



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

Monday, October 16, 2017
WELL WORK PERMIT
Coal Bed Methane Well / Plugging

ARP MOUNTAINEER PRODUCTION, LLC
425 HOUSTON, STE 300

FORT WORTH, TX 76102

Re: Permit approval for WW-1
47-081-01146-00-00

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: WW-1
Farm Name: W. POCAHONTAS LAND CORP.
U.S. WELL NUMBER: 47-081-01146-00-00
Coal Bed Methane Well / Plugging
Date Issued: 10/16/2017

Promoting a healthy environment.

10/20/2017

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PERMIT CONDITIONS

West Virginia Code §22-6-11 allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

CONDITIONS

1. All pits must be lined with a minimum of 20 mil thickness synthetic liner.
2. In the event of an accident or explosion causing loss of life or serious personal injury in or about the well or while working on the well, the well operator or its contractor shall give notice, stating the particulars of the accident or explosion, to the oil and gas inspector and the Chief within twenty-four (24) hours.
3. Well work activities shall not constitute a hazard to the safety of persons.

8101146CP

WW-4B
Rev. 2/01

1) Date July 26, 2017
2) Operator's Well No. WW-1
3) API Well No. 47-81-01146

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

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APPLICATION FOR A PERMIT TO PLUG AND ABANDON **A CBM WELL.**

WV Department of Environmental Protection

4) Well Type: Oil ___/ Gas **X**/ Liquid injection ___/ Waste disposal ___
(If "Gas, Production ___ or Underground storage ___) Deep ___/ Shallow ___

5) Location: Elevation 1,835.92' Watershed Paint Creek
District Town County Raleigh Quadrangle ECCLES

6) Well Operator ARP MOUNTAINEER PRODUCTION, LLC 7) Designated Agent CT Corporation Systems
Address 425 Houston Street, Suite 300 Address 5400 D Big Tyler Road
Fort Worth, TX 76102 Charleston, WV 25313

8) Oil and Gas Inspector to be notified Name Gary Kennedy
Address 252 Circle Avenue
Rainelle WV 25962
9) Plugging Contractor Name To be determined
Address _____

