



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

Austin Caperton, Cabinet Secretary
www.dep.wv.gov

Thursday, October 25, 2018
WELL WORK PERMIT
Vertical / Re-Work

CORE APPALACHIA OPERATING LLC
414 SUMMERS STREET

CHARLESTON, WV 25301

Re: Permit approval for 823680
47-043-03091-00-00

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

A handwritten signature in blue ink, appearing to read 'James A. Martin', is positioned to the right of the typed name and title.

Operator's Well Number: 823680
Farm Name: DEAN, SIBREN, ETAL
U.S. WELL NUMBER: 47-043-03091-00-00
Vertical Re-Work
Date Issued: 10/25/2018

Promoting a healthy environment.

I

PERMIT CONDITIONS

West Virginia Code §22-6-11 allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

CONDITIONS

1. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code §22-6-20, which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than fifty (50) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
2. Pursuant to 35 CSR 4-19.1.a, at the request of the surface owner all water wells or springs within 1000 feet of the proposed well that are actually utilized for human consumption, domestic animals or other general use shall be sampled and analyzed.
3. Pursuant to 35 CSR 4-19.1.c, if the operator is unable to sample and analyze any water well or spring 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 on this well. Such notice shall be provided by sending an email to DEPOOGNotify@wv.gov within 30 days of commencement of drilling.

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

- 1) Well Operator: Core Appalachia Operating, L.L.C. 494518671 Lincoln Laurel Hill Nestlow, WV
Operator ID County District Quadrangle
- 2) Operators Well Number: 823680 3) Elevation: 1068'
- 4) Well type: (a) Oil or Gas
(b) If Gas: Production Underground Storage
Deep Shallow
- 5) Proposed Target Formation(s): Big Injun Proposed Target Depth: 1785'
- 6) Proposed Total Depth: 3510' Formation at proposed Total Depth: Devonian Shale
- 7) Approximate fresh water strata depths: 103'
- 8) Approximate salt water depths: 760'
- 9) Approximate coal seam depths: 420'
- 10) Approximate void depths, (coal, Karst, other): •
- 11) Does land contain coal seams tributary to active mine? No
- 12) Proposed Well Work: Set bridge plug, perforate and stimulate Big Injun
- 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						
Fresh Water	9 5/8"			305	305	Existing
Coal						
Intermediate	7"			1561	1561	Existing
Production	4 1/2"			3455	3455	Existing
Tubing						
Lining						

PACKERS: Kind _____
Sizes _____
Depths set _____

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WV Department of
Environmental Protection

- 1) Date: October 2, 2018
- 2) Operators Well Number: 823680
State County Permit
- 3) API Well Number 47 - 043 - 03091

WW2-A
(Rev. 6-14)

**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: Roger E. and Dabney A. Bryant
Address: P.O. Box 84
Logan, WV 25601
 - (b) Name:
Address:
 - (c) Name:
Address:
- 5) (a) Coal Operator:
 - Name: Lexington Coal Company, LLC
Address: 123 Long Shoals Branch
Alum Creek, WV 25003
Attn: Dave Decker
 - b) Coal Owner(s) with Declaration:
 - Name: Norfolk Southern Industrial Development Corp.
Address: Formerly DBA 15th & K Associates
Three Commercial Place
Norfolk, VA 23510
 - (c) Coal Lessee with Declaration: None
- 6) Inspector:
 - Name: Jeffery L. Smith
Address: 4389 Big Tyler Road
Cross Lanes, WV 25313
Telephone: 681-313-6743

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WV Department of
Environmental Protection

TO THE PERSON(S) 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 of the West Virginia Code I have served copies of this notice and application
a location plat, and accompanying documents pages 1 through 13 on the above-named parties, by:

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

I have read and understand Chapter 22-6 and 38 CSR 11-18, 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 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.

Well Operator: CORE APPALACHIA OPERATING, L.L.C.
By: JG
It's Jessica Greathouse, Director - HSE & Administrative Services
Address: 414 Summers Street
Charleston, WV 25301
Telephone: 304-353-5240
Email: jgreathouse@coreoperating.com

Subscribed and sworn before me this 2nd day of October 2018

Josh Roberts Notary Public,

My Commission expires 6/28/2022



Oil and Gas Privacy Notice

The office of Oil and Gas processes your personal information, such as name, address and phone number, as 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 Free of Information Act requests. Our office will appropriately secure your personal information. If you have questions about our use of your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

47-043-03091W

WW2-B1
(5-12)

Operator's Well Number: 823680
API Well Number: 47 - 043 - 03091

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.

