DIVERSIFIED
energy

UNDERGROUND INJECTION CONTROL (UIC) PERMIT APPLICATION

IVANA TR 3 #1 UIC 2D03904844 API 47-039-04844

CHECKLIST FOR FILING A UIC PERMIT APPLICATION

Please utilize this checklist to ensure you have prepared, completed, and enclosed all required documentation and payment to ensure a timely review of your submittal.

Operator	Diversified Production LLC		
Existing UIC Permit ID Number	UIC UIC 2D03904844	UIC Well API Number	API 47-039-04844

Office of Oil and Gas Office Use Only	
Permit Reviewer	
Date Received	
Administratively Complete Date	
Approved Date	
Permit Issued	

Please check the fees and payment included.

Fees		Payment Type	
UIC Permit Fee: $500	✔	Check	✔
Groundwater Protection Plan (GPP) Fee: $50.00	✔	Electronic	
		Other	

Please check the items completed and enclosed.

- ✔ Checklist
- ✔ UIC-1
  - ✔ Section 1 – Facility Information
  - ✔ Section 2 – Operator Information
  - ✔ Section 3 – Application Information
  - ✔ Section 4 – Applicant/Activity Request and Type
  - ✔ Section 5 – Brief description of the Nature of the Business
  - ✔ CERTIFICATION
- ✔ Section 6 – Construction
  - ✔ Appendix A Injection Well Form
  - ✔ Appendix B Storage Tank Inventory
- ✔ Section 7 – Area of Review
  - ✔ Appendix C Wells Within the Area of Review

N/A ☑ Appendix D Public Service District Affidavit

☑ Appendix E Water Sources

☑ Appendix F Area Permit Wells

☑ Section 8 – Geological Data on Injection and Confining Zones

☑ Section 9 – Operating Requirements / Data

☑ Appendix G Wells Serviced by Injection Well

☑ Section 10 – Monitoring

☑ Section 11 – Groundwater Protection Plan (GPP)

☑ Appendix H Groundwater Protection Plan (GPP)

☑ Section 12 – Plugging and Abandonment

☑ Section 13 – Additional Bonding

☑ Section 14 – Financial Responsibility

☑ Appendix I Financial Responsibility

☑ Section 15 – Site Security Plan

☑ Appendix J Site Security for Commercial Wells

☑ Section 16 – Additional Information

☑ Appendix K Other Permit Approvals

NOTE: For all 2D wells an additional bond in the amount of $5,000 is required.

Reviewed by (Print Name): Jeff Roberts

Reviewed by (Sign): Jeff Roberts

Date Reviewed: 1/15/25

Section 1, 2, 3, 4, 5

UIC 2D03904844

WEST VIRGINIA DEPARTMENT OF
ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
601 57th Street, SE
Charleston, WV 25304
(304) 926-0450
www.dep.wv.gov/oil-and-gas

UNDERGROUND INJECTION CONTROL (UIC) PERMIT APPLICATION

UIC PERMIT ID # UIC 2D03904844 **API #** 4 7-039-04844 **WELL #** IVANA TR 3 #1

Section I. Facility Information

Facility Name: IVANA TR 3 #1

Address: Frame Road

City: Elkview State: WV Zip: 25071

County: Kanawha County District: Elk 7.5' Quadrangle: Blue Creek

Location description:

Location description:
Ivana TR 3 #1 well is located near Frame Road, Elkview WV in Elk District, Kanawha County on Magan acreage at Lat: N 38.482050 Long: W 81.485817

Location of well(s) or approximate center of field/project in UTM NAD 83 (meters):

Northing: 4259404.6 Easting: 457559.5

Latitude: 38.481967
Longitude: -81.486593

Environmental Contact Information:

Name: Lisa Raffle Title: EHS Manager

Phone: 724-579-2320 Email: lraffle@dgoc.com

Section 2. Operator Information

Operator Name: Diversified Production LLC

Operator ID: 494524121

Address: 414 Summers Street

City: Charleston State: WV Zip: 25301

County: Kanawha

Contact Name: Charles Shafer Contact Title: Manager Upstream Operations

Contact Phone: 304-373-3152 Contact Email: cshafer@dgoc.com

Section 3. Applicant Information

Ownership Status: ☒ PRIVATE ☐ PUBLIC ☐ FEDERAL ☐ STATE
☐ OTHER (explain):

SIC code: ☒ 1311 (2D, 2H, 2R) ☐ 1479 (3S) ☐ OTHER (explain):

Section 4. Applicant / Activity Request and Type:

A. Apply for a new UIC Permit: ☐ 2D ☐ 2H ☐ 2R ☐ 3S
B. Reissue existing UIC Permit: ☒ 2D ☐ 2H ☐ 2R ☐ 3S
C. Modify existing UIC Permit: ☐ 2D ☐ 2H ☐ 2R ☐ 3S
(Submit only documentation pertaining to the modification request)
2D COMMERCIAL FACILITY: ☒ YES ☐ NO

Section 5. **Briefly describe the nature of business and the activities to be conducted:**

The Ivana 3 #1 well has been a UIC well for the injection of Class II fluids since 1991. Produced fluids are gravity fed to one of four stock tanks located at the Nytis yard on Wills Creek Road or hauled in by truck to one truck unloading bay. From there, water is gravity fed to a pump that discharges into the disposal well API 47-039-04844.

APPLICATION CERTIFICATION

In accordance with WV Code 47CSR13.13.11, all UIC permit applications must be signed by one of the following:

1. For a corporation: by a principle corporate officer of at least the level of vice-president;
2. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively;
3. For a municipality, State, Federal, or other public agency: by either a principle executive officer or ranking elected official;
4. Or a duly authorized representative in accordance with 47CSR13.13.11.b.
   (A person may be duly authorized by one of the primary entities (1-3) listed above by submitting a written authorization to the Chief of the WVDEP Office of Oil and Gas designating an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or position of equivalent responsibility. A duly authorized representative may thus be either a named individual or any individual occupying a named position.)

Diversified Production LLC

(Company Name)

2D03904844-003

(UIC Permit Number)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (47CSR13.13.11.d)

Charles Shafer

(Print Name)

Manager

(Print Title)

(Signature)

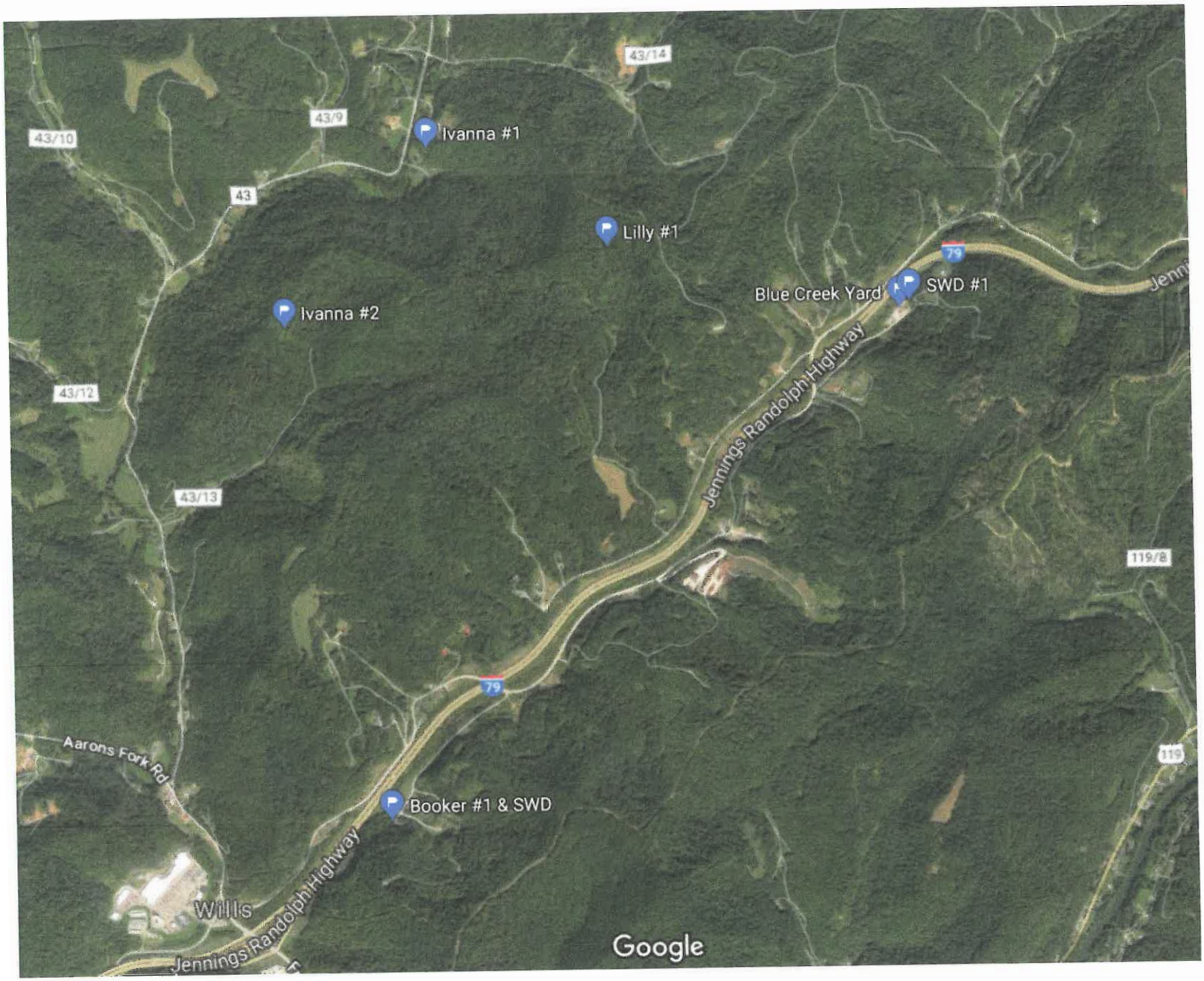
5-19-25

(Date)

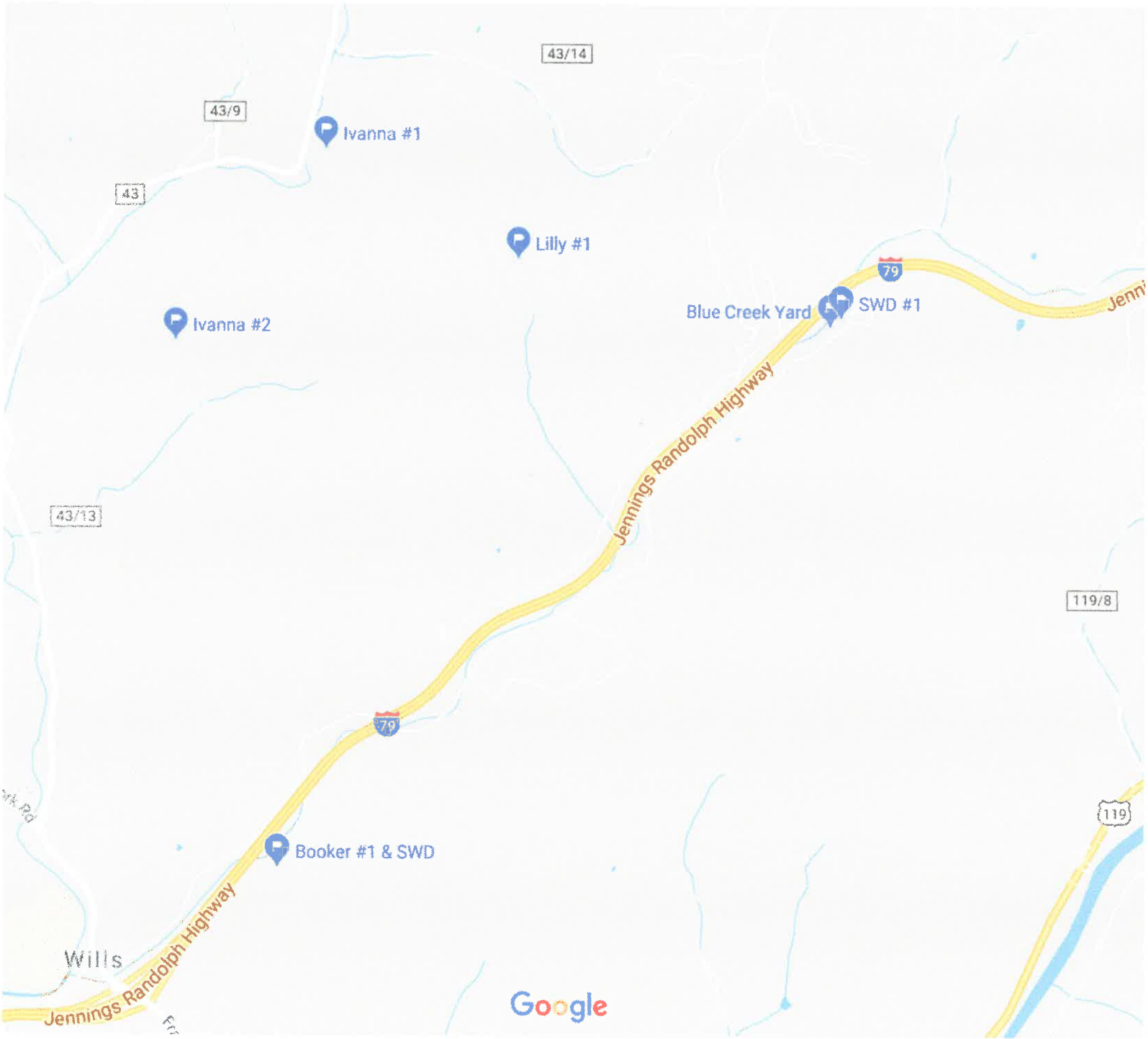
Section 6 - Construction

UIC 2D03904844

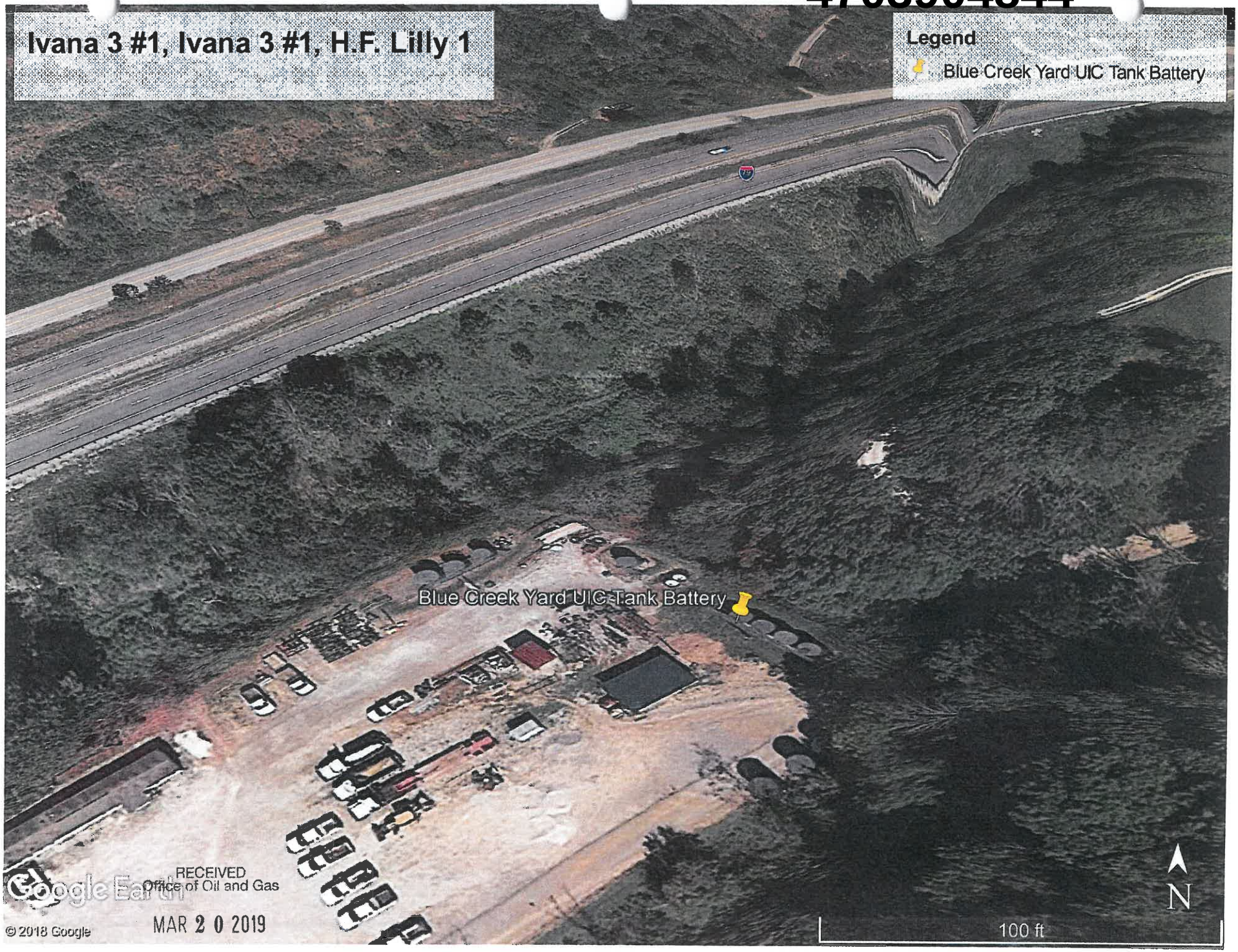
4703904844



4703904844



4703904844



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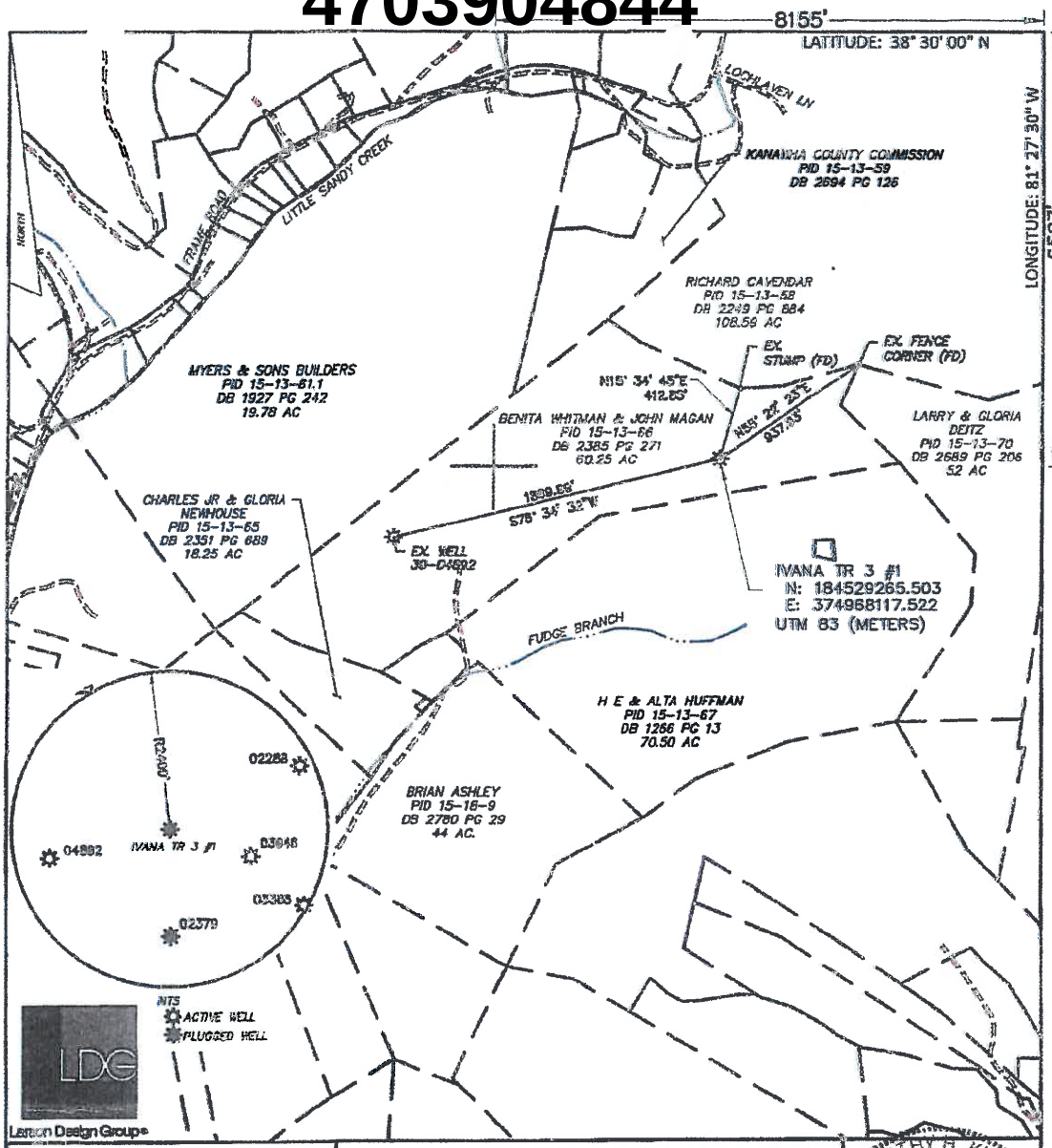
Office of Oil and Gas
MAR 20 2019

WV Department of
Environmental Protection

4703904844



FILE NO. 8013-009
DRAWING NO. 1
SCALE 1" = 1000'
MINIMUM DEGREE OF ACCURACY 1 in 2500'
PROVEN SOURCE OF ELEVATION SURVEY 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) _____

R.P.E. _____ L.L.S. 1969

TIMOTHY H. KINDER LICENSED NO. 1969 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

PLACE SEAL HERE

RECEIVED
Office of Oil and Gas
AUG 10 2018
WV Department of Environmental Protection

FORM WW-6

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

DATE OCTOBER ,20 15
OPERATOR'S WELL NO. IVANA TR 3 #1
API WELL NO.
47 _ 039 _ 04844
STATE COUNTY PERMIT

WELL TYPE: OIL ___ GAS ___ LIQUID INJECTION X WASTE DISPOSAL ___
(IF "GAS,") PRODUCTION ___ STORAGE ___ DEEP ___ SHALLOW X
LOCATION: ELEVATION 1145' WATERSHED FUDGE BRANCH
DISTRICT ELK COUNTY KANAWHA
QUADRANGLE BLUE CREEK
SURFACE OWNER BENITA WHITMAN ACREAGE 60.25
OIL & GAS ROYALTY OWNER N/A LEASE ACREAGE 78.5
LEASE NO. N/A
PROPOSED WORK: DRILL ___ CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE ___ PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) X
PLUG AND ABANDON ___ CLEAN OUT AND REPLUG ___
TARGET FORMATION BIG INJUN ESTIMATED DEPTH 2250'
WELL OPERATOR EXCO Resources (PA), LLC DESIGNATED AGENT MIKE CHURCH-EXCO RESOURCES
ADDRESS 3000 ERICSSON DRIVE, SUITE 200 WARRENDALE, PA 15086 ADDRESS P.O. BOX 8 RAVENSWOOD, WV 26164

COUNTY NAME
PERMIT

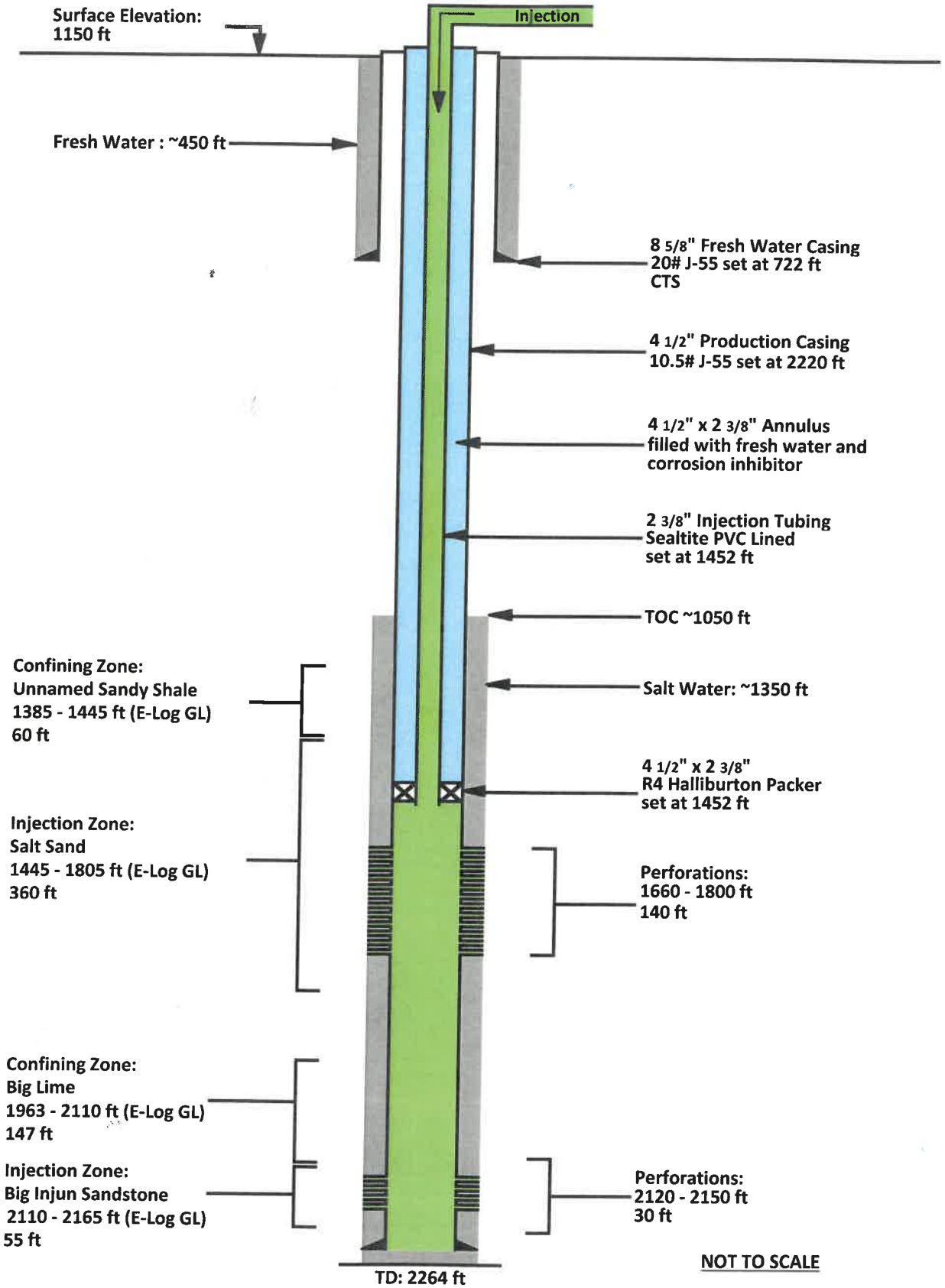
Well Bore Diagram

Ivana TR3 No. 1

API 47-039-04844

Diversified Production LLC

UIC 2D03904844-003



WV Geological & Economic Survey:

Well: County = 039 Permit = 4844 Link to all digital records for well

Report Time: Thursday, May 15, 2025 3:57:20 PM

Location Information: View Map

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4703904844	Kanawha	4844	Elk	Blue Creek	Clendenin	38.481967	-81.486593	457559.5	4259404.6

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4703904844	1/22/1992	Original Loc	Completed	James & Gerry Carte	Tr 3 Well 1				Ivana Company	Quaker State Oil Refining Co.			
4703904844	-/-/-	Worked Over	Completed	James & Gerry Carte	Tr 3 Well 1				Ivana Company	Quaker State Oil Refining Co.			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G
4703904844	1/22/1992	12/9/1991	1150	Ground Level	Blue Ck(Flg Rk)	Undf PRICE blw INJN	Big Injun (Price&eq)	Development Well	Unsuccessful	Dry	Rotary	Fractured	2264		2264		
4703904844	-/-/-	-/-/-	1150	Ground Level	Blue Ck(Flg Rk)	Undf PRICE blw INJN	Big Injun (Price&eq)	Service Well	Unsuccessful	Salt Water Disp	unknown	unknown	2264		0		

Comment: -/-/- Injection zone footages are proposed.

Pay/Show/Water Information:

API	CMP_DT	ACTIVITY	PRODUCT	SECTION	DEPTH_TOP	FM_TOP	DEPTH_BOT	FM_BOT	G_BEF	G_AFT	O_BEF	O_AFT	WATER_QNTY
4703904844	1/22/1992	Water	Fresh Water	Vertical			450						0
4703904844	1/22/1992	Water	Salt Water	Vertical			1340						0
4703904844	-/-/-	Horizon	Injection	Vertical	1400	3rd Salt Sand	1550	3rd Salt Sand					
4703904844	1/22/1992	Dry	None	Vertical	1660	Salt Sands (undiff)	1800	Salt Sands (undiff)	0	0			
4703904844	1/22/1992	Dry	None	Vertical	2120	Big Injun (Price&eq)	2150	Big Injun (Price&eq)	0	0			
4703904844	-/-/-	Horizon	Injection	Vertical	2137	Big Injun (Price&eq)	2177	Big Injun (Price&eq)					

Production Gas Information: (Volumes in Mcf) *** 2024 data for H6A wells only. Other wells are incomplete at this time.**

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_GAS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4703904844	North Coast Energy Eastern	2003	0	0	0	0	0	0	0	0	0	0	0	0	0
4703904844	North Coast Energy Eastern	2005	0	0	0	0	0	0	0	0	0	0	0	0	0
4703904844	North Coast Energy Eastern	2006	0	0	0	0	0	0	0	0	0	0	0	0	0
4703904844	EXCO Resources (PA), LLC	2013	0	0	0	0	0	0	0	0	0	0	0	0	0
4703904844	Nytis Exploration Co., LLC	2017	0	0	0	0	0	0	0	0	0	0	0	0	0
4703904844	Nytis Exploration Co., LLC	2018	0	0	0	0	0	0	0	0	0	0	0	0	0

Production Oil Information: (Volumes in Bbl) ** some operators may have reported NGL under Oil *** 2024 data for H6A wells only. Other wells are incomplete at this time.**

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_OIL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4703904844	North Coast Energy Eastern	2003	0	0	0	0	0	0	0	0	0	0	0	0	0
4703904844	North Coast Energy Eastern	2005	0	0	0	0	0	0	0	0	0	0	0	0	0
4703904844	North Coast Energy Eastern	2006	0	0	0	0	0	0	0	0	0	0	0	0	0
4703904844	EXCO Resources (PA), LLC	2013	0	0	0	0	0	0	0	0	0	0	0	0	0
4703904844	Nytis Exploration Co., LLC	2017	0	0											
4703904844	Nytis Exploration Co., LLC	2018	0	0	0	0	0	0	0	0	0	0	0	0	0

Production NGL Information: (Volumes in Bbl) ** some operators may have reported NGL under Oil *** 2024 data for H6A wells only. Other wells are incomplete at this time.**

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_NGL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4703904844	EXCO Resources (PA), LLC	2013	0	0	0	0	0	0	0	0	0	0	0	0	0
4703904844	Nytis Exploration Co., LLC	2018	0	0	0	0	0	0	0	0	0	0	0	0	0

Production Water Information: (Volumes in Gallons) *** 2024 data for H6A wells only. Other wells are incomplete at this time.**

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_WTR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4703904844	Nytis Exploration Co., LLC	2018	0	0	0	0	0	0	0	0	0	0	0	0	0

Stratigraphy Information:

API	SUFFIX	FM	FM_QUALITY	DEPTH_TOP	DEPTH_QUALITY	THICKNESS	THICKNESS_QUALITY	ELEV	DATUM
4703904844	Original Loc	Salt Sands (undiff)	Well Record	1340	Reasonable	590	Reasonable	1150	Ground Level
4703904844	Original Loc	Little Lime	Well Record	1930	Reasonable	34	Reasonable	1150	Ground Level
4703904844	Original Loc	Pencil Cave	Well Record	1964	Reasonable	6	Reasonable	1150	Ground Level
4703904844	Original Loc	Big Lime	Well Record	1970	Reasonable	140	Reasonable	1150	Ground Level
4703904844	Original Loc	Big Injun (Price&eq)	Well Record	2110	Reasonable	42	Reasonable	1150	Ground Level
4703904844	Original Loc	Undf PRICE blw INJN	Well Record	2152	Reasonable	0	Reasonable	1150	Ground Level

Wireline (E-Log) Information:
* Scanned/Raster Log Information:

API	STATUS	LOG_TOP	LOG_BOT	DEEPEST_FML	LOGS_AVAIL	SCAN	GR_TOP	GR_BOT	D_TOP	D_BOT	N_TOP	N_BOT	I_TOP	I_BOT	T_TOP	T_BOT	S_TOP	S_BOT	O_TOP	O_BOT	INCH2	IN
4703904844	Regular Entry	15	2270		G,D,C,*	Y	15	2260	722	2265									722	2270	Y	Y

Scanned/Raster Comment: *logs: caliper, cbl, ccl

* There is no Digitized/LAS Log data for this well

Downloadable Log Images/Data: We advise you to save the scanned log or digitized log file(s) to your PC for viewing. To do so, right-click the file of interest and select the save option. Then you can direct the file to a location of your choice. Please note the scanned log images vary in size and some may take several minutes to download.

Scanned/Raster Logs

FILENAME
4703904844bco.tif
4703904844cdg.tif

Quick Reference Guide for Log File Names For more info about WVGES scanned logs click here

geologic log types:
- d density (includes bulk density, compensated density, density, density porosity, grain density, matrix density, etc.)
- e photoelectric adsorption (PE or Pe, etc.)
- g gamma ray
- i induction (includes dual induction, medium induction, deep induction, etc.)
- l laterolog
- m dipmeter
- n neutron (includes neutron porosity, sidewall neutron--SWN, etc.)
- o other[1]
- s sonic or velocity
- t temperature (includes borehole temperature, BHT, differential temperature, etc.)
- z spontaneous potential or potential

mechanical log types:
- b cement bond
- c caliper
- o other[1]
- p perforation depth control or perforate

[1]other logs may include, but are not limited to, such curves as audio, bit size, CCL--casing collar locator, continuous meter, directional survey, gas detector, guard, NCTL--Nuclear Cement Top Locator, radioactive tracer, tension

There is no Plugging data for this well

There is no Sample data for this well

Reviewed TM6
Recorded

State of West Virginia
DEPARTMENT OF ENERGY
Division of Oil and Gas

4703904844

Well Operator's Report of Well Work

Farm name: CARTE, JAMES A. & GERRY L Operator Well No.: IVANA CO. 3 (1)

LOCATION: Elevation: 1150.00 Quadrangle: BLUE CREEK

District: ELK County: KANAWHA
Latitude: 6540 Feet South of 38 Deg. 30Min. 0 Sec.
Longitude 8210 Feet West of 81 Deg. 27 Min. 30 Sec.

Company: QUAKER STATE CORPORATION
P.O. BOX 189/1226 PUTNAM HOWE
BELPRE, OH 45714-0189

Agent: FRANK R. ROTUNDA

Inspector: CARLOS W. HIVELY
Permit Issued: 10/15/91
Well work Commenced: 12/9/91
Well work Completed: 1/22/92
Verbal Plugging
Permission granted on: _____
Rotary X Cable _____ Rig
Total Depth (feet) 2264
Fresh water depths (ft) 450'

Salt water depths (ft) 1340'

Is coal being mined in area (Y/N)? N
Coal Depths (ft): N/A

Casing & Tubing	Used in Drilling	Left in Well	Cement Fill Up Cu. Ft.
Size			
8 5/8	722	722	CTS
4 1/2	2220	2220	210 SX

RECEIVED
Office of Oil & Gas
FEB 10 92
WV Division of
Environmental Protection

OPEN FLOW DATA

Producing formation Big Injun Pay zone depth (ft) 1460-1800 2120-218
Gas: Initial open flow N/A MCF/d Oil: Initial open flow N/A Bbl/d
Final open flow N/A MCF/d Final open flow N/A Bbl/d
Time of open flow between initial and final tests N/A Hours
Static rock Pressure N/A psig (surface pressure) after N/A Hours

Second producing formation _____ Pay zone depth (ft) _____
Gas: Initial open flow _____ MCF/d Oil: Initial open flow _____ Bbl/d
Final open flow _____ MCF/d Final open flow _____ Bbl/d
Time of open flow between initial and final tests _____ Hours
Static rock Pressure _____ psig (surface pressure) after _____ Hours

NOTE: ON BACK OF THIS FORM PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

Frank R. Rotunda
For: QUAKER STATE CORPORATION
By: Frank Rotunda
Date: 1/24/92

RECEIVED
Office of Oil and Gas
MAR 20 2019
WV Department of
Environmental Protection

FEB 2 9 REC'D

4703904844

Treatment:

Perf: 2120' - 2150' with 31 holes
Frac: 520 bbl fluid and 200 SX 10/20 sand
Avg Rate 36 BPM
Avg PSI 1381

Perf: 1660' - 1800' with 121 holes
Frac: 758 bbls fluid and 500 SX 20/40 sand
Avg. Rate: 29 BPM
Avg. Psi: 2647

LOG:	FEET:
Sand/shale	0-1340
Salt sands	1340-1930
Little lime	1930-1964
Pencil cave	1964-1970
Big lime	1970-2110
Big injun	2110-2152
Silt/shale	2152-2264

API No.: 4703904844

APPENDIX A
Injection Well Form

1) GEOLOGIC TARGET FORMATION: Salt Sand and Big Injun Sandstone

Depth: SS: 1450 BI: 2115 Feet (top) SS: 1810 BI: 2170 Feet (bottom)

2) Estimated Depth of Completed Well, (or actual depth of existing well): 2264 Feet

3) Approximate water strata depths: Fresh ~450 Feet Salt ~1350 Feet

4) Approximate coal seam depths: N/A

5) Is coal being mined in the area? Yes ☐ No ☑

6) Virgin reservoir pressure in target formation Unknown psig Source

7) Estimated reservoir fracture pressure ~2200 est. psig (BHFP)

8) MAXIMUM PROPOSED INJECTION OPERATIONS:

Injection rate (bbl/hour): 10

Injection volume (bbl/day): 240

Injection pressure (psig): 395

Bottom hole pressure (psig): ~1240

9) DETAILED IDENTIFICATION OF MATERIALS TO BE INJECTED, INCLUDING ADDITIVES:

Produced Big Injun brine

Temperature of injected fluid: (°F) 60 Varies with season

10) FILTERS (IF ANY)

10 micron at the well and at the injection plant

11) SPECIFICATIONS FOR CATHODIC PROTECTION AND OTHER CORROSION CONTROL

Corrosion inhibitor

API No.: 4703904844

APPENDIX A (cont.)

