



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

November 15, 2013

WELL WORK PERMIT

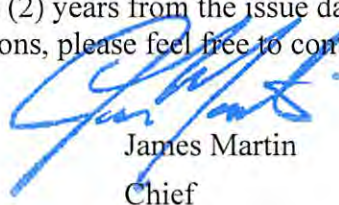
Vertical Well

This permit, API Well Number: 47-7700602, issued to TENASKA RESOURCES, LLC, 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.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days 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.

In addition to the applicable requirements of this permit, and the statutes and rules governing oil and gas activity in WV, this permit may contain specific conditions which must be followed. Permit conditions are attached to this cover letter.

Per 35CSR-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) 926-0499 ext. 1654.



James Martin
Chief

Operator's Well No: JAYHAWK #1H
Farm Name: WALLS, MARSHALL T. & KRISTI
API Well Number: 47-7700602
Permit Type: Vertical Well
Date Issued: 11/15/2013

Promoting a healthy environment.

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. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6-20, which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than fifty (50) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
2. Pursuant to 35 CSR § 4-19.1.a, at the request of the surface owner all water wells or springs within 1000 feet of the proposed well that are actually utilized for human consumption, domestic animals or other general use shall be sampled and analyzed.
3. Pursuant to 35 CSR § 4-19.1.c, if the operator is unable to sample and analyze any water well or spring within one thousand (1,000) feet of the permitted well location, the Office of Oil and Gas requires the operator to sample, at a minimum, one water well or spring located between one thousand (1,000) feet and two thousand (2,000) feet of the permitted well location.
4. All pits must be lined with a minimum of 20 mil thickness synthetic liner.
5. 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.
6. During the surface casing and cementing process, in the event cement does not return to the surface, or any other casing string that is permitted to circulate cement to the surface and does not return to the surface, the oil and gas inspector shall be notified within twenty-four (24) hours.
7. Well work activities shall not constitute a hazard to the safety of persons.
8. If well work related activities require the use of water obtained by withdrawals from waters of this state in amounts that exceed two hundred ten thousand gallons during any thirty day period, the operator is required to consult, and adhere to, the guidance provided by DEP's Water Withdrawal Guidance Tool prior to any water withdrawals.

WW - 2B
(Rev. 8/09)

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WELL WORK PERMIT APPLICATION

- 1) Well Operator Tenaska Resources, LLC 77 05 316
- | | | | |
|-------------|---------|----------|-------------|
| 494496394 | Preston | Portland | Cuzzart 7.5 |
| Operator ID | County | District | Quadrangle |
- 2) Operator's Well Number: Jayhawk 1H 3) Elevation: 1426'
- 4) Well Type: (a) Oil or Gas
 (b) If Gas: Production / Underground Storage
 Deep / Shallow
- 5) Proposed Target Formation(s): Marcellus Shale Proposed Target Depth: 8000' TVD
 6) Proposed Total Depth: N/A Feet Formation at Proposed Total Depth: Marcellus
 7) Approximate fresh water strata depths: 300'
 8) Approximate salt water depths: 1700'
 9) Approximate coal seam depths: 85', 149', 200', 345', 400'
 10) Does land contain coal seams tributary to active mine? No
 11) Describe proposed well work in detail Drill Marcellus and Test, no completion at this time.
 VERTICAL WELL ONLY

12) CASING AND TUBING PROGRAM

TYPE	SPECIFICATIONS			FOOTAGE INTERVALS		CEMENT
	Size	Grade	Weight per ft	For Drilling	Left in Well	
Conductor	20"	H-40	76 lb	60'	60'	CTS
Fresh Water	13.375	H-40	48 lb	900'	900'	CTS
Coal						
Intermediate	9.625"	K-55	36 lb	2500'	2500'	CTS
Production	5 1/2"	HCP110	17 lb	8000'	8000'	By rule 35 CSR 4-11.1
Tubing						
Liners						

Packers: Kind
 Sizes
 Depths Set

SDW
6/3/2013

* NOTE: PRODUCTION CASING NOT TO EXCEED TVD OF MARCELLUS SHALE
11/6/2013

Ensure that completion and reclamation are done in accordance with WUDEP regulation time frame SDW.

