



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

Austin Caperton, Cabinet Secretary
www.dep.wv.gov

Monday, May 07, 2018
WELL WORK PERMIT
Vertical / Plugging

EQT PRODUCTION COMPANY
625 LIBERTY AVE., SUITE 1700


PITTSBURGH, PA 15222

Re: Permit approval for 1664
47-021-00865-00-00

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: 1664
Farm Name: CATHER, FRENCH
U.S. WELL NUMBER: 47-021-00865-00-00
Vertical Plugging
Date Issued: 5/7/2018

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.

Form WW-4 (B)
Permit Copy
(Rev 2/01)

Date: April 5, 2018
Operator's Well
Well No. 656486 Cather # 1664
API Well No.: # 021 - 00865

STATE OF WEST VIRGINIA
DIVISION 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) Elevation: 1077 Watershed: Leading Creek
Location: DeKalb County: Gilmer Quadrangle: Gilmer
District:

6) Well Operator EQT Production Company
120 Professional Place
Address: Bridgeport, WV 26330

7) Designated Agent: Jason Ranson
Address: 120 Professional Place
Bridgeport, WV 26330

8) Oil & Gas Danny Mullins
Name: 220 Jack Acres Rd
Address: Buckhannon WV 26201

9) Plugging Contractor:
Name: HydroCarbon Well Service
Address: PO BOX 995
Buckhannon, WV 26201

10) Work Order: The work order for the manner of plugging this well is as follows:
See Attachment for details and procedures.

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Office of Oil and Gas

MAY 07 2018

WV Department of
Environmental Protection

OFFICE USE ONLY

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

Work order approved by inspector

Danny Mullins

Date 4-30-18

PLUGGING PROGNOS

656486
 Cather #1664
 API# 47-021-00865
 District, DeKalb
 Gilmer County, WV

BY: R Green
 DATE: 12/11/17

CURRENT STATUS:

TD @ 1768'
Elevation @ 1077'

10" casing @ 161'
 8 1/4" casing @ 1017' (Set on packer @ 1017')
 6 5/8" casing @ 1701' (Set on packer @ 1701')

Fresh Water @ None Reported
Saltwater @ None Reported
Oil Show @ 1733'
Gas shows @ 1729'
Coal @ None Reported
 Shot with 30 qts. 1733' to 1740'

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 Office of Oil and Gas

MAY 07 2018

WV Department of
 Environmental Protection

1. Notify inspector, Danny Mullins @304-932-6844, 24 hrs. prior to commencing operations.
2. TIH check TD @ or below 1725'.
3. TIH spot 25 bbl. of 6% gelled water followed by a 325' C1A cement plug, 1725' to 1400', (Gas show & 6 5/8" casing seat) WOC 8 hrs. Tag TOC, add additional C1A cement if necessary.
4. Free point 6 5/8" casing, cut casing @ free point, TOOH 6 5/8" casing.
5. Set a 100' C1A cement plug 50' in/out of casing cut. Perforate all freshwater, saltwater, coal, oil and gas shows below cut. Do not omit any plugs.
6. TOOH to 1100', set a 300' C1A cement plug 1100' to 800' (Elevation & 8 1/4" casing seat).
7. Free point 8 1/4" casing, cut casing @ free point, TOOH 8 1/4" casing.
8. Set a 100' C1A cement plug 50' in/out of casing cut. Perforate all freshwater, saltwater, coal, oil and gas shows below cut. Do not omit any plugs.
9. TOOH to 700' set a 200' C1A cement plug 700' to 500'. (Safety Plug).
10. TOOH to 300' set a 150' C1A cement plug, 300' to 150'. (10" casing seat).
11. Free point 10" casing, cut casing @ free point, TOOH 10" casing.
12. Set a 100' C1A cement plug 50' in casing cut to surface. Perforate all freshwater, saltwater, coal, oil and gas shows below cut. Do not omit any plugs.
13. * Note, If unable to cut and pull 10" casing, TIH and perforate 10" casing with 4 holes each @ 150' 100' & 75'. TIH and set a 150' C1A cement plug 150' to surface.
14. Erect monument with API#, date plugged, & company name.
15. Reclaim location and road to WV-DEP specifications.

D M

WEST VIRGINIA DEPARTMENT OF MINES
OIL & GAS DIVISION
W E L L R E C O R D

Permit No. GIL-355
Glenville Quad.

Company Carnegie Natural Gas Co.
Address 1015 Frick Building, Pittsburgh, Pa.
Farm French Cather et al Acres 155
Location Leading Creek
Well No. 3 - 1664 Elev. 1077'
District DeKalb County - Gilmer
Surface French Cather, Glenville, W. Va.
Mineral See below
Commenced 4/14/51
Completed 5/8/51
Date Shot 5/10/51 from 1733 to 1748
With 30 qts. Nitro-Glycerin
Oil 8 bbls. 1st 24 hrs.

