



**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

January 20, 2016

**WELL WORK PERMIT**

**Vertical Well**

This permit, API Well Number: 47-3906378, issued to RESERVE OIL & GAS, 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: HARMON 2A  
Farm Name: THE COURTLAND COMPANY

**API Well Number: 47-3906378**

**Permit Type: Vertical Well**

Date Issued: 01/20/2016

**Promoting a healthy environment.**

**01/22/2016**

# 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

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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 with 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. Operator shall provide the Office of Oil & Gas notification of the date that drilling commenced, drilling ceased, completion of any other permitted well work and completion of the well. Such notice shall be provided by sending an email to [DEPOOGNotify@wv.gov](mailto:DEPOOGNotify@wv.gov) within 30 days of commencement of drilling.



39-6378

CK# 9858  
\$650<sup>00</sup>

WW - 2B  
(Rev. 8/10)

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

1) Well Operator: Reserve Oil & Gas, Inc. 310-324 Kanawha South Charleston Charleston West  
Operator ID County District Quadrangle

2) Operator's Well Number: Harmon #2A 3) Elevation: 600

4) Well Type: (a) Oil \_\_\_\_\_ or Gas  \_\_\_\_\_  
(b) If Gas: Production  / Underground Storage \_\_\_\_\_  
Deep \_\_\_\_\_ / Shallow  \_\_\_\_\_

5) Proposed Target Formation(s): Base of Lower Huron/Rhinestreet Proposed Target Depth: 4300  
6) Proposed Total Depth: 4350 Feet Formation at Proposed Total Depth: Lower Huron/Rhinestreet  
7) Approximate fresh water strata depths: 200  
8) Approximate salt water depths: 1200

9) Approximate coal seam depths: None

10) Approximate void depths,(coal, Karst, other): N/A

11) Does land contain coal seams tributary to active mine? No

12) Describe proposed well work and fracturing methods in detail (attach additional sheets if needed)

Drill and complete a new Devonian Shale well with 2 stage nitrogen frac. - Moved location  
20 feet from original location

*Handwritten signature*  
1-15-16

13) CASING AND TUBING PROGRAM

TYPE	SPECIFICATIONS			FOOTAGE INTERVALS		CEMENT
	Size	Grade	Weight per ft	For Drilling	Left in Well	Fill -up (Cu. Ft.)
Conductor	13 3/8"			20'		CTS
Fresh Water	9 5/8"			270' 336'		CTS x40% excess
Coal						
Intermediate	7"			1800'		CTS x 30% excess
Production	4 1/2"			4300'		120 sks
Tubing						
Liners						

Packers: Kind: \_\_\_\_\_  
Sizes: \_\_\_\_\_  
Depths Set \_\_\_\_\_

Received

JAN 15 2016 01/22/2016



WW-2A  
(Rev. 6-14)

1). Date: \_\_\_\_\_  
2.) Operator's Well Number Harmon #2A  
State County Permit  
3.) API Well No.: 47- 39 - 6378

**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 The Courtland Company  
Address 114 Monongalia Street  
Charleston, WV 25302  
(b) Name \_\_\_\_\_  
Address \_\_\_\_\_  
(c) Name \_\_\_\_\_  
Address \_\_\_\_\_  
6) Inspector Terry Urban  
Address P.O. Box 1207  
Clendenin, WV 25045  
Telephone 304-549-5915  
5) (a) Coal Operator Name \_\_\_\_\_  
Address \_\_\_\_\_  
(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**

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:

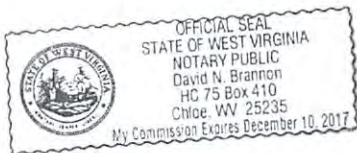
- Personal Service (Affidavit attached)
- Certified Mail (Postmarked postal receipt attached)
- Publication (Notice of Publication attached)

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 Reserve Oil & Gas, Inc.  
By: [Signature]  
Its: Vice President  
Address: 929 Charleston Road  
Spencer, WV 25276  
Telephone: 304-927-5228  
Email: ddouglass@reserveoilandgas.com



