other co-owners of interests described in the used to section eight, article one, chapter eleven-a of this code. (2) Notwithstanding any cen holder is not notice to a landowner, unless the lien holder is the landowner. W. Va. ator shall also provide the Well Site Safety Plan ("WSSP") to the surface owner and any divater 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)	COAL OWNER OR LESSEE
Name: John V. Zinn II	Name:
Address: 192 Zinn Road Grafton, WV 26354	Address:
Name:	COAL OPERATOR
Address:	Name:
	Address:
SURFACE OWNER(s) (Road and/or Other Dist	
Name: John V. Zinn II	☐ SURFACE OWNER OF WATER WELL
Address: 192 Zinn Road	AND/OR WATER PURVEYOR(s)
Grafton, WV 26354	
Name:	Address:
Address:	
SURFACE OWNER(s) (Impoundments or Pits)	OPERATOR OF ANY NATURAL GAS STORAGE FIELD
	1.43
Vame:	Address: Ciliga and Gas
Address:	*Please attach additional forms if necessary
	DEC 2 8 2015
	DEC 7 6 EUR

API NO. 47-		
OPERATOR WE	ELL NO. 213	
Well Pad Name:	Williams	

Noti	ce Time Requirement: notice shall be provided no	later than the filing date of permit application.
	e of Notice: 12/21/2016 Date Permit Application F	iled: <u>12/22/2016</u>
V		OF APPROVAL FOR THE ON OF AN IMPOUNDMENT OR PIT
Deliv	very method pursuant to West Virginia Code § 2	22-6A-10(b)
	PERSONAL REGISTERED	METHOD OF DELIVERY THAT REQUIRES A
	SERVICE MAIL	RECEIPT OR SIGNATURE CONFIRMATION
sedim the su oil an descri- opera more well v impore have a provide propo subse- record provis Code	nent control plan required by section seven of this arti- urface of the tract on which the well is or is proposed to digas leasehold being developed by the proposed wel- ibed in the erosion and sediment control plan submitted tor or lessee, in the event the tract of land on which the coal seams; (4) The owners of record of the surface to work, if the surface tract is to be used for the placement andment or pit as described in section nine of this arti- a water well, spring or water supply source located will de water for consumption by humans or domestic anir- sed well work activity is to take place. (c)(1) If more ction (b) of this section hold interests in the lands, the dis of the sheriff required to be maintained pursuant to sion of this article to the contrary, notice to a lien hold	receipt or signature confirmation, copies of the application, the erosion and cle, and the well plat to each of the following persons: (1) The owners of record of to be located; (2) The owners of record of the surface tract or tracts overlying the lower, if the surface tract is to be used for roads or other land disturbance as each pursuant to subsection (c), section seven of this article; (3) The coal owner, he well proposed to be drilled is located [sic] is known to be underlain by one or ract or tracts overlying the oil and gas leasehold being developed by the proposed and, construction, enlargement, alteration, repair, removal or abandonment of any cle; (5) Any surface owner or water purveyor who is known to the applicant to thin one thousand five hundred feet of the center of the well pad which is used to mals; and (6) The operator of any natural gas storage field within which the than three tenants in common or other co-owners of interests described in applicant may serve the documents required upon the person described in the section eight, article one, chapter eleven-a of this code. (2) Notwithstanding any ler is not notice to a landowner, unless the lien holder is the landowner. W. Va. all also provide the Well Site Safety Plan ("WSSP") to the surface owner and any resting as provided in section 15 of this rule.
☑ Ap	oplication Notice ☑ WSSP Notice ☑ E&S Plan	Notice Well Plat Notice is hereby provided to:
	RFACE OWNER(s)	☐ COAL OWNER OR LESSEE
	Melba Zinn Trust - Peyton Fireman Trustee	Name:
Addre	Morgantown, WV 26505	Address:
Name		□ COAL OPERATOR
Addre	ess:	Name:
- 011		Address:
SUI	RFACE OWNER(s) (Road and/or Other Disturband ; Melba Zinn Trust - Peyton Fireman Trustee	
	: Melba Zinn Trust - Peyton Fireman Trustee	SURFACE OWNER OF WATER WELL
Adure	Morgantown, WV 26505	AND/OR WATER PURVEYOR(s)
Vame		Name:
Addre	:	Address:
	New years	OPERATOR OF ANY NATURAL GAS STORAGE FIELD
SUF	RFACE OWNER(s) (Impoundments or Pits)	Name:
		Address: Call and Gas
Addre	ss:	
		*Please attach additional forms if necessary