12. Casing and Tubing Program

TYPE	Size	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling	INTERVALS: Left in Well	CEMENT: Fill-up (Cu. Ft.)
Conductor							
Fresh Water	8 5/8	New	J-55	20#	722	722	CTS
Coal							
Intermediate 1							
Intermediate 2							
Production	4 1/2	New	J-55	10.5#	2220	2220	210 sks
Tubing	2 7/8	New	J-55		1452	1452	
Liners							

TYPE	Wellbore Diameter	Casing Size	Wall Thickness	Burst Pressure	Cement Type	Cement Yield (cu. ft./sk)	Cement to Surface ? (Y or N)
Conductor							
Fresh Water							
Coal							
Intermediate 1							
Intermediate 2							
Production							
Tubing							
Liners							

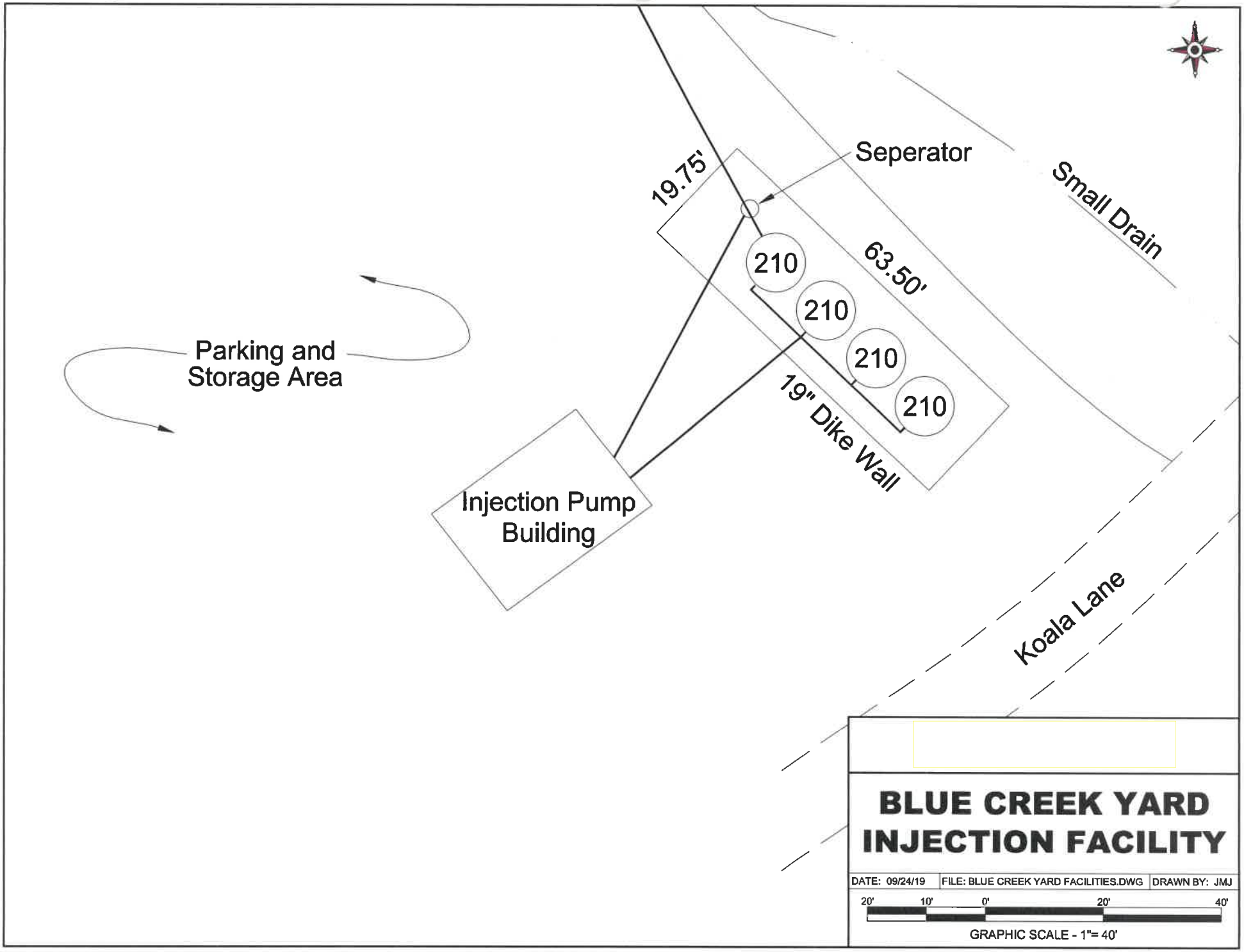
PACKERS	Packer #1	Packer #2	Packer #3	Packer #4
Kind:	R4 Halliburton			
Sizes:	4 1/2" x 2 7/8"			
Depths Set:	1452			

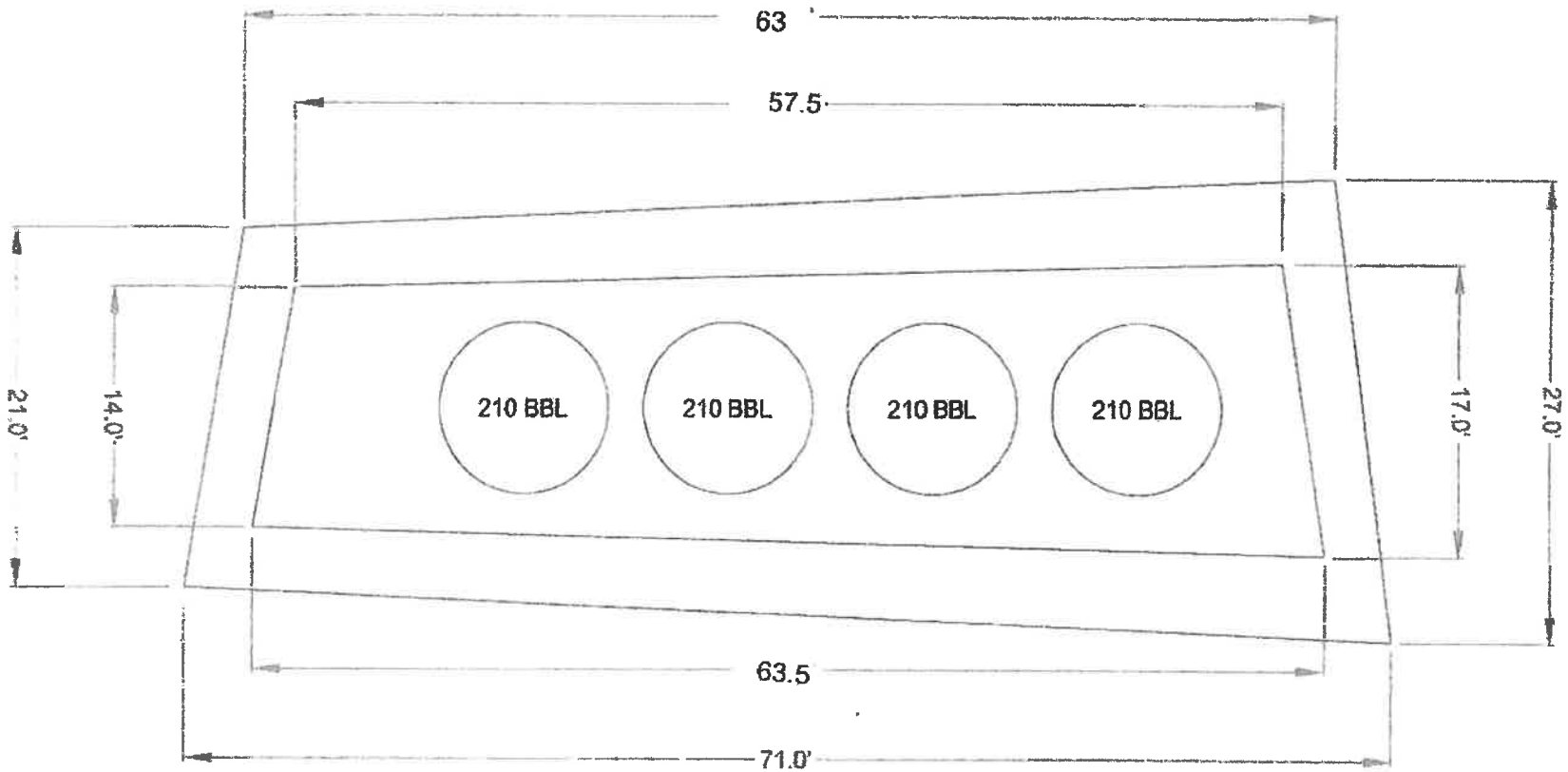
APPENDIX B

UIC Permit No. **2D03904844**

Storage Tank Inventory

Tank ID No.	AST Registration No.	Tank Location		Capacity (barrels)	Type of Fluid Stored	Construction Material (Steel, Plastic, etc.)	Tank Type (Single / Double Wall)	Installation Date	Tank Age (Months)
		Northing	Easting						
1 1651	020-00001651	4259375.88	459832.80	210	1127	Steel	Single	1991	325
2 1652	020-00001652	4259373.93	459835.61	210	Brine	2230	Single	1991	325
3 1653	020-00001653	4259371.40	459938.03	210	Brine	Steel	Single	1991	325
4 1654	020-00001654	4259368.63	459840.77	210	Brine	Steel	Single	1991	325
							Y		
								Y	
						Oil Prod			
						Active			
		4259290.00				4703903946			
				457912.9					


Seperator
19.75'
Small Drain
63.50'
210
210
210
210
Parking and
Storage Area
19" Dike Wall
Injection Pump
Building
Koala Lane
BLUE CREEK YARD
INJECTION FACILITY
DATE: 09/24/19
FILE: BLUE CREEK YARD FACILITIES.DWG
DRAWN BY: JMJ
20'
10'
0'
20'
40'
GRAPHIC SCALE - 1"= 40'



DIKE VOLUMES

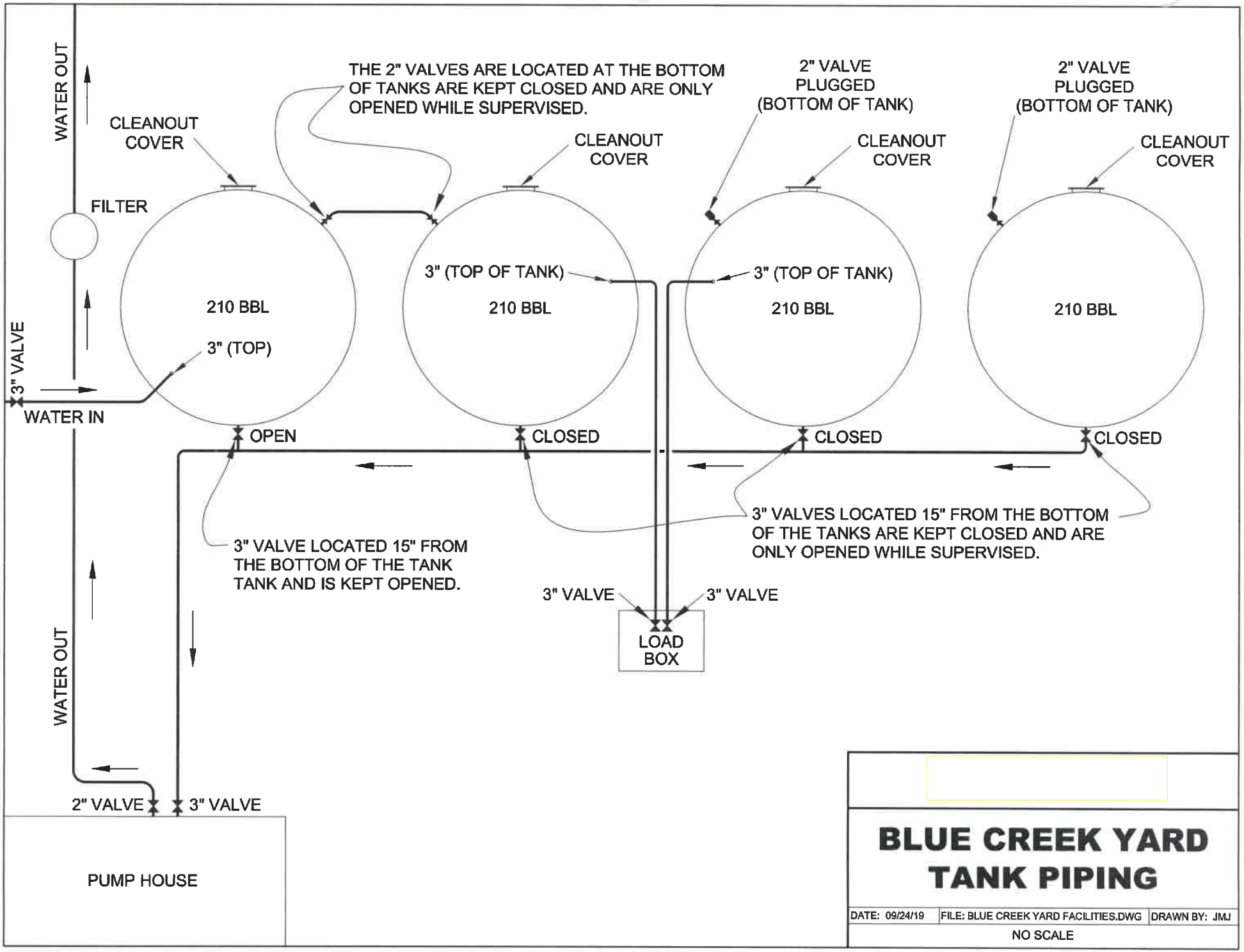
	Dike Width /feet	Dike Width /feet	Dike Depth /inches	Total Volume Gallons	Usable Volume/ Gallons	Percentage of Dike Capacity
INSIDE VOLUME	60.50'	15.50'	19.00"	11107	8317	94.29%
OUTSIDE VOLUME	67.50'	24.00'	19.00"	19188	16397	185.90%
AVERAGE VOLUME	64.00'	19.75'	19.00"	14971	12181	138.10%

BLUE CREEK YARD DIKE CAPACITY

DATE: 09/24/19 | FILE: BLUE CREEK YARD FACILITIES.DWG | DRAWN BY: JMJ

10' 5' 0' 10' 20'

GRAPHIC SCALE - 1"= 10'



BLUE CREEK YARD TANK PIPING

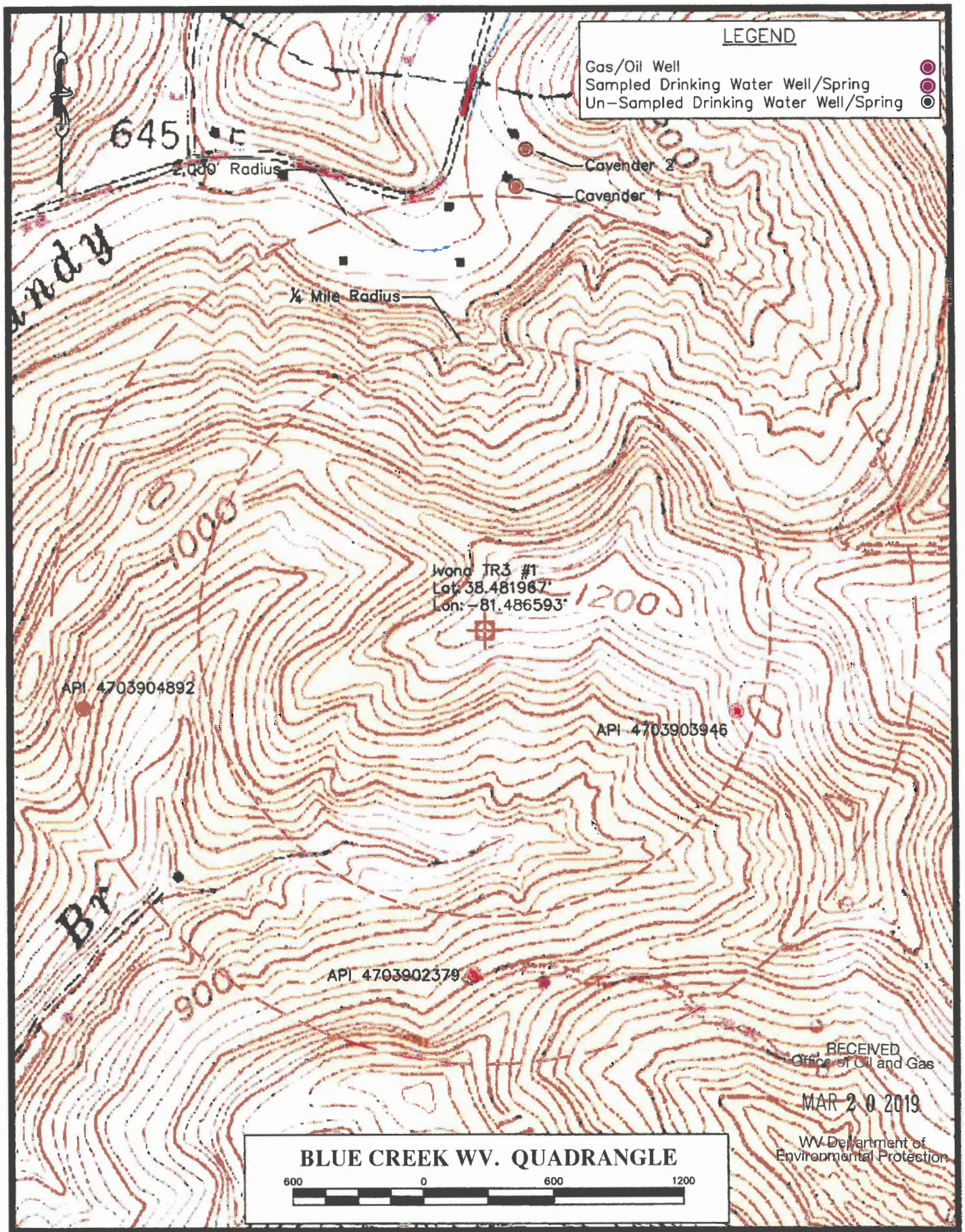
DATE: 09/24/19	FILE: BLUE CREEK YARD FACILITIES.DWG	DRAWN BY: JMJ

NO SCALE

Section 7 - Area of Review

UIC 2D03904844

There were no changes in this map from the previous application



N:\P\2018160\MISCELLANEOUS\IVANA1 QTRMILE-V2.dwg, 3/11/2019 11:41:36 AM, pth, iR-ADV C5535.pc3

KENVIRONS, INC.
FRANKFORT, KENTUCKY

Project:	2018160
Checked By:	BTB
Date:	Sept. 2018
Scale:	As Shown

NYTIS EXPLORATION COMPANY, LLC
IVANA TR3 #1 AOR
KANAWHA COUNTY, WEST VIRGINIA

4703904844

UIC Permit No. **2D03904844**

APPENDIX C
Wells within the Area of Review

	API No.	Well Type	Well Status	Northing	Easting	Surface Elevation	Total Vertical Depth	Penetrate Confining Zone (Y or N)	Penetrate Injection Zone (Y or N)
1	4703903946	Oil Prod	Active	4259290.00	457912.96	1127	2230	Y	Y
2	4703904844	Injector	Active	4259093.58	458555.74	759	1811	Y	Y
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

4703903946

WVGES GEOLOGY UNDERLIES IT ALL
"Pipeline"

Select County: (039) Kanawha
Enter Permit #: 3946
Get Data | Reset

Select datatypes: (Check All)
Location | Production | Plugging
Owner/Completion | Stratigraphy | Sample
Pay/Show/Water | Logs | Btm Hole Loc

Table Descriptions
County Code Translations
Permit-Numbering Series
Usage Notes
Contact Information
Disclaimer
WVGES Main
"Pipeline-Plus" New

WV Geological & Economic Survey:

Well: County = 39 Permit = 3946 Link to all digital records for well

Report Time: Thursday, May 15, 2025 3:58:08 PM

Location Information: View Map

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4703903946	Kanawha	3946	Elk	Blue Creek	Clendenin	38.480951	-81.482533	457912.9	4259290

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4703903946	10/2/1983	Original Loc	Completed	H E & Alta Huffman	2					Quaker State Oil Refining Co.			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G
4703903946	10/2/1983	-/-/-	1127	Ground Level	Blue Ck(Flg Rk)	Big Injun (Price&eq)	Big Injun (Price&eq)	Development Well	Development Well	Oil w/ Gas Show	Rotary	Fractured	2230		2230		

Pay/Show/Water Information:

API	CMP_DT	ACTIVITY	PRODUCT	SECTION	DEPTH_TOP	FM_TOP	DEPTH_BOT	FM_BOT	G_BEF	G_AFT	O_BEF	O_AFT	WATER_QNTY
4703903946	10/2/1983	Water	Salt Water	Vertical			1432						0
4703903946	10/2/1983	Show	Gas	Vertical	2106		2138	Big Injun (Price&eq)	0	12			
4703903946	10/2/1983	Pay	Oil	Vertical	2106		2138	Big Injun (Price&eq)	0	8			

Production Gas Information: (Volumes in Mcf) *** 2024 data for H6A wells only. Other wells are incomplete at this time.**

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_GAS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4703903946	Quaker State Oil Refining Co.	1983	54	11	11	11	0	3	18	0	0	0	0	0	0
4703903946	Quaker State Oil Refining Co.	1984	1,323	97	109	129	94	339	58	83	113	105	75	69	55
4703903946	Quaker State Oil Refining Co.	1985	1,211	90	85	64	82	121	121	118	102	121	92	116	99
4703903946	Quaker State Oil Refining Co.	1986	966	52	43	75	89	107	102	102	109	92	99	92	4
4703903946	Quaker State Oil Refining Co.	1987	435	31	43	33	21	53	58	57	48	38	53	0	0
4703903946	Quaker State Oil Refining Co.	1988	790	67	107	41	73	48	76	59	88	84	13	68	66
4703903946	Quaker State Oil Refining Co.	1989	790	30	58	81	29	47	46	87	89	100	70	69	84
4703903946	Quaker State Oil Refining Co.	1990	666	0	10	11	50	57	69	54	63	103	104	102	43
4703903946	Quaker State Oil Refining Co.	1991	831	39	84	82	76	60	59	71	85	53	57	99	66
4703903946	Quaker State Oil Refining Co.	1992	643	103	100	97	28	49	67	40	17	17	47	40	38
4703903946	Quaker State Oil Refining Co.	1993	966	36	23	21	60	46	57	55	326	232	50	21	39
4703903946	Quaker State Oil Refining Co.	1994	411	27	17	21	28	18	13	0	52	8	84	46	97
4703903946	Peake Energy, Inc.	1995	540	27	45	50	50	48	51	30	84	44	44	14	53
4703903946	Peake Energy, Inc.	1996	632	63	54	61	49	50	48	76	36	42	16	76	61
4703903946	Peake Energy, Inc.	1997	500	74	36	58	49	24	30	49	16	14	52	60	38
4703903946	Peake Energy, Inc.	1998	624	4	46	70	101	73	75	53	59	14	34	55	40
4703903946	Peake Energy, Inc.	1999	636	26	58	69	27	0	3	73	100	120	54	57	49
4703903946	North Coast Energy Eastern	2000	14,621	1,360	1,202	1,389	1,214	1,283	1,025	798	1,389	1,015	1,340	1,356	1,250
4703903946	North Coast Energy Eastern	2001	470	27	29	58	41	34	25	52	54	37	39	49	25
4703903946	North Coast Energy Eastern	2002	340	30	21	12	28	65	33	73	66	12	0	0	0
4703903946	North Coast Energy Eastern	2003	280	0	0	0	0	49	23	22	38	16	26	44	62
4703903946	North Coast Energy Eastern	2004	411	20	22	42	2	54	28	59	32	35	51	41	25
4703903946	North Coast Energy Eastern	2005	322	25	44	38	37	44	33	33	50	18	0	0	0
4703903946	North Coast Energy Eastern	2006	395	0	1	0	2	81	93	47	46	44	28	30	23
4703903946	EXCO - North Coast Energy Eastern, Inc.	2007	222	29	6	17	21	22	29	20	2	29	17	19	11
4703903946	EXCO Resources (WV), Inc.	2008	231	10	3	38	18	15	30	13	33	21	16	24	10
4703903946	EXCO Resources (WV), Inc.	2009	195	22	10	19	22	15	15	15	15	17	7	13	25
4703903946	EXCO Resources (WV), Inc.	2010	138	5	0	0	23	25	3	19	26	14	11	11	1
4703903946	EXCO Resources (PA), LLC	2011	285	0	0	0	7	49	15	49	38	26	40	22	39
4703903946	EXCO Resources (PA), LLC	2012	241	33	18	14	31	13	9	11	11	37	22	25	17
4703903946	EXCO Resources (PA), LLC	2013	158	0	5	9	34	18	0	0	36	9	0	3	44
4703903946	EXCO Resources (PA), LLC	2014	268	36	11	17	17	8	14	38	7	54	30	25	11
4703903946	EXCO Resources (PA), LLC	2015	81	29	15	16	3	18	0	0	0	0	0	0	0
4703903946	Nytis Exploration Co., LLC	2016	1	0	0	0	0	0	1	0	0	0	0	0	0
4703903946	Nytis Exploration Co., LLC	2017	0	0	0	0	0	0	0	0	0	0	0	0	0
4703903946	Nytis Exploration Co., LLC	2018	0	0	0	0	0	0	0	0	0	0	0	0	0
4703903946	Nytis Exploration Co., LLC	2019	0	0	0	0	0	0	0	0	0	0	0	0	0
4703903946	Diversified Production, LLC	2020	0	0	0	0	0	0	0	0	0	0	0	0	0
4703903946	Diversified Production, LLC	2021	0	0	0	0	0	0	0	0	0	0	0	0	0
4703903946	Diversified Production, LLC	2022	0	0	0	0	0	0	0	0	0	0	0	0	0
4703903946	Diversified Production, LLC	2023	0	0	0	0	0	0	0	0	0	0	0	0	0

Production Oil Information: (Volumes in Bbl) ** some operators may have reported NGL under Oil *** 2024 data for H6A wells only. Other wells are incomplete at this time.**

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_OIL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4703903946	Quaker State Oil Refining Co.	1983	335	4	4	4	5	6	5	3	2	3	3	65	232
4703903946	Quaker State Oil Refining Co.	1984	641	84	67	64	86	80	45	41	0	75	36	34	32
4703903946	Quaker State Oil Refining Co.	1985	530	58	53	59	54	46	46	46	44	46	39	29	10
4703903946	Quaker State Oil Refining Co.	1986	413	55	41	41	35	36	30	30	31	31	29	24	30
4703903946	Quaker State Oil Refining Co.	1987	137	13	0	26	17	16	15	13	12	13	12	0	0
4703903946	Quaker State Oil Refining Co.	1988	253	22	23	5	40	31	26	22	19	21	17	2	25
4703903946	Quaker State Oil Refining Co.	1989	164	3	9	14	26	21	22	18	17	17	17	0	0
4703903946	Quaker State Oil Refining Co.	1990	184	0	24	22	19	10	21	17	3	13	17	21	17
4703903946	Quaker State Oil Refining Co.	1991	191	18	17	17	14	17	8	13	1	24	26	25	11
4703903946	Quaker State Oil Refining Co.	1992	227	24	16	0	38	29	16	18	17	19	15	17	18
4703903946	Quaker State Oil Refining Co.	1993	178	17	15	15	17	13	14	14	13	16	14	15	15
4703903946	Quaker State Oil Refining Co.	1994	148	14	13	14	2	0	19	0	22	19	18	14	13
4703903946	Peake Energy, Inc.	1995	98	0	0	0	0	98	0	0	0	0	0	0	0
4703903946	Peake Energy, Inc.	1996	124	16	15	11	13	8	7	12	5	7	1	13	16
4703903946	Peake Energy, Inc.	1997	84	0	0	0	84	0	0	0	0	0	0	0	0
4703903946	Peake Energy, Inc.	1998	162	0	0	0	86	0	0	0	0	76	0	0	0
4703903946	Peake Energy, Inc.	1999	81	0	0	0	0	0	0	0	0	81	0	0	0
4703903946	North Coast Energy Eastern	2000	83	0	0	0	0	0	83	0	0	0	0	0	0
4703903946	North Coast Energy Eastern	2001	168	0	0	86	0	0	0	0	0	82	0	0	0
4703903946	North Coast Energy Eastern	2002	86	0	0	0	0	0	0	86	0	0	0	0	0
4703903946	North Coast Energy Eastern	2003	85	0	0	0	0	0	0	0	85	0	0	0	0
4703903946	North Coast Energy Eastern	2004	82	0	0	0	0	82	0	0	0	0	0	0	0
4703903946	North Coast Energy Eastern	2005	159	0	0	0	159	0	0	0	0	0	0	0	0
4703903946	North Coast Energy Eastern	2006	84	0	0	0	0	0	0	84	0	0	0	0	0
4703903946	EXCO - North Coast Energy Eastern, Inc.	2007	121	0	0	0	0	0	0	0	0	0	121	0	0
4703903946	EXCO Resources (WV), Inc.	2008	45	0	0	0	0	0	45	0	0	0	0	0	0
4703903946	EXCO Resources (WV), Inc.	2009	91	0	0	0	91	0	0	0	0	0	0	0	0
4703903946	EXCO Resources (WV), Inc.	2010	90	0	0	0	0	0	90	0	0	0	0	0	0
4703903946	EXCO Resources (PA), LLC	2011	44	0	0	0	0	0	0	0	0	0	0	0	44
4703903946	EXCO Resources (PA), LLC	2012	0	0	0	0	0	0	0	0	0	0	0	0	0
4703903946	EXCO Resources (PA), LLC	2013	0	0	0	0	0	0	0	0	0	0	0	0	0
4703903946	EXCO Resources (PA), LLC	2014	96	0	0	0	0	0	0	0	96	0	0	0	0
4703903946	EXCO Resources (PA), LLC	2015	0	0	0	0	0	0	0	0	0	0	0	0	0
4703903946	Nytis Exploration Co., LLC	2016	0												
4703903946	Nytis Exploration Co., LLC	2017	0	0											
4703903946	Nytis Exploration Co., LLC	2018	0	0	0	0	0	0	0	0	0	0	0	0	0
4703903946	Nytis Exploration Co., LLC	2019	0	0	0	0	0	0	0	0	0	0	0	0	0
4703903946	Diversified Production, LLC	2020	0	0	0	0	0	0	0	0	0	0	0	0	0
4703903946	Diversified Production, LLC	2021	0	0	0	0	0	0	0	0	0	0	0	0	0

4703903946	Diversified Production, LLC	2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4703903946	Diversified Production, LLC	2023	0	0	0	0	0	0	0	0	0	0	0	0	0	0

4703903946

Production NGL Information: (Volumes in Bbl) ** some operators may have reported NGL under Oil *** 2024 data for H6A wells only. Other wells are incomplete at this time.**

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_NGL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4703903946	EXCO Resources (PA), LLC	2013	0	0	0	0	0	0	0	0	0	0	0	0	0
4703903946	EXCO Resources (PA), LLC	2014	0	0	0	0	0	0	0	0	0	0	0	0	0
4703903946	EXCO Resources (PA), LLC	2015	0	0	0	0	0	0	0	0	0	0	0	0	0
4703903946	Nytis Exploration Co., LLC	2016	0												
4703903946	Nytis Exploration Co., LLC	2018	0	0	0	0	0	0	0	0	0	0	0	0	0
4703903946	Nytis Exploration Co., LLC	2019	0	0	0	0	0	0	0	0	0	0	0	0	0
4703903946	Diversified Production, LLC	2020	0	0	0	0	0	0	0	0	0	0	0	0	0
4703903946	Diversified Production, LLC	2021	0	0	0	0	0	0	0	0	0	0	0	0	0
4703903946	Diversified Production, LLC	2022	0	0	0	0	0	0	0	0	0	0	0	0	0
4703903946	Diversified Production, LLC	2023	0	0	0	0	0	0	0	0	0	0	0	0	0

Production Water Information: (Volumes in Gallons) *** 2024 data for H6A wells only. Other wells are incomplete at this time.**

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_WTR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4703903946	Nytis Exploration Co., LLC	2016	0												
4703903946	Nytis Exploration Co., LLC	2018	0	0	0	0	0	0	0	0	0	0	0	0	0
4703903946	Nytis Exploration Co., LLC	2019	0	0	0	0	0	0	0	0	0	0	0	0	0
4703903946	Diversified Production, LLC	2020	0	0	0	0	0	0	0	0	0	0	0	0	0
4703903946	Diversified Production, LLC	2021	0	0	0	0	0	0	0	0	0	0	0	0	0
4703903946	Diversified Production, LLC	2022	0	0	0	0	0	0	0	0	0	0	0	0	0
4703903946	Diversified Production, LLC	2023	0	0	0	0	0	0	0	0	0	0	0	0	0

Stratigraphy Information:

API	SUFFIX	FM	FM_QUALITY	DEPTH_TOP	DEPTH_QUALITY	THICKNESS	THICKNESS_QUALITY	ELEV	DATUM
4703903946	Original Loc	unidentified coal	Electric Log	816		1		1127	Ground Level
4703903946	Original Loc	Salt Sands (undiff)	Well Record	1432	Reasonable	352	Reasonable	1127	Ground Level
4703903946	Original Loc	Miss/Penn boundary	Electric Log	1783				1127	Ground Level
4703903946	Original Loc	Maxton	Well Record	1870	Reasonable	51	Reasonable	1127	Ground Level
4703903946	Original Loc	Little Lime	Well Record	1921	Reasonable	33	Reasonable	1127	Ground Level
4703903946	Original Loc	Pencil Cave	Well Record	1954	Reasonable	5	Reasonable	1127	Ground Level
4703903946	Original Loc	Greenbrier Group	Well Record	1959	Reasonable	147	Reasonable	1127	Ground Level
4703903946	Original Loc	Big Lime	Well Record	1959	Reasonable	147	Reasonable	1127	Ground Level
4703903946	Original Loc	Big Injun (Price&eq)	Well Record	2106	Reasonable	34	Reasonable	1127	Ground Level

Wireline (E-Log) Information:

* Scanned/Raster Log Information:

API	STATUS	LOG_TOP	LOG_BOT	DEEPEST_FML	LOGS_AVAIL	SCAN	GR_TOP	GR_BOT	D_TOP	D_BOT	N_TOP	N_BOT	I_TOP	I_BOT	T_TOP	T_BOT	S_TOP	S_BOT	O_TOP	O_BOT	INCH2	INC
4703903946	Regular Entry	10	2228		G,D,C,I,*	Y	10	2222	577	2228			1900	2225					565	2228	Y	Y

Scanned/Raster Comment: *logs: caliper,CCL,perforation,perf.depth.different scale on #147A

* There is no Digitized/LAS Log data for this well

Downloadable Log Images/Data: We advise you to save the scanned log or digitized log file(s) to your PC for viewing. To do so, right-click the file of interest and select the save option. Then you can direct the file to a location of your choice. Please note the scanned log images vary in size and some may take several minutes to download.

Scanned/Raster Logs

FILENAME
4703903946gcd.tif
4703903946gpo.tif
4703903946i.tif

Quick Reference Guide for Log File Names For more info about WVGES scanned logs click here

geologic log types:
- d density (includes bulk density, compensated density, density, density porosity, grain density, matrix density, etc.)
- e photoelectric adsorption (PE or Pe, etc.)
- g gamma ray
- i induction (includes dual induction, medium induction, deep induction, etc.)
- l laterolog
- m dipmeter
- n neutron (includes neutron porosity, sidewall neutron--SWN, etc.)
- o other[1]
- s sonic or velocity
- t temperature (includes borehole temperature, BHT, differential temperature, etc.)
- z spontaneous potential or potential

mechanical log types:
- b cement bond
- c caliper
- o other[1]
- p perforation depth control or perforate

[1]other logs may include, but are not limited to, such curves as audio, bit size, CCL--casing collar locator, continuous meter, directional survey, gas detector, guard, NCTL--Nuclear Cement Top Locator, radioactive tracer, tension

There is no Plugging data for this well

There is no Sample data for this well

Reviewed TMG
Recorded

State of West Virginia
DEPARTMENT OF ENERGY
Division of Oil and Gas

4703903946

Well Operator's Report of Well Work

Farm name: CARTE, JAMES A. & GERRY L Operator Well No.: IVANA CO. 3 (1)

LOCATION: Elevation: 1150.00 Quadrangle: BLUE CREEK

District: ELK County: KANAWHA
Latitude: 6540 Feet South of 38 Deg. 30Min. 0 Sec.
Longitude 8210 Feet West of 81 Deg. 27 Min. 30 Sec.

Company: QUAKER STATE CORPORATION
P.O. BOX 189/1226 PUTNAM HOWE
BELPRE, OH 45714-0189

Agent: FRANK R. ROTUNDA

Inspector: CARLOS W. HIVELY
Permit Issued: 10/15/91
Well work Commenced: 12/9/91
Well work Completed: 1/22/92
Verbal Plugging
Permission granted on: _____
Rotary X Cable _____ Rig
Total Depth (feet) 2264
Fresh water depths (ft) 450'

Salt water depths (ft) 1340'

Is coal being mined in area (Y/N)? N
Coal Depths (ft): N/A

Casing & Tubing	Used in Drilling	Left in Well	Cement Fill Up Cu. Ft.
Size			
8 5/8	722	722	CTS
4 1/2	2220	2220	210 SX

RECEIVED
Office of Oil & Gas
FEB 10 92
WV Division of Environmental Protection

OPEN FLOW DATA

Producing formation Big Injun Pay zone depth (ft) 2120 - 2198 1660 - 1800
Gas: Initial open flow N/A MCF/d Oil: Initial open flow N/A Bbl/d
Final open flow N/A MCF/d Final open flow N/A Bbl/d
Time of open flow between initial and final tests N/A Hours
Static rock Pressure N/A psig (surface pressure) after N/A Hours

Second producing formation _____ Pay zone depth (ft) _____
Gas: Initial open flow _____ MCF/d Oil: Initial open flow _____ Bbl/d
Final open flow _____ MCF/d Final open flow _____ Bbl/d
Time of open flow between initial and final tests _____ Hours
Static rock Pressure _____ psig (surface pressure) after _____ Hours

NOTE: ON BACK OF THIS FORM PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

Frank R Rotunda
For: QUAKER STATE CORPORATION

By: Frank Rotunda
Date: 1/24/92

RECEIVED
Office of Oil and Gas
MAR 20 2019
WV Department of Environmental Protection

FEB 2 9 RECD

4703903946

Treatment:

Perf: 2120' - 2150' with 31 holes
Frac: 520 bbl fluid and 200 SX 10/20 sand
Avg Rate 36 BPM
Avg PSI 1381

Perf: 1660' - 1800' with 121 holes
Frac: 758 bbls fluid and 500 SX 20/40 sand
Avg. Rate: 29 BPM
Avg. Psi: 2647

LOG:	FEET:
Sand/shale	0-1340
Salt sands	1340-1930
Little lime	1930-1964
Pencil cave	1964-1970
Big lime	1970-2110
Big injun	2110-2152
Silt/shale	2152-2264

4703903946

RECEIVED
DEC 30 1983
OIL & GAS DIVISION
DEPT. OF MINES

IV-35
(Rev 8-81)

State of West Virginia
Department of Mines
Oil and Gas Division

Date December 27, 1983
Operator's
Well No. 2
Farm B. TICKLE
API No. 47 - 039 - 3946

RECEIVED
FEB 2 - 1984
OIL & GAS DIVISION
DEPT. OF MINES

WELL OPERATOR'S REPORT OF DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

WELL TYPE: Oil XX/ Gas ___/ Liquid Injection ___/ Waste Disposal ___
(If "Gas," Production ___/ Underground Storage ___/ Deep ___/ Shallow ___/)

LOCATION: Elevation: 1127 Watershed Little Sandy Creek of Elk River
District: Elk County Kanawha Quadrangle Blue Creek

COMPANY QUAKER STATE OIL REFG. CORP.
ADDRESS P.O.Box 1327, Parkersburg, WV 26102-1327
DESIGNATED AGENT Carl J. Carlson
ADDRESS same as above
SURFACE OWNER H.E. Huffman
ADDRESS 4438 W. Washington St., Charleston, WV
MINERAL RIGHTS OWNER E. A. Tickle hrs.
ADDRESS
OIL AND GAS INSPECTOR FOR THIS WORK C. Duckworth ADDRESS Davison Rt. Box 107 Gassaway, WV 26624
PERMIT ISSUED 3/10/83
DRILLING COMMENCED 9/28/83
DRILLING COMPLETED 10/2/83
IF APPLICABLE: PLUGGING OF DRY HOLE ON CONTINUOUS PROGRESSION FROM DRILLING OR REWORKING. VERBAL PERMISSION OBTAINED ON

Casing & Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft.
Size 20-16 Cond.			
13-10"			
9 5/8			
8 5/8	566	566	cts
7			
5 1/2			
4 1/2	2193	2193	150 sx
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Big Injun Depth 2106 - 2140 feet
Depth of completed well 2230 feet Rotary XX / Cable Tools ___
Water strata depth: Fresh na feet; Salt 1432 feet
Coal seam depths: na Is coal being mined in the area? no

OPEN FLOW DATA
Producing formation Big Injun Pay zone depth 2106 - 38 feet
Gas: Initial open flow ___ Mcf/d Oil: Initial open flow ___ Bbl/d
Oil Final open flow 12 Mcf/d Final open flow 8 Bbl/d
Time of open flow between initial and final tests ___ hours
Static rock pressure ___ psig (surface measurement) after ___ hours shut in
(If applicable due to multiple completion--)
Second producing formation ___ Pay zone depth ___ feet
Gas: Initial open flow ___ Mcf/d Oil: Initial open flow ___ Bbl/d
Final open flow ___ Mcf/d Oil: Final open flow ___ Bbl/d
Time of open flow between initial and final tests ___ hours
Static rock pressure ___ psig (surface measurement) after ___ hours shut in

KAN 3946

(Continue on reverse side)

FORM IV-35
(REVERSE)

4703903946

DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC.

Perforated from 2106 - 38 with 33 shots.
Frac'd with 390 bbl. water and 160 sx of 20/40 sand.
Fm. breakdown - 3800 psi
ISIP - 850 psi

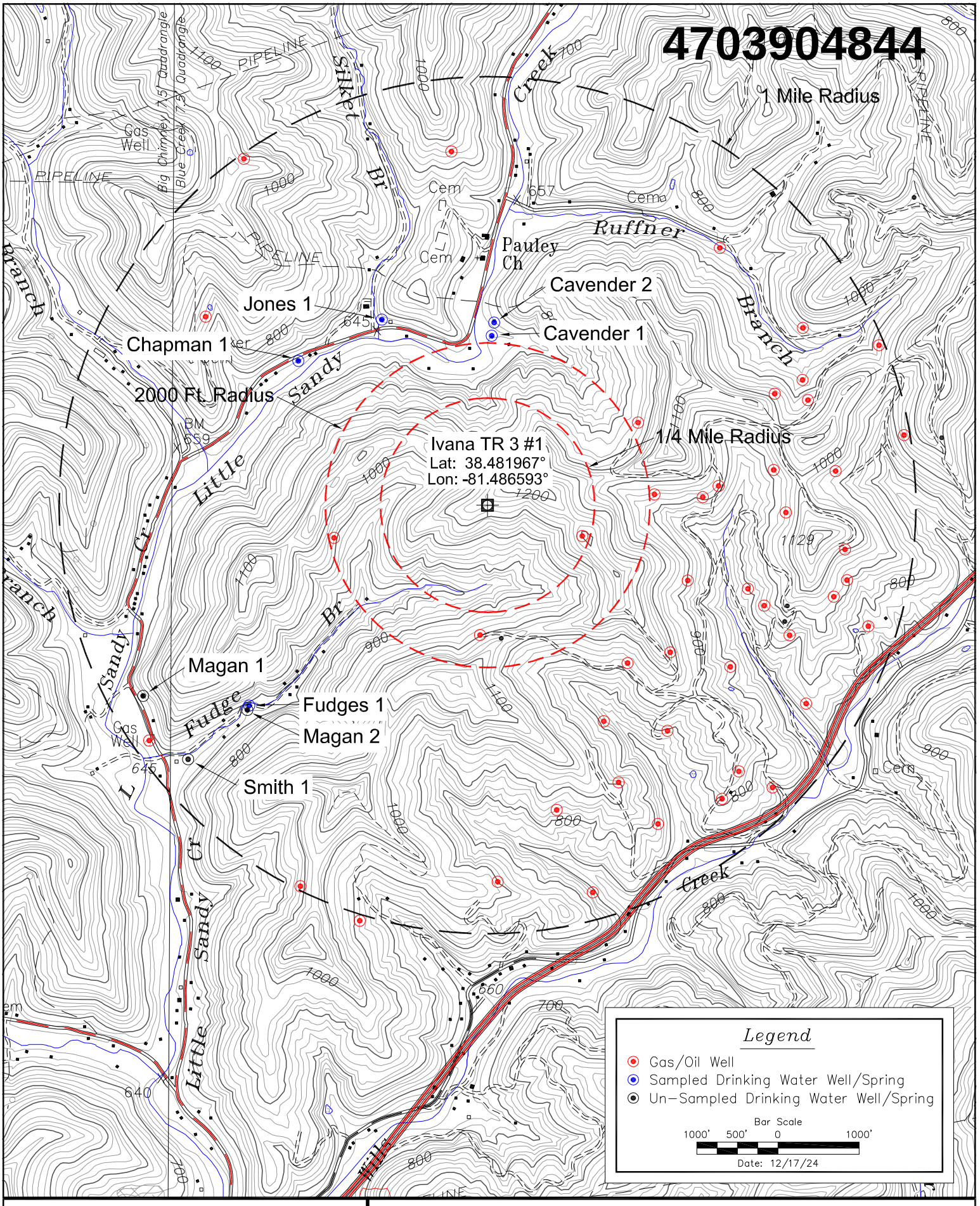
WELL LOG

FORMATION COLOR HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas
Shale & Sandstone	0	520	
Sandstone	520	558	
Shale	558	634	
Sandstone & Shale	634	1034	
Shale & Siltstone	1034	1432	
Salt Sand	1432	1784	
Shale & Siltstone	1784	1870	
Sandstone	1870	1921	
Little Lime	1921	1954	
Pencil Cave	1954	1959	
Big Lime	1959	2106	
Big Injun	2106	2140	
Siltstone	2140	2239 DTD 2230 LTD	

(Attach separate sheets as necessary)

QUAKER STATE OIL REFINING CORPORATION
Well Operator
By: Michael C. Brannock - Sr. Geol.
Date: December 27, 1983

Note: Regulation 2.02(i) provides as follows:
"The term 'log' or 'well log' shall mean a systematic detailed geological record of all formations, including



DR CONSULTING SERVICES
262 Ashbrooke Hill, Ashland KY
Phone: 606 922 0323

IVANA TR3 #1
Kanawha County, West Virginia

4703904844

UIC Section 7 Water Wells and Springs Sampling Summary Ivana TR3 #1 UIC2D0394844

Injection Well	Well Name	Lat	Long	Estimated Distance (miles)	Sampled	Notes
Ivana TR3 #1	Cavender 1	38.488048	-81.485992	0.63	Y	Well at house. Sampled from spigot
	Cavender 2	38.487579	-81.486073	0.61	Y	Open pit well with cover. Very clear/clean
	Cavender 3	38.487795	-81.485746	0.63	Y	Pond near house
	Jones 1	38.488290	-81.490943	0.53	Y	Well behind house, sampled from wash sink in well house.
	Jones 2	38.488305	-81.491025	0.53	Y	Open spring. Had leaves.
	Chapman 1	38.486838	-81.494510	0.42	Y	Sampled from spigot in basement. Formerly A Sams 1
	Smith 1	38.473324	-81.498864	0.61	N	House was vacant. Per neighbor the owner had past away.
	Magan 1	38.475453	-81.501040	0.57	N	Well at house. Due to serve drought owner did not the well sampled Open
	M agan 2	38.474987	-81.496585	0.45	N	pit well, no cover. Due to serve drought owner did not want the well sampled.
	Fudges 1	38.475018	-81.496635	0.48	N	Due to serve drought owner did not want the well sampled

4703904844

APPENDIX E

Water Sources

Operator: Diversified Gas & Oil Year 2024 UIC Permit # UIC2D0394844

		Source #1	Source #2	Source #3	Source #4
Water Source Name		Cavender 1 (well)	Cavender 2(dug well)	Cavender 3 (pond)	Chapman 1
Northing		4260021.51	4260079.06	4260050.9	4259948.78
Easting		457612.41	457621.61	457636.72	456871.81
Parameter	**Units**				
Chloride	mg/L	18.80	7.31	5.34	8.31
Bromide	mg/L	Not Detected	Not Detected	Not Detected	Not Detected
Strontium	mg/L	0.0343	0.0719	0.305	0.0658
Barium	mg/L	0.0195	0.0754	0.126	0.0216
Iron	mg/L	1.05	0.0959	0.353	Not Detected
Total Dissolved Solids (TDS)	mg/L	300	120	84	88
pH	SU	8.04	5.66	6.64	7.48
Manganese	mg/L	0.0443	0.0155	0.0588	0.00275
Aluminum	mg/L	0.708	0.0636	Not Detected	0.0282
Arsenic	mg/L	Not Detected	Not Detected	Not Detected	Not Detected
Sodium	mg/L	2.09	2.82	93.6	6.99
Calcium	mg/L	5.30	11.2	13.8	12.8
Sulfate	mg/L	0.400	8.62	8.51	24.0
MBAS	mg/L	Not Detected	Not Detected	Not Detected	Not Detected

4703904844

APPENDIX E

Water Sources

Operator: Diversified Gas & Oil Year 2024 UIC Permit # UIC2D0394844

		Source #5	Source #6	Source #7	Source #8
Water Source Name		Jones 1(well)	Jones 2 (spring)		
Northing		4260108.23	4260109.94		
Easting		457183.77	457176.27		
Parameter	**Units**				
Chloride	mg/L	2.84	0.890		
Bromide	mg/L	Not Detected	Not Detected		
Strontium	mg/L	0.191	0.167		
Barium	mg/L	0.0713	0.0217		
Iron	mg/L	Not Detected	Not Detected		
Total Dissolved Solids (TDS)	mg/L	230	330		
pH	SU	8.28	8.12		
Manganese	mg/L	0.0102	0.0139		
Aluminum	mg/L	Not Detected	0.114		
Arsenic	mg/L	Not Detected	Not Detected		
Sodium	mg/L	96.1	113		
Calcium	mg/L	4.80	24.2		
Sulfate	mg/L	0.878	8.00		
MBAS	mg/L	Not Detected	Not Detected		

4703904844

Domestic Water Analyses

17-Dec-2024

Lisa Raffle
Diversified Gas & Oil Corporation
PO Box 6070
Charleston, WV 25362

Re: **UIC Water Well** Work Order: **24120095**

Dear Lisa,

ALS Environmental received 3 samples on 04-Dec-2024 01:36 PM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - South Charleston and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 11.

