



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 16, 2016

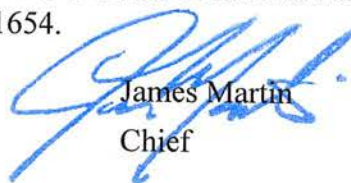
WELL WORK PLUGGING PERMIT

Plugging

This permit, API Well Number: 47-7301526, issued to LOGUE, CATHY, 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 penalties 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: CUNNINGHAM 1

Farm Name: KEARSE, G. W.

API Well Number: 47-7301526

Permit Type: Plugging

Date Issued: 05/16/2016

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.

WW-4B
Rev. 2/01

1) Date March 9, 2016
2) Operator's
Well No. Cunningham 1
3) API Well No. 47-073 - 01520

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 ___
- 5) Location: Elevation 961' Watershed Burnt Cabin Run
District McKim County Pleasants Quadrangle Schultz 7-1/2 quad
- 6) Well Operator Cathy Logue 7) Designated Agent _____
Address 1664 Hardy Hill Road Address _____
St. Marys WV 26170
- 8) Oil and Gas Inspector to be notified 9) Plugging Contractor
Name Derek Haught Name Chisler Brothers Contracting
Address PO Box 85 Address PO Box 101
Smithville WV 26178 Pentress WV 26544

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

Ensure all necessary E&S controls are installed

Perform necessary earth work to establish access and work area for rig
Perform Cement Bond Log to confirm 4 1/2" casing is CTS. Remove any free pipe.
RIH with open ended tubing to determine PBTD

Gel hole with 6% bentonite

Pull tubing up to 50 ft below perforations, pump in adequate cement to fill

perforations and ²⁰⁰~~100~~ ft above.

If 4 1/2" casing is CTS, place minimum 100 ft plugs at 4000 ft, 3000 ft, 2000 ft and 1000 ft.

Pull tubing to ²⁰⁰~~100~~ ft from surface and put in surface cement plug.

Place a standing well monument with API number and reclaim site *PER WV STATE CODE.*

Tag all plugs to confirm placement as required. Top off as needed.

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

Work order approved by inspector Derek M. Haught

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4/25/2016

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WV Department of
Environmental Protection

05/20/2016



SEPT 13 1983
OIL & GAS
DEPT. OF MINES

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
Oil and Gas Division

WELL RECORD

Quadrangle Schultz 7.5
Permit No. 47-073-1526

Rotary Oil
Cable Gas
Revolving Comb.
Water Flood Storage
Disposal (Land)

Company Errell Prior
Address P. O. Box 1486, Parkersburg, W. Va.
Farm Cunningham Acres 30
Location (waters) Burnt Cabin Run
Well No. One (1) Elev. 1119.20
District McKim County Plasents
The surface of tract is owned in fee by G. W. Kearse
Address St. Marys, W. Va.
Mineral rights are owned by P. E. Cunningham
Address P. O. Box 92, Blomont, W. Va.
Drilling Commenced 11-8-1982
Drilling Completed 11-16-1982
Initial open flow Show cu. ft. Show lbs.
Final production 20.10m thru 2" per day Show bbls.
Well open 5 hrs. before test 1450 K.
Well treatment details:
Howeco Nitrogen Eric three stage 12-16 and 17, 1982
152 NCL 1500 gallons Nitrogen 40,000

Casing and Tubing	Depth in Drilling	Depth in Well	Cement fill up Cu. Ft. (Sks.)
Size 20-16			
20-16			
13-10"			
9 5/8			
8 5/8	1188	1188	To surface
7			
5 1/2			
4 1/2			
3		5084	525 sks.
2			
1 1/2			
1			
3/4			
5/8			
3/8			
1/2			
1/4			
1/8			

Coal was encountered at None Feet _____ Inches _____
Fresh water 50 Feet _____ Salt Water None Feet _____
Producing Sand Devonian Shale Depth 3407 - 4426

Formation	Color	Hard or Soft	Top Feet	Bottom Feet	Oil, Gas or Water	Remarks
Clay			0	15		
Sand			15	55		
Red Rock and Slate			55	365		
Sand			365	395		
Red Rock & slate			395	720		
Sand			720	787		
Shale			787	920		
Slate			920	1080		
Sand			1080	1150		
First Salt Sand			1150	1184		
Shale			1184	1242		
Second Salt Sand			1242	1264		
Shale			1264	1324		
Third Salt Sand			1324	1362		
Shale			1362	1490		
Princeton Sand			1490	1510		
Shale			1510	1520		
Ravenciff			1520	1584		
Shale			1584	1592		
Maxon Sand			1592	1660		
Shale			1660	1696		
Lower Maxon			1696	1740		
Shale			1740	1776		
Little Line			1776	1822		

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* Indicates Electric Log tops in the remarks section.