If no water well or spring is located within 1000 feet, the Chief may require the operator to sample and analyze water from a water well or spring within 2000 feet of the proposed well site.

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

The laboratory used by the operator to analyze the samples will be approved by the Chief. The operator named below has decided to use the following laboratory to analyze the water samples:

Certified Laboratory Name Turner Technology, Inc.

Sampling Contractor Turner Technology, Inc.

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Well Operator CORE APPALACHIA OPERATING, L.L.C.

Address 414 Summers Street
Charleston, WV 25301

Telephone 304-353-5240

WV Department of
Environmental Protection

FOR OPERATORS 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 underlining which one you have selected to sample and analyze. If there are not 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 proposed site.

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 leases(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:

<u>Grantor, lessor, etc.</u>	<u>Grantee, lessee, etc.</u>	<u>Royalty</u>	<u>Book/Page</u>
Chesapeake Appalachia, LLC	Core Appalachia Operating, LLC	1/8	55 / 296

**Acknowledge 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 Services
- *County Floodplain coordinator

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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:



Core Appalachia Operating, L.L.C.
Jessica Greathouse
Director – HSE & Administrative Services

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

Operator Name Core Appalachia Operating, L.L.C. OP Code 494518671

Water (HUC 10) Bear Wallow Branch of Tenmile Creek Quadrangle Nestlow, WV 7.5'

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 described anticipated pit waste: Cement and Frac Water

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 – unknown at this time)
- Reuse (at API Number _____)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain _____)

Will closed loop system be used? No

Drilling medium anticipated for this well? Air, fresh water, oil based, etc. Existing well

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

Additives to be used in drilling medium? _____

Drilling cuttings disposal method? Leave in pit, landfill, removed offsite, etc. N/A

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

Landfill or offsite name/permit number? _____

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I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on April 1, 2016, by the Office of Oil and Gas of the West Virginia Division 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.

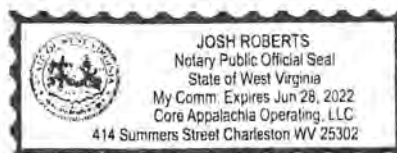
Company Official Signature [Signature]

Company Official (Typed Name) Jessica Greathouse
Company Official Title Director – HSE & Administrative Services

Subscribed and sworn before me this 2nd day of October, 2018

Josh Roberts [Signature] Notary Public

My Commission expires 6/28/2022



47-043-03091 W

Form WW-9

Operator's Well Number:

823680

API Well Number:

47 - 043 - 03091

Proposed Revegetation Treatment:

Acres Disturbed: <1 acre

Prevegetation pH 6.0

Lime 2 Tons/acre or to correct to pH 6.5

Fertilizer type: Hydroseed

Fertilizer amount 500 lbs./acre

Mulch Hydroseed tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs./acre	Seed Type	lbs./acre
Tall Fescue	40	Tall Fescue	40
Winter Rye	20	Winter Rye	20
Ladino Clover	5	Ladino Clover	5

Attach:

Drawing(s) of road, location, pit and proposed area for land application.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved: Jeffrey Smith

