



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

February 26, 2015

WELL WORK PLUGGING PERMIT

Plugging

This permit, API Well Number: 47-3902908, issued to CABOT OIL & GAS CORPORATION, is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Upon completion of the plugging well work, the above named operator will reclaim the site according to the provisions of WV Code 22-6-30. The above named operator will also file, as required in WV Code 22-6-23, an affidavit on form WR-38 by two experienced persons in the operator's employment and the Oil and Gas inspector that the work authorized under this permit was performed and a description given. Failure to abide by all statutory and regulatory provisions governing all duties and operations here under may result in suspensions or revocation of this permit and in addition may result in civil and/or criminal penalties being imposed upon the operator.

This permit will expire in two (2) years from date of issue. If there are any questions, please free to contact me at (304) 926-0499 ext. 1654.

James Martin
Chief

Operator's Well No: 23-646
Farm Name: BOWERS, WILLIAM
API Well Number: 47-3902908
Permit Type: Plugging
Date Issued: 02/26/2015

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. 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.

1) Date January 7, 20 15
2) Operator's
Well No. William Bowers #23 (S-646)
3) API Well No. 47-039 -02908

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 or Underground storage) Deep / Shallow X

5) Location: Elevation 1,400' Watershed Kanawha River
District Cabin Creek County Kanawha Quadrangle Julian

6) Well Operator Cabot Oil & Gas Corporation 7) Designated Agent Whitney Johnson
Address Five Penn Center West, Ste. 401 Address P.O. Box 450
Pittsburgh, PA 15276 Glasgow, WV 25086

8) Oil and Gas Inspector to be notified 9) Plugging Contractor
Name Terry Urban Name Shreve's Well Service
Address P.O. Box 1207 Address 3473 Triplett Road
Clendenin, WV 25045 Spencer, WV 25275

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

*All plugs & procedures may be changed
AS plugging process is put in place*

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

Work order approved by Inspector *Terry Urban*

RECEIVED
Office of Oil and Gas
JAN 12 2015
WV Department of
Environmental Protection

Bowers #23 API # 47 - 039 - 02908 PLUGGING PROCEDURE

Current Configuration

- DTD @ 2558'
- 13" conductor @ 20'
- 10" casing @ 400'
- 8-1/4" casing @ 1700'
- 6-5/8" casing @ 2130'
- 2" tubing @ 2558' with anchor packer set @ 2257'
- Water @ 1560' & 1920'
- Coal @ 90' - 95' & 690' - 695'
- Weir @ 2375' to 2550' with gas show @ 2400' & 2455'
- Injun @ 2305' - 2365'
- Big Lime @ 2125' - 2305'

PROCEDURE

1. Contact Glasgow Office a minimum of 48 hours prior to starting work.
2. Contact State Inspector a minimum of 24 hours prior to starting work.
3. Lay 2" line from wellhead to pit/tank and stake down securely.
4. MIRU service rig and blow down well. Have vacuum truck available to catch any fluids circulated from well.
5. Unpack wellhead.
6. Pull 2" tubing.
7. If unable to pull tubing, run freepoint, cut above freepoint, and POOH.
8. TIH with 2-3/8" work string to TD.
9. MIRU Cement Company and pump 20 bbls 6% Gel followed by 60 sks of Class A cement for plug 1 from TD to 2200'.
10. Displace w/ 8 1/2 bbls of 6% Gel.
11. TOOH with work string.
12. Pull 6-5/8" casing string.
13. TIH with work string to 1950' and pump 20 bbls 6% Gel followed by 55 sks of Class A cement for plug 2 from 1950' to 1750'.
14. Displace w/ 7 1/2 bbls of 6% Gel.
15. TOOH with work string.
16. Pull 8-1/4" casing, 10" casing, and 13" conductor.
17. TIH with work string to 1600' and pump 30 bbls 6% Gel followed by 85 sks of Class A cement for plug 3 from 1600' to 1400'. *BEW*
18. Displace w/ 5 1/2 bbls of 6% Gel.
19. Pull work string up to 735' and pump 50 bbls 6% Gel followed 50 cubic feet of expanding cement (45 sacks Class A cement with 10 % salt added) for plug 4 from 735' to 635'. *COAL*
20. Displace w/ 2 1/2 bbl of 6% Gel.
21. Pull work string up to 150' and pump 130 cubic feet of expanding cement (110 sacks Class A cement with 10 % salt added) for plug 5 from 150' to surface. *COAL*
22. TOOH with work string and lay down.
23. RDMO Cementing Company.
24. Place monument as required by law on top of well bore.
25. Reclaim well site.

All plug shall be changed

RECEIVED
Office of Oil and Gas

JAN 12 2015

WV Department of Environmental Protection

Operator to make any attempt to pull all casing & tubulars
1-13-15

OK same

3902908P

BOWERS #23
API 47-039-02908
CURRENT CONFIGURATION

13" Conductor @ 20'

10" Casing @ 400'

Coal @ 690' - 695'

plug

*1400 Elevator
as per plan*

8-1/4" Casing @ 1700'

Salt Sand @
1225' - 1640'
with water @ 1560'

plug

Maxton @ 1915' - 2005'
with water @ 1920'

Big Lime @ 2125' - 2305'

Injun @ 2305' 2365'

Weir @ 2375' - 2550'

plug

DTD @ 2558'

Schematic is not to scale

2" X 6-5/8" packer set @ 2257'

6-5/8" Casing @ 2130'

2" tubing @ 2558'

WV Department of
Environmental Protection
Office of Oil and Gas
JAN 12 2015
Office of Oil and Gas
JAN 12 2015
WV Department of
Environmental Protection

RECEIVED
3.15
Mr. [Signature]

0392908

-2-

5.646

Formation	Top	Bottom	Remarks
Big Line	2125	2305 ✓	
Lime Gas	2275		
Injun Sand	2305	2365	
Lime Shell	2365	2375	
Weir Sand	2375		
Gas	2400		
Gas	2455		
Bottom Sand	2550		
Total Depth	2558		

Am't Conductor-13 In. 20 ft.

Am't 10" Casing 400 Ft.
 " 8-1/4" " 1700 "
 " 6-5/8" " 2130 "

Packer set at 2257
 Top of perforation 2455

2558 ft. 2 in. tubing

Received
 Office of Oil & Gas
 JAN 13 2015

WW-4A
Revised 6-07

1) Date: January 7, 2015
2) Operator's Well Number
William Bowers #23 (S-646)
3) API Well No.: 47 - 039 - 02908

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

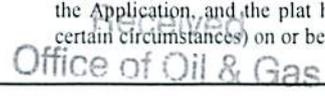
4) Surface Owner(s) to be served:	5) (a) Coal Operator
(a) Name <u>Robin Land Company</u>	Name <u>See Attached Sheet</u>
Address <u>500 Lee St. E., Suite 900</u>	Address _____
<u>Charleston, WV 25301</u>	_____
(b) Name _____	(b) Coal Owner(s) with Declaration
Address _____	Name <u>Robin Land Company</u>
_____	Address <u>500 Lee St. E., Suite 900</u>
_____	<u>Charleston, WV 25301</u>
(c) Name _____	Name _____
Address _____	Address _____
_____	_____
6) Inspector <u>Terry Urban</u>	(c) Coal Lessee with Declaration
Address <u>P.O. Box 1207</u>	Name <u>None of Record</u>
<u>Clendenin, WV 25045</u>	Address _____
Telephone <u>(304) 389-7583</u>	_____

TO THE PERSONS NAMED ABOVE: You should have received this Form and the following documents:

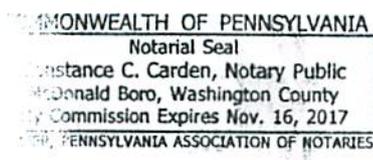
- (1) The application to Plug and Abandon a Well on Form WW-4B, which sets out the parties involved in the work and describes the well its and the plugging work order; and
- (2) The plat (surveyor's map) showing the well location on Form WW-6.

The reason you received these documents is that you have rights regarding the application which are summarized in the instructions on the reverses side. However, you are not required to take any action at all.

Take notice that under Chapter 22-6 of the West Virginia Code, the undersigned well operator proposes to file or has filed this Notice and Application and accompanying documents for a permit to plug and abandon a well with the Chief of the Office of Oil and Gas, West Virginia Department of Environmental Protection, with respect to the well at the location described on the attached Application and depicted on the attached Form WW-6. Copies of this Notice, the Application, and the plat have been mailed by registered or certified mail or delivered by hand to the person(s) named above (or by publication in certain circumstances) on or before the day of mailing or delivery to the Chief.



JAN 13 2015



Well Operator Cabot Oil & Gas Corporation
 By: Kenneth L. Marcum *Kenneth Marcum*
 Its: Regulatory Supervisor
 Address Five Penn Center West, Suite 401
Pittsburgh, PA 15276
 Telephone (412) 249-3850

Subscribed and sworn before me this 7th day of January, 2015
Constance C. Carden Notary Public
My Commission Expires November 16, 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.

