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

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

Wednesday, August 03, 2016
WELL WORK PERMIT
Vertical / Plugging - 2

EXCO RESOURCES (PA), LLC
260 EXECUTIVE DRIVE

CRANBERRY TOWNSHIP, PA 16066

Re: Permit approval for KEM-734
47-107-01413-00-00

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: KEM-734
Farm Name: HOFMANN, WILBERT
U.S. WELL NUMBER: 47-107-01413-00-00
Vertical / Plugging - 2
Date Issued: 8/3/2016

Promoting a healthy environment.

I

10701413P

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 within two years of the date of issuance of this permit.

10701413P

WW-4B
20
Rev. 2/01

1) Date 5/1/2016,

2) Operator's
Well No. Hufmann Kem 734
API Well No. 47- 107 01413

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 610 Watershed Ohio River
District Harris County Wood Quadrangle Lubeck 7.5

6) Well Operator EXCO Resources (PA), LLC
Address PO Box 8.
Ravenswood, WV 26164

7) Designated Agent Diana Stampler/C.T.Corp.
Address 5400 D Big Tyler Road
Charleston, WV 25301

Oil and Gas Inspector to be notified
Name Jamie Stevens
Address 105 Kentuck Rd.Kenna WV25248

PHONE 304 206 7775

9) Plugging Contractor
Name R & R WELL SERVICE
Address 42 LYNCH RIDGE
WALTON, WV 25286

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

PERFORATIONS FROM 1805' TO 1807' (16)
1894' OF 7". CEMENTED W/ 200 SKS CEMENT.

Check Rock pressure
Remove all equipment used to produce well
Run tubing to PBTD of ~~1913~~ ≈1860' gel hole ✓ OK
Cement ~~1913~~ 1860' to ~~1813~~ 1700' over 7"seat & PERFORATIONS
WOC 4 HRS. TAG PLUG. ADD CLASS A CEMENT IF NEEDED.
Freepoint cut and pull 7"csg ≈ 300'.
Gel to 50'below cut @ 300'.
Cement: FROM 50' BELOW CUT @ ≈ 350' TO SURFACE ✓
~~Cement 660 to 560 over elevation~~ ✓
~~Gel 560 to 310~~
~~Cement 310 to 210 across surface pipe seat~~ ✓
~~Gel to 100'~~
~~Cement 100'to surface~~ ✓
Set monument with proper API

RECEIVED
Office of Oil and Gas
JUL 05 2016
WV Department of
Environmental Protection

Signature Jamie Stevens Date 6/17/2016

10701413P

IV-35
(Rev 8-81)

RECEIVED
OCT 0 1 198
W. VA. OIL & GAS
CONSERVATION COMMISSION

State of West Virginia
Department of Mines
Oil and Gas Division

Date October 2, 1987
Operator's BW #28
Well No. (KEM #734)
Farm Wilbert Hofmann
API No. 47- 107-1413

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 X /)

LOCATION: Elevation: 610' Watershed Ohio River
District: Harris County Jackson Quadrangle Lubeck

COMPANY Peake Energy, Inc.
ADDRESS P. O. Box 8, Ravenswood, WV 26164
DESIGNATED AGENT R. A. Pryce
ADDRESS Same
SURFACE OWNER Wilbert Hofmann
ADDRESS Rt. 1, Box 42, New England, WV
MINERAL RIGHTS OWNER Same
ADDRESS
OIL AND GAS INSPECTOR FOR THIS WORK Glen Robinson ADDRESS Mt. Plesant Estate, Minera Wells, WV
PERMIT ISSUED
DRILLING COMMENCED 9/18/87
DRILLING COMPLETED 9/22/87
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.			
10 3/4"	10 3/4"	257'	175 sks classA
9 5/8			
8 5/8			
7	7"	1894'	100 sks class A, ~~100 sks~~ pozmix
5 1/2			
4 1/2			
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Berea Sandstone Depth 1805 feet
Depth of completed well 1913' feet Rotary X / Cable Tools
Water strata depth: Fresh -- feet; Salt -- feet
Coal seam depths: N/A Is coal being mined in the area? NO
Drilled on fluid not known.

OPEN FLOW DATA
Producing formation Berea Sandstone Pay zone depth 1805-1807 feet
Gas: Initial open flow -- Mcf/d Oil: Initial open flow -- Bbl/d
Final open flow 200 Mcf/d Final open flow -- Bbl/d
Time of open flow between initial and final tests 4 hours
Static rock pressure 800 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

(Continue on reverse side)

RECEIVED
Office of Oil and Gas
JUL 0 5 2016
WV Department of
Environmental Protection

10701413P

FORM IV-35
(REVERSE)

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

9/25/87 Young Wireline perforated Berea from 1805' to 1807' with 16 .39" diameter shots.