WW-2A
(Rev. 6-07)

1). Date: 11-12-12
2.) Operator's Well Number Jayhawk 1H
State County Permit
3.) API Well No.: 47- Preston -

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE AND APPLICATION FOR A WELL WORK PERMIT

4) Surface Owner(s) to be served:
(a) Name Marshall T. Kristi Walls ✓
Address 202 Crane Road
Albright, WV 26519
(b) Name
Address
(c) Name
Address
6) Inspector Sam Ward
Address
Telephone 304-389-7583

5) (a) Coal Operator
Name Charles W. Cox & Carol A. Nicholson ✓
Address RR 1 Box 115-A
Thorton, WV 26440
(b) Coal Owner(s) with Declaration
Name
Address
(c) Coal Lessee with Declaration
Name
Address

TO THE PERSONS NAMED ABOVE TAKE NOTICE THAT:

Included is the lease or leases or other continuing contract or contracts by which I hold the right to extract oil and gas
OR

x Included is the information required by Chapter 22, Article 6, Section 8(d) of the Code of West Virginia (see page 2)

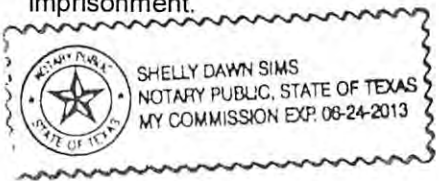
I certify that as required under Chapter 22-6 of the West Virginia Code I have served copies of this notice and application, a location plat, and accompanying documents pages 1 through ___ on the above named parties by:

- Personal Service (Affidavit attached)
- x Certified Mail (Postmarked postal receipt attached)
- Publication (Notice of Publication attached)

I have read and understand Chapter 22-6 and 35 CSR 4, and I agree to the terms and conditions of any permit issued under this application.

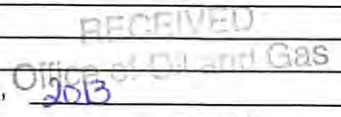
I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete.

I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.



Well Operator Tenaska Resources, LLC
By: [Signature]
Its: Vice President and General Manager
Address 375 Southpointe, Suite 350, Canonsburg, PA 15317
Telephone 817-462-1525

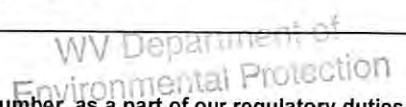
Subscribed and sworn before me this 28th day of February, 2013



My Commission Expires 10-24-13
Notary Public Shelly Dawn Sims

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.



SURFACE OWNER WAIVER

County Preston Operator Tenaska Resources, LLC
Operator well number Jayhawk 1H

INSTRUCTIONS TO SURFACE OWNERS NAMED ON PAGE WW2-A

The well operator named on page WW2A is applying for a permit from the State to do oil or gas well work. (Note: If the surface tract is owned by more than three persons, then these materials were served on you because your name appeared on the Sheriff's tax ticket on the land or because you actually occupy the surface tract. In either case, you may be the only owner who will actually receive these materials.) See Chapter 22 of the West Virginia Code. Well work permits are valid for 24 months. If you do not own any interest in the surface tract, please forward these materials to the true owner immediately if you know who it is. Also, please notify the well operator and the Office of Oil and Gas.

NOTE: YOU ARE NOT REQUIRED TO FILE ANY COMMENT.

WHERE TO FILE COMMENTS AND OBTAIN ADDITIONAL INFORMATION:

Chief, Office of Oil and Gas
Department of Environmental Protection
601 57th St. SE
Charleston, WV 25304
(304) 926-0450

Time Limits and methods for filing comments. The law requires these materials to be served on or before the date the operator files his Application. You have FIFTEEN (15) DAYS after the filing date to file your comments. Comments must be filed in person or received in the mail by the Chief's office by the time stated above. You may call the Chief's office to be sure of the date. Check with your postmaster to ensure a adequate delivery time or to arrange special expedited handling. If you have been contacted by the well operator and you have signed a "voluntary statement of no objection" to the planned work described in these materials, then the permit may be issued at any time.