If you have any questions regarding this report, please feel free to contact me:

ADDRESS: 1740 Union Carbide Drive, South Charleston, WV, USA
PHONE: +1 (304) 356-3168 FAX: +1 (304) 205-6262

Sincerely,

Rebecca Kiser

Electronically approved by: Rebecca Kiser

Rebecca Kiser
Project Manager

Report of Laboratory Analysis

Certificate No: WV: 385

ALS Group, USA

Date: 17-Dec-24

Client: Diversified Gas & Oil Corporation
Project: UIC Water Well
Work Order: **24120095**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
24120095-01	Chapman 1 Grab	Water		12/4/2024 11:05	12/4/2024 13:36	☐
24120095-01	Chapman 1 Grab	Water		12/4/2024 11:05	12/5/2024 08:00	☐
24120095-02	Jones 1 Grab	Water		12/4/2024 11:32	12/4/2024 13:36	☐
24120095-02	Jones 1 Grab	Water		12/4/2024 11:32	12/5/2024 08:00	☐
24120095-03	Jones 2 (Spring) Grab	Water		12/4/2024 11:28	12/4/2024 13:36	☐
24120095-03	Jones 2 (Spring) Grab	Water		12/4/2024 11:28	12/5/2024 08:00	☐

Client:	Diversified Gas & Oil Corporation
Project:	UIC Water Well
Work Order:	24120095

Case Narrative

Samples for the above noted Work Order were received on 12/04/2024. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

Samples were analyzed according to the analytical methodology previously transmitted in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. Sample association for the reported quality control is located at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, units, and acronyms utilized in reporting. A copy of the laboratory's scope of accreditation is available upon request.

With the following exceptions, all sample analyses achieved analytical criteria.

Wet Chemistry:
Batch R415626, Method A4500-H B-11, Samples 24120095-01B,-02B,-03B: pH was received and analyzed outside of the holding time at the request of the client. Results should be considered estimated.

Client: Diversified Gas & Oil Corporation
Project: UIC Water Well
WorkOrder: **24120095**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Analyte accreditation is not offered
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
mg MBAS/L	Milligrams Methylene Blue Active Substances per Liter
mg/L	Milligrams per Liter
s.u.	Standard Units

ALS Group, USA

Date: *17-Dec-24*

Client: Diversified Gas & Oil Corporation
Project: UIC Water Well
Sample ID: Chapman 1 Grab
Collection Date: 12/4/2024 11:05 AM

Work Order: 24120095
Lab ID: 24120095-01
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PH (LABORATORY)		Method: **A4500-H B-11**					Analyst: **SAM**
pH (laboratory)	**7.48**	H	**0**	**0.020**	**s.u.**	1	12/4/2024 17:36
Temperature	**20.6**	Hn	**0**		**s.u.**	1	12/4/2024 17:36

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *17-Dec-24*

Client: Diversified Gas & Oil Corporation
Project: UIC Water Well
Sample ID: Jones 1 Grab
Collection Date: 12/4/2024 11:32 AM

Work Order: 24120095
Lab ID: 24120095-02
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PH (LABORATORY)		Method: **A4500-H B-11**					Analyst: **SAM**
pH (laboratory)	**8.28**	H	**0**	**0.020**	**s.u.**	1	12/4/2024 17:36
Temperature	**20.3**	Hn	**0**		**s.u.**	1	12/4/2024 17:36

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *17-Dec-24*

Client: Diversified Gas & Oil Corporation
Project: UIC Water Well
Sample ID: Jones 2 (Spring) Grab
Collection Date: 12/4/2024 11:28 AM

Work Order: 24120095
Lab ID: 24120095-03
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PH (LABORATORY)		Method: **A4500-H B-11**					Analyst: **SAM**
pH (laboratory)	**8.12**	H	**0**	**0.020**	**s.u.**	1	12/4/2024 17:36
Temperature	**20.7**	Hn	**0**		**s.u.**	1	12/4/2024 17:36

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 17-Dec-24

Client: Diversified Gas & Oil Corporation

Work Order: 24120095

Project: UIC Water Well

QC BATCH REPORT

Batch ID: **R415626** Instrument ID **STC-WC** Method: **A4500-H B-11**

LCS Sample ID: **LCS-R415626-R415626** Units: **s.u.** Analysis Date: **12/4/2024 05:36 PM**

Client ID: Run ID: **STC-WC_241204F** SeqNo: **11291895** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH (laboratory)	3.95	0	0.020	4	0	98.8	90-110	0			

DUP Sample ID: **24120095-01B DUP** Units: **s.u.** Analysis Date: **12/4/2024 05:36 PM**

Client ID: **Chapman 1 Grab** Run ID: **STC-WC_241204F** SeqNo: **11291897** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH (laboratory)	7.5	0	0.020	0	0	0	0-0	7.48	0.267	20	H
Temperature	20.5	0	0	0	0	0		20.6	0.487		H

The following samples were analyzed in this batch: 24120095-01B 24120095-02B 24120095-03B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Chain of Custody Form

☒ ALS
1740 Union Carbide Drive
South Charleston, WV 25303
(Tel) 304.356.3168
(Fax) 304.205.6262

☐ ALS
3352 128th Avenue
Holland, Michigan 49424
(Tel) 616.399.6070
(Fax) 616.399.6185

Page ____ of ____

15135

ALS Project Manager: | ALS Work Order #:

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	UIC Water Wells	A	AL, As, Ba, Ca, Fe, Mn, Na, Sr
Work Order		Project Number		B	pH
Company Name	Diversified Gas & Oil Corp.	Bill To Company		C	Br, Cl, SO4, TDS, MBAS
Send Report To	Lisa Raffle & Jeff Burke	Invoice Attn.		D	
Address		Address		E	
				F	
City/State/Zip		City/State/Zip		G	
Phone	724-579-2320	Phone		H	
Fax		Fax		I	
e-Mail Address	lraffle@dgoc.com/jeffersonburke123@gmail.com			J	

No.	Sample Description	Comp / Grab	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	Chapman 1	Grab	12/4/24	11:05AM	water		3	X	X	X								
2	Jones 1	Grab	12/4/24	11:32AM	water		3	X	X	X								
3	Jones 2 (Spring)	Grab	12/4/24	15:28PM	water		3	X	X	X								
4																		
5																		
6																		
7																		
8																		
9																		
10																		

24120095

DIVERSIFIED: Diversified Gas & Oil Corporation
Project: UIC Water Well

Sampler(s): Please Print & Sign: Jeff Burke & Colgh Roberts Jeff Burke

Shipment Method:

Turnaround Time in Business Days (BD): ☐ Other ____ ☐ 10 BD(STD ☐ 5 BD ☐ 3 BD ☐ 2 BD ☐ 1 BD

Results Due Date:

Relinquished by:	Date:	Time:	Received by:	Temp:	Notes:
Jeff Burke	12/4/24	1135PM	Donald Burdette	ALSTC 26°	
Donald Burdette	12/4/24	1336	Michelle Hoh		
Relinquished by:	Date:	Time:	Received by:	Temp:	QC Package: (Check Box Below)
Relinquished by:	Date:	Time:	Received by (Laboratory):		Level II: Standard QC
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):		Level III: Standard QC + Raw Data Level IV: SW846 Methods/CLP Other:

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS

ALS Environmental

1740 Union Carbide Drive
South Charleston, WV 25303

Sample Receiving Checklist

Received by:	MLH
Date/Time:	12.4.24 1336
Carrier Name:	Client
Shipping container/cooler in good condition?	(Yes) / No / Not Present
Custody seals intact on shipping container/cooler?	Yes / No / (Not Present)
Custody seals intact on sample bottles?	Yes / No / (Not Present)
Chain of Custody present?	(Yes) / No
COC signed when relinquished and received?	(Yes) / No
COC agrees with sample labels?	(Yes) / No
Samples in proper container/bottle?	(Yes) / No
Sample containers intact?	(Yes) / No
Sufficient sample volume for indicated test?	(Yes) / No
All samples received within holding time?	(Yes) / No
All sample temperatures verified to be in compliance?	(Yes) / No
Temperature(s) (°C):	4.6°C
Thermometer(s):	IR Gun
Sample(s) received on ice?	(Yes) / No
Matrix/Matrices:	Water
Cooler(s)/Kit(s):	
Date/Time sample(s) sent to storage:	
Trip Blanks included? (for volatile analysis only)	Yes / (No) / N/A
Water – VOA vials have zero headspace?	Yes / No / (No Vials)
Water – pH acceptable upon receipt?	Yes / No / (N/A)
pH strip lot #:	
pH adjusted (note adjustments below)?	Yes / No / (N/A)
pH adjusted by:	

Login Notes:

24120095

DIVERSIFIED: Diversified Gas & Oil Corporation
Project: UIC Water Well

QA Control Number: Chklst Rev.03 11/4/2021

17-Dec-2024

Lisa Raffle
Diversified Gas & Oil Corporation
PO Box 6070
Charleston, WV 25362

Re: **UIC Water Well** Work Order: **24120095**

Dear Lisa,

ALS Environmental received 3 samples on 05-Dec-2024 for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 16.

If you have any questions regarding this report, please feel free to contact me:

ADDRESS: 3352 128th Avenue, Holland, MI, USA
PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

Rebecca Kiser

Electronically approved by: Rebecca Kiser

Rebecca Kiser
Project Manager

Report of Laboratory Analysis

Certificate No: WV: 355

ALS Group, USA

Date: 17-Dec-24

Client: Diversified Gas & Oil Corporation
Project: UIC Water Well
Work Order: **24120095**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
24120095-01	Chapman 1 Grab	Water		12/4/2024 11:05	12/4/2024 13:36	☐
24120095-01	Chapman 1 Grab	Water		12/4/2024 11:05	12/5/2024 08:00	☐
24120095-02	Jones 1 Grab	Water		12/4/2024 11:32	12/4/2024 13:36	☐
24120095-02	Jones 1 Grab	Water		12/4/2024 11:32	12/5/2024 08:00	☐
24120095-03	Jones 2 (Spring) Grab	Water		12/4/2024 11:28	12/4/2024 13:36	☐
24120095-03	Jones 2 (Spring) Grab	Water		12/4/2024 11:28	12/5/2024 08:00	☐

ALS Group, USA

Date: 17-Dec-24

Client: Diversified Gas & Oil Corporation
Project: UIC Water Well
Work Order: 24120095

Case Narrative

Samples for the above noted Work Order were received on 12/05/2024. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

Samples were analyzed according to the analytical methodology previously transmitted in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. Sample association for the reported quality control is located at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, units, and acronyms utilized in reporting. A copy of the laboratory's scope of accreditation is available upon request.

With the following exceptions, all sample analyses achieved analytical criteria.

Metals:
Batch 251150, Method E200.7, Sample 24120095-03AMS: The MS and/or MSD recovery was below the lower control limit. The corresponding result in the parent sample may be biased low for this analyte: Al

Batch 251150, Method E200.7, Sample 24120095-03AMS: The MS and/or MSD recovery was outside of the control limit; however, the result in the parent sample is greater than 4x the spike amount. No qualification is required for this analyte: Na

No other deviations or anomalies were noted.

Client: Diversified Gas & Oil Corporation
Project: UIC Water Well
WorkOrder: **24120095**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Analyte accreditation is not offered
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
mg MBAS/L	Milligrams Methylene Blue Active Substances per Liter
mg/L	Milligrams per Liter
s.u.	Standard Units

ALS Group, USA

Date: *17-Dec-24*

Client: Diversified Gas & Oil Corporation
Project: UIC Water Well
Sample ID: Chapman 1 Grab
Collection Date: 12/4/2024 11:05 AM

Work Order: 24120095
Lab ID: 24120095-01
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-AES		Method: **E200.7**			Prep: CEM-NPDES / 12/8/24		Analyst: **DSC**
Aluminum	**0.0282**		**0.010**	**0.010**	**mg/L**	1	12/16/2024 12:48
Arsenic	U		0.0016	0.0050	mg/L	1	12/16/2024 12:48
Barium	**0.0216**		**0.0043**	**0.0050**	**mg/L**	1	12/12/2024 16:36
Calcium	**12.8**		**0.39**	**0.50**	**mg/L**	1	12/12/2024 16:36
Iron	U		0.079	0.080	mg/L	1	12/16/2024 12:48
Manganese	**0.00275**	J	**0.0023**	**0.0050**	**mg/L**	1	12/12/2024 16:36
Sodium	**6.99**		**0.26**	**0.50**	**mg/L**	1	12/12/2024 16:36
Strontium	**0.0656**		**0.0012**	**0.0050**	**mg/L**	1	12/12/2024 16:36
ANIONS BY ION CHROMATOGRAPHY		Method: **E300.0**					Analyst: **QTN**
Bromide	U		0.032	0.20	mg/L	1	12/10/2024 19:56
Chloride	**8.31**		**0.31**	**1.0**	**mg/L**	1	12/10/2024 19:56
Sulfate	**24.0**		**0.76**	**4.0**	**mg/L**	4	12/12/2024 01:47
MBAS, AS LAS, MOL WT 348		Method: **A5540C-11**					Analyst: **BJK**
Anionic Surfactants as MBAS	U		0.12	0.40	mg MBAS/L	1	12/5/2024 17:45
TOTAL DISSOLVED SOLIDS		Method: **A2540 C-15**			Prep: FILTER / 12/6/24		Analyst: **SRN**
Total Dissolved Solids	**88**		**22**	**30**	**mg/L**	1	12/9/2024 17:12

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *17-Dec-24*

Client: Diversified Gas & Oil Corporation
Project: UIC Water Well
Sample ID: Jones 1 Grab
Collection Date: 12/4/2024 11:32 AM

Work Order: 24120095
Lab ID: 24120095-02
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-AES		Method: **E200.7**			Prep: CEM-NPDES / 12/8/24		Analyst: **DSC**
Aluminum	U		0.010	0.010	mg/L	1	12/12/2024 16:42
Arsenic	U		0.0016	0.0050	mg/L	1	12/16/2024 12:54
Barium	**0.0713**		**0.0043**	**0.0050**	**mg/L**	1	12/12/2024 16:42
Calcium	**4.80**		**0.39**	**0.50**	**mg/L**	1	12/12/2024 16:42
Iron	U		0.079	0.080	mg/L	1	12/16/2024 12:54
Manganese	**0.0102**		**0.0023**	**0.0050**	**mg/L**	1	12/12/2024 16:42
Sodium	**96.1**		**0.26**	**0.50**	**mg/L**	1	12/12/2024 16:42
Strontium	**0.191**		**0.0012**	**0.0050**	**mg/L**	1	12/12/2024 16:42
ANIONS BY ION CHROMATOGRAPHY		Method: **E300.0**					Analyst: **QTN**
Bromide	U		0.032	0.20	mg/L	1	12/10/2024 20:06
Chloride	**2.84**		**0.31**	**1.0**	**mg/L**	1	12/10/2024 20:06
Sulfate	**0.878**	J	**0.19**	**1.0**	**mg/L**	1	12/10/2024 20:06
MBAS, AS LAS, MOL WT 348		Method: **A5540C-11**					Analyst: **BJK**
Anionic Surfactants as MBAS	U		0.12	0.40	mg MBAS/L	1	12/5/2024 17:45
TOTAL DISSOLVED SOLIDS		Method: **A2540 C-15**			Prep: FILTER / 12/6/24		Analyst: **SRN**
Total Dissolved Solids	**230**		**37**	**50**	**mg/L**	1	12/9/2024 17:12

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *17-Dec-24*

Client: Diversified Gas & Oil Corporation
Project: UIC Water Well
Sample ID: Jones 2 (Spring) Grab
Collection Date: 12/4/2024 11:28 AM

Work Order: 24120095
Lab ID: 24120095-03
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-AES		Method: **E200.7**			Prep: CEM-NPDES / 12/8/24		Analyst: **DSC**
Aluminum	**0.114**		**0.10**	**0.10**	**mg/L**	10	12/16/2024 13:00
Arsenic	U		0.016	0.050	mg/L	10	12/16/2024 13:00
Barium	**0.0217**		**0.0043**	**0.0050**	**mg/L**	1	12/12/2024 16:48
Calcium	**24.2**		**0.39**	**0.50**	**mg/L**	1	12/12/2024 16:48
Iron	U		0.79	0.80	mg/L	10	12/16/2024 13:00
Manganese	**0.0139**		**0.0023**	**0.0050**	**mg/L**	1	12/12/2024 16:48
Sodium	**113**		**2.6**	**5.0**	**mg/L**	10	12/16/2024 13:00
Strontium	**0.167**		**0.0012**	**0.0050**	**mg/L**	1	12/12/2024 16:48
ANIONS BY ION CHROMATOGRAPHY		Method: **E300.0**					Analyst: **QTN**
Bromide	U		0.032	0.20	mg/L	1	12/10/2024 20:16
Chloride	**0.890**	J	**0.31**	**1.0**	**mg/L**	1	12/10/2024 20:16
Sulfate	**8.00**		**0.19**	**1.0**	**mg/L**	1	12/10/2024 20:16
MBAS, AS LAS, MOL WT 348		Method: **A5540C-11**					Analyst: **BJK**
Anionic Surfactants as MBAS	U		0.12	0.40	mg MBAS/L	1	12/5/2024 17:45
TOTAL DISSOLVED SOLIDS		Method: **A2540 C-15**			Prep: FILTER / 12/6/24		Analyst: **SRN**
Total Dissolved Solids	**330**		**37**	**50**	**mg/L**	1	12/9/2024 17:12

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 17-Dec-24

Client: Diversified Gas & Oil Corporation

Work Order: 24120095

Project: UIC Water Well

QC BATCH REPORT

Batch ID: **251150** Instrument ID **ICP2** Method: **E200.7**

MBLK Sample ID: **MBLK-251150-251150** Units: **mg/L** Analysis Date: **12/12/2024 04:24 PM**

Client ID: Run ID: **ICP2_241212A** SeqNo: **11310366** Prep Date: **12/8/2024** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	U	0.01	0.010								
Barium	U	0.0043	0.0050								
Calcium	U	0.39	0.50								
Iron	U	0.079	0.080								
Manganese	U	0.0023	0.0050								
Sodium	U	0.26	0.50								
Strontium	U	0.0012	0.0050								

MBLK Sample ID: **MBLK-251150-251150** Units: **mg/L** Analysis Date: **12/16/2024 12:35 PM**

Client ID: Run ID: **ICP2_241216A** SeqNo: **11315962** Prep Date: **12/8/2024** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	U	0.0016	0.0050								

LCS Sample ID: **LCS-251150-251150** Units: **mg/L** Analysis Date: **12/12/2024 04:30 PM**

Client ID: Run ID: **ICP2_241212A** SeqNo: **11310367** Prep Date: **12/8/2024** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.1104	0.0016	0.0050	0.1	0	110	85-115	0			
Calcium	11.2	0.39	0.50	10	0	112	85-115	0			
Sodium	10.68	0.26	0.50	10	0	107	85-115	0			
Strontium	0.1103	0.0012	0.0050	0.1	0	110	85-115	0			

LCS Sample ID: **LCS-251150-251150** Units: **mg/L** Analysis Date: **12/16/2024 12:42 PM**

Client ID: Run ID: **ICP2_241216A** SeqNo: **11315963** Prep Date: **12/8/2024** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.108	0.01	0.010	0.1	0	108	85-115	0			
Barium	0.1096	0.0043	0.0050	0.1	0	110	85-115	0			
Iron	11.45	0.079	0.080	10	0	115	85-115	0			
Manganese	0.1063	0.0023	0.0050	0.1	0	106	85-115	0			

MS Sample ID: **24120095-03AMS** Units: **mg/L** Analysis Date: **12/12/2024 04:55 PM**

Client ID: **Jones 2 (Spring) Grab** Run ID: **ICP2_241212A** SeqNo: **11310371** Prep Date: **12/8/2024** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	34.97	0.39	0.50	10	24.19	108	70-130	0			
Strontium	0.2762	0.0012	0.0050	0.1	0.1667	110	70-130	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Diversified Gas & Oil Corporation
Work Order: 24120095
Project: UIC Water Well

QC BATCH REPORT

Batch ID: **251150** Instrument ID **ICP2** Method: **E200.7**

MS Sample ID: **24120095-03AMS** Units: **mg/L** Analysis Date: **12/16/2024 01:19 PM**
Client ID: **Jones 2 (Spring) Grab** Run ID: **ICP2_241216A** SeqNo: **11315969** Prep Date: **12/8/2024** DF: **10**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1507	0.1	0.10	0.1	0.1143	36.4	70-130	0			S
Arsenic	0.1049	0.016	0.050	0.1	-0.003102	108	70-130	0			
Iron	11.28	0.79	0.80	10	-0.07701	114	70-130	0			
Sodium	115.8	2.6	5.0	10	113	27.5	70-130	0			SO

MSD Sample ID: **24120095-03AMSD** Units: **mg/L** Analysis Date: **12/12/2024 05:01 PM**
Client ID: **Jones 2 (Spring) Grab** Run ID: **ICP2_241212A** SeqNo: **11310372** Prep Date: **12/8/2024** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	35.92	0.39	0.50	10	24.19	117	70-130	34.97	2.68	20	
Strontium	0.2828	0.0012	0.0050	0.1	0.1667	116	70-130	0.2762	2.37	20	

MSD Sample ID: **24120095-03AMSD** Units: **mg/L** Analysis Date: **12/16/2024 01:25 PM**
Client ID: **Jones 2 (Spring) Grab** Run ID: **ICP2_241216A** SeqNo: **11315970** Prep Date: **12/8/2024** DF: **10**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1796	0.1	0.10	0.1	0.1143	65.3	70-130	0.1507	17.5	20	S
Arsenic	0.09794	0.016	0.050	0.1	-0.003102	101	70-130	0.1049	6.86	20	
Iron	11.45	0.79	0.80	10	-0.07701	115	70-130	11.28	1.5	20	
Sodium	118	2.6	5.0	10	113	49.5	70-130	115.8	1.88	20	SO

The following samples were analyzed in this batch: 24120095-01A 24120095-02A 24120095-03A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Diversified Gas & Oil Corporation
Work Order: 24120095
Project: UIC Water Well

QC BATCH REPORT

Batch ID: **250142** Instrument ID **TDS** Method: **A2540 C-15**

MBLK Sample ID: **MBLK-250142-250142** Units: **mg/L** Analysis Date: **12/9/2024 05:12 PM**
Client ID: Run ID: **TDS_241209A** SeqNo: **11302663** Prep Date: **12/6/2024** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids	U	22	30								

LCS Sample ID: **LCS-250142-250142** Units: **mg/L** Analysis Date: **12/9/2024 05:12 PM**
Client ID: Run ID: **TDS_241209A** SeqNo: **11302662** Prep Date: **12/6/2024** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids	480	22	30	495	0	97	85-109	0			

DUP Sample ID: **24120122-03A DUP** Units: **mg/L** Analysis Date: **12/9/2024 05:12 PM**
Client ID: Run ID: **TDS_241209A** SeqNo: **11302657** Prep Date: **12/6/2024** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids	556.7	37	50	0	0	0	0-0	513.3	8.1	10	

DUP Sample ID: **24120144-09A DUP** Units: **mg/L** Analysis Date: **12/9/2024 05:12 PM**
Client ID: Run ID: **TDS_241209A** SeqNo: **11302661** Prep Date: **12/6/2024** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids	596.7	37	50	0	0	0	0-0	560	6.34	10	

The following samples were analyzed in this batch: 24120095-01C 24120095-02C 24120095-03C

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Diversified Gas & Oil Corporation
Work Order: 24120095
Project: UIC Water Well

QC BATCH REPORT

Batch ID: **R415700** Instrument ID **WETCHEM** Method: **A5540C-11**

MBLK Sample ID: **MB-R415700-R415700** Units: **mg MBAS/L** Analysis Date: **12/5/2024 05:45 PM**
Client ID: Run ID: **WETCHEM_241205L** SeqNo: **11294205** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Anionic Surfactants as MBAS	U	0.12	0.40								

LCS Sample ID: **LCS-R415700-R415700** Units: **mg MBAS/L** Analysis Date: **12/5/2024 05:45 PM**
Client ID: Run ID: **WETCHEM_241205L** SeqNo: **11294206** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Anionic Surfactants as MBAS	0.4	0.12	0.40	0.5	0	80	75-125	0			

DUP Sample ID: **24120077-01B DUP** Units: **mg MBAS/L** Analysis Date: **12/5/2024 05:45 PM**
Client ID: Run ID: **WETCHEM_241205L** SeqNo: **11294208** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Anionic Surfactants as MBAS	U	0.12	0.40	0	0	0	0-0	0	0	25	

The following samples were analyzed in this batch: 24120095-01C 24120095-02C 24120095-03C

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Diversified Gas & Oil Corporation
Work Order: 24120095
Project: UIC Water Well

QC BATCH REPORT

Batch ID: **R415889C** Instrument ID **IC3** Method: **E300.0**

MBLK Sample ID: **MBLK-C-R415889C** Units: **mg/L** Analysis Date: **12/10/2024 05:03 PM**
Client ID: Run ID: **IC3_241210A** SeqNo: **11306576** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	U	0.032	0.20								
Chloride	U	0.31	1.0								
Sulfate	U	0.19	1.0								

LCS Sample ID: **LCS-C-R415889C** Units: **mg/L** Analysis Date: **12/10/2024 04:53 PM**
Client ID: Run ID: **IC3_241210A** SeqNo: **11306575** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	2.03	0.032	0.20	2	0	102	90-110	0			
Chloride	9.728	0.31	1.0	10	0	97.3	90-110	0			
Sulfate	10.57	0.19	1.0	10	0	106	90-110	0			

MS Sample ID: **24110766-04E MS** Units: **mg/L** Analysis Date: **12/10/2024 05:22 PM**
Client ID: Run ID: **IC3_241210A** SeqNo: **11306578** Prep Date: DF: **10**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	192.4	1.9	10	100	91.82	101	90-110	0			

MS Sample ID: **24110766-15E MS** Units: **mg/L** Analysis Date: **12/10/2024 07:27 PM**
Client ID: Run ID: **IC3_241210A** SeqNo: **11306590** Prep Date: DF: **4**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	8.674	0.13	0.80	8	0	108	90-110	0			
Chloride	74.5	1.2	4.0	40	32.72	104	90-110	0			
Sulfate	87.78	0.76	4.0	40	45.21	106	90-110	0			E

MSD Sample ID: **24110766-04E MSD** Units: **mg/L** Analysis Date: **12/10/2024 05:32 PM**
Client ID: Run ID: **IC3_241210A** SeqNo: **11306579** Prep Date: DF: **10**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	192	1.9	10	100	91.82	100	90-110	192.4	0.227	10	

MSD Sample ID: **24110766-15E MSD** Units: **mg/L** Analysis Date: **12/10/2024 07:37 PM**
Client ID: Run ID: **IC3_241210A** SeqNo: **11306591** Prep Date: DF: **4**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	8.524	0.13	0.80	8	0	107	90-110	8.674	1.74	10	
Chloride	74.1	1.2	4.0	40	32.72	103	90-110	74.5	0.538	10	
Sulfate	87.13	0.76	4.0	40	45.21	105	90-110	87.78	0.747	10	E

The following samples were analyzed in this batch: 24120095-01C 24120095-02C 24120095-03C

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Diversified Gas & Oil Corporation
Work Order: 24120095
Project: UIC Water Well

QC BATCH REPORT

Batch ID: **R416037C** Instrument ID **IC3** Method: **E300.0**

MBLK Sample ID: **MBLK-C-R416037C** Units: **mg/L** Analysis Date: **12/12/2024 12:58 AM**
Client ID: Run ID: **IC3_241211A** SeqNo: **11309536** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	U	0.19	1.0								

LCS Sample ID: **LCS-C-R416037C** Units: **mg/L** Analysis Date: **12/12/2024 12:48 AM**
Client ID: Run ID: **IC3_241211A** SeqNo: **11309535** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	10.66	0.19	1.0	10	0	107	90-110	0			

MS Sample ID: **24120057-01C MS** Units: **mg/L** Analysis Date: **12/12/2024 01:28 AM**
Client ID: Run ID: **IC3_241211A** SeqNo: **11309539** Prep Date: DF: **10**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	3555	1.9	10	100	3463	92.1	90-110	0			EO

MSD Sample ID: **24120057-01C MSD** Units: **mg/L** Analysis Date: **12/12/2024 01:37 AM**
Client ID: Run ID: **IC3_241211A** SeqNo: **11309540** Prep Date: DF: **10**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	3437	1.9	10	100	3463	-26.1	90-110	3555	3.38	10	SEO

The following samples were analyzed in this batch: 24120095-01C

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Subcontractor:
ALS Environmental - Holland
3352 128th Avenue
Holland, MI 49424

TEL: (616) 399-6070
FAX: (616) 399-6185
Acct #:

Salesperson	ALSHN Account

24120095

DIVERSIFIED: Diversified Gas & Oil Corporation
Project: UIC Water Well

Date: 04-Dec-24
COC ID: 27529
Due Date: 11-Dec-24

Customer Information		Project Information		Parameter/Method Requested for Analysis	
Purchase Order		Project Name	24120095	A	Total Dissolved Solids (A2540 C-15)
Work Order		Project Number		B	MBAS, as LAS, mol wt 348 (A5540C-11)
Company Name	ALS Group USA, Corp	Bill To Company	ALS Group USA, Corp	C	Anions by Ion Chromatography (E300.0)
Send Report To	Rebecca Kiser	Inv Attn	Accounts Payable	D	Metals by ICP-MS (SW6020B)
Address	1740 Union Carbide Dr.	Address	1740 Union Carbide Dr.	E	
				F	
City/State/Zip	So. Charleston, WV 25303	City/State/Zip	So. Charleston, WV 25303	G	
Phone	(304) 356-3168	Phone	(304) 356-3168	H	
Fax		Fax		I	
eMail Address	rebecca.kiser@alsglobal.com	eMail CC		J	

ALS Sample ID	Client Sample ID	Matrix	Collection Date 24hr	Bottle	A	B	C	D	E	F	G	H	I	J
24120095-01A	Chapman 1 Grab	Water	4/Dec/2024 11:05	(1) 125PHNO3				X						
24120095-01C	Chapman 1 Grab	Water	4/Dec/2024 11:05	(1) 500PNeat	X	X	X							
24120095-02A	Jones 1 Grab	Water	4/Dec/2024 11:32	(1) 125PHNO3				X						
24120095-02C	Jones 1 Grab	Water	4/Dec/2024 11:32	(1) 500PNeat	X	X	X							
24120095-03A	Jones 2 (Spring) Grab	Water	4/Dec/2024 11:28	(1) 125PHNO3				X						
24120095-03C	Jones 2 (Spring) Grab	Water	4/Dec/2024 11:28	(1) 500PNeat	X	X	X							

Comments: WV Samples Sampler: J.B./C.R.

Relinquished by:	Date/Time	Received by:	Date/Time	Cooler IDs	Report/QC Level
Michelle Holm	12.4.24 1500	[illegible]	12-5-24 8:00	6.0°C	Std
Relinquished by:	Date/Time	Received by:	Date/Time	DPZ [illegible]	

ALS Group, USA
Holland, Michigan

Sample Receipt Checklist

Client Name: **DIVERSIFIED** Date/Time Received: **04-Dec-24 13:36**

Work Order: **24120095** Received by: **CMK**

Checklist completed by Caleb Koetje (eSignature) 05-Dec-24 (Date) Reviewed by: Rebecca Kiser (eSignature) 05-Dec-24 (Date)

Matrices: Water
Carrier name: Courier

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	<6.0c	Df2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	12/5/2024 9:55:21 AM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:			

Login Notes: pH check <2

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

09-Jan-2025

Jeff Burke
Diversified Gas & Oil Corporation
PO Box 6070
Charleston, WV 25362

Re: **UIC Water Well** Work Order: **24120491**

Dear Jeff,

ALS Environmental received 4 samples on 19-Dec-2024 11:51 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - South Charleston and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 12.

If you have any questions regarding this report, please feel free to contact me:

ADDRESS: 1740 Union Carbide Drive, South Charleston, WV, USA
PHONE: +1 (304) 356-3168 FAX: +1 (304) 205-6262

Sincerely,

Rebecca Kiser

Electronically approved by: Briana Lothes

Rebecca Kiser
Project Manager

Report of Laboratory Analysis

Certificate No: WV: 385

ALS Group, USA

Date: 09-Jan-25

Client: Diversified Gas & Oil Corporation
Project: UIC Water Well
Work Order: **24120491**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
24120491-01	C.Pritt 2 (Pond) Grab	Water		12/19/2024 10:02	12/19/2024 11:51	☐
24120491-01	C.Pritt 2 (Pond) Grab	Water		12/19/2024 10:02	12/20/2024 10:00	☐
24120491-02	Cavender 1 Grab	Water		12/19/2024 09:04	12/19/2024 11:51	☐
24120491-02	Cavender 1 Grab	Water		12/19/2024 09:04	12/20/2024 10:00	☐
24120491-03	Cavender 2 (duglopan well) Grab	Water		12/19/2024 09:11	12/19/2024 11:51	☐
24120491-03	Cavender 2 (duglopan well) Grab	Water		12/19/2024 09:11	12/20/2024 10:00	☐
24120491-04	Cavender 3 (pond)	Water		12/19/2024 09:18	12/19/2024 11:51	☐
24120491-04	Cavender 3 (pond)	Water		12/19/2024 09:18	12/20/2024 10:00	☐

Client: Diversified Gas & Oil Corporation
Project: UIC Water Well
Work Order: 24120491

Case Narrative

Samples for the above noted Work Order were received on 12/19/2024. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

Samples were analyzed according to the analytical methodology previously transmitted in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. Sample association for the reported quality control is located at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, units, and acronyms utilized in reporting. A copy of the laboratory's scope of accreditation is available upon request.

With the following exceptions, all sample analyses achieved analytical criteria.

Wet Chemistry:
Batch R416402, Method A4500-H B-11, Samples 24120491-01C, -02C, -03C, -04C: Samples were received and analyzed outside of the holding time at the request of the client. Results should be considered estimated. pH

Client:	Diversified Gas & Oil Corporation
Project:	UIC Water Well
WorkOrder:	**24120491**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Analyte accreditation is not offered
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
mg MBAS/L	Milligrams Methylene Blue Active Substances per Liter
mg/L	Milligrams per Liter
s.u.	Standard Units

ALS Group, USA

Date: *09-Jan-25*

Client: Diversified Gas & Oil Corporation
Project: UIC Water Well
Sample ID: C.Pritt 2 (Pond) Grab
Collection Date: 12/19/2024 10:02 AM

Work Order: 24120491
Lab ID: 24120491-01
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PH (LABORATORY)		Method: **A4500-H B-11**					Analyst: **BJL**
pH (laboratory)	**6.66**	H	**0**	**0.020**	**s.u.**	1	12/19/2024 19:25
Temperature	**21.0**	Hn	**0**		**s.u.**	1	12/19/2024 19:25

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *09-Jan-25*

Client: Diversified Gas & Oil Corporation
Project: UIC Water Well
Sample ID: Cavender 1 Grab
Collection Date: 12/19/2024 09:04 AM

Work Order: 24120491
Lab ID: 24120491-02
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PH (LABORATORY)		Method: **A4500-H B-11**					Analyst: **BJL**
pH (laboratory)	**8.04**	H	**0**	**0.020**	**s.u.**	1	12/19/2024 19:25
Temperature	**21.0**	Hn	**0**		**s.u.**	1	12/19/2024 19:25

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *09-Jan-25*

Client: Diversified Gas & Oil Corporation
Project: UIC Water Well
Sample ID: Cavender 2 (duglopan well) Grab
Collection Date: 12/19/2024 09:11 AM

Work Order: 24120491
Lab ID: 24120491-03
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PH (LABORATORY)		Method: **A4500-H B-11**					Analyst: **BJL**
pH (laboratory)	**5.66**	H	**0**	**0.020**	**s.u.**	1	12/19/2024 19:25
Temperature	**21.2**	Hn	**0**		**s.u.**	1	12/19/2024 19:25

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *09-Jan-25*

Client: Diversified Gas & Oil Corporation
Project: UIC Water Well
Sample ID: Cavender 3 (pond)
Collection Date: 12/19/2024 09:18 AM

Work Order: 24120491
Lab ID: 24120491-04
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PH (LABORATORY)		Method: **A4500-H B-11**					Analyst: **BJL**
pH (laboratory)	**6.64**	H	**0**	**0.020**	**s.u.**	1	12/19/2024 19:25
Temperature	**21.2**	Hn	**0**		**s.u.**	1	12/19/2024 19:25

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 09-Jan-25

Client: Diversified Gas & Oil Corporation

Work Order: 24120491

Project: UIC Water Well

QC BATCH REPORT

Batch ID: **R416402** Instrument ID **STC-WC** Method: **A4500-H B-11**

LCS Sample ID: **LCS-R416402-R416402** Units: **s.u.** Analysis Date: **12/19/2024 07:25 PM**

Client ID: Run ID: **STC-WC_241219E** SeqNo: **11324450** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH (laboratory)	4.04	0	0.020	4	0	101	90-110	0			

DUP Sample ID: **24120489-05D DUP** Units: **s.u.** Analysis Date: **12/19/2024 07:25 PM**

Client ID: Run ID: **STC-WC_241219E** SeqNo: **11324452** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH (laboratory)	7.97	0	0.020	0	0	0	0-0	7.96	0.126	20	H
Temperature	21.4	0	0	0	0	0		21.1	1.41		H

The following samples were analyzed in this batch: 24120491-01C 24120491-02C 24120491-03C 24120491-04C

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Chain of Custody Form

☒ ALS
1740 Union Carbide Drive
South Charleston, WV 25303
(Tel) 304.356.3168
(Fax) 304.205.6262

Page ____ of ____

16029

☐ ALS
3352 128th Avenue
Holland, Michigan 49424
(Tel) 616.399.6070
(Fax) 616.399.6185

ALS Project Manager: | ALS Work Order #:

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	UIC Water Well	A	
Work Order		Project Number		B	
Company Name	Diversified Gas & Oil	Bill To Company		C	
Send Report To	Lisa Raffle / Jeff Burke	Invoice Attn.		D	
Address	P.O. Box 6070	Address		E	
				F	
City/State/Zip	Charleston WV 25362	City/State/Zip		G	
Phone		Phone		H	
Fax		Fax		I	
e-Mail Address	lraffle@dgoc.com/jeffersonburke123@gmail.com.			J	

No.	Sample Description	Comp / Grab	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	Id
1	C. Pritt 2 (pond)	Grab	12/19/24	10:02AM	W		3								pH 6.2
2	Cavender 1	Grab	12/19/24	9:04AM	W		3								pH 7.2
3	Cavender 2 (dug/open well)	Grab	12/19/24	9:11AM	W		3								pH 6.2
4	Cavender 3 (pond)	Grab	12/19/24	9:18AM	W		3								pH 6.8
5															
6															
7															
8															
9															
10															

24120491
DIVERSIFIED: Diversified Gas & Oil Corporation
Project: Water Well

Sampler(s): Please Print & Sign: Jeff Burke [signature]

Shipment Method:

Turnaround Time in Business Days (BD): ☐ Other ____ ☐ 10 BD(STD ☐ 5 BD ☐ 3 BD ☐ 2 BD ☐ 1 BD

Re

Relinquished by:	Date:	Time:	Received by:	Temp:	Notes:
[signature]	12/19/2024	11:54AM	[signature]	ALSR L6.2	
Relinquished by:	Date:	Time:	Received by:		
Relinquished by:	Date:	Time:	Received by:	Temp:	QC Package: (Check Box Below)
Relinquished by:	Date:	Time:	Received by (Laboratory):		Level II: Standard QC
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):		Level III: Standard QC + Raw Data
					Level IV: SW846 Methods/CLP
					Other:

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS

ALS Environmental

1740 Union Carbide Drive
South Charleston, WV 25303

Sample Receiving Checklist

Received by:	MLH
Date/Time:	12.19.24 1151
Carrier Name:	Client
Shipping container/cooler in good condition?	(Yes) / No / Not Present
Custody seals intact on shipping container/cooler?	Yes / No / (Not Present)
Custody seals intact on sample bottles?	Yes / No / (Not Present)
Chain of Custody present?	(Yes) / No
COC signed when relinquished and received?	(Yes) / No
COC agrees with sample labels?	(Yes) / No
Samples in proper container/bottle?	(Yes) / No
Sample containers intact?	(Yes) / No
Sufficient sample volume for indicated test?	(Yes) / No
All samples received within holding time?	(Yes) / No
All sample temperatures verified to be in compliance?	(Yes) / No
Temperature(s) (°C):	<6°c
Thermometer(s):	IR-Gun
Sample(s) received on ice?	(Yes) / No
Matrix/Matrices:	Water
Cooler(s)/Kit(s):	
Date/Time sample(s) sent to storage:	
Trip Blanks included? (for volatile analysis only)	Yes / (No) / N/A
Water – VOA vials have zero headspace?	Yes / No / (No Vials)
Water – pH acceptable upon receipt?	Yes / No / (N/A)
pH strip lot #: _____	
pH adjusted (note adjustments below)?	Yes / No / (N/A)
pH adjusted by:	

Login Notes:

24120491

DIVERSIFIED: Diversified Gas & Oil Corporation
Project: Water Well

09-Jan-2025

Jeff Burke
Diversified Gas & Oil Corporation
PO Box 6070
Charleston, WV 25362

Re: **UIC Water Well** Work Order: **24120491**

Dear Jeff,

ALS Environmental received 4 samples on 20-Dec-2024 for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 18.