9/28/87 NOWSCO 75% foam fractured the Berea with 45,000# of 20/40 sand and 15,000# of 10/20 sand, 648,000 scf of nitrogen, and 319 bbls of water at 1450 psig. ISIP: 1160 psig. 5 min SIP: 1080 psig.

WELL LOG

FORMATION COLOR HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fres and salt water, coal, oil and ga
Shale	0	42	
Sand	42	100	
Shale & Siltstone	100	306	
Sand	306	394	
Shale	394	423	
Sand	423	447	
Shale & Siltstone	447	849	
Sand	849	875	
Shale	875	1030	
Dunkard Sands	1030	1230	
Shale	1230	1310	
Salt Sands	1310	1436	
Shale	1436	1790	
Coffee Shale (Sunbury)	1790	1806	
Berea Sand	1806	1810	
Shale	1810	1913	
Total Depth	1913		

RECEIVED
Office of Oil and Gas
JUL 05 2016
WV Department of
Environmental Protection

(Attach separate sheets as necessary)

Peake Energy, Inc.
Well Operator

By: K A P

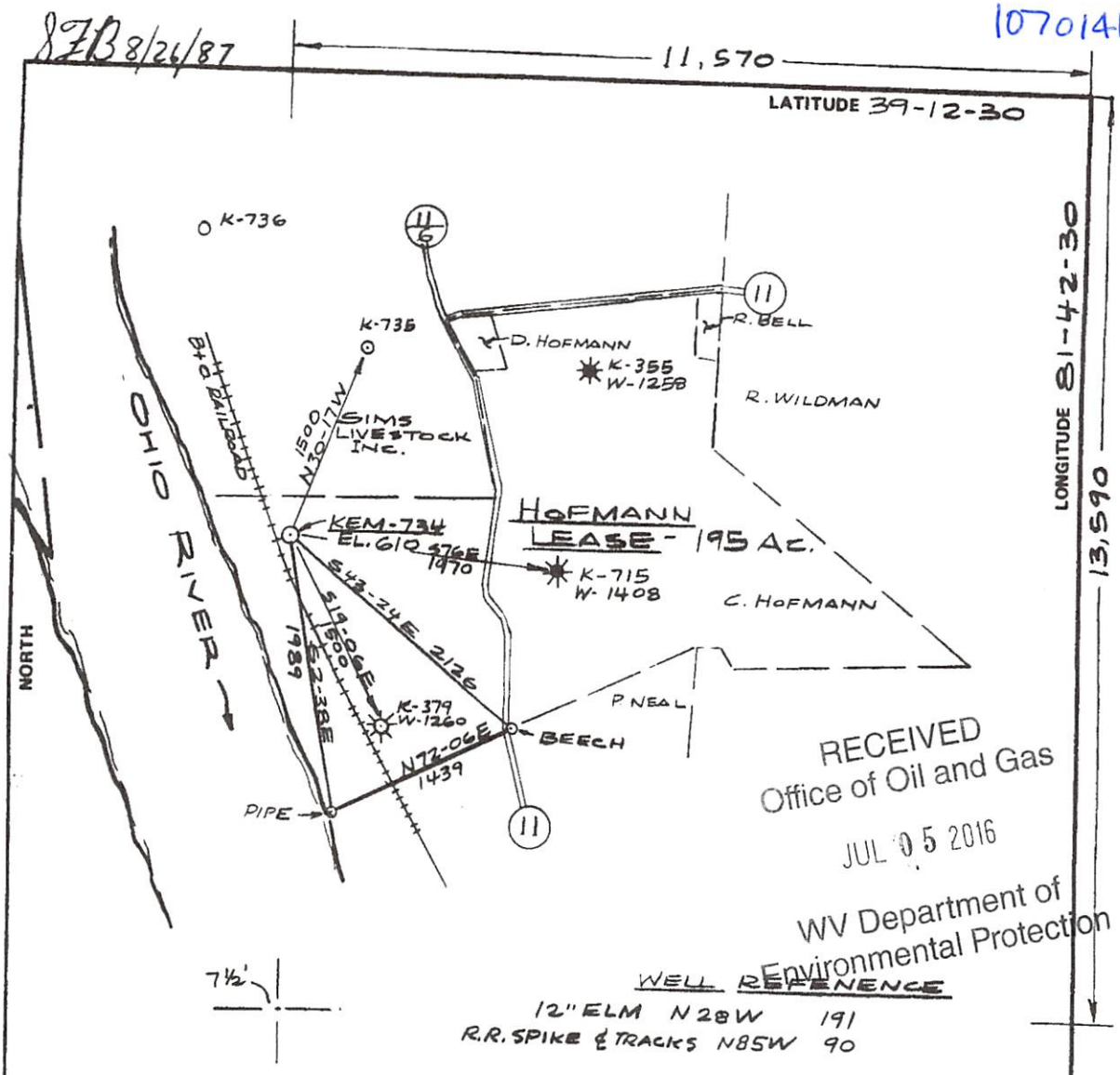
Date: October 2, 1987

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."

54

SFB 8/26/87

10701413P



RECEIVED
Office of Oil and Gas
JUL 05 2016
WV Department of Environmental Protection

FILE NO.
DRAWING NO.
SCALE 1" = 1000'
MINIMUM DEGREE OF ACCURACY 1 IN 200
PROVEN SOURCE OF ELEVATION INTERSECTION CO. RD. 11+11/6, ELEV = 644

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) Lawrence R Boice
R.P.E. _____ L.L.S. 667

PLACE SEAL HERE