Comments must be in writing. Your comments must include your name, address and telephone number, the well operator's name and well number and the approximate location of the proposed well site including district and county from the application. You may add other documents, such as sketches, maps or photographs to support your comments.

The Chief has the power to deny or condition a well work permit based on comments on the following grounds:

- 1) The proposed well work will constitute a hazard to the safety of persons.
2) The soil erosion and sediment control plan is not adequate or effective;
3) Damage would occur to publicly owned lands or resources;
4) The proposed well work fails to protect fresh water sources or supplies;
5) The applicant has committed a substantial violation of a previous permit or a substantial violation of one or more of the rules promulgated under Chapter 22, and has failed to abate or seek review of the violation...

If you want a copy of the permit as it is issued or a copy of the order denying the permit, you should request a copy from the Chief.

List of Water Testing Laboratories. The Office maintains a list of water testing laboratories which you can hire to test your water to establish water quality prior to and after drilling. Contact the Chief to obtain a copy.

VOLUNTARY STATEMENT OF NO OBJECTION

I hereby state that I have read the instructions to surface owners and that I have received copies of a Notice and Application for a Well Work Permit on Form WW2-A, and attachments consisting of pages 1 through ___ including a work order on Form WW2-B, a survey plat, and a soil and erosion plan, all for proposed well work on my surface land as described therein.

I further state that I have no objection to the planned work described in these materials, and I have no objection to a permit being issued on those materials.

FOR EXECUTION BY A NATURAL PERSON

FOR EXECUTION BY A CORPORATION, ETC.

Signature Date

Company Name By Its Date

Print Name

Signature Date
WV Department of Environmental Protection

RECEIVED
Office of Oil and Gas
OCT 07 2013

WW-2A Coal Waiver

COAL OPERATOR, OWNER, OR LESSEE WAIVER

County Preston

Operator Tenaska Resources, LLC

Operator's Well Number Jayhawk 1H

INSTRUCTIONS TO COAL OPERATOR, OWNER, OR LESSEE

To the coal operator, owner, or lessee named on page WW2-A. You are hereby notified that any objection you wish to make or are required to make by WV Code 22-6-15, 16 or 17, must be filed with the Chief of the Office of Oil and Gas within fifteen (15) days after the receipt of this application by the Office. Mail objections to:

Chief, Office of Oil and Gas
Department of Environmental Protection
601 57th St. SE
Charleston, WV 25304
(304) 926-0499 extension 1654

WAIVER

The undersigned coal operator _____ / owner _____ / lessee _____ / of the coal under this well location has examined this proposed well location. If a mine map exists which covers the area of well location, the well location has been added to the mine map. The undersigned has no objection to the work proposed to be done at this location, provided, the well operator has complied with all applicable requirements of the West Virginia Code and the governing regulations.

FOR EXECUTION BY A NATURAL PERSON

FOR EXECUTION BY A CORPORATION, ETC.

Signature

Date

Company
Name _____
By _____
Its _____
Date _____

Signature

Date

RECEIVED
Office of Oil and Gas
OCT 0 7 2013
WV Department of
Environmental Protection

**INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE
Chapter 22, Article 6, Section 8(d)
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)**

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that –

- (1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;
- (2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

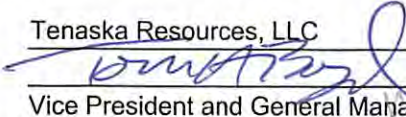
Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
Marshall T. and Kristi Walls	Tenaska Resources, LLC	1/8	693/400

**Acknowledgement of Possible Permitting/Approval
In Addition to the Office of Oil and Gas**

The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- WV Division of Water and Waste Management
- WV Division of Natural Resources
- WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or nullifies the need for other permits/approvals that may be necessary and further affirms that all needed permits/approvals should be acquired from the appropriate authority before the affected activity is initiated.