Subscribed and sworn before me this 14<sup>th</sup> day of January, 2016

David N. Brannon Notary Public  
My Commission Expires December 10, 2017

**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 [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov)

Received 01/22/2016

JAN 15 2016

Office of Oil and Gas  
WV Dept. of Environmental Protection



39-6378

WW-2A Surface Waiver

SURFACE OWNER WAIVER

County Kanawha Operator Reserve Oil & Gas, Inc. Operator well number Harmon #2 A

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: John A. Truszew Date: 1-16-2016
Print Name: JOHN A. TRUSZEW

Company Name: The Courtland Company
By: JOHN A. TRUSZEW Date:
Its: VICE PRES. Signature: John A. Truszew Date: 1-16-2016

01/22/2016



39-6378

WW-2A Coal Waiver

COAL OPERATOR, OWNER, OR LESSEE WAIVER

County Kanawha  
Operator Reserve Oil & Gas, Inc.

Operator's Well Number Harmon #2 A

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 57<sup>th</sup> 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

No known owner, operator, or lessee  
of workable coalbed/seam on this tract.

Received

01/22/2016

JAN 15 2016

Office of Oil and Gas  
WV Dept. of Environmental Protection

WW-2A Coal Waiver

39-6378

COAL OPERATOR, OWNER, OR LESSEE WAIVER

County Kanawha  
Operator Reserve Oil & Gas, Inc. Operator's Well Number Harmon #2 A

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 57<sup>th</sup> 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.

_____	Date _____	Company Name _____	_____
Signature		By _____	_____
		Its _____	Date _____
		Signature _____	Date _____

No known owner, operator, or lessee of workable coalbed/seam on this tract.

Received

JAN 15 2016 01/22/2016

Office of Oil and Gas  
WV Dept. of Environmental Protection



39-6378

WW-2A1  
(Rev. 1/11)

Operator's Well Number Harmon #2A

**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
The Courtland Company	Reserve Oil & Gas, Inc.	1/8	LB 262/338

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

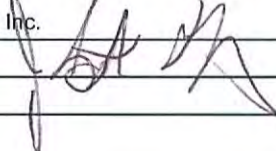
The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- 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:  
By: Its:

Reserve Oil & Gas, Inc. \_\_\_\_\_  
 Vice President \_\_\_\_\_



Received 01/22/2016

JAN 15 2016



39-6378

WW-2B1  
(5-12)

Well No. Harmon #2 A

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 Lab  
Sampling Contractor \_\_\_\_\_

Well Operator Reserve Oil & Gas, Inc.  
Address 929 Charleston Road  
Spencer, WV 25276  
Telephone 304-927-5228

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.

No known water well within 2000 feet.  
Only water sources are Davis Creek.

Received 01/22/2016

JAN 15 2016



WW-9  
(2/15)

API Number 47 - 39 - 6378  
Operator's Well No. 6378 Harmon #2A

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Reserve Oil & Gas, Inc. OP Code 310-324

Watershed (HUC 10) Davis Creek Quadrangle Charleston West

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.? 20

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection ( UIC Permit Number \_\_\_\_\_ )
- Reuse (at API Number TY 1-15-16 \_\_\_\_\_ )
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain \_\_\_\_\_)

Will closed loop system be used? If so, describe: N/A

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. Air, Gel, Brinewater

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

Additives to be used in drilling medium? Gilsonite, Mil-Flake, Airfoam HD

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

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

-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 [Signature] JAN 15 2016

Company Official (Typed Name) J. Scott Freshwater

Company Official Title Vice President

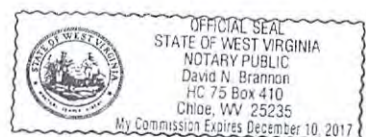
Office of Oil and Gas  
WV Dept. of Environmental Protection

Subscribed and sworn before me this 14<sup>th</sup> day of January, 2016

David N. Brannon Notary Public

My commission expires December 10, 2017

01/22/2016





39-6378

Form WW-9

Operator's Well No. Harmon #2 A

Reserve Oil & Gas, Inc.