COAL OPERATORS
WILLIAM BOWERS #23 (S-646)
47-039-02908

Coyote Coal Company, LLC ✓
P.O. Box 43
Dawes, WV 25054

Midland Trail Energy, LLC ✓
P.O. Box 336
Tad, WV 25201

Spartan Mining Company ✓
Dba/Mammoth Coal Company
P.O. Box 150
Cannelton, WV 25036

Catenary Coal Company, LLC ✓
63 Corporate Centre Drive
Scott Depot, WV 25560

Upper Kanawha Valley Development Corp ✓
400 Patterson Ln. #200
Charleston, WV 25311

Received
Office of Oil & Gas
JAN 13 2015

3902908P

7014 2120 0003 6926 4012

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OFFICIAL USE

Postage	\$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$

Sent To: Robin Land Company
 500 Lee St. E., Suite 900
 Charleston, WV 25301

Postmark Here: JAN - 7 2015

Bowers #23 P&A

PS Form 3800

7014 2120 0003 6926 4204

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Postage	\$
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Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$

Sent To: Coyote Coal Company, LLC
 P.O. Box 43
 Dawes, WV 25054

Postmark Here: JAN - 7 2015

Bowers #23 P&A

PS Form 3800

7014 2120 0003 6926 4043

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Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$

Sent To: Spartan Mining Company
 Db/Mammoth Coal Company
 P.O. Box 150
 Cannelton, WV 25036

Postmark Here: JAN - 7 2015

Bowers #23 P&A

PS Form 3800

7014 2120 0003 6926 4036

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Postage	\$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$

Sent To: Midland Trail Energy, LLC
 P.O. Box 336
 Tad, WV 25201

Postmark Here: JAN - 7 2015

Bowers #23 P&A

PS Form 3800

7014 2120 0003 6926 4067

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Postage	\$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$

Sent To: Upper Kanawha Valley Development Corp
 400 Patterson Ln. #200
 Charleston, WV 25311

Postmark Here: JAN - 7 2015

Bowers #23 P&A

PS Form 3800

7014 2120 0003 6926 4204

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Postage	\$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$

Sent To: Catenary Coal Company, LLC
 63 Corporate Centre Drive
 Scott Depot, WV 25560

Postmark Here: JAN - 7 2015

Bowers #23 P&A

PS Form 3800

Received Office of Oil & Gas

JAN 13 2015

3902908P

70J4 2120 0003 6926 4050

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Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage	



Sent To
Street & A
or PO Box
City, State

Terry Urban
P.O. Box 1207
Clendenin, WV 25045

Bowers #23 P&A

PS Form 3800, July 2011

Received
Office of Oil & Gas
JAN 13 2015

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Cabot Oil & Gas Corporation OP Code 08145

Watershed (HUC 10) Kanawha River Quadrangle Julian

Elevation 1,400' County Kanawha District Cabin Creek

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

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

If so, please describe anticipated pit waste: _____

Will a synthetic liner be used in the pit? Yes _____ No X 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 No treated pit wastes will be produced)

Will closed loop system be used? N/A

Drilling medium anticipated for this well? Air, freshwater, oil based, etc. no drilling proposed

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

Additives to be used in drilling medium? N/A

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. No cuttings produced during plugging operation

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

-Landfill or offsite name/permit number? _____

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 Kenneth L. Marcum

Company Official (Typed Name) Kenneth L. Marcum

Company Official Title Regulatory Supervisor

Subscribed and sworn before me this 7th day of January, 20 ~~14~~ 2015

Constance C. Carden

COMMONWEALTH OF PENNSYLVANIA
Notary Seal
Constance C. Carden, Notary Public
McDonald Boro, Washington County
My Commission Expires Nov. 16, 2017
MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

My commission expires 11/16/2017

Form WW-9

Operator's Well No. Bowers #23

Proposed Revegetation Treatment: Acres Disturbed 0.18 Prevegetation pH 6.5

Lime 2 Tons/acre or to correct to pH 6.5

Fertilizer (10-20-20 or equivalent) 500 lbs/acre (500 lbs minimum)

Mulch Pulp Fiber at 1000 to 1500 Tons/acre

Seed Mixtures

Area I			Area II		
Seed Type		lbs/acre	Seed Type		lbs/acre
Grain Rye - 100	Red Clover - 5	Fescue - 40	Grain Rye - 100	Red Clover - 5	Fescue - 40
Annual Rye - 20	White Clover - 5		Annual Rye - 20	White Clover - 5	
Perennial Rye - 10	Alta Sweet Clover - 5		Perennial Rye - 1	Alta Sweet Clover - 5	
Yellow Clover - 5	Birdsfoot Trefoil - 10		Yellow Clover - 5	Birdsfoot Trefoil	