PLATE 1526

Formation	Color	Hard or Soft	Top Feet	Bottom Feet	Oil, Gas or Water	Remarks
Shale			1822	1848		
Blue Monday			1848	1878		
Shale			1878	1908		
Big Lime			1908	1992		
Keener Sand			1992	2046		
Shale			2046	2058		
Injun Sand			2058	2106		
Shale			2106	2118		
Squaw Sand			2118	2148		
Shale			2148	2608		
Herea Sand			2608	2620		
Shale			2620	2728		
Gantz Sand			2728	2750		
Devonian Brown shale			2750	5110		
Total Depth			5110			

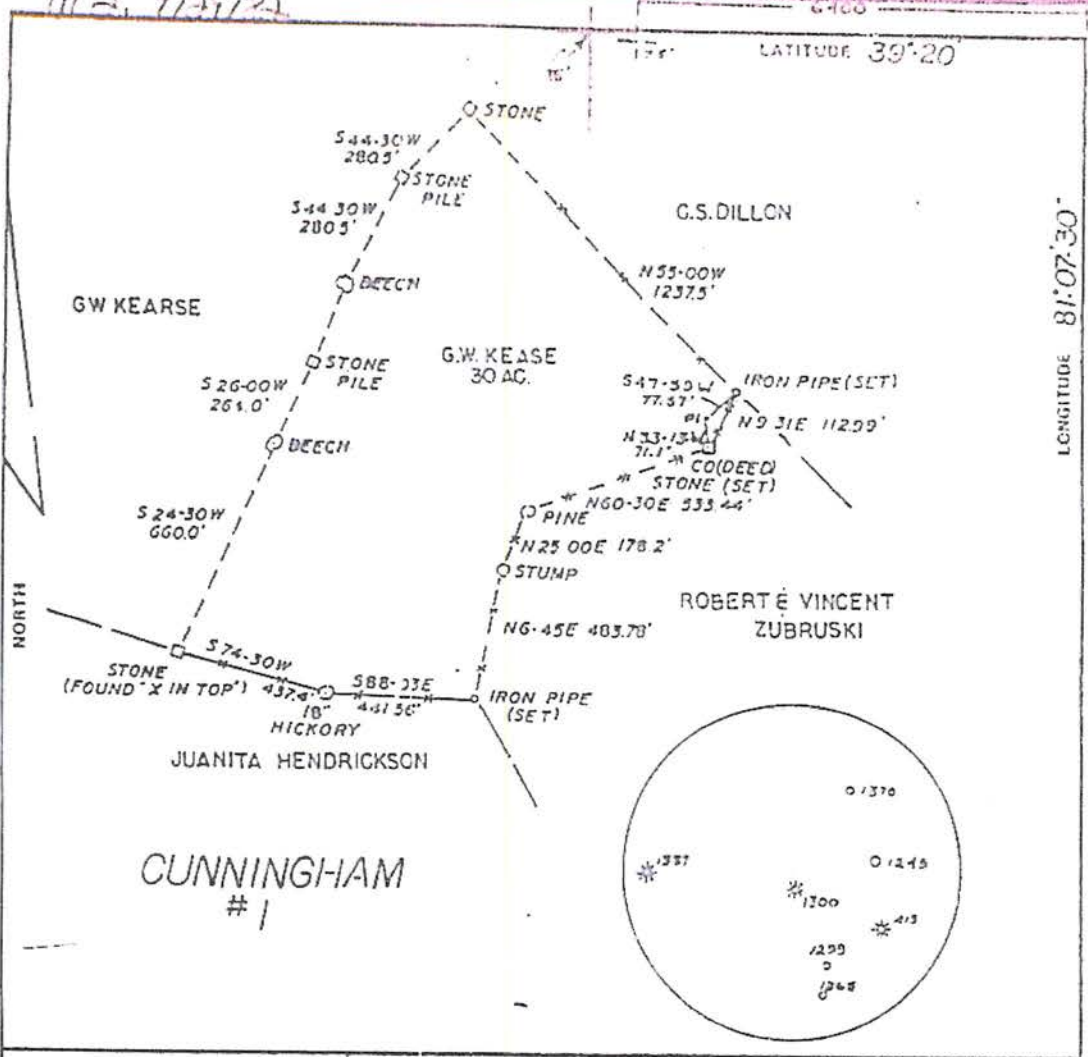
Perforations:
 4426 - 4424
 4362 - 4334, 32, 31,
 4149 - 4148, 26, 25
 4048 - 4046, 27, 26, 25, 24
 3978 - 3945, 28
 3893
 3854 - 3845, 16, 14, 13, 12,
 3611
 3575 - 3551
 3410 - 3401, 08, 07