Comments: Remove all sediment control prior to release

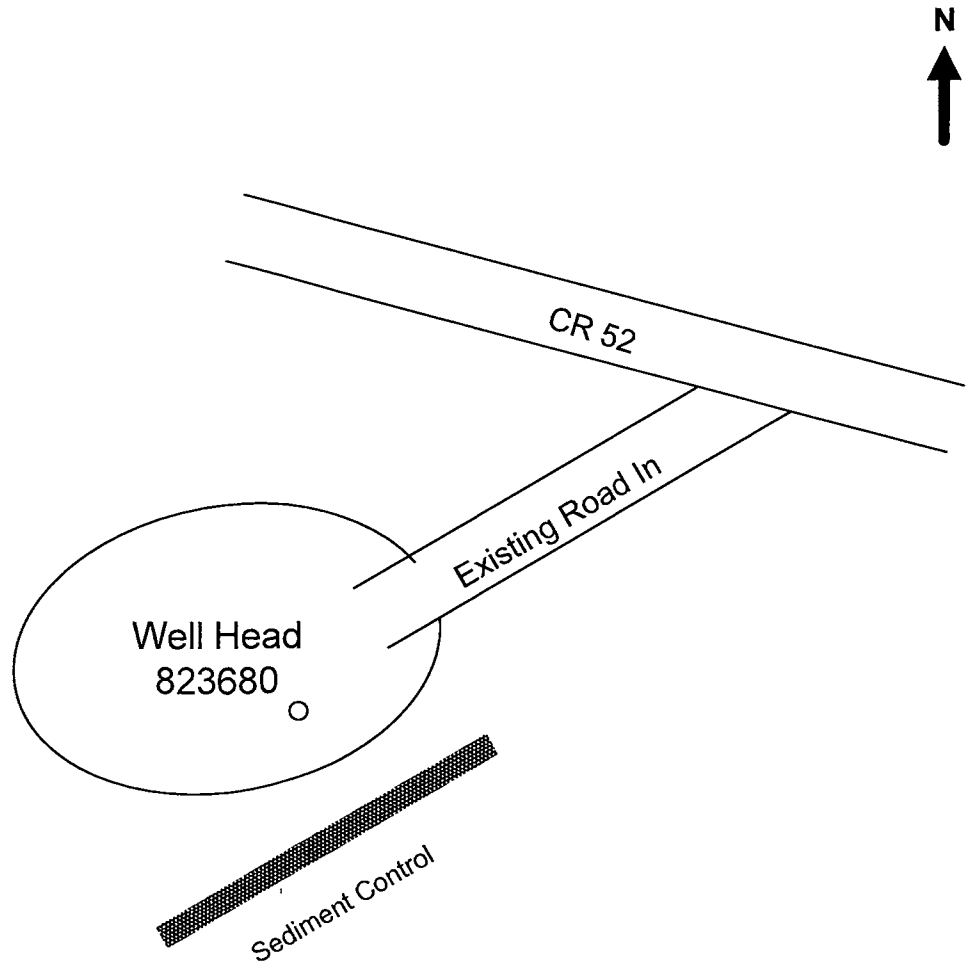
Title: Oil & Gas Inspector

Date: 10-3-18

Field Reviewed? () Yes () No

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Diagram of Well 823680 WO
API 47-043-3091
Field Office - Branchland
County - Lincoln