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

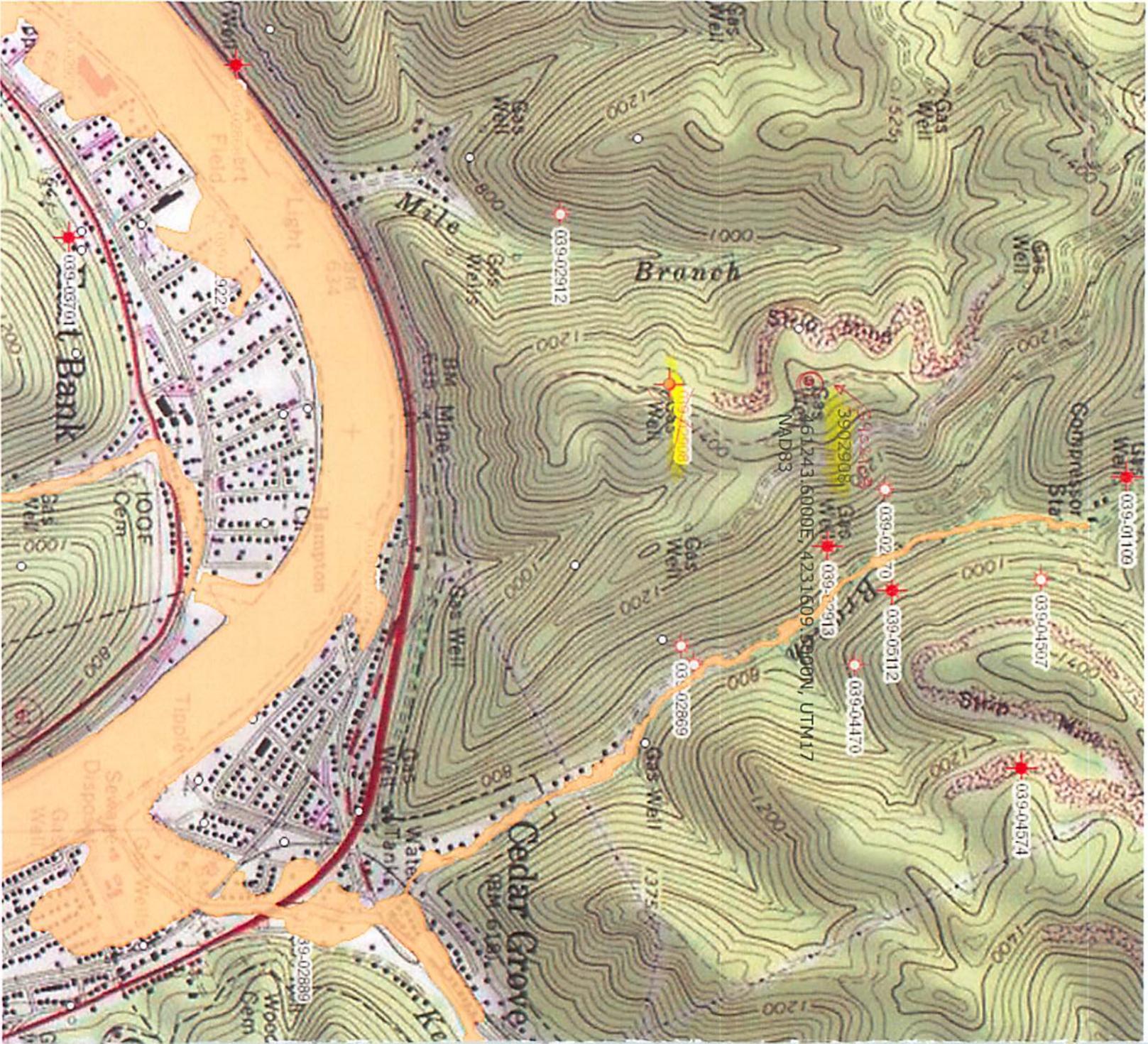
Plan Approved by: _____

Comments: _____

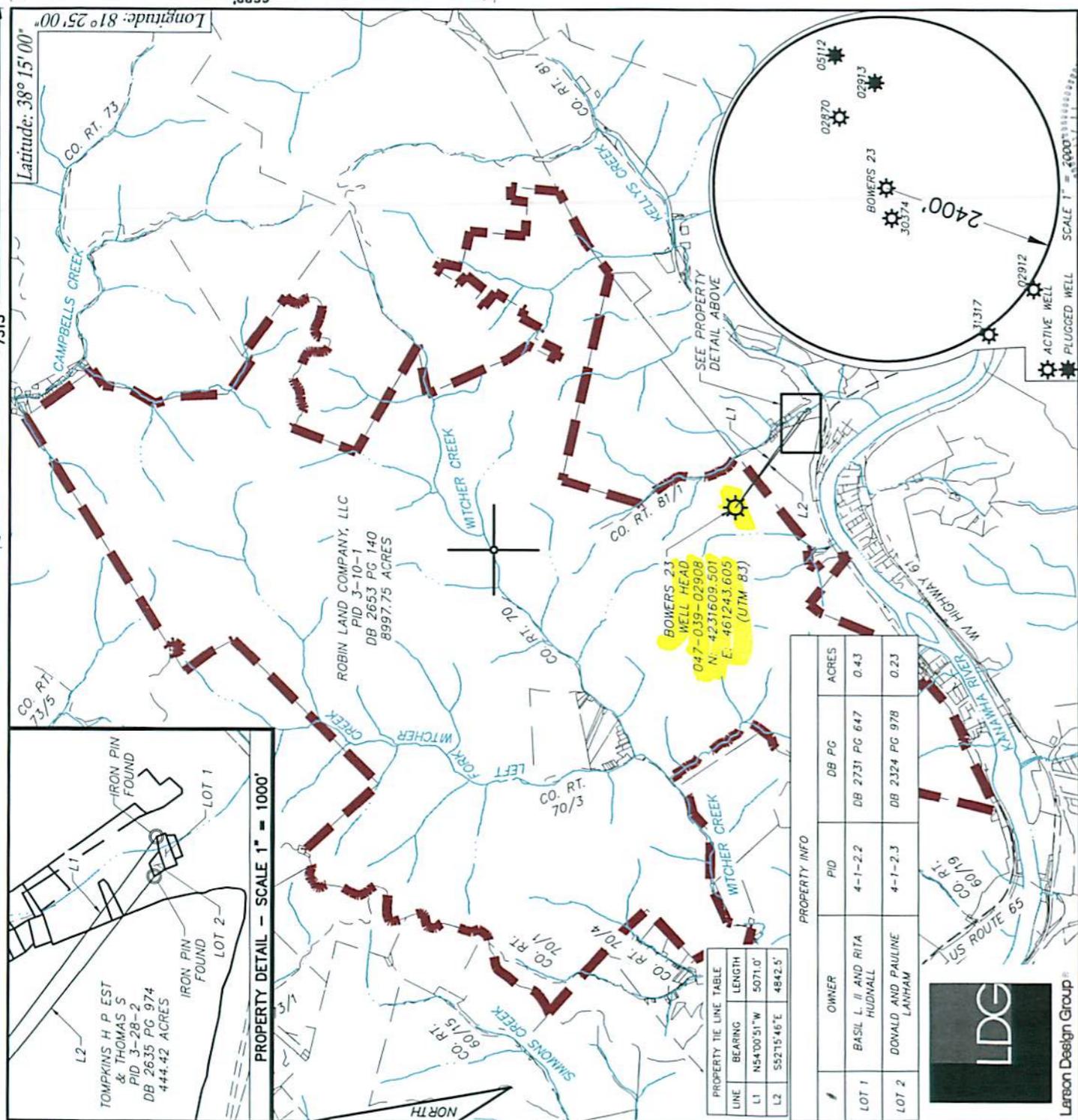
Title: Inspector Delgado Date: 1-13-15

Field Reviewed? Yes No

39 02908 P



3902908P



TOMPKINS H P EST & THOMAS S
PID 3-28-2
DB 2635 PG 974
444.42 ACRES

IRON PIN FOUND
LOT 1
LOT 2

PROPERTY DETAIL - SCALE 1" = 1000'

PROPERTY DETAIL - SCALE 1" = 1000'

LINE	BEARING	LENGTH
L1	N54°00'51"W	5071.0'
L2	S52°15'46"E	4842.5'

PROPERTY INFO			
#	OWNER	PID	DB PG ACRES
LOT 1	BASIL L II AND RITA HUDNALL	4-1-2.2	DB 2731 PG 647 0.43
LOT 2	DONALD AND PAULINE LANHAM	4-1-2.3	DB 2324 PG 978 0.23



FILE #: 8744-013
DRAWING #: 1
SCALE: 1" = 5000'
MINIMUM DEGREE OF ACCURACY: 1" in 2500'
PROVEN SOURCE OF ELEVATION: SURVEY GRADE GPS

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

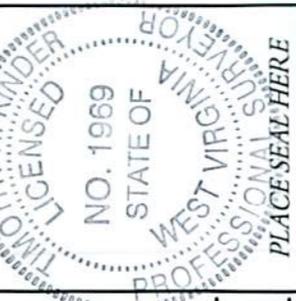
Well Type: Oil Waste Disposal Production Deep
 Gas Liquid Injection Storage Shallow

WATERSHED: KANAWHA RIVER
COUNTY/DISTRICT: KANAWHA / CABIN CREEK
SURFACE OWNER: ROBIN LAND COMPANY, LLC
OIL & GAS ROYALTY OWNER: WILLIAM BOWERS ESTATE (47-0618)
ACREAGE: 8,997.75
ACREAGE: 1,532
DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG & ABANDON
CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY):

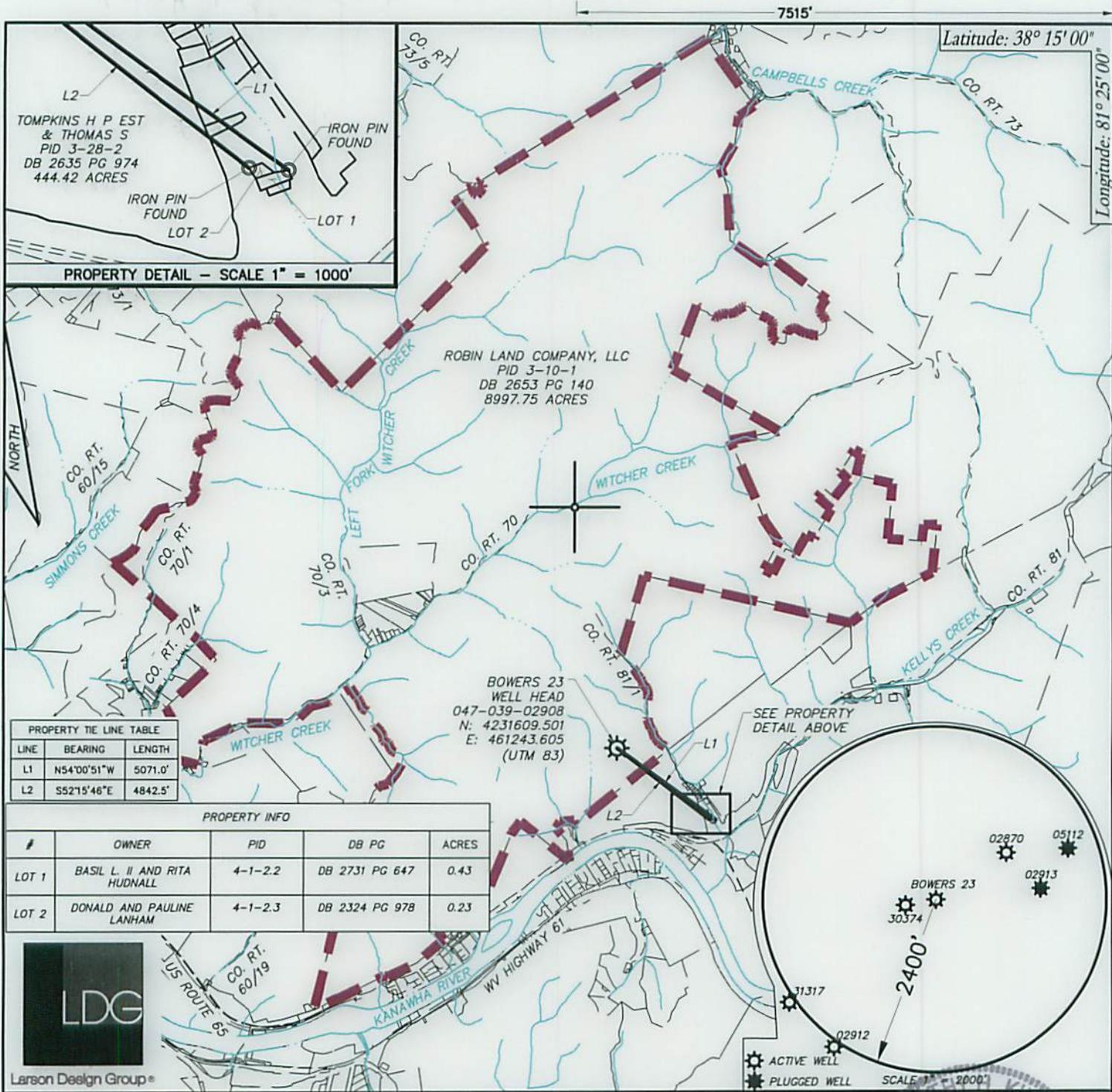
TARGET FORMATION: WEIR
ESTIMATED DEPTH: 2375' - 2550'
WELL OPERATOR CABOT OIL & GAS CORPORATION
DESIGNATED AGENT WHITNEY JOHNSON
Address FIVE PENN CENTER WEST, SUITE 401
City PITTSBURGH State PA Zip Code 15276
State WV City GLASGOW State WV Zip Code 25086