4702100865A
4702100865A
Casing & Tubing
10 161 161
8 1/4 1017 1017
6 5/8 1701 1701

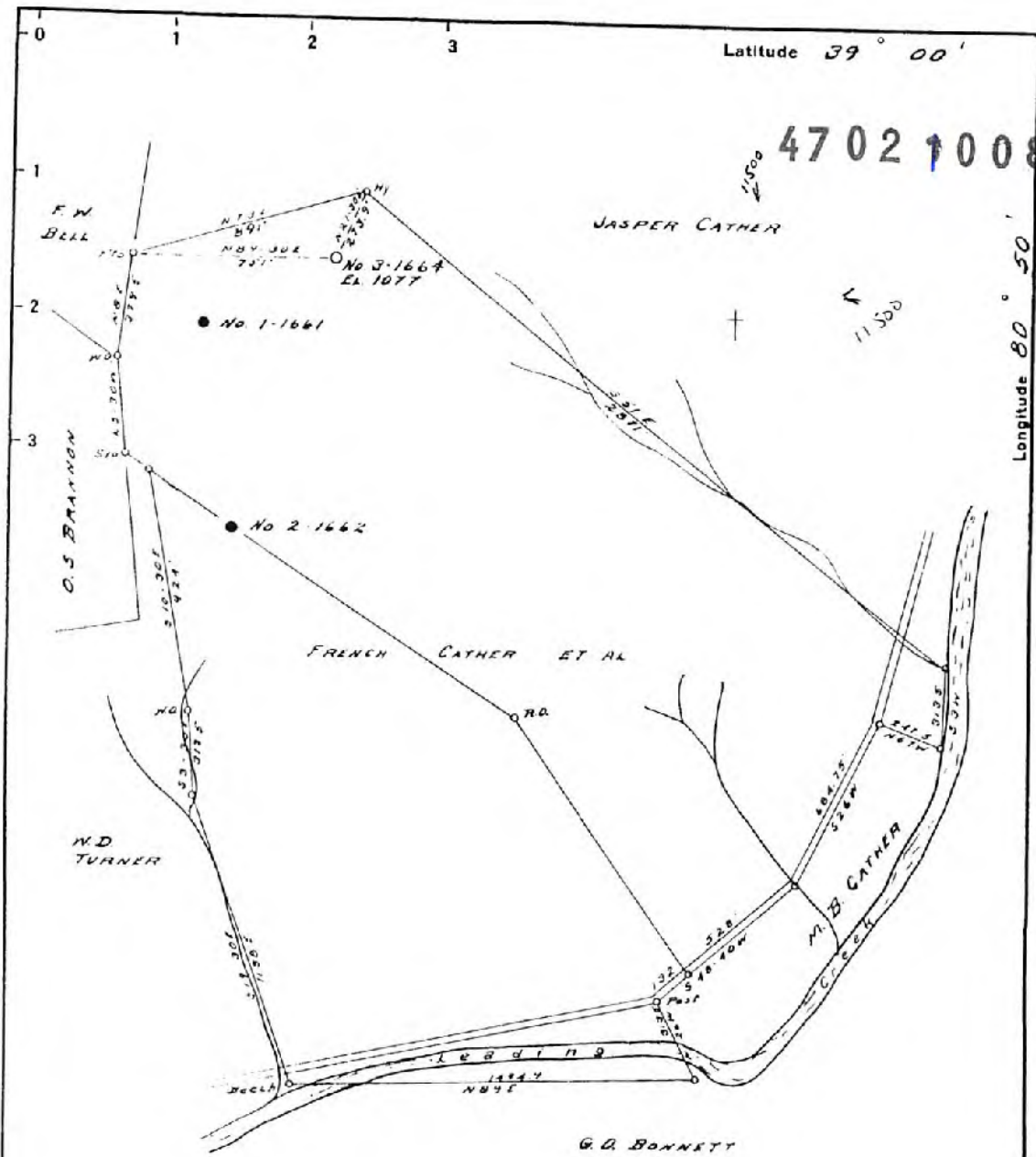
Bot. Hole Packer
8 3/4" x 10"
Set at 1017'
Bot. Hole Packer 7" x 8 3/4"
Set at 1701'