If you have any questions regarding this report, please feel free to contact me:

ADDRESS: 3352 128th Avenue, Holland, MI, USA
PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

Rebecca Kiser

Electronically approved by: Briana Lothes

Rebecca Kiser
Project Manager

ALS Group, USA

Date: 09-Jan-25

Client: Diversified Gas & Oil Corporation
Project: UIC Water Well
Work Order: **24120491**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
24120491-01	C.Pritt 2 (Pond) Grab	Water		12/19/2024 10:02	12/19/2024 11:51	☐
24120491-01	C.Pritt 2 (Pond) Grab	Water		12/19/2024 10:02	12/20/2024 10:00	☐
24120491-02	Cavender 1 Grab	Water		12/19/2024 09:04	12/19/2024 11:51	☐
24120491-02	Cavender 1 Grab	Water		12/19/2024 09:04	12/20/2024 10:00	☐
24120491-03	Cavender 2 (duglopan well) Grab	Water		12/19/2024 09:11	12/19/2024 11:51	☐
24120491-03	Cavender 2 (duglopan well) Grab	Water		12/19/2024 09:11	12/20/2024 10:00	☐
24120491-04	Cavender 3 (pond)	Water		12/19/2024 09:18	12/19/2024 11:51	☐
24120491-04	Cavender 3 (pond)	Water		12/19/2024 09:18	12/20/2024 10:00	☐

Client: Diversified Gas & Oil Corporation
Project: UIC Water Well
Work Order: 24120491

Case Narrative

Samples for the above noted Work Order were received on 12/20/2024. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

Samples were analyzed according to the analytical methodology previously transmitted in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. Sample association for the reported quality control is located at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, units, and acronyms utilized in reporting. A copy of the laboratory's scope of accreditation is available upon request.

With the following exceptions, all sample analyses achieved analytical criteria.

Metals:
No other deviations or anomalies were noted.

Wet Chemistry:
No other deviations or anomalies were noted.

Client: Diversified Gas & Oil Corporation
Project: UIC Water Well
WorkOrder: **24120491**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Analyte accreditation is not offered
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
mg MBAS/L	Milligrams Methylene Blue Active Substances per Liter
mg/L	Milligrams per Liter
s.u.	Standard Units

ALS Group, USA

Date: *09-Jan-25*

Client: Diversified Gas & Oil Corporation
Project: UIC Water Well
Sample ID: C.Pritt 2 (Pond) Grab
Collection Date: 12/19/2024 10:02 AM

Work Order: 24120491
Lab ID: 24120491-01
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-AES		Method: **E200.7**			Prep: CEM-NPDES / 12/27/24		Analyst: **ABL**
Aluminum	**0.435**		**0.010**	**0.010**	**mg/L**	1	1/6/2025 13:05
Arsenic	U		0.0016	0.0050	mg/L	1	1/8/2025 12:42
Barium	**0.0256**		**0.0043**	**0.0050**	**mg/L**	1	1/6/2025 13:05
Calcium	**8.44**		**0.39**	**0.50**	**mg/L**	1	1/6/2025 13:05
Iron	**0.663**		**0.079**	**0.080**	**mg/L**	1	1/6/2025 13:05
Manganese	**0.0561**		**0.0023**	**0.0050**	**mg/L**	1	1/6/2025 13:05
Sodium	**4.04**		**0.26**	**0.50**	**mg/L**	1	1/6/2025 13:05
Strontium	**0.0487**		**0.0012**	**0.0050**	**mg/L**	1	1/6/2025 13:05
ANIONS BY ION CHROMATOGRAPHY		Method: **E300.0**					Analyst: **QTN**
Bromide	U		0.032	0.20	mg/L	1	12/31/2024 01:56
Chloride	**9.23**		**0.31**	**1.0**	**mg/L**	1	12/31/2024 01:56
Sulfate	**7.87**		**0.19**	**1.0**	**mg/L**	1	12/31/2024 01:56
MBAS, AS LAS, MOL WT 348		Method: **A5540C-11**					Analyst: **JNV**
Anionic Surfactants as MBAS	U		0.12	0.40	mg MBAS/L	1	12/20/2024 14:13
TOTAL DISSOLVED SOLIDS		Method: **A2540 C-15**			Prep: FILTER / 12/26/24		Analyst: **SRN**
Total Dissolved Solids	**86**		**22**	**30**	**mg/L**	1	12/30/2024 17:09

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *09-Jan-25*

Client: Diversified Gas & Oil Corporation
Project: UIC Water Well
Sample ID: Cavender 1 Grab
Collection Date: 12/19/2024 09:04 AM

Work Order: 24120491
Lab ID: 24120491-02
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-AES		Method: **E200.7**			Prep: CEM-NPDES / 12/27/24		Analyst: **ABL**
Aluminum	**0.708**		**0.010**	**0.010**	**mg/L**	1	1/6/2025 13:11
Arsenic	U		0.0016	0.0050	mg/L	1	1/8/2025 12:48
Barium	**0.0195**		**0.0043**	**0.0050**	**mg/L**	1	1/6/2025 13:11
Calcium	**5.30**		**0.39**	**0.50**	**mg/L**	1	1/6/2025 13:11
Iron	**1.05**		**0.079**	**0.080**	**mg/L**	1	1/6/2025 13:11
Manganese	**0.0443**		**0.0023**	**0.0050**	**mg/L**	1	1/6/2025 13:11
Sodium	**2.09**		**0.26**	**0.50**	**mg/L**	1	1/6/2025 13:11
Strontium	**0.0343**		**0.0012**	**0.0050**	**mg/L**	1	1/6/2025 13:11
ANIONS BY ION CHROMATOGRAPHY		Method: **E300.0**					Analyst: **QTN**
Bromide	U		0.032	0.20	mg/L	1	12/31/2024 02:06
Chloride	**18.8**		**5.0**	**16**	**mg/L**	16	12/20/2024 21:09
Sulfate	**0.400**	J	**0.19**	**1.0**	**mg/L**	1	12/31/2024 02:06
MBAS, AS LAS, MOL WT 348		Method: **A5540C-11**					Analyst: **JNV**
Anionic Surfactants as MBAS	U		0.12	0.40	mg MBAS/L	1	12/20/2024 14:13
TOTAL DISSOLVED SOLIDS		Method: **A2540 C-15**			Prep: FILTER / 12/24/24		Analyst: **SRN**
Total Dissolved Solids	**300**		**37**	**50**	**mg/L**	1	12/26/2024 17:33

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *09-Jan-25*

Client: Diversified Gas & Oil Corporation
Project: UIC Water Well
Sample ID: Cavender 2 (duglopan well) Grab
Collection Date: 12/19/2024 09:11 AM

Work Order: 24120491
Lab ID: 24120491-03
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-AES		Method: **E200.7**			Prep: CEM-NPDES / 12/27/24		Analyst: **ABL**
Aluminum	**0.0636**		**0.010**	**0.010**	**mg/L**	1	1/6/2025 13:17
Arsenic	U		0.0016	0.0050	mg/L	1	1/8/2025 12:54
Barium	**0.0754**		**0.0043**	**0.0050**	**mg/L**	1	1/6/2025 13:17
Calcium	**11.2**		**0.39**	**0.50**	**mg/L**	1	1/6/2025 13:17
Iron	**0.0959**		**0.079**	**0.080**	**mg/L**	1	1/6/2025 13:17
Manganese	**0.0155**		**0.0023**	**0.0050**	**mg/L**	1	1/6/2025 13:17
Sodium	**2.82**		**0.26**	**0.50**	**mg/L**	1	1/6/2025 13:17
Strontium	**0.0719**		**0.0012**	**0.0050**	**mg/L**	1	1/6/2025 13:17
ANIONS BY ION CHROMATOGRAPHY		Method: **E300.0**					Analyst: **QTN**
Bromide	U		0.51	3.2	mg/L	16	12/20/2024 21:18
Chloride	**7.31**	J	**5.0**	**16**	**mg/L**	16	12/20/2024 21:18
Sulfate	**8.62**	J	**3.0**	**16**	**mg/L**	16	12/20/2024 21:18
MBAS, AS LAS, MOL WT 348		Method: **A5540C-11**					Analyst: **JNV**
Anionic Surfactants as MBAS	U		0.12	0.40	mg MBAS/L	1	12/20/2024 14:13
TOTAL DISSOLVED SOLIDS		Method: **A2540 C-15**			Prep: FILTER / 12/24/24		Analyst: **SRN**
Total Dissolved Solids	**120**		**22**	**30**	**mg/L**	1	12/26/2024 17:33

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *09-Jan-25*

Client: Diversified Gas & Oil Corporation
Project: UIC Water Well
Sample ID: Cavender 3 (pond)
Collection Date: 12/19/2024 09:18 AM

Work Order: 24120491
Lab ID: 24120491-04
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-AES		Method: **E200.7**			Prep: CEM-NPDES / 12/27/24		Analyst: **ABL**
Aluminum	U		0.010	0.010	mg/L	1	1/6/2025 13:23
Arsenic	U		0.0016	0.0050	mg/L	1	1/8/2025 13:00
Barium	**0.126**		**0.0043**	**0.0050**	**mg/L**	1	1/6/2025 13:23
Calcium	**13.8**		**0.39**	**0.50**	**mg/L**	1	1/6/2025 13:23
Iron	**0.353**		**0.079**	**0.080**	**mg/L**	1	1/6/2025 13:23
Manganese	**0.0588**		**0.0023**	**0.0050**	**mg/L**	1	1/6/2025 13:23
Sodium	**93.6**		**0.26**	**0.50**	**mg/L**	1	1/6/2025 13:23
Strontium	**0.305**		**0.0012**	**0.0050**	**mg/L**	1	1/6/2025 13:23
ANIONS BY ION CHROMATOGRAPHY		Method: **E300.0**					Analyst: **QTN**
Bromide	U		0.51	3.2	mg/L	16	12/20/2024 21:26
Chloride	**5.34**	J	**5.0**	**16**	**mg/L**	16	12/20/2024 21:26
Sulfate	**8.51**	J	**3.0**	**16**	**mg/L**	16	12/20/2024 21:26
MBAS, AS LAS, MOL WT 348		Method: **A5540C-11**					Analyst: **JNV**
Anionic Surfactants as MBAS	U		0.12	0.40	mg MBAS/L	1	12/20/2024 14:13
TOTAL DISSOLVED SOLIDS		Method: **A2540 C-15**			Prep: FILTER / 12/24/24		Analyst: **SRN**
Total Dissolved Solids	**84**		**22**	**30**	**mg/L**	1	12/26/2024 17:33

Note: See Qualifiers page for a list of qualifiers and their definitions.

Batch ID: **251727** Instrument ID **ICP2** Method: **E200.7**

MBLK	Sample ID: **MBLK-251727-251727**					Units: **mg/L**			Analysis Date: **1/6/2025 12:53 PM**			
Client ID:		Run ID: **ICP2_250106A**				SeqNo: **11350806**			Prep Date: **12/27/2024**		DF: **1**	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	U	0.01	0.010								
Barium	U	0.0043	0.0050								
Calcium	U	0.39	0.50								
Iron	U	0.079	0.080								
Manganese	U	0.0023	0.0050								
Sodium	U	0.26	0.50								
Strontium	U	0.0012	0.0050								

MBLK	Sample ID: **MBLK-251727-251727**					Units: **mg/L**			Analysis Date: **1/8/2025 12:30 PM**			
Client ID:		Run ID: **ICP2_250108A**				SeqNo: **11356359**			Prep Date: **12/27/2024**		DF: **1**	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	U	0.0016	0.0050								

LCS	Sample ID: **LCS-251727-251727**					Units: **mg/L**			Analysis Date: **1/6/2025 12:59 PM**			
Client ID:		Run ID: **ICP2_250106A**				SeqNo: **11350807**			Prep Date: **12/27/2024**		DF: **1**	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.09713	0.01	0.010	0.1	0	97.1	85-115	0			
Barium	0.1041	0.0043	0.0050	0.1	0	104	85-115	0			
Calcium	9.862	0.39	0.50	10	0	98.6	85-115	0			
Iron	10.08	0.079	0.080	10	0	101	85-115	0			
Manganese	0.09713	0.0023	0.0050	0.1	0	97.1	85-115	0			
Sodium	10.03	0.26	0.50	10	0	100	85-115	0			
Strontium	0.09856	0.0012	0.0050	0.1	0	98.6	85-115	0			

LCS	Sample ID: **LCS-251727-251727**					Units: **mg/L**			Analysis Date: **1/8/2025 12:36 PM**			
Client ID:		Run ID: **ICP2_250108A**				SeqNo: **11356360**			Prep Date: **12/27/2024**		DF: **1**	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.0979	0.0016	0.0050	0.1	0	97.9	85-115	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Diversified Gas & Oil Corporation
Work Order: 24120491
Project: UIC Water Well

QC BATCH REPORT

Batch ID: **251727** Instrument ID **ICP2** Method: **E200.7**

MS Sample ID: **24120491-04BMS** Units: **mg/L** Analysis Date: **1/6/2025 01:30 PM**
Client ID: **Cavender 3 (pond)** Run ID: **ICP2_250106A** SeqNo: **11350812** Prep Date: **12/27/2024** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.09735	0.01	0.010	0.1	0.003234	94.1	70-130	0			
Barium	0.2208	0.0043	0.0050	0.1	0.126	94.7	70-130	0			
Calcium	22.65	0.39	0.50	10	13.79	88.6	70-130	0			
Iron	9.938	0.079	0.080	10	0.3527	95.9	70-130	0			
Manganese	0.1518	0.0023	0.0050	0.1	0.05885	92.9	70-130	0			
Sodium	101.4	0.26	0.50	10	93.58	78.7	70-130	0			EO
Strontium	0.3894	0.0012	0.0050	0.1	0.3049	84.5	70-130	0			

MS Sample ID: **24120491-04BMS** Units: **mg/L** Analysis Date: **1/8/2025 01:07 PM**
Client ID: **Cavender 3 (pond)** Run ID: **ICP2_250108A** SeqNo: **11356365** Prep Date: **12/27/2024** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.09757	0.0016	0.0050	0.1	0.0006743	96.9	70-130	0			

MSD Sample ID: **24120491-04BMSD** Units: **mg/L** Analysis Date: **1/6/2025 01:36 PM**
Client ID: **Cavender 3 (pond)** Run ID: **ICP2_250106A** SeqNo: **11350813** Prep Date: **12/27/2024** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.08564	0.01	0.010	0.1	0.003234	82.4	70-130	0.09735	12.8	20	
Barium	0.2221	0.0043	0.0050	0.1	0.126	96	70-130	0.2208	0.593	20	
Calcium	22.81	0.39	0.50	10	13.79	90.1	70-130	22.65	0.693	20	
Iron	9.825	0.079	0.080	10	0.3527	94.7	70-130	9.938	1.15	20	
Manganese	0.1498	0.0023	0.0050	0.1	0.05885	91	70-130	0.1518	1.31	20	
Sodium	102	0.26	0.50	10	93.58	84.1	70-130	101.4	0.531	20	EO
Strontium	0.3949	0.0012	0.0050	0.1	0.3049	90	70-130	0.3894	1.4	20	

MSD Sample ID: **24120491-04BMSD** Units: **mg/L** Analysis Date: **1/8/2025 01:13 PM**
Client ID: **Cavender 3 (pond)** Run ID: **ICP2_250108A** SeqNo: **11356366** Prep Date: **12/27/2024** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.09691	0.0016	0.0050	0.1	0.0006743	96.2	70-130	0.09757	0.679	20	

The following samples were analyzed in this batch:

24120491-01B	24120491-02B	24120491-03B
24120491-04B		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Diversified Gas & Oil Corporation
Work Order: 24120491
Project: UIC Water Well

QC BATCH REPORT

Batch ID: **251676** Instrument ID **TDS** Method: **A2540 C-15**

MBLK Sample ID: **MBLK-251676-251676** Units: **mg/L** Analysis Date: **12/26/2024 05:33 PM**
Client ID: Run ID: **TDS_241226D** SeqNo: **11334679** Prep Date: **12/24/2024** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids	U	22	30								

LCS Sample ID: **LCS-251676-251676** Units: **mg/L** Analysis Date: **12/26/2024 05:33 PM**
Client ID: Run ID: **TDS_241226D** SeqNo: **11334678** Prep Date: **12/24/2024** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids	510	22	30	495	0	103	85-109	0			

DUP Sample ID: **24120564-01A DUP** Units: **mg/L** Analysis Date: **12/26/2024 05:33 PM**
Client ID: Run ID: **TDS_241226D** SeqNo: **11334673** Prep Date: **12/24/2024** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids	710	37	50	0	0	0	0-0	700	1.42	10	

DUP Sample ID: **24120564-02A DUP** Units: **mg/L** Analysis Date: **12/26/2024 05:33 PM**
Client ID: Run ID: **TDS_241226D** SeqNo: **11334675** Prep Date: **12/24/2024** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids	663.3	37	50	0	0	0	0-0	646.7	2.54	10	

The following samples were analyzed in this batch: 24120491-02A 24120491-03A 24120491-04A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Diversified Gas & Oil Corporation
Work Order: 24120491
Project: UIC Water Well

QC BATCH REPORT

Batch ID: **251711** Instrument ID **TDS** Method: **A2540 C-15**

MBLK Sample ID: **MBLK-251711-251711** Units: **mg/L** Analysis Date: **12/30/2024 05:09 PM**
Client ID: Run ID: **TDS_241230A** SeqNo: **11341610** Prep Date: **12/26/2024** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids	U	22	30								

LCS Sample ID: **LCS-251711-251711** Units: **mg/L** Analysis Date: **12/30/2024 05:09 PM**
Client ID: Run ID: **TDS_241230A** SeqNo: **11341609** Prep Date: **12/26/2024** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids	496	22	30	495	0	100	85-109	0			

DUP Sample ID: **24120551-03A DUP** Units: **mg/L** Analysis Date: **12/30/2024 05:09 PM**
Client ID: Run ID: **TDS_241230A** SeqNo: **11341589** Prep Date: **12/26/2024** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids	1167	74	100	0	0	0	0-0	1173	0.569	10	

DUP Sample ID: **24120564-04A DUP** Units: **mg/L** Analysis Date: **12/30/2024 05:09 PM**
Client ID: Run ID: **TDS_241230A** SeqNo: **11341601** Prep Date: **12/26/2024** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids	1087	74	100	0	0	0	0-0	1087	0	10	

The following samples were analyzed in this batch: 24120491-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Diversified Gas & Oil Corporation
Work Order: 24120491
Project: UIC Water Well

QC BATCH REPORT

Batch ID: **R416436** Instrument ID **WETCHEM** Method: **A5540C-11**

MBLK Sample ID: **MB-R416436-R416436** Units: **mg MBAS/L** Analysis Date: **12/20/2024 02:13 PM**
Client ID: Run ID: **WETCHEM_241220D** SeqNo: **11325595** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Anionic Surfactants as MBAS	U	0.12	0.40								

LCS Sample ID: **LCS-R416436-R416436** Units: **mg MBAS/L** Analysis Date: **12/20/2024 02:13 PM**
Client ID: Run ID: **WETCHEM_241220D** SeqNo: **11325596** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Anionic Surfactants as MBAS	0.4	0.12	0.40	0.5	0	80	75-125	0			

DUP Sample ID: **24120491-01A DUP** Units: **mg MBAS/L** Analysis Date: **12/20/2024 02:13 PM**
Client ID: **C.Pritt 2 (Pond) Grab** Run ID: **WETCHEM_241220D** SeqNo: **11325598** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Anionic Surfactants as MBAS	U	0.12	0.40	0	0	0	0-0	0	0	25	

The following samples were analyzed in this batch:

24120491-01A	24120491-02A	24120491-03A
24120491-04A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Diversified Gas & Oil Corporation
Work Order: 24120491
Project: UIC Water Well

QC BATCH REPORT

Batch ID: **R416759** Instrument ID **IC5** Method: **E300.0**

MBLK Sample ID: **MBLK-R416759** Units: **mg/L** Analysis Date: **12/20/2024 08:18 PM**
Client ID: Run ID: **IC5_241220A** SeqNo: **11339912** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	U	0.032	0.20								
Chloride	U	0.31	1.0								
Sulfate	U	0.19	1.0								

MBLK Sample ID: **MBLK-R416759** Units: **mg/L** Analysis Date: **12/20/2024 10:27 PM**
Client ID: Run ID: **IC5_241220A** SeqNo: **11340604** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	U	0.032	0.20								
Chloride	U	0.31	1.0								
Sulfate	U	0.19	1.0								

LCS Sample ID: **MLCCV-A-R416759** Units: **mg/L** Analysis Date: **12/20/2024 08:09 PM**
Client ID: Run ID: **IC5_241220A** SeqNo: **11339913** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	2.01	0.032	0.20	2	0	100	90-110	0			
Chloride	9.727	0.31	1.0	10	0	97.3	90-110	0			
Sulfate	10.01	0.19	1.0	10	0	100	90-110	0			

LCS Sample ID: **LCS-R416759** Units: **mg/L** Analysis Date: **12/20/2024 10:18 PM**
Client ID: Run ID: **IC5_241220A** SeqNo: **11340605** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	2.01	0.032	0.20	2	0	100	90-110	0			
Chloride	9.727	0.31	1.0	10	0	97.3	90-110	0			
Sulfate	10.01	0.19	1.0	10	0	100	90-110	0			

MS Sample ID: **24120401-03B MS** Units: **mg/L** Analysis Date: **12/20/2024 08:35 PM**
Client ID: Run ID: **IC5_241220A** SeqNo: **11339920** Prep Date: DF: **40**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	632.3	12	40	400	261.5	92.7	90-110	0			

MSD Sample ID: **24120401-03B MSD** Units: **mg/L** Analysis Date: **12/20/2024 08:43 PM**
Client ID: Run ID: **IC5_241220A** SeqNo: **11339921** Prep Date: DF: **40**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	631.4	12	40	400	261.5	92.5	90-110	632.3	0.146	10	

The following samples were analyzed in this batch: 24120491-01A 24120491-02A 24120491-03A 24120491-04A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Diversified Gas & Oil Corporation
Work Order: 24120491
Project: UIC Water Well

QC BATCH REPORT

Batch ID: **R416821C** Instrument ID **IC3** Method: **E300.0**

MBLK Sample ID: **MBLK-C-R416821C** Units: **mg/L** Analysis Date: **12/31/2024 01:07 A**
Client ID: Run ID: **IC3_241230A** SeqNo: **11342517** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	U	0.032	0.20								
Chloride	U	0.31	1.0								
Sulfate	U	0.19	1.0								

LCS Sample ID: **LCS-C-R416821C** Units: **mg/L** Analysis Date: **12/31/2024 12:57 A**
Client ID: Run ID: **IC3_241230A** SeqNo: **11342516** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	2.001	0.032	0.20	2	0	100	90-110	0			
Chloride	9.838	0.31	1.0	10	0	98.4	90-110	0			
Sulfate	10.68	0.19	1.0	10	0	107	90-110	0			

MS Sample ID: **24120463-01C MS** Units: **mg/L** Analysis Date: **12/31/2024 01:36 A**
Client ID: Run ID: **IC3_241230A** SeqNo: **11342520** Prep Date: DF: **40**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	84	1.3	8.0	80	0	105	90-110	0			
Chloride	390.2	12	40	400	9.404	95.2	90-110	0			
Sulfate	494.4	7.6	40	400	74.96	105	90-110	0			

MSD Sample ID: **24120463-01C MSD** Units: **mg/L** Analysis Date: **12/31/2024 01:46 A**
Client ID: Run ID: **IC3_241230A** SeqNo: **11342521** Prep Date: DF: **40**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	85.24	1.3	8.0	80	0	107	90-110	84	1.47	10	
Chloride	391	12	40	400	9.404	95.4	90-110	390.2	0.216	10	
Sulfate	495.4	7.6	40	400	74.96	105	90-110	494.4	0.206	10	

The following samples were analyzed in this batch: 24120491-01A 24120491-02A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

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FAX: (616) 399-6185
Acct #:

Salesperson: ALSHN Account

24120491

DIVERSIFIED: Diversified Gas & Oil Corporation
Project: UIC Water Well

Date: 19-Dec-24
COC ID: 27677
Due Date: 27-Dec-24

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	24120491	A	Total Dissolved Solids (A2540 C-15)
Work Order		Project Number		B	MBAS, as LAS, mol wt 348 (A5540C-11)
Company Name	ALS Group USA, Corp	Bill To Company	ALS Group USA, Corp	C	Metals by ICP-AES (E200.7)
Send Report To	Rebecca Kiser	Inv Attn	Accounts Payable	D	Anions by Ion Chromatography (E300.0)
Address	1740 Union Carbide Dr.	Address	1740 Union Carbide Dr.	E	
				F	
City/State/Zip	So. Charleston, WV 25303	City/State/Zip	So. Charleston, WV 25303	G	
Phone	(304) 356-3168	Phone	(304) 356-3168	H	
Fax		Fax		I	
eMail Address	rebecca.kiser@alsglobal.com	eMail CC		J	

ALS Sample ID	Client Sample ID	Matrix	Collection Date 24hr	Bottle	A	B	C	D	E	F	G	H	I	J
24120491-01A	C.Pritt 2 (Pond) Grab	Water	19/Dec/2024 10:02	(1) 500PNeat	X	X		X						
24120491-01B	C.Pritt 2 (Pond) Grab	Water	19/Dec/2024 10:02	(1) 125PHNO3			X							
24120491-02A	Cavender 1 Grab	Water	19/Dec/2024 9:04	(1) 500PNeat	X	X		X						
24120491-02B	Cavender 1 Grab	Water	19/Dec/2024 9:04	(1) 125PHNO3			X							
24120491-03A	Cavender 2 (duglopan well) Grab	Water	19/Dec/2024 9:11	(1) 500PNeat	X	X		X						
24120491-03B	Cavender 2 (duglopan well) Grab	Water	19/Dec/2024 9:11	(1) 125PHNO3			X							
24120491-04A	Cavender 3 (pond)	Water	19/Dec/2024 9:18	(1) 500PNeat	X	X		X						
24120491-04B	Cavender 3 (pond)	Water	19/Dec/2024 9:18	(1) 125PHNO3			X							

Comments:

WV Samples Sampler: J.B.

Relinquished by:	Date/Time	Received by:	Date/Time	Cooler IDs	Report/QC Level
Michelle Holmes	12.19.24 1400	[signature]	12-20-24 10:10	4.0c	Std
Relinquished by:	Date/Time	Received by:	Date/Time	JRE	
				p439	

ALS Group, USA
Holland, Michigan

Sample Receipt Checklist

Client Name: **DIVERSIFIED** Date/Time Received: **19-Dec-24 11:51**

Work Order: **24120491** Received by: **CMK**

Checklist completed by Caleb Koetje (eSignature) 20-Dec-24 (Date) Reviewed by: Briana Lothes (eSignature) 23-Dec-24 (Date)

Matrices: Water
Carrier name: Courier

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	<6.0c	IR6	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	12/20/2024 12:02:35 PM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:	-		

Login Notes: pH Check <2

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

(4/25)

APPENDIX F

Area Permit Wells

4703904844

API #	Well Type (Injection, Production, Observation, Monitoring)	Well Status (Active, Abandoned, Shut-in, Plugged)	Northing (UTM NAD 83 Meters)	Easting (UTM NAD 83 Meters)
N/A				
Not for area permit wells				

Make as many copies as necessary and include page numbers as appropriate.

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MAR 20 2019

WV Department of
Environmental Protection

Page __ of __

UIC Permit No.
2D03904844

APPENDIX G

Wells Serviced by Injection Wells

API #	Operator	Producing Formation
	This is a commercial facility	
	and can accept material from	
	any qualified supplier.	
	A complete list of wells	
	serviced is on file with	
	the WVDEP-OOG.	

Make as many copies as necessary and include page numbers as appropriate.

Section 8 – Geological Data

UIC 2D03904844

SECTION 8-Geological data on the Injection and Confining Zone:

Well Name: Ivanna Tr3#1

API: 47-039-04844

UIC: UIC2D0394844

The subject UIC well is located in Kanawha County, West Virginia in the northeast corner of the Blue Creek quadrangle (Figure 1). The Ivanna Tr3 #1 and 3 other active UIC wells have been used to dispose water into the Injun Sandstone and Lower Maxton Sandstone since the mid 1990's.

DESCRIPTION OF INJECTION ZONES

INJUN SANDSTONE

Formation Description

The Injun Sandstone is an injection zone for the subject well. This formation sits beneath the Greenbrier Limestone "Big Lime" at the top of the Lower Mississippian section. This predominately fine-grained, quartz rich sandstone exceeds 50' in thickness in the area of interest and is 48' in the subject well (Figure 2). Grains are generally subangular to subrounded, moderate to well sorted, and fine to very fine sand. Primary porosity in the subject well and adjacent Blue Creek Field can exceed 20% in the Injun Sandstone, and the subject well has 38' of Injun Sandstone with porosity over 12% (Figure 3). Like gross thickness, primary porosity in the area is greatest in the adjacent Blue Creek oil field that lies to the east of the subject wells but decreases significantly outside of the field.

Stratigraphic Description

In northwestern Kanawha County, the Injun Sandstone is overlain unconformably by the Greenbrier Limestone and sits above the Pocono Shale.

Structural Mapping

Structural mapping on the Injun Sandstone top indicates that the subject well is located updip from a local syncline (Figure 4). The adjacent structural low forms the outline of the Blue Creek oil field, and as mapped, this local syncline also has the thickest Injun Sandstone in the area (Figure 2).

Faulting

Structure maps (Figure 4) on the Injun Sandstone top do not have any indication of faulting in this injection interval throughout the area of interest.

LOWER SALT SAND

Formation Description

As stated above, the Lower Salt Sand is an injection zone along with the Injun Sandstone in the subject well. The Lower Salt Sand is a member of the Pottsville Group of the Pennsylvanian System and the quartz arenite ranges in thickness from 350-500' in northwestern Kanawha Co. (Figure 5). Porosity mapping of the Lower Salt Sand (Figure 6) indicates a thick north-south trend to the west of the Blue Creek oil field. The subject well is mapped within this trend and has over 25' of sand with porosity over 12%.

Stratigraphic Description

In northwestern Kanawha County, the Lower Salt Sand lies below an unnamed Shale (named the Lower Salt Sand Shale for this report) and unconformably above the Upper Mississippian Mauch Chunk Group.

Structural Mapping

Structural mapping on the Lower Salt Sand base indicates that the subject well is located updip from a local syncline (Figure 7).

Faulting

Structure maps (Figure 7) on the Lower Salt Sand do not have any indication of faulting in this injection zone.

DESCRIPTION OF CONFINING ZONES

GREENBRIER LIMESTONE (BIG LIME)

Confining Layer for: Injun Sandstone

Formation Description

The Big Lime is 130-170' (Figure 8) thick throughout the area of interest and is predominately composed of dense limestone. Porous zones are uncommon, isolated, and <5' when observed. This limestone has been mapped throughout the area of interest and there is no evidence of faulting. Low porosity, high density, and massive thickness of the Big Lime in northwestern Kanawha County make it an excellent confining layer.

Primary Lithology: Limestone

Log Description:

This limestone has a very low gamma ray signature (20 API), low density ~2.7 g/cc, and porosity in most wells is below 2%. In the subject well, the Big Lime has a gross thickness of 148'.

LOWER SALT SAND SHALE

Confining Layer for: Lower Salt Sand

Formation Description

In the area of interest, the Lower Salt Sand Shale gross thickness ranges from 40-100' (Figure 9) thick and the average thickness is over 60'. Porous zones are uncommon, but a thin coal seam has been observed in some wells. This shale has been mapped throughout the area of interest and there is no evidence of faulting. The thickness, lack of faults, and dense nature of this shale makes this unit an excellent confining layer.

Primary Rock Type: Shale

Secondary Rock Type: Coal and Siltstone

Log Description:

This shale generally has a gamma ray value over 100 API units but lower than 200. Bulk density values range from 2.60-269 g/cc and porosity values average 3% or less for the entire interval. In the subject well, the Lower Salt Sand Shale has a gross thickness of 60'.

EARTHQUAKES AND INDUCED SEISMICITY

From 1824 to 2016 West Virginia has experienced nearly 100 earthquakes within state boundaries (Figure 10). These earthquakes have magnitudes ranging from .3 to 4.7 using both historical and instrumental measurements. The closest recorded earthquakes to the subject well are in Jackson and Kanawha counties and are 10 and 20 miles from the subject well respectively. As stated above, the subject well has been used as an injection well since the mid 1990's, and the closest recorded seismic event is over 10 miles away. Furthermore, no evidence of faulting in the area at the injection level exists at Blue Creek.

The subject well has two decades of injection history and there have not been any pressure issues, containment problems, or induced seismicity in the area, and the subject well remains an excellent candidate for fluid injection.

WATER MIGRATION MODEL

A schematic depicting the likely migration path for injected fluids is included in this report (Figure 11). Although the likely migration path for each injection formation has been drawn on the one model, the discussion is broken down into two separate paragraphs.

INJUN SAND

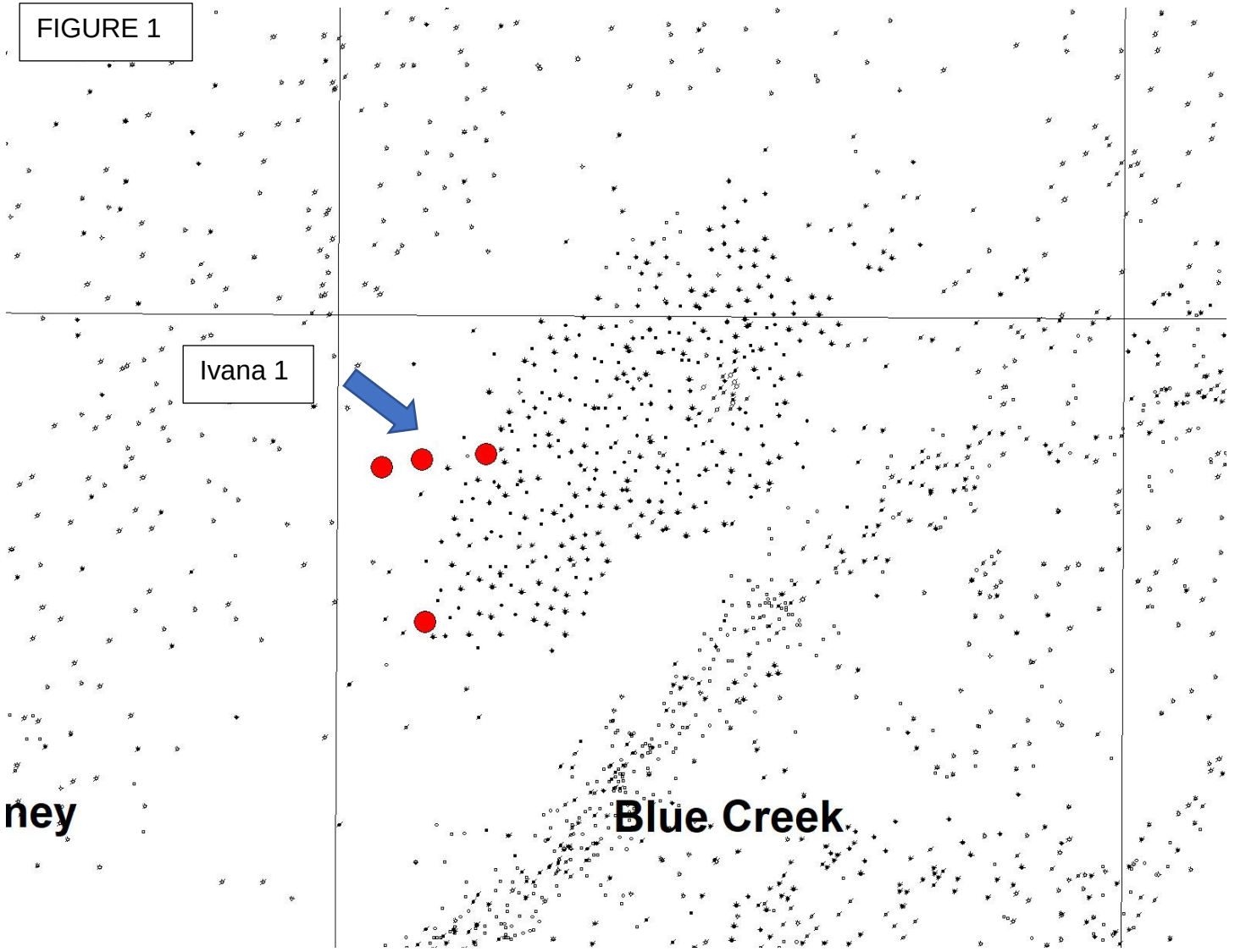
As alluded to earlier, structure maps on the Injun Sand (Figure 4) indicate that the subject well is directly adjacent to and west of a local syncline. Furthermore, gross thickness (Figure 2) and porosity mapping (Figure 3) are greatest within this syncline. Pumped fluids would preferentially migrate downdip into the Blue Creek oil field where the Injun Sand has much better porosity than the surrounding areas.

LOWER SALT SAND

Fluids will only be injected into the basal 150' of the formation since porosity is more consistent and better developed than the upper portions of the sand. Porosity maps (Figure 6) show that the subject well lies in a local thick and has over 25' of sand with more than 12% porosity. Unlike the Injun Sand, fluids injected into the Lower Salt Sand are not expected to preferentially migrate in one direction.