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: *Matthew H. Anderson*
R.P.E.: L.L.S.: 1969



DATE: JUNE 19, 2014
OPERATOR'S WELL #: BOWERS 23 S-646
API WELL #: 47 039 02908
STATE COUNTY RECEIVED PERMIT
Office of Oil & Gas
JAN 13 2015
ELEVATION: 1400'



FILE #: 8744-013
 DRAWING #: 1
 SCALE: 1" = 5000'
 MINIMUM DEGREE OF ACCURACY: 1" in 2500'
 PROVEN SOURCE OF ELEVATION: SURVEY GRADE GPS

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: *[Signature]*
 R.P.E.: _____ L.L.S.: 1969

STATE OF WEST VIRGINIA
 NO. 1969
 STATE OF WEST VIRGINIA
 PROFESSIONAL SURVEYOR
 PLACE SEAL HERE

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



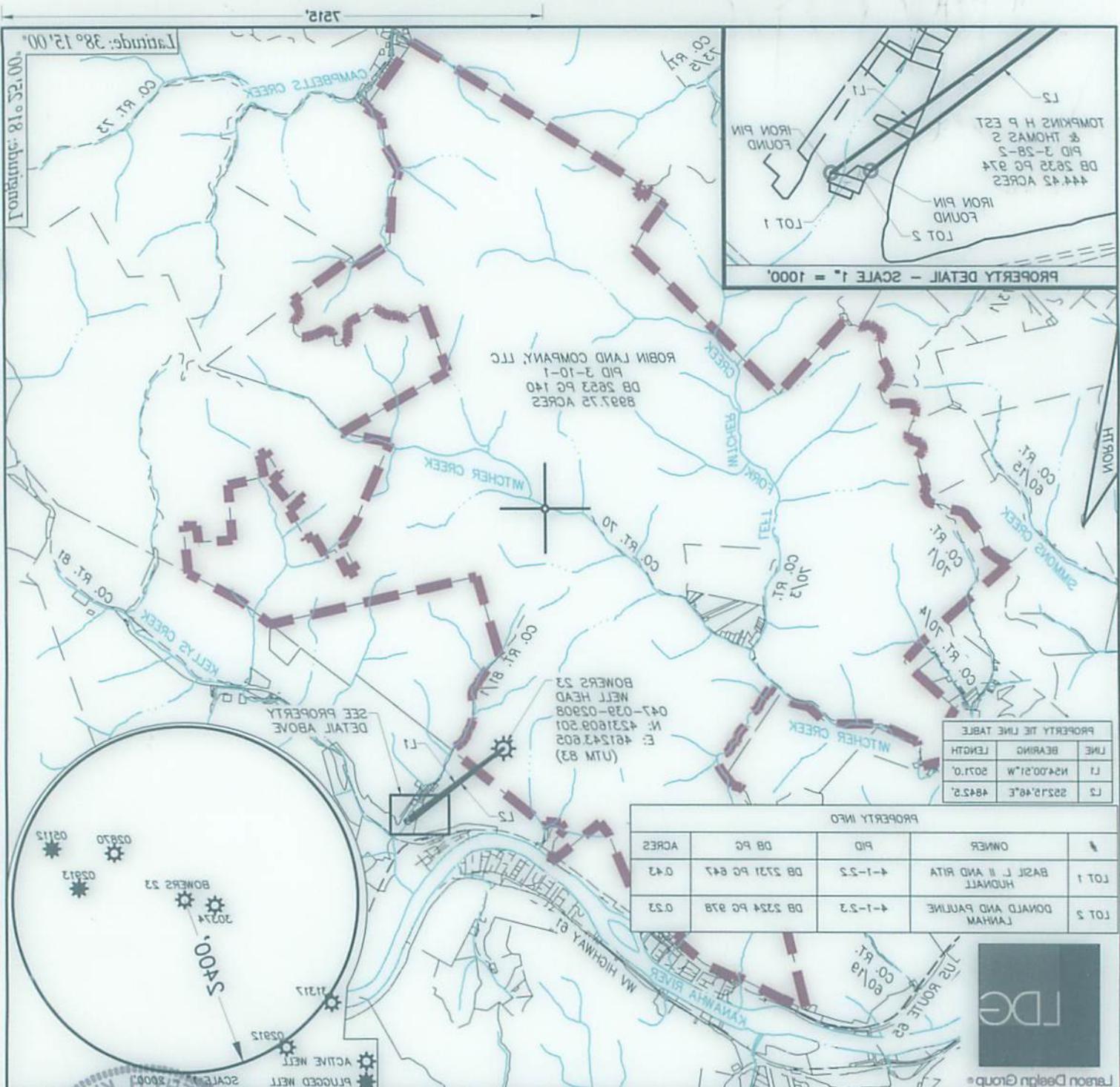
DATE: JUNE 19, 2014
 OPERATOR'S WELL #: BOWERS 23 S-646
 API WELL #: 47 039 02908 P
 STATE COUNTY PERMIT

Well Type: Oil Waste Disposal Production Deep
 Gas Liquid Injection Storage Shallow

WATERSHED: KANAWHA RIVER ELEVATION: 1400'
 COUNTY/DISTRICT: KANAWHA / CABIN CREEK QUADRANGLE: JULIAN
 SURFACE OWNER: ROBIN LAND COMPANY, LLC ACREAGE: 8,997.75
 OIL & GAS ROYALTY OWNER: WILLIAM BOWERS ESTATE (47-0618) ACREAGE: 1,532
 DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
 PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG & ABANDON
 CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY): _____

TARGET FORMATION: WEIR ESTIMATED DEPTH: 2375' - 2550'
 WELL OPERATOR CABOT OIL & GAS CORPORATION DESIGNATED AGENT WHITNEY JOHNSON
 Address FIVE PENN CENTER WEST, SUITE 401 Address CABOT OIL & GAS CORPORATION, P.O. BOX 450
 City PITTSBURGH State PA Zip Code 15276 City GLASGOW State WV Zip Code 25086

FORM WW-6



PROPERTY LINE TABLE

LINE	BEARING	LENGTH
L1	N44°01'17"W	2037.0'
L2	S25°19'46"E	4842.5'

PROPERTY INFO

LOT #	OWNER	PID	DB PG	ACRES
LOT 1	BASIL II AND RITA HUDNALL	4-1-23	DB 2731 PG 647	0.43
LOT 2	DONALD AND PAULINE LAHAM	4-1-23	DB 2724 PG 278	0.23



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: _____

L.I.S.: 1988

R.P.E.: _____

PLACE SEAL HERE

FILE #: 8744-013

DRAWING #: 1

SCALE: 1" = 2000'

MINIMUM DEGREE OF ACCURACY: 1" in 2500'

PROVEN SOURCE OF ELEVATION: SURVEY GRADE GPS

DATE: JUNE 19, 2014

OPERATOR'S WELL #: BOWERS 23 2-646

API WELL #: 47 039 02808 4

STATE COUNTY PERMIT

WELL TYPE: Oil Waste Disposal Production Deep Gas Liquid Injection Storage Shallow

WATERSHED: KANAWHA RIVER

COUNTY/DISTRICT: KANAWHA \ CABIN CREEK

SURFACE OWNER: ROBIN LAND COMPANY, LLC

OIL & GAS ROYALTY OWNER: WILLIAM BOWERS ESTATE (47-0618)

WELL OPERATOR: CABOT OIL & GAS CORPORATION

Address: FIVE PENN CENTER WEST, SUITE 401, City: PITTSBURGH, State: PA, Zip Code: 15278

Address: CABOT OIL & GAS CORPORATION, P.O. BOX 450, City: GLASGOW, State: WV, Zip Code: 25086

DESIGNATED AGENT: WHITNEY JOHNSON

TARGET FORMATION: WEIR

ESTIMATED DEPTH: 2375' - 2550'

CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY):

PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG & ABANDON

DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE

ACREAGE: 1.232

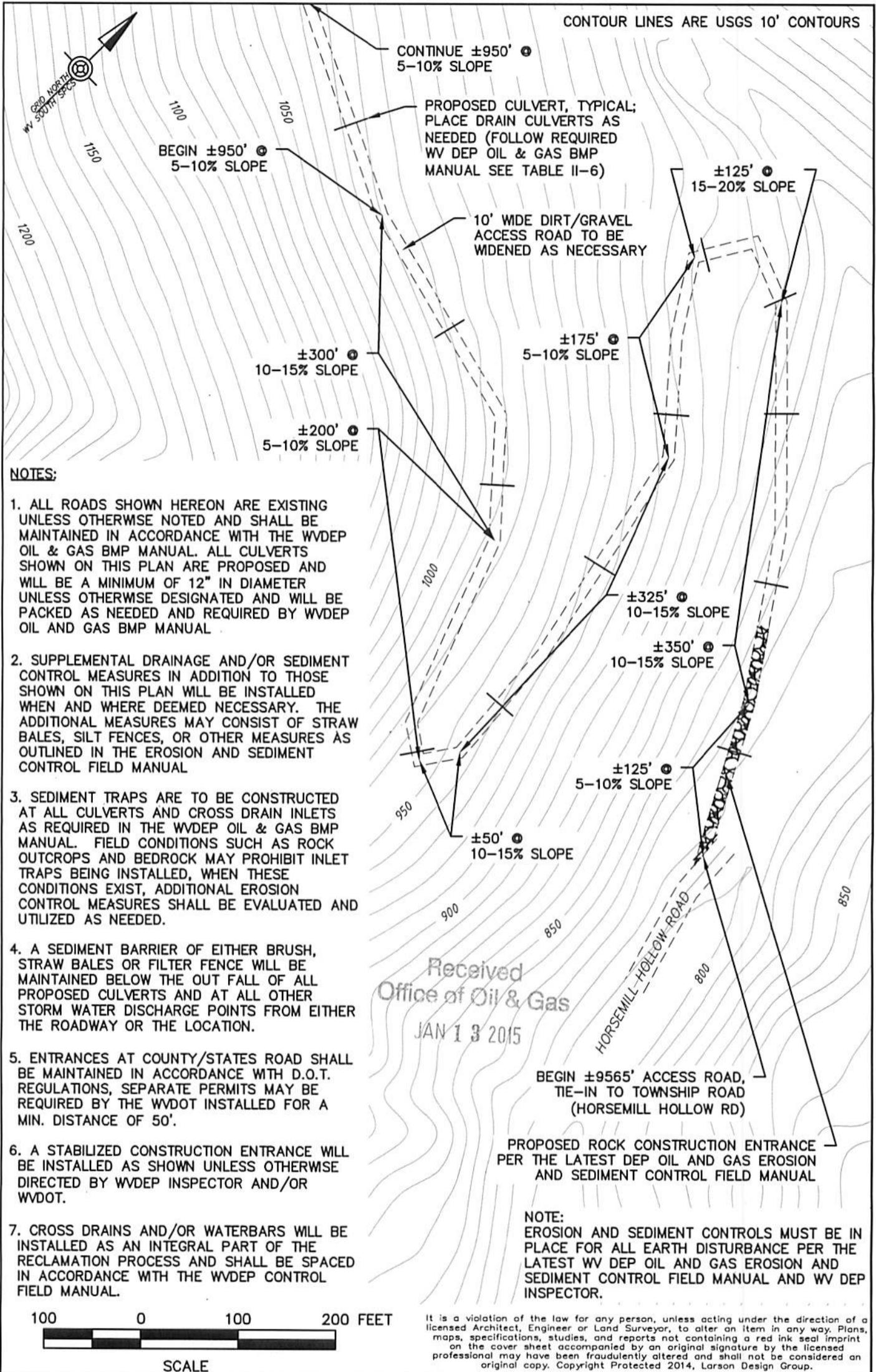
ACREAGE: 8.9975

QUADRANGLE: JULIAN

ELEVATION: 1400'



9-WV-MR03

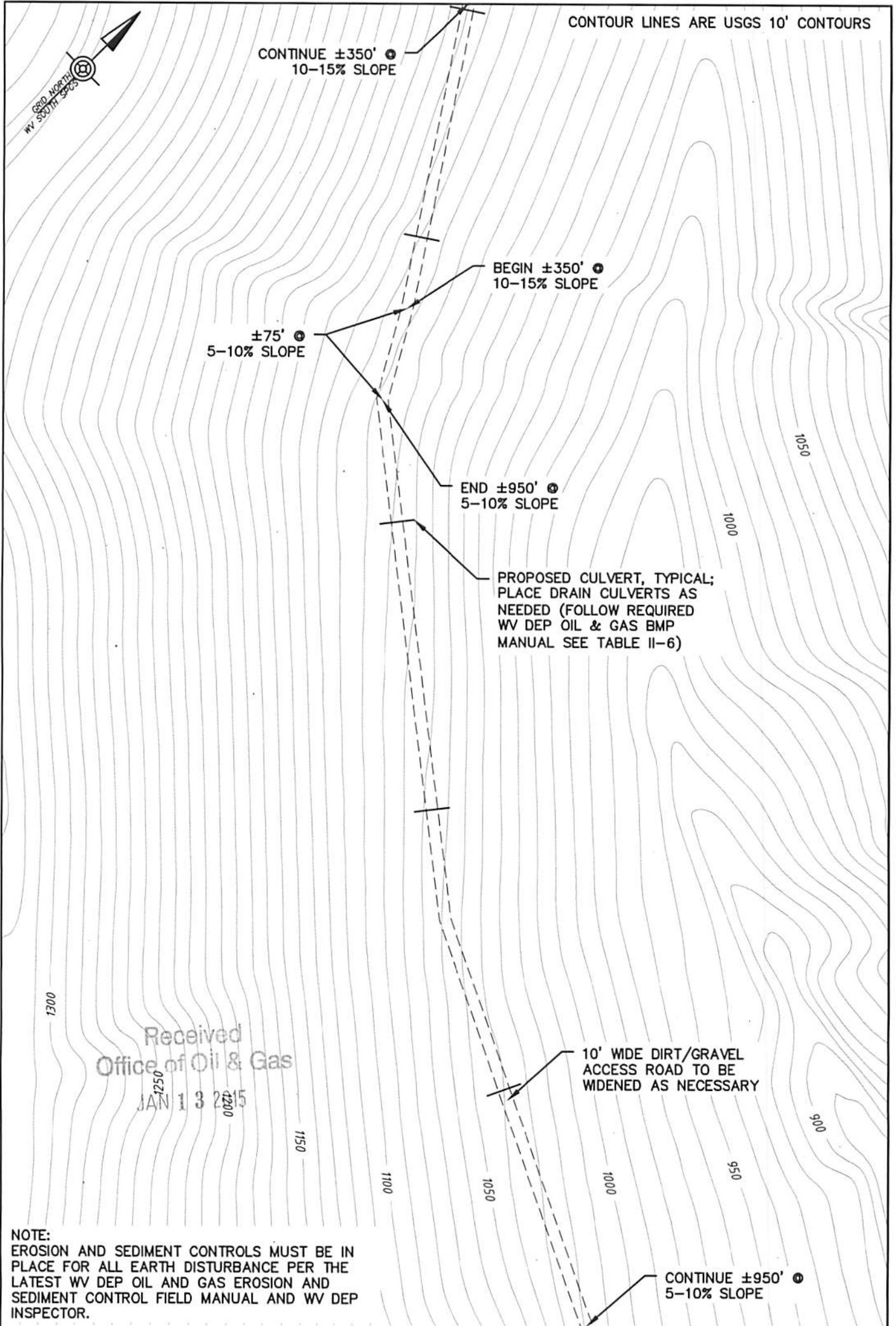


NOTES:

1. ALL ROADS SHOWN HEREON ARE EXISTING UNLESS OTHERWISE NOTED AND SHALL BE MAINTAINED IN ACCORDANCE WITH THE WVDEP OIL & GAS BMP MANUAL. ALL CULVERTS SHOWN ON THIS PLAN ARE PROPOSED AND WILL BE A MINIMUM OF 12" IN DIAMETER UNLESS OTHERWISE DESIGNATED AND WILL BE PACKED AS NEEDED AND REQUIRED BY WVDEP OIL AND GAS BMP MANUAL.
2. SUPPLEMENTAL DRAINAGE AND/OR SEDIMENT CONTROL MEASURES IN ADDITION TO THOSE SHOWN ON THIS PLAN WILL BE INSTALLED WHEN AND WHERE DEEMED NECESSARY. THE ADDITIONAL MEASURES MAY CONSIST OF STRAW BALES, SILT FENCES, OR OTHER MEASURES AS OUTLINED IN THE EROSION AND SEDIMENT CONTROL FIELD MANUAL.
3. SEDIMENT TRAPS ARE TO BE CONSTRUCTED AT ALL CULVERTS AND CROSS DRAIN INLETS AS REQUIRED IN THE WVDEP OIL & GAS BMP MANUAL. FIELD CONDITIONS SUCH AS ROCK OUTCROPS AND BEDROCK MAY PROHIBIT INLET TRAPS BEING INSTALLED, WHEN THESE CONDITIONS EXIST, ADDITIONAL EROSION CONTROL MEASURES SHALL BE EVALUATED AND UTILIZED AS NEEDED.
4. A SEDIMENT BARRIER OF EITHER BRUSH, STRAW BALES OR FILTER FENCE WILL BE MAINTAINED BELOW THE OUT FALL OF ALL PROPOSED CULVERTS AND AT ALL OTHER STORM WATER DISCHARGE POINTS FROM EITHER THE ROADWAY OR THE LOCATION.
5. ENTRANCES AT COUNTY/STATES ROAD SHALL BE MAINTAINED IN ACCORDANCE WITH D.O.T. REGULATIONS, SEPARATE PERMITS MAY BE REQUIRED BY THE WVDOT INSTALLED FOR A MIN. DISTANCE OF 50'.
6. A STABILIZED CONSTRUCTION ENTRANCE WILL BE INSTALLED AS SHOWN UNLESS OTHERWISE DIRECTED BY WVDEP INSPECTOR AND/OR WVDOT.
7. CROSS DRAINS AND/OR WATERBARS WILL BE INSTALLED AS AN INTEGRAL PART OF THE RECLAMATION PROCESS AND SHALL BE SPACED IN ACCORDANCE WITH THE WVDEP CONTROL FIELD MANUAL.