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

FORM IV-6
(8-78)

DATE AUGUST 14, 1987
OPERATOR'S WELL NO. KEM-734
API WELL NO.
47 - 107 - 1413
STATE COUNTY PERMIT

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION

WELL TYPE: OIL X GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
(IF "GAS,") PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X
LOCATION: ELEVATION 610 WATER SHED OHIO RIVER
DISTRICT HARRIS COUNTY WOOD
QUADRANGLE LUBECK 7½
SURFACE OWNER WILBERT G + CLARA HOFMANN ACREAGE 189.69
OIL & GAS ROYALTY OWNER WILBERT G. + CLARA HOFMANN LEASE ACREAGE 195
LEASE NO. 86-02-1938
PROPOSED WORK: DRILL X CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) ___

PLUG AND ABANDON ___ CLEAN OUT AND REPLUG ___
TARGET FORMATION BEREA ESTIMATED DEPTH 1875
WELL OPERATOR KAISER EXPLOR + MIN. CO. DESIGNATED AGENT R. A. PRYCE
ADDRESS P.O. BOX 8 ADDRESS P.O. BOX 8
RAVENSWOOD, WV 26164 RAVENSWOOD, WV 26164

JF
6/17/2016

WOOD 1413

1070413P

RECEIVED
AUG 25 1987
DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

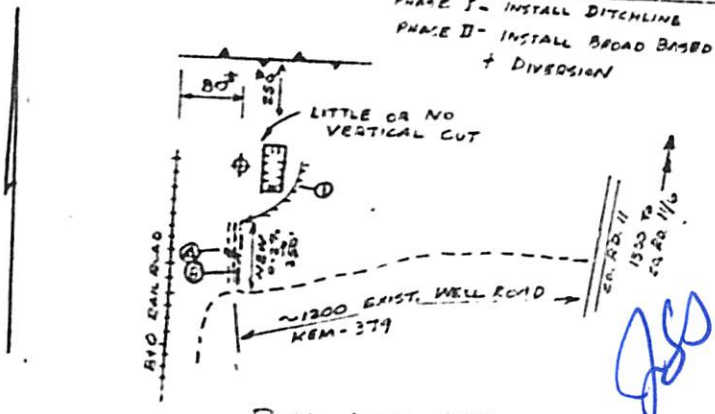
ATTACH OR PHOTOCOPY SECTION OF INVOLVED TOPOGRAPHIC MAP.
QUADRANGLE LUBECK 7½'

LEGEND
Well Site ⊕
Access Road ——

LEGEND

Property boundary
Road
Existing fence
Planned fence
Stream
Open ditch
Diversion
Spring
Wet spot
Building
Drain pipe
Waterway