Surface Owner:
Roger & Dabney
Bryant

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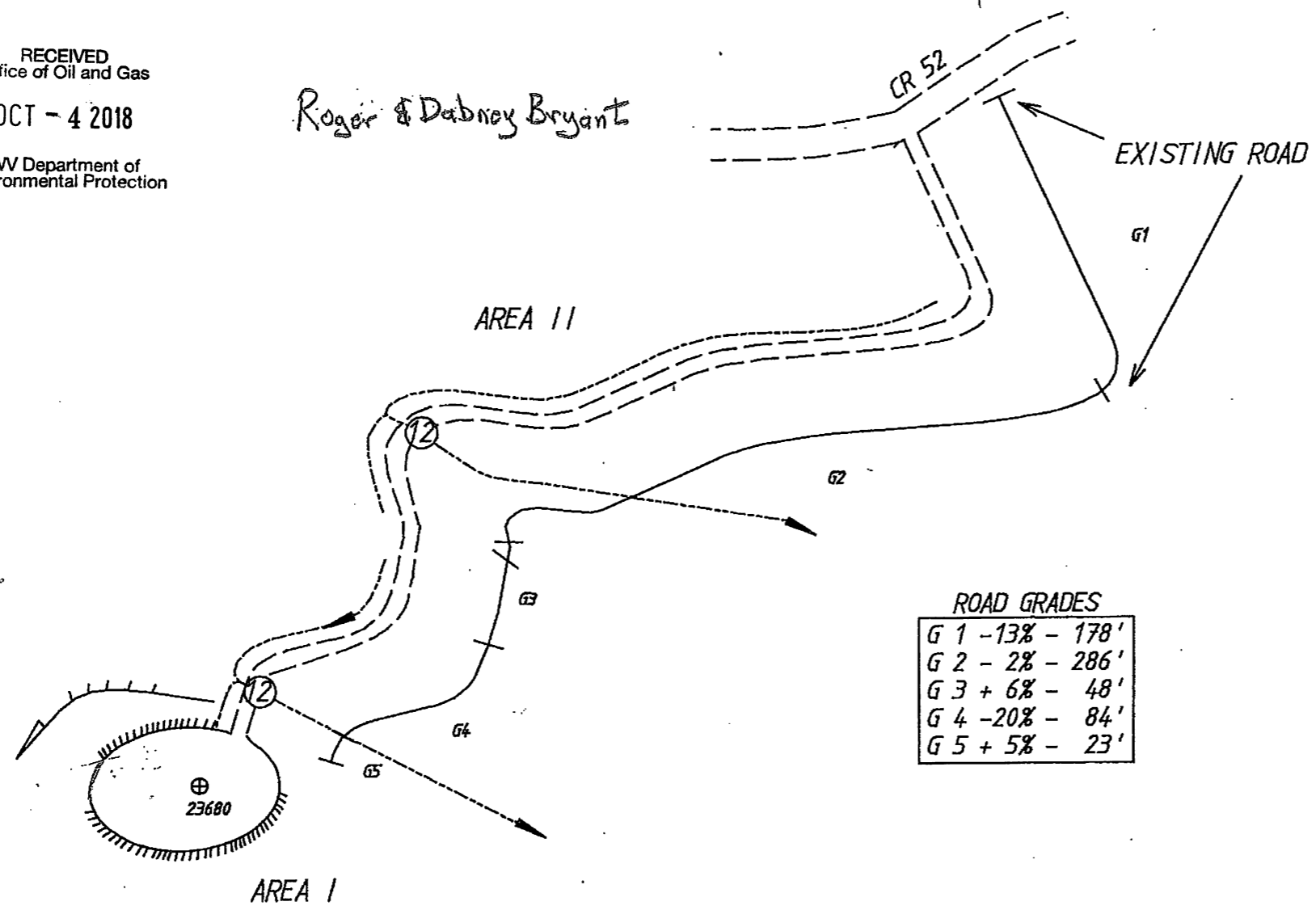
Site Plan

47-043-03091W

NESTLOW, QUAD

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Roger & Dabney Bryant



ROAD GRADES

G 1	-13%	- 178'
G 2	- 2%	- 286'
G 3	+ 6%	- 48'
G 4	-20%	- 84'
G 5	+ 5%	- 23'

Roger & Dabney Bryant

178' EXISTING
441' NEW CONSTRUCTION
619' TOTAL

DRAWING LEGEND

- | | | | |
|-------------------|--|--|--|
| PROPERTY BOUNDARY | | DIVERSION | |
| ROAD | | SPRING | |
| EXISTING FENCE | | NET SPOT | |
| PLANNED FENCE | | DRAIN PIPE W/SIZE IN INCHES | |
| STREAM | | WATER WAY | |
| OPEN DITCH | | CROSS DRAIN | |
| ROCK | | ARTIFICIAL FILTER STRIP | |
| NORTH | | PIT: CUT WALLS | |
| BUILDINGS | | PIT: COMPACTED FILL WALLS | |
| WATER WELLS | | AREA FOR LAND APPLICATION OF PIT WASTE | |
| DRILL SITE | | | |

GENERAL NOTES

THIS DRAWING IS A SCHEMATIC REPRESENTATION OF THE PROPOSED WELL SITE AND ACCESS ROAD. PROPOSED STRUCTURES SUCH AS WELL SITE, DRILLING PIT, ROADWAYS, CULVERTS, SEDIMENT BARRIERS ETC. ARE SHOWN IN APPROXIMATE PRE-PLANNING CONFIGURATIONS. GIVEN UNFORSEEN CIRCUMSTANCES, THE AS-BUILT LOCATION OF THESE STRUCTURES MAY VARY SLIGHTLY FROM THE LOCATIONS SHOWN ON THIS DRAWING.

