west virginia department of environmental protection

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

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

May 06, 2016

WELL WORK PLUGGING PERMIT

Plugging

This permit, API Well Number: 47-10900919, issued to CABOT OIL & GAS CORPORATION, is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Upon completion of the plugging well work, the above named operator will reclaim the site according to the provisions of WV Code 22-6-30. The above named operator will also file, as required in WV Code 22-6-23, an affidavit on form WR-38 by two experienced persons in the operator's employment and the Oil and Gas inspector that the work authorized under this permit was performed and a description given. Failure to abide by all statutory and regulatory provisions governing all duties and operations here under may result in suspensions or revocation of this permit and in addition may result in civil and/or criminal penalities being imposed upon the operator.

This permit will expire in two (2) years from date of issue. If there are any questions, please free to contact me at (304) 926-0499 ext. 1654.

James Martin
Chief

Operator's Well No: 1
Farm Name: GRAYBEAL, CARL & THOMAS
API Well Number: 47-10900919
Permit Type: Plugging
Date Issued: 05/06/2016

Promoting a healthy environment.

1090091 9 P

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.

4. This well is under a consent order and must be plugged under the terms of that agreement.

1609009191P

WW-4B
Rev. 2/01

1) Date September 28, 2015
2) Operator's
Well No. Carl Graybeal #1 (SW-491)
3) API Well No. 47- 109 - 00919

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

APPLICATION FOR A PERMIT TO PLUG AND ABANDON

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

5) Location: Elevation 1,294.59' Watershed Indian Creek of the Guyandotte River
District Center County Wyoming Quadrangle Pineville

6) Well Operator Cabot Oil & Gas Corporation
Address 2000 Park Lane, Suite 300
Pittsburgh, PA 15275

7) Designated Agent Phillip Hill - Cabot Oil & Gas Corporation
Address 900 Lee Street East, Suite 1500
Charleston, WV 25301

8) Oil and Gas Inspector to be notified
Name Danny Mullins Brian K Ferguson
Address 124 Big Trace Fork Road 708 Monroe Drive
Harts, WV 25524 Beckley, WV 25801

9) Plugging Contractor
Name Contractor Services, Inc.
Address 929 Charleston Road
Spencer, WV 25276

10) Work Order: The work order for the manner of plugging this well is as follows:

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

Work order approved by inspector Brian K Ferguson Danny Mullins Date 10/15/15

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Office of Oil and Gas
OCT 22 2015
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Environmental Protection

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OCT 8 2015
WV Department of
Environmental Protection

109 00919 P

Carl Graybeal #1
API # 47 - 109 - 00919
PLUGGING PROCEDURE

Current Configuration
DTD @ 2850'
Elevation @ 1278'
8 5/8" casing @ 904' KB, cemented to surface
4 1/2" casing @ 2505' KB w/ TOC @ 943'
Big Lime perforations: 2382' – 2385'
Lower Maxton perforations: 1789' – 1845'
Bridge plug @ 1780' top w/ 30' of cement
Ravencliff perforations: 1145' – 1232'
Coal @ 145' – 147'
Poca 3 coal seam @ 512'
No water reported

PROCEDURE

1. Contact David Trader (304-256-5240) with Pinnacle Mining two months prior to starting work. Pinnacle Mining will schedule wireline company to run E-log.
2. Contact Pineville District Office a minimum of 48 hours prior to starting work.
3. Contact state inspector a minimum of 24 hours prior to starting work.
4. MIRU service rig and blow down well.
5. Lay 2" line from wellhead to pit/tank and stake down securely. Vent 4 1/2" x 8 5/8" annulus.
6. Unpack wellhead.
7. Run rig tools to determine well TD and note any fluid level.
8. TIH with 2 3/8" work string to 1740'.
9. MIRU Cementing Company.
10. Pump 20 barrels of 6% Gel.
10a. → 11. Pull work string up to 1250'.
12. Pump 12 sacks of Class A cement for cement plug 1 from 1250' to 1100'.
13. Displace with 4 bbls of 6% Gel.
14. POOH with work string and let cement plug set for a minimum of eight hours.
15. Run freepoint and cut 4 ½" casing where free. Estimate ±940'.
16. TIH with 2 3/8" work string to 950'.
17. Pump 50 barrels of 6% Gel followed by 30 sacks of Class A cement for plug 2 from 950' to 850'.
18. Displace with 3 bbls of 6% Gel.
19. POOH with work string.
20. RU wireline and TIH with perforating guns.
21. Perforate the 8 5/8" casing from 778' to 558' at 20' intervals with 1 shot at each interval.
22. Pull perf gun up to 512' and perf intervals at 512', 400', 300', 200', and 100'.
23. POOH with perf gun.
24. RU power swivel and TIH with section mill.
25. Mill 8 5/8" casing from 5' below the Poca 3 seam to 10' above, approximately 497' to 517' MD.
26. POOH with mill.
27. TIH with 2 3/8" work string to 725' and pump 119 cubic feet of C&J Energy Services "Thixotropic" or equivalent expanding cement for cement plug 3 from 725' to 400'.
28. Displace with 1 ½ bbls of 6% Gel.
29. Pull work string up to 200' and pump 62 sacks of Class A cement for cement plug 4 from 200' to surface.
30. TOOH with work string and lay down.

10a ADD 100' CLASS A CEMENT PLUG FROM 1750' TO 1650'.

31. RDMO Cement company
32. Erect Monument according to Law.
33. RDMO.

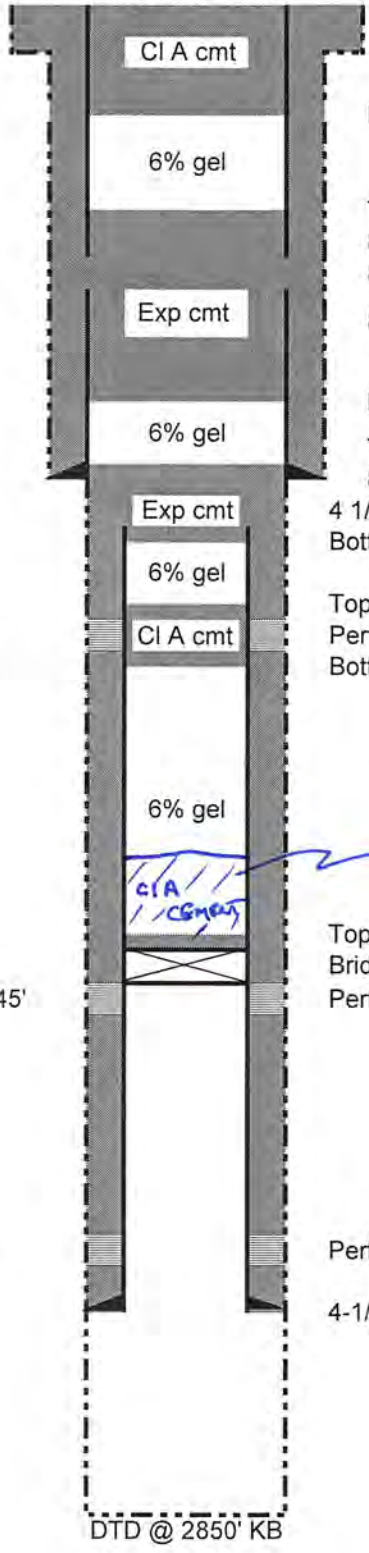
1090091 9 P

Carl Graybeal #1

API 47-109-00919

PROPOSED CONFIGURATION

Elevation - 1278'



No water reported

Coal @ 145' - 147'

Poca 3 coal seam @ 512'

Ravencliff @ 1145' - 1232'

Lower Maxton @ 1789' - 1845'

Big Lime @ 2290' - 2780

12 3/4" Conductor pulled

Bottom of cmt plug 4 @ 200'