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<p>PROJECT NO.: 8744-014</p> <p>SHEET NO.: 1 of 8</p>	<p>RECLAMATION PLAN BOWERS 23 CABIN CREEK DISTRICT, KANAWHA COUNTY, WEST VIRGINIA</p>	<p>Larson Design Group®</p>
<p>CABOT OIL & GAS CORPORATION FIVE PENN CENTER WEST, SUITE 401 PITTSBURGH, PA 15276-0130 PHONE (304) 595-5015 DATE: 4/3/14 DRAWN BY: JCW CHECKED BY: THK</p>	<p>Larson Design Group • Architects Engineers Surveyors 2502 Cranberry Square Morgantown, WV 26508 PHONE 304.777.2940 TOLL FREE 877.323.6603 FAX 570.323.9902 • www.larsondesigngroup.com</p>	



CONTOUR LINES ARE USGS 10' CONTOURS

CONTINUE ±350' 10-15% SLOPE

BEGIN ±350' 10-15% SLOPE

±75' 5-10% SLOPE

END ±950' 5-10% SLOPE

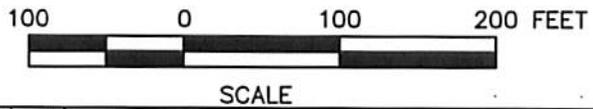
PROPOSED CULVERT, TYPICAL; PLACE DRAIN CULVERTS AS NEEDED (FOLLOW REQUIRED WV DEP OIL & GAS BMP MANUAL SEE TABLE II-6)

10' WIDE DIRT/GRAVEL ACCESS ROAD TO BE WIDENED AS NECESSARY

CONTINUE ±950' 5-10% SLOPE

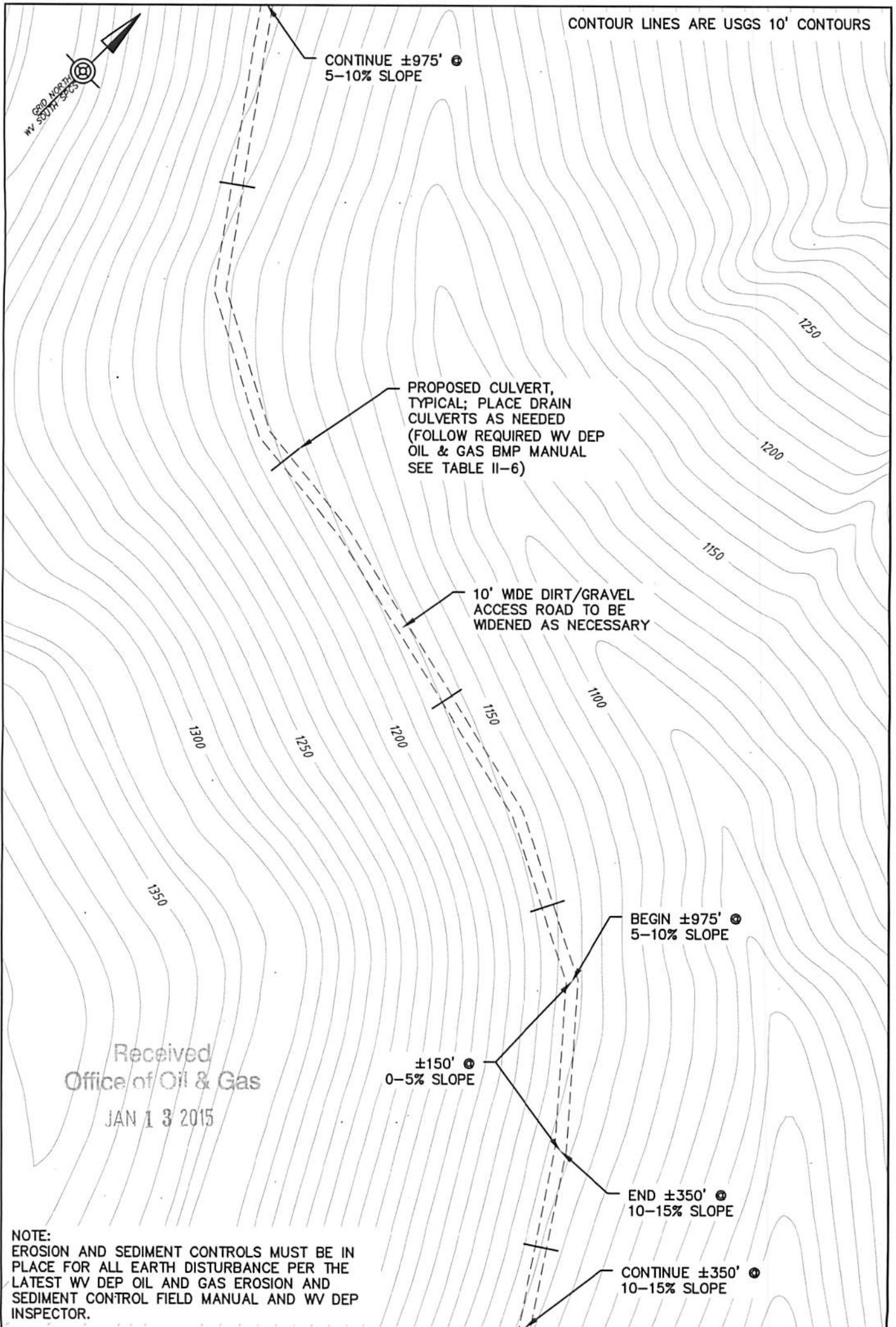
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NOTE:
EROSION AND SEDIMENT CONTROLS MUST BE IN PLACE FOR ALL EARTH DISTURBANCE PER THE LATEST WV DEP OIL AND GAS EROSION AND SEDIMENT CONTROL FIELD MANUAL AND WV DEP INSPECTOR.



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PROJECT NO.: 8744-014	SHEET NO.: 2 of 8	RECLAMATION PLAN BOWERS 23		
		CABIN CREEK DISTRICT, KANAWHA COUNTY, WEST VIRGINIA		
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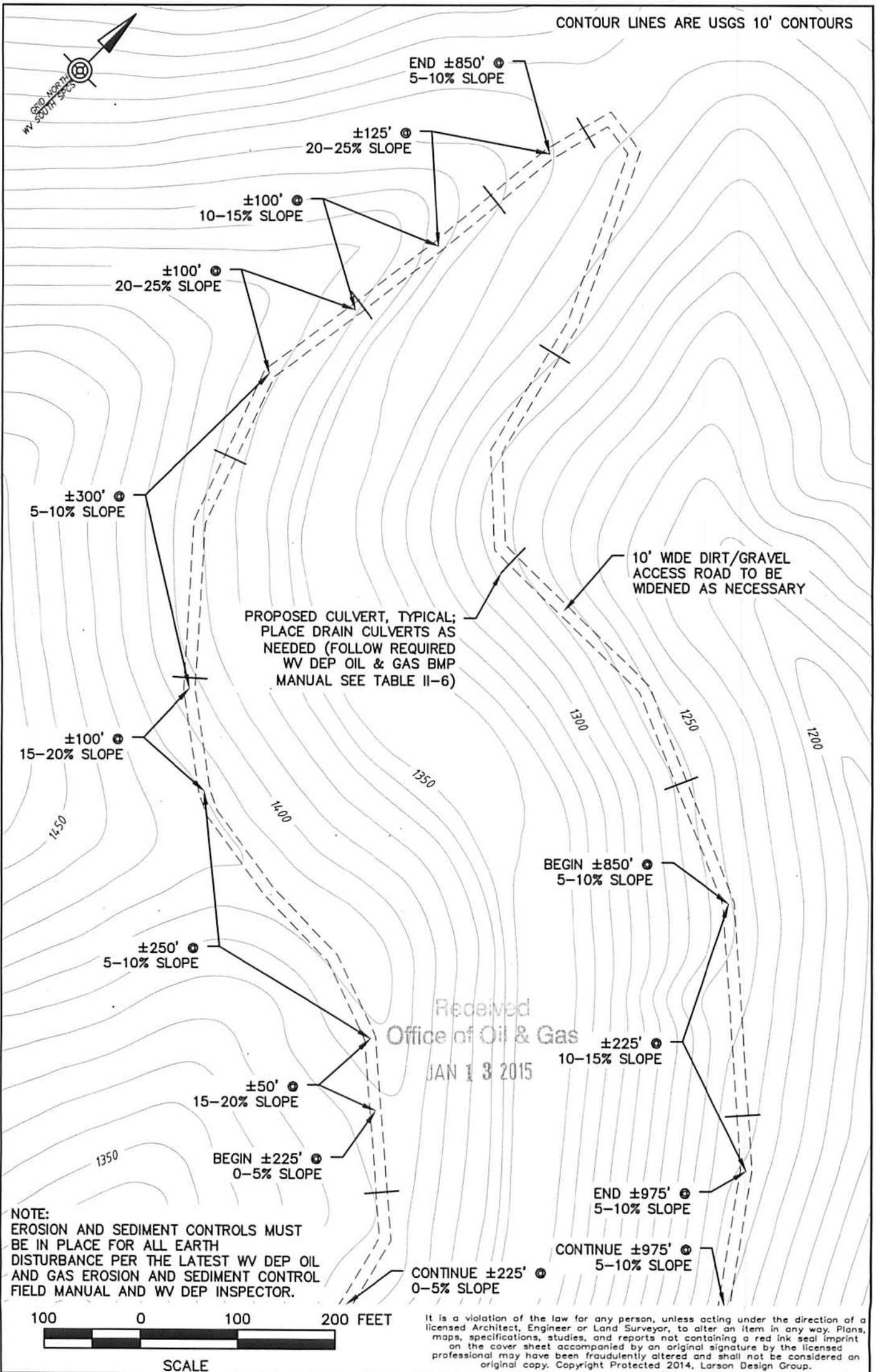
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		CABIN CREEK DISTRICT, KANAWHA COUNTY, WEST VIRGINIA	
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PROJECT NO.: 8744-014	SHEET NO.: 4 of 8	RECLAMATION PLAN BOWERS 23	
		CABIN CREEK DISTRICT, KANAWHA COUNTY, WEST VIRGINIA	
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CONTOUR LINES ARE USGS 10' CONTOURS