ALL CULVERTS SHOWN ON THIS PLAN ARE PROPOSED AND WILL BE A MINIMUM OF 12" IN DIAMETER UNLESS OTHERWISE SPECIFIED.

BRUSH REMOVED BY CLEARING AND GRUBBING ACTIVITIES WILL BE CUT AND WINCROWED BELOW THE OUT SLOPE OF CONSTRUCTION AREAS. ALL TIMBER 6" DBH WILL BE CUT AND STACKED. NO ROCK OR FILL MATERIAL TO BE DISPLACED OFF-SITE.

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 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.

A SEDIMENT BARRIER OF EITHER BRUSH, STRAW BALES OR FILTER FENCE WILL BE MAINTAINED BELOW THE OUTFALL OF ALL PROPOSED CULVERTS AND AT ALL OTHER STORM WATER DISCHARGE POINTS FROM EITHER THE ROADWAY OR THE LOCATION.

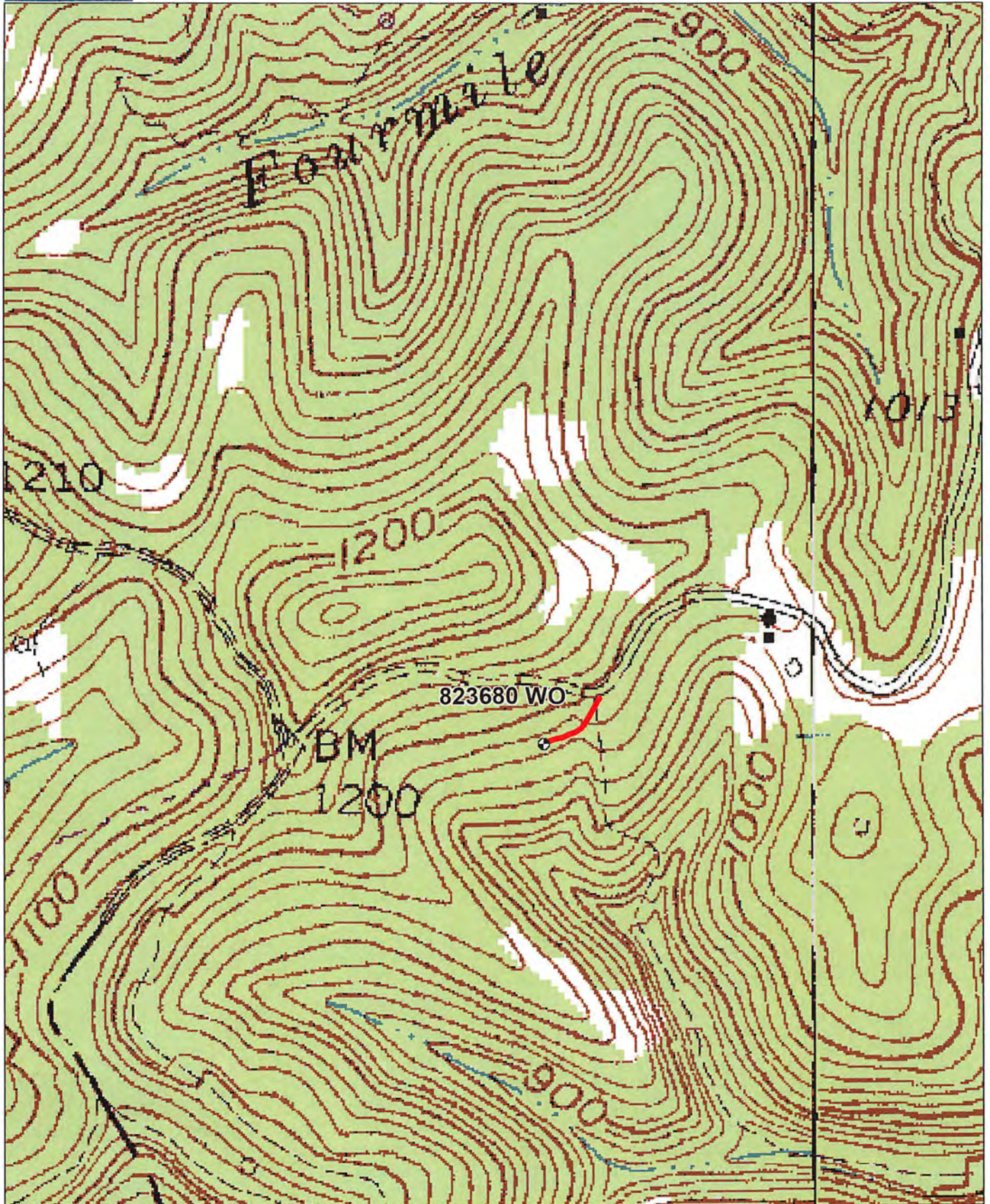
CROSS DRAINS OR WATERBARS WILL BE INSTALLED AS AN INTEGRAL PART OF THE RECLAMATION PROCESS AND SHALL BE SPACED IN ACCORDANCE WITH THE AS-BUILT ROADWAY SLOPES AND TABLE 11-4 OF THE EROSION AND SEDIMENT CONTROL FIELD MANUAL.