Top of cmt plug 3 @ 400'
8-5/8" Casing perf'd from 512' to 112' @ 100' intervals
8-5/8" Casing milled from 497' to 517' MD

8-5/8" Casing perforated from 778' to 558' MD
@ 20' intervals with one shot

Bottom of cmt plug 3 @ 725'

Top of cmt plug 2 @ 850'
8-5/8" Casing @ 904' KB
4 1/2" csg TOC @ 943' KB
Bottom of cmt plug 2 @ 950'

Top of cmt plug 1 @ 1100'
Perforations @ 1170'-1202' & 1214'-1233'
Bottom of cmt plug 1 @ 1250'

Top of cmt plug @ 1750
Bridge plug @1780'
Perforations @ 1828' - 1843'

Perforations @ 2382' - 2385'

4-1/2" Casing @ 2505' KB

Schematic is not to scale

T. Ott 01/27/15

1090091 9P

IV-35
(Rev 8-81)

RECEIVED
AUG 16 1984
OIL & GAS DIVISION
DEPT. OF MINES

State of West Virginia
Department of Mines
Oil and Gas Division

Date August 14, 1984
Operator's
Well No. SW-491
Farm Carl Graybeal
API No. 47 - 109 - 0919 Frac
(Revised)

WELL OPERATOR'S REPORT
OF
DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

WELL TYPE: Oil ___ / Gas x / Liquid Injection ___ / Waste Disposal ___ /
(If "Gas," Production x / Underground Storage ___ / Deep ___ / Shallow ___ /)

LOCATION: Elevation: 1278 Watershed Indian Creek
District: Center County Wyoming Quadrangle Pineville

COMPANY James F. Scott
ADDRESS P. O. Box 112, Salem, WV 26426
DESIGNATED AGENT Darrel Wright
ADDRESS P. O. Box 112, Salem, WV 26426
SURFACE OWNER Carl N. Graybeal et al
ADDRESS Wolf Pen, WV 24896
MINERAL RIGHTS OWNER Carl N. Graybeal et al
ADDRESS Wolf Pen, WV 24896
OIL AND GAS INSPECTOR FOR THIS WORK Arthur St. Clair ADDRESS Brenton, WV 24818
PERMIT ISSUED [redacted] 6-15-84
DRILLING COMMENCED [redacted] 6-26-86
DRILLING COMPLETED [redacted] 6-26-86
IF APPLICABLE: PLUGGING OF DRY HOLE ON CONTINUOUS PROGRESSION FROM DRILLING OR REWORKING. VERBAL PERMISSION OBTAINED ON ___

Casing & Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft.
Size 20-16 Cond.	30'		
13-10"			
9 5/8			
8 5/8		904'	to surface
7			
5 1/2			
4 1/2		2850	285 sks
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Big Lime Depth ___ feet
Depth of completed well 2850 feet Rotary ___ / Cable Tools ___
Water strata depth: Fresh 130 feet; Salt 330 feet
Coal seam depths: 145-147 Is coal being mined in the area? yes

OPEN FLOW DATA
Producing formation Big Lime and Maxton abandoned / Ravencliff Pay zone depth 1214-1233 / 1170-1202 feet
Gas: Initial open flow ___ Mcf/d Oil: Initial open flow ___ Bbl/d
Final open flow 1007 Mcf/d Final open flow ___ Bbl/d
Time of open flow between initial and final tests 4 hours
Static rock pressure 295# psig (surface measurement) after 72 hours shut in
(If applicable due to multiple completion--)
Second producing formation ___ Pay zone depth ___ feet
Gas: Initial open flow ___ Mcf/d Oil: Initial open flow ___ Bbl/d
Final open flow ___ Mcf/d Oil: Final open flow ___ Bbl/d
Time of open flow between initial and final tests ___ hours
Static rock pressure ___ psig (surface measurement) after ___ hours shut in

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OCT 06 2015
WV Department of
Environmental Protection

Directional

(Continue on reverse side)

1090091gP

FORM IV-35
(REVERSE)

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

		1170-1202		500 sks	654 BBL
Ravencliff	Perfs:	1214-1233	20/40 sand	300 sks	452 BBL

WELL LOG

FORMATION COLOR HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fre and salt water, coal, oil and c
Overburden	0	40	
Sandstone	40	120	
Shale	120	145	
Coal	145	147	
Shale	147	180	
Sandstone	180	225	
Shale	225	440	
Sandstone	440	525	
Shale	525	723	
Sandstone	723	828	
Shale	828	838	
Sandstone	838	905	
Shale	905	1095	
Sandstone	1095	1232	
Shale	1232	1260	
Limestone	1260	1290	
Shale	1290	1355	
Sandstone	1355	1580	
Shale	1580	1595	
Sandstone	1595	1758	
Shale	1758	1789	
Sandstone	1789	1845	
Shale	1845	1980	
Sand & Shale	1980	2080	
Shale	2080	2160	
Lime	2160	2210	
Shale	2210	2260	
Lime	2260	2730	
Shale	2730	2850TD	
Electric Log Tops			
Salt Sand	723	828	
Princeton	838	905	
Ravencliff	1145	1232	
Avis Lime	1260	1290	
Maxton	1355	1580	
Maxton	1789	1845	
Little Lime	2160	2210	
Big Lime	2290	2780	

(Attach separate sheets as necessary)

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Environmental Protection

James F. Scott
Well Operator

By: James F Scott

Date: 8/14/84

Note: Regulation 2.02(i) provides as follows:
"The term 'log' or 'well log' shall mean a systematic detailed geological record of all formations, including coal, encountered in the drilling of a well."

1090091gP

IV-35
(Rev 8-81)

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MAR 1 2 1984
OIL & GAS DIVISION
DEPT. OF MINES

State of West Virginia
Department of Mines
Oil and Gas Division

Date February 17, 1984
Operator's
Well No. SW-491
Farm Carl Graybeal
API No. 47 - 109 - 0919

WELL OPERATOR'S REPORT OF DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

WELL TYPE: Oil ___ / Gas X / Liquid Injection ___ / Waste Disposal ___ /
(If "Gas," Production X / Underground Storage ___ / Deep ___ / Shallow ___ /)

LOCATION: Elevation: 1278 Watershed Indian Creek
District: Center County Wyoming Quadrangle Pineville

COMPANY James F. Scott
ADDRESS P. O. Box 112, Salem, WV 26426
DESIGNATED AGENT Darrel Wright
ADDRESS P. O. Box 112, Salem, WV 26426
SURFACE OWNER Carl N. Graybeal et al
ADDRESS Wolf Pen, WV 24896
MINERAL RIGHTS OWNER Carl N. Graybeal
ADDRESS Wolf Pen, WV 24896
OIL AND GAS INSPECTOR FOR THIS WORK _____
ADDRESS _____
PERMIT ISSUED 11/9/83
DRILLING COMMENCED 12/1/83
DRILLING COMPLETED 12/7/83
IF APPLICABLE: PLUGGING OF DRY HOLE ON CONTINUOUS PROGRESSION FROM DRILLING OR REWORKING. VERBAL PERMISSION OBTAINED ON _____

Casing & Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft.
Size 20-16 Cond.	30'		
13-10"			
9 5/8			
8 5/8		904'	to surface
7			
5 1/2			
4 1/2			
3			
2			
Liners used			

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OCT 06 2015
WV Department of Environmental Protection

GEOLOGICAL TARGET FORMATION Big Lime Depth _____ feet
Depth of completed well 2850 feet Rotary ___ / Cable Tools ___
Water strata depth: Fresh 130,330 feet; Salt ___ feet
Coal seam depths: 145-147 Is coal being mined in the area? yes

