west virginia department of environmental protection

Office of Oil and Gas
601 57th Street, S.E.
Charleston, WV 25304
(304) 926-0450
fax: (304) 926-0452

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

Wednesday, September 14, 2016
WELL WORK PERMIT
Vertical / Plugging

CABOT OIL & GAS CORPORATION
2000 PARK LANE, SUITE 300

PITTSBURGH, PA 15275

Re: Permit approval for 18-641
47-039-02861-00-00

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

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days of completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

Per 35 CSR 4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926- 0450.

James A. Martin
Chief

Operator's Well Number: 18-641
Farm Name: BOWERS, WILLIAM
U.S. WELL NUMBER: 47-039-02861-00-00
Vertical / Plugging
Date Issued: 9/14/2016

3902861P

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.

3902861P

WW-4B
Rev. 2/01

1) Date July 21, 2016
2) Operator's
Well No. William Bowers #18
3) API Well No. 47-039-02861

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

APPLICATION FOR A PERMIT TO PLUG AND ABANDON

4) Well Type: Oil ____/ Gas X / Liquid injection ____/ Waste disposal ____/
(If "Gas, Production X or Underground storage ____) Deep ____/ Shallow X

5) Location: Elevation 1,369.24' Watershed Laurel Fork of Witcher Creek
District Cabin Creek County Kanawha Quadrangle Cedar Grove

6) Well Operator Cabot Oil & Gas Corporation
Address 2000 Park Lane, Suite 300
Pittsburgh, PA 15275

7) Designated Agent Phillip Hill - Cabot Oil & Gas Corporation
Address 900 Lee Street East, Suite 1500
Charleston, WV 25301

8) Oil and Gas Inspector to be notified
Name Terry Urban
Address P.O. Box 1207
Clendenin, WV 25045

9) Plugging Contractor
Name Contractor Services, Inc.
Address 929 Charleston, Road
Spencer, WV 25276

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

See Attached Sheet

See Change on Well Schematic

Received
Office of Oil & Gas
JUL 28 2016

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

Work order approved by inspector _____ Date 7-28-16

3902861A

Bowers #18
API # 47 - 039 - 02861
PLUGGING PROCEDURE

Current Configuration

ELEV. 1369'

DTD @ 2525'
13" conductor @ 11'
10" casing @ 409'
8" casing @ 1672'
6-5/8" casing @ 2106'
2-3/8" tubing @ 2525' with anchor packer set @ NA
Coal @ 60' – 65' & 375' – 379' & 660' - 665'
Gas Sand @ 940' – 1033'
Salt Sand @ 1205' – 1545' w/ gas show @ 1410'
Water Sand @ 1600'
Weir @ 2320' to 2510'
Injun @ 2250' – 2285'
Big Lime @ 2100' – 2250' w/ gas show @ 2131'

PROCEDURE

See Changes on well drawing

7-28-16

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 2-3/8" tubing.
7. If unable to pull tubing, run freepoint, cut above freepoint, and POOH.
8. Pull 6-5/8" casing from hole.
9. TIH with 2-3/8" work string to TD.
10. MIRU Cement Company and pump 41 bbls 6% Gel.
11. Pull up work string to 2300' and pump 63 sks of Class A cement for plug 1 from 2300' to 2080'.
12. Displace w/ 8 ¾ bbls of 6% Gel.
13. TOOH with work string.
14. Pull 8" casing string.
15. TIH with work string to 1640' and pump 9 3/4 bbls 6% Gel followed by 213 sks of Class A cement for plug 2 from 1640' to 1180'.
16. Displace w/ 6 ¼ bbls of 6% Gel.
17. Pull up work string to 1080' and pump 13 bbls of 6% Gel followed by 111 sks of Class A cement for plug 3 from 1080' to 840'.
18. Displace w/ 4 bbls of 6% Gel.
19. Pull work string up to 705' and pump 21 1/4 bbls 6% Gel followed 35 1/2 cubic feet of expanding cement (30 sks Class A cement) for plug 4 from 705' to 640'.
20. Displace w/ 2 ½ bbls of 6% Gel.
21. TOOH with work string.
22. Pull 10" casing, and 13" conductor.
23. TIH with work string to 420' and pump 21 bbls of 6% Gel followed by 55 1/2 cubic feet of expanding cement (47 sacks Class A) for plug 5 from 420' to 320'.
24. Displace w/ 1 ½ bbls of 6% Gel.
25. Pull work string up to 105' and pump 57 ¼ cubic feet of expanding cement (48 ½ sks of Class) for plug 6 from 105' to surface.
26. TOOH with work string and lay down.
27. RDMO Cementing Company.