Clay	Red	0	16
Red Rock	Red	15	120
Slate	White	120	220
Red Rock	Red	220	240
Slate	White	240	275
Red Rock	Red	275	300
Slate Shells	Wh.	300	375
Red Rock	Red	375	430
Slate Shls.	White	430	490
Red Rock	Red	490	535
Slate Shls.	White	535	628
Red Rock	Red	628	650
Slate Shls.	White	650	720
Pink Rock	Pink	720	750
Sand	White	750	768
Slate	Black	768	800
Slate Shls.	White	800	870
Sand	White	870	925
Slate Shls.	White	925	996
Sand	White	996	1095
Slate	Light	1095	1105
Sand	Black	1105	1150
Slate	Black	1160	1165
Sand	Dark	1165	1190
Slate	White	1190	1255
Sand	White	1255	1345
Slate	Dark	1345	1435
Sand	White	1435	1510
Slate	Dark	1510	1690
Lime	Dark	1690	1724
Sand	White	1724	1751
Slate	Dark	1751	1753
Lime	Dark	1753	
TOTAL DEPTH			1768

MINERAL RIGHTS OWNED BY:
French Cather, Glenville, W. Va.
Heirs of Hannah E. Britton, DeWitt T.
Britton, Attorney-in-fact, Mannington,
W. Va.

Gas Show 1729
Oil - 1733-1748

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New Location
 Drill Deeper
 Abandonment

Company CARNEGIE NATURAL GAS
 Address PITTSBURGH, PA
 Farm FRENCH CATHER ET AL
 Tract _____ Acres 15.5 Lease No. E1889
 Well (Farm) No. 3 Serial No. E1664
 Elevation (Spirit Level) 1077'
 Quadrangle GLENVILLE NE. & NW.
 County GILMER District DEKALB
 Engineer W. GIGER
 Engineer's Registration No. 1850
 File No. _____ Drawing No. _____
 Date 10-30-50 Scale 1"=500'

STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES
 OIL AND GAS DIVISION
 CHARLESTON

WELL LOCATION MAP
 FILE NO. 61L-965

+ Denotes location of well on United States Topographic Maps, scale 1 to 62,500, latitude and longitude lines being represented by border lines as shown.
 - Denotes one inch spaces on border of original tracing.

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 Office of Oil and Gas
 APR 23 2018
 WV Department of Environmental Protection
 24179

1) Date: April 5, 2018
2) Operator's Well Number
656486 Cather # 1664
3) API Well No.: # 021 - 00865
State County Permit

STATE OF WEST VIRGINIA - BUREAU OF ENVIRONMENT **4702100865P**
DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL & GAS
NOTICE AND APPLICATION TO PLUG AND ABANDON WELL

4) Surface Owner(s) to be served:
(a) Name Bridgett J Chapman
Address 85 Meadow LN
Glenville WV 26351
(b) Name _____
Address _____
(c) Name _____
Address _____
6) Inspector Danny Mullins
Address 220 Jack Acres Rd
Buckhannon WV 26201
Telephone 304-932-6844

5) (a) Coal Operator:
Name None
Address _____
(b) Coal Owner(s) with Declaration
Name Bridgett J Chapman
85 Meadow LN
Address Glenville WV 26351
Name Hannah Britton Hrs
Address c/o K Petroleum/ Heather Graham
81 Mill St. STE 205
Gahanna OH 43230
(c) Coal Lessee with Declaration
Name None
Address _____

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 Division 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: EQT Production Company
By: Erin Spine
Its: Regional Land Supervisor
Address: 2200 Energy Drive
Canonsburg PA 15317
Telephone: (304) 848-0035

Subscribed and sworn before me this 18 day of April, 2018
Rebecca L. Wanstreet Notary Public
My Commission Expires: 4-7-2020

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The Office of Oil & Gas processes your personal information, such as name, address and phone 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 of your personal information, please contact DEP's Chief Privacy Officer at deprivacyofficer@wv.gov.

2) Operator's Well Number

656486 Cather # 1664

3) API Well No.: 47 021 - 00865

47 021 00865 P

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

Operator Name: EQT PRODUCTION COMPANY OP CODE: _____

Watershed (HUC 10): Leading Creek Quadrangle: Gilmer

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

Will a pit be used? Yes X No ___

If so, please describe anticipated pit waste:

Formation Fluids

Will a synthetic liner be used in the pit? Yes X No ___ Is so, what ml.? 20 ml

Proposed Disposal Method for Treated Pit Wastes:

- _____ Land Application (if selected provide a completed form WW-9-GPP)
- _____ Underground Injection (UIC Permit Number _____)
- X _____ Reuse (at API Number -- Various _____)
- X _____ Off Site Disposal Permit (Supply form WW-9 for disposal location. See attachment)
- _____ Other: (Explain _____)

Will closed loop system be used ? If so, describe: _____

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, remove 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 the Oil and Gas of any load of drill cuttings or associated waste rejected at a 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 Division 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.

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.

