



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

Friday, November 15, 2019
WELL WORK PLUGGING PERMIT
Vertical Plugging

ANTERO RESOURCES CORPORATION
1615 WYNKOOP STREET

DENVER, CO 80202

Re: Permit approval for BISHOP 1
47-033-00290-00-00

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.

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. Please be advised that form WR-38, Affidavit of Plugging and Filling Well, 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: BISHOP 1
Farm Name: WILLIAM R & PRISCILLA D⁺
U.S. WELL NUMBER: 47-033-00290-00-00
Vertical Plugging
Date Issued: 11/15/2019

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.

WW-4B
Rev. 2/01

1) Date _____, 20____
2) Operator's
Well No. RL Bishop #1
3) API Well No. 47-033 - 00290

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 1118' Watershed Gnatty Creek
District Elk County Harrison Quadrangle Berlin 7.5'

6) Well Operator Antero Resources Corporation 7) Designated Agent CT Corporation System - Dianna Stamper
Address 1615 Wynkoop Street Address 5400 D Big Tyler Road
Denver, CO 80202 Charleston, WV 25313

8) Oil and Gas Inspector to be notified 9) Plugging Contractor
Name Sam Ward Name N/A - Antero will plug well
Address 601 57th Street SE Address _____
Charleston, WV 25304

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

RECEIVED
Office of Oil and Gas

OCT 17 2019

WV Department of
Environmental Protection

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

Work order approved by inspector *Sam Ward* Date 10/15/2019

RL Bishop #1
Harrison County, WV
 API #47-033-00290



Antero Resources
 1615 Wynkoop St.
 Denver, CO 80202
Office: 303.357.7310
Fax: 303.357.7315

Objective: Plug and Abandon Wellbore.

Pipe Schedule:

- Conductor @ 404' - 13-10"
- Intermediate Casing @ 1,176' - 8 5/8"
- Production Casing @ 2,030' - 7"
- Hookwell Packer @ 2,339' - 4.5"

MAY BE 2445' 2" TUBING IN WELL
 THAT WILL NEED PULLED.

Water Zone

1. Fresh Water: 60'
2. Fresh Water: 895'

Oil and Gas Zones:

1. Fifth: 2,380' - 2,398'; Gas @ 2,380'-2390'
2. Bayard: 2,437' - 2,446'; Gas @ 2,432'-2,436'

ELEV. 1117'

Procedure:

1. Check and record all casing/annular pressures into Wellview.
2. Coordinate and schedule casing jacks.
3. Notify WVDEP prior to commencing work, for plug witnessing (Harrison County Inspector)
4. Move in and rig up flat tank and frac tank (No pits will be utilized).
5. Move in rig up service unit.
6. Rig up JU head and test - check and report surface pressure including bradenhead pressure
7. Kill well.
8. RU wireline and lubricator.
9. Make gauge ring run to TD = 2,339'. Pull out of hole. Note fluid depth tagged.
10. Trip in hole and pull 4.5" Hookwell Packer set @ 2,369'. Will evaluate if unable to pull packer out of hole.
11. Trip in hole with tubing to TD @ 2,445'
12. MIRU cement services. Mix and pump cement plug (Class A cement + 2% CaCl₂, 20% excess included yield = 1.18 ft³/sk, WR=5.2 gal/sk) Plug should cover from 2,445'-2,030'.
 - a. Displace to balance plug
 - b. Slowly pull out of cement plug and LD 415' of tubing.
 - c. Reverse circulate tubing clear of cement
 - d. Wait on cement 8hrs.
 - e. RIH w/ tubing and tag TOC at 2,030'. BASE OF 7"
13. MIRU logging crew
14. Load Hole with 6% gel
15. Rig up and TIH with cement bond log tool to evaluate cement behind 7" casing. Estimate the amount of 7" casing to be recovered.
16. If needed, RIH with wireline and free point tool above top of cement (in 7" casing).
 - a. Chemical or mechanical cut at xxxx' (depth as determined via freepoint and CBL)
 - b. POOH and LD 7" casing.