OPEN FLOW DATA
Producing formation Big Lime, Maxton Pay zone depth 1828-1843 2382-2385 feet
Gas: Initial open flow ___ Mcf/d Oil: Initial open flow ___ Bbl/d
Final open flow not enough to test Mcf/d Final open flow ___ Bbl/d
Time of open flow between initial and final tests ___ hours
Static rock pressure 300# psig (surface measurement) after ___ hours shut in
(If applicable due to multiple completion--)
Second producing formation ___ Pay zone depth ___ feet
Gas: Initial open flow ___ Mcf/d Oil: Initial open flow ___ Bbl/d
Final open flow ___ Mcf/d Oil: Final open flow ___ Bbl/d
Time of open flow between initial and final tests ___ hours
Static rock pressure ___ psig (surface measurement) after ___ hours shut in

WOM 5/6

(Continue on reverse side)

1090099P

FORM IV-35
(REVERSE)

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

Big Lime	2382-2385	Acid Frac	122 bbls
Maxton	1828-1843	Sand 80/100	100 sks
		20/40	300 sks

WELL LOG

FORMATION COLOR HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all and salt water, coal, oil an
Overburden	0	40	
Sandstone	40	120	
Shale	120	145	
Coal	145	147	
Shale	147	180	
Sandstone	180	225	
Shale	225	440	
Sandstone	440	525	
Shale	525	723	
Sandstone	723	828	
Shale	828	838	
Sandstone	838	905	
Shale	905	1095	
Sandstone	1095	1232	
Shale	1232	1260	
Limestone	1260	1290	
Shale	1290	1355	
Sandstone	1355	1580	
Shale	1580	1595	
Sandstone	1595	1758	
Shale	1758	1789	
Sandstone	1789	1845	
Shale	1845	1980	
Sand & Shale	1980	2080	
Shale	2080	2160	
Lime	2160	2210	
Shale	2210	2260	
Lime	2260	2730	
Shale	2730	2850 TD	
Electric Log Tops			
Salt Sand	723	828	
Princeton	838	905	
Ravencliff	1145	1232	
Avis Lime	1260	1290	
Maxton	1355	1580	
Maxton	1789	1845	
Little Lime	2160	2210	
Big Lime	2290	2780	

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OCT 06 2015
WV Department of
Environmental Protection

(Attach separate sheets as necessary)

James F. Scott
Well Operator

By: James F Scott

Date: 2/17/84

Note: Regulation 2.02(i) provides as follows:
"The term 'log' or 'well log' shall mean a systematic detailed geological record of all formations, including well, encountered in the drilling of a well."

10900919 P

WW-4A
Revised 6-07

1) Date: September 28, 2015
2) Operator's Well Number
Carl Graybeal #1 (SW-491)

3) API Well No.: 47 - 109 - 00919

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

4) Surface Owner(s) to be served:

(a) Name: Carl, Rosa, Thomas L. & Linda Graybeal
Address: P.O. Box 900
Pineville, WV 24874

(b) Name:
Address:

(c) Name:
Address:

5) (a) Coal Operator
Name: See Attached Sheet
Address:

(b) Coal Owner(s) with Declaration
Name: WPP, LLC
Address: 5260 Irwin Road
Huntington, WV 25705

Name:
Address:

6) Inspector: Danny Mullins Brian K Ferguson
Address: 124 Big Trace Fork Road 708 Manor Drive
Harts, WV 25524 Beckley, WV 25801
Telephone: (304) 932-6844 304-550-6265

(c) Coal Lessee with Declaration
Name: Pinnacle Land Company, LLC
Address: P.O. Box 338
Pineville, WV 24874

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 reverses 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: Cabot Oil & Gas Corporation
By: Kenneth L. Marcum
Its: Regulatory Supervisor
Address: 2000 Park Lane, Suite 300
Pittsburgh, PA 15275
Telephone: (412) 249-3850

COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Constance C. Carden, Notary Public
McDonald Boro, Washington County
My Commission Expires Nov. 16, 2017
MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

Subscribed and sworn before me this [illegible] day of September [illegible]
Constance C. Carden Notary Public
My Commission Expires November 16, 2017

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 depprivacyoffier@wv.gov.

1090091 9P

COAL OPERATORS
CARL GRAYBEAL #1 (SW-491)
47-109-00919

Raw Coal Mining Co., Inc.
P.O. Box 1030
Bluefield, WV 24605

Spartan Mining Company
208 Business Street
Beckley, WV 25801

Pinnacle Mining Co., LLC
P.O. Box 338
Pineville, WV 24874

Brooks Run Mining Company, LLC
208 Business Street
Beckley, WV 25801

Justice Highwall Mining, Inc.
P.O. Box 1085
Beckley, WV 25802

Bluestone Coal Corp.
P.O. Box 1085
Beckley, WV 25802

Shane Coal Company
P.O. Box 1084
Bluefield, VA 24605

1090019P

WW-9
(2/15)

API Number 47 - 109 - 00919
Operator's Well No. Carl Graybeal #1 (SW-491)

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Cabot Oil & Gas Corporation OP Code 08145

Watershed (HUC 10) Indian Creek of the Guyandotte River Quadrangle Pineville

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

Will a pit be used? Yes ☐ No ☑

If so, please describe anticipated pit waste: _____

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

Proposed Disposal Method For Treated Pit Wastes: ANY WELL EFFLUENT MUST BE CONTAINED IN TANKS AND DISPOSED OF PROPERLY. gmm

_____ Land Application
_____ Underground Injection (UIC Permit Number _____)
_____ Reuse (at API Number _____)
_____ Off Site Disposal (Supply form WW-9 for disposal location)
■ Other (Explain No treated pit wastes will be produced

Will closed loop system be used? If so, describe: N/A

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. no drilling proposed

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

Additives to be used in drilling medium? NL/A

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. No cuttings produced during plugging operation

-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 August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

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

Company Official Signature Kenneth L Marcum

Company Official (Typed Name) Kenneth L. Marcum

Company Official Title Regulatory Supervisor

Subscribed and sworn before me this 28th day of September, 2015

Constance C. Carden Notary Public

My commission expires 11/16/2017

COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Constance C. Carden, Notary Public
McDonald Boro, Washington County
My Commission Expires Nov. 16, 2017
MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

10900919P

Form WW-9

Operator's Well No. Carl Graybeal #1 (SW-491)

Cabot Oil & Gas Corporation

Proposed Revegetation Treatment: Acres Disturbed 1.00 Prevegetation pH 6.23

Lime 2 Tons/acre or to correct to pH 6.5

Fertilizer type 10-20/20 or equivalent

Fertilizer amount 500 lbs/acre

Mulch Pulp Fiber at 1000 to 1500 lbs. ~~Tons~~/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
(Grain Rye - 100) (Red Clover - 5) (Fescue - 40)		(Grain Rye - 100) (Red Clover - 5) (Fescue - 40)	
(Annual Rye - 20) (White Clover - 5)		(Annual Rye - 20) (White Clover - 5)	
(Perennial Rye - 10) (Alta Sweet Clover - 5)		(Perennial Rye - 10) (Alta Sweet Clover - 5)	
(Yellow Clover - 5) (Birdsfoot Trefoil - 10)		(Yellow Clover - 5) (Birdsfoot Trefoil - 10)	

Attach:
Drawing(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided)

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: [signature]

Comments:

Title: OOG Inspector Date: 10/15/15

Field Reviewed? (_____) Yes (_____) No

10900919 A

GENERAL NOTES:

1.) THESE DRAWINGS ARE A SCHEMATIC REPRESENTATION OF THE PROPOSED WELL SITE AND ACCESS ROAD. PROPOSED STRUCTURES SUCH AS THE DRILLING PIT, ROADWAY, CULVERTS, SEDIMENT BARRIERS, ETC. ARE SHOWN IN THEIR APPROXIMATE PREPLANNING CONFIGURATION. GIVEN UNFORSEEN CIRCUMSTANCES, THE AS-BUILT LOCATION OF THESE STRUCTURES MAY VARY SLIGHTLY FROM THE LOCATION SHOWN ON THE ATTACHED DRAWINGS.