Office of Oil and Gas

Company Official Signature [Signature] APR 23 2018

Company Official (Typed Name) Erin Spine

Company Official Title Regional Land Supervisor WV Department of

Subscribed and sworn before me this 18 day of April Environmental Protection 2018

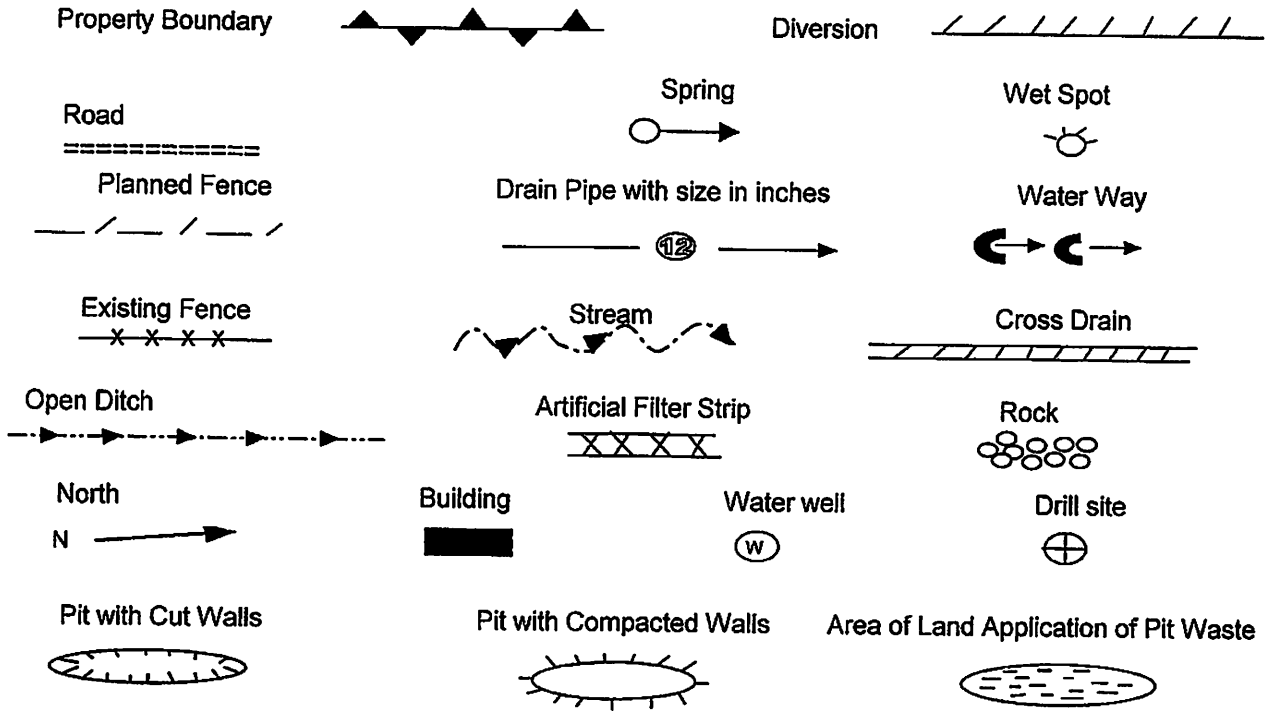
[Signature] My Commission Expires 4-7-2020

Notary Public



OPERATOR'S WELL NO.:
656486 Cather # 1664

LEGEND



DM

Proposed Revegetation Treatment: Acres Disturbed: _____ 1± _____ Prevegetation pH _____

Lime _____ 3 _____ Tons/acre or to correct to pH _____ 6.5 _____

Fertilizer (10-20-20) or equivalent _____ 1/3 ton _____ lbs/acre (500 lbs minimum)

Mulch _____ 2 _____ Tons/acre or hydroseed.

SEED MIXTURES

Area I		Area II	
Seed Type	lbs/acre	Seed Type	lbs/acre
Red Fescue	40	Red Fescue	15
Alsike Clover	5	Alsike Clover	5
Annual Rye	15		

ATTACH:
Drawing(s) of road, location, pit and proposed area for land application.
Photocopies section of involved 7.5' topographic sheet.

Plan approved by: _____

Comments: _____

Title: _____ Date: _____
Field Reviewed? _____ Yes _____ No

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Environmental Protection

EQT Production Water plan
Offsite disposals

4702 · 00865P

Waste Management - Meadowfill Landfill

Rt. 2, Box 68 Dawson Drive
Bridgeport, WV 26330
304-326-6027
Permit #SWF-1032-98
Approval #100785WV

Waste Management - Northwestern Landfill

512 E. Dry Road
Parkersburg, WV 26104
304-428-0602
Permit #SWF-1025 WV-0109400
Approval #100833WV

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WV Department of
Environmental Protection

4702-0000-0000

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APR 23 2018
U.S. Department of
Environmental Protection
Washington, D.C.