COLUMBIA NATURAL RESOURCES, INC.
900 PENNSYLVANIA AVE.
POST OFFICE BOX 6070, CHARLESTON, WV 25362

RECLAMATION PLAN
PROPOSED LOCATION 23680

BEARWALLOW BRANCH OF TENMILE CREEK
LAUREL HILL DIST., LINCOLN CO., WV

DATE: 10-04-99	SCALE:	DRAWING NO. 1 OF 1
PREPARED BY: TRUE LINE SURVEYING, INC.	FILE: CNR23680(HC-73)REVREC.DGN	

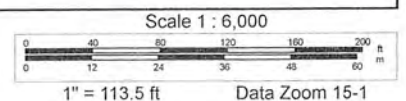
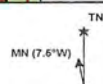


823680 Workover Project

Data use subject to license.

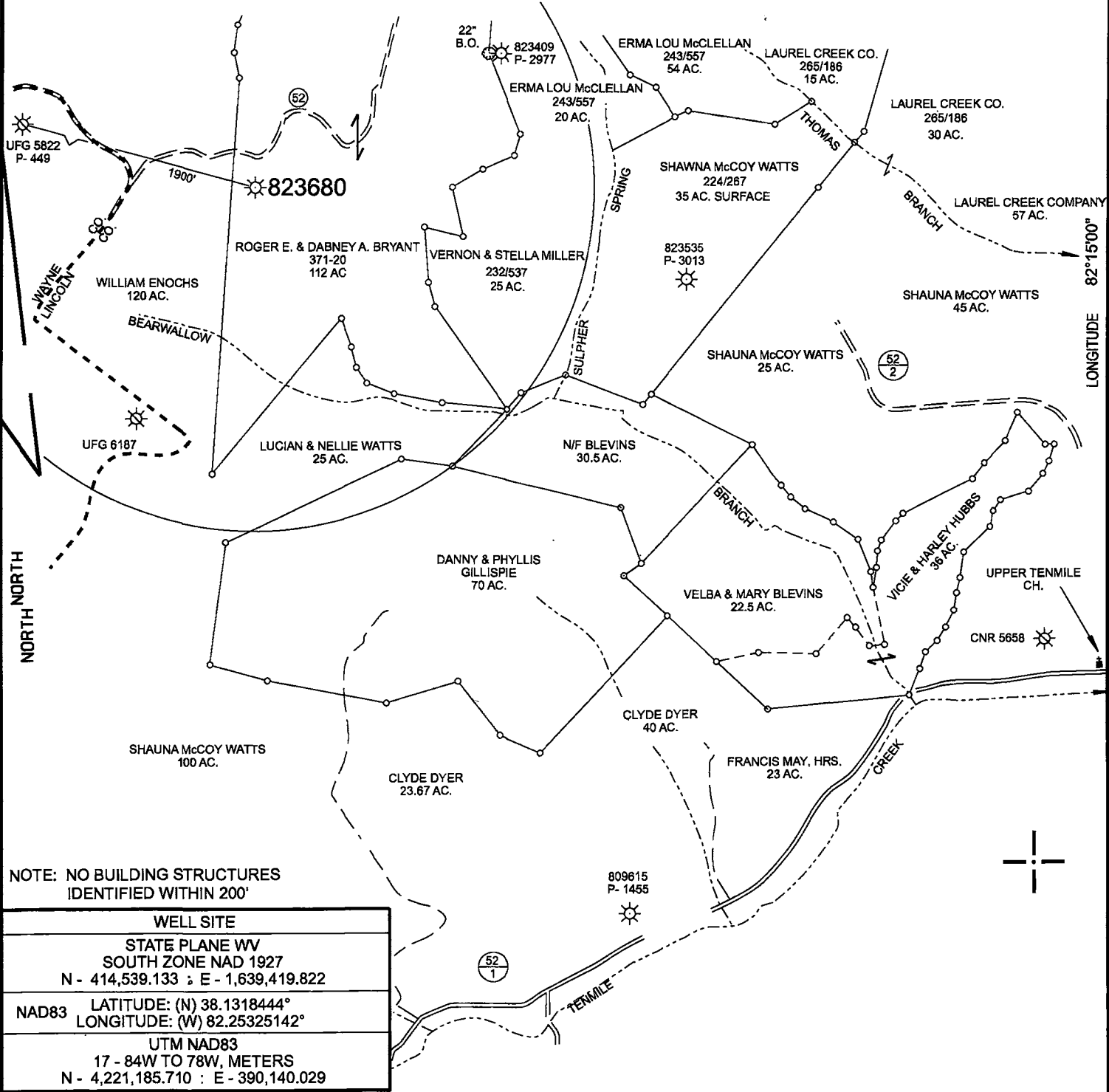
© DeLorme. XMap® 8.