Received
Office of Oil & Gas
JUL 28 2016

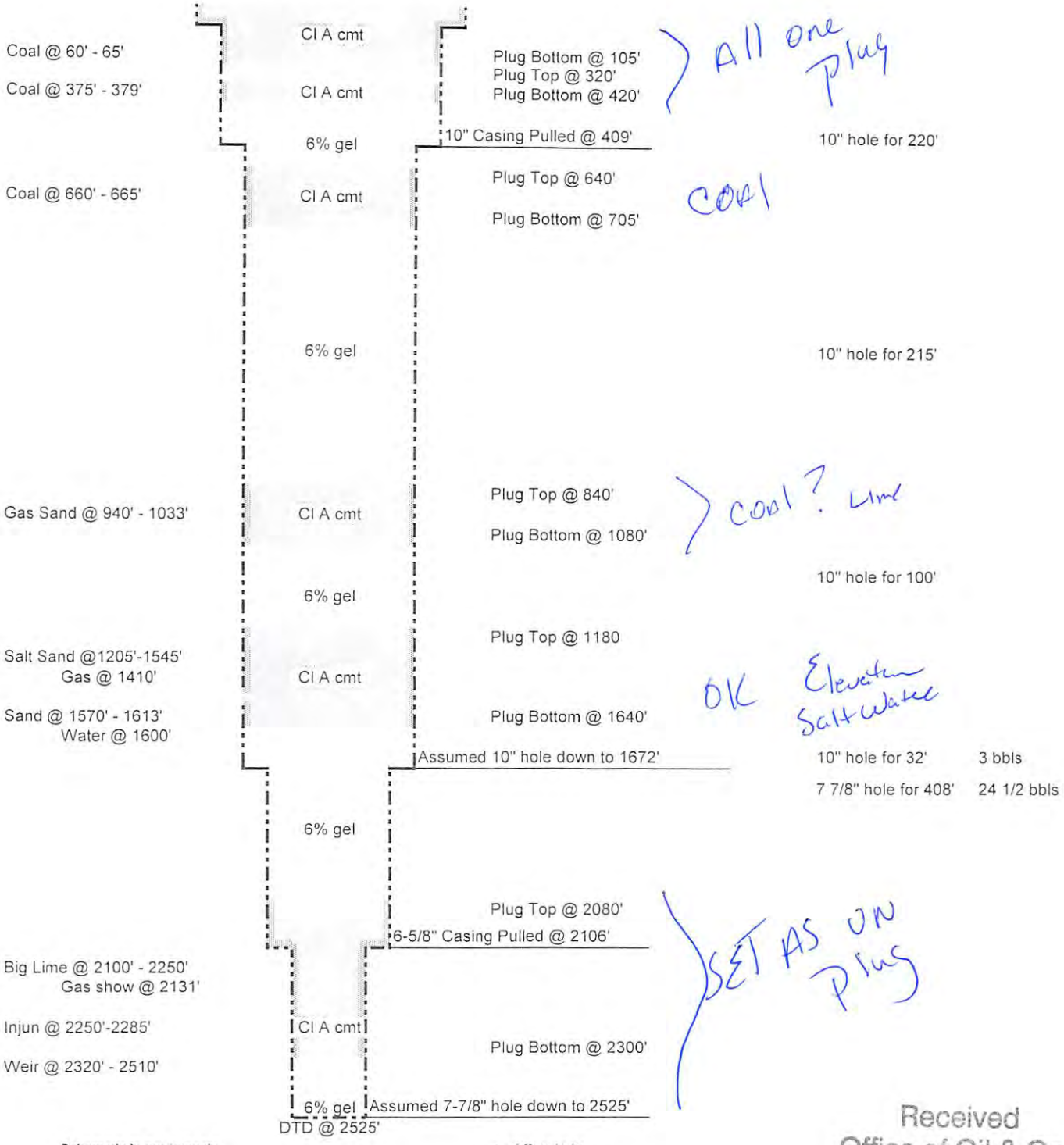
3902861P

28. Place monument as required by law on top of well bore.
29. Reclaim well site.

Received
Office of Oil & Gas
JUL 28 2016

3902861 P

BOWERS #18
API 47-039-02861
PLUGGED CONFIGURATION



Schematic is not to scale

A. Wolfe 10/28/14

Received
Office of Oil & Gas
JUL 28 2016

39028661 P

30-42 Elev 1330 B

RECORD FOR BOWERS#18

CONDUCTOR		11ft.	
Hard Rock	11	to	40
Sand & Shales	40		60
1st Coal	60		65
Sand	65		375
2nd Coal	375		379 — Coal
Sand	379		430
Slate	430		500
Sand	500		560
Slate	560		600
Sand	600		660
3rd Coal	660		665 — Coal
Sand	665		910
Lime	910		940 } Lime?
Gas Sand	940		1033
Lime	1033		1100
Slate	1100		1205
Salt Sand	1205		1360 Break of slate 10 ft.
Gas Sand	1410		
Salt Sand	1360		1545
Slate	1545		1570
Sand	1570		1613 Water at 1600 ft.
Shale	1613		1710
Red Rock	1710		1715
Lime	1715		1725
Sand	1725		1760
Red Rock	1760		1800
Lime	1800		1810
Sand	1810		1905
Maxon Sand	1905		1945
Slate & Shales	1945		2040
Little Lime	2040		2075
Slate & Shales	2075		2100
Big Lime	2100		2250 Gas in Big Lime 2131 ft.
Big Injun	2250		2285
Slate & Shales	2285		2320
Squaw Sand & Wier	2320		2510
Slate	2510		2525

1330 Elevat

Open

2100 / 1330 / .770 — 2250 / 1330 / .920 — 2320 / 1330 / .990 (190')

SETAS one plug

1st Gas	2345
2 "	2395

10 In Casing	409 ft.
8 " "	1672-5
6-1/2 "	2106-5

All casing left in well

Drilled by Flint & Strother Co.

Commenced rigging up April 6/20
Finished drilling July 30/20
Total hole 2525 ft.

Received
Office of Oil & Gas
JUL 28 2016

3902861P

WW-4A
Revised 6-07

1) Date: June 21, 2016
2) Operator's Well Number
William Bowers #18

3) API Well No.: 47 - 039 - 02861

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

4) Surface Owner(s) to be served:
(a) Name: Blackhawk Land and Resources, LLC ✓
Address: 3228 Summit Square Place, Ste. 180
Lexington, KY 40509

(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: See Attached Exhibit "A"
Address:

(b) Coal Owner(s) with Declaration
Name: Blackhawk Land and Resources, LLC ✓
Address: 3228 Summit Square Place, Suite 180
Lexington, KY 40509

Name:
Address:

(c) Coal Lessee with Declaration
Name: None of Record
Address:

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.

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

Well Operator: Cabot Oil & Gas Corporation
By: Kenneth L. Marcum
Its: Regulatory Supervisor
Address: 2000 Park Lane, Suite 300
Pittsburgh, PA 15275
Telephone: (412) 249-3850

Subscribed and sworn before me this 21st day of July, 2016
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 deprivacyoffier@wv.gov.

3902861P

EXHIBIT "A"

COAL OPERATOR(S)

WILLIAM BOWERS #18

47-039-02861

Coyote Coal Company, LLC
63 Corporate Center
Scott Depot, WV 25560

Midland Trail Energy, LLC
P.O. Box 366
Tad, WV 25201

Panther Creek Mining, LLC
3228 Summit Sq. Place, Suite 180
Lexington, KY 40509

Mammoth Coal Company
P.O. Box 150
Cannelton, WV 25036

Pritchard Mining Co., Inc.
P.O. Box 3311
Charleston, WV 25333

Administration Services, Inc.
4200 Shamblin Run Road
Given, WV 25245

WWMV, LLC
315 70th Street, SE
Charleston, WV 25304

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

ERP Environmental Fund
P.O. Box 87
Natural Bridge, VA 24578

RECEIVED
Office of Oil and Gas
JUL 28 2016
WV Department of
Environmental Protection

3902861P

WW-9
(2/15)

API Number 47 - 039 - 02861
Operator's Well No. William Bowers #18

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) Laurel Fork of Witcher Creek Quadrangle Cedar Grove

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 No treated pit wastes will be produced

ANY WELL EFFLUENT WILL BE CONTAINED IN TANKS & DISPOSED OF OFF-SITE. JMM

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. 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?

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

Company Official (Typed Name) Konneth L. Marcum

Company Official Title Regulatory Supervisor

Received
Office of Oil & Gas
JUL 28 2016

Subscribed and sworn before me this 21st day of July, 2016

Constance C. Carden Notary Public

My commission expires 11/16/2017

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

3902861P

Form WW-9

Operator's Well No. William Bowers #18

Cabot Oil & Gas Corporation

Proposed Revegetation Treatment: Acres Disturbed 2.0 Prevegetation pH 6.5

Lime 2 Tons/acre or to correct to pH 6.5

Fertilizer type 10-20/20 or equivalent

Fertilizer amount 500 lbs/acre

Mulch Pulp Fiber at 1000 to 1500 lbs. ~~Tons~~/acre

Seed Mixtures

Temporary		Permanent	
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 - 10) (Alta Sweet Clover - 5)	
(Yellow Clover - 5) (Birdsfoot Trefoil - 10)		(Yellow Clover - 5) (Birdsfoot Trefoil - 10)	

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: [signature]

Comments:

Received
Office of Oil & Gas
JUL 28 2016

Title: Inspector Oil & Gas Date: 7-28-16

Field Reviewed? (✓) Yes ( ) No

3902861P

GENERAL NOTES:

THIS DRAWING REPRESENTS A SCHEMATIC REPRESENTATION OF THE PROPOSED WELL SITE AND ACCESS ROAD. PROPOSED STRUCTURES SUCH AS THE DRILLING PIT, ROADWAY, CULVERTS, SEDIMENT BARRIERS, ETC. ARE SHOWN IN THEIR APPROXIMATE PREPLANNING CONFIGURATION. GIVEN UNFORESEEN CIRCUMSTANCES, THE AS-BUILT LOCATION OF THESE STRUCTURES MAY VARY SLIGHTLY FROM THE LOCATION SHOWN ON THE ATTACHED DRAWINGS.

ALL ROADS SHOWN THEREON ARE EXISTING UNLESS OTHERWISE NOTED AND SHALL BE MAINTAINED IN ACCORDANCE WITH GUIDELINES AND REQUIREMENTS OF WEST VIRGINIA DEPARTMENT OF OIL AND GAS EROSION AND SEDIMENT CONTROL MANUAL.

ALL CULVERTS SHOWN ON THIS DRAWING ARE PROPOSED AND WILL BE A MINIMUM OF 15" IN DIAMETER UNLESS OTHERWISE NOTED.

DITCH LINES AND CULVERTS WILL BE INSTALLED WHENEVER PRACTICAL. HOWEVER PORTIONS OF THE EXISTING/ PROPOSED ROADS WHICH ARE LOCATED IN SOLID ROCK SHALL NOT REQUIRE DITCHES OR CROSS DRAINS, UNLESS OTHERWISE WARRANTED BY FIELD CIRCUMSTANCES.

SUPPLEMENTAL DRAINAGE AND/OR SEDIMENT CONTROL STRUCTURES MEASURES IN ADDITION TO THOSE SHOWN ON THE ATTACHED DRAWINGS WILL BE INSTALLED WHEN AND WHERE DEEMED NECESSARY. SUCH ADDITIONAL MEASURES MAY CONSIST OF EITHER STRAW BALES, SILT FENCES OR OTHER MEASURES OUTLINED IN THE WEST VIRGINIA DEPARTMENT OF OIL AND GAS EROSION AND SEDIMENT CONTROL FIELD MANUAL.