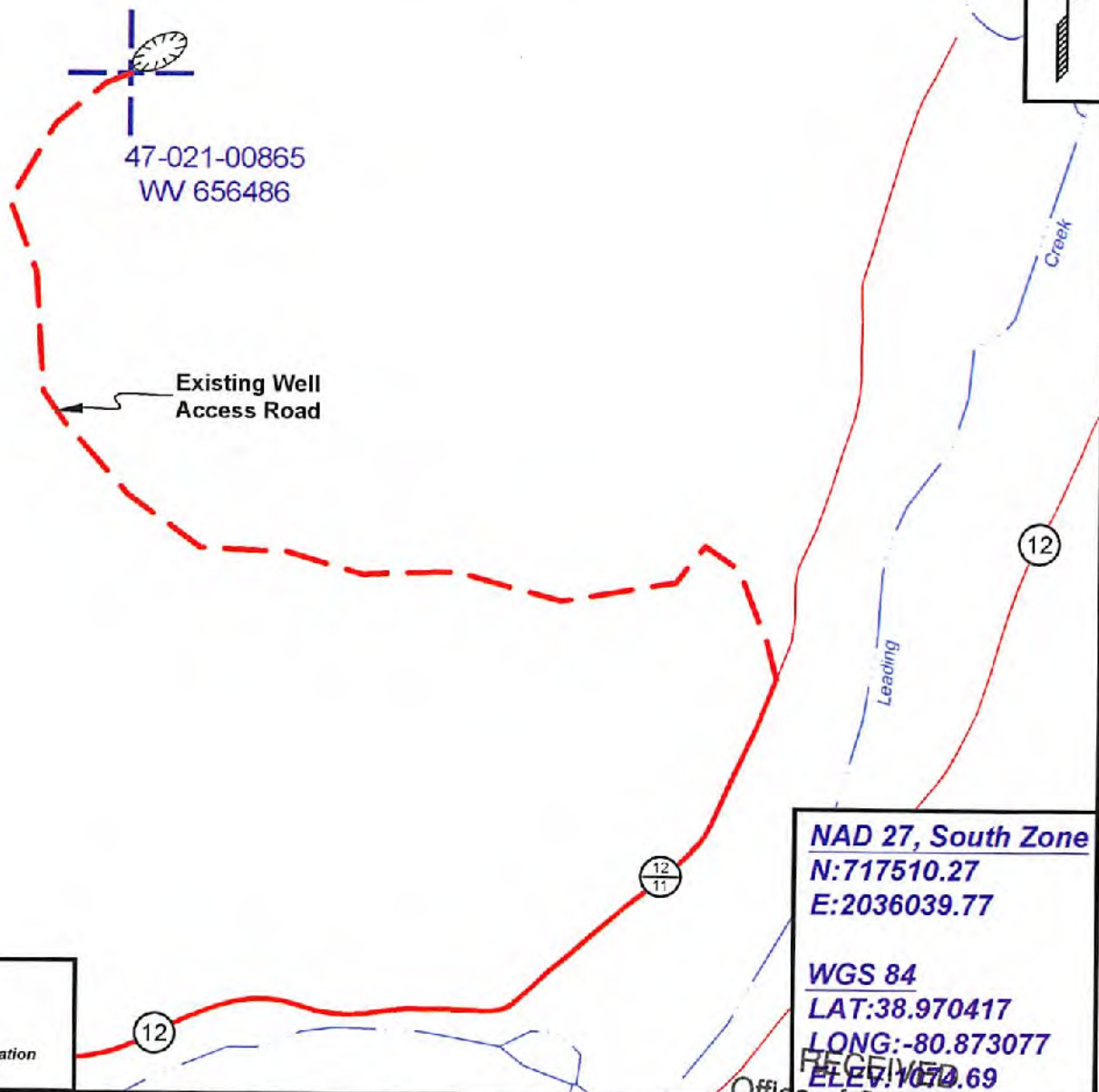
4702100865P

Topo Quad: Glenville 7.5' Scale: 1" = 500'
 County: Gilmer Date: March 19, 2018
 District: DeKalb Project No: 25-19-00-07

Highway

47-021-00865 WV 656486 (Cather #1664)


Pit Location Map



NAD 27, South Zone
 N:717510.27
 E:2036039.77

WGS 84
 LAT:38.970417
 LONG:-80.873077
 ELEV:1070.69

LEGEND

 Proposed Pit Location



SURVEYING AND MAPPING SERVICES PERFORMED BY:
ALLEGHENY SURVEYS, INC.
 1-800-482-8606
 237 Birch River Road
 Birch River, WV 26610
 PH: (304) 649-8606
 FAX: (304) 649-8608