2.) ALL ROADS SHOWN THEREON ARE EXISTING UNLESS OTHERWISE NOTED AND SHALL BE MAINTAINED IN ACCORDANCE WITH THE GUIDELINES AND REQUIREMENTS OF THE WV DEP OIL & GAS EROSION AND SEDIMENT CONTROL MANUAL.

3.) ALL CULVERTS SHOWN ON THESE DRAWINGS ARE PROPOSED AND WILL BE A MINIMUM OF 15" IN DIAMETER UNLESS OTHERWISE NOTED.

4.) DITCHLINES AND CULVERTS WILL BE INSTALLED WHENEVER PRACTICAL; HOWEVER, PORTIONS OF THE EXISTING ROADS WHICH ARE LOCATED IN SOLID ROCK SHALL NOT REQUIRE DITCHES OR CROSS DRAINS, UNLESS OTHERWISE WARRANTED BY FIELD CIRCUMSTANCES.

5.) SUPPLEMENTAL DRAINAGE AND/OR SEDIMENT CONTROL STRUCTURES/MEASURES IN ADDITION TO THOSE SHOWN ON THE ATTACHED DRAWINGS WILL BE INSTALLED WHERE AND WHEN DEEMED NECESSARY. SUCH ADDITIONAL MEASURES MAY CONSIST OF SILT FENCES OR OTHER MEASURES AS OUTLINED IN THE EROSION AND SEDIMENT CONTROL MANUAL.

6.) SEDIMENT BASINS (TRAPS) WILL BE CONSTRUCTED AT ALL CULVERTS AND CROSS DRAIN INLETS AS REQUIRED IN THE WV-DEP OIL & GAS EROSION AND SEDIMENT CONTROL MANUAL. FIELD CONDITIONS SUCH AS ROCK OUTCROPS AND BEDROCK MAY PROHIBIT INLET TRAPS BEING INSTALLED. WHEN THESE CONDITIONS EXIST, ADDITIONAL EROSION CONTROL MEASURES SHALL BE EVALUATED AND UTILIZED AS NEEDED.

7.) SEDIMENT BARRIERS OF EITHER WINDROWED BRUSH, FILTER FENCE ET CETERA WILL BE INSTALLED AND MAINTAINED BELOW THE OUTFALL OF ALL PROPOSED CULVERTS AND AT ALL OTHER STORM WATER DISCHARGE POINTS FROM EITHER THE ROADWAY OR SITE LOCATIONS.

8.) ALL NECESSARY TIMBER AND BRUSH WILL BE REMOVED FROM THE PROPOSED ROADWAY AND SITE LOCATIONS BY CLEARING AND GRUBBING ACTIVITIES. ANY MARKETABLE TIMBER WILL BE CUT AND STACKED TO THE SIDE OF THE ROADWAY OR REMOVED TO A STOCKPILE AREA. THE REMAINING TIMBER AND BRUSH WILL BE CUT AND WINDROWED BELOW THE OUTSLOPE OF THE CONSTRUCTION AREAS, TO BE UTILIZED AS A SEDIMENT BARRIER.

9.) SEPARATE PERMITS WILL BE OBTAINED FROM THE WV-DOT FOR ALL POINTS OF INGRESS-EGRESS FROM COUNTY/STATE ROADS. THESE INGRESS-EGRESS POINTS WILL BE MAINTAINED INACCORDANCE WITH CURRENT WV-DOT REGULATIONS. A STABILIZED CONSTRUCTION ENTRANCE CONSISTING OF 8" OF CRUSHED STONE WILL BE CONSTRUCTED FOR A MINIMUM DISTANCE OF 50' FROM THE INGRESS-EGRESS POINTS OF ALL PUBLIC ROADWAYS INACCORDANCE WITH CURRENT WV-DOT REGULATIONS.

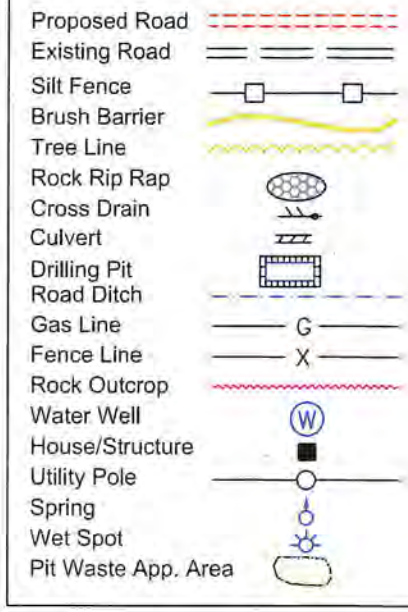
10.) ALL CULVERTS SHOWN ON THESE DRAWINGS ARE TO BE CONSIDERED PERMANENT AND WILL REMAIN IN PLACE AFTER THE COMPLETION OF CONSTRUCTION ACTIVITIES UNLESS NOTED OTHERWISE. A STABILIZED OUTLET CONTROL DEVICE SUCH AS RIPRAP, NATURAL STONE, BRUSH, ETC. WILL BE INSTALLED BELOW THE OUTFALL OF ANY ROADWAY CULVERT(S) WHICH ARE NOT LOCATED IN A STREAM CHANNEL OR CREEK.

11.) PERMANENT CROSS DRAINS OR WATERBARS WILL BE INSTALLED AS AN INTEGRAL PART OF THE RECLAMATION PROCESS AND SHALL BE SPACED INACCORDANCE WITH THE AS-BUILT ROADWAY GRADES AND TABLE II-4 OF THE SEDIMENT AND EROSION CONTROL FIELD MANUAL.

12.) TEMPORARY SEEDING AND MULCHING WILL BE UTILIZED TO PROVIDE A VEGETATIVE COVER ON ALL DISTURBED AREAS I.E. ROADWAYS, STIE LOCATIONS, ROAD OR SITE OUTSLOPES AND ANY OTHER AREAS THAT ARE DISTURBED BY CONSTRUCTION ACTIVITIES RESULTING FROM THE PROPOSED WELL.

13.) THE LOCATION OF DRILLING PIT(S) MAY BE ADJUSTED TO MINIMIZE ENVIRONMENTAL IMPACTS AND MEET THE REQUIREMENTS OF THE WV-DEP.

DRAWING LEGEND



SPACING OF CULVERTS BY GRADE	
ROAD GRADE (%)	DISTANCE
2-5	500-300
6-10	300-200
11-15	200-100
16-20	100

SPACING OF CROSS DRAINS BY GRADE	
ROAD GRADE (%)	DISTANCE
1	400
2	250
5	135
10	80
15	60
20	45

CONTRACTOR NOTE:

IT IS THE RESPONSIBILITY OF THE CONSTRUCTION CONTRACTOR TO FIELD VERIFY THE SIZE/CONDITION OF ALL UNDERGROUND UTILITIES, SANITARY SEWERS, STORM SEWERS, ETC. PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION AND/OR EXCAVATION ACTIVITIES

WEST VIRGINIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS NOTICE IN DESIGN STAGE.

CALL 1-800-245-4848

Cabot Oil & Gas Corporation

Well: SW-491 (Graybeal 1)

November 20, 2014

Located near Pineville in Center District of Wyoming County, West Virginia

1090091 P

Cabot Oil & Gas Corporation
SW-491 (Graybeal 1)

TOPO SECTION OF:
United States Department of the Interior
Geological Survey - Pineville WV - 7½' Quad

PROPOSED CULVERT INVENTORY
(For Bid Purposes Only)

15" (Minimum) Culverts	none proposed

Additional Culverts and/or other drainage structures and sediment control devices may be required by the WVDEP Oil & Gas Inspector.