Date _____ RECEIVED
 APPROVED *Fewell* Office of Oil and Gas

By _____ Date MAY 02 2016

73-01526
 WV Department of
 Environmental Protection

112, 9/29/22



FILE NO. _____	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 MINES. (SIGNED) <u>[Signature]</u> R.P.E. _____ L.L.S. <u>[Signature]</u>	PLACE SEAL HERE
DRAWING NO. _____		
SCALE <u>1"=400'</u>		
MINIMUM DEGREE OF ACCURACY <u>1"=200'</u>		
PROVEN SOURCE OF ELEVATION <u>HILL TOP</u>		
ELEVATION <u>1165'</u>		

(*) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
FORM IV-6 (8-78)

DATE SEPT 15 1982
OPERATOR'S WELL NO. _____
API WELL NO. 47 - 073 - 1526
STATE COUNTY PERMIT

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION

WELL TYPE: OIL GAS LIQUID INJECTION _____ WASTE DISPOSAL _____
(IF "GAS,") PRODUCTION STORAGE _____ DEEP _____ SHALLOW _____

LOCATION: ELEVATION 812.80' WATER SHED BURNY CARIN RUN
DISTRICT MCKIM COUNTY PICASANTS
QUADRANGLE SCHULTZ 72

SURFACE OWNER GW KEARSE ACREAGE 10
OIL & GAS ROYALTY OWNER RE CUNNINGHAM ET AL LEASE ACREAGE 10
LEASE NO. _____

PROPOSED WORK: DRILL CONVERT _____ DRILL DEEPER _____ REDRILL _____ FRACTURE OR STIMULATE _____ PLUG OFF OLD FORMATION _____ PERFORM _____ FORMATION _____ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____

PLUG AND ABANDON _____ CLEAN OUT AND REPLUG _____
TARGET FORMATION BROWN SHALE ESTIMATED DEPTH 4000'
WELL OPERATOR FERRILL PRIOR DESIGNATED AGENT FERRILL PRIOR
ADDRESS P.O. BOX 1486 PARKERSBURG ADDRESS P.O. BOX 1486 PARKERSBURG
W.V. DEPARTMENT OF MINES

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Office of Oil and Gas

MAY 02 2016

WW-4A
Revised 6-07

1) Date: March 9, 2016
2) Operator's Well Number
Cunningham 1
3) API Well No.: 47 - 073 - 01526

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:	5) (a) Coal Operator
(a) Name <u>Cathy Logue</u>	Name _____
Address <u>1664 Hardy Hill Road</u>	Address _____
<u>St. Marys WV 26170</u>	
(b) Name _____	(b) Coal Owner(s) with Declaration
Address _____	Name _____
	Address _____
(c) Name _____	Name _____
Address _____	Address _____
6) Inspector <u>Derek Haught</u>	(c) Coal Lessee with Declaration
Address <u>PO Box 85</u>	Name _____
<u>Smithville WV 26178</u>	Address _____
Telephone <u>304-206-7613</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 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 Cathy Logue
 By: Cathy Logue
 Its: owner
 Address 1664 Hardy Hill Road
St. Marys WV 26170
 Telephone _____



Subscribed and sworn before me this 11th day of March 2016
Crystal J. Spears Notary Public
 My Commission Expires Nov 3 2018
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 Office of Oil and Gas

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 the use of your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

MAY 02 2016
 DEPARTMENT OF ENVIRONMENTAL PROTECTION

WW-9
(2/15)

API Number 47 - 073 - 01526
Operator's Well No. Cunningham 1

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Cathy Logue OP Code _____
Watershed (HUC 10) Burnt Cabin Road Quadrangle Schultz 7-1/2

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 gwnu per ATTACHMENT A

If so, please describe anticipated pit waste: water

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

Proposed Disposal Method For Treated Pit Wastes:

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

Will closed loop system be used? If so, describe: yes - see attachment

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

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

Additives to be used in drilling medium? bentonite

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

-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 Bruce A. Chisler

Company Official (Typed Name) Bruce A Chisler

Company Official Title Operating Manager

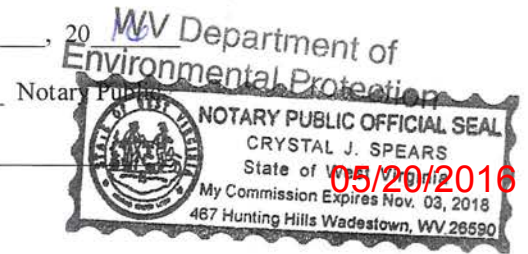
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Subscribed and sworn before me this 11th day of March, 2016

Crystal J Spears
Notary Public

My commission expires Nov 3 2018



Attachment A to WW-9

Cathy Logue plans to utilize a closed loop process for the drilling of the H-1290 well. Return flow from the well will be separated into its liquid and solid form. Liquids will be held in steel tanks and reused in the drilling and completions process or disposed of at an approved facility listed below. Solids removed from the stream will be diverted to steel half-round tanks where they will be solidified on site and taken to disposal as they are accumulated.

H-1290 drill cuttings will be taken to disposal at one or more of the following disposal/approved waste facilities, unless listed facilities are no longer approved to accept waste at time of disposal.

- Westmoreland Landfill (Tervita) – Belle Vernon, PA (Permit #100277)
- Meadowfill Landfill (Waste Management) – Bridgeport WV (Permit #SWF103298)
- Max Environmental – Yukon, PA (PAD004835146 and 301071)
- Max Environmental – Bulger, PA (PAD059087072 and 301359)
- Chestnut Valley Landfill (Advanced Disposal) – Export, PA (Permit #101421)

Cathy Logue plans to reuse and recycle all flow back fluid and/or reach out to other operators in the area who may be able to reuse and recycle such fluid. However, in the event that reuse is not obtainable the fluid will be disposed of at one, or multiple, of the following disposal/approved waste facilities unless listed facilities are no longer approved or accept waste at time of disposal:

- Fairmont Brine Processing (WV NPDES #0116408)
- Green Hunter M.E> Elder 1 Disposal Well (Permit #47-085-05151)
- Green Hunter Mason 1 Disposal Well (Permit #47-085-09721)
- Green Hunter Warren Disposal Well (Permit #34-121-2-3995)
- Green Hunter Travis Unit Disposal Well (Permit #34-121-2-4086)
- Viking Energy Corporation 20320 Disposal Well (Permit #47-039-02210)
- Ohio Oil Gathering Killbuck Disposal Well (Permit #34-075-24527)
- Ohio Oil Gathering Moran Disposal Well (Permit #34-089-24792)
- Ohio Oil Gathering Bells Run Disposal Well (Permit #34-167-29395)
- Ohio Oil Gathering Long Run Disposal Well (Permit #34-167-29658)
- Ohio Oil Gathering Newell Run Disposal Well (Permit #34-167-29658)
- Appalachian Oil Purchaser Greens Run Disposal Well (Permit #2D0732540)
- Appalachian Oil Purchaser BW#4 Disposal Well (Permit #2D0732523)

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WV Department of
Environmental Protection

05/20/2016

Form WW-9

Operator's Well No. Cunningham 1

Cathy Logue

Proposed Revegetation Treatment: Acres Disturbed 2.2 Prevegetation pH TBD

Lime 2 Tons/acre or to correct to pH 7

Fertilizer type 19-19-19

Fertilizer amount 500 lbs/acre

Mulch 2 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
orchard grass	46	orchard grass	46
red clover	8	red clover	8
tertapolid perennial rye	16	tertapolid perennial rye	16
timothy 15 annual rye	15	timothy 15 annual rye	15