DEPTH OF 4 1/2" @ 2339'

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 Office of Oil and Gas

OCT 17 2019

WV Department of
 Environmental Protection

SDW
 10/15/19

17. Determine if cement plugs can be pumped down 7" casing after the cut and while laying down the casing. If so, pump the following plugs from surface down casing.
18. If pumping plug down 7" casing, pump a 300' elevation plug using (Class A cement + 2% CaCl₂, 20% excess included yield = 1.18 ft³/sk, WR=5.2 gal/sk). Plug should cover 300' above cut casing.
 - a. Trip out of hole and wait on cement
 - b. Tag TOC 400' above 7" casing cut.
19. If cement plug is required 200' above casing cut and 200' below casing cut, 2-3/8" tubing will have to be run back in the hole after 7" casing is laid down.
20. Pump a 400' elevation plug using 87 sks (Class A cement + 2% CaCl₂, 20% excess included yield = 1.18 ft³/sk, WR=5.2 gal/sk). Plug should cover 200' above cut casing and 200' below cut casing.
 - a. Trip out of hole and wait on cement
21. Tag TOC 200' above 7" casing cut.
22. Mix and pump sacks from 504'-3' (Class A cement + 2% CaCl₂, 20% excess included yield = 1.18 ft³/sk, WR=5.2 gal/sk) Plug should cover from 504' to elevation cut.
 - a. TOOH
 - b. Wait on cement 8 hrs.
23. Cut off casing at 3' below ground level.
24. Weld marker plate with API No.: 47-033-00290-Per WV CSR 35-4-5.5

S DW
10/15/2019

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Office of Oil and Gas

OCT 17 2019
WV Department of
Environmental Protection

FORM IV-56WC
[12-78]

Date Feb 27 1979

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES, OIL AND GAS DIVISION

Operator's Well No. R. L. Bishop No 1
API Well No. 47 State 033 County 0290 Permit

WELL CLASSIFICATION FORM

STRIPPER GAS WELL
NGPA Section 108

DESIGNATED AGENT Leon D. Harpold

ADDRESS Rt. 3, Box 260-C
Weston, W. Va. 26452

WELL OPERATOR St. Clair Oil Co.

LOCATION: Elevation 1113

ADDRESS 219 East Main Street
St. Clairsville, Ohio 43950

Watershed Rooting Creek

GAS PURCHASER Equitable Gas Company

Dist. Elk County Harrison Quad. Weston SE

ADDRESS 420 Boulevard of the Allies
Pittsburgh, Pa. 15219

Gas Purchase Contract No. 5969 B

Meter Chart Code 2-43-25-152801-1

Date of Contract 08-01-75

* * * * *

Provide a complete inventory of the lease and production equipment used for the well for the previous 24 months or, if less than 24 months, the period the well has been in production. Include a complete list of equipment or processes used in connection with recognized enhanced recovery techniques during completion or production. (Attach separate sheets, if necessary.)

- 404 feet of 10 inch casing
- 1176 feet of 8 5/8 casing
- 2030 feet of 7 inch casing
- 2369 feet of 4 1/2 inch casing
- 2445 feet of 2 inch tubing
- Line Pipe
- Hookwall Packer
- Surface fittings, valves, etc.
- Gas Compressor and related controls

List all records reasonably available to you which contain information relevant to a determination of eligibility (including production records, B&O Tax Records and royalty payment records) and indicate the location of such records:

The following records are located at the company offices at 219 East Main Street, St. Clairsville, Ohio:

- Production records as received from Equitable Gas Company
- Annual Business & Occupation Tax Returns
- County Personal Property Tax Returns
- Royalty Records

Describe the search made of any records listed above.

All records listed are based on the production records as received from Equitable Gas Company and have been compared.

Are you aware of any other information which would tend to be inconsistent with the information specified above? Yes _____ No X. If yes, indicate the type and source of the information.

AFFIDAVIT

I, Patrick H. Hersey, having been first sworn according to law state that I have caused to be made a diligent search of those records hereinbefore indicated in the manner herein described, that the information contained in this document is true and accurate and that on the basis of the records and examinations hereinbefore described, and to the best of my information, knowledge and belief, the well for which this certification is sought qualifies as a scripper well.

Patrick H. Hersey

STATE OF ~~XRSO~~XRSOXXA, Ohio
COUNTY OF Belmont, TO WIT:

I, Barbara Anne Lucarelli, a Notary Public in and for the state and county aforesaid, do certify that Patrick H. Hersey, whose name is signed to the writing above, bearing date the 27 day of February, 1979, has acknowledged the same before me, in my county aforesaid.

Given under my hand and official seal this 27 day of February, 1979.
My term of office expires on the 14 day of September, 1987.

Barbara Anne Lucarelli
Notary Public

[NOTARIAL SEAL]

REGISTRATION:

DATE:

NOV 29 1979

47-033-00290P

WELL OPERATOR: ST. CLAIR OIL Co.