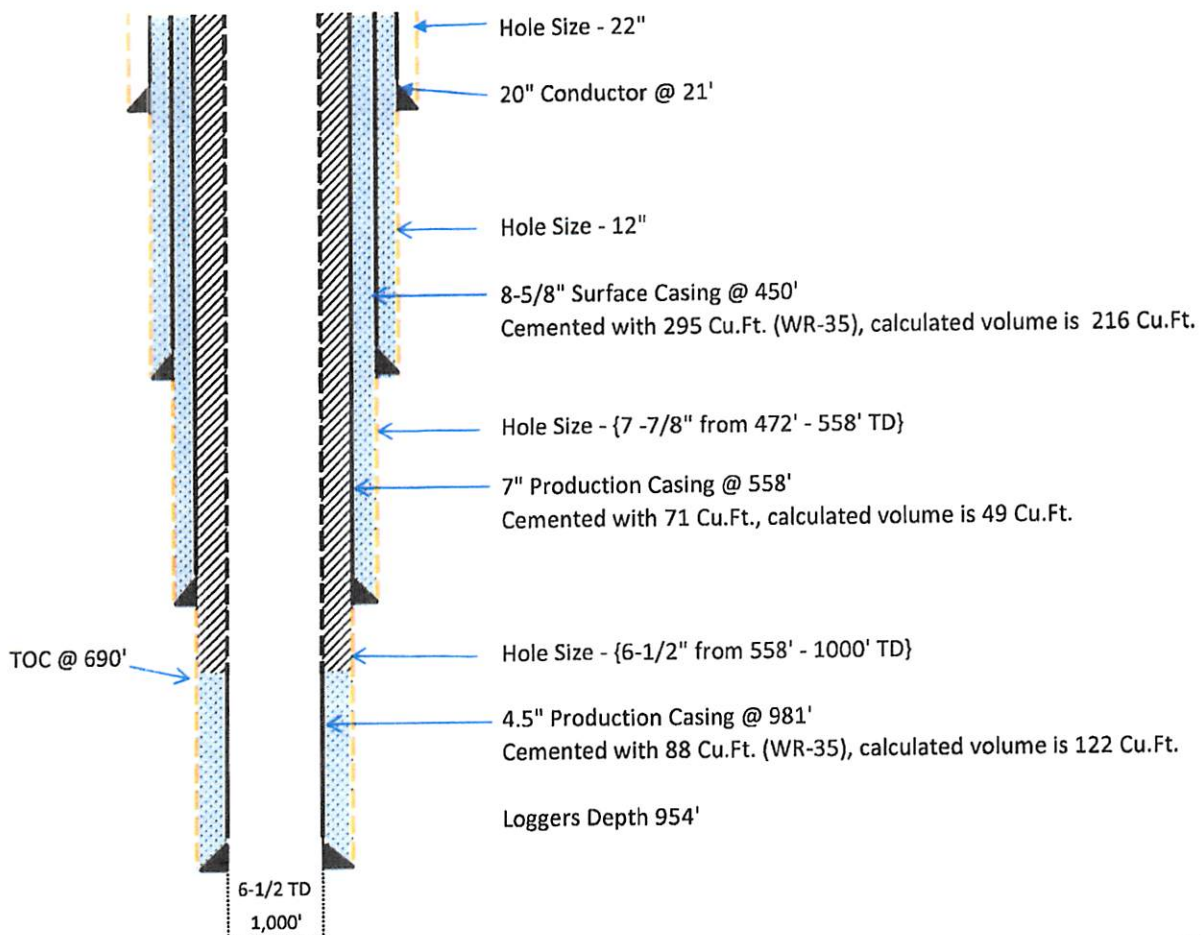
Check Rock Pressure
10) Work Order: The work order for the manner of plugging this well is as follows:
Move in work-over rig, Lower 2-3/8 tubing and tag bottom, casing depth expected 981'
If fill is encountered, clean to as deep as reasonably achievable below lowermost coal. Due to a portion of un-cemented 4-1/2" casing the free pipe will need to be extracted. Break down existing wellhead, add 4-1/2" pup joint. NU service company to perform free-point on casing.
Expect free point @ 690'. Confirm free point @ or near 690' NU casing cutting tools, RIH make 4-1/2 casing cut @ 600'
Pull 4-1/2 casing, LD pipe. MU 2-3/8 tubing, RIH w/tubing, tag bottom, set off bottom, + or - 2ft
NU Cementers pump 500' expandable cement plug using 25% in excess, totaling 57cu.ft
TOOH w/tubing to be above cement plug, WOC for 4hrs minimum. RIH w/tubing, tag cement at or near 480'. NU cementers finish circulating cement to the surface w/25% excess, totaling 140 cu.ft Install permanent marker. Reclaim location.
SET MONUMENT PER WV COAE.

Notification must be given to the district oil and gas inspector 24 hours before permitted work can commence.

Work order approved by inspector *Gary Kennedy* Date 9/5/17

10/20/2017

WW-1 Plug and Abandon Schematic API # 47-081-01146



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81 01146 C P

WR-35
Rev (5-01)

DATE: August 10, 2004
API #: 47-81-01146 C

State of West Virginia
Department of Environmental Protection
Office of Oil and Gas

Well Operator's Report of Well Work

Farm name: Western Pocahontas Operator Well No.: WW-1
LOCATION: Elevation: 1833.50 Quadrangle: Eccles
District: Town County: Raleigh
Latitude: 12737 Feet South of 37 Deg. 52 Min. 30 Sec.
Longitude 3994 Feet West of 81 Deg. 15 Min. 0 Sec.

Company: AMVEST Oil & Gas, Inc.