Well Operator: Tenaska Resources, LLC
 By: Its: 
 Vice President and General Manager

OCT 07 2013
 WV Department of
 Environmental Protection

WW-2B1
(5-12)

Well No. Jayhawk 1H

West Virginia Department of Environmental Protection
Office of Oil and Gas

NOTICE TO SURFACE OWNERS

The well operator named below is preparing to file for a permit from the state to drill a new well. Before a well work permit can be filed with the Chief of the Office of Oil and Gas, the well operator is required to have given notice of the right to request water well or spring analytical testing. This notice shall be given to the owners or occupants of land which have a water well or spring being utilized for human consumption, domestic animals, or other general use and which is located within 1000 feet of the proposed well site.

With this form, the operator is giving you notice of your right to request analytical testing. The operator is required to sample and analyze the water wells or springs of all owners or occupants who request it. Therefore, if you wish to have your water well or spring tested, contact the operator named below.

All sampling shall be completed prior to drilling. Within thirty (30) days of the receipt of such sample analyses the operator shall submit the results to the Chief of the Office of Oil and Gas and to the owners or occupants who may have requested them.

Be advised, you have the right to sample and analyze any water supply at your own expense.

Listed below is the laboratory chosen by operator to perform analysis, and contactor chosen to collect sample.

Certified Laboratory Name ALS / Environmental
Sampling Contractor Morris Knowles and Associates - (3 water purveyors within 2000 feet)

Well Operator Tenaska Resources, LLC
Address 375 Southpointe Blvd. Suite 350
Canonsburg, PA 15317
Telephone 817-462-1525

FOR OPERATOR'S USE ONLY: Below, or on an attached page, list those persons which were given this notice. Place an asterisk beside the one(s) that contacted you and requested sampling and analyses. If there were no requests made, indicate by underling which one you have selected to sample and analyze. If there are no water wells or springs within 1000 feet of the proposed site, the Chief may require the operator to test wells up to 2000 feet from the proposed site.

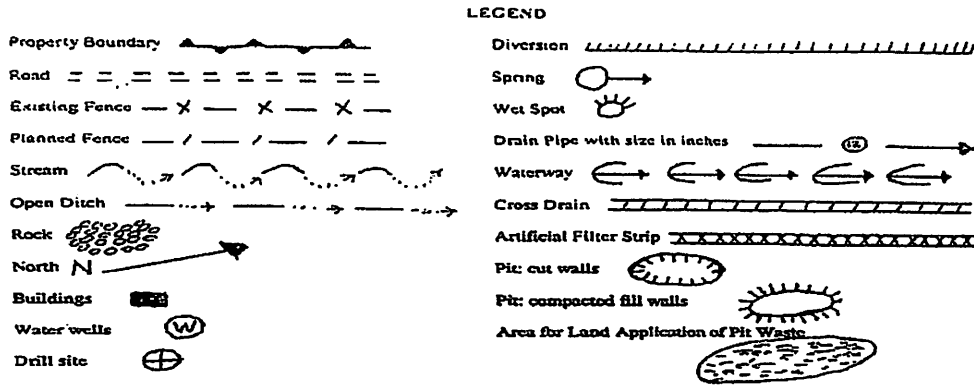
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Environmental Protection

Form WW-9

Operator's Well No. _____



Proposed Revegetation Treatment: Acres Disturbed 4 AC. 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 Hay 2 Tons/acre

Seed Mixtures

Seed Type	Area I		Seed Type	Area II	
		lbs/acre			lbs/acre
KY - 31		40	Orchard Grass		15
Alsike Clover		5	Alsike Clover		5
Annual Rye		15			

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

Plan Approved by: S. P. Duffett

Comments: Upgrade EdS as necessary. Make sure vegetation is established to WV DEP EdS minimum standards & pre-seed/mulch all disturbed areas.