SEDIMENT BASINS (TRAPS) WILL BE CONSTRUCTED AT ALL CULVERTS AND CROSS DRAINS INLETS AS REQUIRED IN THE WEST VIRGINIA DEPARTMENT OF OIL AND GAS EROSION AND SEDIMENT CONTROL 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.

A SEDIMENT BARRIERS OF EITHER BRUSH, STRAW BALES, FILTER FENCE, ETC. WILL BE INSTALLED AND MAINTAINED BELOW THE OUT FALL OF ALL PROPOSED CULVERTS AND AT ALL OTHER STORM WATER DRAINAGE POINTS FROM EITHER THE ROADWAY OR THE LOCATION.

ALL NECESSARY TIMBER OR BRUSH WILL BE REMOVED FROM ROUTE OF THE ROADWAY AND LOCATION BY CLEANING AND GRUBBING ACTIVITIES. ANY SALVAGEABLE TIMBER WILL BE CUT AND STACKED TO THE SIDE OF THE ROADWAY OR REMOVED TO A STOCKPILE AREA. THE REMAINING TIMBER OR BRUSH WILL BE CUTUP AND WIND ROWED BELOW THE OUTSLOPE OF THE CONSTRUCTION AREAS TO BE UTILIZED AS A SEDIMENT BARRIER.

SEPARATE PERMITS WILL BE OBTAINED FROM THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION FOR ALL POINTS OF INGRESS AND EGRESS FROM COUNTY AND STATE ROADS. THESE INGRESS AND EGRESS POINTS WILL BE MAINTAINED IN ACCORDANCE WITH CURRENT WEST VIRGINIA DEPARTMENT OF TRANSPORTATION REGULATIONS. A STABILIZED CONSTRUCTION ENTRANCE CONSISTING OF 8" OF CRUSHED STONE WILL BE CONSTRUCTED FOR A MINIMUM DISTANCE OF 50' FROM THE INGRESS AND EGRESS POINTS OF ALL PUBLIC ROADWAYS IN ACCORDANCE WITH CURRENT WEST VIRGINIA DEPARTMENT OF TRANSPORTATION REGULATIONS.

ALL CULVERTS SHOWN ON THE ATTACHED DRAWINGS ARE TO BE CONSIDERED PERMANENT AND WILL REMAIN IN PLACE AFTER COMPLETION OF CONSTRUCTION ACTIVITIES UNLESS NOTED OTHERWISE. A STABILIZED OUTLET CONTROL DEVICE SUCH AS RIP RAP, NATURAL STONE, BRUSH, ETC. WILL BE INSTALLED BELOW THE OUT FALL OF ANY ROADWAY CULVERT(S) WHICH ARE NOT LOCATED IN A STREAM OR CREEK.

PERMANENT CROSS DRAINS OR WATER BARS WILL BE INSTALLED AS AN INTEGRAL PART OF THE RECLAMATION PROCESS AND SHALL BE SPACED IN ACCORDANCE WITH AS-BUILT ROADWAY SLOPES AND TABLE 11-4 OF THE WEST VIRGINIA DEPARTMENT OF OIL AND GAS EROSION AND SEDIMENT CONTROL FIELD MANUAL.

TEMPORARY SEEDING AND MULCHING WILL BE UTILIZED TO PROVIDE A VEGETATIVE COVER ON ALL DISTURBED AREAS I.E. ROADWAYS, LOCATION, ROAD/LOCATION SLOPES AND ANY OTHER AREAS THAT ARE DISTURBED BY CONSTRUCTION ACTIVITIES.

THE LOCATION OF DRILLING PIT(S) MAY BE ADJUSTED TO THE MOST ENVIRONMENTAL SAFE SITE TO MEET THE REQUIREMENTS OF THE WVDEP.

CONTRACTORS NOTE:

IT IS THE RESPONSIBILITY OF THE CONSTRUCTION CONTRACTOR TO FIELD VERIFY THE EXACT LOCATION AND CONDITION OF ALL UNDERGROUND UTILITIES, SANITARY SEWERS, STORM SEWERS, ETC. PRIOR TO THE COMMENCEMENT OF ANY/OR CONSTRUCTION ACTIVITIES. DIG WITH C.A.R.E. CALL MISS UTILITY 1-800-245-4848.

TABLE 11-4 SPACING OF CROSS DRAINS	
ROAD GRADE (%)	DISTANCE (FT)
1	400
2	250
5	135
10	80
15	60
20	45

TABLE 11-7 SPACING OF CULVERTS	
ROAD GRADE (%)	DISTANCE (FT)
2-5	500-300
6-10	300-200
11-15	200-100
16-20	100

1-800-245-4848

DRAWING LEGEND

PROPOSED ROAD
EXISTING ROAD
STRAW BALES
SILT FENCE
BRUSH BARRIER
TREE LINE
ROCK RIP RAP
CROSS DRAIN
CULVERT
DRILLING PIT
ROAD DITCH
GAS LINE
FENCE LINE
ROCK OUTCROP
WATER WELL
HOUSE/STRUCTURE
UTILITY POLE
SPRING
WET SPOT
PIT WASTE APP. AREA

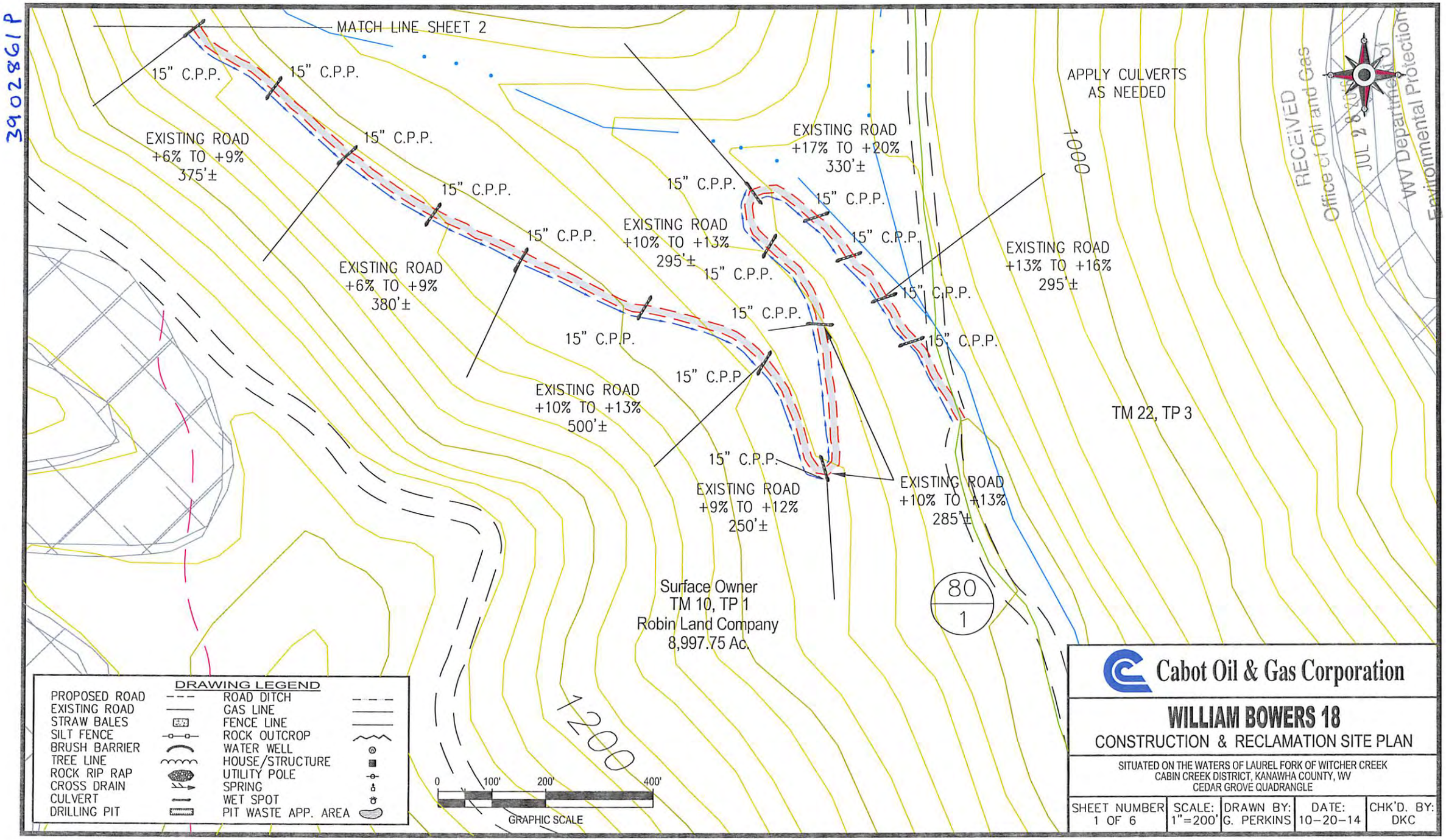
DRIVING DIRECTIONS FOR WILLIAM BOWERS 18