	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
Address: One Boar's Head Pointe	8.625	450	450	203-DNC
Charlottesville, VA 22903	7.0	558	558	95
Agent: Allen Mueller	4.5	981	981	73(TOC 691)
Inspector: Rodney Dillon				
Date Permit Issued: March 24, 2000				
Date Well Work Commenced: April 14, 2000				
Date Well Work Completed: June 7, 2000				
Verbal Plugging:				
Date Permission granted on:				
Rotary X Cable Rig Horn 23				
Total Depth (feet): 1000'				
Fresh Water Depth (ft.): 125', 550'				
Salt Water Depth (ft.): N.A.				
Is coal being mined in area (N/Y)? Yes				
Coal Depths (ft.): 133-34, 231-39, 487-92, 576-77, 670-72, 721-27, 779-84, 789-93				

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OPEN FLOW DATA

Producing formation Poca 2, 3, 4, 6, 9 coals Pay zone depth (ft) 576-793
Gas: Initial open flow N.A. MCF/d Oil: Initial open flow N.A. Bbl/d
Final open flow 31 MCF/d Final open flow 0 Bbl/d
Time of open flow between initial and final tests N.A. Hours
Static rock Pressure N.A. psig (surface pressure) after N.A. Hours

Second producing formation _____ Pay zone depth (ft) _____
Gas: Initial open flow _____ MCF/d Oil: Initial open flow _____ Bbl/d
Final open flow _____ MCF/d Final open flow _____ Bbl/d
Time of open flow between initial and final tests _____ Hours
Static rock Pressure _____ psig (surface pressure) after _____ Hours

NOTE: ON BACK OF THIS FORM PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

Signed: John F. Sinclair
By: John F. Sinclair VP-Exploration
Date: 8/10/04

8101146CP

Well: WW-1 Permit No: 47-81-1146C
 District: Town County: Raleigh

DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC.

4/20/00 MIRU Halliburton and Key Energy
 Fraced previously perforated Poca 2 (789-793) and Poca 3 (779-784) coals with nitrogen foam, placing 7,300 lbs. 16/30 sand. Set frac plug at 756'. High TP.
 Perforated Poca 4 coal (720-732), and fraced with nitrogen foam, placing 8,800 lbs. 16/30 sand. Set frac plug at 706'. High TP.
 Perforated Poca 6 (670-674) and Poca 9 (576-578) coals, and fraced with nitrogen foam, placing 25,500 lbs. 16/30 sand.

Formation	Top	Bottom	Remarks
Shale	0	45	
Sand	45	60	
Shale	60	110	
Sand	110	133	Water 100 gpm
Coal	133	134	
Shale	134	164	
Sand	164	178	
Sand and Shale	178	190	
Sand	190	231	
Coal	231	239	
Shale	239	243	
Sand	243	487	
Coal	487	492	
Sand	492	555	Water 350 gpm
Shale	555	576	
Coal	576	577	
Sand	577	670	
Coal	670	672	
Shale	672	721	
Coal	721	727	
Sand and Shale	727	779	
Coal	779	784	
Shale	784	789	
Coal	789	793	
Sand and Shale	793	840	
Shale	840	890	
Sand and Shale	890	960	
Sand	960	1000	
TD		1000	

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Well: WW-1 Permit No: 47-81-1146C
 District: Town County: Raleigh

DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC.

- 11/04/98 Ran 4-1/2" casing w/ frac baffles @ 592, 692, 758, & 787
- 12/03/98 Perforated coal 779-793 w/ 38 - 2-1/8 charges
 Did not frac

Formation	Top	Bottom	Remarks
Shale	0	45	
Sand	45	60	
Shale	60	110	
Sand	110	133	Water 100 gpm
Coal	133	134	
Shale	134	164	
Sand	164	178	
Sand and Shale	178	190	
Sand	190	231	
Coal	231	239	
Shale	239	243	
Sand	243	487	
Coal	487	492	
Sand	492	555	Water 350 gpm
Shale	555	576	
Coal	576	577	
Sand	577	670	
Coal	670	672	
Shale	672	721	
Coal	721	727	
Sand and Shale	727	779	
Coal	779	784	
Shale	784	789	
Coal	789	793	
Sand and Shale	793	840	
Shale	840	890	
Sand and Shale	890	960	
Sand	960	1000	
TD		1000	

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WW-4A
Revised 6-07

1) Date: 7-26-2017
2) Operator's Well Number
ARP Mountaineer Production, LLC WW-1

3) API Well No.: 47 - 81 - 01148

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF APPLICATION TO PLUG AND ABANDON A WELL

