



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

April 18, 2014

WELL WORK PERMIT

Horizontal 6A Well

This permit, API Well Number: 47-4902284, issued to TRANS ENERGY, INC., 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: JONES 4H
Farm Name: JONES, ROBERT
API Well Number: 47-4902284
Permit Type: Horizontal 6A Well
Date Issued: 04/18/2014

Promoting a healthy environment.

04/18/2014

PERMIT CONDITIONS

West Virginia Code § 22-6A-8(d) 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. This proposed activity may require permit coverage from the United States Army Corps of Engineers (USACOE). Through this permit, you are hereby being advised to consult with USACOE regarding this proposed activity.
2. 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 § 22-6A-5a (12), 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.
3. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the fill material shall be within plus or minus 2% of the optimum moisture content as determined by the standard proctor density test, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort. Each lift must meet 95 % compaction of the optimum density based on results from the standard proctor density test of the actual soils used in specific engineered fill sites. Each lift shall be tested for compaction, with a minimum of two tests per lift per acre of fill. All test results shall be maintained on site and available for review.
4. Operator shall install signage per § 22-6A-8g (6) (B) at all source water locations included in their approved water management plan within 24 hours of water management plan activation.
5. Oil and gas water supply wells will be registered with the Office of Oil and Gas and all such wells will be constructed and plugged in accordance with the standards of the Bureau for Public Health set forth in its Legislative rule entitled *Water Well Regulations*, 64 C.S.R. 19. Operator is to contact the Bureau of Public Health regarding permit requirements. In lieu of plugging, the operator may transfer the well to the surface owner upon agreement of the parties. All drinking water wells within fifteen hundred feet of the water supply well shall be flow tested by the operator upon request of the drinking well owner prior to operating the water supply well.
6. Pursuant to the requirements pertaining to the sampling of domestic water supply wells/springs the operator shall, no later than thirty (30) days after receipt of analytical data provide a written copy to the Chief and any of the users who may have requested such analyses.
7. If any explosion or other accident causing loss of life or serious personal injury occurs in or about a well or well work on a well, the well operator or its contractor shall give notice, stating the particulars of the explosion or accident, to the oil and gas inspector and the Chief, within 24 hours of said accident.
8. During the casing and cementing process, in the event cement does not return to the surface, the oil and gas inspector shall be notified within 24 hours.

WW-6B
(9/13)

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

1) Well Operator: Trans Energy Inc 494481575 Marion Mannington Glover Gap
Operator ID County District Quadrangle

2) Operator's Well Number: Jones 3H Well Pad Name: Jones

3) Farm Name/Surface Owner: Robert Jones Public Road Access: Rt 4/3

4) Elevation, current ground: 1042' Elevation, proposed post-construction: _____

5) Well Type (a) Gas Oil _____ Underground Storage _____
Other _____

(b) If Gas Shallow Deep _____
Horizontal

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Associated Pressure(s):
Marcellus Shale 7900' 60' thick 4000 psi

8) Proposed Total Vertical Depth: 7900'

9) Formation at Total Vertical Depth: Marcellus Shale

10) Proposed Total Measured Depth: 11,950'

11) Proposed Horizontal Leg Length: 4,050

12) Approximate Fresh Water Strata Depths: 60, 150'

13) Method to Determine Fresh Water Depths: Water Wells drilled in the County, information provided by Health Dept.

14) Approximate Saltwater Depths: 1525'

15) Approximate Coal Seam Depths: N/A

16) Approximate Depth to Possible Void (coal mine, karst, other): N/A

17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine? Yes No

(a) If Yes, provide Mine Info: Name: _____
Depth: _____
Seam: _____
Owner: _____

WJH
3-31-14

WW-6B
(9/13)

18)

CASING AND TUBING PROGRAM

TYPE	Size	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling	INTERVALS: Left in Well	CEMENT: Fill-up (Cu. Ft.)
Conductor	20	new	J-55	94	110'	110'	CTS
Fresh Water	13-3/8	new	J-55	54.5	1000'	1000'	CTS
Coal							
Intermediate	9-5/8	new	J-55	36	3000'	3000'	CTS
Production	5-1/2	new	P-110	20		11,950'	CTS
Tubing							
Liners							