4703904844

FIGURE 1



carbon

Blue Creek Field

Author: Clay Wilcox
Date: 12 February, 2019
Horizontal Scale: 1"=1 Mile
Contour Interval: N/A

FIGURE 2

4703904844

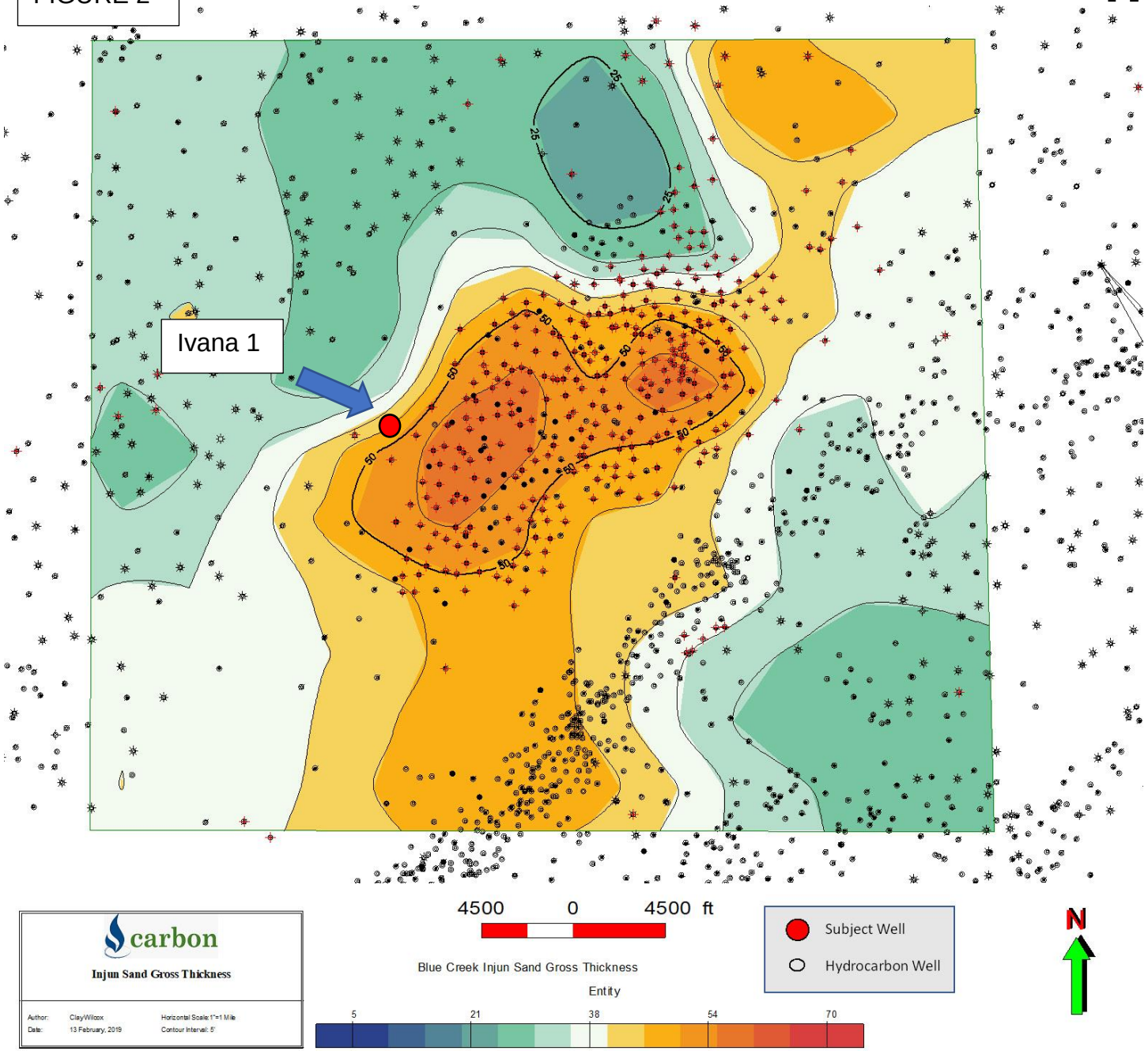


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FIGURE 3

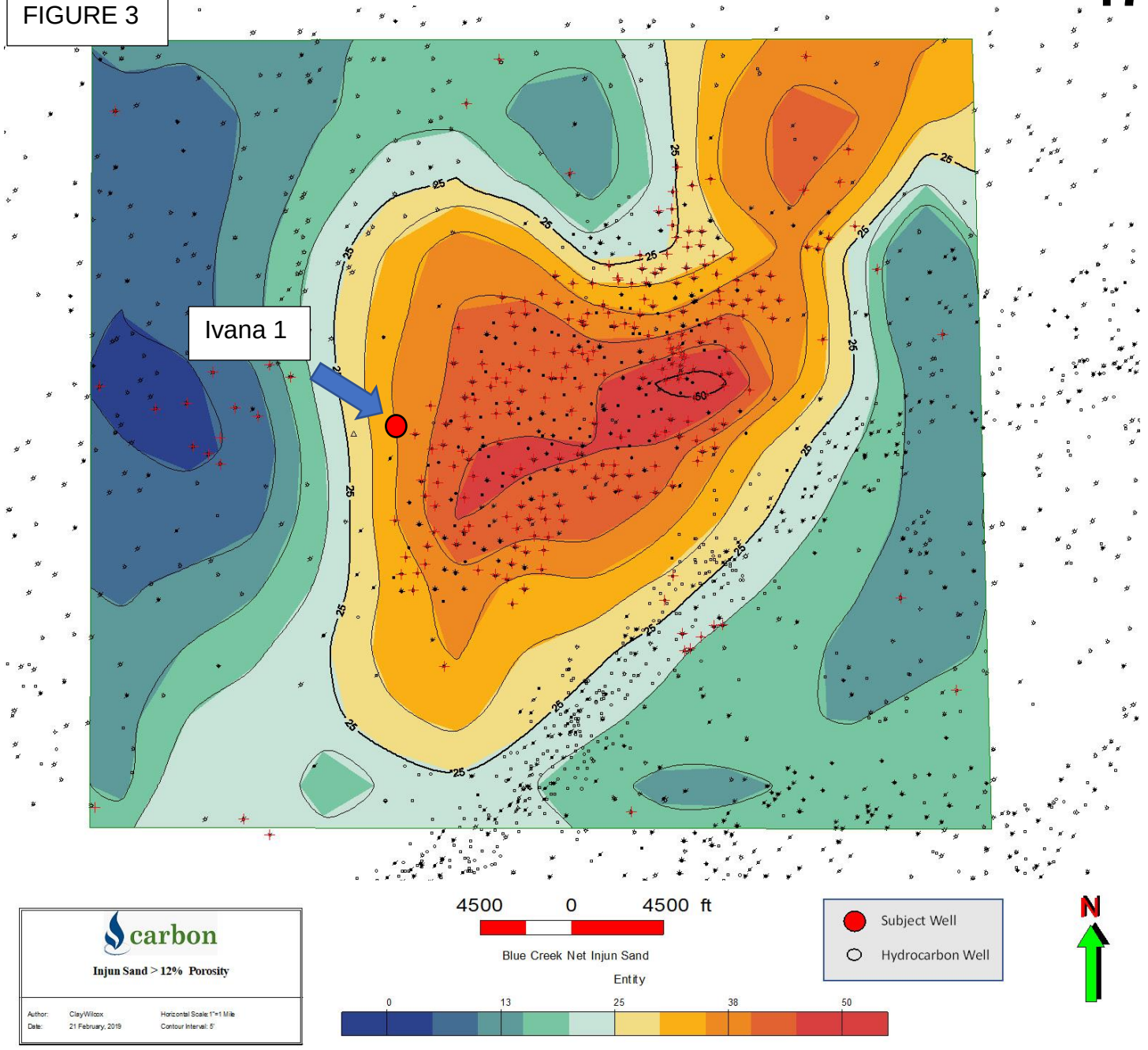

FIGURE 4

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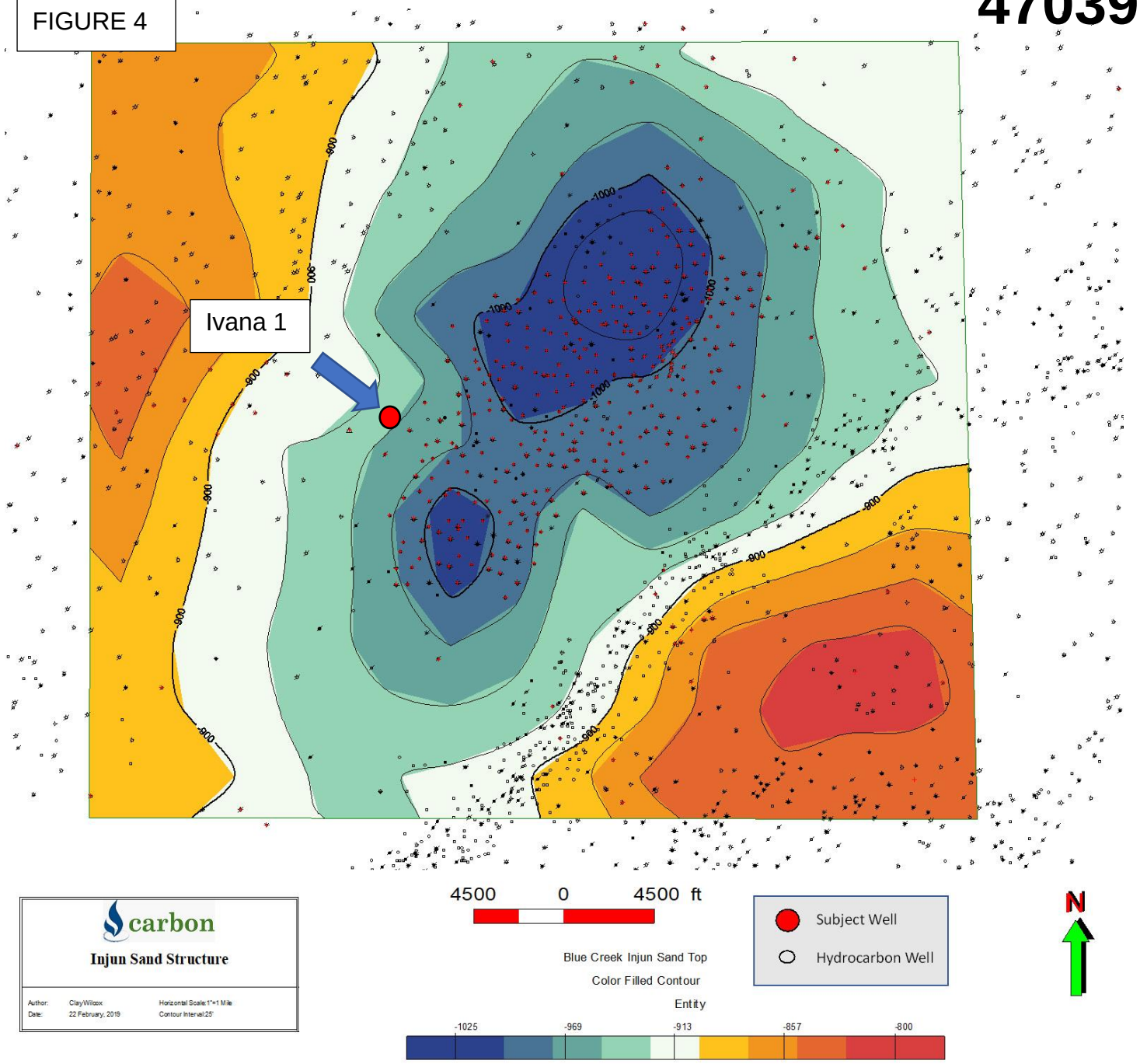

FIGURE 5

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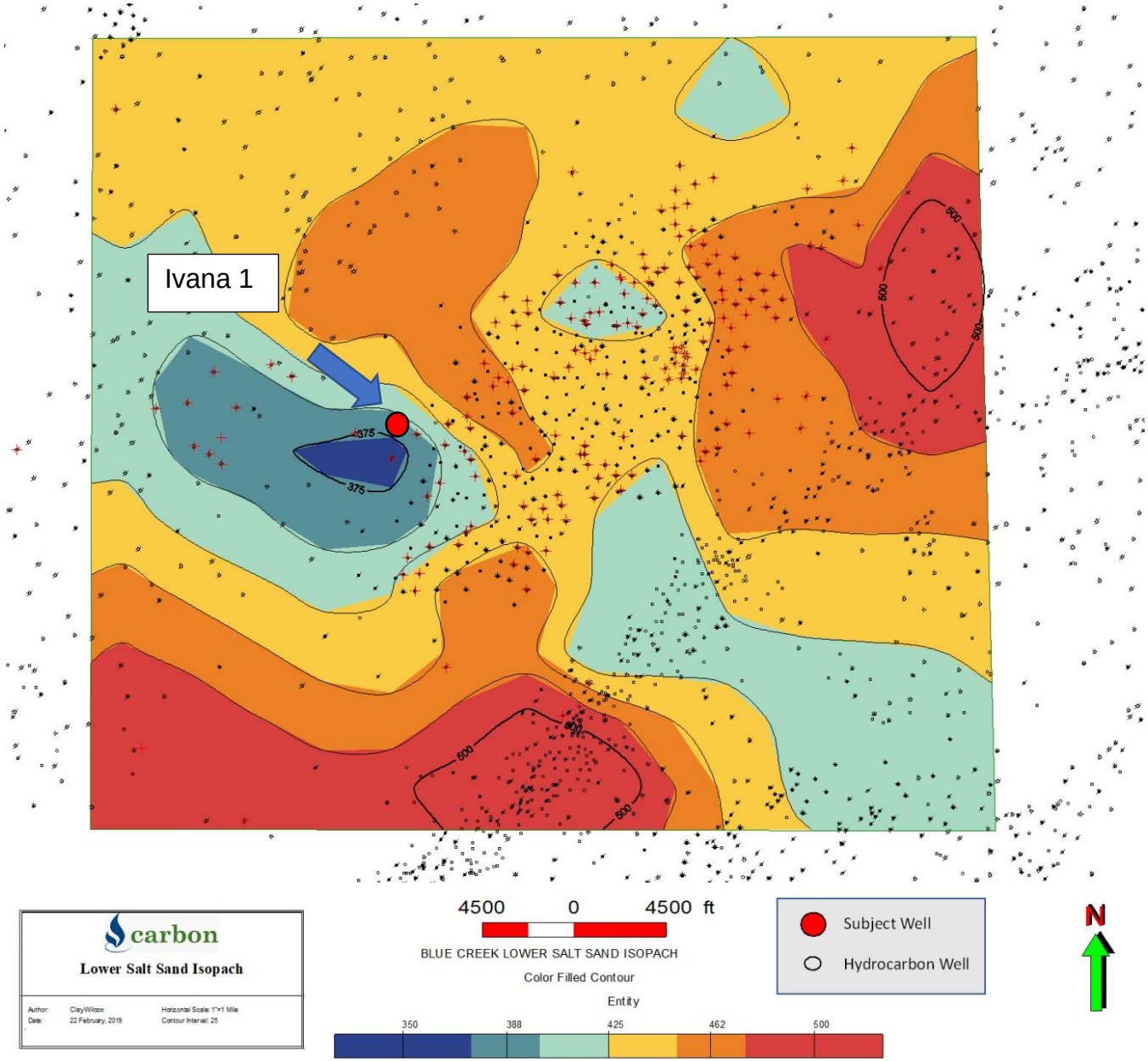

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FIGURE 6

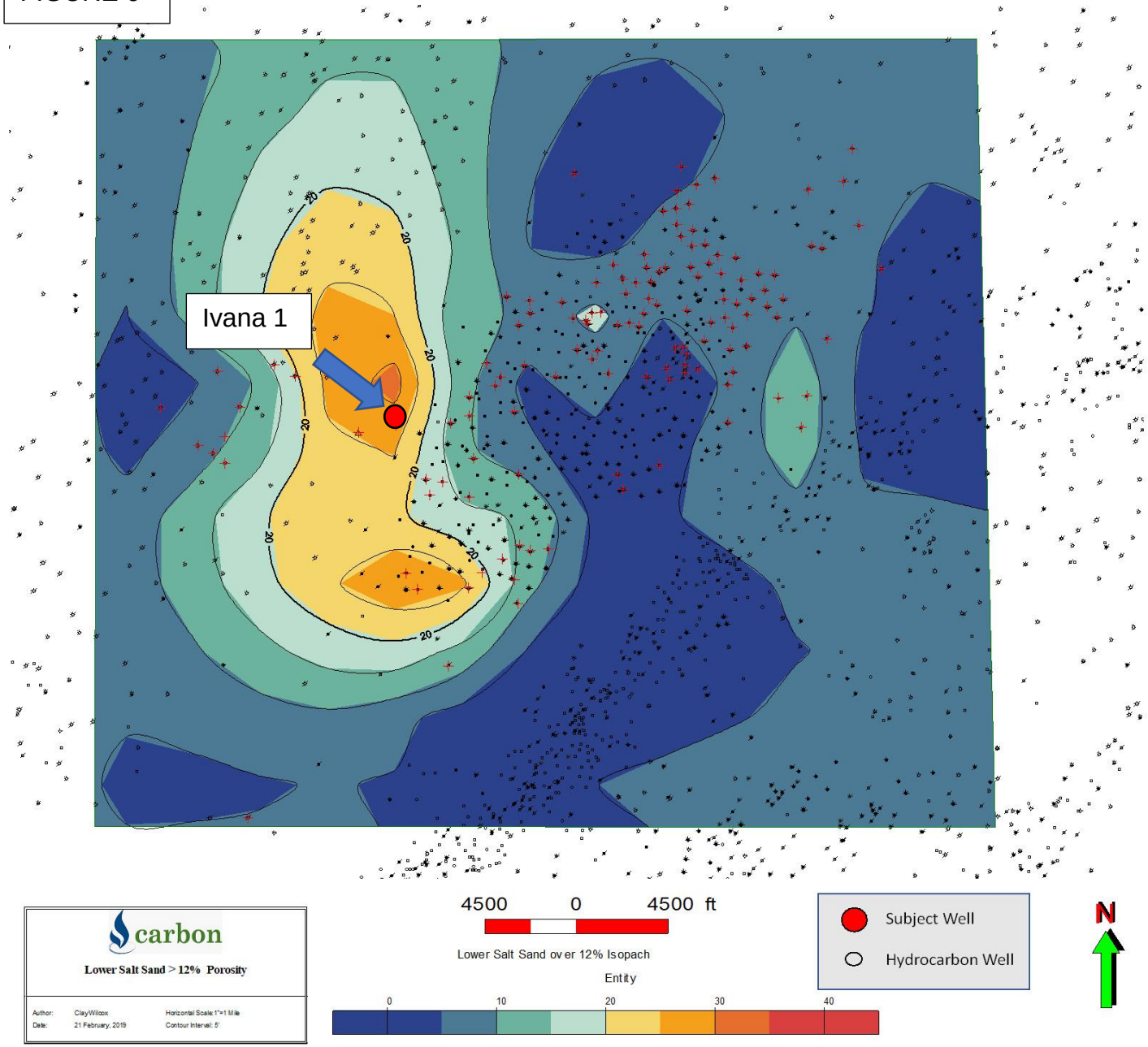

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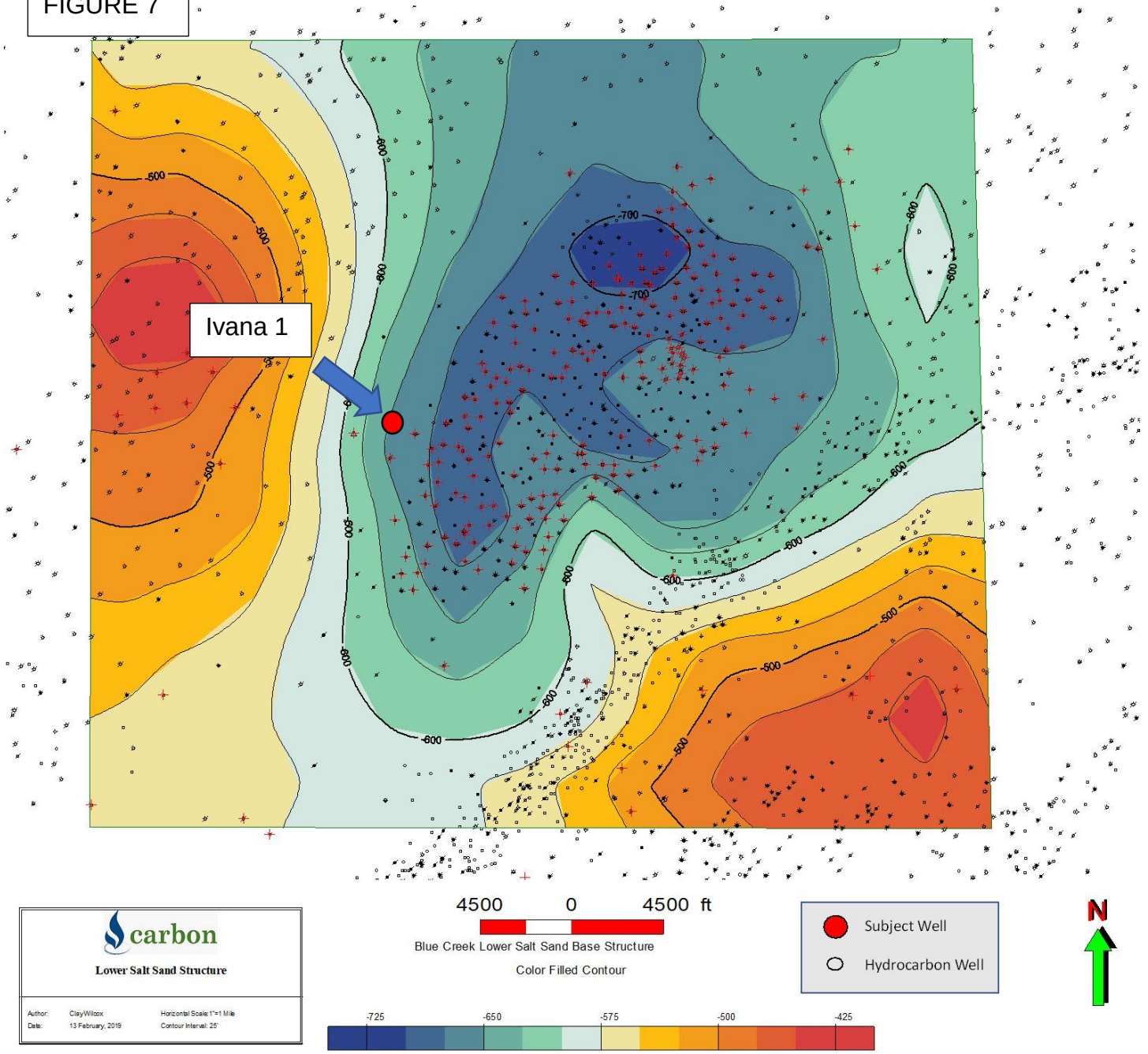
FIGURE 7



carbon

Lower Salt Sand Structure

Author: ClayWilcox
Date: 13 February, 2019
Horizontal Scale: 1"=1 Mile
Contour Interval: 25'

FIGURE 8

4703904844

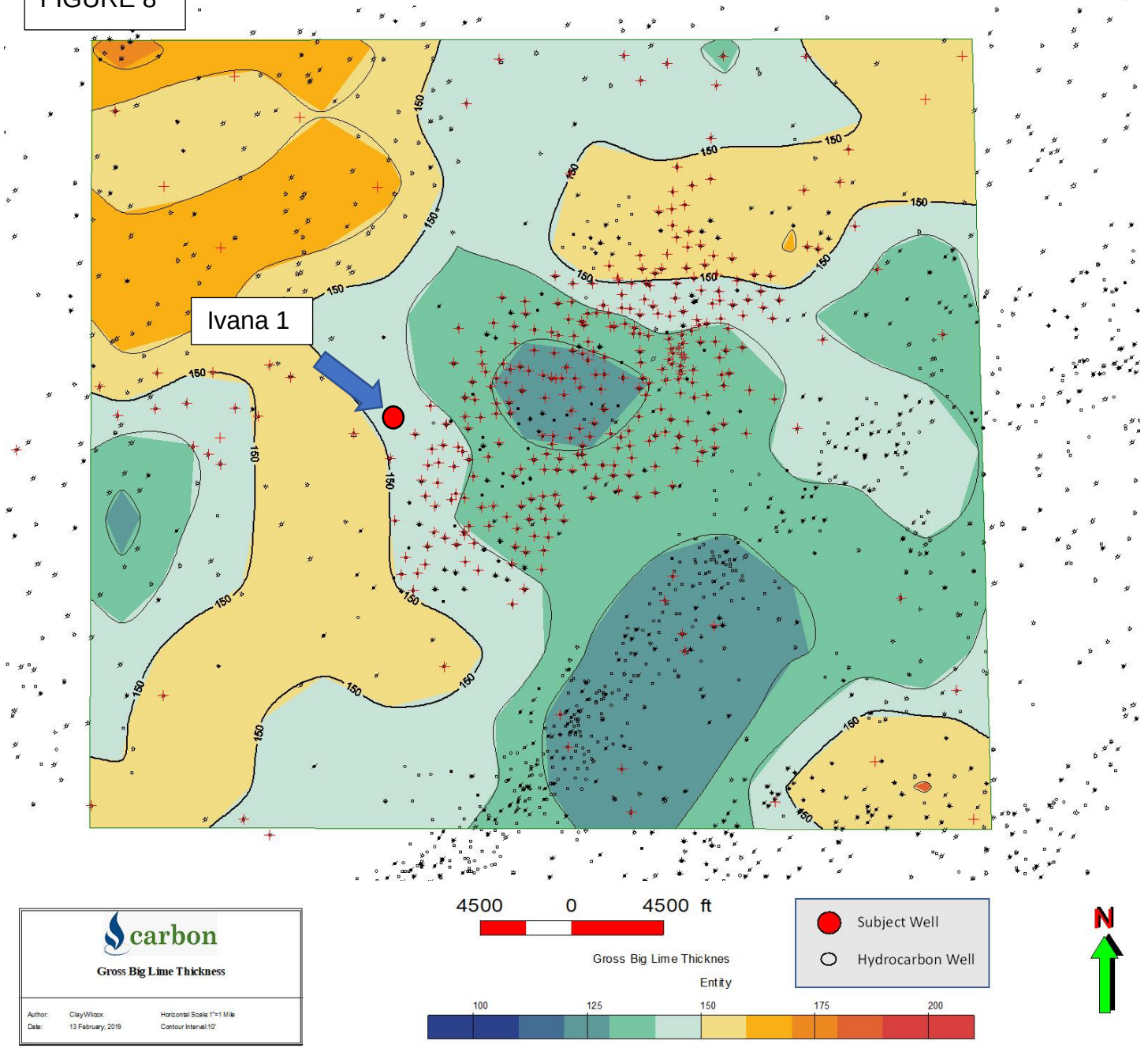
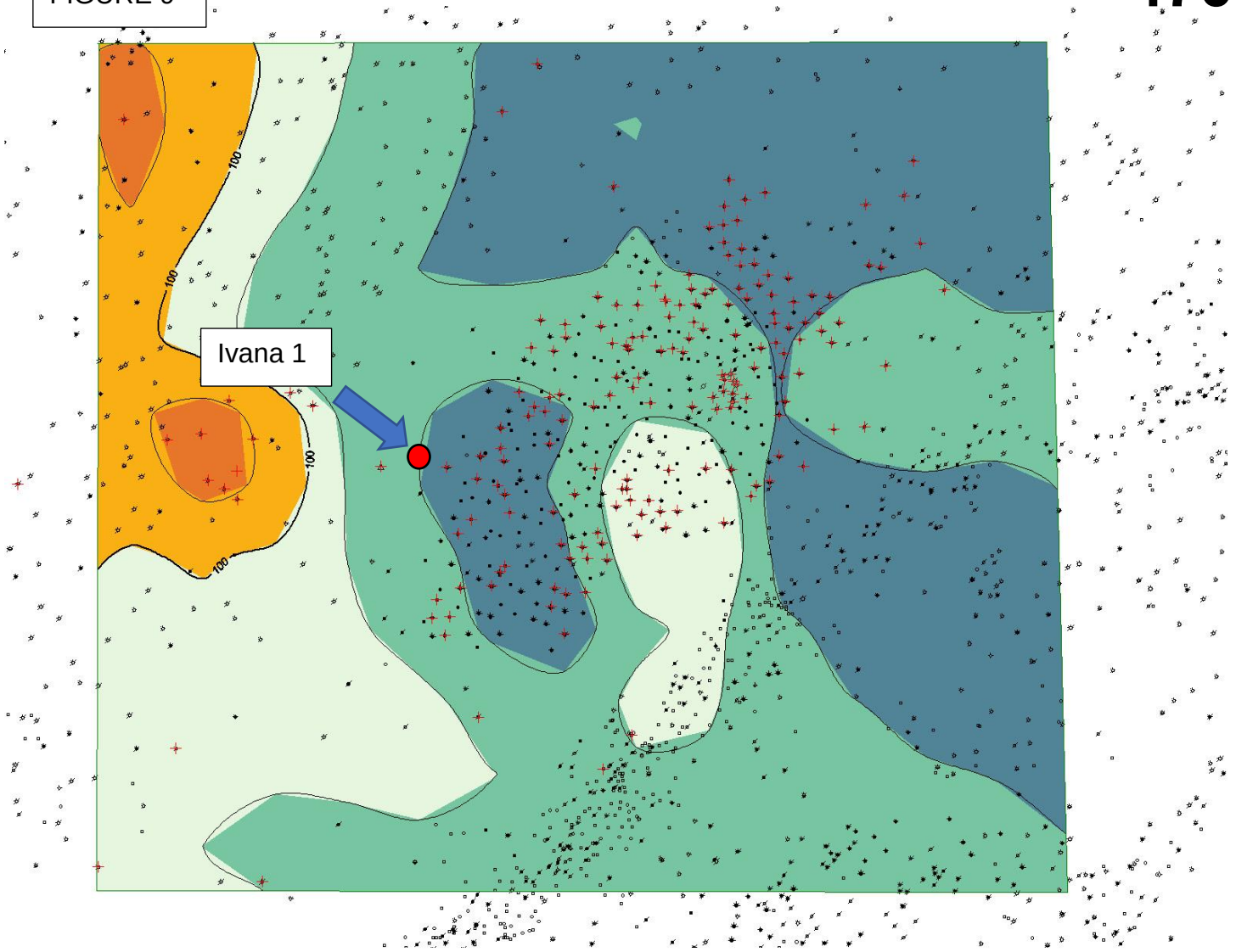


FIGURE 9

4703904844



carbon

Salt Sand Shale "Confining Layer" Isopach

Author: Clay Wilcox
Date: 13 February, 2019
Horizontal Scale: 1"=1 Mile
Contour Interval: 50'

4500 0 4500 ft

Blue Creek Salt Sand Shale Isopach

Entity

20 55 90 125 160

Subject Well

Hydrocarbon Well

N

4703904844

Kanawha County Brine Disposal Wells

Brine Disposal Wells

WellUse

- Brine Disposal
- Greenbrier Thickness (ft)
- Greenbrier Lmst Elev
- PreCambrian_Faults
- Surface Structure

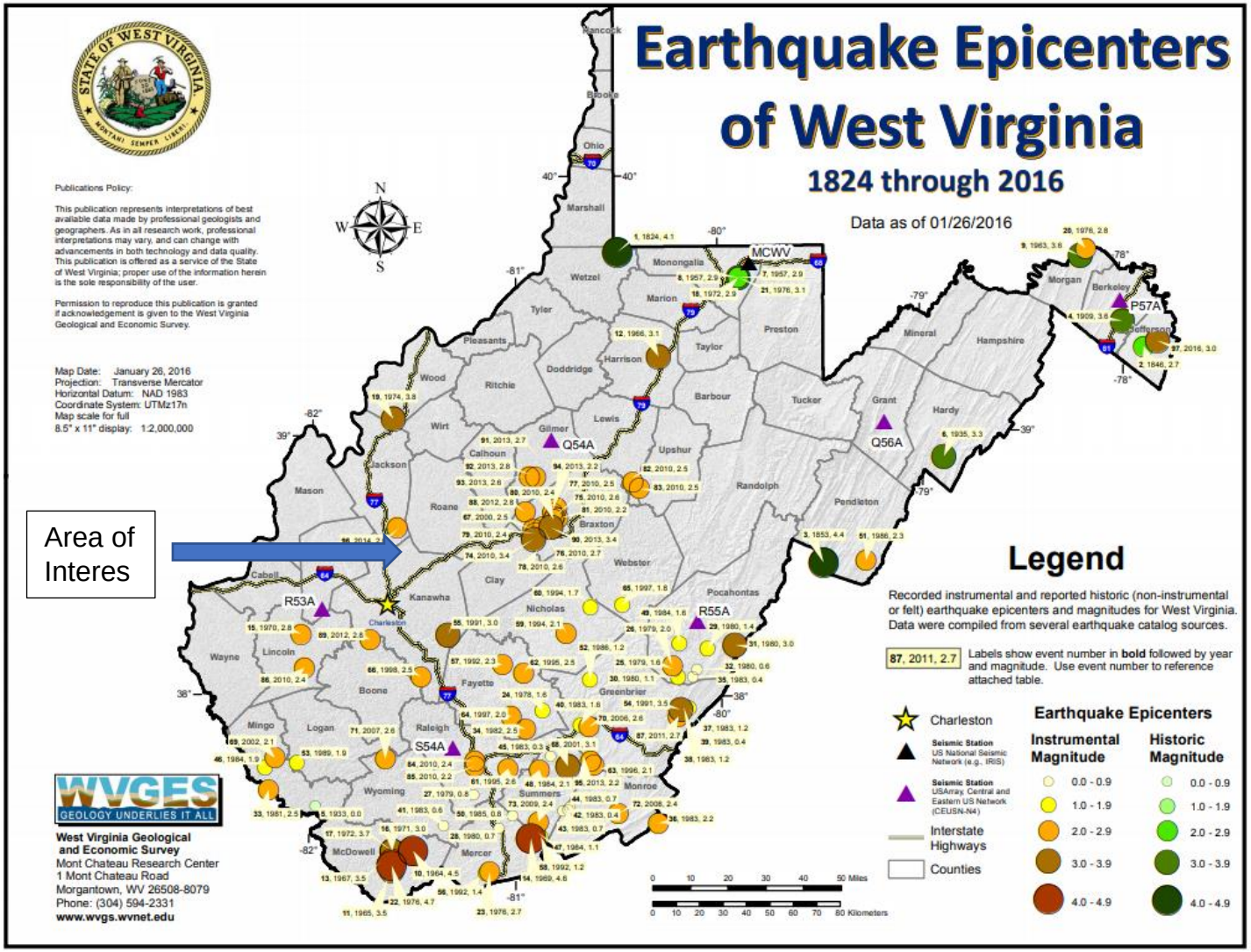
Scale: 1:60,000

5,000 0 5,000 10,000 Feet

Esri, NASA, NGA, USGS, FEMA, Sources: Esri, TomTom, Garmin, FAO, NOA

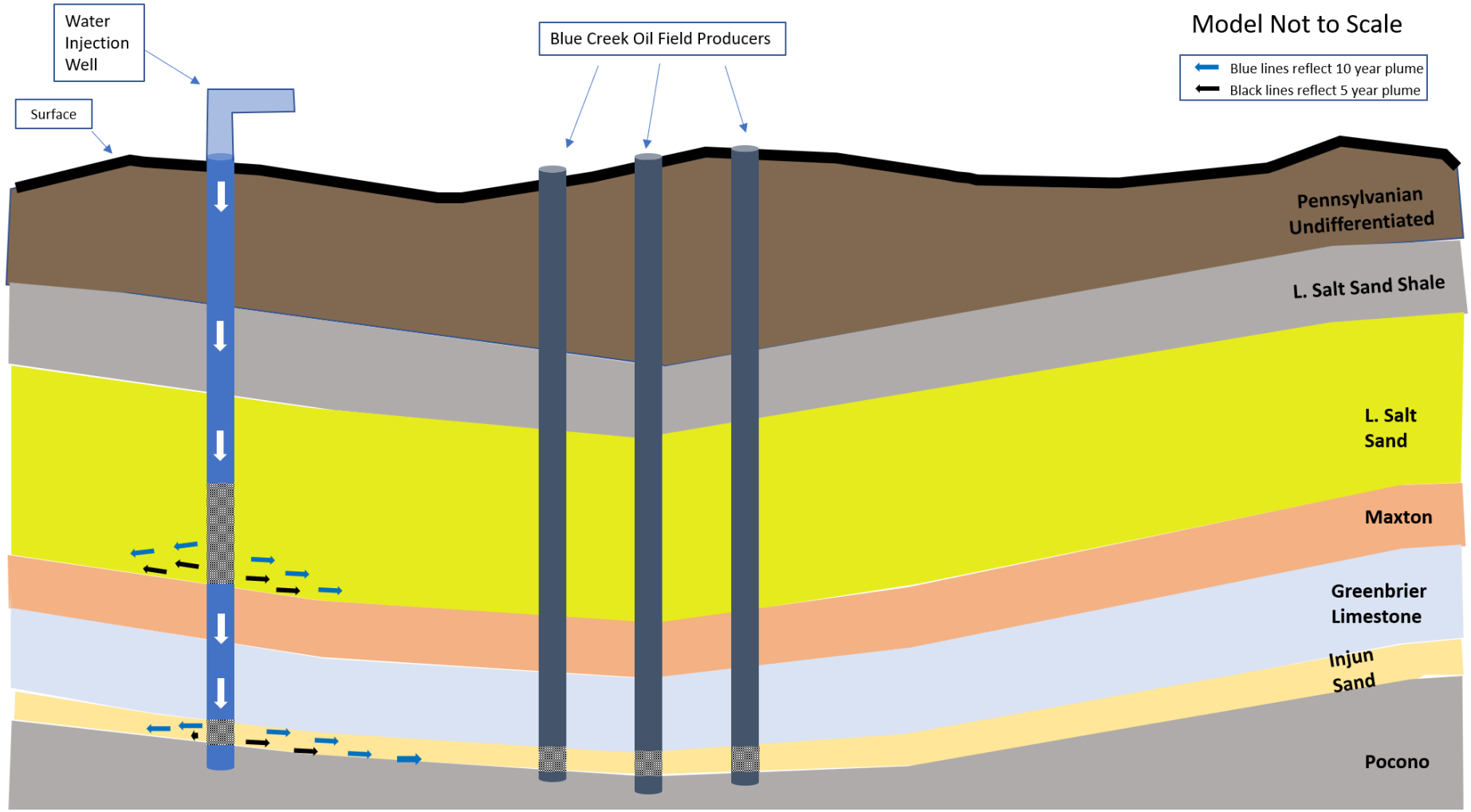
4703904844

FIGURE 10



4703904844

FIGURE 11



Diversified Production, LLC
UIC 2D03904844
Ivana TR3 No.1

	Injection (bbl)	Thickness (ft)
Salt Sand:	617,926 (87%)	360
Big Injun Sandstone:	92,334 (13%)	55
Total:	710,260	415

Estimation of Fluid Migration - Salt Sand

The following is an estimation of the injection fluid migration over time at the Ivana TR3 No.1 (API 4703904844) using the volumetric method. Parameters used in the calculation are cumulative volume, porosity percent, reservoir height, and saturation displacement percent. Below is the formula used for the calculation and the parameter inputs.

$$R = \sqrt{Q \times V / 3.14 \times P \times H \times Sd}$$

		Input	
Q =	Cumulative injection volume (bbls)	(617,926 bbl)	(as of 12/30/2024)
V =	Volume of one barrel of liquid (cf/bbl)	(5.615 cf/bbl)	
P =	Average porosity (%)	(0.27)	27%
H =	Reservoir height (ft)	(360 ft)	Salt Sand
Sd =	Saturation displacement (%)	(0.20)	20%
R =	Estimated radial distance from wellbore	(238 ft)	

Estimation of Fluid Migration - Big Injun

The following is an estimation of the injection fluid migration over time at the Ivana TR3 No.1 (API 4703904844) using the volumetric method. Parameters used in the calculation are cumulative volume, porosity percent, reservoir height, and saturation displacement percent. Below is the formula used for the calculation and the parameter inputs.

$$R = \sqrt{Q \times V / 3.14 \times P \times H \times Sd}$$

		Input	
Q =	Cumulative injection volume (bbls)	(92,334 bbl)	(as of 12/30/2024)
V =	Volume of one barrel of liquid (cf/bbl)	(5.615 cf/bbl)	
P =	Average porosity (%)	(0.35)	35%
H =	Reservoir height (ft)	(55 ft)	Big Injun Sandstone
Sd =	Saturation displacement (%)	(0.20)	20%
R =	Estimated radial distance from wellbore	(207 ft)	

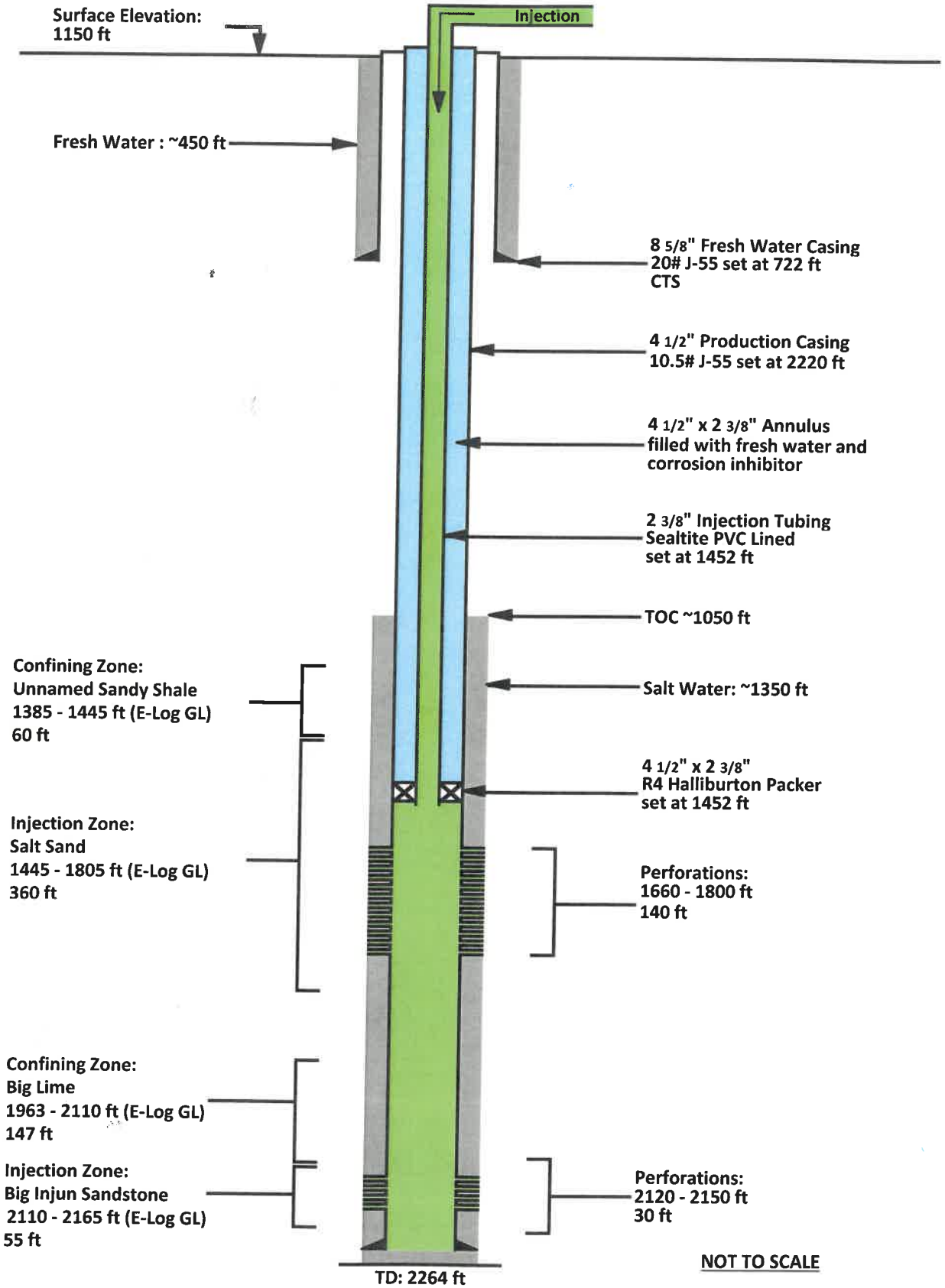
Well Bore Diagram

Ivana TR3 No. 1

API 47-039-04844

Diversified Production LLC

UIC 2D03904844-003



4703904844

WELL LOGS

Ivana TR3-1 (Formation Density)

YOUNG WIRELINE SERVICES
P.O.BOX 716
RIPLEY, WV. 25271

GR-COMPENSATED DENSITY LOG

FILING NO. 13076

COMPANY DUNKER STATE CORP.
WELL THE IVANA CO. TRACT 3 # 1
FIELD ELK DISTRICT
COUNTY KANAWHA STATE WV.
LOCATION FUDGE BRANCH, BLUE CREEK QUAD 7.5'
PERMIT , 47-039-4844
OTHER SERVICE
SEC TWP RGE

ELEVATIONS KB 1185 DF 1185 GL 1180

PERMANENT DATUM GROUND LEVEL ELEV 1180
LOG MEASURED FROM KB ,5 FT. ABOVE PERMANENT DATUM
DRILLING MEASURED FROM KB

DATE	12-20-91			
RUN NO.	ONE			
DEPTH DRILLER	2280			
DEPTH LOGGER	2284			
BOTTOM LOGGED INT.	2282			
TOP LOGGED INT.	16			
CASING DRILLER	722			
CASING LOGGER	722			
BIT SIZE	7 7/8			
TYPE FLUID IN HOLE	H2O			
DENSITY & VISCOSITY	N/A			
PH AND FLUID LOSS	N/A			
SOURCE OF SAMPLE	N/A			
RM @ MEAS. TEMP.	N/A			
RMF @ MEAS. TEMP.	N/A			
RMC @ MEAS. TEMP.	N/A			
SOURCE OF RMF & RMC	N/A			
RM @ BHT	N/A			
TIME SINCE CIRC.	4 HRS.			
MAX. REC. TEMP. F.	N/A			
EQUIP. NO. AND LOC.	126 / CHAS.			
RECORDED BY	D. CLARK			
WITNESSED BY	MR. KIMBLECH			

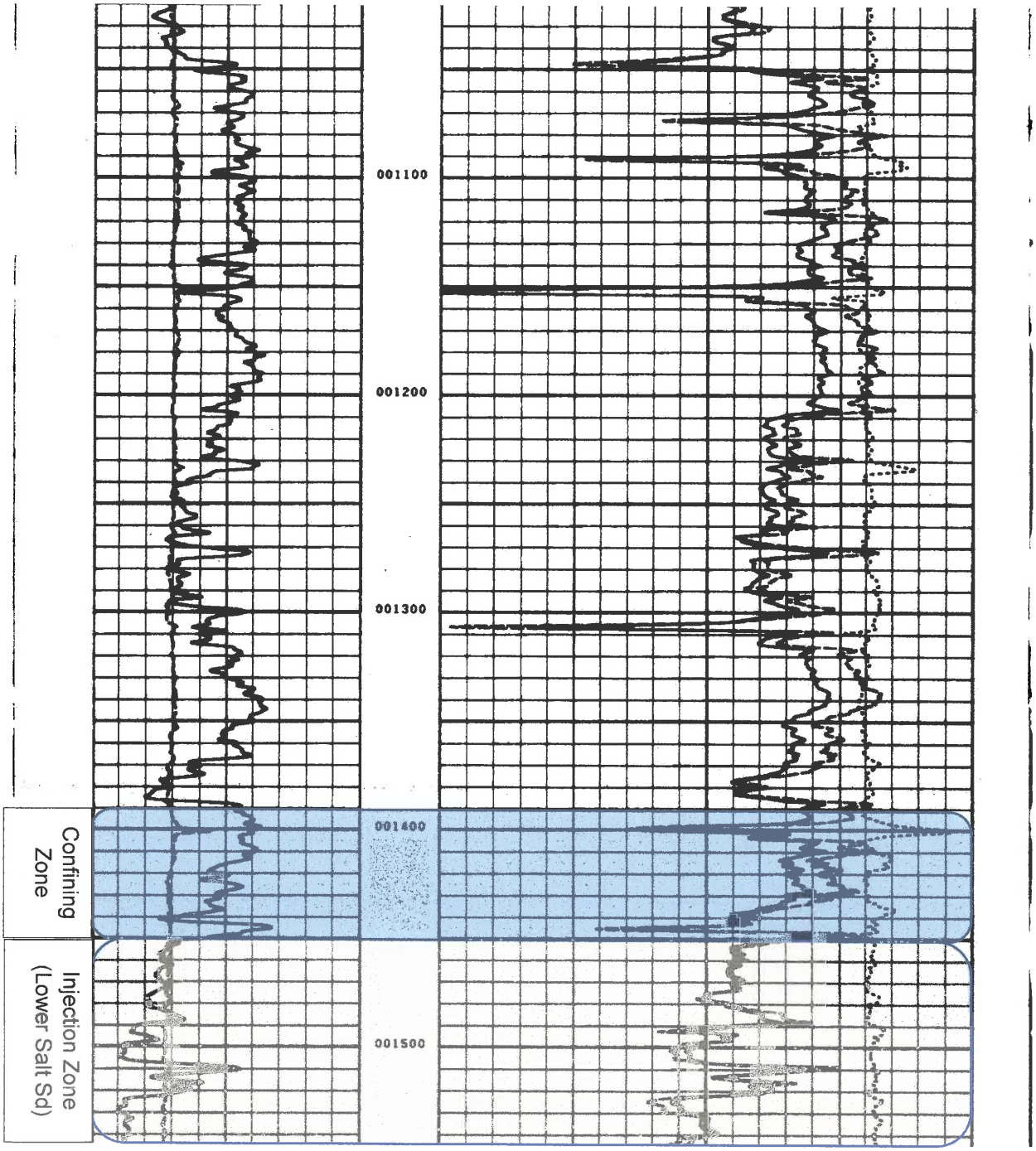
RUN NO.	TOOL NO.	PANNEL NO.	SOURCE NO.	TOOL TYPE	SCALE	UNITS / DIVISION
ONE	2216	262	CSV - J32	CDL	2.0 - 3.0	.05/

REMARKS
2.71 DENSITY MATRIX THRU LS.