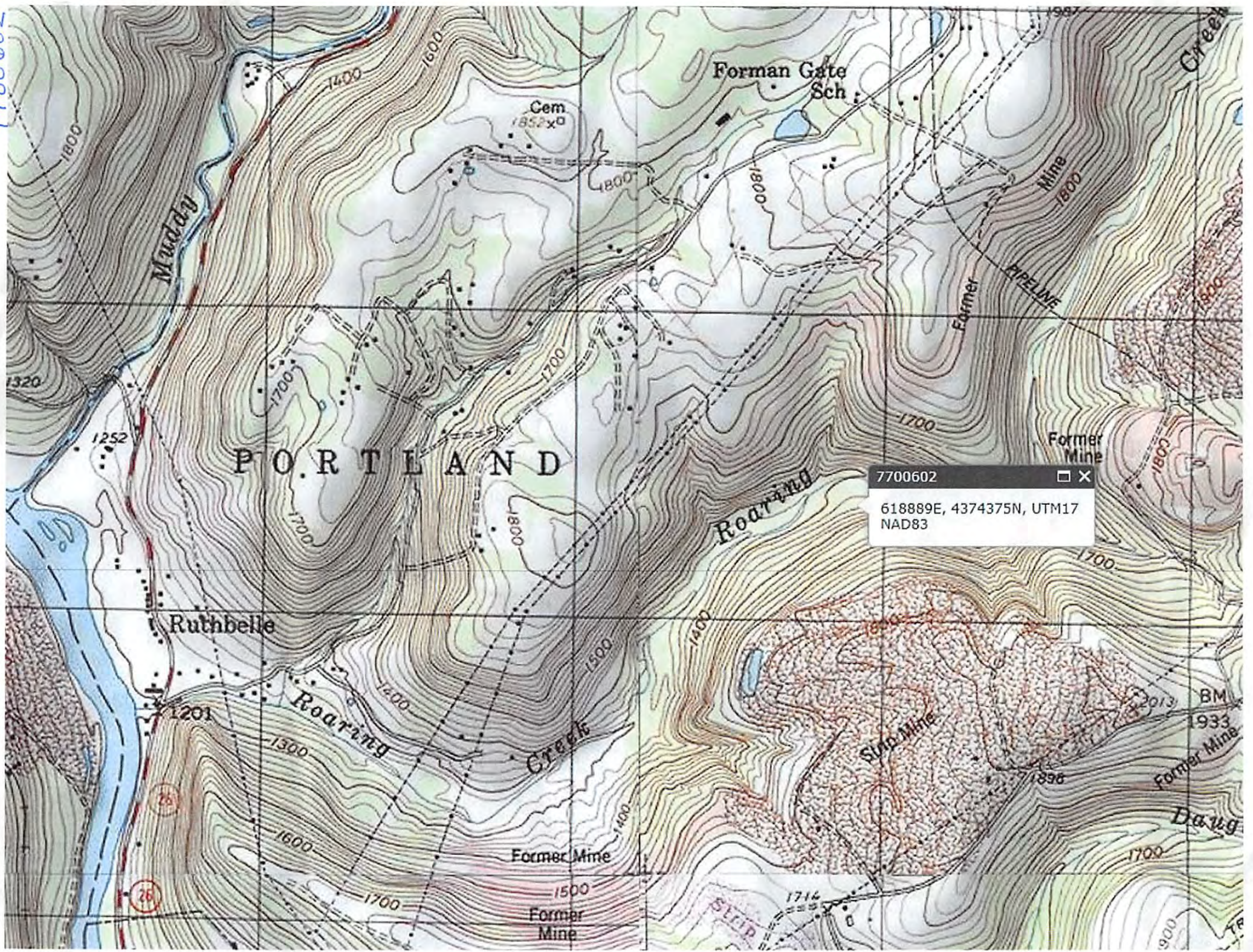
Title: Oil & Gas Inspector Date: 6/3/2013
Field Reviewed? Yes No

RECEIVED
Office of Oil and Gas

OCT 07 2013

WV Department of
Environmental Protection

7700602



7700602

618889E, 4374375N, UTM17
NAD83

26
26

BM
1933
Former Mine
1896
1700
1900

CORRECTED

7700602

WELL IS LOCATED ON TOPO MAP 11,237' FEET SOUTH OF LATITUDE: 39° 32' 30"

WELL IS LOCATED ON TOPO MAP 9522' FEET WEST OF LONGITUDE: 79° 35' 00"