PHASE I - INSTALL DITCHLINE
PHASE II - INSTALL BROAD BASED DIP + DIVERSION



PLAN KEM-734

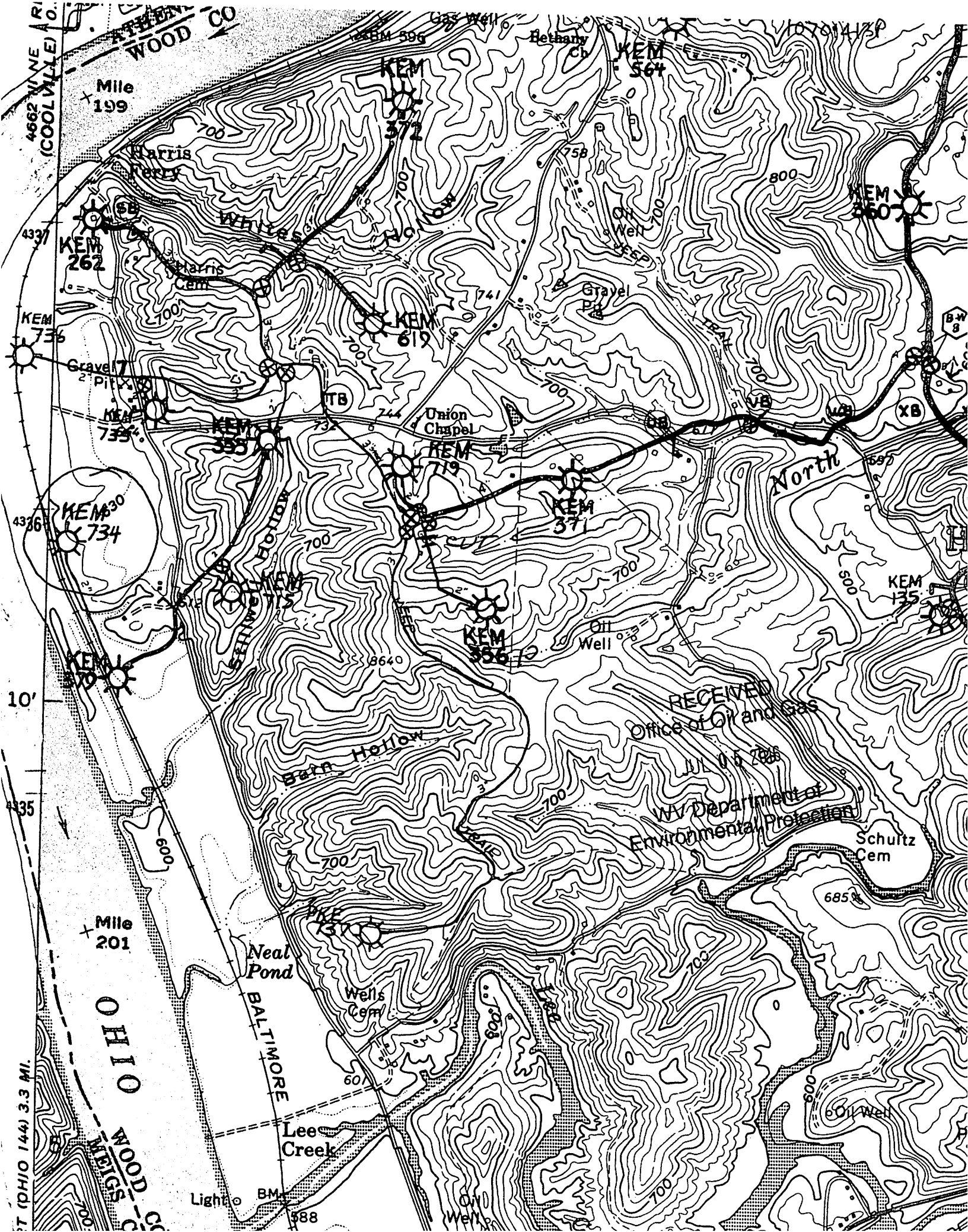
ACCESS ROAD - 1200' EXIST
250' NEW

JSD

1071417

Office of Oil and Gas
JUL 05 2016
WV Department of Environmental Protection

Reclamation
P/KU


ATHENS
WOOD CO
Gas Well
BM 596
Bethany Ch
KEM 564
KEM 372
Mile 199
Harris Ferry
Whites Hollow
KEM 262
Harris Cem
KEM 619
Gravel Pit
Oil Well
KEM 360
KEM 736
Gravel Pit
KEM 735
KEM 355
Union Chapel
KEM 719
KEM 371
North
KEM 734
KEM 715
KEM 356
Oil Well
KEM 135
KEM 370
Barn Hollow
RECEIVED
Office of Oil and Gas
JUL 05 2006
WV Department of Environmental Protection
Schultz Cem
Mile 201
Neal Pond
Wells Cem
BALTIMORE
Lee Creek
OHIO
WOOD
MEIGS
Light
BM
Oil Well

10701413P

W-4A
Revised 6-07

1) Date: 5/1/2016
2) Operator's Well Number
Hufmann 734

3) API Well No.: 47 - 107 1413 -

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE 0F APPLICATION TO PLUG AND ABANDON A WELL

4) Surface Owner(s) to be served: 2-705
(a) Name Duane Hofmann, Robinhood Rd. Washington WV 26181
Address

(b) Name
Address

(c) Name
Address

5) (a) Coal Operator
Name none None
Address

(b) Coal Owner(s) with Declaration
Name
Address
P.O.