Operator is responsible for coordination with contractor and True Line regarding any changes or additions the State may require.

PROJECTED EARTHEN DISTURBANCE

Well Location Site	0.27 Acres
Access Road	0.73 Acres
Approximate Total Disturbance	1.00 Acres

All roads shown hereon are existing unless otherwise noted and shall be maintained in accordance with the WVDEP best management practices contained in the Erosion and Sediment Control Field Manual.

Entrances at County/State roads shall be maintained in accordance with WVDOT regulations. Separate permits may be required by the WVDOT.

Sediment basins (sumps) and appropriate erosion control barriers are to be constructed at all culvert and cross drain inlets and outlets as required in the WVDEP Oil & Gas Erosion and Sediment Control Field Manual. Field conditions (rock outcrops or bedrock) may prohibit inlet sumps (traps) being installed. When these conditions exist, additional erosion control measures shall be evaluated and employed as needed.

Earthwork contractors are responsible for notification to the operator and Oil & Gas Inspector prior to any deviation from this plan.

All slopes shall be seeded and mulched after site construction is complete. All slopes created during road construction will receive temporary seeding and mulch immediately following completion.

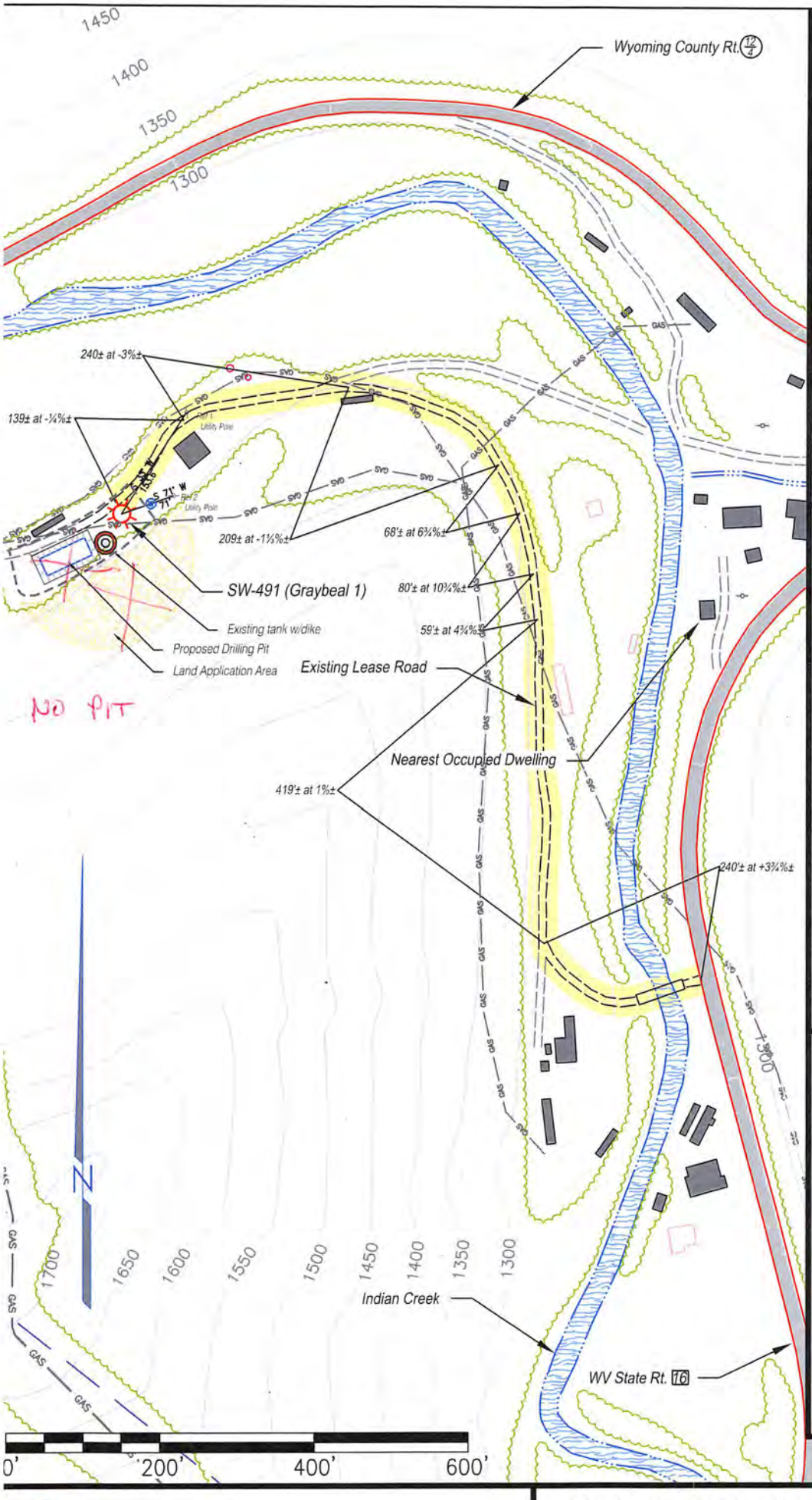
Marketable timber shall be cut and stacked at an accessible location.

Stacked or windrowed brush may be used for sediment control.

Applications for separate Public Lands Corporation permits on the access road stream crossings (if any) have been provided where applicable.

LEGEND

- Proposed Road
- Existing Road
- Existing Culvert
- Proposed Culvert (15" Min. unless noted)
- Proposed Stream Crossing
- Cross Drain
- Diversion Ditch
- Silt Fence
- Brush Barrier
- Tree Line
- Road Ditch
- Gas Line
- Fence Line
- Water Well
- House/Structure
- Spring
- Wet Spot