GAMMA RAY
API UNITS
0 — 200
200 — 400

CORRECTION
-.3 .3
BULK DENSITY
GRAMS / CC
2.0 2.25 2.50 2.75 3.0

4703904844



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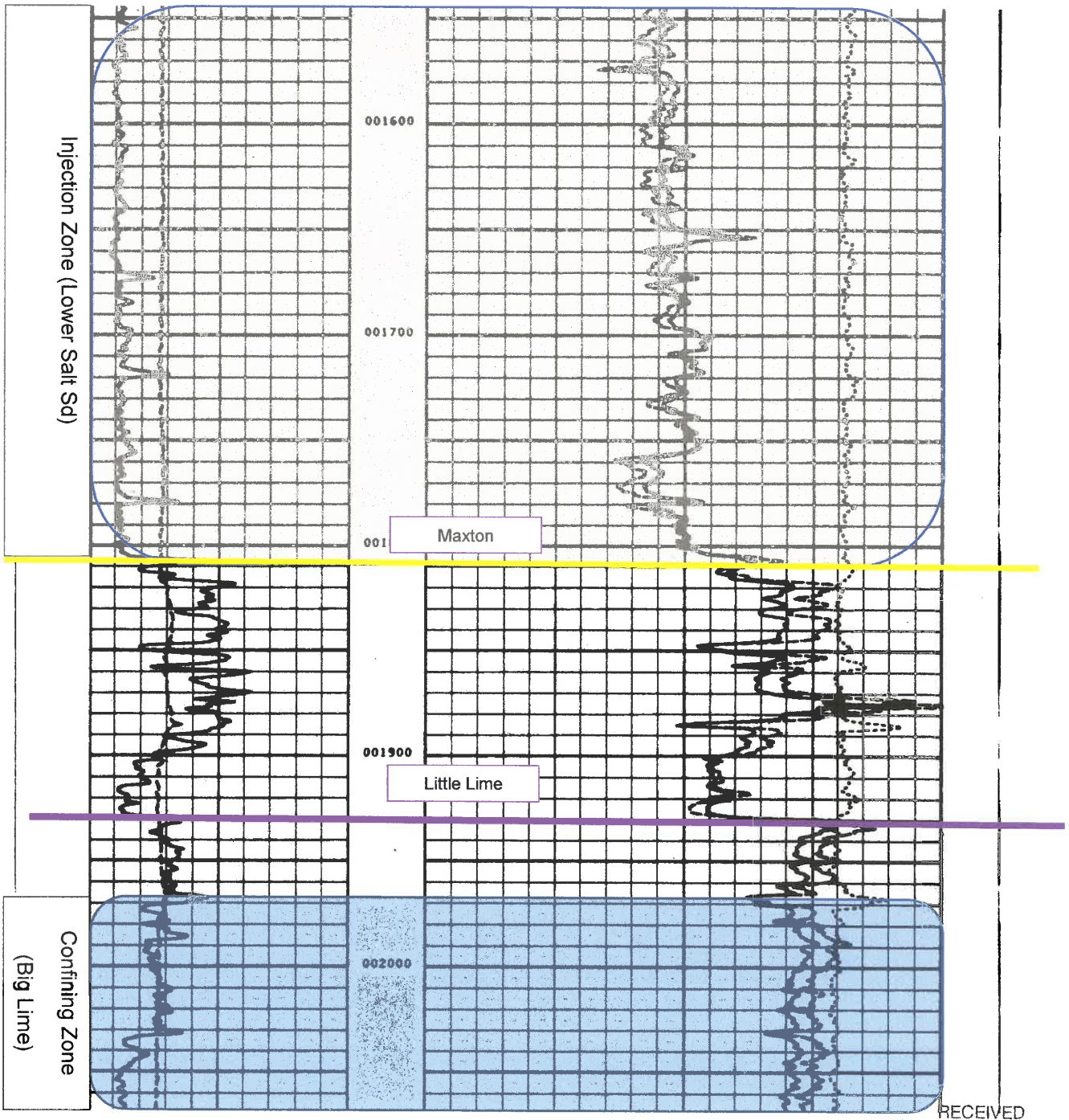

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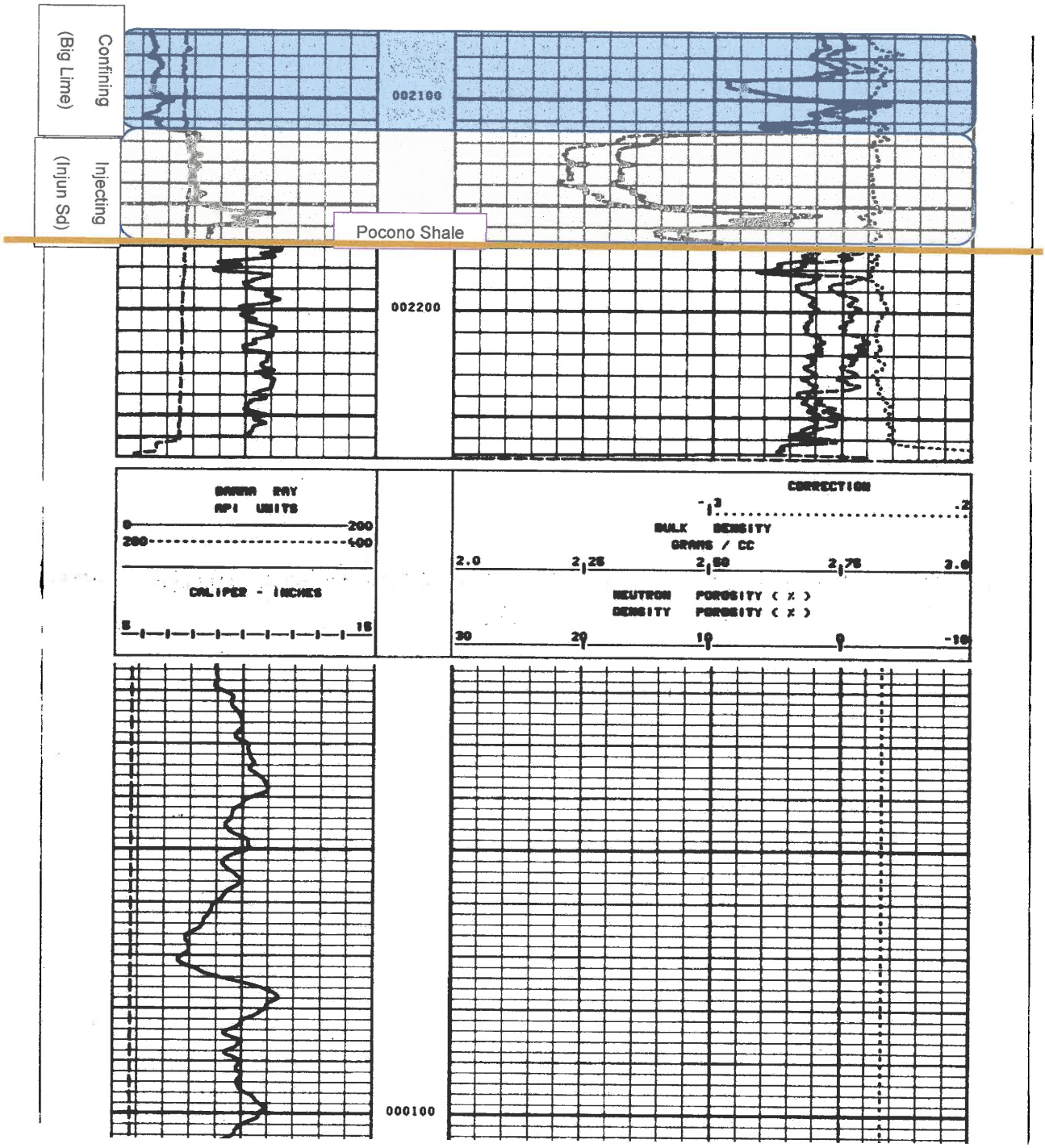

4703904844

YOUNG WIRELINE SERVICES

GAMMA RAY CEMENT BOND LOG

COMPANY Quaker State Corp.

WELL The Ivana Co. Tract 3 #1

FIELD Elk Dist.

COUNTY Kanawha STATE WV

LOCATION: Fudge Branch, Blue Creek 7.5 Quad

SEC. TWP. RGE.

OTHER SERVICES:

Permit No 47-039-4844

Permanent Datum: Ground Level ; Elev.: 1150

Log Measured From Top of 4½ , 3 Ft. Above Perm. Datum

Drilling Measured From Kelly Bushing

Elev.: K.B. 1155 D.F. 1155 G.L. 1150

Date	Jan 20, 1993		
Run No.	One		
Type Log	GR-Cement Bond		
Depth—Driller	2250		
Depth—Logger	2501		
Bottom logged interval	2504		
Top logged interval	900		
Type fluid in hole	H2O		
Salinity, PPM Cl.			
Density			
Level	Full		
Max rec. temp., deg. F.			
Operating rig time	1 HR.		
Recorded by	W. Mahan		
Witnessed by	Mr. J. Whitehead Mr Knobloch		

Run No.	Bore-Hole Record Bit	From	To	Casing Record Size	Wgt.	From	To
	7⅞	722	TD	8⅝		Surf.	722
				4½		Surf.	TD

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MAR 2 0 2019

WV Department of
Environmental Protection

FORM 109

EQUIPMENT DATA

GAMMA RAY		PERFORATIONS			
RUN NO.	one	Type	To	From	No. Shots
TOOL MODEL NO.	6220L-R	3½ Hollow Carrier	2150	2120	31
DIAM.	2⅛				
DETECT. MODEL NO.			1660	1800	121
TYPE	Point				
LENGTH	3'				
				Total	152

GENERAL	
HOIST TRUCK NO.	140
INST. TRUCK NO.	140
TOOL SERIAL NO.	

LOGGING DATA

GENERAL				GAMMA RAY			
RUN NO.	DEPTHS FROM	DEPTHS TO	SPEED FT/MIN	T.C. SEC.	SENS. SETTINGS	ZERO LOG DIV.	SCALE API G.R. UNITS
one	2204	900	30	2	116	0-2	0-200

REFERENCE LITERATURE:

See Coal Mines Base Map at 1910

REMARKS:

4703904844

GAMMA RAY

API GAMMA RAY UNITS

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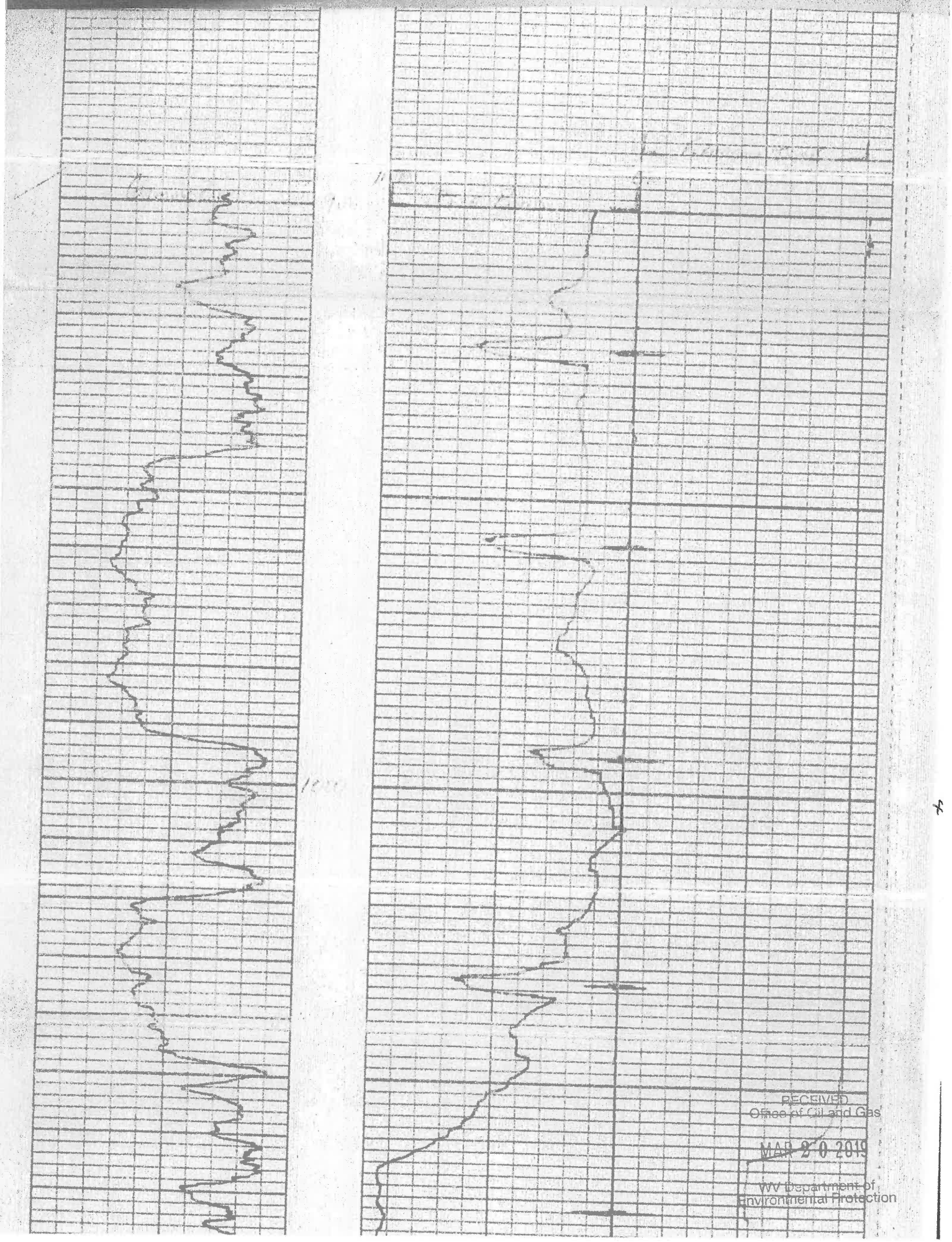
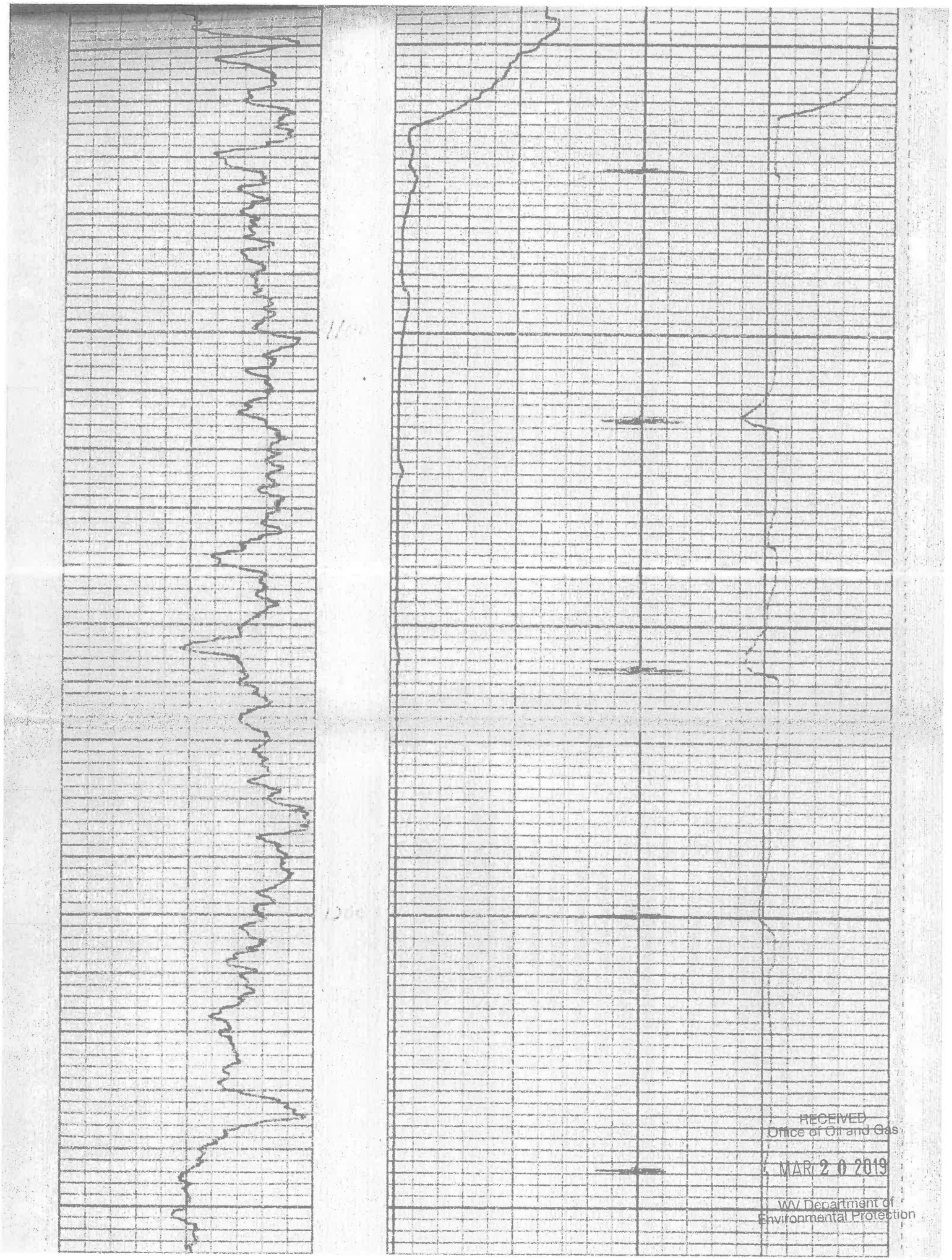
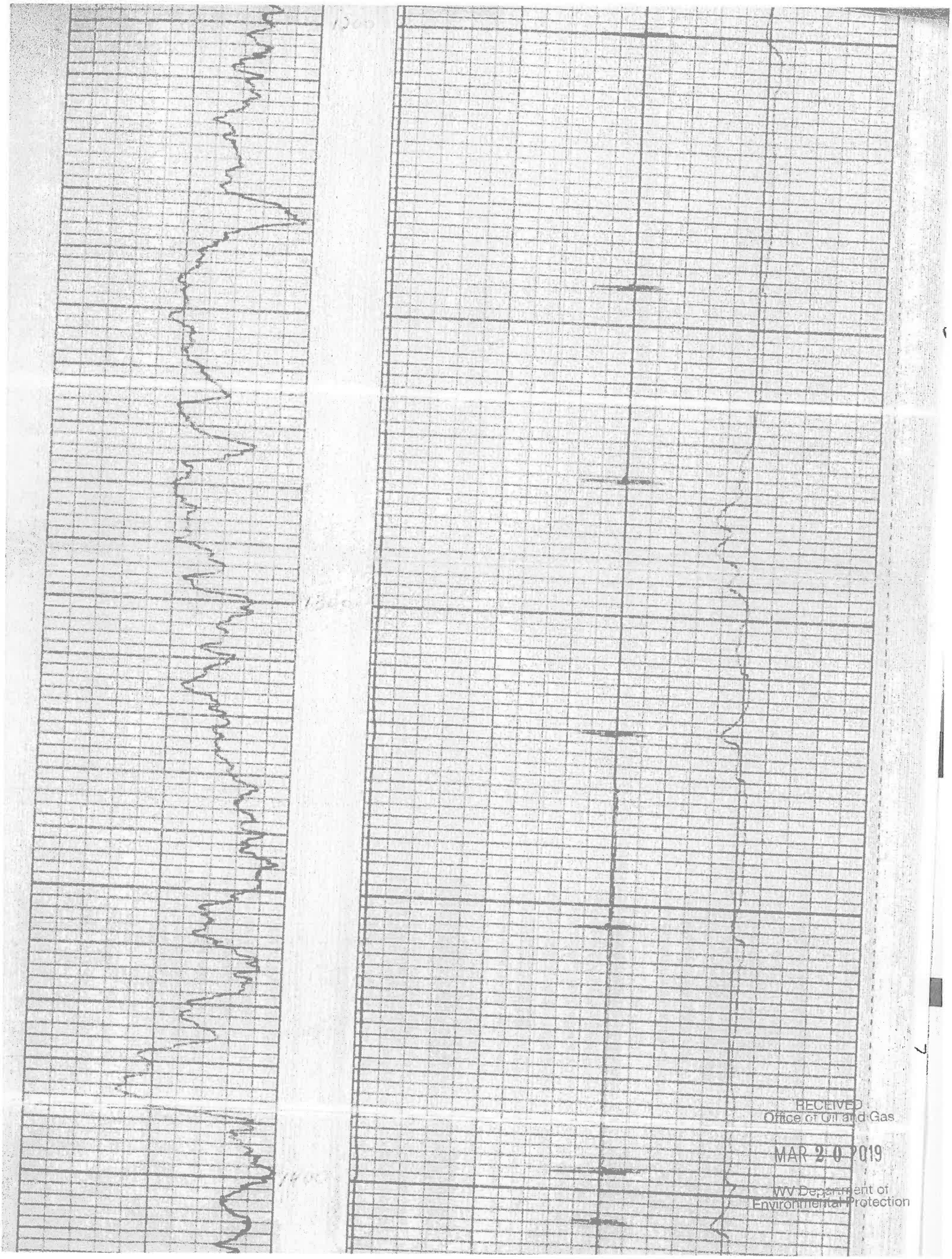
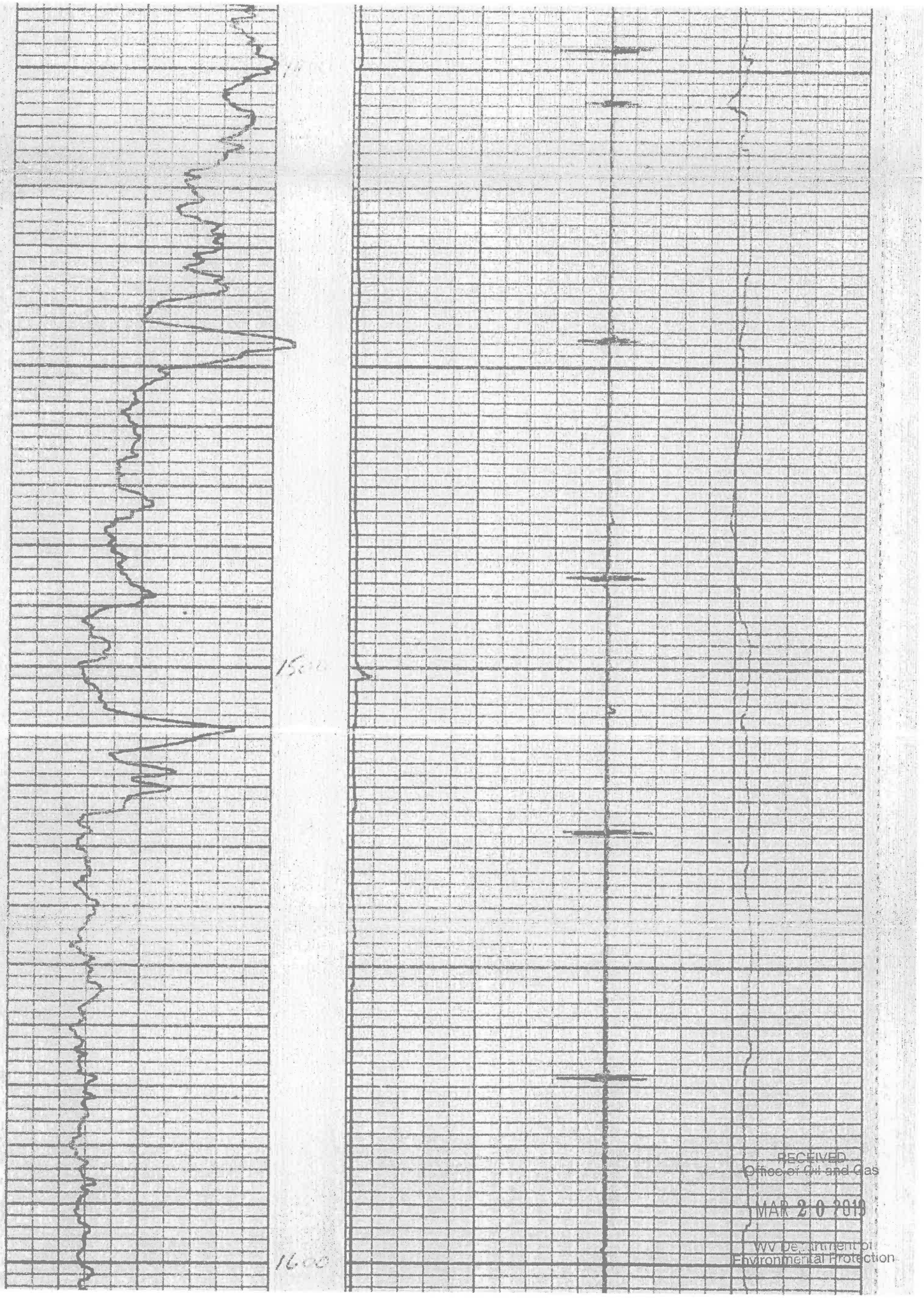
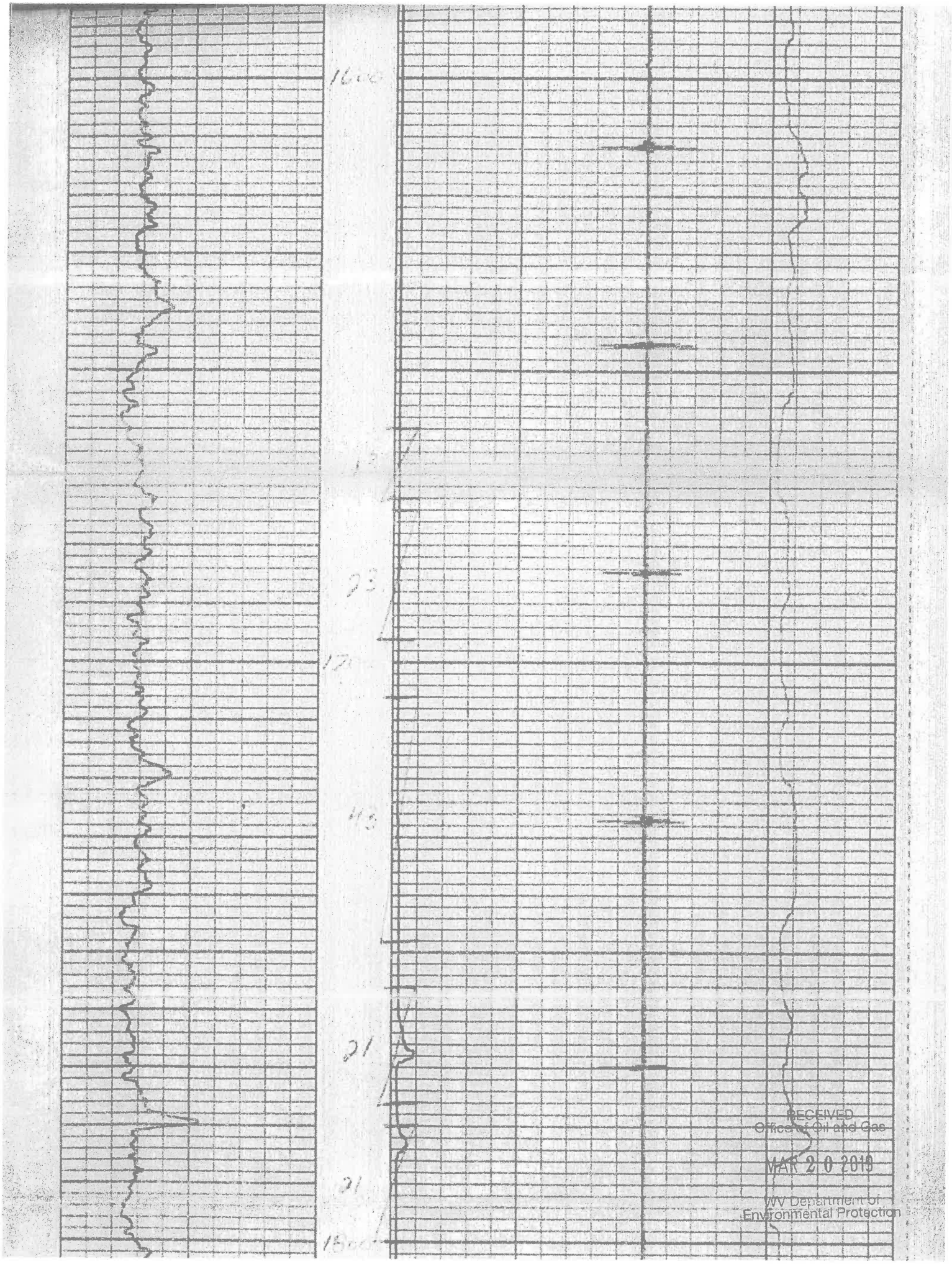
Office of Oil and Gas
MAR 20 2018
WV Department of
Environmental Protection

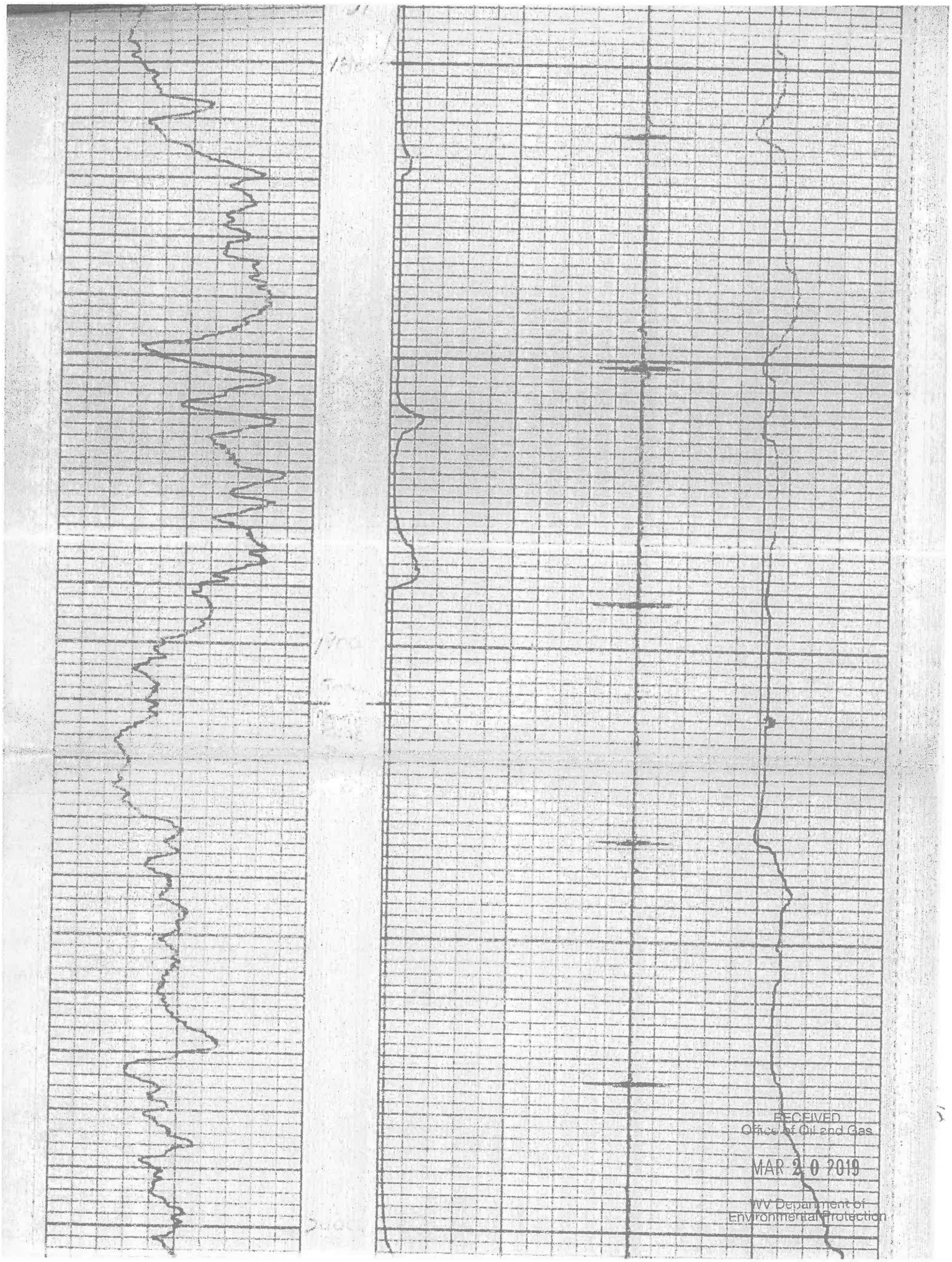


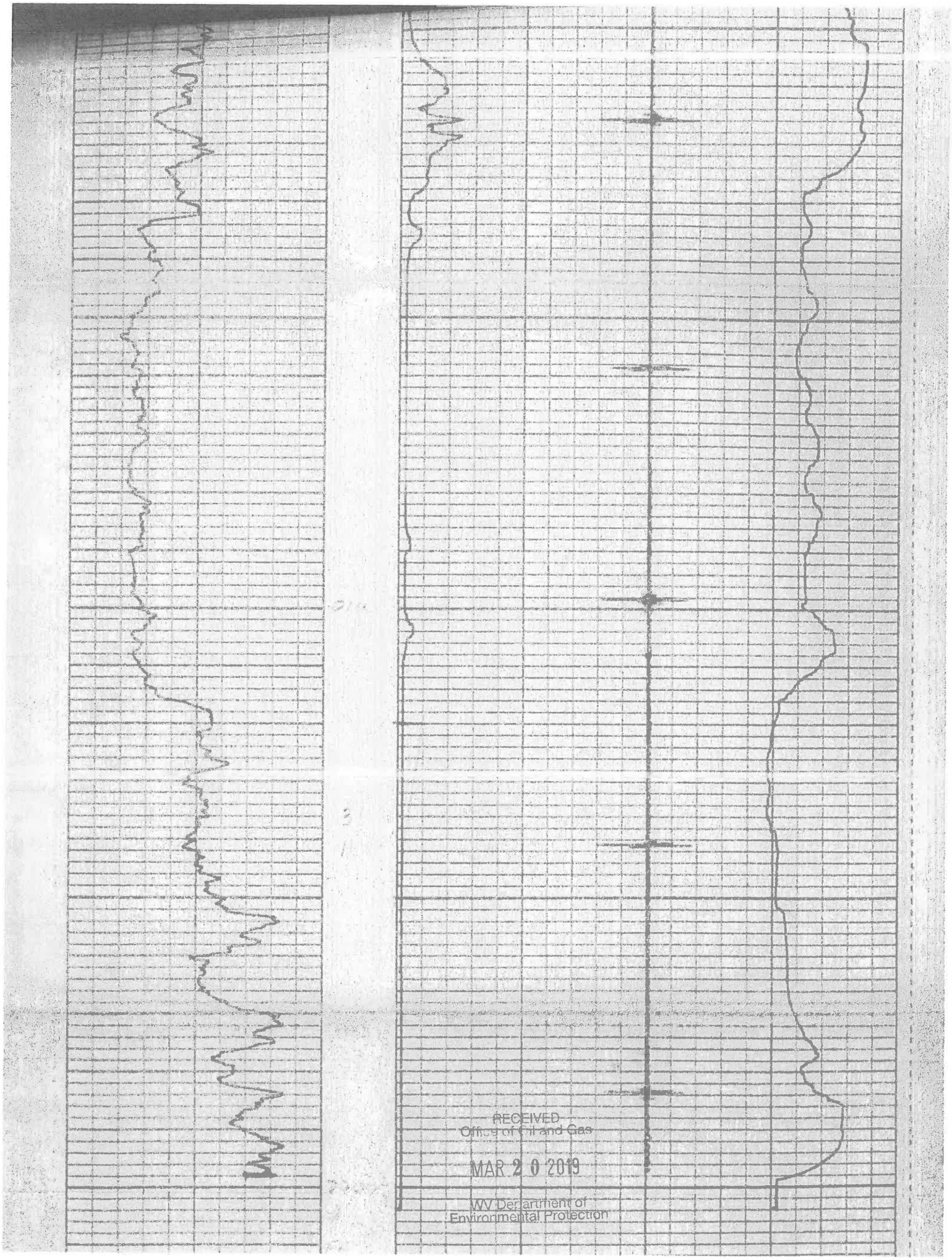


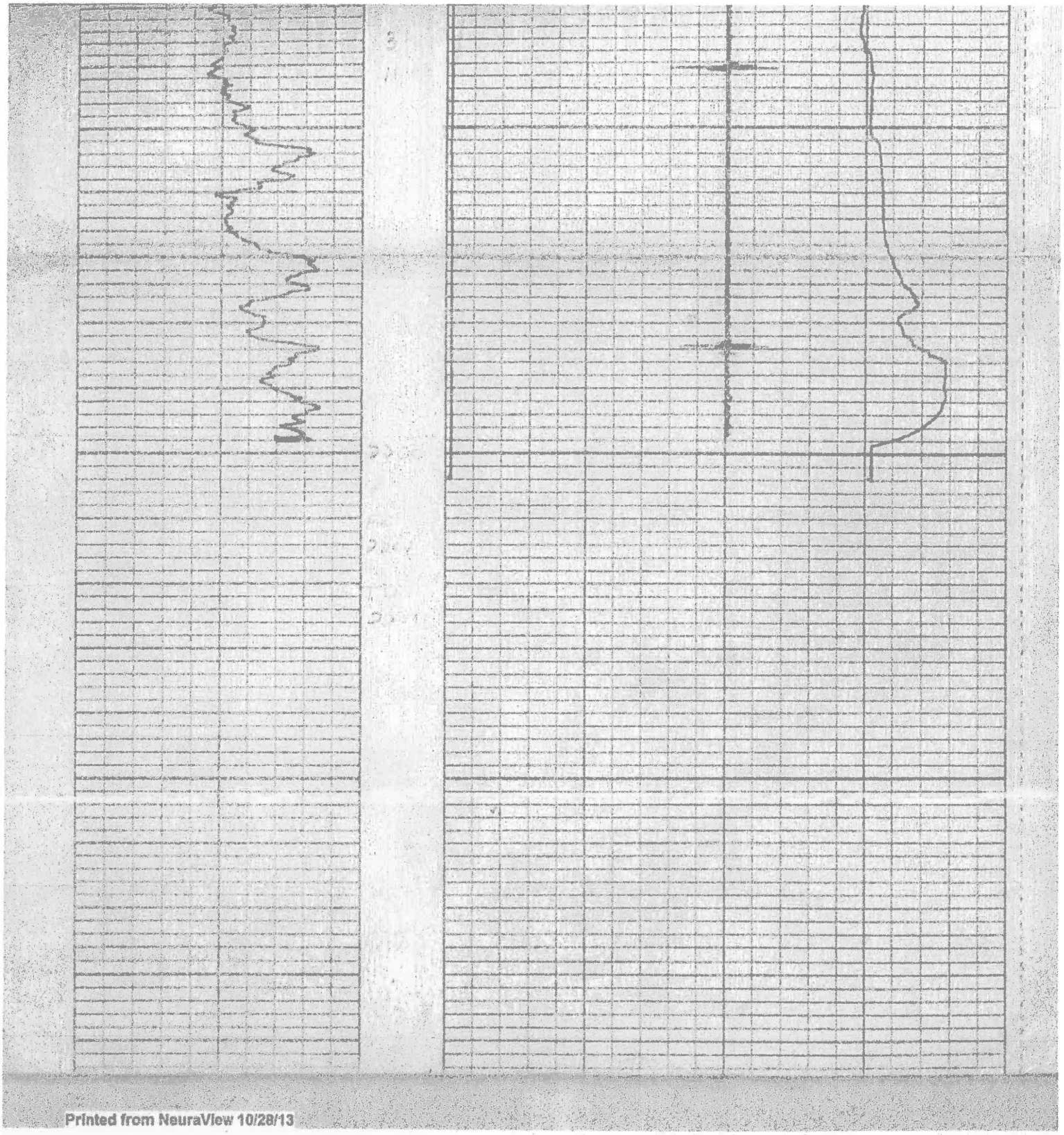












Printed from NeuraView 10/28/13

4703904844

YOUNG WIRELINE SERVICES

P.O.BOX 718
RIPLEY, WV. 25271

GR-COMPENSATED DENSITY LOG

FILING NO.
13078

COMPANY QUAKER STATE CORP.
WELL THE IVANA CO. TRACT 3 # 1
FIELD ELK DISTRICT
COUNTY KANAWHA STATE WV.