PREPARED FOR:
EQT Production Company
 P.O. Box 280
 Bridgeport, WV 26330
 WV Department of Environmental Protection

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Topo Quad: Glenville 7.5'

Scale: 1" = 400' **4702100865P**

County: Gilmer

Date: March 19, 2018

District: DeKalb

Project No: 25-19-00-07

47-021-00865 WV 656486 (Cather #1664)

Topo

Pit Location Map




Existing Well Access Road

47-021-00865
WV 656486

NAD 27, South Zone
N:717510.27
E:2036039.77

WGS 84
LAT:38.970417
LONG:-80.873077
ELEV:1074.69

LEGEND

 Proposed Pit Location



SURVEYING AND MAPPING SERVICES PERFORMED BY:
ALLEGHENY SURVEYS, INC.
1-800-482-8606
237 Birch River Road
Birch River, WV 26610
PH: (304) 649-8606
FAX: (304) 649-8608

PREPARED FOR: **RECEIVED**
Office of Oil and Gas
EQT Production Company
APR 18 2018
Bridgeport, WV 26330
WV Department of
Environmental Protection

4702 100803



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 WV Department of
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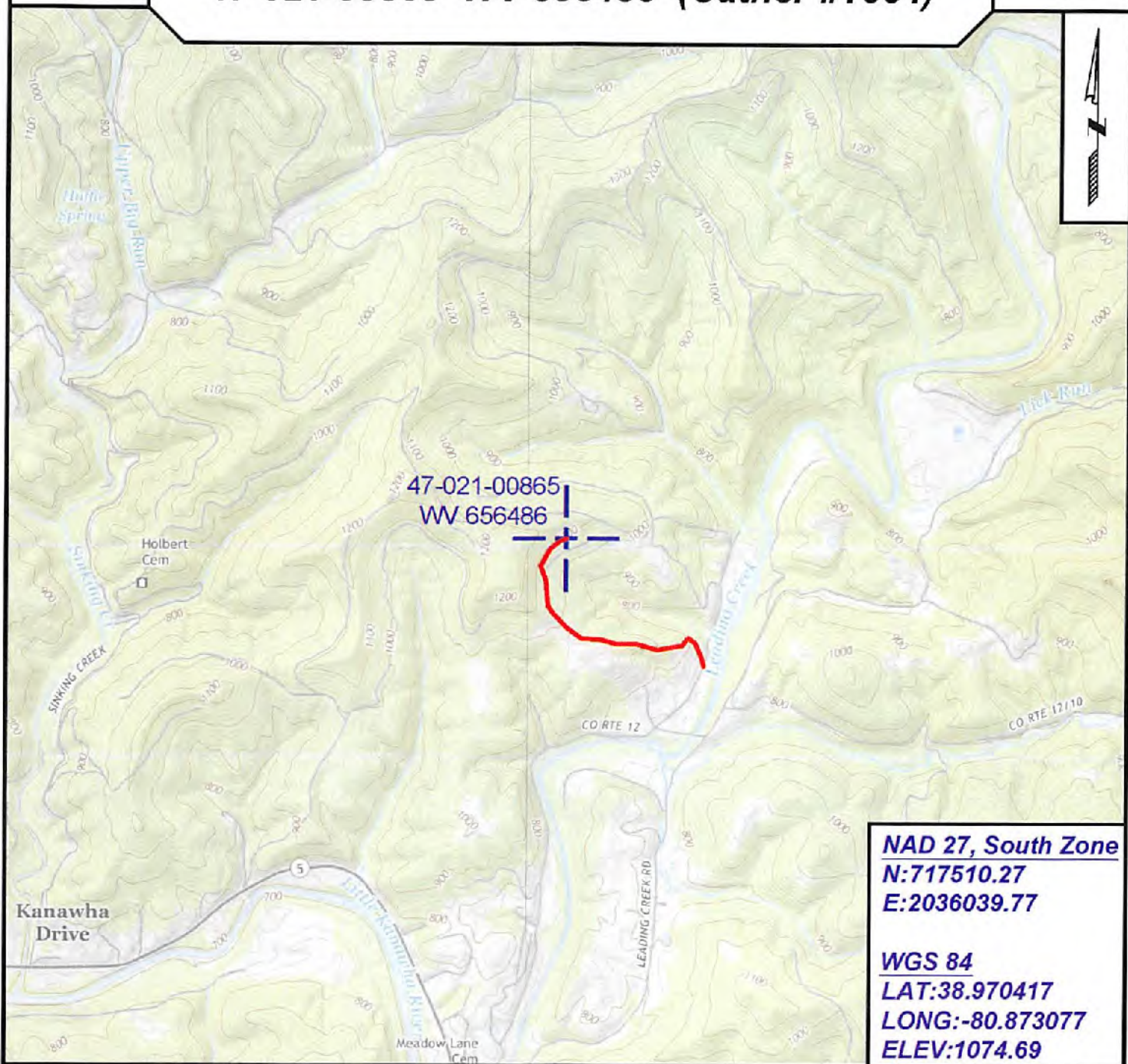