017864

FIRST PURCHASER: EQUITABLE GAS COMPANY

005939

OTHER:

W. Va. Department of Mines, Oil & Gas Division
 WELL DETERMINATION FILE NUMBER
7902 28-108-033-0290
 Use Above File Number on all Communications
 Relating to Determination of this Well

*Placed in Section 108, plugging well
 Johnson (ED)*

CHECK EACH ITEM AS COMPLETE OR NOTE WHAT IS MISSING

ITEM NO.

- 1 FERC-121 Items not completed - Line No. _____
- 2 IV-1 - Agent LEON D. HARPOLD
- 3 IV-2 - Well Permit
- 4 IV-6 - Well Plat
- 5 IV-35- Well Record Drilling Deepening Yes
- 6 IV-36- Gas-Oil Test: Gas Only Was Oil Produced? No Ratio _____
- 7 IV-39- Annual Production 12 mo years
- 8 IV-40- 90 day Production 91 (IV 39) Days off Line: -0-
- 9 IV-48- Application for Certification. Complete? Yes
- 10 - 17 IV Form #51 - 52 - 53 - 54 - 55 - 56 - 57 - 58. Complete Affidavit Signed
- 18 - 28 Other: Survey _____ Logs _____ Geological Charts _____ Structure Map _____

1:4000 Map _____ Well Tabulations _____ Gas Analyses _____

(5) Date Commenced: 9-12-63 Deepened: 7-25-75
Completed: 10-11-63

(5) Production Depth: 2380-90' 2432-36'

(5) Production Formation: 5H + BAYARD

(5) Final Open Flow 194 MCF/D

(5) Final Rock Pressure: NA

(6) Other Gas Test: _____

(7) Avg. Daily Gas from Annual Production: $\frac{2055}{363} = 5.7 \text{ MCF/D}$

(8) Avg. Daily Gas from 90-day endit. 1-120 days: $\frac{757}{91} = 8.3 \text{ MCF/D}$

(2) Line Pressure: NA PSIG from Daily Rep.

(5) Oil Production: No From Completion Report

(10-17) Does lease inventory indicate enhanced recovery being done: No

(10-17) Is affidavit signed? Notarized?

Does official well record with the Department confirm the submitted information? Yes

Additional Information _____ Does computer program confirm? _____

Was Determination Objected to? _____ By Whom? _____

J.R.R.

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS WELLS DIVISION

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FEB 19 1976

OIL & GAS DIVISION
DEPT. OF MINES

INSPECTOR'S WELL REPORT

Permit No. Har-290-DD

Oil or Gas Well _____
(KIND)

Company	CASING AND TUBING	USED IN DRILLING	LEFT IN WELL	PACKERS	
				Kind of Packer	Size of
<u>ST. Clair Oil Co.</u>	Size				
Address <u>319 E. Main St., ST. Clairsville, Ohio</u>	16				
Farm <u>Nellie Bishop's Heirs</u>	13				
Well No. <u>1</u>	10				
District <u>ELK</u> County <u>Harrison</u>	8 1/4				
Drilling commenced _____	6 1/2				Depth set _____
Drilling completed _____ Total depth _____	5 3/16				Perf. top _____
Date shot _____ Depth of shot _____	3				Perf. bottom _____
Initial open flow _____ /10ths Water in _____ Inch	2				Perf. top _____
Open flow after tubing _____ /10ths Merc. in _____ Inch	Liners Used				Perf. bottom _____
Volume _____ Cu. Ft.	CASING CEMENTED _____ SIZE _____ No. FT. _____ Date _____				
Rock pressure _____ lbs. _____ hrs.	NAME OF SERVICE COMPANY _____				
Oil _____ bbls., 1st 24 hrs.	COAL WAS ENCOUNTERED AT _____ FEET _____ INCHES				
Fresh water _____ feet _____ feet	_____ FEET _____ INCHES _____ FEET _____ INCHES				
Salt water _____ feet _____ feet	_____ FEET _____ INCHES _____ FEET _____ INCHES				

Drillers' Names _____

Remarks: Final Inspection
Release

2/12/76
DATE

Paul H. [Signature]
DISTRICT WELL INSPECTOR



DRILL DEEPER

RECEIVED

AUG 18 1975

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES

OIL & GAS DIVISION
DEPT. OF MINES

Oil and Gas Division

WELL RECORD

Quadrangle WESTON S. E.

Permit No. HAR-290 D.D.