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4) Surface Owner(s) to be served:	5) (a) Coal Operator
(a) Name <u>Western Pocahontas Properties</u>	Name <u>ICG Beckley, LLC</u>
Address <u>5280 Irwin Road</u>	Address <u>2221 Old Eccles Road</u>
<u>Huntington WV 25707</u>	<u>Eccles, WV 25838</u>
(b) Name <u>Pine Valley Coal Company</u>	(b) Coal Owner(s) with Declaration
Address <u>1 City Place Drive</u>	Name <u>Western Pocahontas Properties</u>
<u>Saint Louis Missouri 63141</u>	Address <u>5280 Irwin Road</u>
	<u>Huntington WV 25707</u>
(c) Name _____	Name _____
Address _____	Address _____
6) Inspector <u>Gary Kennedy</u>	(c) Coal Lessee with Declaration
Address <u>252 Circle Avenue</u>	Name <u>ICG Beckley, LLC</u>
<u>Rainelle WV 25962</u>	Address <u>2221 Old Eccles Road</u>
Telephone <u>304-382-8402</u>	<u>Eccles, WV 25838</u>

TO THE PERSONS NAMED ABOVE: You should have received this Form and the following documents:

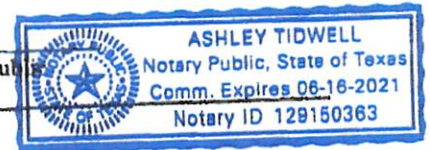
- (1) The application to Plug and Abandon a Well on Form WW-4B, which sets out the parties involved in the work and describes the well its and the plugging work order; and
- (2) The plat (surveyor's map) showing the well location on Form WW-6.

The reason you received these documents is that you have rights regarding the application which are summarized in the instructions on the reverse side. However, you are not required to take any action at all.

Take notice that under Chapter 22-6 of the West Virginia Code, the undersigned well operator proposes to file or has filed this Notice and Application and accompanying documents for a permit to plug and abandon a well with the Chief of the Office of Oil and Gas, West Virginia Department of Environmental Protection, with respect to the well at the location described on the attached Application and depicted on the attached Form WW-6. Copies of this Notice, the Application, and the plat have been mailed by registered or certified mail or delivered by hand to the person(s) named above (or by publication in certain circumstances) on or before the day of mailing or delivery to the Chief

Well Operator ARP MOUNTAINEER PRODUCTION, LLC
 By: Julie Harris 7/26/17
 Title: Director, EHS
 Address: Atlas | Titan
425 Houston Street, Suite 300 | Fort Worth, TX 76102
 Telephone: T. 817.885.8838 | M. 882.216.0248 | jrharris@atlasenergy.com

Subscribed and sworn before me this 26 day of July 2017
Ashley Tidwell Notary Public
 My Commission Expires 10/16/2021



Oil and Gas Privacy Notice

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

8101146CP

WW-9
(5/16)

API Number 47 - 81 - 01146
Operator's Well No. WW1

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name ARP MOUNTAINEER PRODUCTION, LLC OP Code 494509804

Watershed (HUC 10) 0505000801 Quadrangle Paint Creek

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

Will a pit be used? Yes No

If so, please describe anticipated pit waste: WATER AND CEMENT TO BE COLLECTED IN OPEN TOP TANK THEN TESTED AND LAND APPLIED

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

Proposed Disposal Method For Treated Pit Wastes:

- Land Application (If selected provide a completed form WW-9-GPP)
- Underground Injection (UIC Permit Number _____)
- Reuse (at API Number _____)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain _____)

JWH

Will closed loop system be used? If so, describe: NO

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

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

Additives to be used in drilling medium? _____

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

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

-Landfill or offsite name/permit number? _____

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

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on April 1, 2016, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

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

Company Official Signature Julle Harris 7/26/17

Company Official (Typed Name) Julle Harris

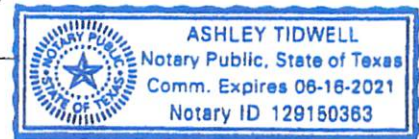
Company Official Title Director, EHS

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Subscribed and sworn before me this 26 day of July, 20 17

Ashley Tidwell Notary Public

My commission expires 6/16/2021



10/20/2017

Proposed Revegetation Treatment: Acres Disturbed 0.5 Prevegetation pH 5-6.5

Lime 2 Tons/acre or to correct to pH 6

Fertilizer type 10-20-20 or equivalent

Fertilizer amount 500 lbs/acre

Mulch Hay/Straw Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Tall Fescue or Orchard Grass	40		
Annual Rye Grass	5		

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

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: [Signature]

Comments: _____

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Title: Inspector Date: 9/5/17

Field Reviewed? Yes No

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

Operator Name: ARP MOUNTAINEER PRODUCTION, LLC
Watershed (HUC 10): 0505000601 Paint Creek Quad: Paint Creek
Farm Name: Western Pocahontas Land Corp.