4702100865A

Topo Quad: Glenville 7.5' Scale: 1" = 2000'
 County: Gilmer Date: March 19, 2018
 District: DeKalb Project No: 25-19-00-07

47-021-00865 WV 656486 (Cather #1664)

Topo



47-021-00865
 WV 656486

NAD 27, South Zone
N:717510.27
E:2036039.77

WGS 84
LAT:38.970417
LONG:-80.873077
ELEV:1074.69



SURVEYING AND MAPPING SERVICES PERFORMED BY:
ALLEGHENY SURVEYS, INC.
 1-800-482-8606
 237 Birch River Road
 Birch River, WV 26610
 PH: (304) 649-8606
 FAX: (304) 649-8608

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EQT Production Company
 P.O. Box 280
 Bridgeport, WV 26330
 APR 20 2018
 WV Department of
 Environmental Protection



POTENTIAL WATER SAMPLE DATA SHEET

CLIENT: EQT PRODUCTION COMPANY

LEASE NAME AND WELL No. Cather #1664 - WV 656486 - API No. 47-021-00865

POTENTIAL SAMPLE LOCATIONS

There appears to be no potential water sources within the required 1000 feet of the existing well WV 656486.

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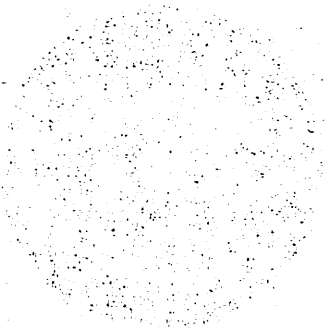
APR 23 2018

BIRCH RIVER OFFICE
237 Birch River Road
Birch River, WV 26610
phone: 304-649-8606 fax: 304-649-8608

BRIDGEPORT OFFICE
172 Thompson Drive
Bridgeport, WV 26330
phone: 304-848-5035 fax: 304-848-5037

WV Department of Environmental Protection
CHARLOTTE OFFICE
P.O. Box 108 - 1413 Gildress Road
Martinsburg, WV 25003
phone: 304-756-2949 fax: 304-756-2948

9702:008029



ENVIRONMENTAL PROTECTION AGENCY

U.S. DEPARTMENT OF AGRICULTURE
WASHINGTON, D.C. 20503

OFFICE OF OIL AND GAS

WASHINGTON, D.C. 20503

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Office of Oil and Gas
APR 24 1980
U.S. DEPARTMENT OF AGRICULTURE
Environmental Protection

Topo Quad: Glenville 7.5'