*WRH
3-31-14*

TYPE	Size	Wellbore Diameter	Wall Thickness	Burst Pressure	Cement Type	Cement Yield (cu. ft./k)
Conductor	20	26	0.438	1530	Type 1	13 cu ft/sk
Fresh Water	13-3/8	17-1/2	.38	2730	Type 1	1.25 cu ft/sk
Coal						
Intermediate	9-5/8	12-1/2	.352	3520	Type 1	1.26 cu ft/sk
Production	5-1/2	8-3/4	.361	1360	Poz H Class H	1.18 cu ft/sk
Tubing						
Liners						

PACKERS

Kind:				
Sizes:				
Depths Set:				

WW-6B
(9/13)

19) Describe proposed well work, including the drilling and plugging back of any pilot hole:

Drill and Complete horizontal well in the Marcellus Shale. Lateral to be approximately 5000' in length. Under no circumstance will drilling penetrate below elevation (at 1042') before freshwater casing is set.

20) Describe fracturing/stimulating methods in detail, including anticipated max pressure and max rate:

Fracture 17-21 stages with Proppant: 150,000 of 100 mesh sand 80,000 of 20/40 white sand, 169,998 of 40/70 white sand.
Fluid summary: 1,500 of 15% HCL, 412,665 of Slickwater I, 11,000 Slickwater II.

Max Pressure = 10,000 psi
Max Rate = 100 bbl./min.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): As Built

22) Area to be disturbed for well pad only, less access road (acres): As Built

23) Describe centralizer placement for each casing string:

Fresh Water String - 1 centralizer every 160'
Intermediate String - 1 centralizer every 100' from 3300' to 900'
Production String - 1 centralizer every 80' from TD to above ROP (7000')

24) Describe all cement additives associated with each cement type:

Standard Type 1 cement - retarder and fluid loss (surface and intern)
Type 1 = 2% CaCl₂ + Y4# Flake - Surface Cement mixed @ 15.6 ppg CaCl₂, Flake (cellophane flake)
Type 1 = 2% CaCl₂ + Y4# Flake - Intermediate Cement mix @ 15.6 ppg
Class H in lateral - retarder and fluid loss and free water additive

25) Proposed borehole conditioning procedures:

Before cement casing mud will be thinned and all gas will be circulated out of the mud before cementing.

*Note: Attach additional sheets as needed.

WW-9
(9/13)

4704902284

API Number 47 - _____
Operator's Well No. Jones 4H _____

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Trans Energy Inc OP Code 494481575

Watershed (HUC 10) Eastern Branch of Bartholomew Fork Quadrangle Glover Gap

Elevation 1042' County Marion District Mannington

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:

- Land Application
- Underground Injection (UIC Permit Number _____)
- Reuse (at API Number _____)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain All frac fluids will be fowed back into storage containers and Buckeye's Water Service Company will haul to an approved water disposal facilities) _____

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

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. Freshwater mud until reaching Marcellus then synthetic

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

Additives to be used in drilling medium? None

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. All cuttings will be hauled to approved landfill

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) Sawdust

-Landfill or offsite name/permit number? Short Creek Landfill SWF - 1034

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 *Leslie Gearhart*

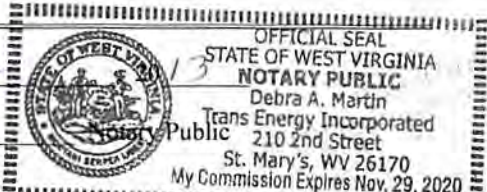
Company Official (Typed Name) Leslie Gearhart