CONTINUE ±225' 0-5% SLOPE

END ±225' 0-5% SLOPE

±50' 5-10% SLOPE

±225' 0-5% SLOPE

PROPOSED CULVERT, TYPICAL;
PLACE DRAIN CULVERTS AS
NEEDED (FOLLOW REQUIRED
WV DEP OIL & GAS BMP
MANUAL SEE TABLE II-6)

±100' 5-10% SLOPE

10' WDE DIRT/GRAVEL
ACCESS ROAD TO BE
WIDENED AS NECESSARY

±150' 0-5% SLOPE

±75' 15-20% SLOPE

±100' 0-5% SLOPE

±75' 10-15% SLOPE

BEGIN ±350' 0-5% SLOPE

CONTINUE ±350' 0-5% SLOPE

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NOTE:
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PLACE FOR ALL EARTH DISTURBANCE PER THE
LATEST WV DEP OIL AND GAS EROSION AND
SEDIMENT CONTROL FIELD MANUAL AND WV DEP
INSPECTOR.



SCALE

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RECLAMATION PLAN BOWERS 23

CABIN CREEK DISTRICT, KANAWHA COUNTY, WEST VIRGINIA

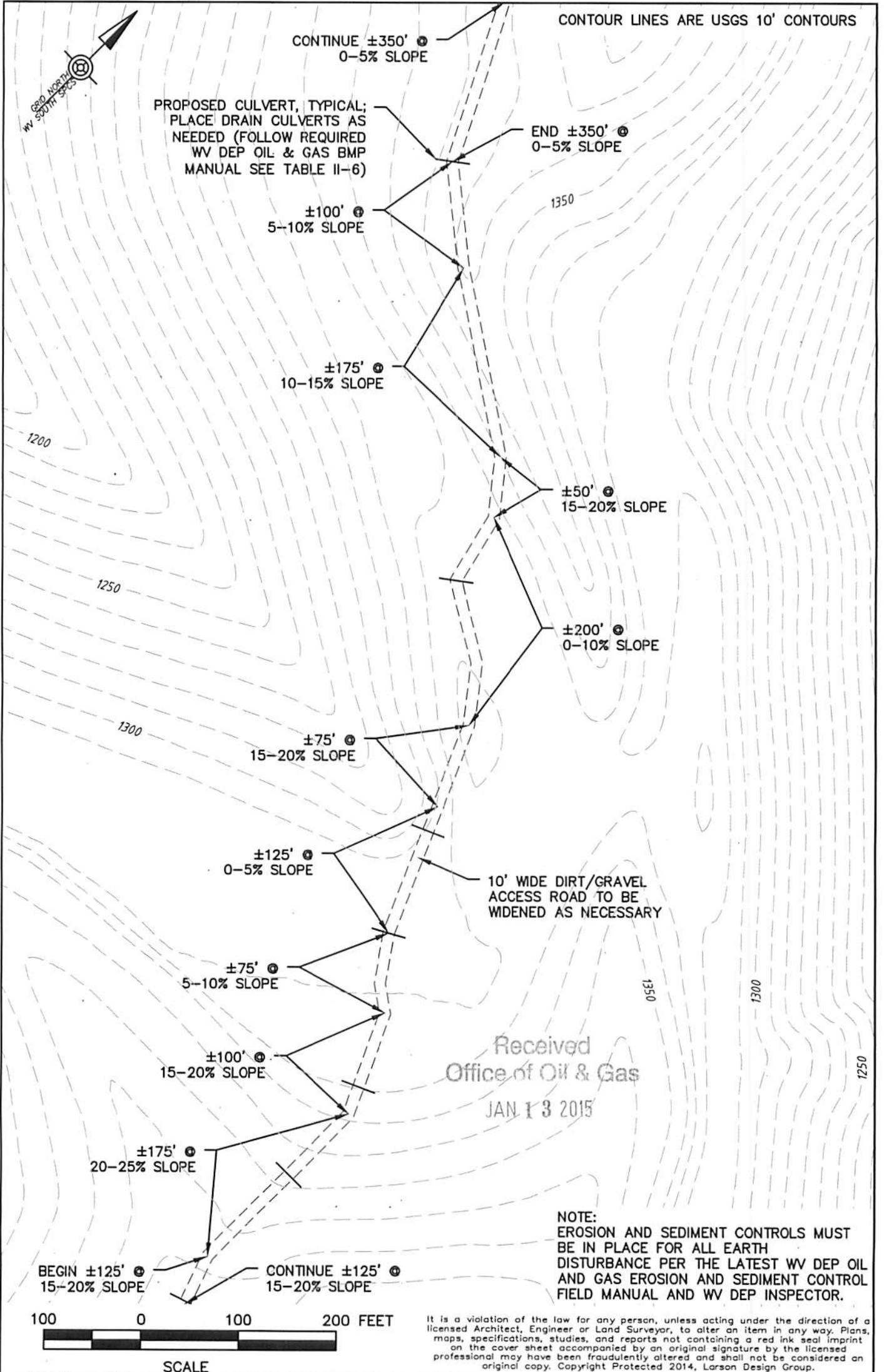
CABOT OIL & GAS CORPORATION
FIVE PENN CENTER WEST, SUITE 401
PITTSBURGH, PA 15276-0130
PHONE (304) 595-5015
DATE: 4/3/14 DRAWN BY: JCW CHECKED BY: THK

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8744-014
SHEET NO.:
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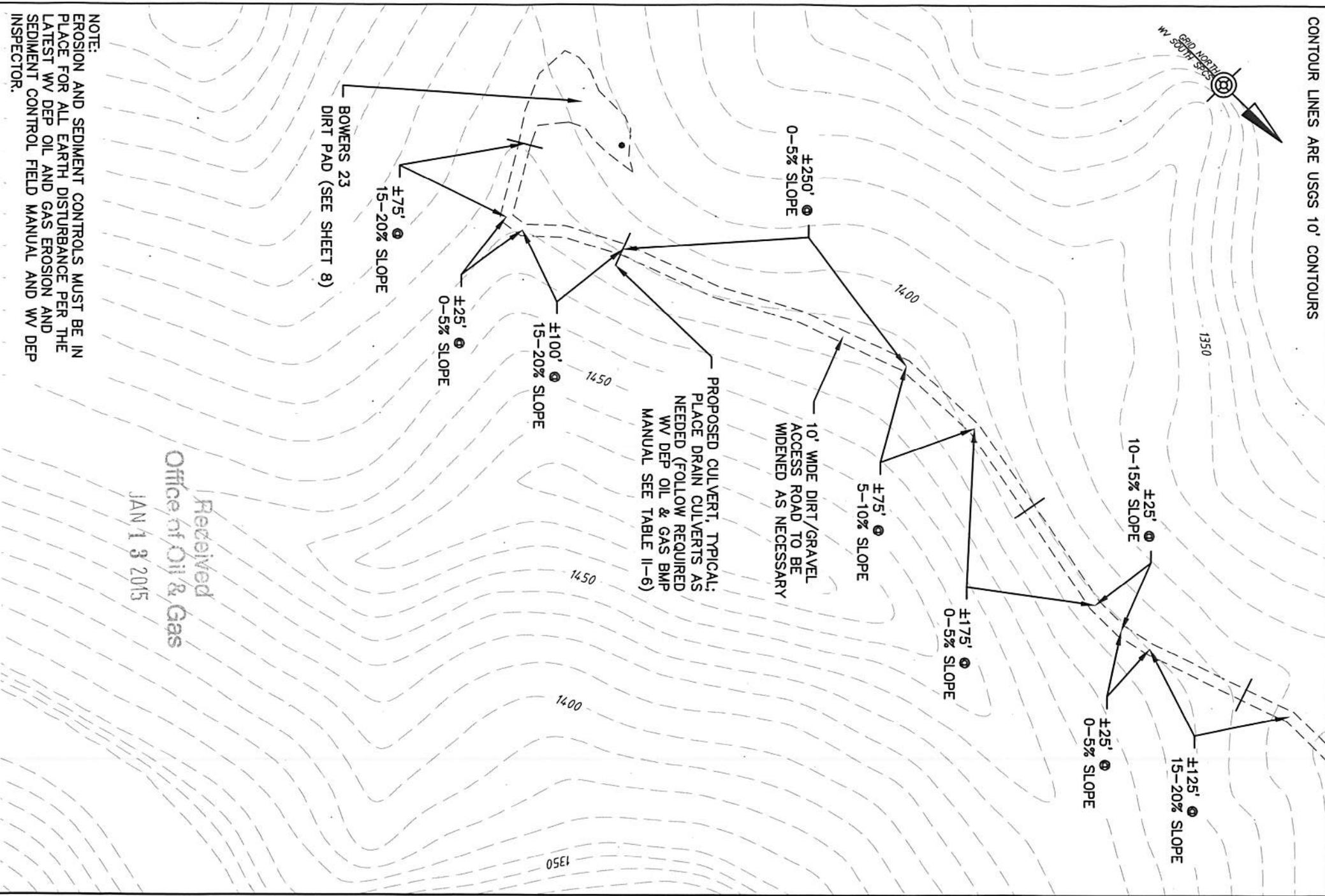