1.) FROM CHARLESTON, WV, GO EAST ON U.S. RT. 60 FOR APPROXIMATELY 13.5± MILES TO SECONDARY ROUTE 81, IN CEDAR GROVE.
2.) TURN SLIGHT RIGHT ONTO SECONDARY ROUTE 81 AND GO APPROXIMATELY 0.5± MILE TO SECONDARY ROUTE 81/1.
3.) TURN LEFT ONTO SECONDARY ROUTE 81/1 AND GO APPROXIMATELY 1.1± MILES TO THE BEGINNING OF THE ACCESS ROAD LOCATED ON THE LEFT-HAND SIDE OF THE ROAD.
4.) FROM THE AFOREMENTIONED SITE, FOLLOW THE EXISTING ROAD FOR APPROXIMATELY 1.5± MILES TO THE EXISTING WELL SITE AS SHOWN ON THE "CONSTRUCTION AND RECLAMATION PLAN".

Cabot Oil & Gas Corporation

WILLIAM BOWERS 18

CABIN CREEK DISTRICT, KANAWHA COUNTY, WV
CEDAR GROVE 7.5' QUADRANGLE



3902861P

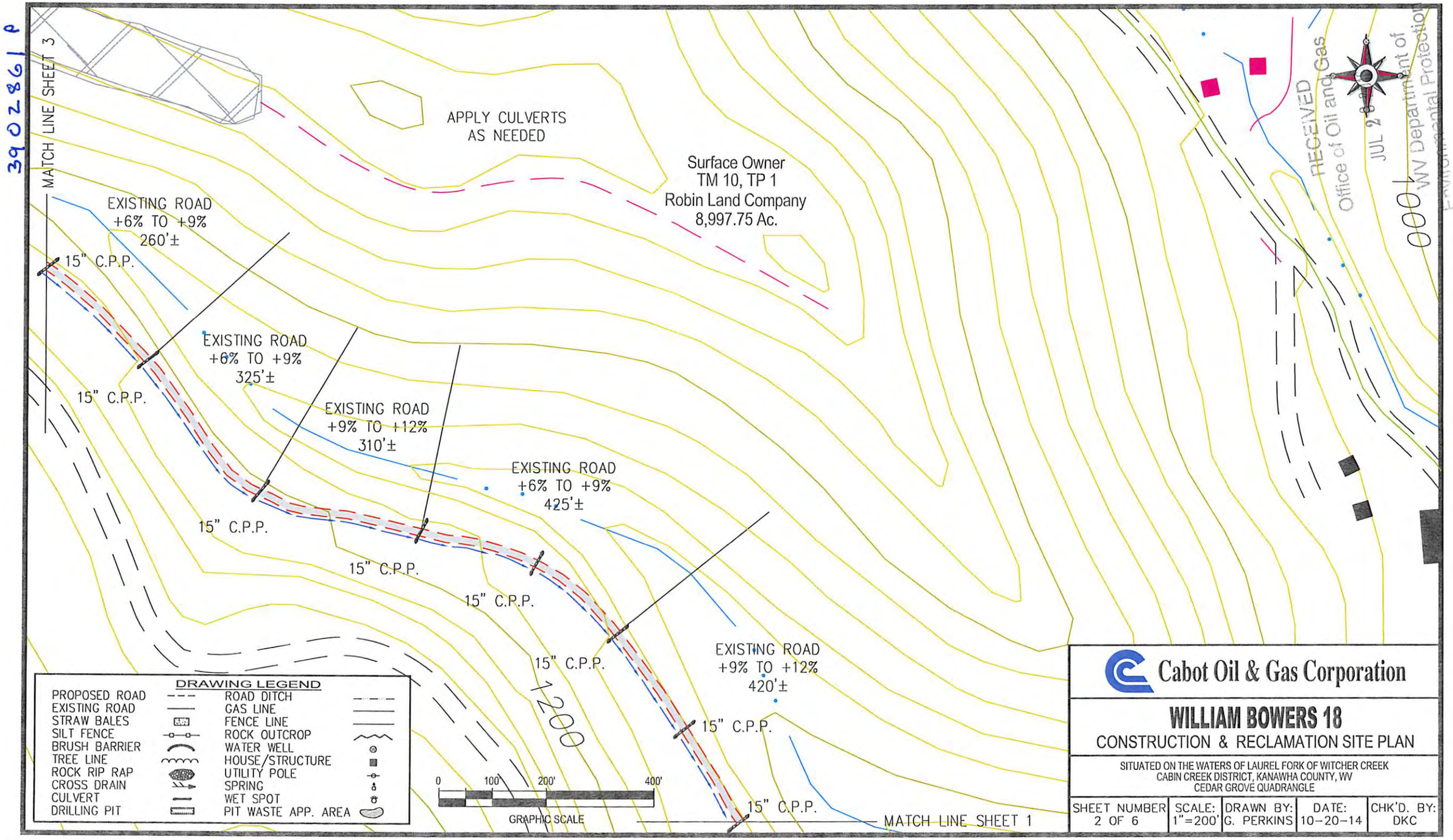
Cabot Oil & Gas Corporation

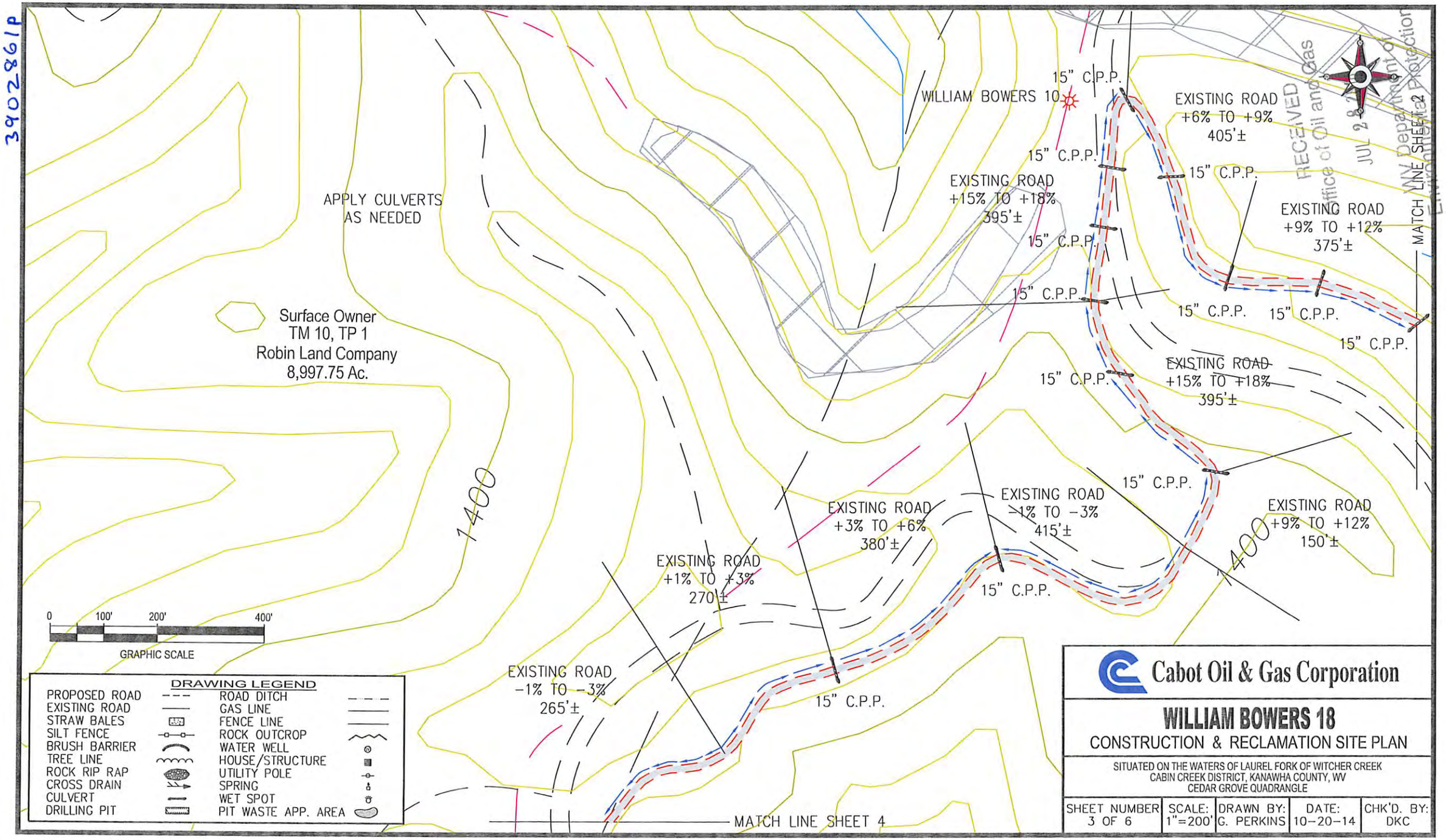
WILLIAM BOWERS 18

CONSTRUCTION & RECLAMATION SITE PLAN

SITUATED ON THE WATERS OF LAUREL FORK OF WITCHER CREEK
CABIN CREEK DISTRICT, KANAWHA COUNTY, WV
CEDAR GROVE QUADRANGLE

SHEET NUMBER	SCALE:	DRAWN BY:	DATE:	CHK'D. BY:
1 OF 6	1"=200'	G. PERKINS	10-20-14	DKC


3902861 P
MATCH LINE SHEET 3
APPLY CULVERTS AS NEEDED
Surface Owner
TM 10, TP 1
Robin Land Company
8,997.75 Ac.
EXISTING ROAD
+6% TO +9%
260'±
15" C.P.P.
EXISTING ROAD
+6% TO +9%
325'±
15" C.P.P.
EXISTING ROAD