05/05/2017

API NO. 47-	- 1
OPERATOR WE	ELL NO. 213
Well Pad Name:	Williams

Notice Time Requirement: notice shall be provided no later than the filing date of permit application. Date of Notice: 12/21/2016 Date Permit Application Filed: 12/22/2016 Notice of: PERMIT FOR ANY ☑ CERTIFICATE OF APPROVAL FOR THE WELL WORK CONSTRUCTION OF AN IMPOUNDMENT OR PIT Delivery method pursuant to West Virginia Code § 22-6A-10(b) REGISTERED ☐ PERSONAL ☑ METHOD OF DELIVERY THAT REQUIRES A SERVICE MAIL. 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 crosion 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) COAL OWNER OR LESSEE Name: Name: Blackhawk Land and Resources, LLC Address: 3228 Summit Square Place, Suite 180 Address: Lexington, KY 40509 Name: COAL OPERATOR Address: Name: Address: SURFACE OWNER(s) (Road and/or Other Disturbance) Name: I SURFACE OWNER OF WATER WELL Address: AND/OR WATER PURVEYOR(s) Name: Name: Address: Address: ☐ OPERATOR OF ANY NATURAL GAS STORAGE FIELD ☐ SURFACE OWNER(s) (Impoundments or Pits) Name: Address: Name: Address: *Please attach additional forms if necessary DEC 2 8 2016

WW-6A
(9-13)

API NO. 47		
OPERATOR WI	ELL NO.	213
Well Pad Name:	Willams	

Noti	ice Time Requirement: notice shall be provided no la	ter than the filing date of permit application.
	e of Notice: 12/21/2016 Date Permit Application File ice of:	d: <u>12/22/2</u> 018
7		F APPROVAL FOR THE N OF AN IMPOUNDMENT OR PIT
Deli	very method pursuant to West Virginia Code § 22-	6A-10(b)
	PERSONAL REGISTERED A	METHOD OF DELIVERY THAT REQUIRES A
		RECEIPT OR SIGNATURE CONFIRMATION
oil an description of the state	triace of the tract on which the well is or is proposed to be ad gas leasehold being developed by the proposed well we ited in the erosion and sediment control plan submitted put or or lessee, in the event the tract of land on which the vector or lessee, in the event the tract of land on which the vector or lessee, in the event the tract of land on which the vector of the surface tract work, if the surface tract is to be used for the placement, undment or pit as described in section nine of this article a water well, spring or water supply source located within the water for consumption by humans or domestic animal used well work activity is to take place. (c)(1) If more that cition (b) of this section hold interests in the lands, the applies of the sheriff required to be maintained pursuant to section of this article to the contrary, notice to a lien holder R. § 35-8-5.7.a requires, in part, that the operator shall a purveyor or surface owner subject to notice and water te	
	oplication Notice	COAL OWNER OR LESSEE Name: Address: COAL OPERATOR
	:	Name:
Addre	 :::::::::::::::::::::::::::::::::::	Address:
Name		= COAL ONED A FOR
	:: ::	Name:
		Name:Address:
	RFACE OWNER(s) (Road and/or Other Disturbance)	Address: SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s) Name: Glenna Lee Evans
Name	:	☑ SURFACE OWNER OF WATER WELL
Addre	ess:	AND/OR WATER PURVEYOR(s)
		Name: Glenna Lee Evans
ontson Addre		Address: 1023 Hinlde Rd. Grafton, WV 28354
-aat C	ss:	OPERATOR OF ANY NATURAL GAS STORAGE FIELD
SUI	RFACE OWNER(s) (Impoundments or Pits)	Name:
Vame		Address:
Addre	ss:	Ohios of thems. Jac
		*Please attach additional forms if necessary
		DEC 2 8 2016

Vev Department of Environment Pro 05/05/2017

WW-6A (9-13)

API NO. 47-	- 4
OPERATOR WE	ELL NO. 213
Well Pad Name:	Williams

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: 12/21/2016 Date Permit Application Filed: 12/22/2016 Notice of: PERMIT FOR ANY ☑ CERTIFICATE OF APPROVAL FOR THE WELL WORK CONSTRUCTION OF AN IMPOUNDMENT OR PIT Delivery method pursuant to West Virginia Code § 22-6A-10(b) PERSONAL ☐ REGISTERED ☑ METHOD OF DELIVERY THAT REQUIRES A SERVICE MAIL 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) COAL OWNER OR LESSEE Name: Name: Address: Address: COAL OPERATOR Name: Address: Name: Address: SURFACE OWNER(s) (Road and/or Other Disturbance) Name: IT SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s) Address: Name: Mary Ann Nuzum Name: Address: RR. Box 146 Address: Grafton, WV 26354 DOPERATOR OF ANY NATURAL GAS STORAGE FIELD SURFACE OWNER(s) (Impoundments or Pits) Name: Address: Address: *Please attach additional forms if necessary (9 8 Z016

WW-6A (8-13)

API NO. 47-	
OPERATOR WELL NO.	213
Well Pad Name: Williams	

Notice is hereby given:

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

This Notice Shall Include:

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

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

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

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

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

Well Location Restrictions

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

WW-6A	
(8-13)	

API NO. 47	
OPERATOR WELL NO. 213	
Well Dod Nome: Williams	

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

Water Well Testing:

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

Water Testing Laboratories:

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

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

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

Written Comment:

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

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

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



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API NO. 47-___OPERATOR WELL NO. 213
Well Pad Name: Williams

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.