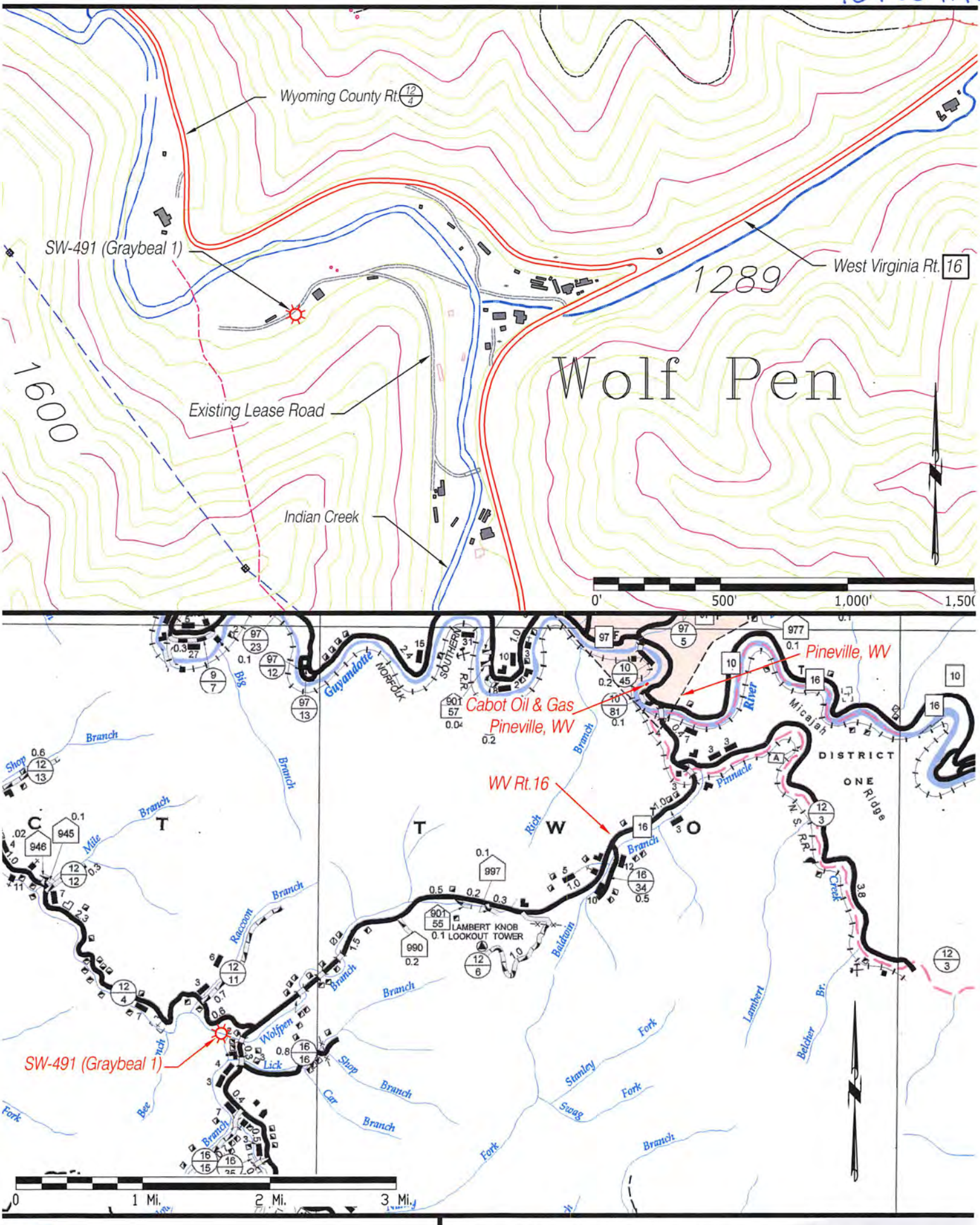


Cabot Oil & Gas Corporation

WW-9: SW-491 (Graybeal 1) Construction and Reclamation Plan

November 20, 2014

109 00 919P

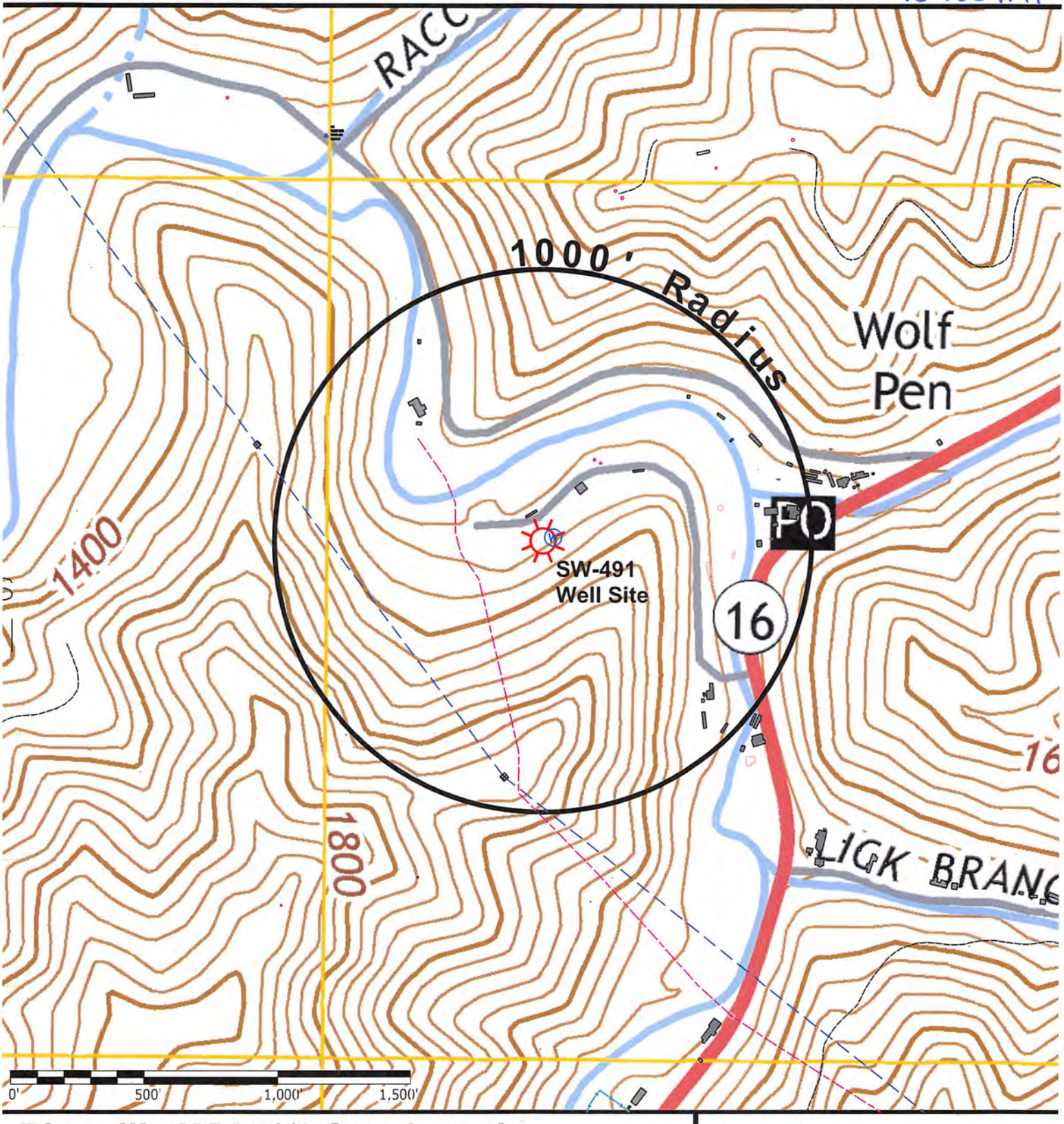


Cabot Oil & Gas Corporation

SW-491 (Graybeal 1) Location Map - November 20, 2014
Wyoming General Highway Map & USGS Pineville Quad

Located near Pineville in Center District of Wyoming County, West Virginia

10900919P



Pineville WV 7½' Quadrangle

Notes:
There are water wells/other sources of groundwater currently being used for human consumption, domestic animals or other general uses identified within 1000' of the existing well. The town of Pineville water system serves this area if needed.

Legend:

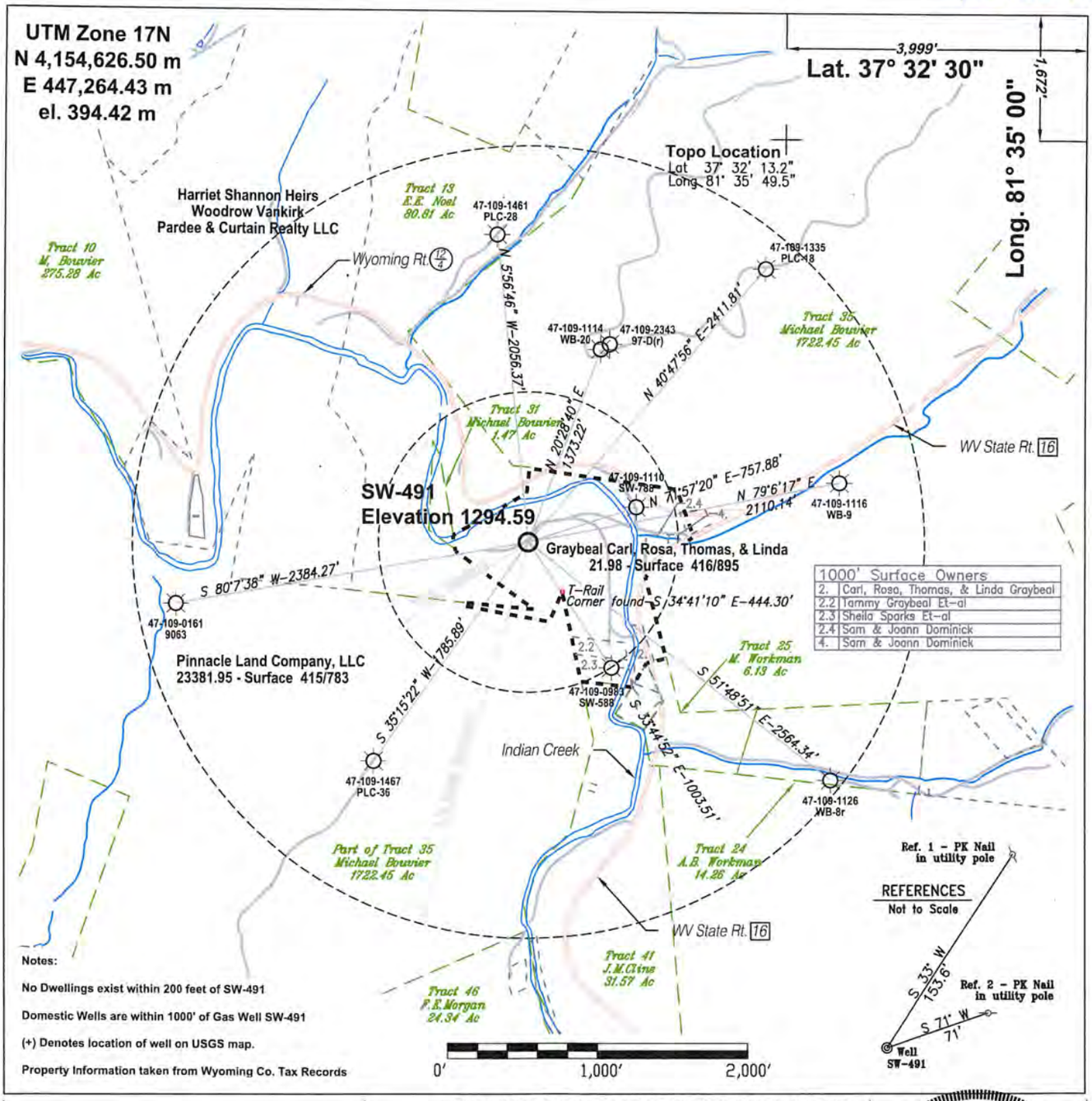
Water Well	Ⓦ
Spring	
Wet Spot	
House/Structure	■

Cabot Oil & Gas Corporation

SW-491 (Graybeal 1)

Located near Pineville in Center District of Wyoming County, West Virginia

1090091 9P



FILE #: \\filestation1\Station4D\work\Cabot Oil & Gas\

DRAWING #: \Cabot2014\SW-491\WW-6_SW491.dwg

SCALE: see barscale above

MINIMUM DEGREE OF ACCURACY: 1 part in 2500

PROVEN SOURCE OF ELEVATION: sub meter GPS location

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

Signed: _____

R.P.E.: _____ L.L.S.: 1065

JOHN E. CAFFREY LICENSED No. 1065 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

PLACE SEAL HERE

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

WVDEP
OFFICE OF OIL & GAS
601 57TH STREET
CHARLESTON, WV 25304

DATE: November 20, 2014

OPERATOR'S WELL #: SW-491

API WELL #: 47 (STATE) 109 (COUNTY) 00919P (PERMIT)

Well Type: ☐ Oil ☐ Waste Disposal ☒ Production ☐ Deep
☒ Gas ☐ Liquid Injection ☐ Storage ☒ Shallow

WATERSHED: Indian Creek of the Guyandotte River ELEVATION: 1,294.59

COUNTY/DISTRICT: 109-Wyoming / 3-Center QUADRANGLE: 549 - PINEVILLE

SURFACE OWNER: Carl, Rosa, Thomas & Linda Graybeal ACREAGE: 21.98

OIL & GAS ROYALTY OWNER: Carl, Rosa, Thomas & Linda Graybeal ACREAGE: 21.98

DRILL ☐ CONVERT ☐ DRILL DEEPER ☐ REDRILL ☐ FRACTURE OR STIMULATE ☐

PLUG OFF OLD FORMATION ☐ PERFORATE NEW FORMATION ☐ PLUG & ABANDON ☒

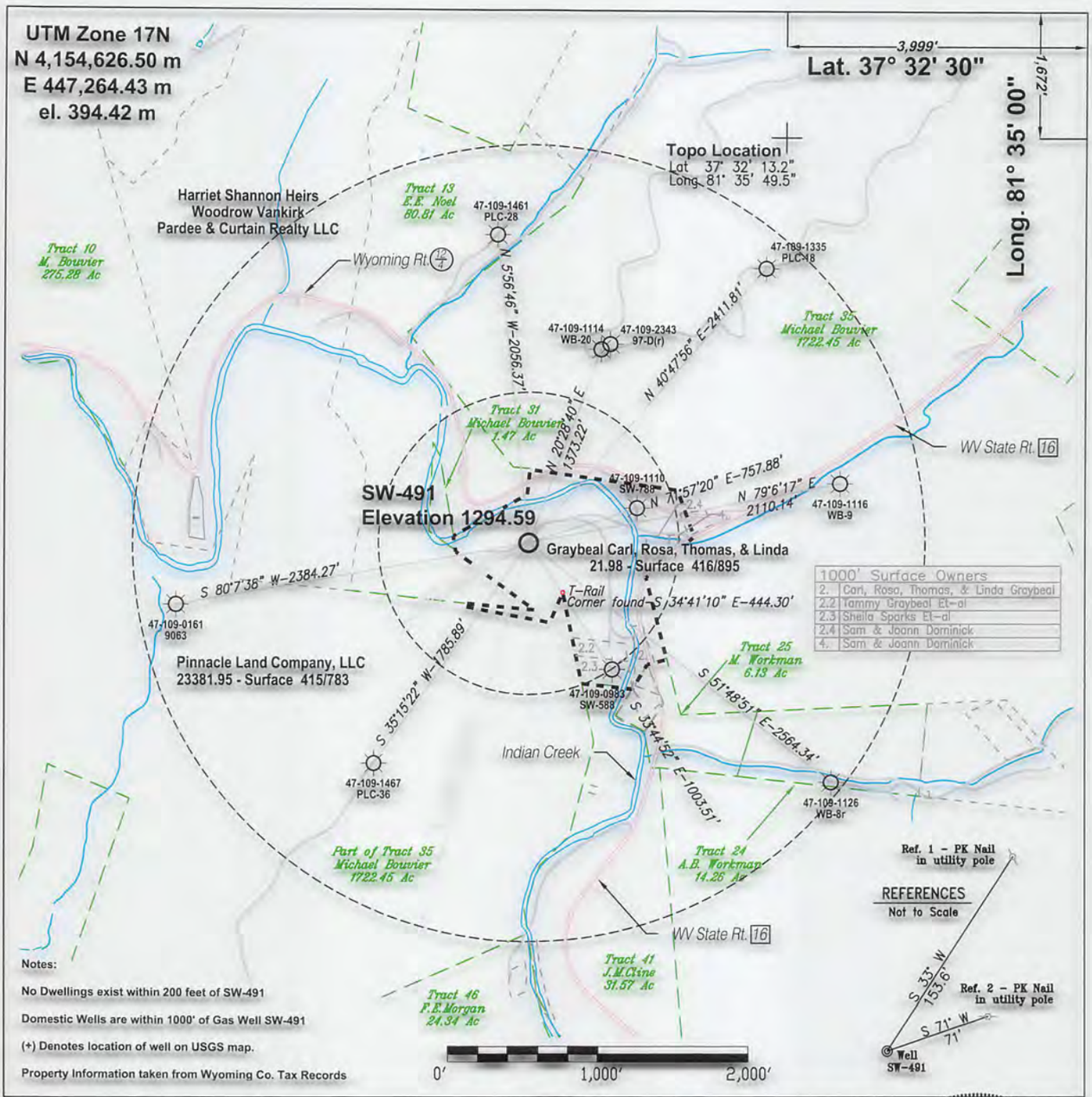
CLEAN OUT & REPLUG ☐ OTHER CHANGE ☐ (SPECIFY): _____