Proposed Revegetation Treatment: Acres Disturbed 2 Prevegetation pH 5.5

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer type \_\_\_\_\_

Fertilizer amount 0.25 lbs/acre

Mulch Hay 2 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Orchard Grass	25	Ladino Clover	5
Red Top Clover	15	KY 31	40

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: *Amy W. Allen*

Comments: \_\_\_\_\_

Received

JAN 15 2016

Office of Oil and Gas  
WV Dept. of Environmental Protection

Title: *Insp O&GAS* Date: *1-15-16*

Field Reviewed?  Yes  No

01/22/2016



NOTE:

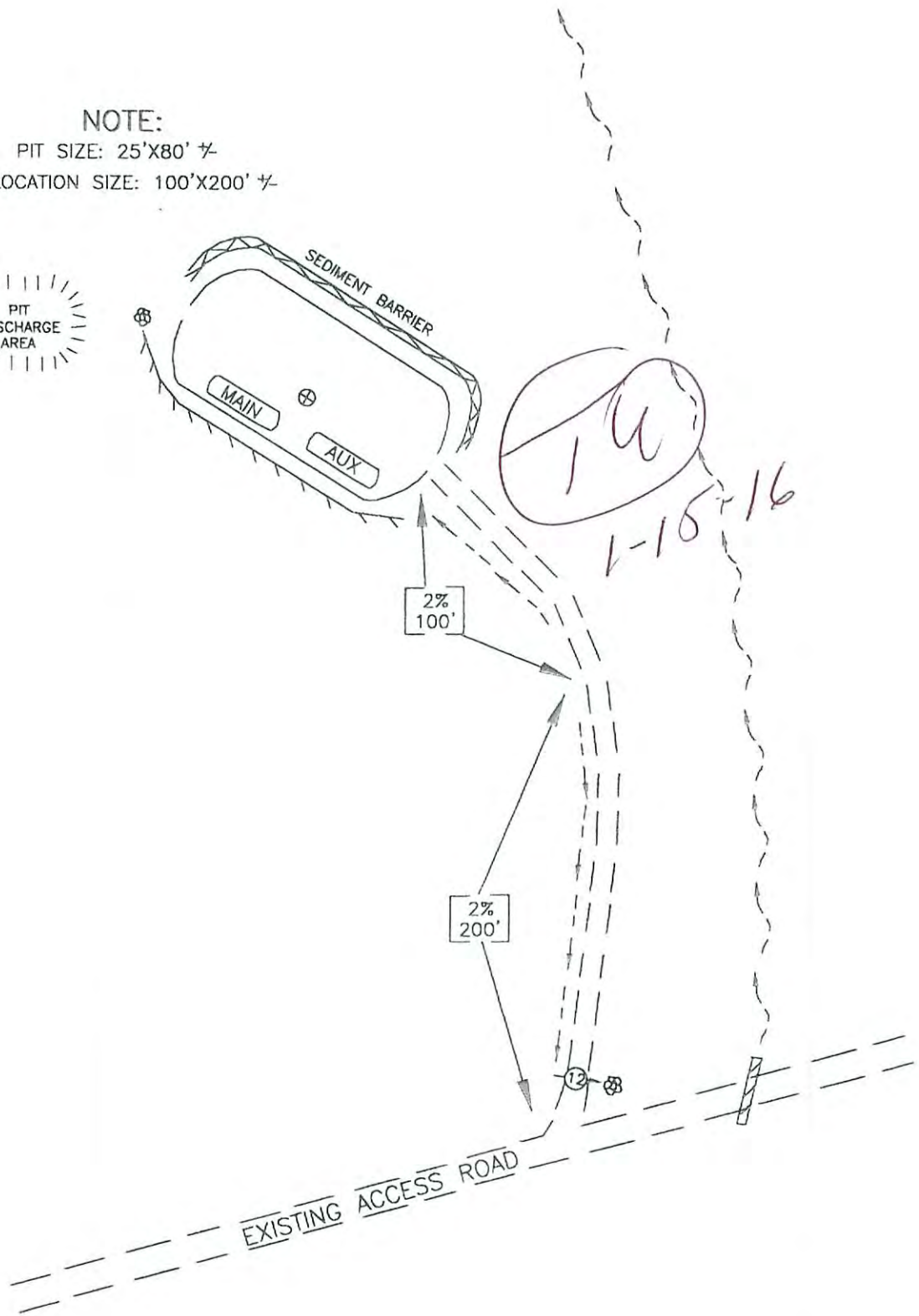
Any Trees 6" or larger in Diameter will be cut and piled. Brush will be used as Sediment Barriers. Temporary seed and mulch all slopes upon construction. Stone over all Culverts and entrance off existing roadway.