Company Official Title VP Operations

Subscribed and sworn before me this 12th day of November

Debra A Martin *Debra A. Martin*

My commission expires November 29, 2020



Received

04/18/2014

4704902284

Form WW-9

Operator's Well No. Jones 4H

Trans Energy Inc

Proposed Revegetation Treatment: Acres Disturbed _____ Prevegetation pH _____

Lime 2 Tons/acre or to correct to pH 6.5

Fertilizer type _____

Fertilizer amount 600 lbs/acre

Mulch 90 Bales Tons/acre

Seed Mixtures

Temporary

Permanent

Seed Type	lbs/acre
Meadow Mix	100
Oats or Rye	50

Seed Type	lbs/acre
Meadow Mix	100
Oats or Rye	50

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: *William Henderson*

Comments: _____

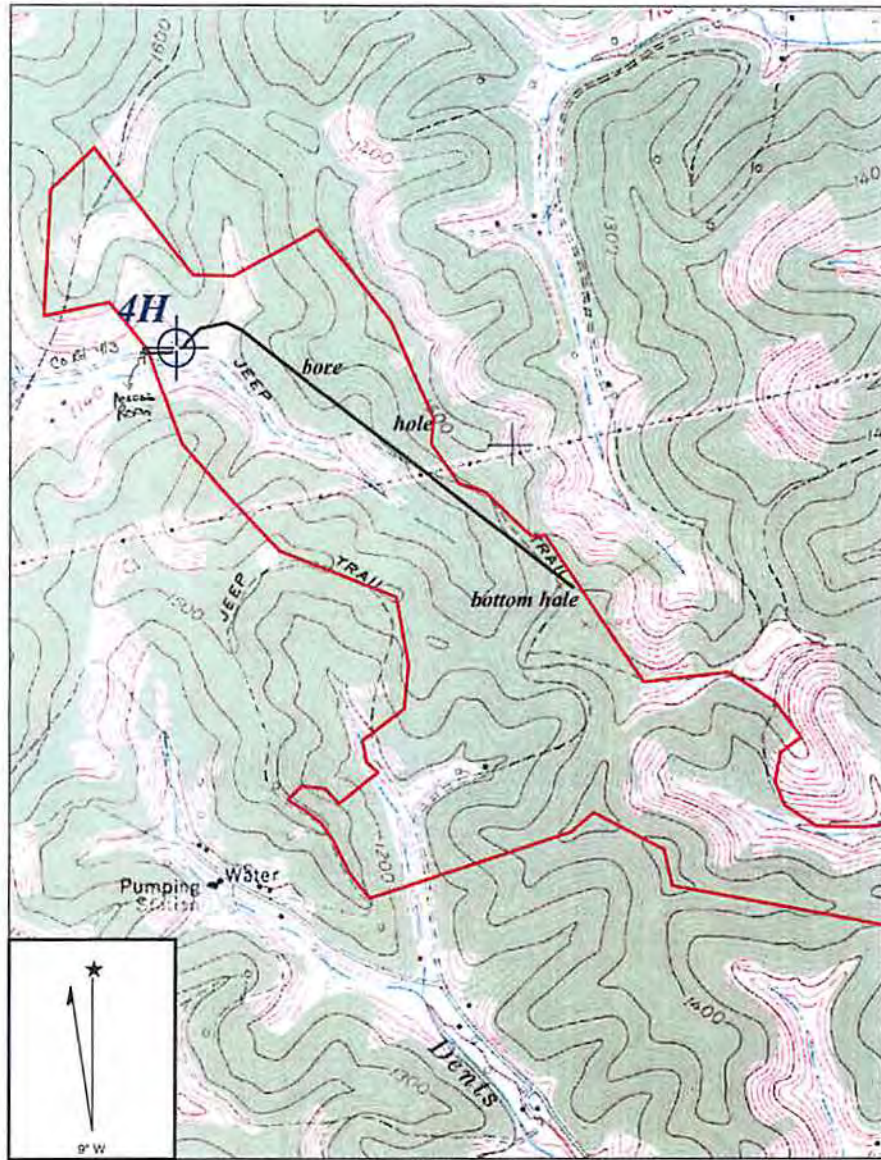
Title: Environmental Inspector

Date: 11-13-13

Field Reviewed? () Yes () No

Received

Office of Oil and Gas
Environmental Protection
04/18/2014



GLOVER GAP QUADRANGLE

SCALE 1" = 1000'

TRANS ENERGY, INC.