O.S.W. #30139

Rotary _____ Oil _____
Cable X Gas X
Recycling _____ Comb. _____
Water Flood _____ Storage _____
Disposal _____ (Kind) _____

Company ST. CLAIR OIL COMPANY
Address 219 E. MAIN ST., ST. CLAIRSVILLE, OH
Farm NELLIE BISHOP HEIRS Acres 149
Location (waters) ROOTING CREEK
Well No. ONE Elev. 1113
District ELK County HARRISON
The surface of tract is owned in fee by ROBERT L. BISHOP AGENT
Address 307 OHIO AVE., NUTTER FORT, WV 26301
Mineral rights are owned by SAME AS ABOVE
Address _____
Drilling Commenced JULY 25, 1975
Drilling Completed AUGUST 4, 1975
Initial open flow 119,000 cu. ft. _____ bbls.
Final production 184,000 cu. ft. per day _____ bbls.
Well open _____ hrs. before test _____ RP.
Well treatment details:
NONE

Casing and Tubing	Used in Drilling	Left in Well
Size 20-16		
Cond. 13-10" 10	404	404
9 5/8		
8 5/8	1,176	1,176
7	2,030	2,030
5 1/2		
4 1/2		2,369
3		
2		2,445
Liners Used		

Cement fill up
Cu. ft. (Sks.)
HOOKEWALL PACKER
4 1/2" x 7"
SN696116
JULY 3, 1969
AT 2,003 FT.

Attach copy of cementing record. NONE

Coal was encountered at NONE Feet _____ Inches _____
Fresh water NONE Feet _____ Salt Water NONE Feet _____
Producing Sand 5TH AND BAYARD Depth 2,380-90 2,432-36

Formation	Color	Hard or Soft	Top Feet	Bottom Feet	Oil, Gas or Water	* Remarks
SAND	BROWN	SOFT	2,380	2,398	GAS	2,380-2,390
SLATE			2,390	2,430	65,000	
SAND	BROWN	HARD	2,430	2,437	OIL & GAS SHOW	
SLATE			2,437	2,446		2,432-2,436

(over)

* Indicates Electric Log tops in the remarks section.

DRIILL DEEPEN

Formation	Color	Hard or Soft	Top Feet	Bottom Feet	Oil, Gas or Water	* Remarks

Date AUGUST 12, 1975

APPROVED ST. CLAIR OIL COMPANY, Owner

By *Harry H. Jones*
(Title) PRESIDENT

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS WELLS DIVISION

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AUG 11 1975

OIL & GAS DIVISION
DEPT. OF MINES

INSPECTOR'S WELL REPORT

Permit No. Har-290-DD

Oil or Gas Well _____
(KIND)

Company St. Clair Oil Company
 Address 219 East Main St, St. Clairsville Ohio
 Farm Nellie Bishop Heirs
 Well No. 1
 District FLK County Harrison
 Drilling commenced 7/28/75
 Drilling completed 8/6/75 Total depth 2446'
 Date shot _____ Depth of shot _____
 Initial open flow _____ /10ths Water in _____ Inch
 Open flow after tubing _____ /10ths Merc. in _____ Inch
 Volume _____ Cu. Ft.
 Rock pressure _____ lbs. _____ hrs.
 Oil _____ bbls., 1st 24 hrs.
 Fresh water _____ feet _____ feet
 Salt water _____ feet _____ feet

CASING AND TUBING	USED IN DRILLING	LEFT IN WELL	PACKERS
Size			
16			
13			
10			
8 1/4			
6 3/4			
5 3/4			
3			
2			
Liners			
CASING NAME			
COAL			

● SENDER: Complete items 1 and 2. Add your address in the "RETURN TO" space on reverse.

1. The following service is requested (check one)

Show to whom and date delivered..... 15¢

Show to whom, date, & address of delivery..... 35¢

DELIVER ONLY TO ADDRESSEE and show to whom and date delivered..... 65¢

DELIVER ONLY TO ADDRESSEE and show to whom, date, and address of delivery..... 85¢

2. ARTICLE ADDRESSED TO:
 St. Clair Oil Company
 219 E. Main
 St. Clairsville, Ohio 43950

3. ARTICLE DESCRIPTION:
 REGISTERED NO. _____ CERTIFIED NO. 18772+ INSURED NO. _____
 (Always obtain signature of addressee or agent)

I have received the article described above
 SIGNATURE: Nellie Bishop Heirs

4. DATE OF DELIVERY _____

5. ADDRESS (Complete only if requested)

6. UNABLE TO DELIVER BECAUSE: _____

POSTMARK: 9161
100
1975

AGENCY'S INITIALS: FLK

Drillers' Names T. Riffle

Company Tools _____

Remarks: Small show of oil in Bayard sand and small increase in gas. Well not shot or fractured. Being put back in production.