HARMON

#2A

NOTE:

PIT SIZE: 25'X80' +/-  
LOCATION SIZE: 100'X200' +/-



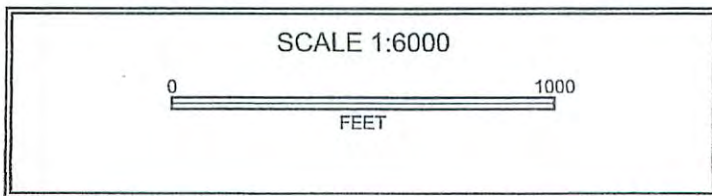
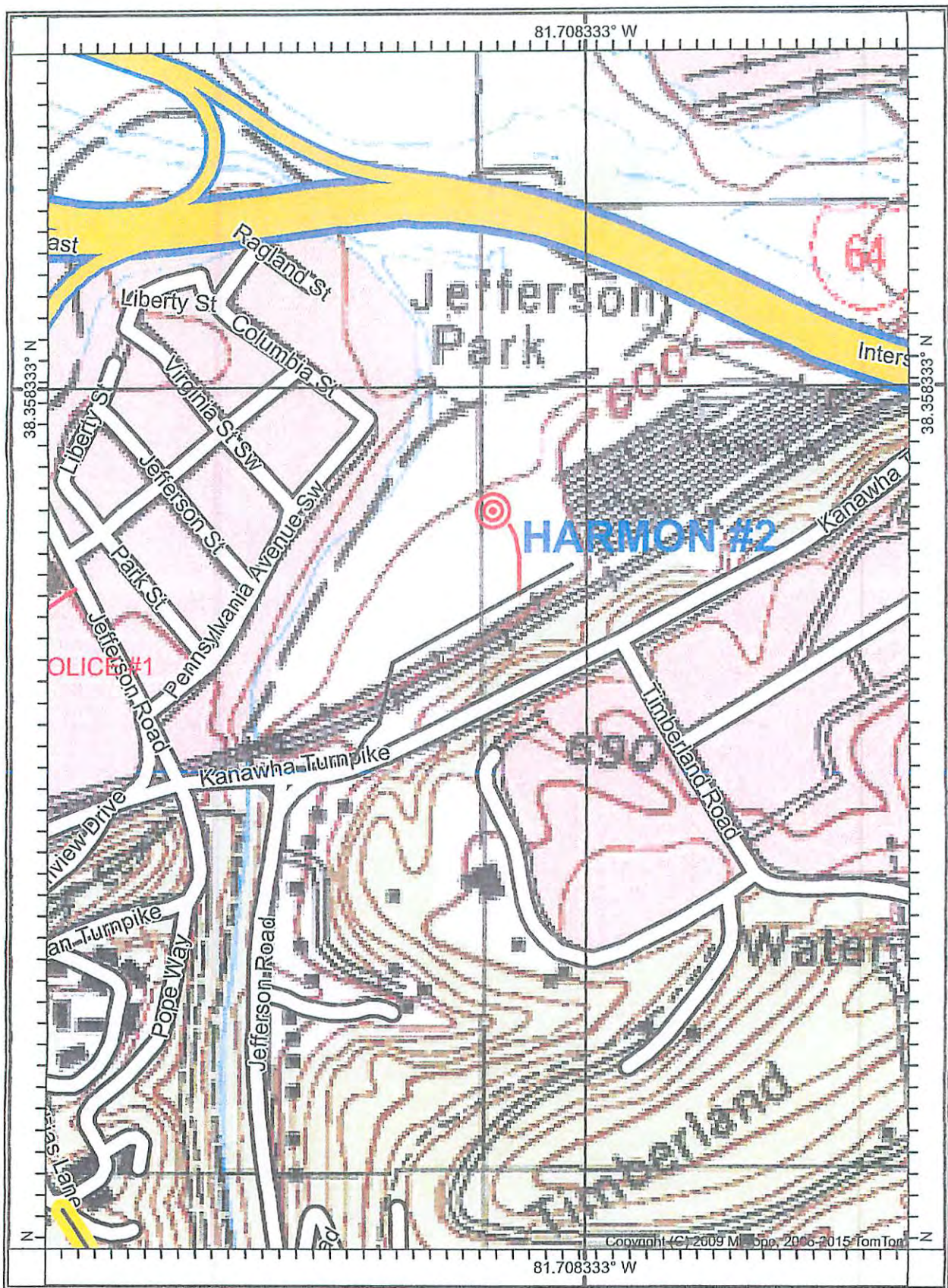
39-6378