NOTES ON SURVEY

1. TIES TO WELLS AND CORNERS ARE BASED ON GRID NORTH FOR THE WV STATE PLANE COORDINATE SYSTEM NORTH ZONE NAD '83.
2. LEASE BOUNDARY SHOWN HEREON TAKEN FROM DB 614/PG 611.
3. SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF PRESTON COUNTY IN 2012.
4. WELL LAT./LONG. (NAD'27) ESTABLISHED BY DGPS (SUBMETER MAPPING GRADE).
5. SURFACE TRACTS SHOWN HEREON ARE SHOWN RELATIVE TO TOPOGRAPHIC FEATURES AS CALLED FOR AND ARE SHOWN FOR REFERENCE ONLY AND SUBJECT TO AN ACCURATE SURVEY.

WELL NO. 1H
 STATE PLANE COORDINATES
 NORTH ZONE (NAD 27)
 LAT=(N)39.51071
 LONG=79.61726
 NORTH ZONE (NAD 83)
 LAT=(N)39.51079
 LONG=(W)79.61703
 UTM (NAD' 83)
 N. 4,374,375
 E. 618,889

MARVIN A. MORGAN
225 ACRES±

WALLS LEASE
213.997 ACRES±
WELL NO. 1H

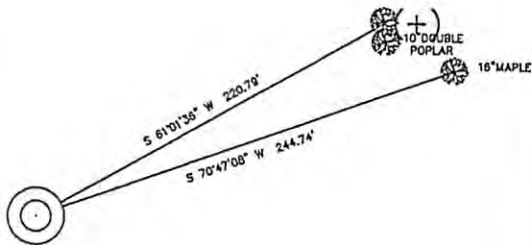
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Office of Oil and Gas

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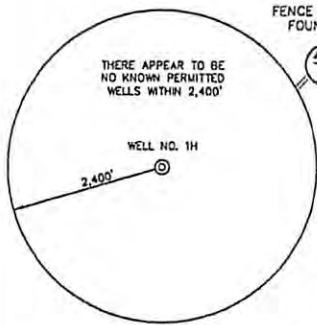
LEGEND WV Department of Environmental Protection

- LEASE BOUNDARY
- SURFACE BOUNDARY
- NEVER DRILLED
- ACTIVE WELL
- ABANDON WELL
- (+) - TOPO MAP POINT

REFERENCES
1" = 100'



WELL NO. 1H



FILE #: 1729 TENASKA
 DRAWING #: A-25510
 SCALE: 1"=1,000'
 MINIMUM DEGREE OF ACCURACY: 1/200
 PROVEN SOURCE OF ELEVATION: DGPS/OPUS

I, THE UNDERSIGNED, DO 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: *James C. Bollison*
 R.P.E.: 13801 L.L.S.:



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
 WVDEP
 OFFICE OF OIL & GAS
 601 57TH STREET
 CHARLESTON, WV 25304



DATE: JANUARY 17, 2013
 OPERATOR'S WELL #: JAYHAWK #1H
 API WELL #: 47 077 00602
 STATE COUNTY PERMIT

WELL TYPE: OIL WASTE DISPOSAL PRODUCTION
 GAS LIQUID INJECTION STORAGE SHALLOW

WATERSHED: ROARING CREEK ELEVATION: 1,426'
 COUNTY/DISTRICT: PRESTON COUNTY / PORTLAND QUADRANGLE: CUZZART 7.5'
 SURFACE OWNER: MARSHALL T. & KRISTI WALLS ACREAGE: 213.997±
 OIL & GAS ROYALTY OWNER: MARSHALL T. & KRISTI WALLS ACREAGE: 213.997±
 DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION PLUG & ABANDON CLEAN OUT & REPLUG OTHER CHANGE
 PHYSICAL CHANGE IN WELL (SPECIFY):
 TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 8000'
 WELL OPERATOR: TENASKA RESOURCES, LLC DESIGNATEED AGENT: BRYAN J McCONNELL
 ADDRESS: SUITE 350, 375 SOUTHPOINTE BLVD. CITY: CANONSBURG STATE: PA ZIP CODE: 15317