TARGET FORMATION: Big Lime ESTIMATED DEPTH: 2850

WELL OPERATOR Cabot Oil & Gas Corporation
Address Five Penn Center West, Suite 401
City Pittsburgh State PA Zip Code 15276

DESIGNATED AGENT Whitney Johnson
Address P.O. Box 450
City Glasgow State WV Zip Code 25086

RECEIVED
OCT 06 2015
WV Department of Environmental Protection



FILE #: \\filestation1\Station4D\work\Cabot Oil & Gas\

DRAWING #: \Cabot2014\SW-491\WW-6_SW491.pc

SCALE: see barscale above

MINIMUM DEGREE OF ACCURACY: 1 part in 2500

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Signed: _____

R.P.E.: _____ L.L.S.: 1065

JOHN E. CAFFREY LICENSED No. 1065 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

PLACE SEAL HERE

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

WVDEP
OFFICE OF OIL & GAS
601 57TH STREET
CHARLESTON, WV 25304

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DRILL ☐ CONVERT ☐ DRILL DEEPER ☐ REDRILL ☐ FRACTURE OR STIMULATE ☐

PLUG OFF OLD FORMATION ☐ PERFORATE NEW FORMATION ☐ PLUG & ABANDON ☒

CLEAN OUT & REPLUG ☐ OTHER CHANGE ☐ (SPECIFY): _____

TARGET FORMATION: Big Lime ESTIMATED DEPTH: 2850

WELL OPERATOR Cabot Oil & Gas Corporation
Address Five Penn Center West, Suite 401
City Pittsburgh State PA Zip Code 15276

DESIGNATED AGENT Whitney Johnson
Address P.O. Box 450
City Glasgow State WV Zip Code 25086

1090091 9P

McLaughlin, Jeffrey W

From: David Trader <DTrader@senecacoal.com>
Sent: Friday, May 06, 2016 9:55 AM
To: McLaughlin, Jeffrey W
Cc: David Trader
Subject: Pinnacle Mining Company - waive right to comment

Jeff,

As per our telephone conversation this morning.

Pinnacle Mining Company, LLC waives the right to comment on the WVDEP Office of Oil and Gas requested adjustment of the plugging procedure Cabot Oil and Gas Corporation has submitted, for the well API# 047-109-00919.

This waiving of the right is for only the WVDEP Office of Oil and Gas CODE requirements for the placement of at least 100 feet of cement (as compared to the submitted 30 feet of cement) on top of the Bridge Plug to be located at a depth of 1,780 feet.

Please call or e-mail if you have any additional comments or concerns.

Regards,
David

SENECA COAL RESOURCES, LLC

David Trader
Engineering Manager
Direct: 304-256-5240 Mobile: 304-320-3458
Rt. 16 S Welch Pineville Rd. Pineville, WV 24874
Main: 304-256-5800 :: Fax: 304-256-7170

10900919P

McLaughlin, Jeffrey W

From: David Trader <DTrader@senecacoal.com>
Sent: Friday, May 06, 2016 9:49 AM
To: McLaughlin, Jeffrey W
Cc: David Trader
Subject: Pinnacle Mining Company- Rescinding submitted OB-16

Jeff,

As per our telephone conversation this morning.

Pinnacle Mining Company, LLC would like to rescind the submitted Form OB-16 (dated October 5, 2015), concerning the plugging by Cabot Oil and Gas Corporation of the well API# 047-109-00919.

Call or e-mail if you have any additional questions or concerns.

Regards,
David

SENECA COAL RESOURCES, LLC

David Trader
Engineering Manager
Direct: 304-256-5240 Mobile: 304-320-3458
Rt. 16 S Welch Pineville Rd. Pineville, WV 24874
Main: 304-256-5800 :: Fax: 304-256-7170

10900919P

Form OB-16

Date: October 5, 2015

Operator's Well #: SW-491

API Well#: 047 (State) 109 (County) 00919 (Permit)

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

REQUEST BY COAL OPERATOR, OWNER OR LESSEE
FOR PLUGGING UNDER WV CODE 22-6-24 (d)

Well Type: ☐ Oil ☒ Liquid Injection ☐ Production ☐ Deep
☒ Gas ☐ Waste Disposal ☐ Storage ☒ Shallow

Well Location: County/District: 109-Wyoming / 3-Center Quadrangle: 549 - PINEVILLE

Elevation: 1294.59 Watershed: Indian Creek of the Guyandotte River

Well Operator:	Designated Agent:
Cabot Oil and Gas Corporation	Whitney Johnson
Address: Five Penn Center, Suite 401	Address: P.O. Box 450
City: Pittsburgh State: PA Zip Code: 15276	City: Glasgow State: WV Zip Code: 25086
Office of Oil & Gas Inspector to be Notified:	**Coal Operator, Owner or Lessee:**
Danny Mullins	Pinnacle Mining Company, LLC
Address: 124 Big Trace Fork Road	Address: P.O. Box 338
City: Harts State: WV Zip Code: 25524	City: Pineville State: WV Zip Code: 24874

The undersigned is an operator, owner or lessee of coal at the above well location under a deed __ / lease X / or other contract __/ dated June 30, 2003, to the undersigned from WPP, LLC
[If said deed, lease, or other contract has been recorded:]
Recorded on July 1, 2003, in the office of the Clerk of the County Commission of Wyoming County, West Virginia, in _____ Book 416 at page 151.

The undersigned hereby requests that the well above described be plugged in accordance with the provisions of WV Code 22-6-24 (d) (3), and further requests the Department determine the difference between (i) the cost of plugging the well in accordance with WV Code 22-6-24 (c) and (ii) the cost of plugging the well in accordance with WV Code 22-6-24 (d) (3).

The undersigned represents that if the determined costs under WV Code 22-6-24 (c) is less than the costs under WV Code 22-6-24 (d) (3), then the undersigned will place into escrow the difference in costs, unless the indicated well operator waives such payment into escrow.

Received
Office of Oil & Gas
OCT 07 2015

Requesting Party:

Signed By: David G. Trader

Printed Name: DAVID G. TRADER

Its: SENIOR MINE ENGINEER

1090091 9P

Cabot Oil & Gas Corporation

North Region

September 28, 2015

Chief
West Virginia Division of Environmental Protection
Office of Oil & Gas
601 57th Street
Charleston, WV 25304

RE: Carl Graybeal #1 (SW-491)
Center District, Wyoming County, WV
API # 47-109-00919
Written Application to plug and abandon wellbore

Dear Chief:

In accordance with Article 22-6-23 of the Code of State Regulations regarding oil and gas operations, please find attached a formal application for the plug and abandonment of the subject well.

Notices of our intention to plug this wellbore have been sent to surface owner, coal owner, and coal operators associated with this well. Copies of the certified mail receipts are attached for your records.

If you have any questions or need additional information, I can be reached at 412-249-3850.

Sincerely,

Kenneth L. Marcum
Regulatory Supervisor

RECEIVED
Office of Oil and Gas
OCT 06 2015
WV Department of
Environmental Protection