Notice is hereby given by:
Well Operator: Arsenal Resources
Teleph

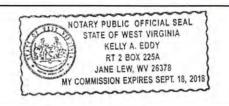
API NO. 47-OPERATOR WELL NO. 213 Well Pad Name: Williams

Telephone: 724-940-1204 Email: ecarder@arsenalresources.com

Address: 6031 Wallace Road Extension, Suite 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@wy.gov.



Subscribed and sworn before me this 7th day of April 2017 Notary Public My Commission Expires September 18, 2018



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.

Date of Notic				t TEN (10) days prior to filing a Application Filed: 12/22/2016	регин аррисации.
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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.

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.

Date of Noti		Notice shall be		st TEN (10) days prior to filing a Application Filed: 12/22/2016	
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Notice is here Pursuant to Vene surface of State: County: District: Quadrangle: Watershed: Pursuant to Pursuant to Pacsimile number of the county of the cou	ereby given: West Virginia Cowner's land for towner's land electronical drilling 1 57th Street, SE	: Code § 22-6A- onic mail addr may be obtain Charleston, W	16(b), this noticess of the opered from the Sec	UTM NAD 83 Easting: Northing: Public Road Access: Generally used farm name: ce shall include the name, addrator and the operator's authorize cretary, at the WV Department of 926-0450) or by visiting www.de	ollows: 588397.17 4364248.31 Whiteday Road Williams ress, telephone number, and if available, ed representative. Additional information of Environmental Protection headquarters, ep.wv.gov/oil-and-gas/pages/default.aspx.
Notice is her Pursuant to Vehe surface of State: County: District: Quadrangle: Watershed: Phis Notice Pursuant to Cacsimile number at the horizont of the Notice ocated at 60 Notice is her well Operator	ereby given: West Virginia Cowner's land for to West Virginia Taylor Fetterman Gladesville 7.5' Whiteday Creek Shall Include West Virginia Comber and electrorizontal drilling 1 57th Street, SE ereby given by or: Arsenal Reso	the purpose of of the content of the	16(b), this notices of the opered from the Sec V 25304 (304-	ntal well on the tract of land as for Easting: Northing: Public Road Access: Generally used farm name: ce shall include the name, addrator and the operator's authorize cretary, at the WV Department of 926-0450) or by visiting www.de Authorized Representative:	ollows: 588397.17 4364248.31 Whiteday Road Williams ress, telephone number, and if available, ed representative. Additional information of Environmental Protection headquarters, ep.wv.gov/oil-and-gas/pages/default.aspx.
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Notice is he Pursuant to V he surface of State: County: District: Quadrangle: Watershed: This Notice Pursuant to Pacsimile nur elated to ho ocated at 60 Notice is he Well Operato Address: Nexford, PA 1	ereby given: West Virginia Cowner's land for towner's land for the land land land land land land land land	the purpose of of the content of the	16(b), this notices of the opered from the Ser	ntal well on the tract of land as for Easting: Northing: Public Road Access: Generally used farm name: ce shall include the name, additator and the operator's authorized retary, at the WV Department of 1926-0450) or by visiting www.de Authorized Representative: Address: Bridgeport, WV 26330	bllows: 588397.17 4364248.31 Whiteday Road Williams ress, telephone number, and if available, ed representative. Additional information of Environmental Protection headquarters, ep.wv.gov/oil-and-gas/pages/default.aspx.
Notice is her Pursuant to Vehe surface of State: County: District: Quadrangle: Watershed: Pursuant to Cacsimile number of the Notice is her Well Operator Address: Wexford, PA 1 Felephone:	ereby given: West Virginia Cowner's land for towner's land electronical drilling land for the street, SE ereby given by the st	the purpose of of the purpose	16(b), this notices of the opered from the Ser	ntal well on the tract of land as for Easting: Northing: Public Road Access: Generally used farm name: ce shall include the name, additator and the operator's authorized retary, at the WV Department of 1926-0450) or by visiting www.do Authorized Representative: Address: Bridgeport, WV 26330 Telephone:	bllows: 588397.17 4364248.31 Whiteday Road Williams ress, telephone number, and if available, ed representative. Additional information of Environmental Protection headquarters, ep.wv.gov/oil-and-gas/pages/default.aspx.
Notice is he Pursuant to V he surface of State: County: District: Quadrangle: Watershed: This Notice Pursuant to Pacsimile nur elated to ho ocated at 60 Notice is he Well Operato Address: Nexford, PA 1	ereby given: West Virginia Cowner's land for towner's land electronical drilling land for the street, SE ereby given by the st	code § 22-6A- conic mail addr may be obtain Charleston, W : urces Road Ext. Suite	16(b), this notices of the opered from the Sec V 25304 (304-	ntal well on the tract of land as for Easting: Northing: Public Road Access: Generally used farm name: ce shall include the name, additator and the operator's authorized retary, at the WV Department of 1926-0450) or by visiting www.de Authorized Representative: Address: Bridgeport, WV 26330	ollows: 588397.17 4364248.31 Whiteday Road Williams ress, telephone number, and if available, ed representative. Additional information of Environmental Protection headquarters, ep.wv.gov/oil-and-gas/pages/default.aspx. Eddie Carder 65 Professional PLace, Suite 200

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 depprivacy officer@wv.gov.