+9% TO +12%
310'±
EXISTING ROAD
+6% TO +9%
425'±
15" C.P.P.
15" C.P.P.
15" C.P.P.
15" C.P.P.
EXISTING ROAD
+9% TO +12%
420'±
15" C.P.P.
15" C.P.P.
1200
0
100'
200'
400'
GRAPHIC SCALE
MATCH LINE SHEET 1
RECEIVED
Office of Oil and Gas
JUL 2
WV Department of
Environmental Protection
000
DRAWING LEGEND
PROPOSED ROAD
EXISTING ROAD
STRAW BALES
SILT FENCE
BRUSH BARRIER
TREE LINE
ROCK RIP RAP
CROSS DRAIN
CULVERT
DRILLING PIT
ROAD DITCH
GAS LINE
FENCE LINE
ROCK OUTCROP
WATER WELL
HOUSE/STRUCTURE
UTILITY POLE
SPRING
WET SPOT
PIT WASTE APP. AREA
Cabot Oil & Gas Corporation
WILLIAM BOWERS 18
CONSTRUCTION & RECLAMATION SITE PLAN
SITUATED ON THE WATERS OF LAUREL FORK OF WITCHER CREEK
CABIN CREEK DISTRICT, KANAWHA COUNTY, WV
CEDAR GROVE QUADRANGLE
SHEET NUMBER 2 OF 6
SCALE: 1"=200'
DRAWN BY: G. PERKINS
DATE: 10-20-14
CHK'D. BY: DKC



Cabot Oil & Gas Corporation

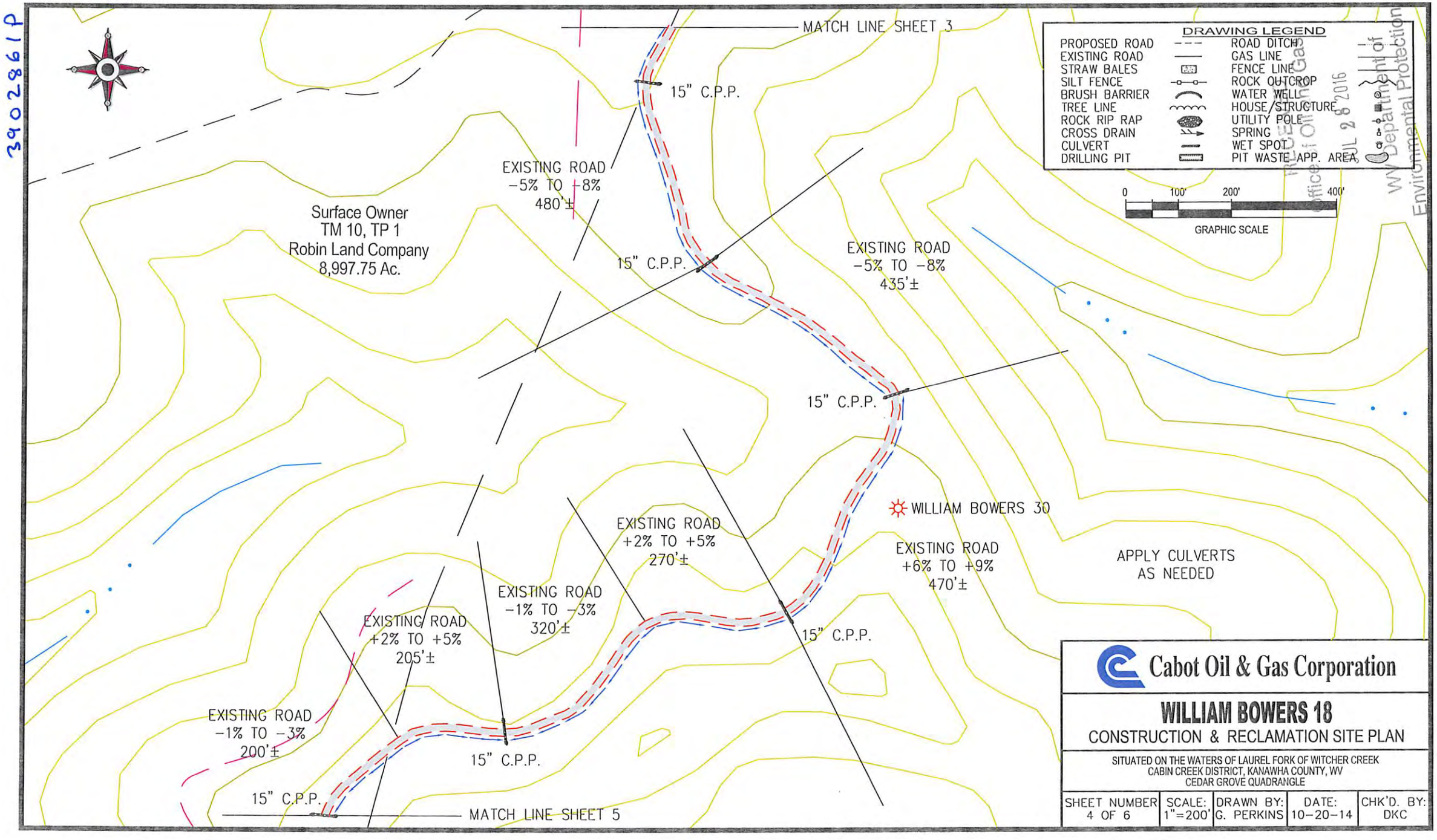
WILLIAM BOWERS 18

CONSTRUCTION & RECLAMATION SITE PLAN

SITUATED ON THE WATERS OF LAUREL FORK OF WITCHER CREEK
CABIN CREEK DISTRICT, KANAWHA COUNTY, WV
CEDAR GROVE QUADRANGLE

SHEET NUMBER	SCALE:	DRAWN BY:	DATE:	CHK'D. BY:
3 OF 6	1"=200'	G. PERKINS	10-20-14	DKC

3902861P



RECEIVED
Office of Oil & Gas
JUL 28 2016
WV Department of
Environmental Protection