8/6/75
DATE

Paul H. Barrett
DISTRICT WELL INSPECTOR

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION

INSPECTOR'S WELL REPORT

Permit No. 404-290

Oil or Gas Well _____
(KIND)

Company St. Clair Oil & Gas Co.
 Address St. Clairsville, Ohio
 Farm A. L. Lewis
 Well No. ONE
 District F.L.K. County Harrison
 Drilling commenced 8/12/63
 Drilling completed _____ Total depth 2100
 Date shot _____ Depth of shot _____
 Initial open flow _____ /10ths Water in _____ Inch
 Open flow after tubing _____ /10ths Merc. in _____ Inch
 Volume _____ Cu. Ft.
 Rock pressure _____ lbs. _____ hrs.
 Oil _____ bbls., 1st 24 hrs.
60-874-1812-2200
 Fresh water _____ feet
 Salt water _____ feet

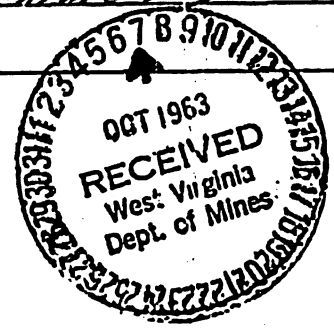
CASING AND TUBING	USED IN DRILLING	LEFT IN WELL	PACKERS
Size			
16			Kind of Packer _____
13			
10	<u>404'</u>		Size of _____
8 1/4	<u>1176'</u>		
6 3/4	<u>2027'</u>		Depth set _____
5 3/16			
3			Perf. top _____
2			Perf. bottom _____
Liners Used			Perf. top _____
			Perf. bottom _____

CASING CEMENTED _____ SIZE _____ No. FT. _____ Date _____
 NAME OF SERVICE COMPANY _____
No. Coal Showing on Log.
 COAL WAS ENCOUNTERED AT _____ FEET _____ INCHES
 _____ FEET _____ INCHES FEET _____ INCHES
 _____ FEET _____ INCHES FEET _____ INCHES

Drillers' Names LEON-D. HARPOLD - LOWELL LEMMONS

Remarks:

CONTRACTOR - ST. CLAIR OIL CO.



Oct 4, 1963
DATE

William J. Blaser
DISTRICT WELL INSPECTOR

DEPARTMENT OF MINES
OIL AND GAS DIVISION 5

Quadrangle Weston S. E.

WELL RECORD

Permit No. HAR - 290

Oil or Gas Well Gas
(KIND)

Company <u>St. Clair Oil Company</u>	Casing and Tubing	Used in Drilling	Left in Well	Packers <u>None</u>
Address <u>219 East Main Street, St. Clairsville, Ohio</u>	Size			Kind of Packer
Form <u>A. Lewis</u> Acres <u>149</u>	16			
Location (waters) <u>Rooting Creek</u>	13			
Well No. <u>one</u> Elev. <u>1,113'</u>	10	<u>404</u>	<u>404</u>	Size of
District <u>Elk</u> County <u>Harrison</u>	9	<u>2,030</u>	<u>2,030</u>	Depth set
The surface of tract is owned in fee by <u>Nellie Bishop Heirs</u>	<u>8 1/2</u>	<u>1,176</u>	<u>1,176</u>	Perf. top <u>None</u>
Address <u>Nutter Fork, W. Va.</u>	5 3/16			Perf. bottom
Mineral rights are owned by <u>Richard L. Bishop, et als</u>	3			Perf. top
Address <u>Nutter Fork, W. Va.</u>	2			Perf. bottom
Drilling commenced <u>August 12, 1963</u>	Liners Used			
Drilling completed <u>October 11, 1963</u>				
Date Shot <u>No</u> From <u></u> To <u></u>				
With <u></u>				
Open Flow <u>/10ths</u> Water in <u></u> Inch				
<u>30/10ths</u> Merc. in <u>3"</u> Inch				
Volume <u>9,105,000</u> Nat. <u></u> Cu. Ft.				
Rock Pressure <u>1,060</u> lbs. <u>24</u> hrs. <u></u> hrs.				
Oil <u>No</u> bbls., 1st 24 hrs.				
WELL ACIDIZED <u>No</u>				
WELL FRACTURED <u>No</u>				