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.

Date of Not	e Requirement: Notice shall be provided at letice: 12/21/2016 Date Permi	t Application Filed: 12/22/2016	
Delivery me	ethod pursuant to West Virginia Code § 22-6	6A-16(b)	
☐ HAND	CERTIFIED MAIL		
DELIV	ERY RETURN RECEIPT REQUI	ESTED	
drilling a hor of this subse subsection m	W. Va. Code § 22-6A-16(b), at least ten days persted or hand delivery, give the surface owner rizontal well: <i>Provided</i> , That notice given purction as of the date the notice was provided to any be waived in writing by the surface owner, ble, facsimile number and electronic mail addresses.	notice of its intent to enter upon to rsuant to subsection (a), section to the surface owner: <i>Provided</i> , ho The notice, if required, shall inc	the surface owner's land for the purpose of en of this article satisfies the requirements wever. That the notice requirements of this lude the name, address, telephone number
	ereby provided to the SURFACE OWNI		
Name: William Address: 3642		Name:	
Grafton, WV 2635		Address:	
		-	
the surface of State: County: District: Quadrangle: Watershed:	West Virginia Code § 22-6A-16(b), notice is howner's land for the purpose of drilling a horizon West Virginia Taylor Fetterman Gladesville 7.5' Whiteday Creek	ontal well on the tract of land as for UTM NAD 83 Easting: Northing: Public Road Access: Generally used farm name:	billows: 588397.17 4364248.31 Whiteday Road Williams
Pursuant to Y facsimile nur related to hor	Shall Include: West Virginia Code § 22-6A-16(b), this note inber and electronic mail address of the oper rizontal drilling may be obtained from the Sec 1 57th Street, SE, Charleston, WV 25304 (304-	ator and the operator's authorized	ed representative. Additional information
	reby given by:	Authorized Representative:	Eddie Carder
Address:	6031 Wallace Road Ext. Suite 300 3	Address:	65 Professional PLace, Suite 200
Wexford, PA 15		Briegeport, WV 26330	CONTROL CONTRO
Telephone:	724-940-1204	Telephone:	724-940-1204
Email:	ecarder@arsenalresources.com	Email:	ecarder@arsenalresources.com
Facsimile:	304-848-9134	Dacsimile:	304-848-9134
The Office of duties. Your	Privacy Notice: Oil and Gas processes your personal informat personal information may disclosed to other management of the control of the con	ion, such as name, address and te	s in the normal course of business or as

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.

Notice Time Date of Not	e Requirement: notice shice: 12/21/2016	nall be provided no Date Permit A	o later than the filin pplication Filed: 12	g date of permi	it application.
Delivery me	ethod pursuant to West	Virginia Code § 2	22-6A-16(c)		
■ CERT	IFIED MAIL		HAND		
20,000	RN RECEIPT REQUEST	TED.	HAND		
KETU	KN RECEIPT REQUES	IED	DELIVERY		
the planned required to b drilling of a damages to t	operation. The notice re e provided by subsection horizontal well; and (3) he surface affected by oil	ery, give the surfa equired by this su (b), section ten of A proposed surfa and gas operation	ce owner whose landsection shall include this article to a sunce use and compens to the extent the contract of the extent of the exte	nd will be used to ude: (1) A copy face owner who asation agreeme damages are con	lication, an operator shall, by certified mail for the drilling of a horizontal well notice of y of this code section; (2) The information use land will be used in conjunction with the ent containing an offer of compensation for inpensable under article six-b of this chapter. isted in the records of the sheriff at the time
Notice is her (at the address Name: William	reby provided to the SUI	RFACE OWNER the sheriff at the t	ime of notice):		
Address: 3642			Name:		
Grafton, WV 2635			Addre	SS:	
Notice is her Pursuant to V operation on State:		6A-16(c), notice is for the purpose of	f drilling a horizont	al well on the tra	well operator has developed a planned act of land as follows:
County:	Taylor		UTM NAD	Northing:	4364248.31
District:	Fetterman		Public Road		Whiteday Road
Quadrangle:	Gladesville 7.5'		Generally us	ed farm name:	Williams
Watershed:	Whiteday Creek		<u> </u>		-
Pursuant to W to be provide horizontal we surface affect information r	ed by W. Va. Code § 22 ell; and (3) A proposed su led by oil and gas operate elated to horizontal drilli located at 601 57 th Stre	2-6A-10(b) to a surface use and contions to the extenting may be obtain	arface owner whos inpensation agreement the damages are coned from the Secre-	e land will be ent containing an ompensable und tary, at the WV	code section; (2) The information required used in conjunction with the drilling of a n offer of compensation for damages to the der article six-b of this chapter. Additional Department of Environmental Protection or by visiting www.dep.wv.gov/oil-and-driveness
Well Operator	T: Arsenal Resources		Address:	6031 Wallace Road E	extension, Suite 300
Telephone:	724-940-1204			Wexford, PA 15090	
Email:	ecarder@arsenalresour.com		Facsimile:	304-848-9134	
The Office of duties. Your p needed to co appropriately	personal information may	be disclosed to regulatory requiparmations If you h	other State agenci rements, including ave any questions	es or third parti Freedom of Ir	telephone number, as part of our regulatory ies in the normal course of business or as information Act requests. Our office will r your personal information, please contact