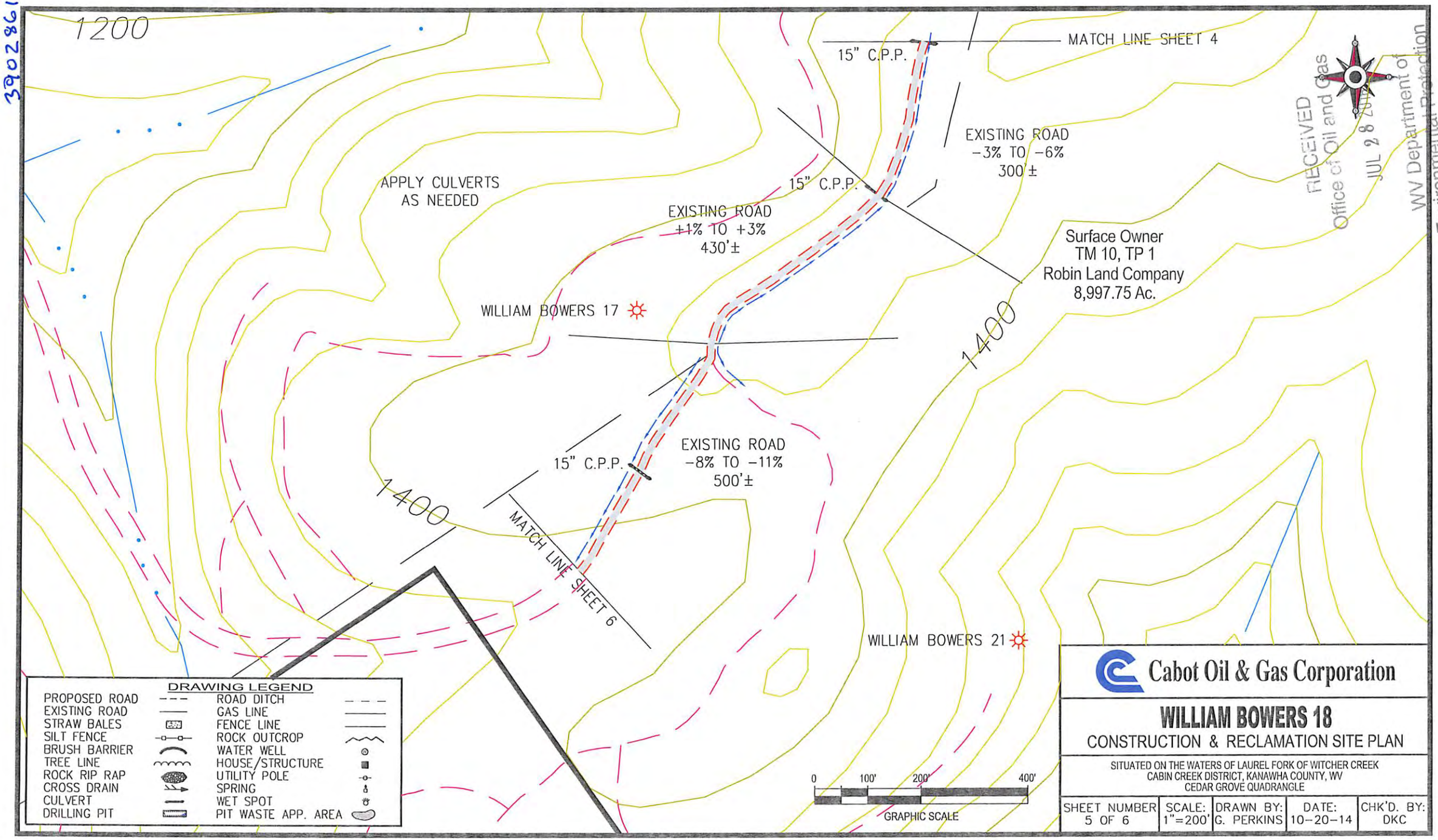
Cabot Oil & Gas Corporation

WILLIAM BOWERS 18

CONSTRUCTION & RECLAMATION SITE PLAN

SITUATED ON THE WATERS OF LAUREL FORK OF WITCHER CREEK
CABIN CREEK DISTRICT, KANAWHA COUNTY, WV
CEDAR GROVE QUADRANGLE

SHEET NUMBER	SCALE:	DRAWN BY:	DATE:	CHK'D. BY:
4 OF 6	1"=200'	G. PERKINS	10-20-14	DKC



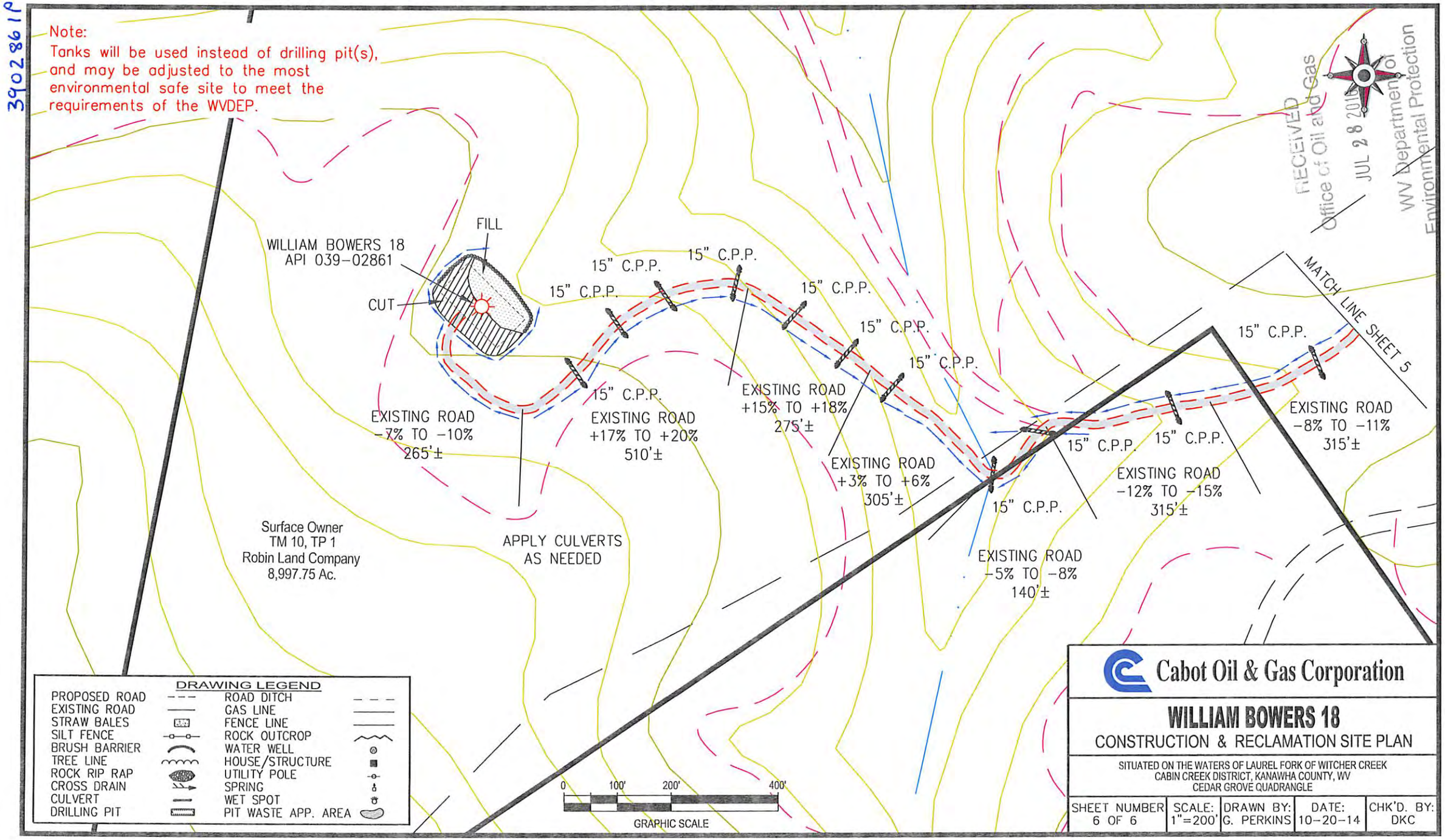
RECEIVED
Office of Oil and Gas
JUL 28 2015
WV Department of
Environmental Protection

3902861P

3902861P

Note:
Tanks will be used instead of drilling pit(s), and may be adjusted to the most environmental safe site to meet the requirements of the WVDEP.