WELL: JONES 4H
 R. JONES, ET AL 411.355 ACRE UNIT

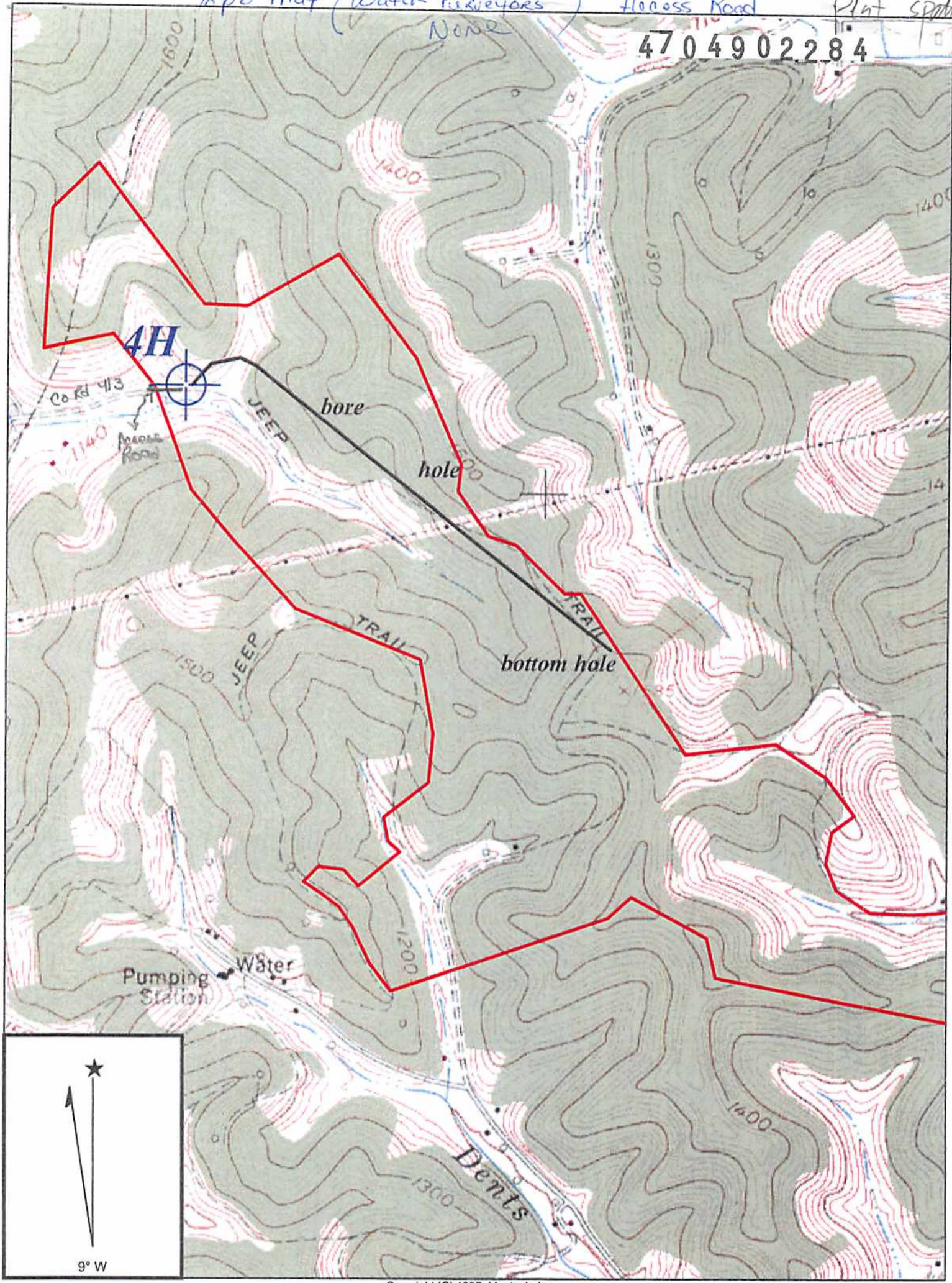
MANNINGTON DISTRICT MARION COUNTY WEST VIRGINIA

WRH
3-31-14

4704902284

Topo Map (Water Surveyors) across Road Plot spatial

4704902284



Copyright (C) 1997, Maptech, Inc.