WW-6A5 (1/12) Operator Well No. Williams 213

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

Notice Time Date of Notic	Requirement: notice s ce: 12/21/2016		o later than the filing pplication Filed: 12/2		application.
Delivery met	thod pursuant to West	Virginia Code § 2	22-6A-16(c)		
■ CERTI	FIED MAIL		HAND		
	RN RECEIPT REQUES	STED	DELIVERY		
return receipt the planned of required to be drilling of a damages to the	requested or hand deliverage provided by subsection horizontal well; and (3 ne surface affected by one	very, give the surfarequired by this sun (b), section ten on (b) A proposed surfared and gas operation	the owner whose land absection shall include this article to a surface use and compens as to the extent the date	I will be used for de: (1) A copy ace owner whose ation agreement amages are com	cation, an operator shall, by certified mail or the drilling of a horizontal well notice of of this code section; (2) The information se land will be used in conjunction with the nt containing an offer of compensation for pensable under article six-b of this chapter. sted in the records of the sheriff at the time
	eby provided to the SI is listed in the records of				
Address: 192 Z					
Grafton, WV 26354	4		10.00		
State: County: District:	the surface owner's land West Virginia Taylor Fetterman	d for the purpose of	UTM NAD 8	Easting: Northing: Access:	588397.17 4364248.31 Whiteday Road
Quadrangle:	Gladesville 7.5'			ed farm name:	Williams
Watershed:	Whiteday Creek				
Pursuant to V to be provide horizontal we surface affectinformation is	ed by W. Va. Code § ell; and (3) A proposed ted by oil and gas oper related to horizontal dr., located at 601 57 th Sfault.aspx.	22-6A-10(b) to a s surface use and co ations to the exten- illing may be obta	surface owner whose empensation agreement the damages are co- lined from the Secret	e land will be on the containing are compensable und tary, at the WV	code section; (2) The information required used in conjunction with the drilling of a n offer of compensation for damages to the der article six-b of this chapter. Additional Department of Environmental Protection or by visiting www.dep.wv.gov/oil-and-extension , Suite 300
Telephone:	724-940-1204			Wexford, PA 15090	
Email:	ecarder@arsenalresqurces.co	om	Facsimile:	304-848-9134	
The Office of	Privacy Notice: 5	your personal info	rmation, such as nam	ne, address and	telephone number, as part of our regulatory ies in the normal course of business or as

WW-6A5 (1/12)

Operator Well No. Williams 213

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

Notice Time Date of Notic	Requirement: notice shall be provide: 12/21/2016 Date Perm		r than the filing ation Filed: 12/2		application.
Delivery met	thod pursuant to West Virginia Co	de § 22-6	A-16(c)		
	FIED MAIL RN RECEIPT REQUESTED	□ HA	ND LIVERY		
return receipt the planned of required to be drilling of a d damages to the	requested or hand delivery, give the operation. The notice required by the provided by subsection (b), section horizontal well; and (3) A proposed the surface affected by oil and gas open to the sur	surface of this subsection of this ten of this surface uprations to	wner whose land tion shall include article to a surface and compense the extent the date	I will be used for de: (1) A copy ace owner whost action agreement amages are comp	cation, an operator shall, by certified mail or the drilling of a horizontal well notice of of this code section; (2) The information se land will be used in conjunction with the at containing an offer of compensation for pensable under article six-b of this chapter. sted in the records of the sheriff at the time
(at the addres	eby provided to the SURFACE OV is listed in the records of the sheriff a nn Trust-Peyton Fireman Trustee		of notice): Name:		
Address: 1380 Morgantown, WV 2	Fenwick Avenue		Address	s:	
State: County: District: Quadrangle: Watershed:	West Virginia Taylor Fetterman Gladesville 7.5' Whiteday Creek		UTM NAD 8 Public Road a Generally use	Northing:	588397.17 4364248.31 Whiteday Road Williams
Pursuant to V to be provide horizontal we surface affect information r	ed by W. Va. Code § 22-6A-10(b) ell; and (3) A proposed surface use a ted by oil and gas operations to the related to horizontal drilling may be located at 601 57th Street, SE,	to a surfa- nd comper extent the obtained	nsation agreement damages are confrom the Secret	e land will be un nt containing an empensable und ary, at the WV	code section; (2) The information required used in conjunction with the drilling of a n offer of compensation for damages to the der article six-b of this chapter. Additional Department of Environmental Protection or by visiting www.dep.wv.gov/oil-and-department
Well Operato	Or: Arsenal Resources		Address:	6031 Wallace Road E.	xtension, Suite 300
Telephone:	724-940-1204			Wexford, PA 15090	
Email:	ecarder@arsenalresources.com		Facsimile:	304-848-9134	
The Office of duties. Your needed to co	personal information may be disclosured by the disclosured by the statutory or regulatory	requirem	er State agencie ents, including	es or third parti Freedom of Ir	telephone number, as part of our regulatory ies in the normal course of business or as aformation Act requests. Our office will r your personal information, please contact

WellName # Williams 213 FRACTURING ADDITIVES							
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				

4709101332

DEC 9 8 7818

() Encheannaidi<mark>05/05/2017</mark>



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

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

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

December 19, 2016

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 Williams Pad, Taylor County

Williams 213 Well Site

4709101332

Dear Mr. Martin,

Earl Ray Tomblin

Governor

The West Virginia Division of Highways has issued Permit #04-2016-0403 for the subject site to Mountaineer Keystone, LLC for access to the State Road for the well site located off of Taylor County 119/6.