Received

JAN 15 2016 01/22/2016

Office of Oil and Gas  
WV Dept. of Environmental Protection





39-638

Received

JAN 15 2016

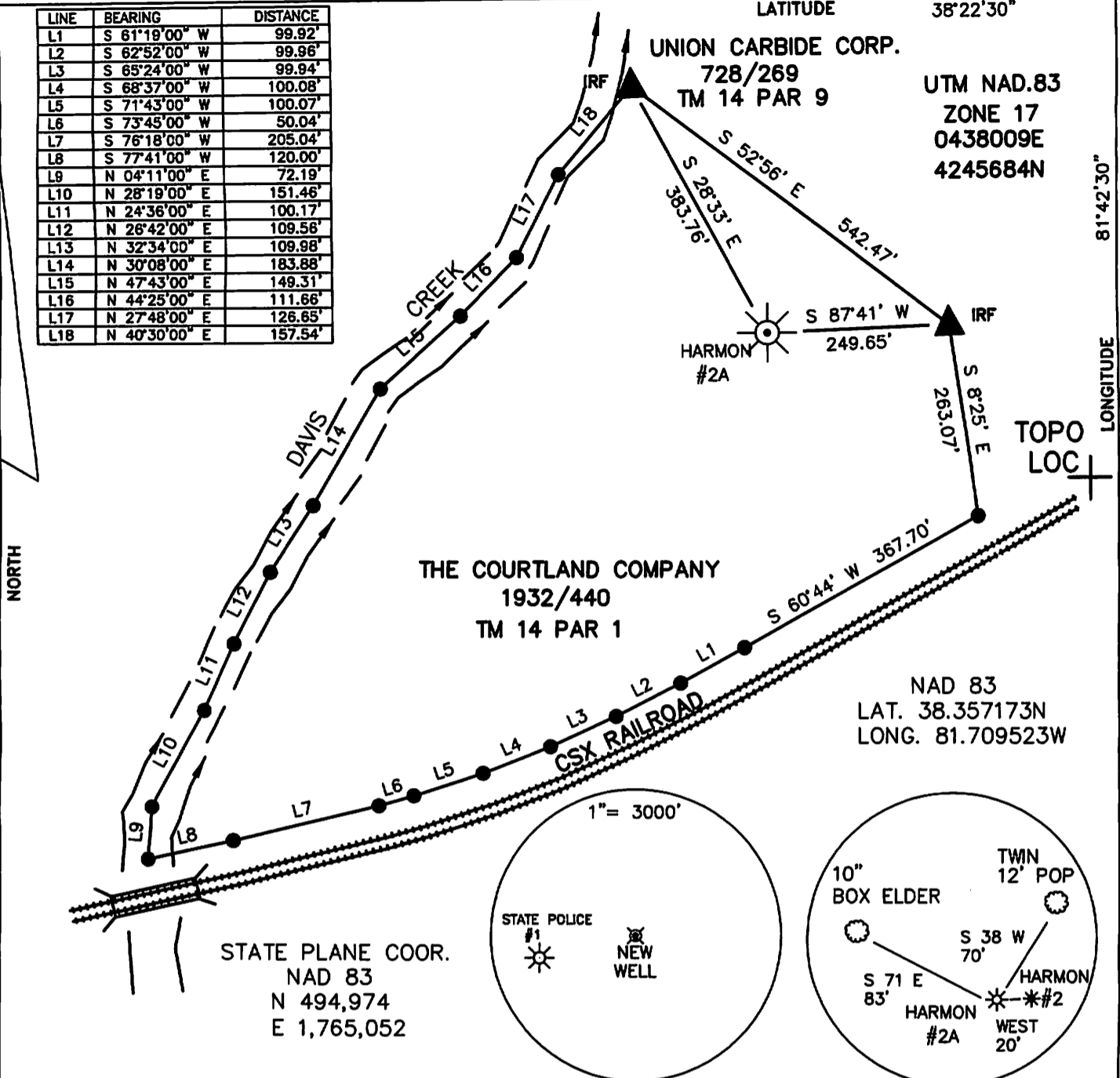
01/22/2016

Office of Oil and Gas  
WV Dept. of Environmental Protection



395'  
 81°42'30"  
 6,550'  
 LONGITUDE

LINE	BEARING	DISTANCE
L1	S 61°19'00" W	99.92'
L2	S 62°52'00" W	99.96'
L3	S 65°24'00" W	99.94'
L4	S 68°37'00" W	100.08'
L5	S 71°43'00" W	100.07'
L6	S 73°45'00" W	50.04'
L7	S 76°18'00" W	205.04'
L8	S 77°41'00" W	120.00'
L9	N 04°11'00" E	72.19'
L10	N 28°19'00" E	151.46'
L11	N 24°36'00" E	100.17'
L12	N 28°42'00" E	109.56'
L13	N 32°34'00" E	109.98'
L14	N 30°08'00" E	183.88'
L15	N 47°43'00" E	149.31'
L16	N 44°25'00" E	111.66'
L17	N 27°48'00" E	126.65'
L18	N 40°30'00" E	157.54'



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

FILE NO. \_\_\_\_\_  
 DRAWING NO. 16-01  
 SCALE 1"=200'  
 MINIMUM DEGREE OF ACCURACY 1 IN 200  
 PROVEN SOURCE OF ELEVATION GPS

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) Richard Prine  
 R.P.E. \_\_\_\_\_ P.S. 851

PLACE SEAL HERE