Address

(c) Coal Lessee with Declaration
Name
Address

6) Inspector
Address Jamie Stevens
105 Kentuck RD.
Kenna WV 25248

Telephone ph: 304 206 7775

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 Chie

RECEIVED
Office of Oil and Gas
JUL 05 2016
WV Department of
Environmental Protection

Well Operator EXCO RESOURCES (PA), LLC
By: Randall Sheets Randall Sheets
Its: Supervisor
Address P O BOX 8
RAVENSWOOD, WV 26164
Telephone 304-273-5371

Subscribed and sworn before me this 16th day of June, 2016
Notary Public

OFFICIAL SEAL
NOTARY PUBLIC
STATE OF WEST VIRGINIA
JERRY M. TEPHABOCK
RT. 1, BOX 101A
RIPLEY, WV 25271
My commission expires June 11, 2018

My Commission Expires 6/11/18 Jerry M. Tephabock

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.

WW-9
(5/13)

10701413P

Page _____ of _____

API Number 47 - _____ -107 1413
Operator's Well No Hufmann 734

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name ÉXCO Resources (PA),LLC OP Code 307860

Watershed (HUC 10 Ohio River_____ Quadrangle Lubeck 7.5

Elevation 610 County Wood District Harris

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

Will a pit be used for drill cuttings? Yes _____ No ✓

ANY WELL EFFLUENT MUST BE CONTAINED IN TANKS & DISPOSED OF PROPERLY OFF SITE. gwm

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:

_____ Land Application
_____ Underground Injection (UIC Permit Number_____)
_____ Reuse (at API Number_____)
_____ Off Site Disposal (Supply form WW-9 for disposal location)
X Other (Explain no flluids are expected in return_____

Will closed loop system be used? _____

Drilling medium anticipated for this well? 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? _____

RECEIVED
Office of Oil and Gas
JUL 05 2016
WV Department of
Environmental Protection

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 Randall Sheets

Company Official (Typed Name) Randall Sheets

Company Official Title Supervisor

Subscribed and sworn before me this 16th day of June, 20 16

Jerry M. Tephabock Notary Public

My commission expires 6/11/18

OFFICIAL SEAL
NOTARY PUBLIC
STATE OF WEST VIRGINIA
JERRY M. TEPHABOCK
RT. 1, BOX 101A
RIPLEY, WV 25271
My commission expires June 11, 2018

10701413P

Form WW-9

Operator's Well NoHufmann 734_____

Proposed Revegetation Treatment: Acres Disturbed 0.5 _____ Prevegetation Ph 6.0 _____

Lime _____ 2Tons/acre or to correct to pH _____

Fertilizer type _____ 10-20-20 _____

Fertilizer amount _____ 500 lbs/acre

Mulch _____ 2 Tons/acre

Seed Mixtures

Temporary Seed Type	lbs/acre	Permanent Seed Type	lbs/acre
orchard Grass ~~KENTUCKY FESCUE~~	~~40~~ 14 lbs	SAME	
ALSIKE CLOVER	5		
ANNUAL RYE	~~16~~ 12		