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.

Very Truly Yours,

Gary K. Clayton

Regional Maintenance Engineer

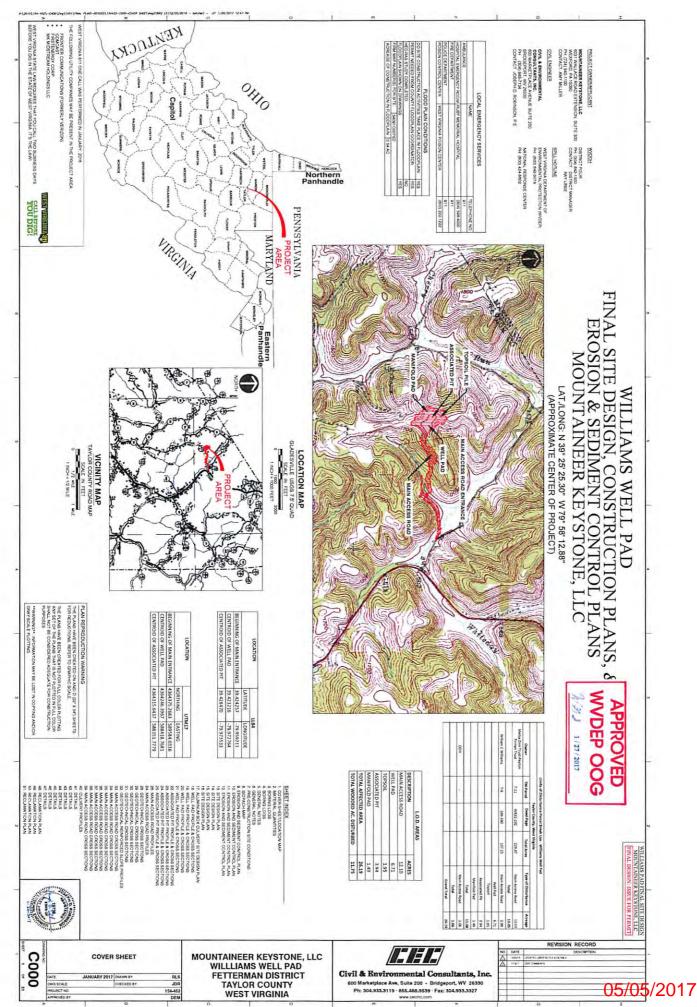
Central Office Oil & Gas Coordinator

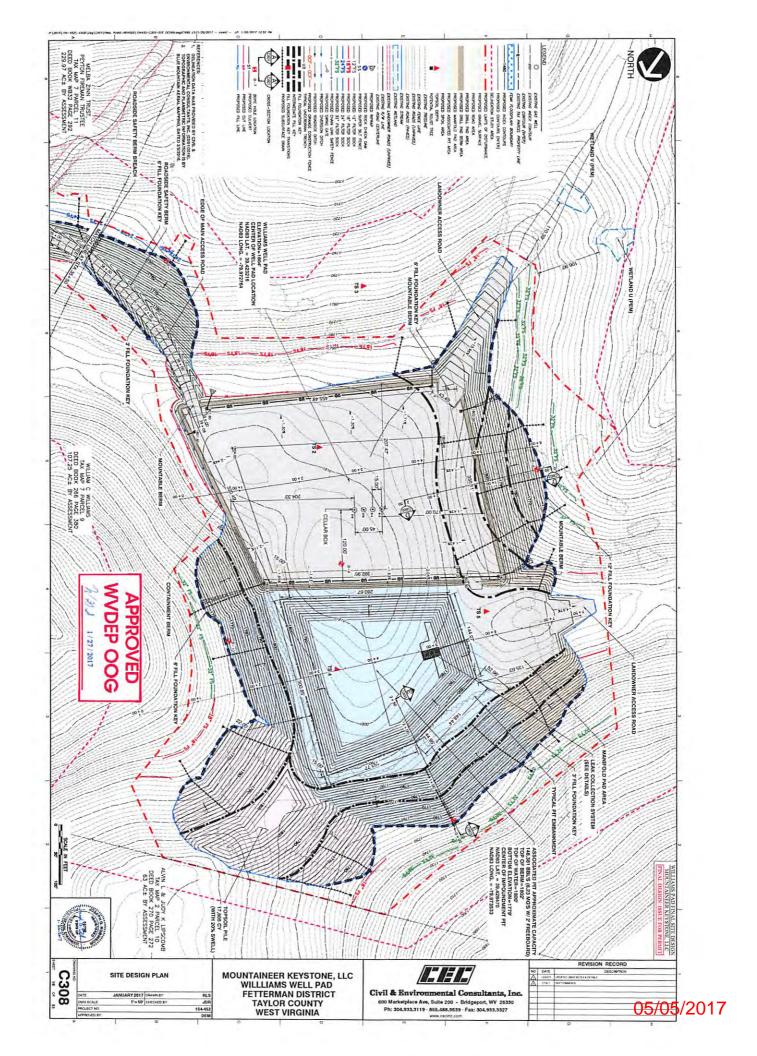
Eddie Carder Cc:

Mountaineer Keystone, LLC

CH, OM, D-4

File





WILLIAMS WI FINAL SITE DESIGN, CON EROSION & SEDIMEN ARSENAL RE

LAT./LONG: N 39° 25' 25.3

(APPROXIMATE CENTI

PROJECT OWNER/APPLICANT

ARSENAL RESOURCES MALLACE RD, EXT. SUITE 300 WEXFORD, PA 15090 PH: (724) 940-1218 CONTACT: WILLIAM VEIGEL

CIVIL ENGINEER

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
600 MARKETPLACE AVENUE SUITE 200
BRIDGEPORT, WV 26330
PH: (304) 848-7134 CONTACT: JOSEPH D. ROBINSON, P.E.

WVDOH

DISTRICT FOUR PH: (304) 842-1500 CONTACT: DISTRICT MANAGER RAY URSE

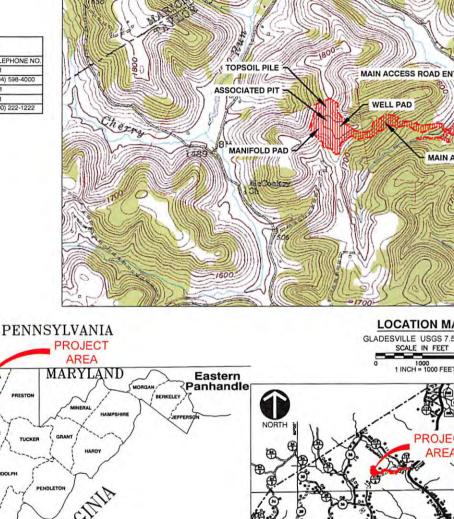
SPILL HOTLINE

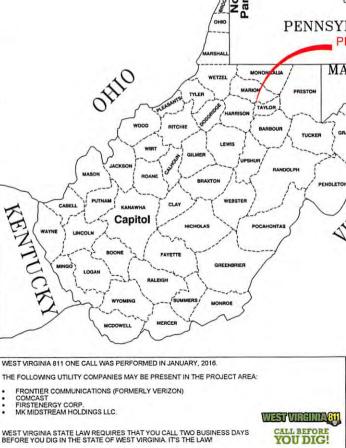
WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (WVDEP)
PH: (800) 642-3074

NATIONAL RESPONSE CENTER PH: (800) 424-8802

LOCAL EMERGENCY SERVICES					
	NAME	TELEPHONE NO.			
AMBULANCE		911			
HOSPITAL EMERGENCY ROOM	RUBY MEMORIAL HOSPITAL	(304) 598-4000			
FIRE DEPARTMENT		911			
POLICE DEPARTMENT		911			
POISON CONTROL CENTER	WEST VIRGINIA POISON CENTER	(800) 222-1222			

FLOOD P	LAIN CONDITIONS	
DO SITE CONSTRUCTION ACTIVITIES TAKE PLACE IN FLOODPLAIN:		
PERMIT NEEDED FROM COUNTY FLOODPLAIN COORDINATOR:		
HEC-RAS STUDY COMPLETED:		
FLOODPLAIN SHOWN ON DRAWINGS:		
FIRM MAP NUMBER(S) FOR SITE:	54091C0075D	
ACREAGE OF CONSTRUCTION IN E	LOODELAIN: TO SA AC	





05/05/2017

VICINITY MA TAYLOR COUNTY ROA SCALE IN FEET

1/2 MILE

1 INCH = 1/2 MILE

LL PAD STRUCTION PLANS, & CONTROL PLANS

W 79° 58' 12.88" OF PROJECT)



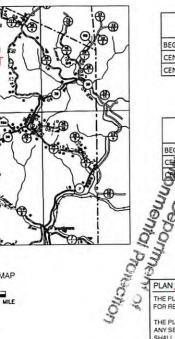


WILLIAMS PAD FINAL SITE DESIGN ARSENAL RESOURCES

FINAL DESIGN: ISSUE FOR PERMIT

	Umits of Distur	Dance Parcel Brea	k Ups - Williams We	III Pad	
		Taylor County, We	est Virginia		
Owner	TM-Parcel	Deed-Page	Total Acres	Type of Disturbance	Acreage
Melba Zinn Trust-Peyton Firman Trust	7-11	WB32-292	229.97	Main Access Road	10.05
				Total	10.05
William C Williams	7-9	266-380	107.25	Main Access Road	0.99
		1		Well Pad	6.71
				Topsoil	1.95
				Associated Pit	3.94
				Manifold Pad	1.49
	i			Total	15.08
рон				Main Access Road	1.06
				Total	1.06
				Grand Total	26.19