STATE OF WEST VIRGINIA  
 Department of Environmental Protection  
 OFFICE OF OIL AND GAS

DATE 1/13, 2016  
 OPERATOR'S WELL NO. HARMON #2A  
 API WELL NO. 47

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

LOCATION: ELEVATION 600 WATER SHED DAVIS CREEK  
 DISTRICT SOUTH CHARLESTON COUNTY KANAWHA  
 QUADRANGLE CHARLESTON WEST

SURFACE OWNER THE COURTLAND COMPANY ACREAGE 13.767  
 OIL & GAS ROYALTY OWNER THE COURTLAND COMPANY LEASE ACREAGE 13.767  
 LEASE NO. \_\_\_\_\_

PROPOSED WORK: DRILL  CONVERT \_\_\_\_\_ DRILL DEEPER \_\_\_\_\_ REDRILL \_\_\_\_\_ FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION \_\_\_\_\_ PERFORATE NEW FORMATION \_\_\_\_\_ OTHER PHYSICAL CHANGE IN WELL (SPECIFY): \_\_\_\_\_

PLUG AND ABANDON \_\_\_\_\_ CLEAN OUT AND REPLUG \_\_\_\_\_

TARGET FORMATION BASE OF LOWER HURON/RHINESTREET ESTIMATED DEPTH 5500 Office of Oil and Gas  
 WELL OPERATOR RESERVE OIL & GAS INC. DESIGNATED AGENT J. SCOTT FRESHWATER Environmental Protection  
 ADDRESS 929 CHARLESTON ROAD ADDRESS 929 CHARLESTON ROAD  
 SPENCER, WV 25276 SPENCER, WV 25276