PROJECT NO.: 8744-014	SHEET NO.: 6 of 8	RECLAMATION PLAN BOWERS 23	
		CABIN CREEK DISTRICT, KANAWHA COUNTY, WEST VIRGINIA	
CABOT OIL & GAS CORPORATION FIVE PENN CENTER WEST, SUITE 401 PITTSBURGH, PA 15276-0130 PHONE (304) 595-5015 DATE: 4/3/14 DRAWN BY: JCW CHECKED BY: THK		Larson Design Group • Architects Engineers Surveyors 2502 Cranberry Square Morgantown, WV 26508 PHONE 304.777.2940 TOLL FREE 877.323.6603 FAX 570.323.9902 • www.larsondesigngroup.com	

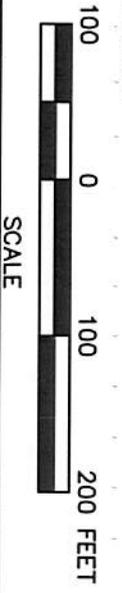


3902908P

CONTOUR LINES ARE USGS 10' CONTOURS



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RECLAMATION PLAN BOWERS 23

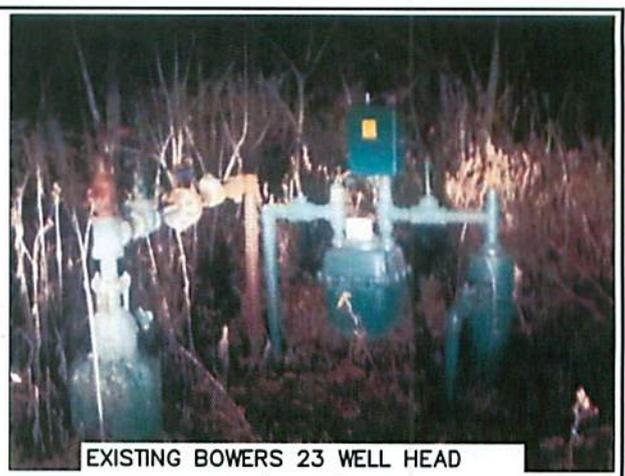
CABIN CREEK DISTRICT, KANAWHA COUNTY, WEST VIRGINIA
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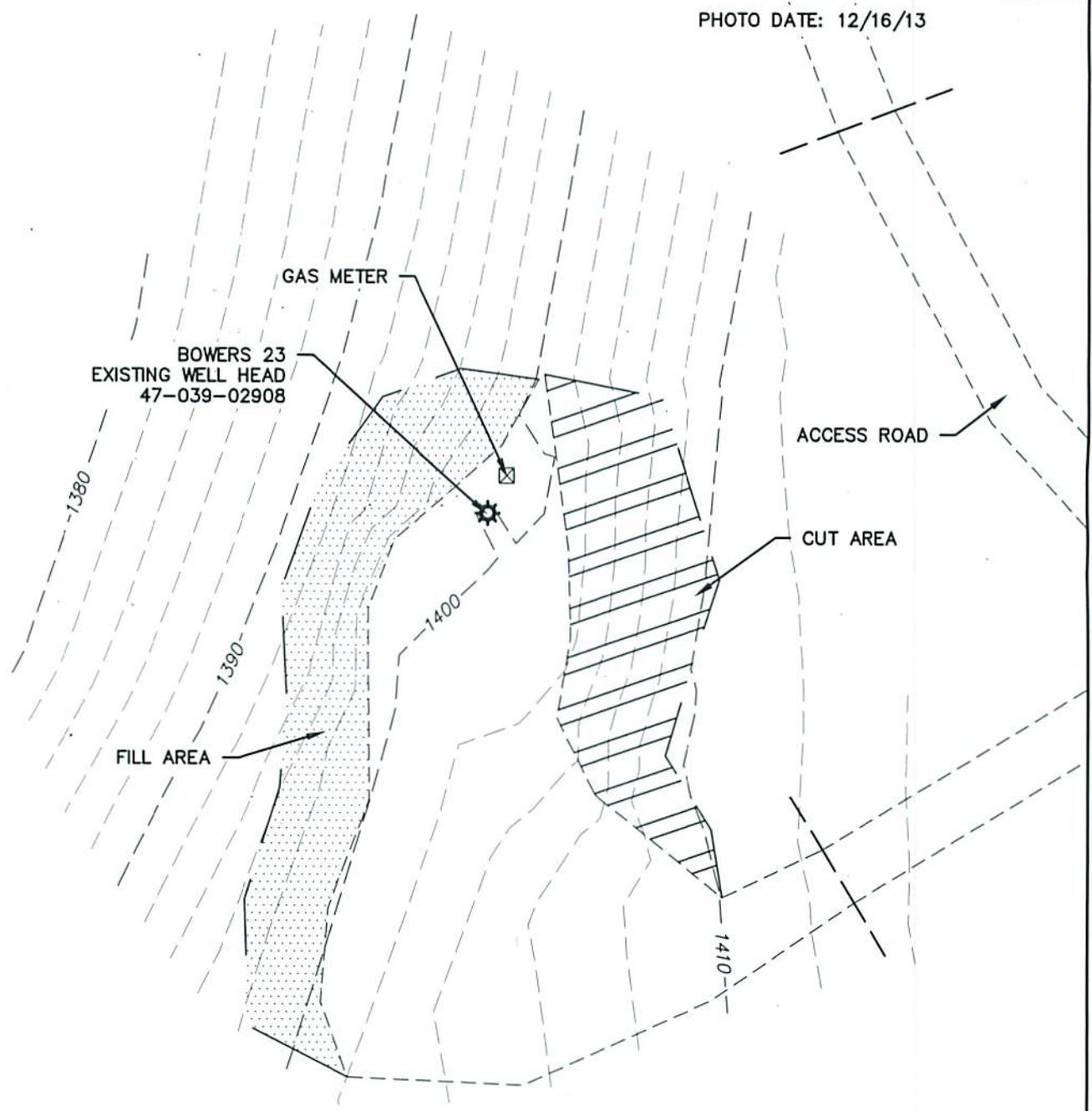


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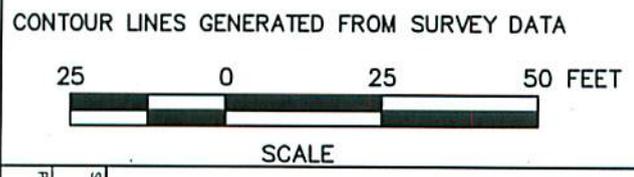
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 SHEET NO.: 7 of 8



EXISTING BOWERS 23 WELL HEAD
PHOTO DATE: 12/16/13



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January 7, 2015

Chief
West Virginia Division of Environmental Protection
Office of Oil & Gas
601 57th Street
Charleston, WV 25304

RE: William Bowers #23 (S-646)
Cabin Creek District, Kanawha County, WV
API # 47-039-02908
Written Application to plug and abandon wellbore

Dear Chief:

In accordance with Article 22-6-23 of the Code of State Regulations regarding oil and gas operations, please find attached a formal application for the plug and abandonment of the subject well.

Notices of our intention to plug this wellbore have been sent to surface owner, coal owner, and coal operators associated with this well. Copies of the certified mail receipts are attached for your records.

If you have any questions or need additional information, I can be reached at 412-249-3850.

Sincerely,



Kenneth L. Marcum
Regulatory Supervisor

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