www.delorme.com



NOTE: ALL WELLS IDENTIFIED WITHIN 2400' ARE SHOWN

LATITUDE 38°10'00"



NOTE: NO BUILDING STRUCTURES IDENTIFIED WITHIN 200'

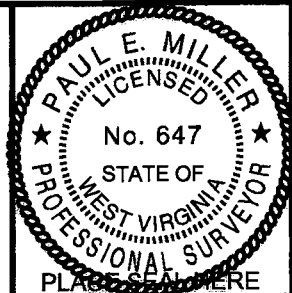
WELL SITE	
STATE PLANE WV SOUTH ZONE NAD 1927 N - 414,539.133 ; E - 1,639,419.822	
NAD83	LATITUDE: (N) 38.1318444° LONGITUDE: (W) 82.25325142°
UTM NAD83 17 - 84W TO 78W, METERS N - 4,221,185.710 ; E - 390,140.029	

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

FILE NO.	823680WO.DGN
DRAWING NO.	823680
SCALE	1" = 1000'
MINIMUM DEGREE OF ACCURACY	1 : 200
PROVEN SOURCE OF ELEVATION	MAPPING GRADE 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 ENVIRONMENTAL PROTECTION.

(SIGNED) *Paul E. Miller*
R.P.E. _____ L.L.S. 647



STATE OF WEST VIRGINIA
DIVISION OF ENVIRONMENTAL PROTECTION
OIL AND GAS DIVISION



DATE SEPTEMBER 26, 2018
OPERATOR'S WELL NO. 823680
API WELL NO. _____

47 043 03091 W
STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
(IF "GAS,") PRODUCTION STORAGE DEEP SHALLOW
LOCATION: ELEVATION 1068' WATER SHED BEARWALLOW BRANCH OF TENMILE CREEK
DISTRICT LAUREL HILL COUNTY LINCOLN
QUADRANGLE NESTLOW, WV 7.5'

SURFACE OWNER ROGER E. & DABNEY A. BRYANT ACREAGE 112
OIL & GAS ROYALTY OWNER CHESAPEAKE APPALACHIA, L.L.C. LEASE ACREAGE _____ FEE LAND _____
LEASE NO. 1-000001-001

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 BIG INJUN ESTIMATED DEPTH _____
WELL OPERATOR CORE APPALACHIA OPERATING, LLC DESIGNATED AGENT JESSICA GREATHOUSE
ADDRESS 414 SUMMERS ST., CHARLESTON, WV25301 ADDRESS SAME

FORM WW-6

COUNTY NAME

PERMIT