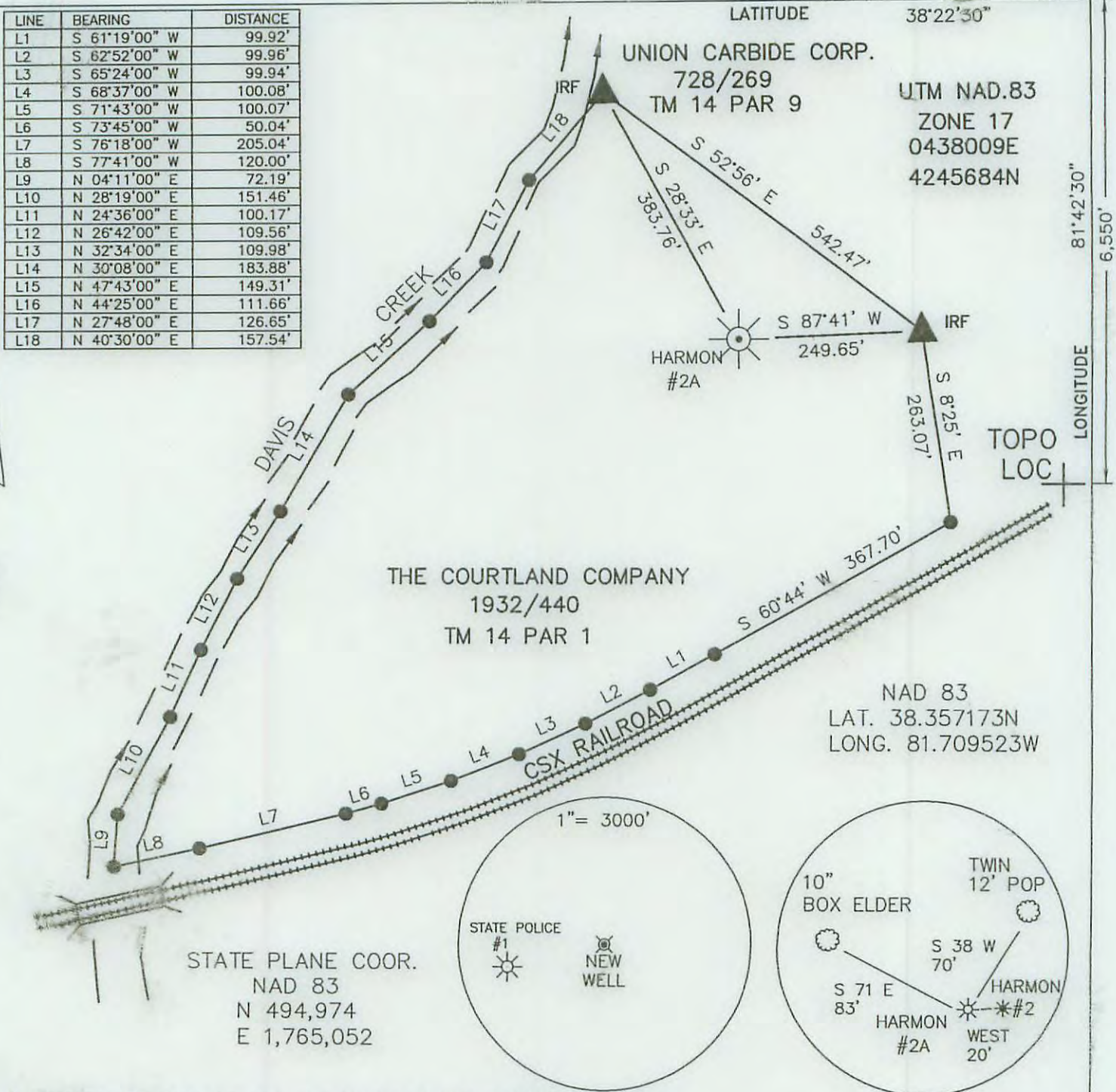
Received

JAN 1 9 12/2016



LINE	BEARING	DISTANCE
L1	S 61°19'00" W	99.92'
L2	S 62°52'00" W	99.96'
L3	S 65°24'00" W	99.94'
L4	S 68°37'00" W	100.08'
L5	S 71°43'00" W	100.07'
L6	S 73°45'00" W	50.04'
L7	S 76°18'00" W	205.04'
L8	S 77°41'00" W	120.00'
L9	N 04°11'00" E	72.19'
L10	N 28°19'00" E	151.46'
L11	N 24°36'00" E	100.17'
L12	N 26°42'00" E	109.56'
L13	N 32°34'00" E	109.98'
L14	N 30°08'00" E	183.88'
L15	N 47°43'00" E	149.31'
L16	N 44°25'00" E	111.66'
L17	N 27°48'00" E	126.65'
L18	N 40°30'00" E	157.54'

NORTH



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

FILE NO. \_\_\_\_\_  
 DRAWING NO. 16-01  
 SCALE 1"=200'  
 MINIMUM DEGREE OF ACCURACY 1 IN 200  
 PROVEN SOURCE OF ELEVATION GPS

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) \_\_\_\_\_  
 R.P.E. \_\_\_\_\_ P.S. 851



STATE OF WEST VIRGINIA  
Department of Environmental Protection  
OFFICE OF OIL AND GAS

DATE 1/13, 2016  
 OPERATOR'S WELL NO. HARMON #2A  
 API WELL NO. 47-039-06378  
 STATE COUNTY PERMIT

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

LOCATION: ELEVATION 600 WATER SHED DAVIS CREEK  
 DISTRICT SOUTH CHARLESTON COUNTY KANAWHA  
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01/22/2016