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: _____

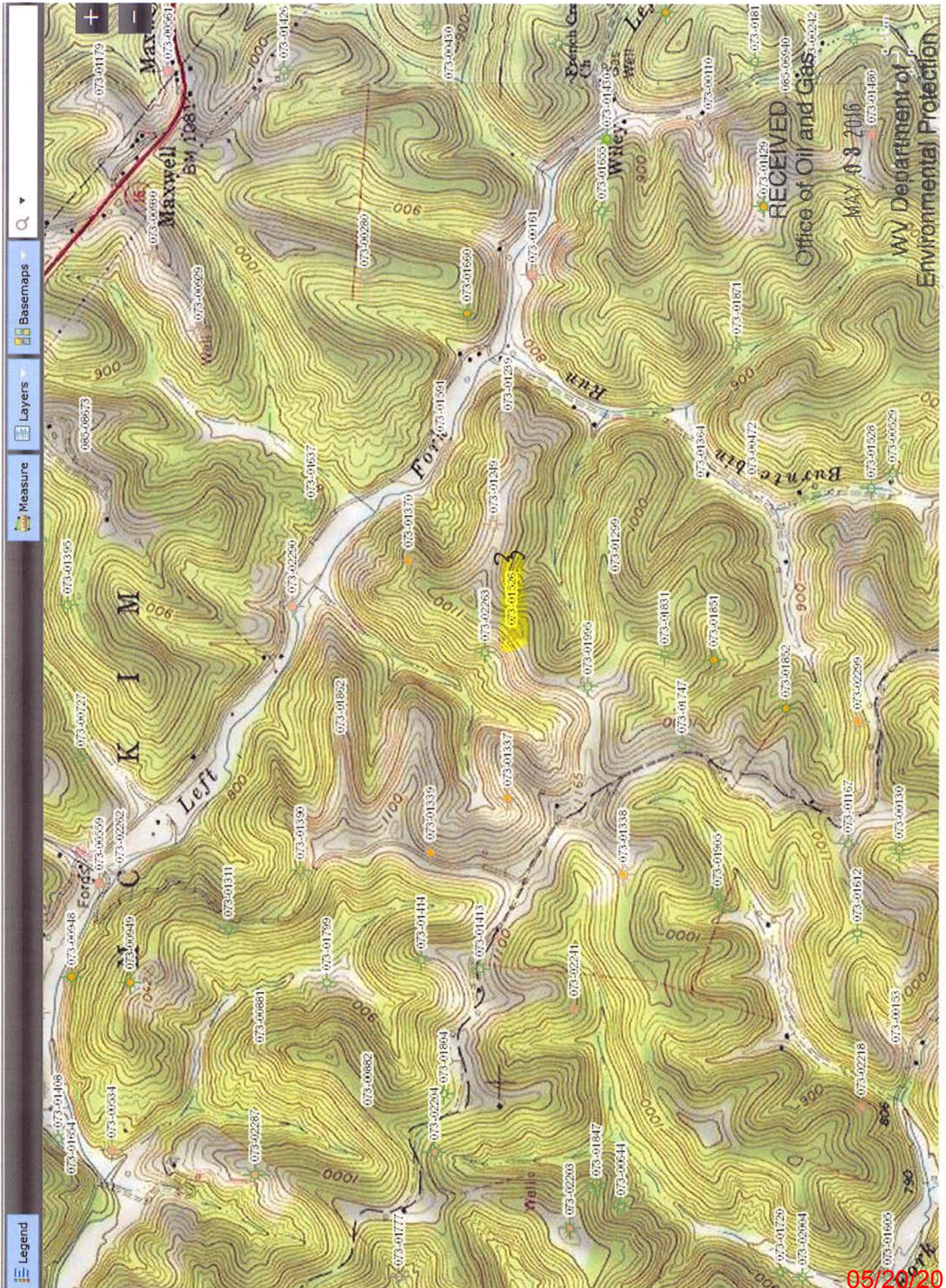
Comments: _____

Title: _____

Date: _____

Field Reviewed? () Yes () No

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MAY 02 2016
WV Department of
Environmental Protection



WW-7
8-30-06



West Virginia Department of Environmental Protection
Office of Oil and Gas

WELL LOCATION FORM: GPS

API: 47-073-01526 WELL NO.: Cunningham 1
FARM NAME: Kearse G. Warren
RESPONSIBLE PARTY NAME: Cathy Logue
COUNTY: Pleasants DISTRICT: McKim
QUADRANGLE: Schultz 7-1/2
SURFACE OWNER: Cathy Logue
ROYALTY OWNER: Cathy Logue
UTM GPS NORTHING: 4353738.6
UTM GPS EASTING: 487262.4 GPS ELEVATION: 1165'

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 X : Post Processed Differential ____
Real-Time Differential X

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.

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West Virginia Department of Environmental Protection

Cathy Logue Signature Quinn Title 3-11-10 Date