CASING CEMENTED No SIZE No. Ft. Date

COAL WAS ENCOUNTERED AT FEET INCHES

FEET INCHES FEET INCHES

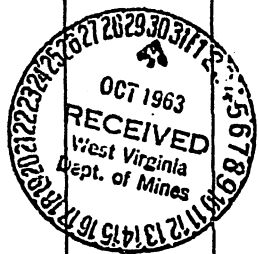
FEET INCHES FEET INCHES

RESULT AFTER TREATMENT

ROCK PRESSURE AFTER TREATMENT

Fresh Water Feet Salt Water Feet

Formation	Color	Hard or Soft	Top	Bottom	Oil, Gas or Water	Depth	Remarks
Clay			0	15			
Red Rock			15	50			
Lime			50	70	Water	60'	Hole full
Slate			70	160			
Lime			160	179			
Slate			179	238			
Red Rock			238	255			
Slate			255	265			
Lime			265	280			
Slate			280	343			
Sand			343	353			
Red Rock			353	357			
Slate			357	420			
Lime			420	448			
Slate			448	471			
Lime			471	595			
Slate			595	640			
Black Slate			640	665			
Sand			665	675			
Slate			675	700			
Sand			700	784			
Black Slate			784	815			
Sand			815	895			
Slate			895	920	Water		2 bailers hr.
Black Slate			920	1015			
Lime			1015	1060			
Sand			1060	1140			
Lime			1140	1196			
Slate			1196	1203			



Formation	Color	Hard or Soft	Top 5	Bottom	Oil, Gas or Water	Depth Found	Remarks
Red Rock			1203	1265			
Lime			1265	1300			
Sand			1300	1319			
Lime			1319	1359			
Red Rock			1359	1410			
Slate			1410	1423			
Little Lime			1423	1450			
Slate			1450	1484			
Big Lime			1484	1571			
Injun			1571	1642			
Lime			1642	1663			
Sand			1663	1670			
Slate			1670	1698			
Lime			1698	1742			
Slate			1742	1750			
Sand			1750	1780			
Slate			1780	1798			
Sand	Gantz		1798	2000			
Slate			2000	2003			
Lime			2003	2061			
Slate			2061	2075			
Red Rock			2075	2086			
Sand			2086	2107			
Red Rock			2107	2120			
Sand			2120	2130			
Red Rock			2130	2180			
Shale & Shells			2180	2209			
Sand			2209	2284			
Lime			2284	2310			
Slate			2310	2342			
Gritty Lime			2342	2360			
Slate			2360	2368			
Sand (Gordon)			2368	2380			
				2380 T.D.			

Date October 18, 1963
 APPROVED Harry S. Brown, Owner
 By _____ Secretary-Treasurer
 (Title)

WW-4A
Revised 6-07

1) Date: _____
2) Operator's Well Number
RL Bishop #1

3) API Well No.: 47 - 033 - 00290

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>Antero Resources Corporation (8-23.1,8-38,32-1.2,32-1.1)</u>	Name _____
Address <u>1615 Wynkoop St</u>	Address _____
<u>Denver, CO 80202</u>	
(b) Name <u>PLEASE SEE ATTACHMENT</u>	(b) Coal Owner(s) with Declaration
Address _____	Name _____
	Address _____
(c) Name <u>PLEASE SEE ATTACHMENT</u>	Name _____
Address _____	Address _____
6) Inspector <u>Sam Ward</u>	(c) Coal Lessee with Declaration
Address <u>601 57th Street SE</u>	Name _____
<u>Charleston, WV 25304</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 reverse 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.

MEGAN GRIFFITH
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20184011666
MY COMMISSION EXPIRES MARCH 13, 2022

Well Operator Antero Resources Corporation
By: Diana Hoff *Diana O. Hoff* 9/30/19
Its: VP of Operations
Address 1615 Wynkoop Street
Denver, CO 80202
Telephone 303-357-7310

Subscribed and sworn before me this 2nd day of October 2019
[Signature] Notary Public
My Commission Expires MARCH 13, 2022

RECEIVED
Office of Oil and Gas
OCT 17 2019

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.

SURFACE OWNER WAIVER

Operator's Well
Number

RL Bishop #1

INSTRUCTIONS TO SURFACE OWNERS NAMED ON PAGE WW4-A

The well operator named on page WW-4A is applying for a permit from the State to plug and abandon a well. (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 **FIVE (5) 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 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.