L.O.D. AREAS	L.O.D. AREAS				
DESCRIPTION	ACRES				
MAIN ACCESS ROAD	12.10				
WELL PAD	6.71				
TOPSOIL	1.95				
ASSOCIATED PIT	3.94				
MANIFOLD PAD	1.49				
TOTAL AFFECTED AREA	26.19				
TOTAL WOODED AC. DISTURBED	11.75				



UAD

LOCATION	LL84		
	LATITUDE	LONGITUDE	
BEGINNING OF MAIN ENTRANCE	39.424257	-79.959211	
CENTROID OF WELL PAD	39.423216	-79.972764	
CENTROID OF ASSOCIATED PIT	39.428470	-79.973533	

LOCATION	UTM17		
	NORTHING	EASTING	
BEGINNING OF MAIN ENTRANCE	4364375.2683	589584.0336	
CENTROID OF WELL PAD	4364246.3967	588418.7681	
CENTROID OF ASSOCIATED PIT	4364315.6437	588351.7779	

PLAN REPRODUCTION WARNING THE PLANS HAVE BEEN CREATED ON A CREATED ON ANSI D (22" X 34") SHEETS. ERTO GRAPHIC SCALE.

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

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

SHE	FTI	NDF	X

- 1 COVER SHEET/LOCATION MAP
- 2. MATERIAL QUANTITIES 3. BORING LOGS
- 4. BORING LOGS
- 4. BOHING LOGS
 5. GENERAL NOTES
 6. GENERAL NOTES
 7. PRE-CONSTRUCTION SITE CONDITIONS
 8. ISOPACH MAP
 9. EROSION AND SEDIMENT CONTROL PLAN

- 10. EROSION AND SEDIMENT CONTROL PLAN
 11. EROSION AND SEDIMENT CONTROL PLAN
 12. EROSION AND SEDIMENT CONTROL PLAN
 13. SITE DESIGN PLAN
- 14. SITE DESIGN PLAN 15. SITE DESIGN PLAN 16. SITE DESIGN PLAN
- 17. ALUMINUM BOX CULVERT SITE DESIGN PLAN

- 17. ALUMINUM BOX CULVERT SITE DESIGN PLAN

 18. WELL PAD PROFILE & CROSS SECTIONS

 19. WELL PAD PROFILE & CROSS SECTIONS

 20. WELL PAD PROFILE & CROSS SECTIONS

 21. WELL PAD PROFILE & CROSS SECTIONS

 22. ASSOCIATED PIT PROFILE & CROSS SECTIONS

 23. ASSOCIATED PIT PROFILE & CROSS SECTIONS

 24. ASSOCIATED PIT PROFILE & CROSS SECTIONS

 25. ASSOCIATED PIT PROFILE & CROSS SECTIONS

 26. MANIA ACCESS PICAD PROFILE S

- 26. MAIN ACCESS ROAD PROFILES
 24. MAIN ACCESS ROAD PROFILES
 28. GEOTECHNICAL CROSS SECTIONS
 29. GEOTECHNICAL CROSS SECTIONS
- 30. GEOTECHNICAL CROSS SECTIONS
 31. GEOTECHNICAL CROSS SECTIONS
 32. GEOTECHNICAL REINFORCED SLOPE PROFILES
 33. MAIN ACCESS ROAD CROSS SECTIONS

- 33. MAIN ACCESS ROAD CRUSS SECTIONS
 34. MAIN ACCESS ROAD CRUSS SECTIONS
 35. MAIN ACCESS ROAD CRUSS SECTIONS
 36. MAIN ACCESS ROAD CRUSS SECTIONS
 37. MAIN ACCESS ROAD CRUSS SECTIONS
 38. MAIN ACCESS ROAD CRUSS SECTIONS
 38. MAIN ACCESS ROAD CRUSS SECTIONS

- 39. MAIN ACCESS ROAD CROSS SECTIONS
 40. CULVERT PROFILES
 41. DETAILS
 42. DETAILS

- 42. DETAILS 43. DETAILS 44. DETAILS 45. DETAILS 46. DETAILS 47. DETAILS
- 48. RECLAMATION PLAN 49. RECLAMATION PLAN 50. RECLAMATION PLAN
- 51 RECLAMATION PLAN



REVISION RECORD	DATE	12/20/16 UPDA	1/26/17 DEP	WE'LL COM			
	DESC	TED LINER NOTES A DETAILS	DEP COMMENTS	MANY MAME UPDATE			
CORD	SRIPTION						

Civil & Environmental Consultants, Inc. 600 Marketplace Ave, Suite 200 - Bridgeport, WV 26330 Ph: 304,933,3119 - 855,488,9539 · Fax: 304,933,3327

ARSENAL RESOURCES
WILLLIAMS WELL PAD
FETTERMAN DISTRICT
TAYLOR COUNTY
WEST VIRGINIA

COVER SHEET JANUARY 2017

C000