1. List the procedures used for the treatment and discharge of fluids. Include a list of all operations that could contaminate the groundwater.

Waste water that is collected into the portable tank will be treated and ground disbursed using a 2" portable gasoline powered trash pump.

2. Describe procedures and equipment used to protect groundwater quality from the list of potential contaminant sources above.

While in operation, the portable 2" gasoline powered trash pump will be placed inside containment eliminating chances for potential spillage of gasoline onto the surface.

3. List the closest water body, distance to closest water body, and distance from closest Well Head Protection Area to the discharge area.

Closest Water Body - Paint Creek
Distance to Closest Water Body 300' +/-
Distance from Closest WHPA to Discharge Area - N/A

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4. Summarize all activities at your facility that are already regulated for groundwater protection.

Not applicable.

5. Discuss any existing groundwater quality data for your facility or an adjacent property.

WV
10/20/2017

Not Applicable

6. Provide a statement that no waste material will be used for deicing or fill material on the property.

No wastes will be used for deicing, ice control, structural fills, road base or other uses.

7. Describe the groundwater protection instruction and training to be provided to the employees. Job procedures shall provide direction on how to prevent groundwater contamination.

All employees will be trained on their responsibility to ensure groundwater protection. Current job procedures provide direction on how to prevent ground water contamination through proper work practices.

8. Provide provisions and frequency for inspections of all GPP elements and equipment.

During the plugging and abandonment activities, the site will be inspected to ensure that all elements and equipment of the sites ground water protection program are in place, properly functioning, and appropriately managed.

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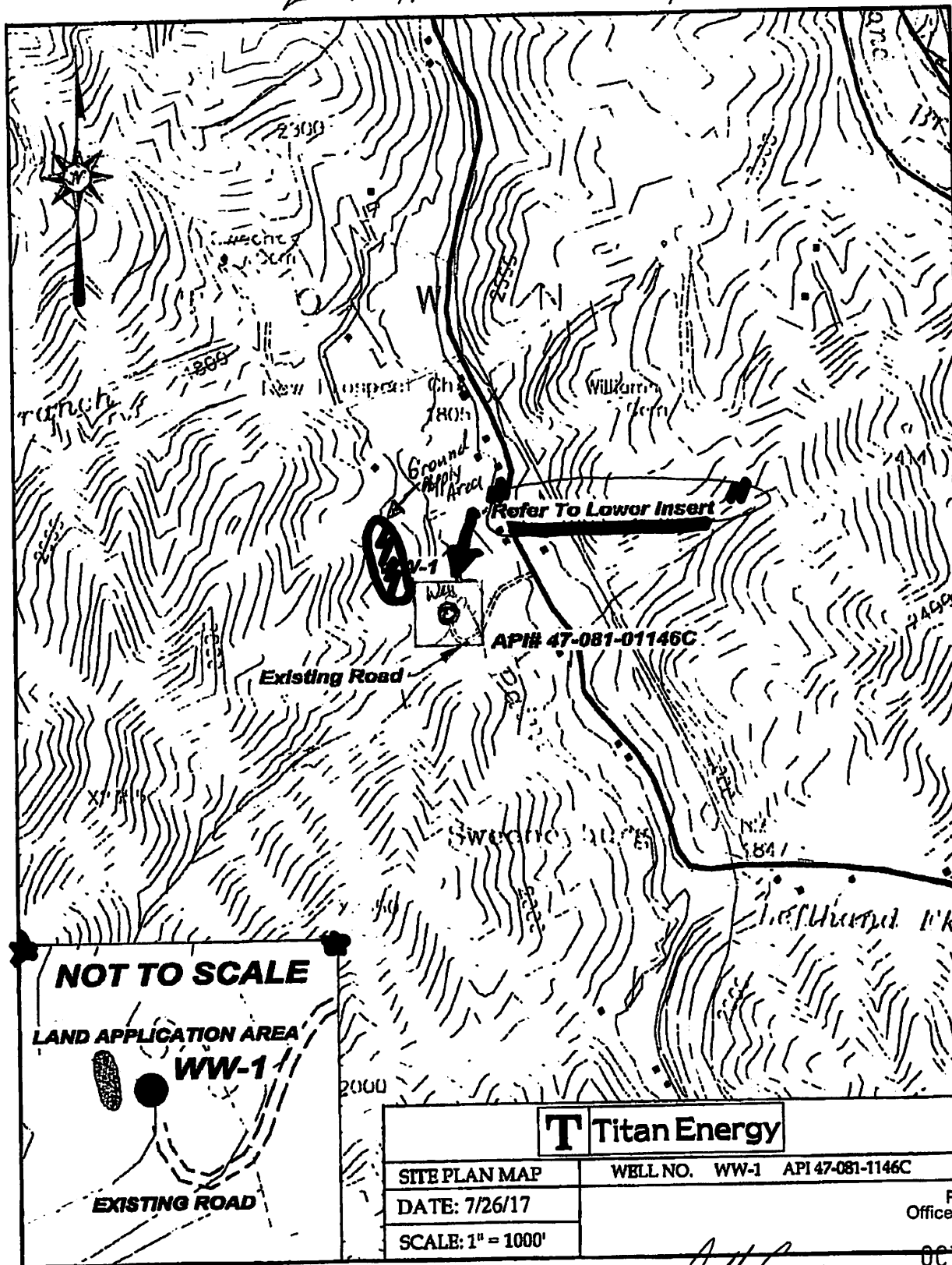
Signature: Rocky St. Jeor