GLOVER GAP QUADRANGLE

SCALE 1" = 1000'

TRANS ENERGY, INC.

WELL: JONES 4H
R. JONES, ET AL 411.355 ACRE UNIT

MANNINGTON DISTRICT MARION COUNTY WEST VIRGINIA

WRH
11-13-13

Received

04/18/2014

NOV 29 2013

Office of Oil and Gas
WV Dept. of Environmental Protection

top hole 80°25' 37.57" (80.427103) bottom hole 80°24' 50.5" (80.41403)

LATITUDE

39°37' 30"

R. JONES, ET AL
411.355 ACRE LEASE

D-M-P District-Map-Parcel



LONGITUDE 80°25' 00"

14300'

16520'

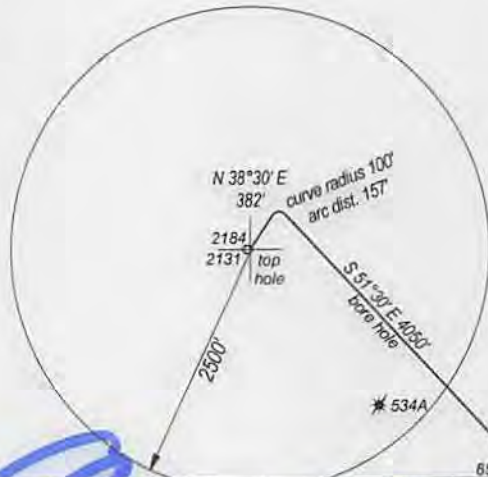
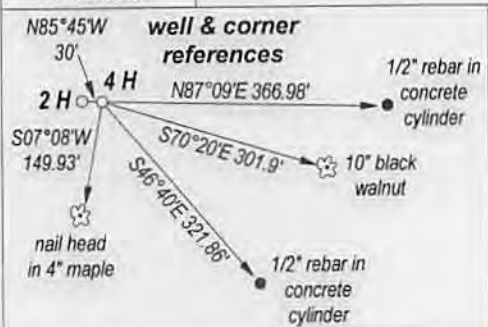
top hole 39°35' 08.66" (39.585739)

bottom hole 39°34' 46.5" (39.57956)

UTM NAD 83
meters
top hole
N: 4381936.633
E: 549196.635

bottom hole
N: 4381261
E: 550324

Permitted wells shown within 500' of bore hole
No water wells within 250' of top hole
All buildings of any kind shown within 625' of top hole



FILE NO. _____
DRAWING NO. _____
SCALE 1" = 2500'
MINIMUM DEGREE OF ACCURACY 1:200
PROVEN SOURCE OF ELEVATION GPS OBSERVATION

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 ENERGY.

(SIGNED) _____
PROFESSIONAL SURVEYOR: 551



STATE OF WEST VIRGINIA
DEPARTMENT OF ENERGY
DIVISION OF OIL AND GAS

DATE OCTOBER 25TH, 2013
OPERATORS WELL NO. JONES 4H

API 47 - 049 - 02284 HGA
STATE COUNTY PERMIT

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

LOATION: ELEVATION 1042 WATER SHED EASTERN BRANCH OF BARTHOLOMEW FORK
DISTRICT MANNINGTON COUNTY MARION QUADRANGLE GLOVER GAP

SURFACE OWNER ROBERT JONES ACREAGE 57 (52)
OIL & GAS ROYALTY ROBERT JONES, ET AL. LEASE AC 411.355

PROPOSED WORK: DRILL XX CONVERT DRILL DEEPER REDRILL
FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
PERFORATE NEW FORMATION
OTHER PHYSICAL CHANGE IN WELL
PLUG AND ABANDON CLEAN OUT AND REPLUG

TARGET FORMATION MARCELLUS SHALE ESTIMATED DEPTH 7900'

WELL OPERATOR TRANS ENERGY, INC. DESIGNATED AGENT LOREN BAGLEY
ADDRESS P. O. BOX 393 ADDRESS P. O. BOX 393
ST. MARYS, WV 26170 ST. MARYS, WV 26170

FORM WW - 6

COUNTY NO. _____
PREMIT _____

04/16/2014

SRH
11-13-13