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: _____

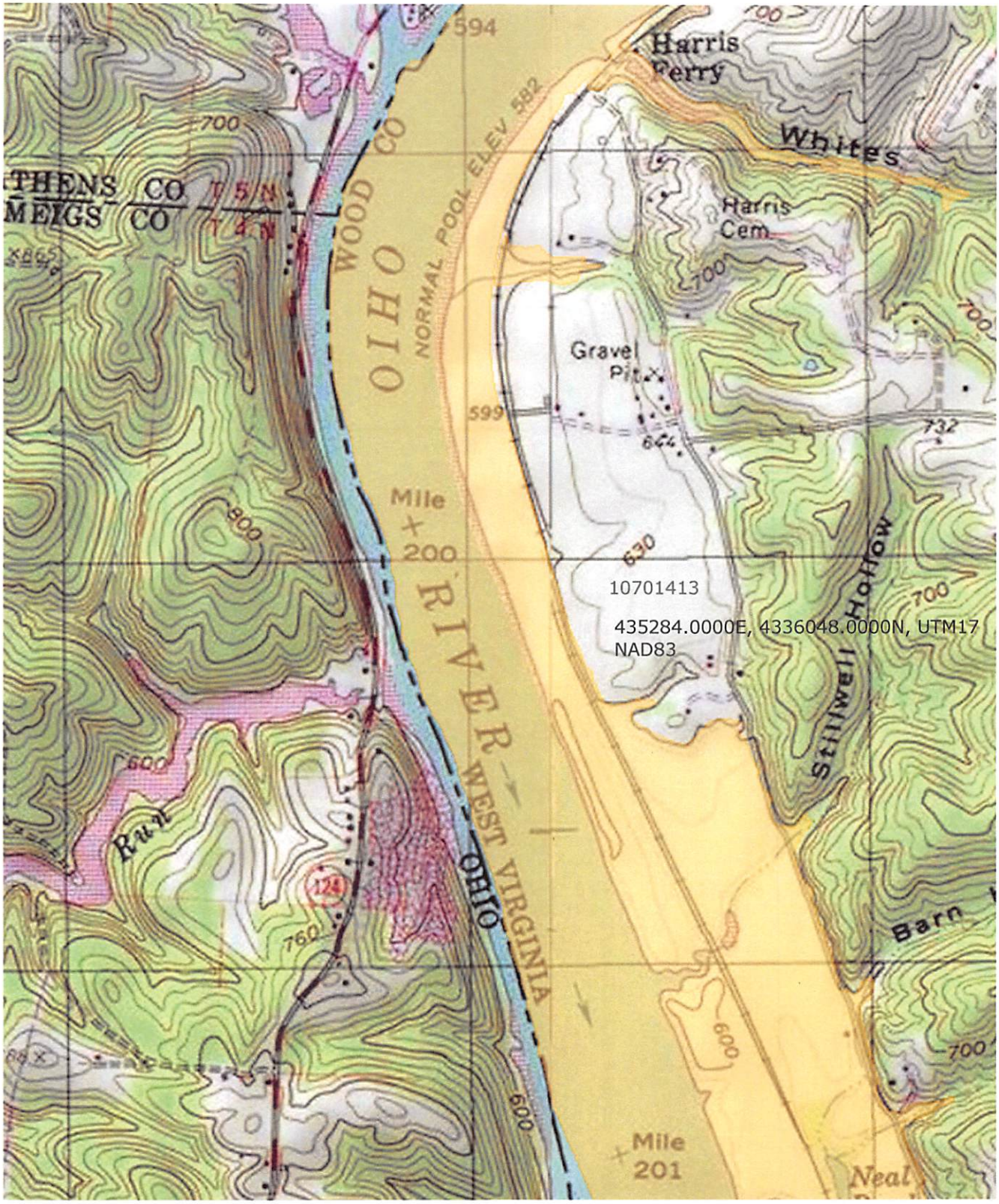
OK.

RECEIVED
Office of Oil and Gas
JUL 05 2016
WV Department of
Environmental Protection

Title: J. Stevens Jr. Date: 6/17/2016

Field Reviewed? (✓) Yes ( ) No

10701413P


Harris Perry
Whites
Harris Cem
Gravel Pit
NORMAL POOL ELEV 582
WOOD CO
OHIO
RIVER
WEST VIRGINIA
OHIO
Mile 200
Mile 201
Stillwell Hollow
Barn
Run
Neal
10701413
435284.0000E, 4336048.0000N, UTM17 NAD83

10701413 P

WW-7
8-30-06

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

API: 47 107 1413 **WELL NO.:** Kem 734

FARM NAME: Hufmann

RESPONSIBLE PARTY NAME: EXCO Resources (PA), LLC

COUNTY: Wood **DISTRICT:** Harris - 2

QUADRANGLE: Lubeck 7.5 - 449

SURFACE OWNER: Duane Hofmann

ROYALTY OWNER: Duane Hofmann

UTM GPS NORTHING: 4336048

UTM GPS EASTING: 435284 **GPS ELEVATION:** 610

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 _____

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.

RECEIVED
Office of Oil and Gas
JUL 05 2016
WV Department of
Environmental Protection

Randall R Stutz — Signature
Supervisor — Title
6/16/16 — Date