LOCATION FUDGE BRANCH. BLUE CREEK QUAD 7.5.
PERMIT , 47-039-4844

SEC TWP RGE

OTHER SERVICE

PERMANENT DATUM GROUND LEVEL ELEV 1150
LOG MEASURED FROM KB ,5 FT. ABOVE PERMANENT DATUM
DRILLING MEASURED FROM KB

ELEVATIONS
KB 1155
DF 1155
GL 1150

DATE	12-28-91			
RUN NO.	ONE			
DEPTH DRILLER	2260			
DEPTH LOGGER	2264			
BOTTOM LOGGED INT.	2262			
TOP LOGGED INT.	18			
CASING DRILLER	723			
CASING LOGGER	722			
BIT SIZE	7 7/8			
TYPE FLUID IN HOLE	H2O			
DENSITY & VISCOSITY	N/A			
PH AND FLUID LOSS	N/A			
SOURCE OF SAMPLE	N/A			
RM @ MEAS. TEMP.	N/A			
RMF @ MEAS. TEMP.	N/A			
RMC @ MEAS. TEMP.	N/A			
SOURCE OF RMF & RMC	N/A			
RM @ BHT	N/A			
TIME SINCE CIRC.	4 HRS.			
MAX. REC. TEMP. F.	N/A			
EQUIP. NO. AND LOC.	128 / CHAS.			
RECORDED BY	D. CLARK			
WITNESSED BY	MR. KOEBLECH			

RUN NO.	TOOL NO.	PANNEL NO.	SOURCE NO.	TOOL TYPE	SCALE	UNITS / DIVISION
ONE	2216	262	CSV - J33	CDL	2.0 - 3.0	.05/

REMARKS
2.71 DENSITY MATRIX THRU LS.

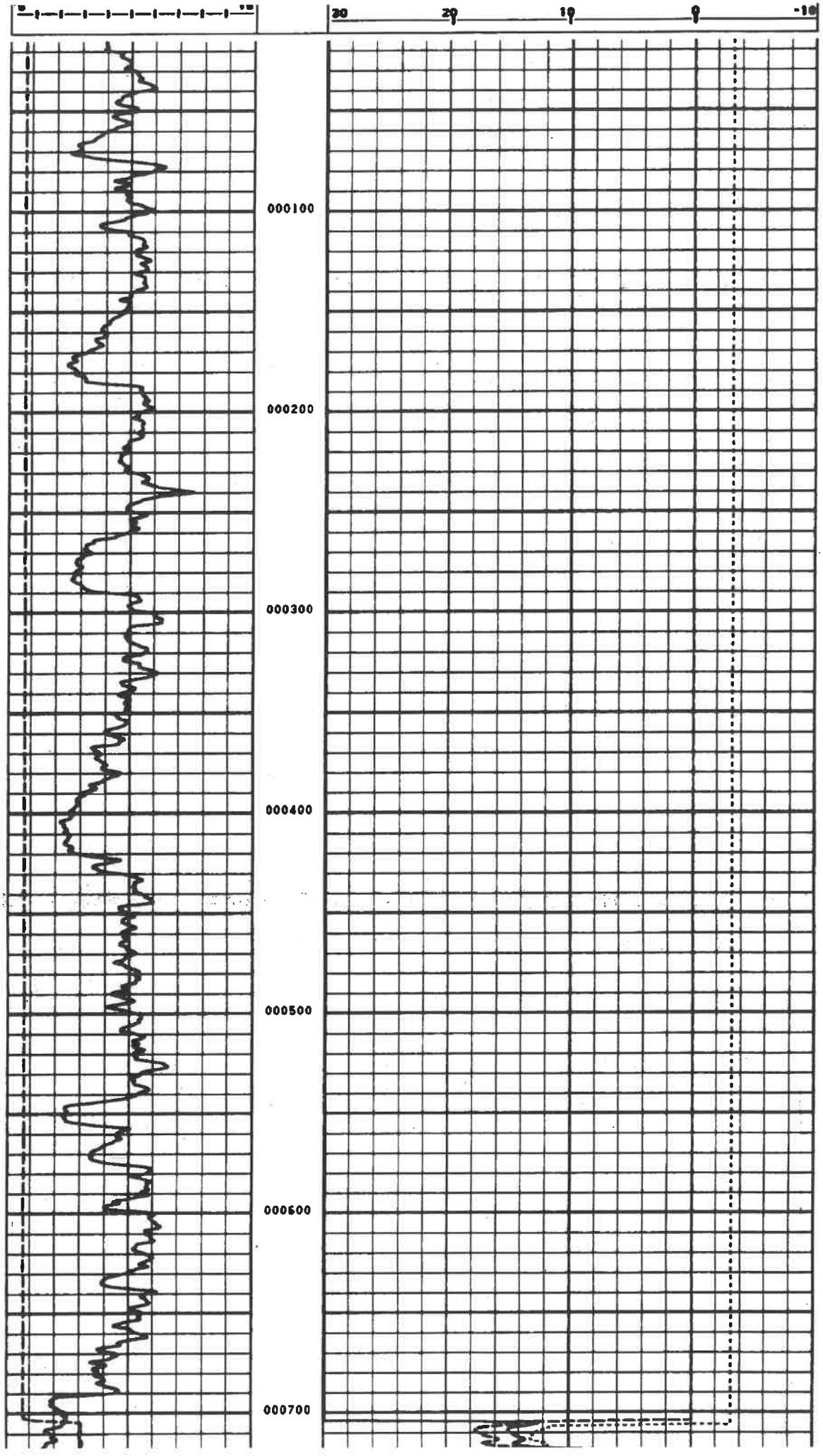
GAMMA RAY
API UNITS
0 ———— 200
200 - - - - - - 400

CALIPER - INCHES

CORRECTION
-.3 2

BULK DENSITY
GRAMS / CC
2.0 2.25 2.50 2.75 3.0

NEUTRON POROSITY (X)
DENSITY POROSITY (X)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000600
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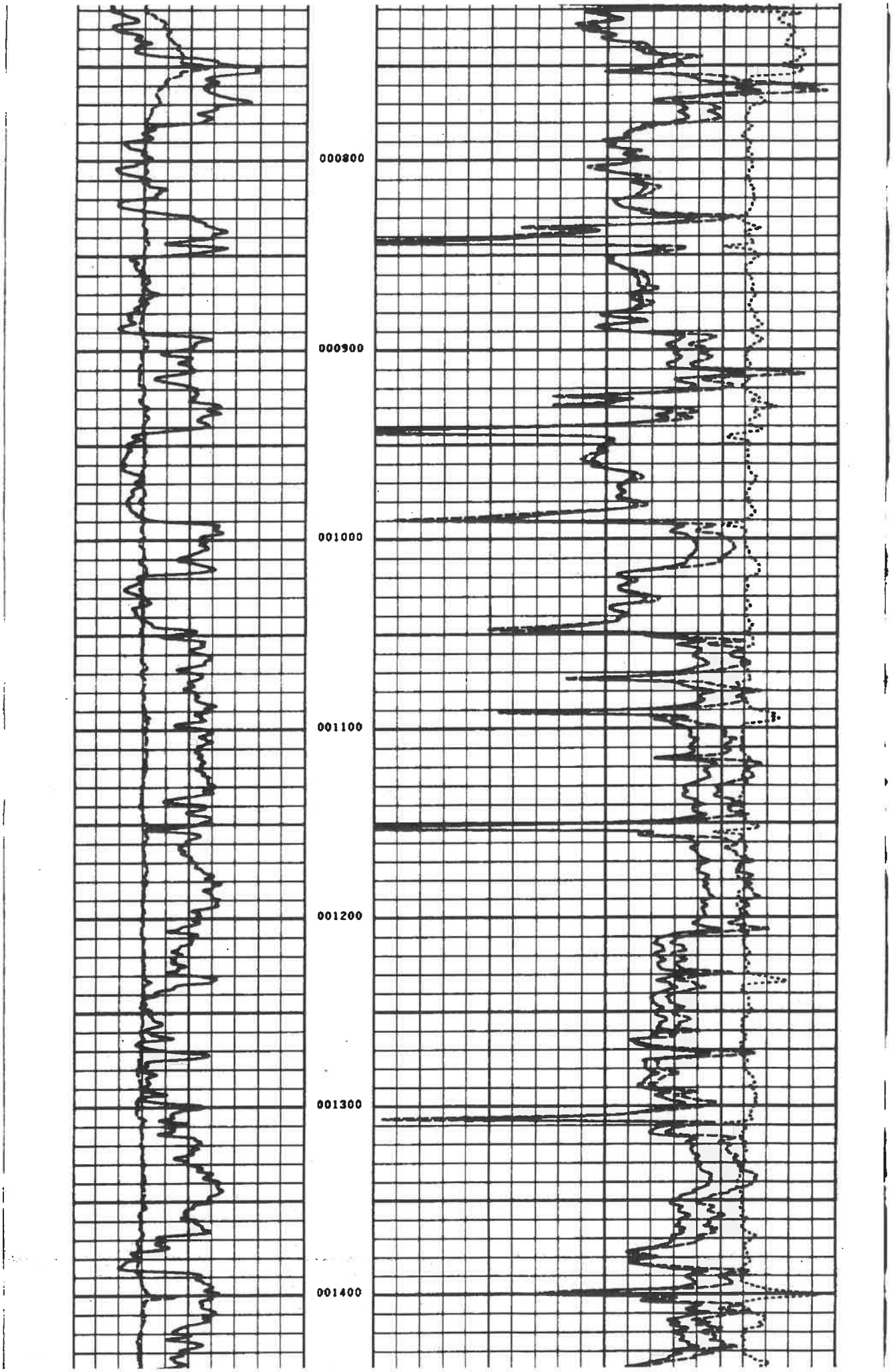
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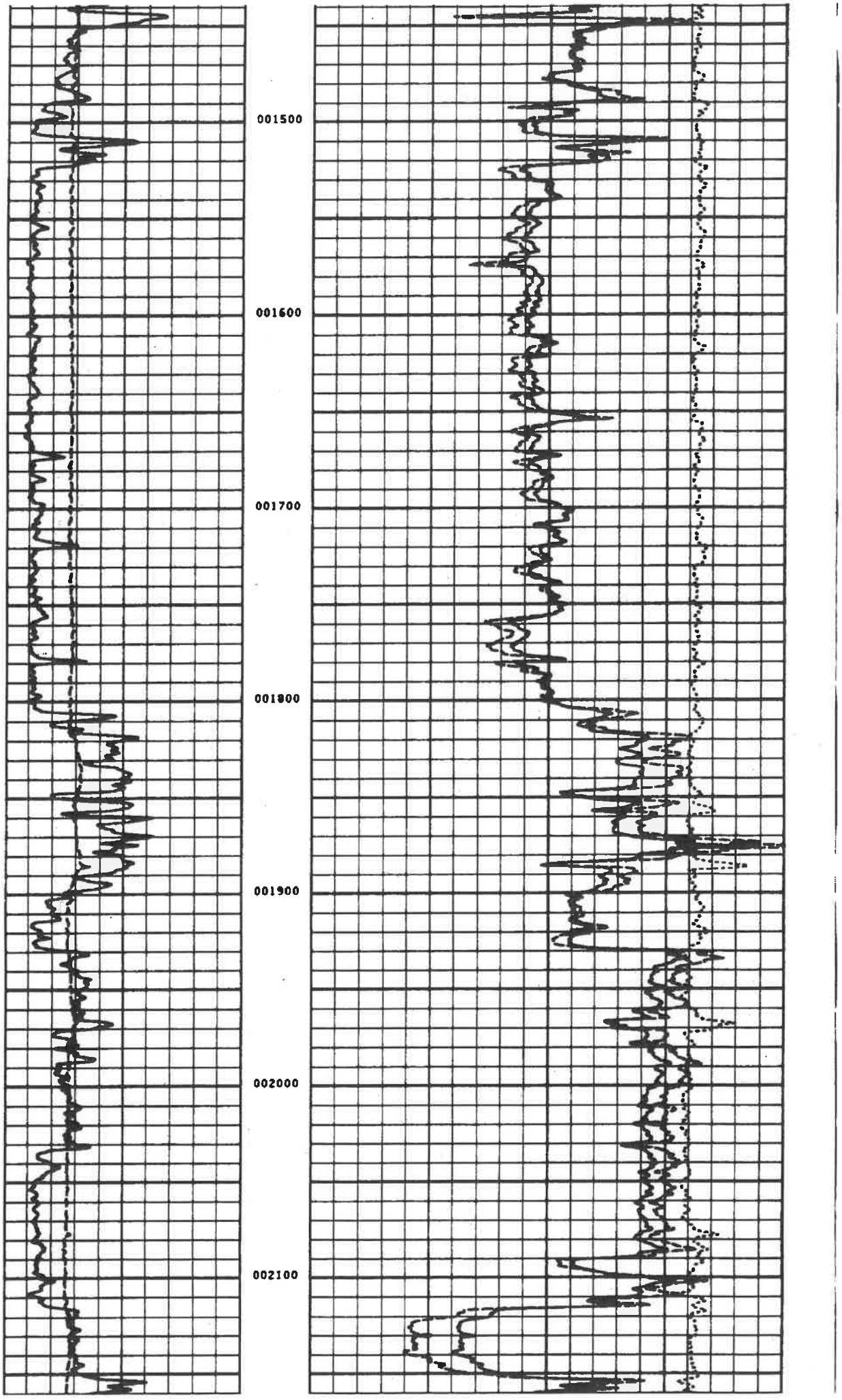
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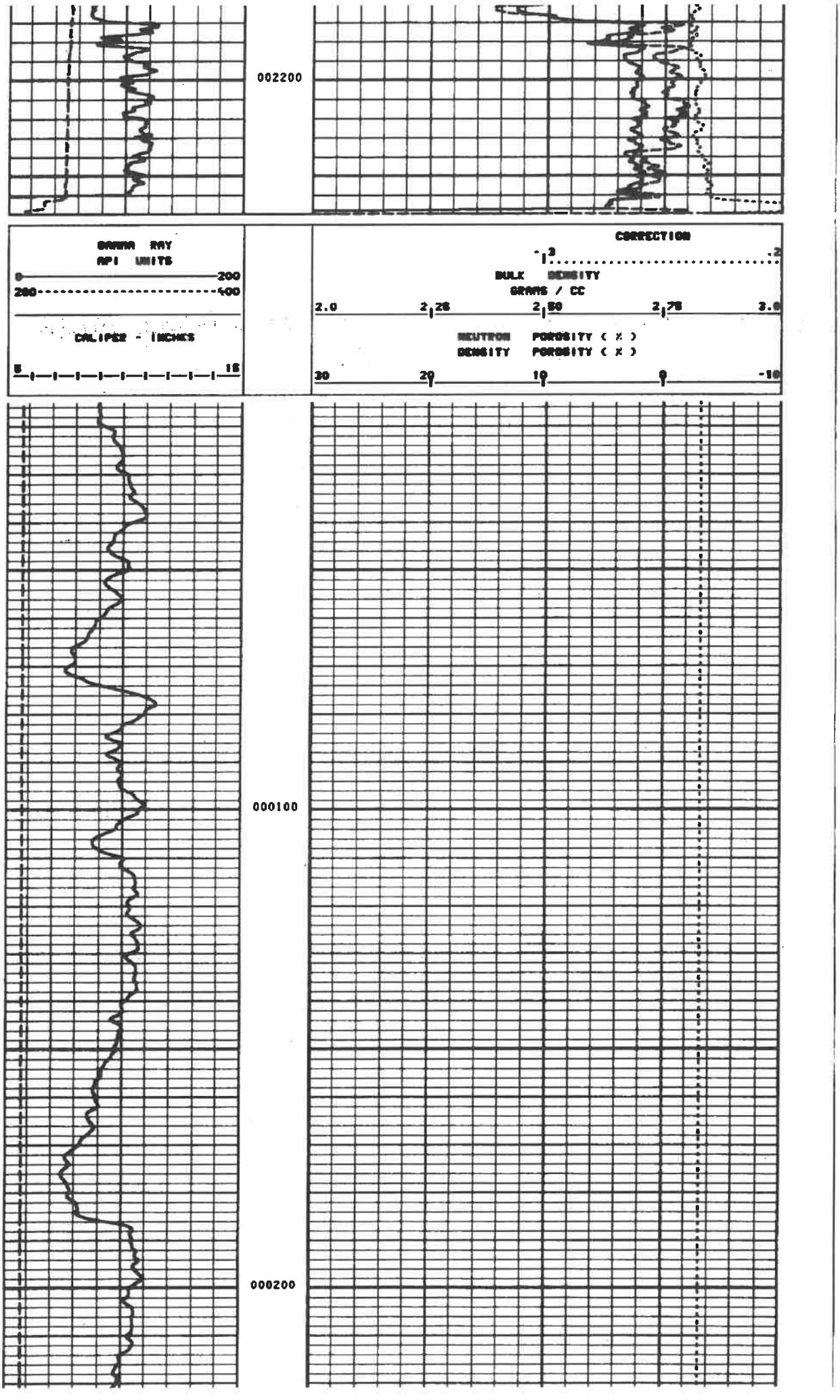
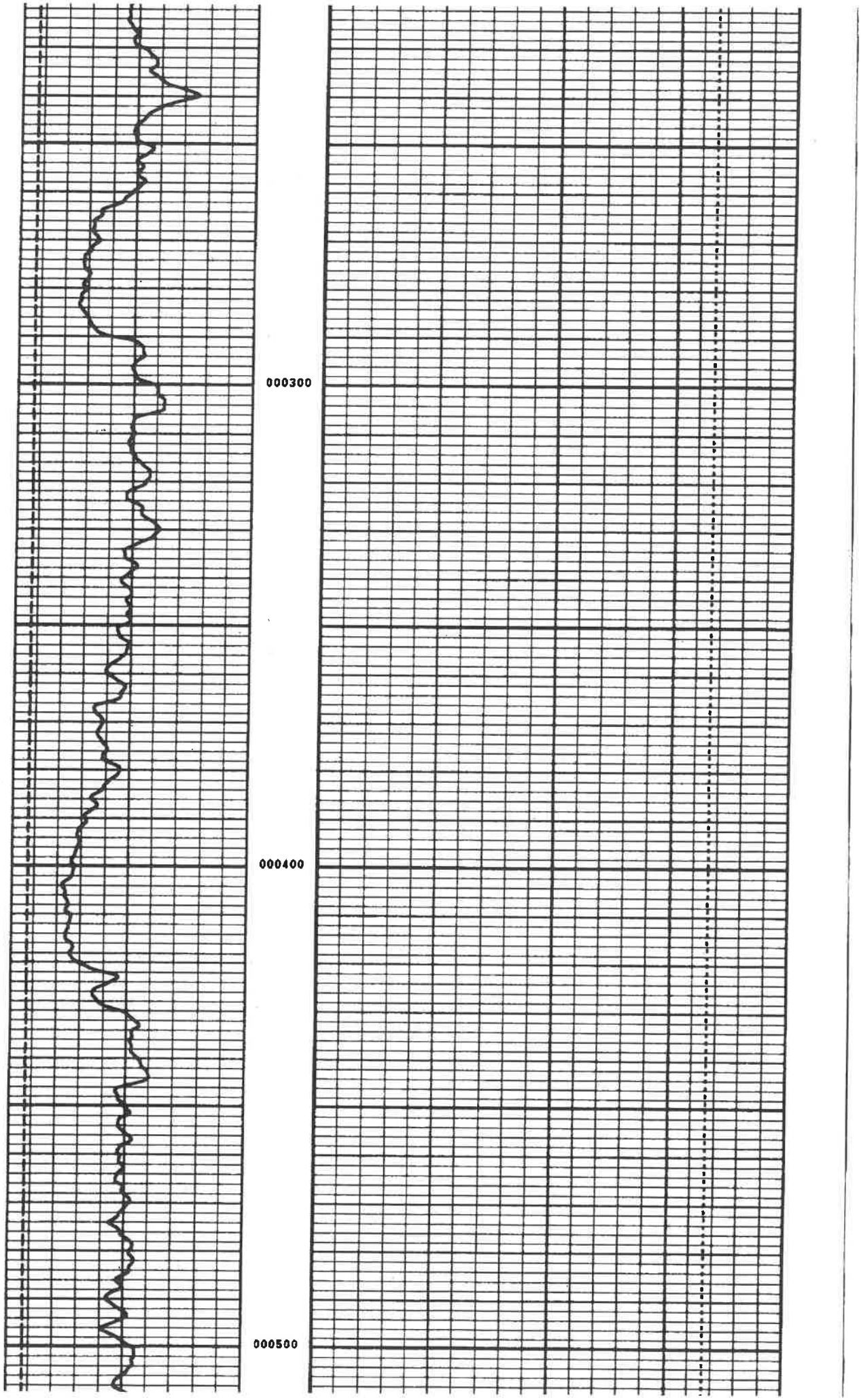
001800
001900
002000
002100


002200
GAMMA RAY
API UNITS
0
200
200
400
CALIPER - INCHES
6
16
CORRECTION
-.3
.2
BULK DENSITY
GRAMS / CC
2.0
2.25
2.50
2.75
3.0
NEUTRON POROSITY (%)
DENSITY POROSITY (%)
30
20
10
0
-10
000100
000200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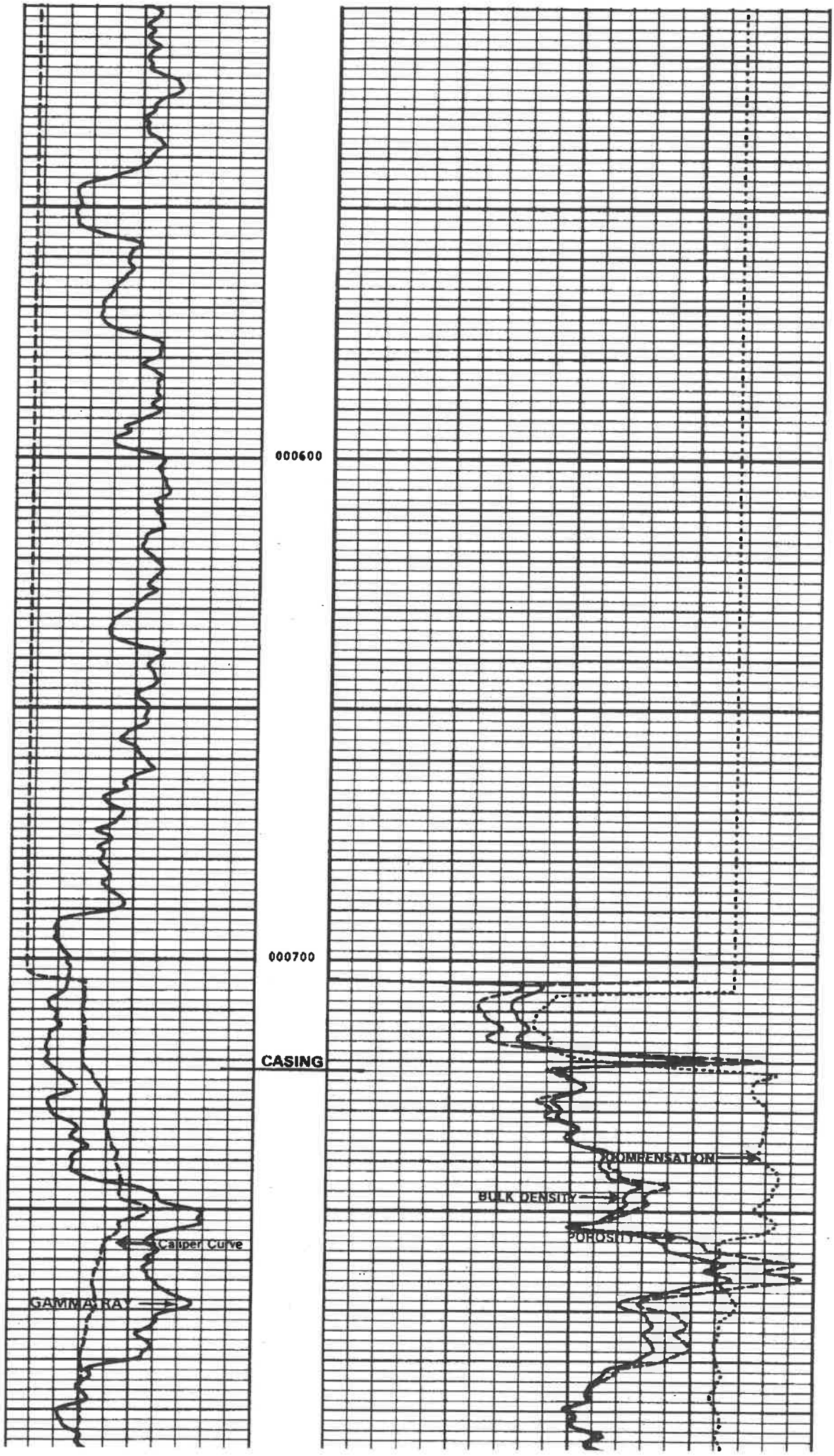
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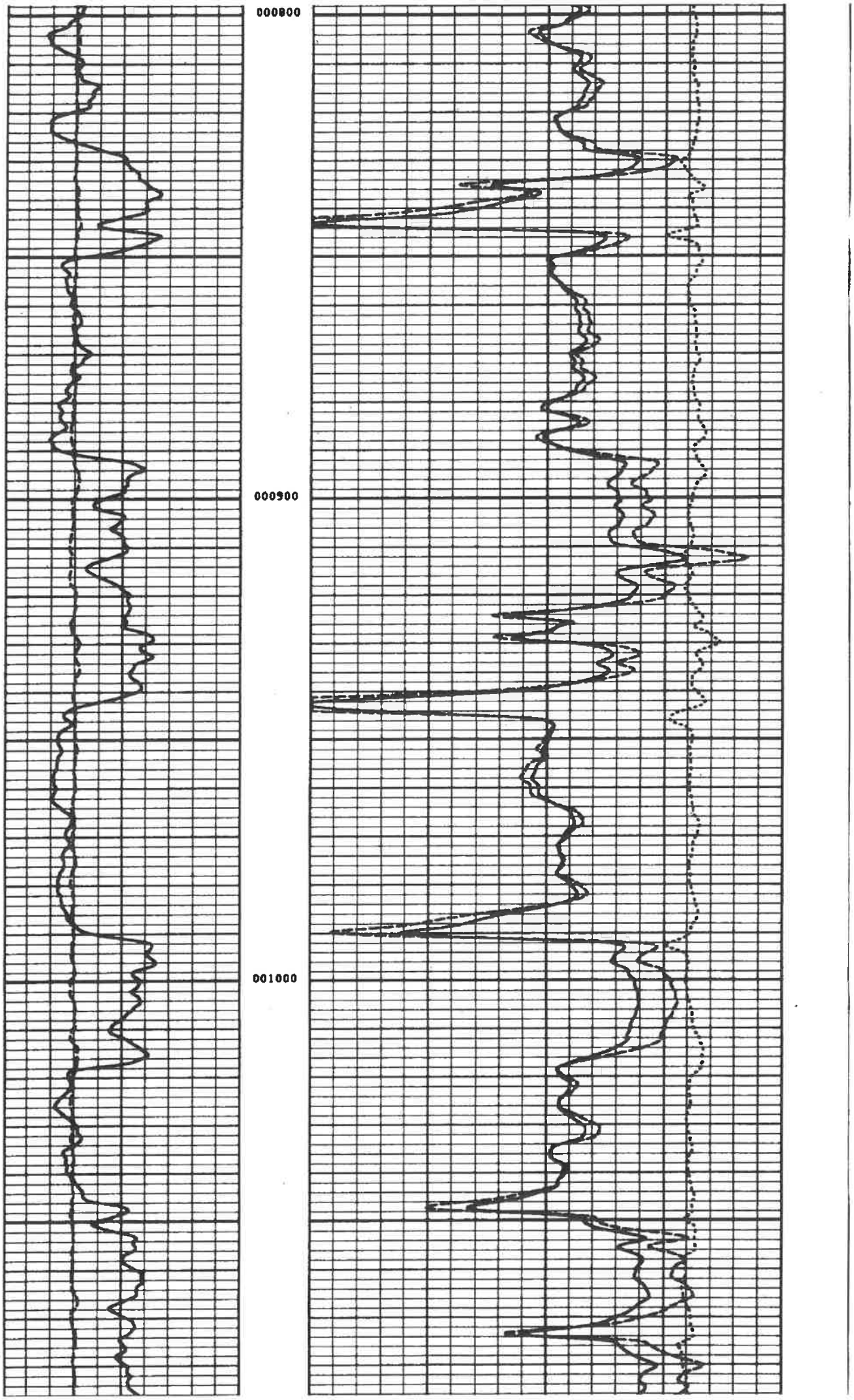
CASING
COMPENSATION
BULK DENSITY
POROSITY
Caliper Curve
GAMMA RAY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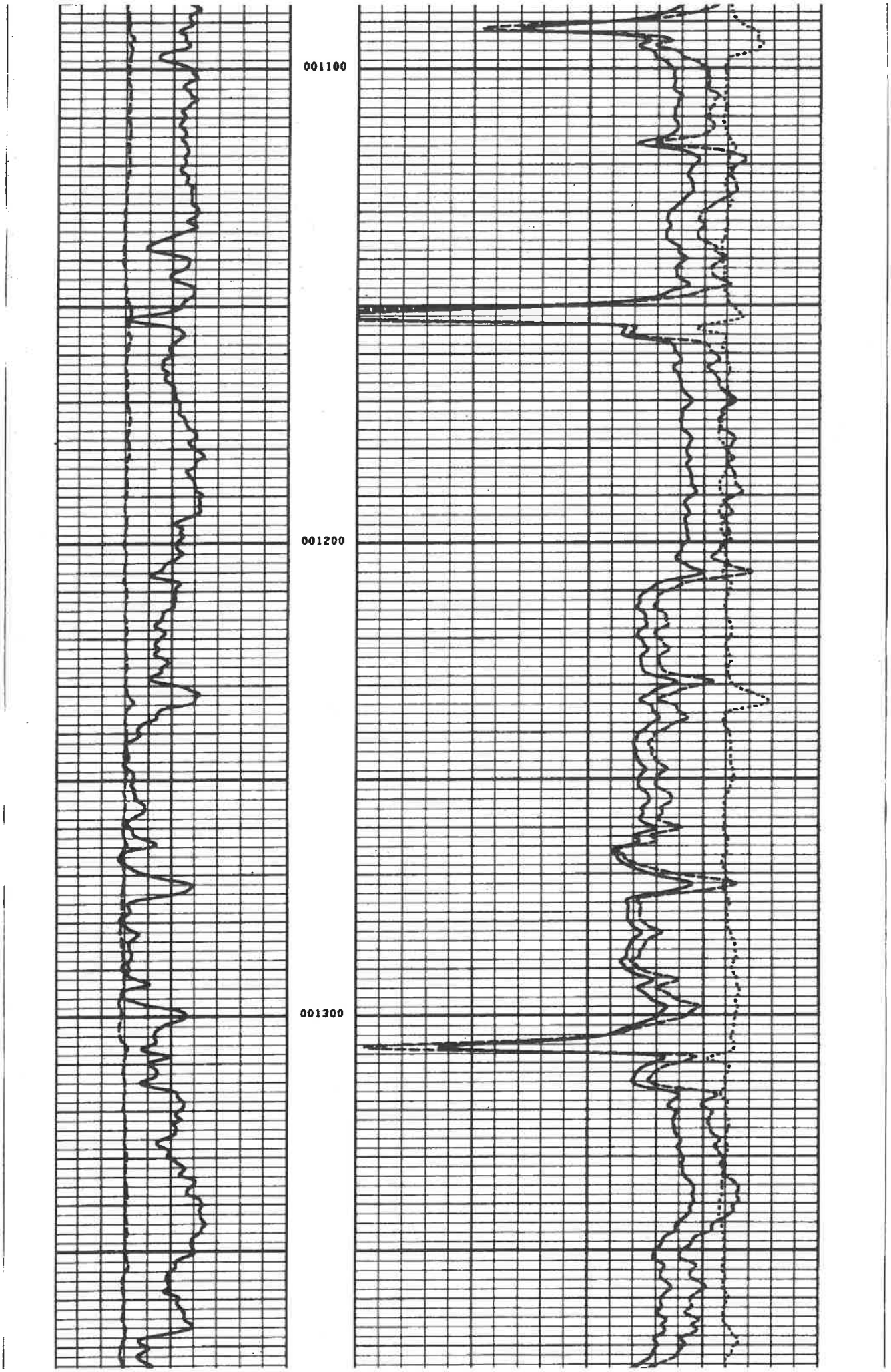
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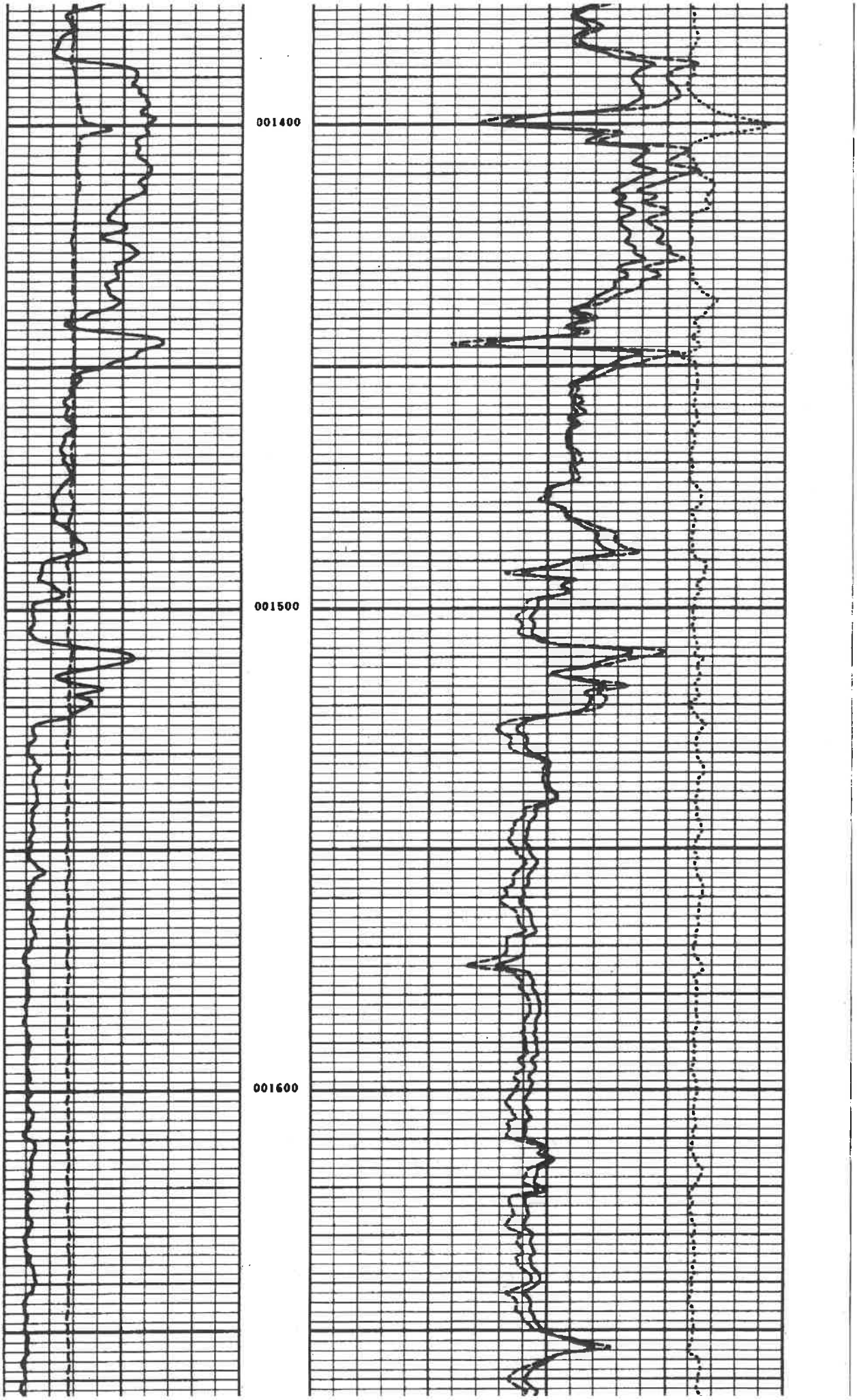
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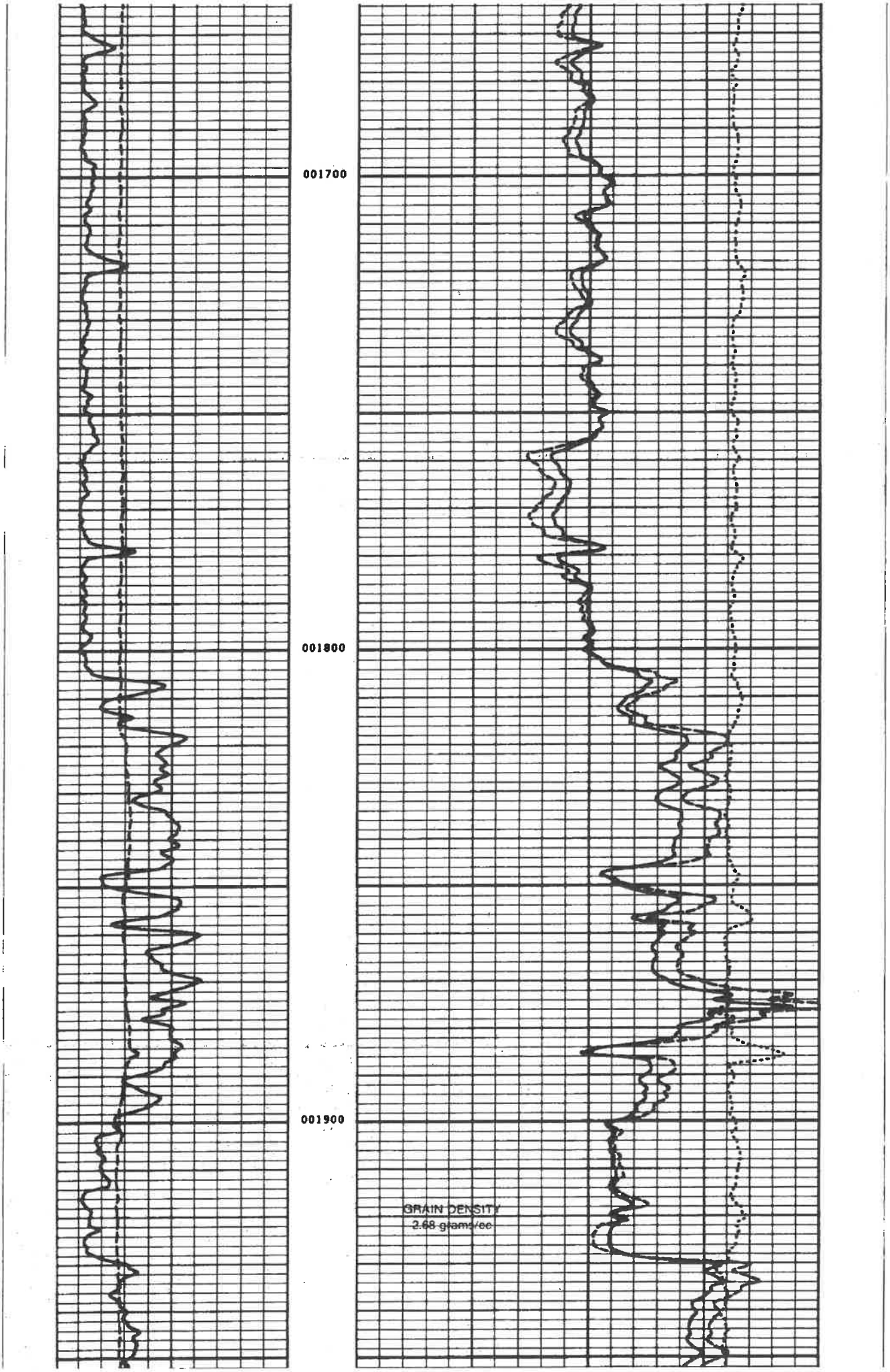
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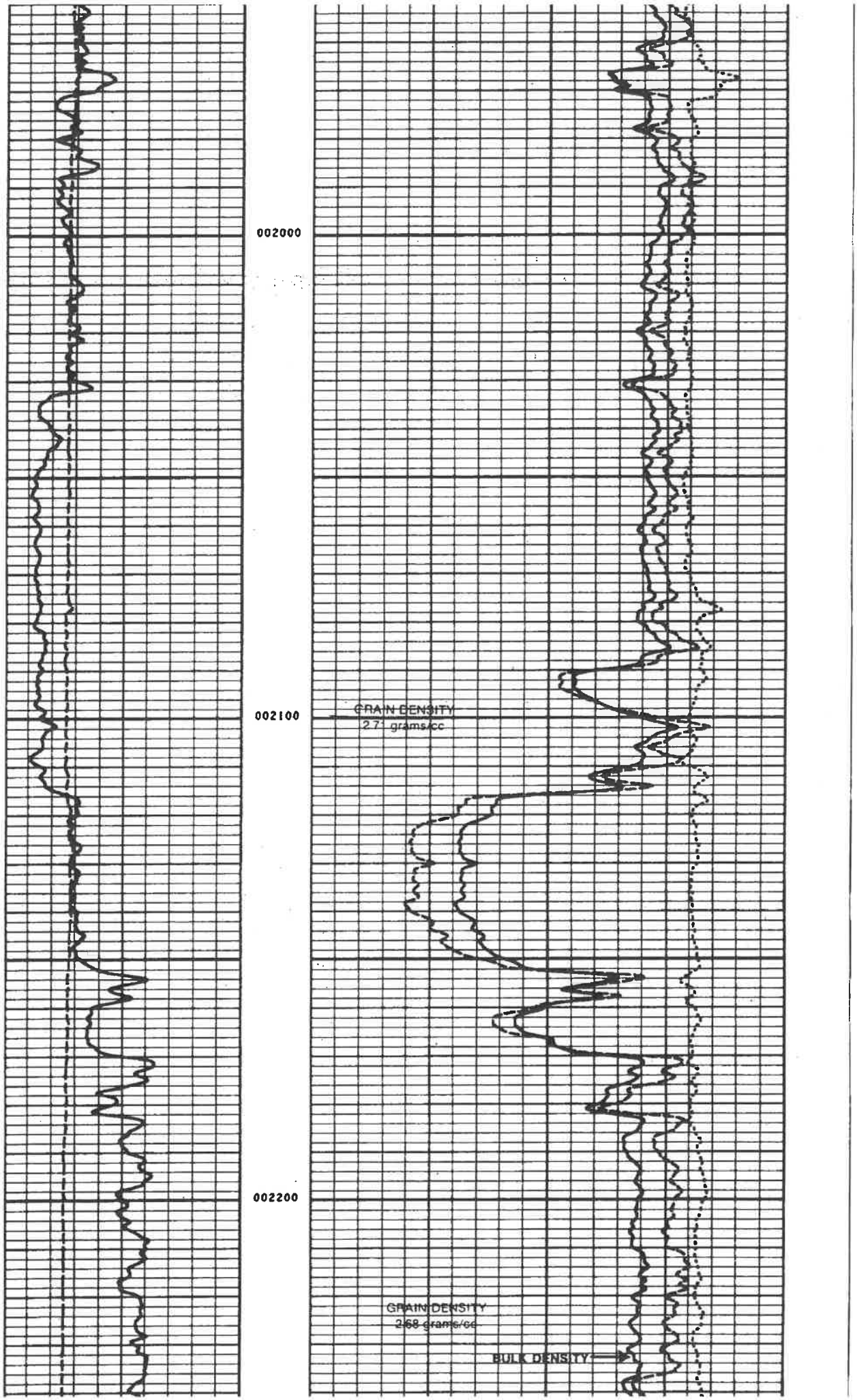
001800
001900
GRAIN DENSITY
2.68 grams/cc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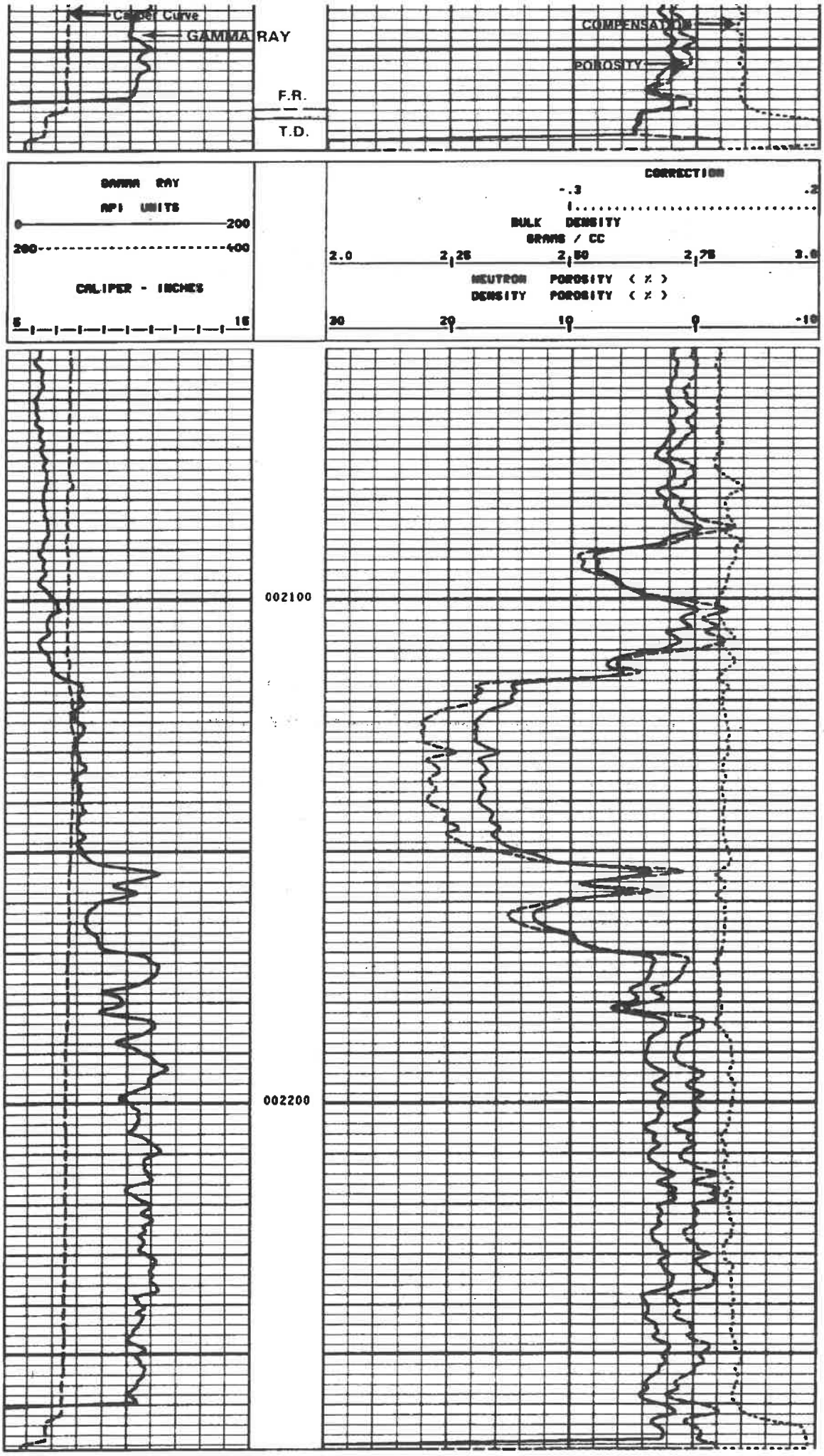
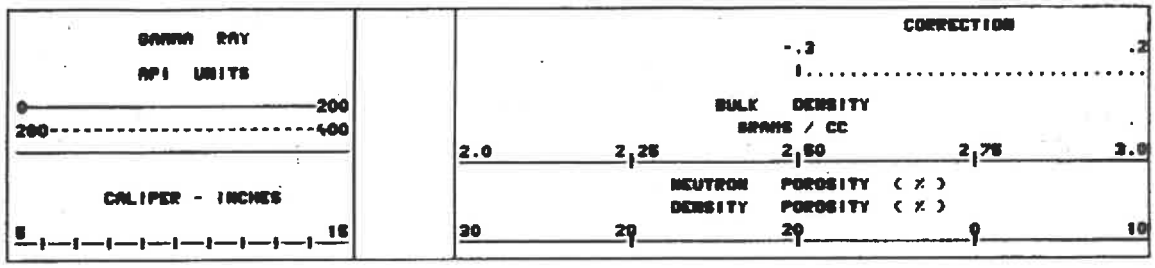
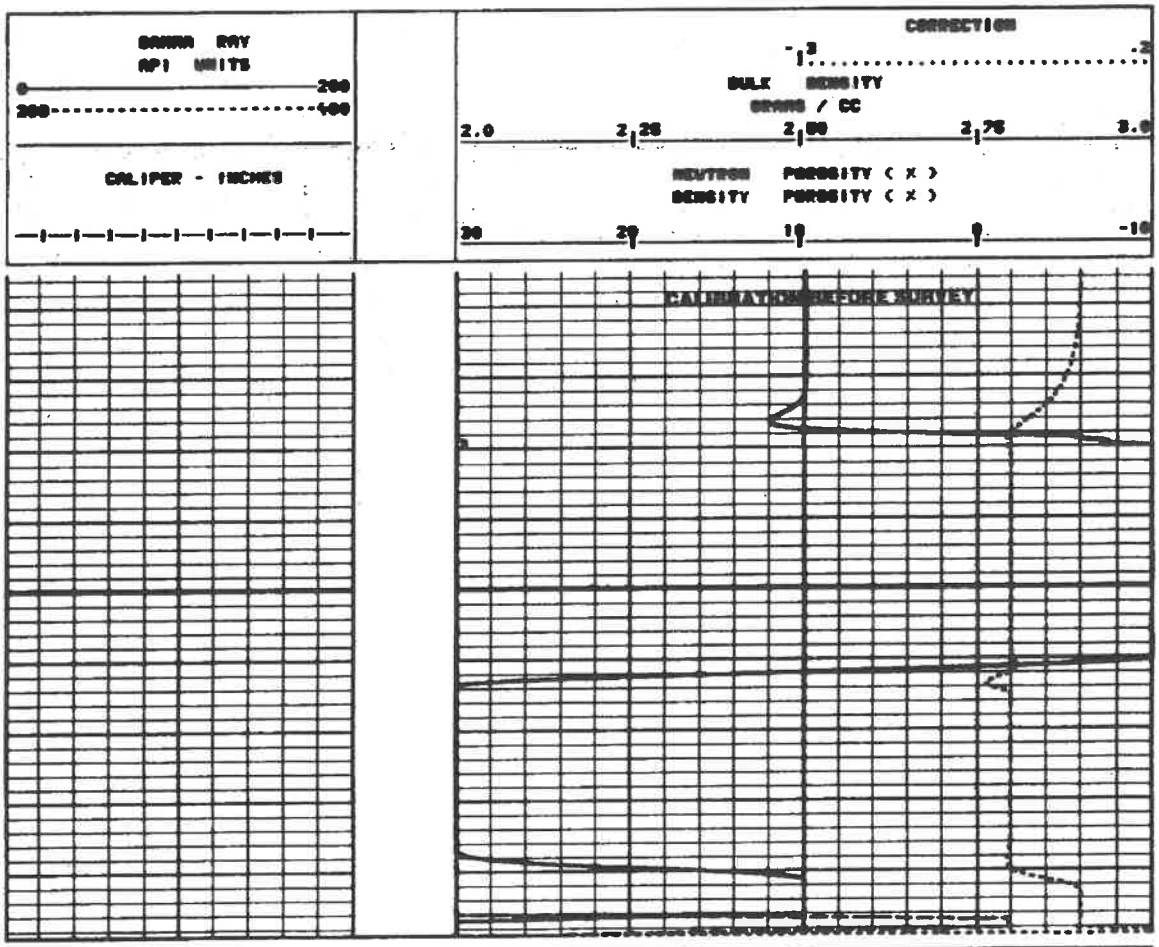
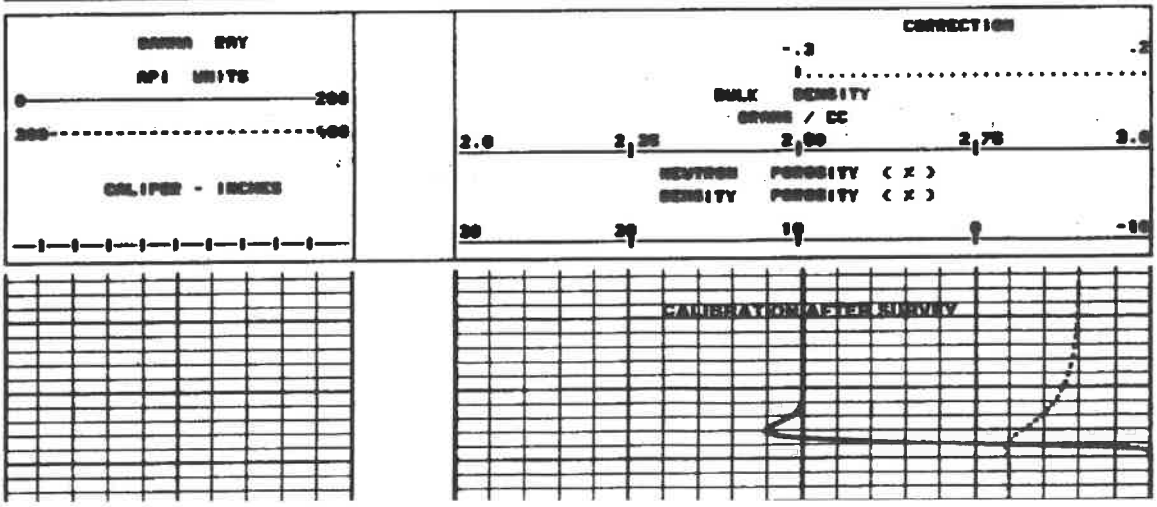
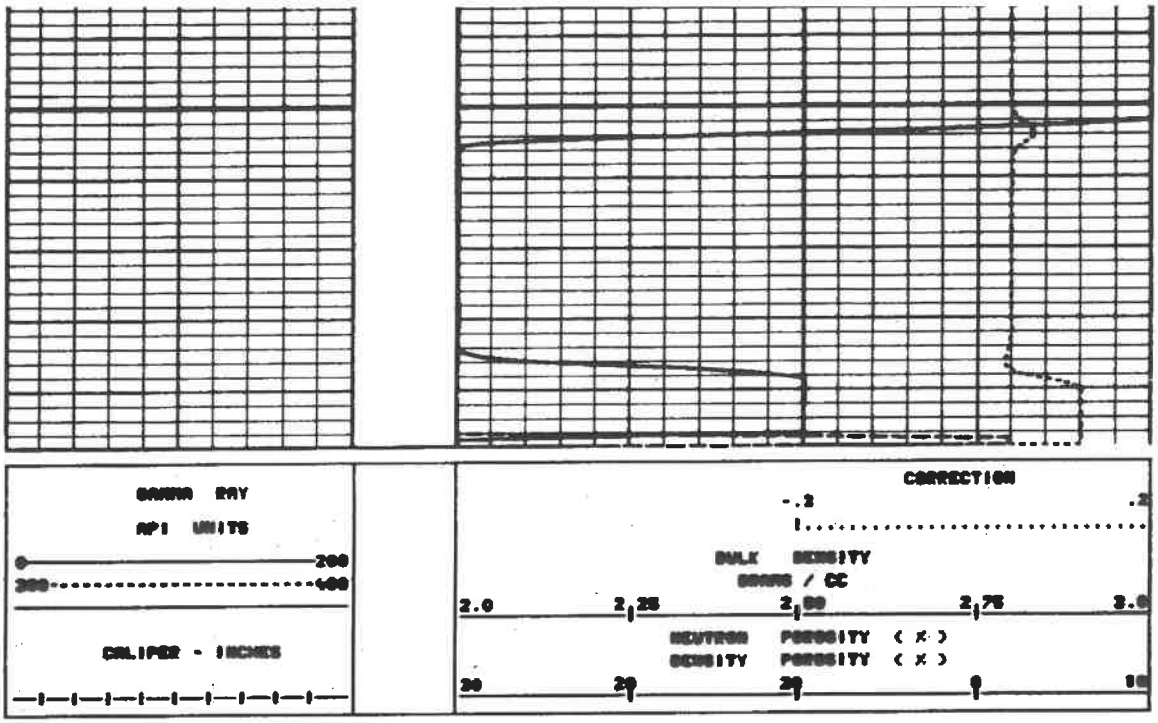
002100
002200
GRAIN DENSITY
2.71 grams/cc
GRAIN DENSITY
2.68 grams/cc
BULK DENSITY