RECEIVED
Office of Oil and Gas
JUL 28 2015
WV Department of
Environmental Protection



DRAWING LEGEND

PROPOSED ROAD	ROAD DITCH
EXISTING ROAD	GAS LINE
STRAW BALES	FENCE LINE
SILT FENCE	ROCK OUTCROP
BRUSH BARRIER	WATER WELL
TREE LINE	HOUSE/STRUCTURE
ROCK RIP RAP	UTILITY POLE
CROSS DRAIN	SPRING
CULVERT	WET SPOT
DRILLING PIT	PIT WASTE APP. AREA

Cabot Oil & Gas Corporation

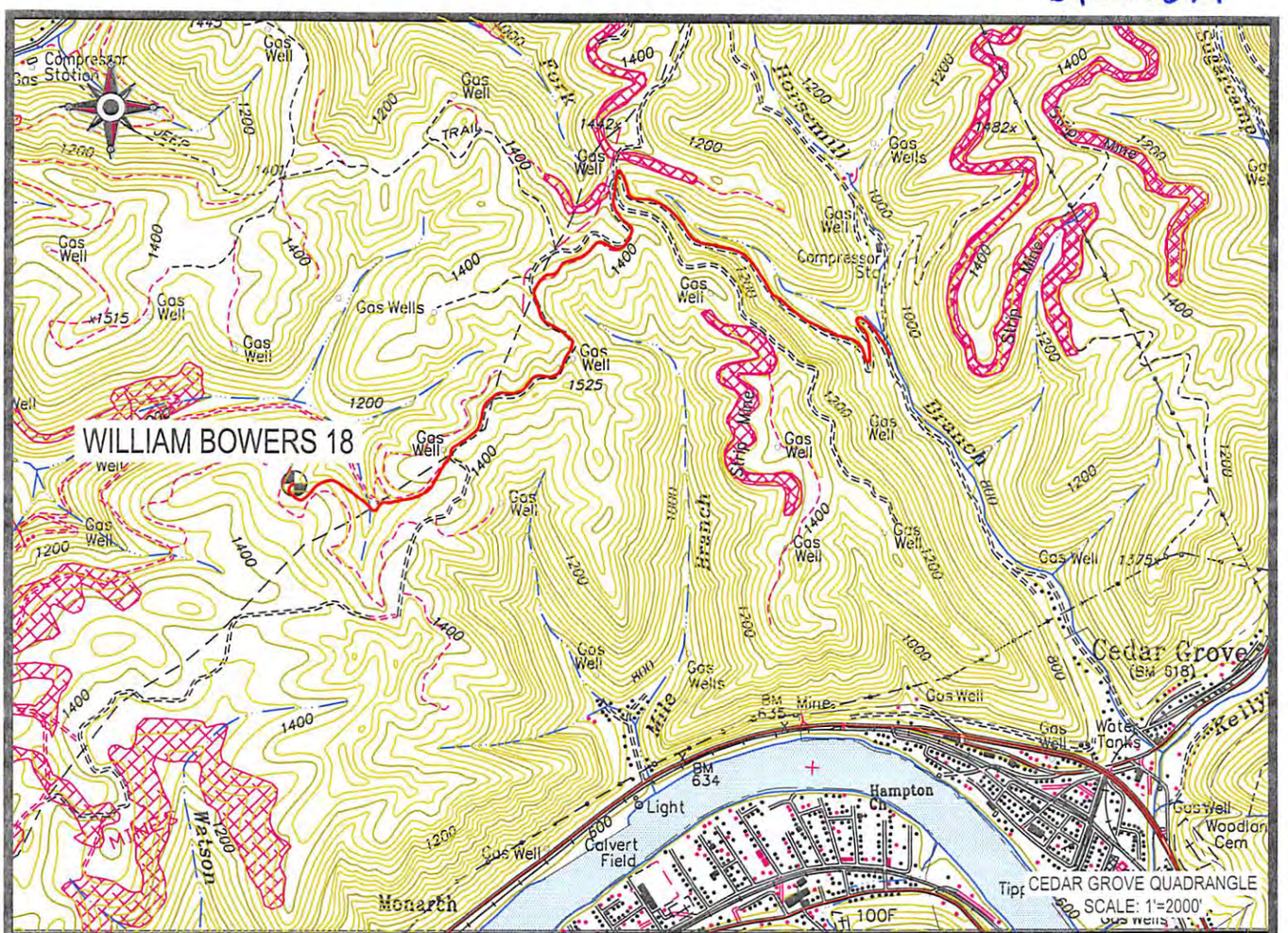
WILLIAM BOWERS 18

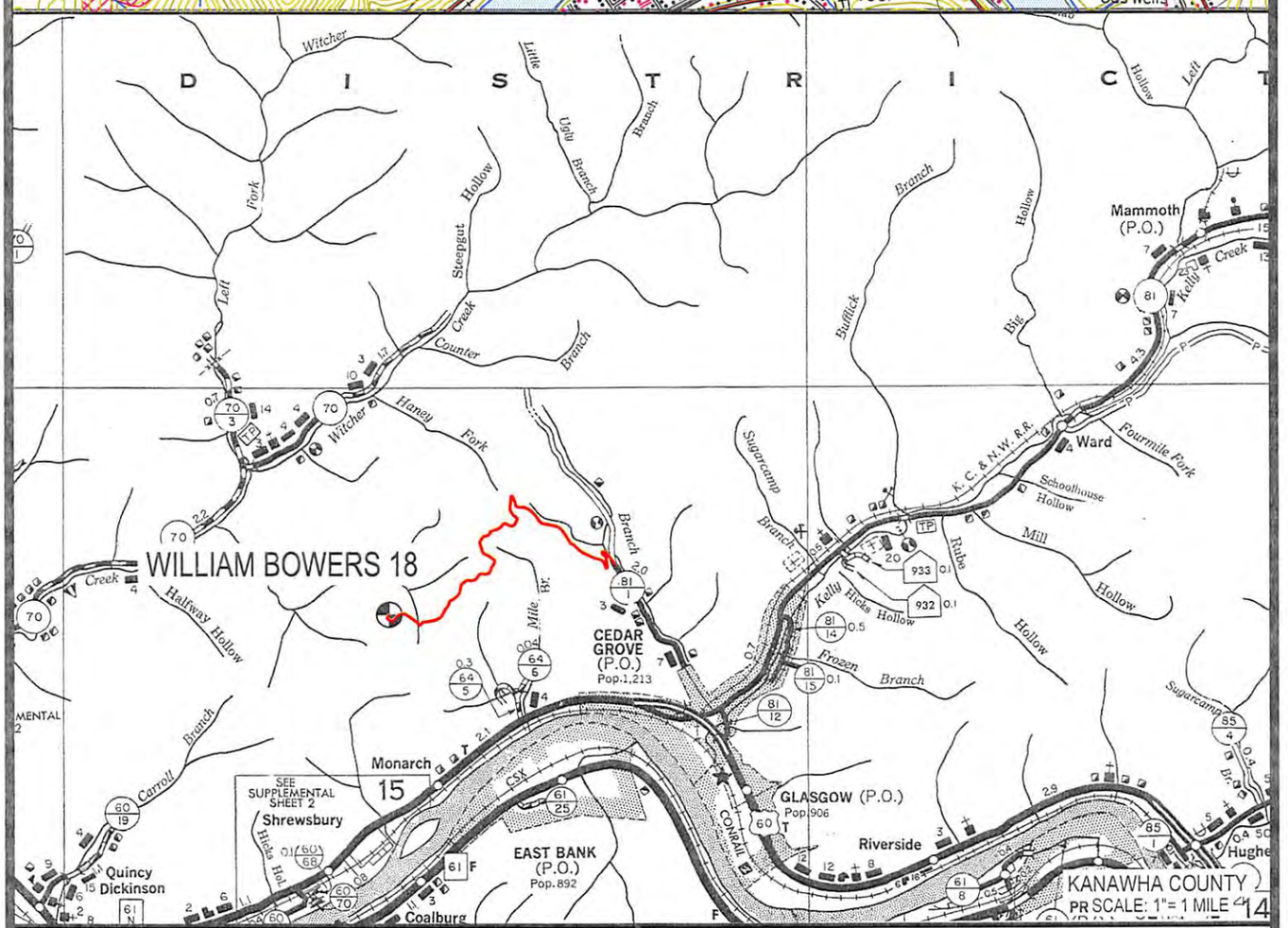
CONSTRUCTION & RECLAMATION SITE PLAN

SITUATED ON THE WATERS OF LAUREL FORK OF WITCHER CREEK
CABIN CREEK DISTRICT, KANAWHA COUNTY, WV
CEDAR GROVE QUADRANGLE

SHEET NUMBER	SCALE:	DRAWN BY:	DATE:	CHK'D. BY:
6 OF 6	1"=200'	G. PERKINS	10-20-14	DKC

3902861P





Cabot Oil & Gas Corporation

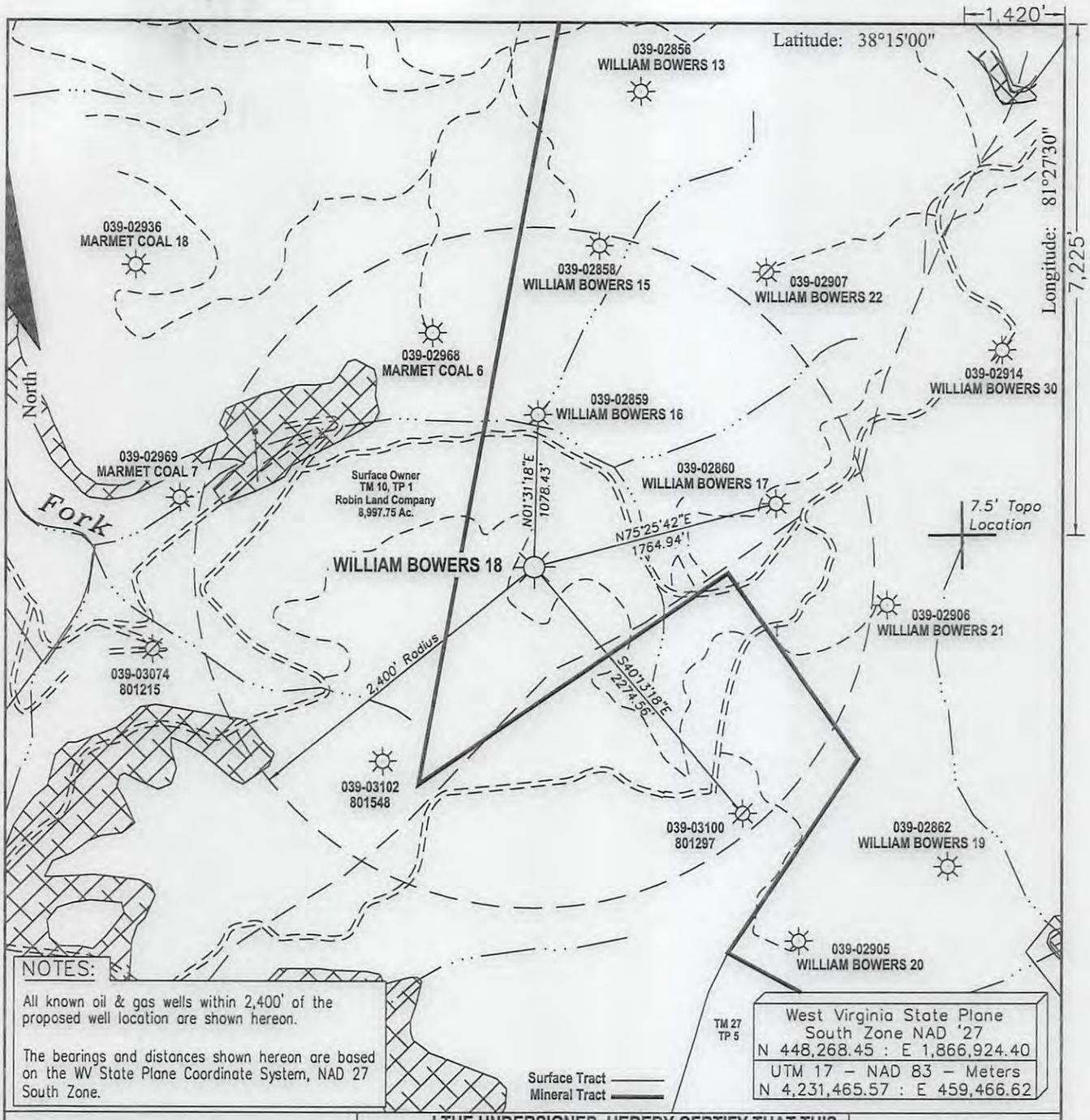
WILLIAM BOWERS 18

LOCATION MAP

LOCATED ON THE WATERS OF LAUREL FORK
OF WITCHER CREEK
CABIN CREEK DISTRICT, KANAWHA COUNTY, WV
CEDAR GROVE 7.5' QUADRANGLE

PROJECT NO. CABOT	DWG. BOWERS 18 LOC	
DATE: 10-20-14	SCALE: AS NOTED	CHK'D BY: D.K.C.
DRAWN BY: G. PERKINS	FILE: C:\PROJECT FOLDER\CABOT	

CUNNINGHAM
LAND SURVEYING & MAPPING SERVICES, LLC
• 5213 STEPHEN WAY •
• CROSS LANES, WEST VIRGINIA 25313 •
• VOICE (304) 561-4129 • FAX (304) 776-0703 •
• E-MAIL ADDRESS • DKCUNNINGHAM@SUDDENLINK.NET •



NOTES:

All known oil & gas wells within 2,400' of the proposed well location are shown hereon.