Scale: 1" = 2000' **4702100865P**

County: Gilmer

Date: March 19, 2018

District: DeKalb

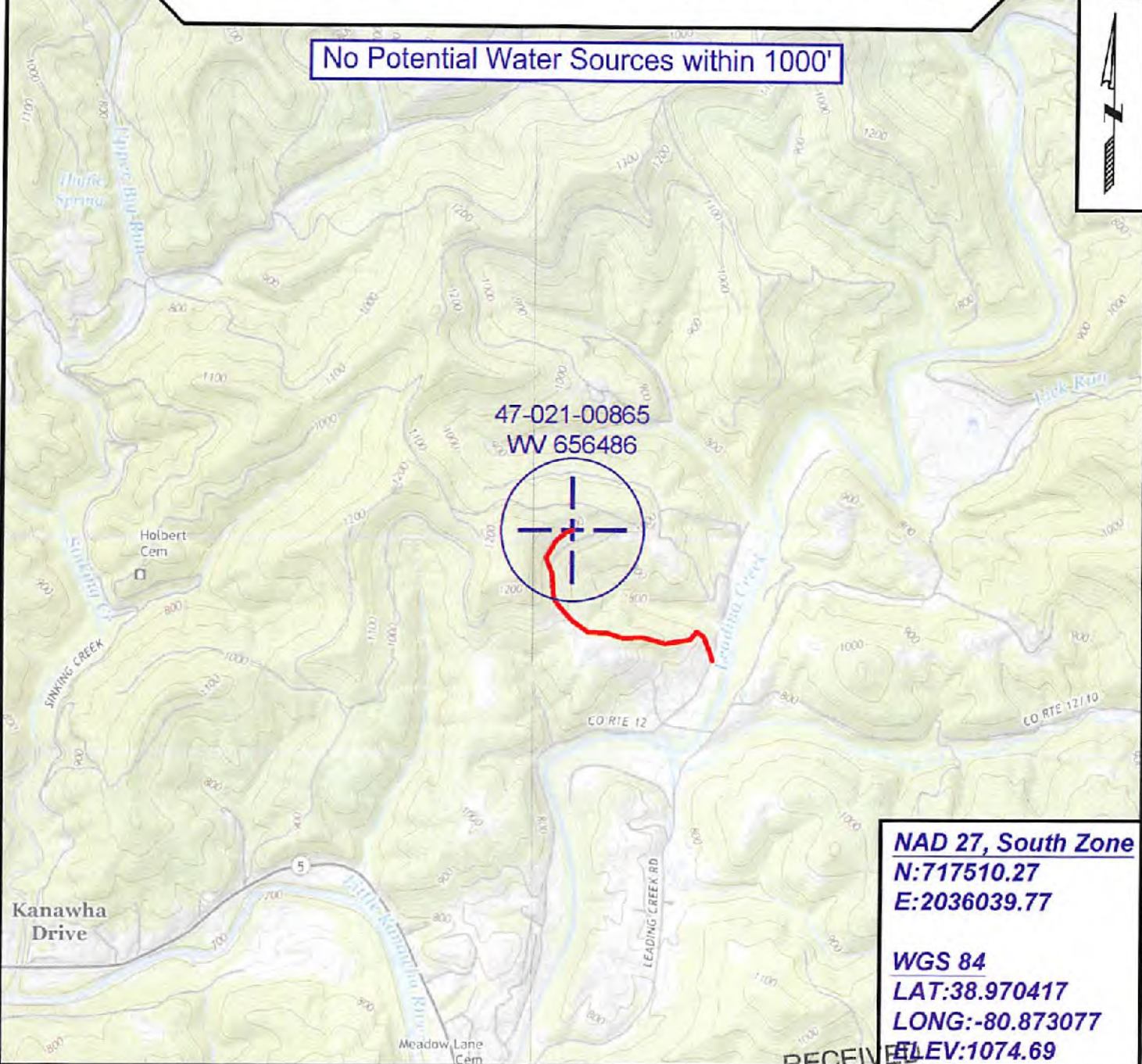
Project No: 25-19-00-07

Water

47-021-00865 WV 656486 (Cather #1664)

No Potential Water Sources within 1000'

47-021-00865
WV 656486



NAD 27, South Zone
N:717510.27
E:2036039.77

WGS 84
LAT:38.970417
LONG:-80.873077
ELEV:1074.69

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ALLEGHENY SURVEYS, INC.
1-800-482-8606
237 Birch River Road
Birch River, WV 26610
PH: (304) 649-8606
FAX: (304) 649-8608

PREPARED FOR:
Office of Oil and Gas
EQT Production Company
APR 23 2018
P.O. Box 280
Bridgeport, WV 26330
WV Department of
Environmental Protection

42021008026

Environmental Protection Agency

Office of Oil and Gas

Washington, D.C. 20460

Attention: [Illegible]

Date: [Illegible]

Re: [Illegible]

[Illegible]

[Illegible]

[Illegible]

[Illegible]

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[Illegible]

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Office of Oil and Gas
APR 23 1976
U.S. Department of
Environmental Protection

WW-7
8-30-06

47-021-00865P



West Virginia Department of Environmental Protection
Office of Oil and Gas
WELL LOCATION FORM: GPS

API: 47-021-00865 WELL NO.: WV 656486 (Cather #1664)

FARM NAME: French Cather, et al.

RESPONSIBLE PARTY NAME: EQT Production Company

COUNTY: Gilmer DISTRICT: DeKalb

QUADRANGLE: Glenville 7.5'

SURFACE OWNER: Bridgett J. Chapman

ROYALTY OWNER: Linda Bowers, et al.

UTM GPS NORTHING: 4313501

UTM GPS EASTING: 510995 GPS ELEVATION: 327 m (1075 ft)

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:

1. Datum: NAD 1983, Zone: 17 North, Coordinate Units: meters, Altitude: height above mean sea level (MSL) – meters.
2. Accuracy to Datum – 3.05 meters
3. Data Collection Method:

Survey grade GPS _____ : Post Processed Differential _____
Real-Time Differential _____

Mapping Grade GPS X : Post Processed Differential X
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.

[Signature]
Signature

PS# 2180
Title

3/22/18
Date

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Office of Oil and Gas
APR 23 2018
WV Department of
Environmental Protection