Date: 7-26-2017

[Handwritten signature]

10/20/2017

Land Application Drawing



NOT TO SCALE

LAND APPLICATION AREA
WW-1

EXISTING ROAD

T Titan Energy	
SITE PLAN MAP	WELL NO. WW-1 API 47-081-1146C
DATE: 7/26/17	
SCALE: 1" = 1000'	

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OCT 12 2017

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John Cox
10-4-17

10/20/2017

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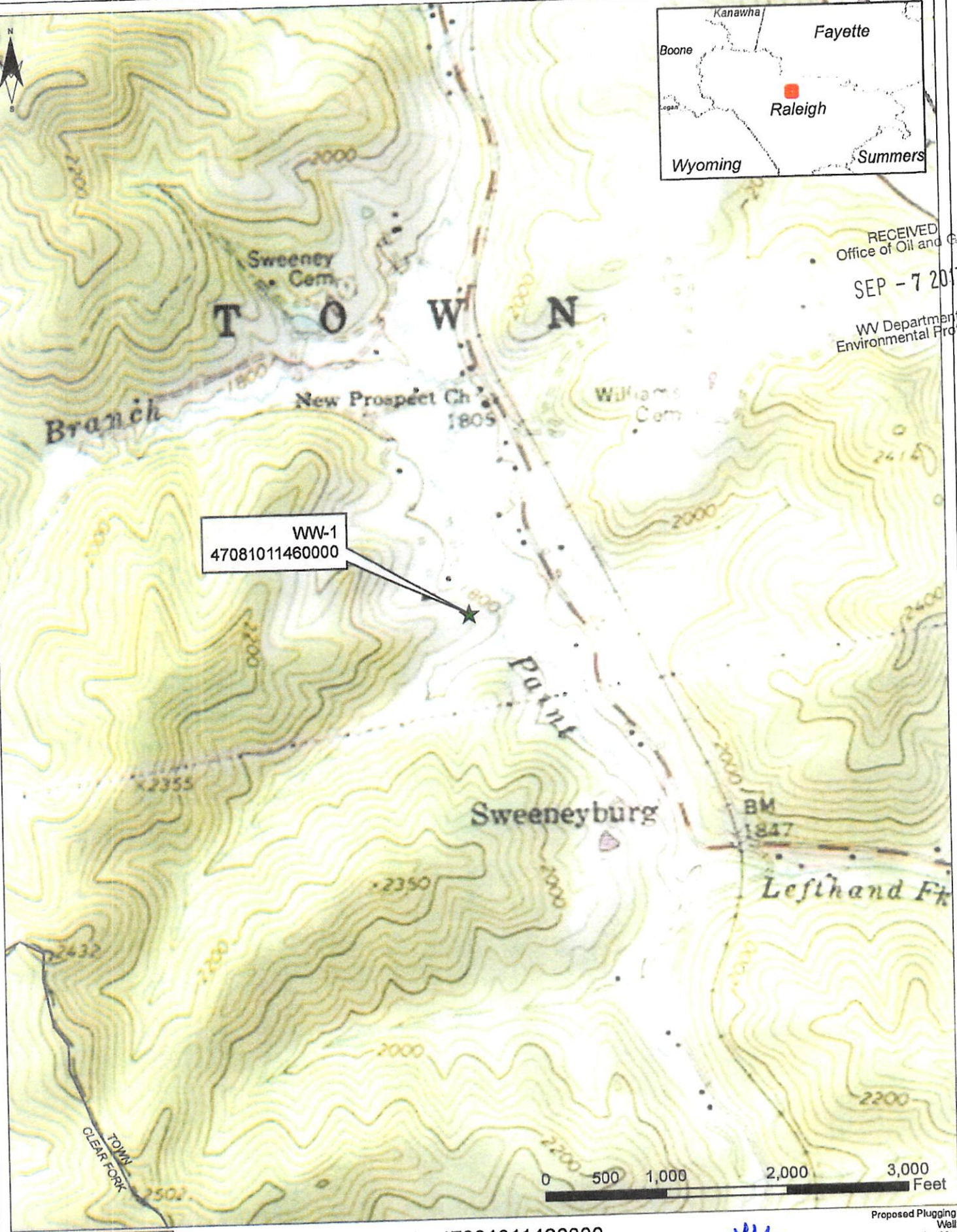


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WW-1
47081011460000



T Titan Energy

WW-1 - 47081011460000

Proposed Plugging
Well:
General Location Map
Date 3/2/2016

10/20/2017

8/24/2007

810114660

AK

Ruskin Dr
Co-Route 713

WW 1

Sweeneysburg Rd

Range Rd

11

7

Image USDA Farm Service Agency

Google e

1996

Imagery Date: 8/24/2007 | lat 37.840812° lon -81.259896° elev 1861 ft eye alt 10

WW-7
8-30-06



West Virginia Department of Environmental Protection
Office of Oil and Gas

WELL LOCATION FORM: GPS

API: 47-81-01146 WELL NO.: WW-1

FARM NAME: WESTERN POCAHONTAS LAND CORP.

RESPONSIBLE PARTY NAME: ARP MOUNTAINEER PRODUCTION, LLC

COUNTY: Raleigh DISTRICT: Town

QUADRANGLE: Eccles

SURFACE OWNER: Western Pocahontas Properties

ROYALTY OWNER: Western Pocahontas Properties

UTM GPS NORTHING: 4188100.93

UTM GPS EASTING: 476808.96 GPS ELEVATION: 1835.92'

The Responsible Party named above has chosen to submit GPS coordinates in lieu of preparing a new well location plat for a plugging permit or assigned API number on the above well. The Office of Oil and Gas will not accept GPS coordinates that do not meet the following requirements:

- Datum: NAD 1983, Zone: 17 North, Coordinate Units: meters, Altitude: height above mean sea level (MSL) – meters.
- Accuracy to Datum – 3.05 meters
- Data Collection Method:
Survey grade GPS : Post Processed Differential _____
Real-Time Differential
- Mapping Grade GPS _____ : Post Processed Differential _____
Real-Time Differential _____

4. Letter size copy of the topography map showing the well location.
I the undersigned, hereby certify this data is correct to the best of my knowledge and belief and shows all the information required by law and the regulations issued and prescribed by the Office of Oil and Gas.

Rocky Atwell EHS Specialist, Sr. 7-26-2017
Signature Title Date

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