The bearings and distances shown hereon are based on the WV State Plane Coordinate System, NAD 27 South Zone.

FILE #:

DRAWING #: Bowers 20 ww6

SCALE: 1" = 1000'

MINIMUM DEGREE OF ACCURACY: 1 : 12,729

PROVEN SOURCE OF ELEVATION: Global Positioning System (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 ENVIROMENTAL PROTECTION.

Signed:

R.P.E.: L.L.S.: 1993

GREGORY A. PERKINS ★ LICENSED ★ No. 1993 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

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

WVDEP
OFFICE OF OIL & GAS
601 57TH STREET
CHARLESTON, WV 25304

STATE OF WEST VIRGINIA ★ MONTANI SEMPER LIBERI ★ JUNE 20 1863

DATE: October 20, 2014

OPERATOR'S WELL #: William Bowers 18

API WELL #: 47 (STATE) 039 (COUNTY) 02861 P (PERMIT)

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

WATERSHED: Laurel Fork of Witcher Creek ELEVATION: 1,369.24'

COUNTY/DISTRICT: Kanawha / Cabin Creek QUADRANGLE: Cedar Grove

SURFACE OWNER: Robin Land Company ACREAGE: 8,997.75

OIL & GAS ROYALTY OWNER: William Bowers Estate ACREAGE: 1,532

LEASE #: 47-0618 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: ESTIMATED DEPTH:

WELL OPERATOR Cabot Oil & Gas Corp.
Address Five Penn Center West, Suite 401
City Pittsburgh State PA Zip Code 15276

DESIGNATED AGENT Whitney Johnson
Address P.O. Box 450
City Clasgow State WV Zip Code 25086