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 Permit To Plug And Abandon on Forms WW-4A and WW-4B, and a survey plat.

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
ETC.

FOR EXECUTION BY A CORPORATION,

Diana O. Hoff
Signature

Date 9/30/19

Name Antero Resources Corporation
By Diana Hoff
Its VP of Operations

Signature _____ Date _____

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OCT 17 2019
WV Department of
Environmental Protection

WW-9
(4/16)

API Number 47 - 033 - 00290
Operator's Well No. RL Bishop #1

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Antero Resources Corporation OP Code 494507062

Watershed (HUC 10) Gnatty Creek Quadrangle Berlin 7.5'

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: No pit will be used at this site (Drilling and Flowback Fluids will be stored in tanks. Cuttings will be tanked and hauled off site.)

Will a synthetic liner be used in the pit? Yes No If so, what ml.? N/A

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection (UIC Permit Number *UIC Permit # will be provided on Form WR-34)
- Reuse (at API Number Future permitted well locations when applicable. API# will be provided on Form WR-34)
- Off Site Disposal (Supply form WW-9 for disposal location) (Meadowfill Landfill Permit #SWF-1032-98)
- Other (Explain Northwestern Landfill Permit #SWF-1025/ WV0109410)

SDW
10/15/2019

Will closed loop system be used? If so, describe: Yes, fluids stored in tanks, cuttings removed offsite and taken to landfill.

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

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

Additives to be used in drilling medium?

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

-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.

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Office of Oil and Gas

Company Official Signature *Gretchen Kohler*

OCT 17 2019

Company Official (Typed Name) Gretchen Kohler

WV Department of Environmental Protection

Company Official Title Sr. Environmental & Regulatory Manager

Subscribed and sworn before me this 2nd day of October, 2019

[Signature]

Notary Public

My commission expires MARCH 13, 2022

MEGAN GRIFFITH
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20184011666
MY COMMISSION EXPIRES MARCH 13, 2022

Form WW-9

Operator's Well No. RL Bishop #1

Antero Resources Corporation

Proposed Revegetation Treatment: Acres Disturbed 38.20 acres Prevegetation pH _____

Lime 2-4 Tons/acre or to correct to pH 6.5

Fertilizer type _____

Fertilizer amount 500 lbs/acre

Mulch 2-3 Tons/acre

Seed Mixtures

Temporary

Permanent

Seed Type	lbs/acre
Annual Ryegrass	40
Field Bromegrass	40

Seed Type	lbs/acre
Crownvetch	10-15
Tall Fescue	30

Please reference Table IV-3 on page 7 of the Well #1 Plugging Plan

Please reference Table IV-4A on page 7 of the Well #1 Plugging Plan

*or type of grass seed requested by surface owner

*or type of grass seed requested by surface owner

Attach:

Maps(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided). If water from the pit will be land applied, include dimensions (L x W x D) of the pit, and dimensions (L x W), and area in acreage, of the land application area.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by:

S. L. DeWanette

Comments:

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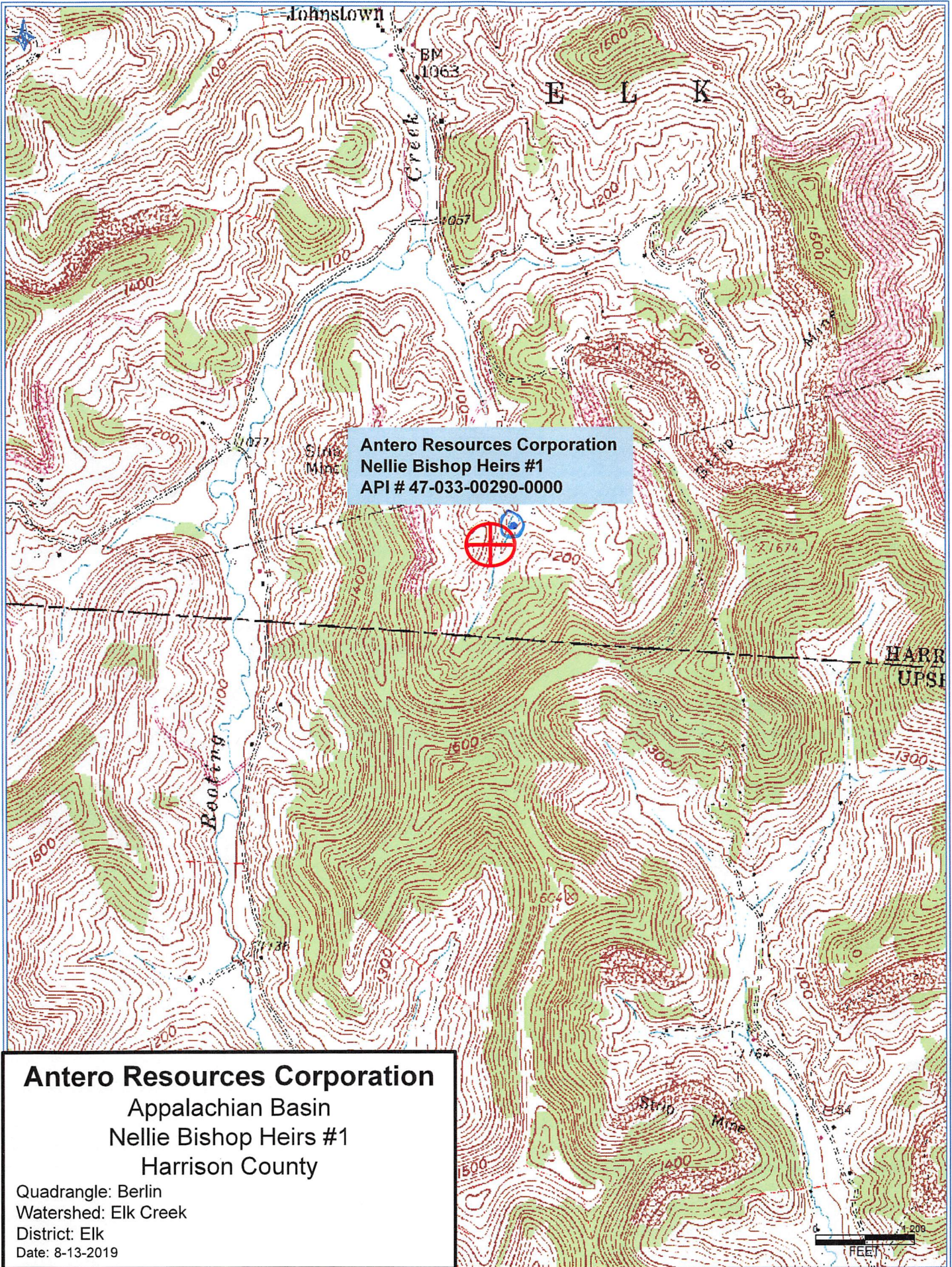
OCT 17 2019

WV Department of
Environmental Protection

Title: 006 Prospector

Date: 10/15/2019

Field Reviewed? () Yes (X) No



Antero Resources Corporation
Nellie Bishop Heirs #1
API # 47-033-00290-0000

Antero Resources Corporation
Appalachian Basin
Nellie Bishop Heirs #1
Harrison County

Quadrangle: Berlin
Watershed: Elk Creek
District: Elk
Date: 8-13-2019



WW-7
8-30-06



West Virginia Department of Environmental Protection
Office of Oil and Gas

WELL LOCATION FORM: GPS

API: 47-033-00290 WELL NO.: 1

FARM NAME: RL Bishop

RESPONSIBLE PARTY NAME: Antero Resources Corporation

COUNTY: Harrison DISTRICT: Elk

QUADRANGLE: Berlin

SURFACE OWNER: William R & Priscilla D Suan & Phyllis M Bishop

ROYALTY OWNER: N/A

UTM GPS NORTHING: 4328763.15 m

UTM GPS EASTING: 562762.73 m GPS ELEVATION: 340.7 m (117')

The Responsible Party named above has chosen to submit GPS coordinates in lieu of preparing a new well location plat for a plugging permit or assigned API number on the above well. The Office of Oil and Gas will not accept GPS coordinates that do not meet the following requirements:

- Datum: NAD 1983, Zone: 17 North, Coordinate Units: meters, Altitude: height above mean sea level (MSL) – meters.
- Accuracy to Datum – 3.05 meters
- Data Collection Method:

Survey grade GPS : Post Processed Differential _____
Real-Time Differential

Mapping Grade GPS : Post Processed Differential _____
Real-Time Differential

- Letter size copy of the topography map showing the well location.**

I the undersigned, hereby certify this data 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 Office of Oil and Gas.

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Office of Oil and Gas
OCT - 4 2019

[Signature]
Signature

Permitting Agent
Title

10.2.2019
Date