Caliper Curve
GAMMA RAY
F.R.
T.D.
COMPENSATED
POROSITY
GAMMA RAY
API UNITS
0
200
200
400
CALIPER - INCHES
6
16
CORRECTION
-.3
.2
BULK DENSITY
GRAMS / CC
2.0
2.25
2.50
2.75
3.0
NEUTRON POROSITY (%)
DENSITY POROSITY (%)
30
20
10
0
-10
002100
002200


GAMMA RAY
API UNITS
0
200
200
400
CALIPER - INCHES
6
16
CORRECTION
-.2
.2
BULK DENSITY
GRAMS / CC
2.0
2.25
2.50
2.75
3.0
NEUTRON POROSITY (%)
DENSITY POROSITY (%)
30
20
10
0
10


GAMMA RAY
API UNITS
0
200
200
400
CALIPER - INCHES
CORRECTION
-.2
.2
BULK DENSITY
GRAMS / CC
2.0
2.25
2.50
2.75
3.0
NEUTRON POROSITY (%)
DENSITY POROSITY (%)
30
20
10
0
-10
CALIBRATION BEFORE SURVEY


GAMMA RAY
API UNITS
0
200
200
400
CALIPER - INCHES
CORRECTION
-.2
.2
BULK DENSITY
GRAMS / CC
2.0
2.25
2.50
2.75
3.0
NEUTRON POROSITY (%)
DENSITY POROSITY (%)
30
20
10
0
-10
CALIBRATION AFTER SURVEY


GAMMA RAY
API UNITS
0
200
200
400
CALIPER - INCHES
CORRECTION
-.2
.2
BULK DENSITY
GRAMS / CC
2.0
2.25
2.50
2.75
3.0
NEUTRON POROSITY (%)
DENSITY POROSITY (%)
30
20
10
0
10

Section 9 – Operating Requirements

UIC 2D03904844

Section 9 - Operating Requirements/Data:

The Ivana 3 # 1 has previously been permitted as a UIC Class 2D injection facility. Production casing of 4 1/2" 10.5# was run to a depth of 2220' with 2 3/8 4.6# EUE tubing and R4 Halliburton 4 1/2 x 2 3/8 packer set at 1460'. Injection fluid makeup is brine water with no corrosion inhibitor and with O psig as an annular pressure. Corrosion inhibitor was added to the annulus at the time of tubing installation, records did not indicate brand. Historical volumes injected at this location are approximately 10 BPH at an average of 400 psig. Bottom hole psig is 1245#. The projected future use is expected to be the same

The facility utilizes two filtration units both using 10-micron filters, one at the plant and one at the well.

A list of API wells by API number to be serviced by a brine disposal well(s) are listed on APPENDIX G

MIT inspections shall be performed a minimum of every five years or anytime service work is performed to the well or anytime routine inspections show the possibility of an integrity problem. Casing and tubing pressures are monitored during operational hours. Routine inspections are performed for monitoring for corrosion, potential leaks and plant maintenance. Inspection check points include wellhead, tanks, containments, equipment including connections and location access.
All routine inspections and tests shall be recorded, logged and filed in the local office until transferred to and filed in the office of the company's regulatory analyst. In the event of any suspect well or pipeline integrity problem the well will be immediately shut in and injection activities shall cease with proper notifications being made. In the event of any well integrity problem the well will be made "static" and evaluation of data shall be performed and remedial work will begin once a plan of action has been put into place. Any injection fluids shall be transported and disposed of in an alternated state approved disposal facility or permitted UIC Class 2D well.

A copy of the current mechanical integrity test is included.

MIT 4703904844

WR-37
12/23/19

WV DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
PRE-OPERATION CERTIFICATE FOR LIQUID INJECTION
MECHANICAL INTEGRITY TEST RECORD

MIT Date: 5/24/23
Operator's Well Name / #: Ivana # 1
API#: 47- 039 - 04844
UIC Permit #: 2D03904844002
Field Name (2R only):

WELL OPERATOR Diversified Production
Address: 414 Summers Street, Charleston, WV 25301

DESIGNATED AGENT Chuck Shafer
Address: 414 Summers Street, Charleston, WV 25301

INJECTION FORMATION Lower Salt Sand and Big Injun Depth 1450-2110 feet (top) to 1810-2152 feet (bottom)
Perforation Interval 1240'-1930' or Open Hole Interval

INJECTION PERMIT TYPE
☑ 2D Commercial Disposal ☐ 2D Non-Commercial Disposal ☐ 2R Area Permit (EOR) ☐ 3S Solution Mining

INJECTATE TYPE (Check all that apply):
☑ Produced Water ☐ Fresh Water ☐ Completion Flowback Water ☐ Tank & Pipeline Residuals
☐ Drilling Waste Liquids ☐ Solution Mining Waste ☐ Gas (2R) ☐ Other (Specify)
Additives (ie. biocides, inhibitors, etc.) Alpha 3207 corrosion inhibitor

WELL CONSTRUCTION / CASING PROGRAM

CASING OR TUBING TYPE	SIZE	GRADE	WEIGHT PER FT.	NEW	USED	FOOTAGE USED IN DRILLING	FOOTAGE LEFT IN WELL	CEMENT USED
CONDUCTOR								
FRESH WATER	8 5/8	H-40	23	new		530		180sks
COAL								
INTERMEDIATE								
PRODUCTION	4 1/2	J-55	9.5	new			2030	210sks
TUBING	2 3/8	J-55	sealtite	new				
LINERS								

PACKER	TYPE: R-4 Halliburton	SIZE: 4 1/2" x 2 3/8"	DEPTH: 1472

MECHANICAL INTEGRITY TEST TYPE
☑ Standard Annulus Pressure Test
Is Test Annulus Filled? ☑ Yes ☐ No If Yes, Specify Fluid Type? water and nitrogen
☑ Pump Line Test ☐ Other (Specify) filled with water and nitrogen

MAXIMUM PERMITED WELLHEAD INJECTION PRESSURE 482 psi **MIT PRESSURE** 725 psi

MECHANICAL INTEGRITY TEST DESCRIPTION
Casing was filled with water and nitrogen and tested at 725 psi for 30 minutes and verified with a chart recorder.

(2R Area Permits: If multiple pump lines are tested together, please list wells serviced by the tested pump lines.)

4703904844

WR-37
12/23/19

API#: 47- 039 - 04844

NOTE:

- If the well and the pump line are tested together the MIT pressure must be 1.5 times the maximum permitted injection pressure held for a minimum of 20 minutes with no more than a 5% loss.
- If the well is tested separately, the MIT pressure must be 1.5 times the maximum permitted injection pressure held for a minimum of 20 minutes with no more than a 5% loss.
- If the pump line is tested separately, the MIT pressure shall be the maximum permitted injection pressure plus 100 psi held for a minimum of 20 minutes with no more than a 5% loss. Multiple pump lines can be tested together.
- All MITs must be witnessed by a state inspector. A valid recording chart containing the inspector's signature must accompany this completed form.
- All MITs that fail must be submitted using this form and chart.
- Submit all MIT required documentation to OOG within 30 days of test.
- The mechanical integrity of this well must be demonstrated at least 5 years from this test date and each time work is completed on the well or pump line to continue injection.

The undersigned certify:

The MIT was performed on 5/24/23
The well and/or pump line:
☑ demonstrated mechanical integrity or ☐ failed to demonstrate mechanical integrity.

The MIT was witnessed by Terry Urban, Inspector WVDEP - Office of Oil and Gas.

Diversified Production
Permit Holder Company Name

6/14/23
Date

Chuck Shafer
Agent or Responsible Party (Print Name)

Chuck L Shafer
Signature

Manager-Production
Title

----------**Office of Oil and Gas Use Only:**----------

THIS WELL IS AUTHORIZED FOR INJECTION
UP TO A MAXIMUM WELLHEAD INJECTION PRESSURE OF _____ psi

Special Conditions:

_____

_____

_____

_____

_____

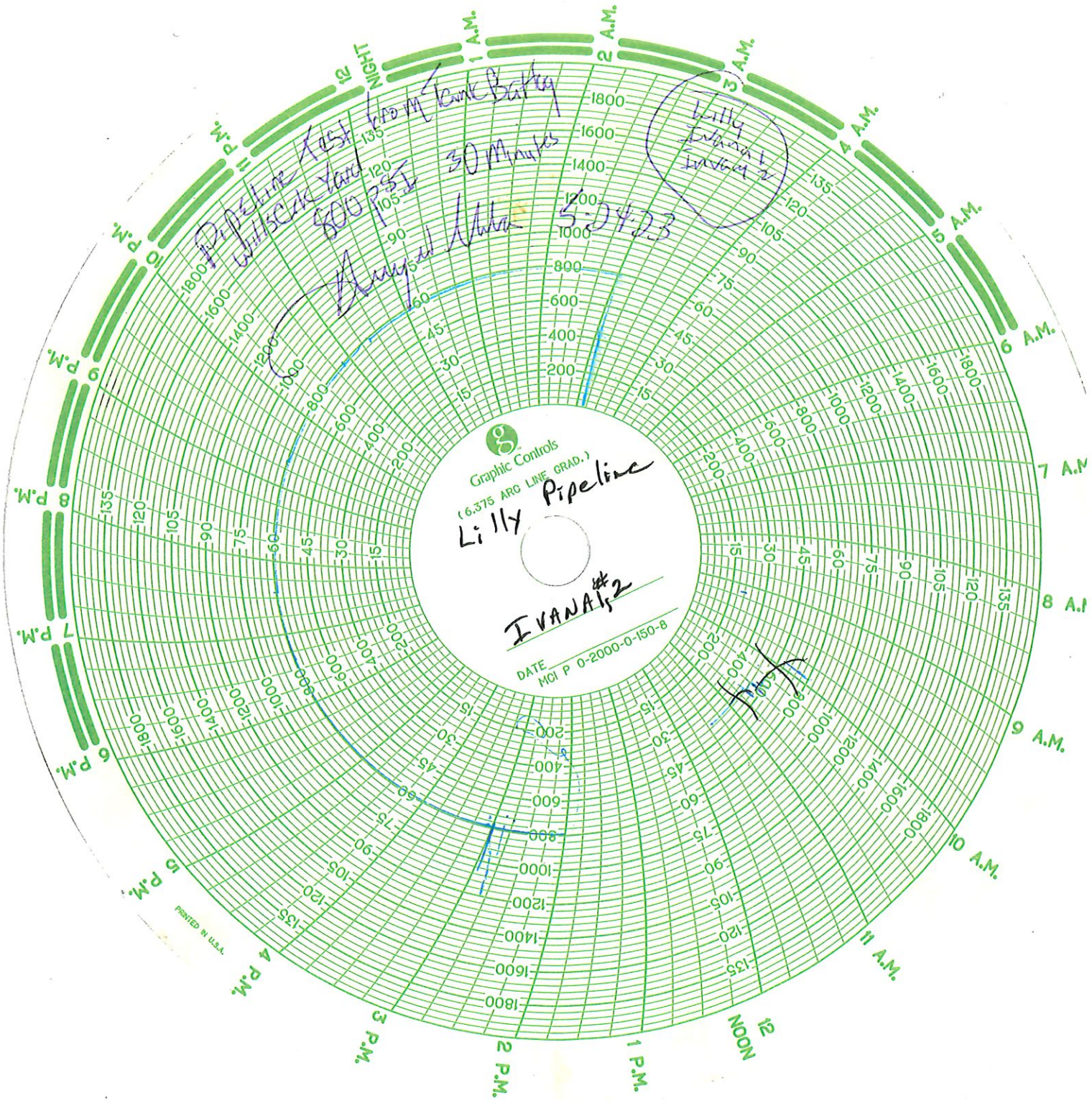
_____
UIC Program Manager
WVDEP-Office of Oil and Gas

_____
Date

4703904844


Graphic Controls
(6.375 ARC LINE GRAD.)
IVANA #1
DATE
MCI P 0-2000-0-150-8
PRINTED IN U.S.A.

4703904844


Graphic Controls
(6.375 ARG LINE GRAD.)
Lilly Pipeline
IVANA #1,2
DATE
MCI P 0-2000-0-150-8
PRINTED IN U.S.A.
NOON
1 P.M.
2 P.M.
3 P.M.
4 P.M.
5 P.M.
6 P.M.
7 P.M.
8 P.M.
9 P.M.
10 P.M.
11 P.M.
12 NIGHT
1 A.M.
2 A.M.
3 A.M.
4 A.M.
5 A.M.
6 A.M.
7 A.M.
8 A.M.
9 A.M.
10 A.M.
11 A.M.
12 NOON

~~7005 2570 0002 3125 3550~~

9502 1126 3461 4170 1702 02

DIVERSIFIED energy

June 18, 2024

WV Dept. of Environmental Protection
Office of Oil & Gas
Mr. James Martin, Chief
Mr. Andrew Lockwood
601 57th Street, SE
Charleston, WV 25304

RE: May 2024 Site Injectate Sampling Analyses
Station 1: Permits 2D0394892 2D0394844 2D0392262

Diversified Production LLC.
101 McQuiston Drive
Jackson Center, PA 16133

Dear Gentlemen,

On behalf of Diversified Production LLC, please find the May 2024 injectate sampling analyses performed and submitted in compliance with Rule 47 CSR 13 and W Va Code §22-11 & 12 and per the parameters of the individual permits listed above. The sampling was conducted on May 15, 2024 at Diversified Production LLC Station 1 facility located in Kanawha County WV facilitating Permit 2D0394892, 2D0394844, and 2D0392262. The analysis was performed by the ALG Group USA – Pace Analytical Services, LLC, a WV DEP authorized laboratory and documents the chain of custody of the sampling.

If you have any questions, or require any additional information, please contact me per the signature contact information below.

Sincerely,

Kim Christian
Diversified Gas & Oil
kchrisitan@dgoc.com
(681) 230-4886
(304) 532-7332
EHS Regulatory Analyst

4703904844

Injectate Analysis

Diversified Production LLC

101 McQuiston Drive
Jackson Center, PA 16133

2024 Annual Injectate Sample

UIC Site: Station 1 Wills Creek, Elkview, WV

UIC PERMIT #2D03902262 003
HF LILLY #1
KANAWHA COUNTY, WEST VIRGINIA

UIC PERMIT #2D03902262 003
HF LILLY #1
KANAWHA COUNTY, WEST VIRGINIA

UIC PERMIT #2D03902262 003
HF LILLY #1
KANAWHA COUNTY, WEST VIRGINIA

13-Jun-2024

JL Rhudy
Envirocheck of Virginia
375 Mountain Lane
Tazewell, VA 24651

Re: **WV UIC Wells near Charleston, WV** Work Order: **24050999**

Dear JL,

ALS Environmental received 1 sample on 15-May-2024 02:46 PM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - South Charleston and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 9.

If you have any questions regarding this report, please feel free to contact me:

ADDRESS: 1740 Union Carbide Drive, South Charleston, WV, USA
PHONE: +1 (304) 356-3168 FAX: +1 (304) 205-6262

Sincerely,

Rebecca Kiser

Electronically approved by: Rebecca Kiser

Rebecca Kiser
Project Manager

ALS Group, USA

Date: 13-Jun-24

Client: Envirocheck of Virginia
Project: WV UIC Wells near Charleston, WV
Work Order: **24050999**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
24050999-01	IVANNA #2, IVANNA #1, HF Lilly #1 Composite	Liquid		5/15/2024 09:45	5/15/2024 13:06	☐
24050999-01	IVANNA #2, IVANNA #1, HF Lilly #1 Composite	Liquid		5/15/2024 09:45	5/17/2024 08:00	☐

Client: Envirocheck of Virginia
Project: WV UIC Wells near Charleston, WV
Work Order: 24050999

Case Narrative

Samples for the above noted Work Order were received on 05/15/2024. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

Samples were analyzed according to the analytical methodology previously transmitted in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. Sample association for the reported quality control is located at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, units, and acronyms utilized in reporting. A copy of the laboratory's scope of accreditation is available upon request.

With the following exceptions, all sample analyses achieved analytical criteria.

Wet Chemistry:
Batch R403803, Method A4500-H B-11, Sample 24050999-01C: Sample was received and analyzed outside of the holding time at the request of the client. Results should be considered estimated. pH

Subcontracted analytical data has been appended to this report in its entirety.

Client: Envirocheck of Virginia
Project: WV UIC Wells near Charleston, WV
WorkOrder: **24050999**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Analyte accreditation is not offered
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
as noted	
mg/L	Milligrams per Liter
none	
s.u.	Standard Units

ALS Group, USA

Date: *13-Jun-24*

Client: Envirocheck of Virginia
Project: WV UIC Wells near Charleston, WV
Sample ID: IVANNA #2, IVANNA #1, HF Lilly #1 Composite
Collection Date: 5/15/2024 09:45 AM

Work Order: 24050999
Lab ID: 24050999-01
Matrix: LIQUID

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PH (LABORATORY)		Method: **A4500-H B-11**					Analyst: **BJL**
pH (laboratory)	**5.53**	H	**0**	**0.020**	**s.u.**	1	5/15/2024 16:53
Temperature	**21.2**	Hn	**0**		**s.u.**	1	5/15/2024 16:53
SUBCONTRACTED ANALYSES		Method: **SUBCONTRACT**					Analyst: **PACE**
Subcontracted Analyses	**See attached**		**0**		**as noted**	1	6/12/2024

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 13-Jun-24

Client: Envirocheck of Virginia

QC BATCH REPORT

Work Order: 24050999

Project: WV UIC Wells near Charleston, WV

Batch ID: **R403803** Instrument ID **STC-WC** Method: **A4500-H B-11**

LCS Sample ID: **LCS-R403803-R403803** Units: **s.u.** Analysis Date: **5/15/2024 04:53 PM**

Client ID: Run ID: **STC-WC_240515E** SeqNo: **10764132** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH (laboratory)	4.12	0	0.020	4	0	103	90-110	0			

DUP Sample ID: **24050983-01C DUP** Units: **s.u.** Analysis Date: **5/15/2024 04:53 PM**

Client ID: Run ID: **STC-WC_240515E** SeqNo: **10764134** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH (laboratory)	5.18	0	0.020	0	0	0	0-0	5.17	0.193	20	H
Temperature	21.8	0	0	0	0	0		21.8	0		H

The following samples were analyzed in this batch: 24050999-01C

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Environmental
1740 Union Carbide Drive
Laboratory location:
South Charleston, WV 25303
(Tel) 304.356.3168
(Fax) 304.205.6262

Chain of Custody Form

Page 1 of 1

ALS Project Manager: | **Work Order #:**

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	**WV UIC Wells near Charleston, WV**	A	**Al, As, Ba, Ca, Fe, Mn, Na, Sr**
Work Order		Project Number		B	**Br, Cl, SO4**
Company Name	Envirocheck of Virginia, Inc.	Bill To Company	**Envirocheck of Virginia, Inc.**	C	**TDS, pH**
Send Report To	JL Rhudy III	Invoice Attn.	**JL Rhudy III**	D	**Specific Gravity**
Address	375 Mountian Lane	Address	**120 Lovelane St.**	E	**Ra226/228**
				F	**Gross alpha/beta**
City/State/Zip	Tazewell/VA/24651	City/State/Zip	**Bluefield/VA/24605**	G	
Phone	276-701-3093	Phone	**276-701-3093**	H	
Fax		Fax		I	
e-Mail Address	jl@e2cofvirginia.com	e-Mail Address	jl@e2cofvirginia.com	J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	**IVANNA #2 47-039-04892 UIC2D03904892002**	**05/15/24**	9:45			8	X	X	X	X	X	X					
2	**IVANNA #1 47-039-04844 UIC2D03904844002**		9:45				X	X	X	X	X	X					
3	**HF Lilly #1 47-039-02262 UIC2D03902262003**		9:45				X	X	X	X	X	X					
4																	
5																	
6																	
7																	
8																	
9																	
10																	

24050999
ENVIROCHECK- VA: Envirocheck of Virginia
Project: WV UIC Wells near Charleston, WV

Sampler(s): Please Print & Sign
Chris Catron Chris Catron

Shipment Method:

Required Turnaround Time:
☒ STD 10 Wk Days ☐ 5 Wk Days ☐ 2 Wk Days ☐ 24 Hour ☐ Other _____

Results Due Date:

Relinquished by: Chris Catron	**Date:** 5/15/24	**Time:** 1:00	**Received by:**	**Notes:**
Relinquished by:	**Date:**	**Time:**	**Received by (Laboratory):**	**Cooler Temp.**
Logged by (Laboratory):	**Date:**	**Time:**	**Checked by (Laboratory):**	

QC Package: (Check Box Below)

	Level II: Standard QC		TRRP-Checklist
	Level III: Std QC + Raw Data		TRRP Level IV
	Level IV: SW846 CLP-Like		
	Other: _____		

Preservative Key: 1-HCL 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 degrees C 9-5035

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS Laboratory Group.

ALS Environmental

1740 Union Carbide Drive
South Charleston, WV 25303

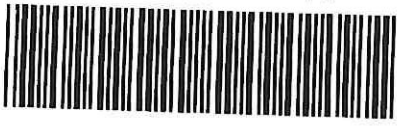
Sample Receiving Checklist

Received by:	ZW
Date/Time:	5.15.24 1306
Carrier Name:	Client
Shipping container/cooler in good condition?	(Yes) / No / Not Present
Custody seals intact on shipping container/cooler?	Yes / No / (Not Present)
Custody seals intact on sample bottles?	Yes / No / (Not Present)
Chain of Custody present?	(Yes) / No
COC signed when relinquished and received?	(Yes) / No
COC agrees with sample labels?	(Yes) / No
Samples in proper container/bottle?	(Yes) / No
Sample containers intact?	(Yes) / No
Sufficient sample volume for indicated test?	(Yes) / No
All samples received within holding time?	(Yes) / No
All sample temperatures verified to be in compliance?	(Yes) / No
Temperature(s) (°C):	<6°C
Thermometer(s):	IR Gun
Sample(s) received on ice?	(Yes) / No
Matrix/Matrices:	water
Cooler(s)/Kit(s):	
Date/Time sample(s) sent to storage:	
Trip Blanks included? (for volatile analysis only)	Yes / (No) / N/A
Water – VOA vials have zero headspace?	Yes / No / (No Vials)
Water – pH acceptable upon receipt?	Yes / No / (N/A)
pH strip lot #:	
pH adjusted (note adjustments below)?	Yes / No / (N/A)
pH adjusted by:	

Login Notes:

24050999

ENVIROCHECK- VA: Envirocheck of Virginia
Project: WV UIC Wells near Charleston, WV



13-Jun-2024

JL Rhudy
Envirocheck of Virginia
375 Mountain Lane
Tazewell, VA 24651

Re: **WV UIC Wells near Charleston, WV** Work Order: **24050999**

Dear JL,

ALS Environmental received 1 sample on 17-May-2024 for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 14.

If you have any questions regarding this report, please feel free to contact me:

ADDRESS: 3352 128th Avenue, Holland, MI, USA
PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

Rebecca Kiser

Electronically approved by: Rebecca Kiser

Rebecca Kiser
Project Manager

ALS Group, USA

Date: 13-Jun-24

Client: Envirocheck of Virginia
Project: WV UIC Wells near Charleston, WV
Work Order: **24050999**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
24050999-01	IVANNA #2, IVANNA #1, HF Lilly #1 Composite	Liquid		5/15/2024 09:45	5/15/2024 13:06	☐
24050999-01	IVANNA #2, IVANNA #1, HF Lilly #1 Composite	Liquid		5/15/2024 09:45	5/17/2024 08:00	☐

Client: Envirocheck of Virginia
Project: WV UIC Wells near Charleston, WV
Work Order: 24050999

Case Narrative

Samples for the above noted Work Order were received on 05/17/2024. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

Samples were analyzed according to the analytical methodology previously transmitted in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. Sample association for the reported quality control is located at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, units, and acronyms utilized in reporting. A copy of the laboratory's scope of accreditation is available upon request.

With the following exceptions, all sample analyses achieved analytical criteria.

Metals:
Batch 240950, Method SW6020B, Sample 24050999-01A: The reporting limit is elevated due to dilution for high concentrations of non-target analytes. Al

Wet Chemistry:
Batch R404425A, Method E300.0, Sample 24050999-01B: The reporting limit is elevated due to dilution needed to eliminate matrix-related interference. Bromide

Client: Envirocheck of Virginia
Project: WV UIC Wells near Charleston, WV
WorkOrder: **24050999**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Analyte accreditation is not offered
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
as noted	
mg/L	Milligrams per Liter
none	
s.u.	Standard Units

ALS Group, USA

Date: *13-Jun-24*

Client: Envirocheck of Virginia
Project: WV UIC Wells near Charleston, WV
Sample ID: IVANNA #2, IVANNA #1, HF Lilly #1 Composite
Collection Date: 5/15/2024 09:45 AM

Work Order: 24050999
Lab ID: 24050999-01
Matrix: LIQUID

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS		Method: **SW6020B**		Prep: SW3015A / 5/28/24			Analyst: **STP**
Aluminum	U		0.057	0.10	mg/L	10	5/29/2024 01:57
Arsenic	**0.29**		**0.0019**	**0.050**	**mg/L**	10	5/29/2024 01:57
Barium	**410**		**0.57**	**5.0**	**mg/L**	1000	5/29/2024 17:53
Calcium	**21,000**		**220**	**500**	**mg/L**	1000	5/29/2024 17:53
Iron	**88**		**0.47**	**0.80**	**mg/L**	10	5/29/2024 01:57
Manganese	**4.8**		**0.017**	**0.050**	**mg/L**	10	5/29/2024 01:57
Sodium	**61,000**		**130**	**200**	**mg/L**	1000	5/29/2024 17:53
Strontium	**730**		**0.39**	**5.0**	**mg/L**	1000	5/29/2024 17:53
ANIONS BY ION CHROMATOGRAPHY		Method: **E300.0**					Analyst: **CLJ**
Bromide	U		1,300	8,000	mg/L	40000	5/23/2024 13:14
Chloride	**171,000**		**12,000**	**40,000**	**mg/L**	40000	5/23/2024 13:14
Sulfate	U		30	160	mg/L	160	5/22/2024 16:40
SPECIFIC GRAVITY		Method: **D5057-90**					Analyst: **MTK**
Specific Gravity	**1.17**		**0**		**none**	1	5/23/2024 10:15
TOTAL DISSOLVED SOLIDS		Method: **A2540 C-15**		Prep: FILTER / 5/21/24			Analyst: **LAD**
Total Dissolved Solids	**220,000**		**1,100**	**1,500**	**mg/L**	1	5/24/2024 11:13

Note: See Qualifiers page for a list of qualifiers and their definitions.

QC BATCH REPORT

Batch ID: **240950** Instrument ID **ICPMS3** Method: **SW6020B**

MBLK Sample ID: **MBLK-240950-240950** Units: **mg/L** Analysis Date: **5/29/2024 01:21 AM**

Client ID: Run ID: **ICPMS3_240528A** SeqNo: **10808428** Prep Date: **5/28/2024** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.005757	0.0057	0.010								J
Arsenic	U	0.00019	0.0050								
Barium	U	0.00057	0.0050								
Calcium	U	0.22	0.50								
Iron	U	0.047	0.080								
Manganese	U	0.0017	0.0050								
Sodium	0.1817	0.13	0.20								J
Strontium	U	0.00039	0.0050								

LCS Sample ID: **LCS-240950-240950** Units: **mg/L** Analysis Date: **5/29/2024 01:22 AM**

Client ID: Run ID: **ICPMS3_240528A** SeqNo: **10808429** Prep Date: **5/28/2024** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.09723	0.0057	0.010	0.1	0	97.2	80-120	0			
Arsenic	0.0975	0.00019	0.0050	0.1	0	97.5	80-120	0			
Barium	0.106	0.00057	0.0050	0.1	0	106	80-120	0			
Calcium	10.35	0.22	0.50	10	0	104	80-120	0			
Iron	9.775	0.047	0.080	10	0	97.8	80-120	0			
Manganese	0.09409	0.0017	0.0050	0.1	0	94.1	80-120	0			
Sodium	10.25	0.13	0.20	10	0	103	80-120	0			
Strontium	0.09986	0.00039	0.0050	0.1	0	99.9	80-120	0			

MS Sample ID: **24050271-01BMS** Units: **mg/L** Analysis Date: **5/29/2024 01:29 AM**

Client ID: Run ID: **ICPMS3_240528A** SeqNo: **10808433** Prep Date: **5/28/2024** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.6318	0.0057	0.010	0.1	0.4834	148	75-125	0			SO
Arsenic	0.09713	0.00019	0.0050	0.1	0.000847	96.3	75-125	0			
Barium	0.1207	0.00057	0.0050	0.1	0.0171	104	75-125	0			
Calcium	88.44	0.22	0.50	10	81.86	65.9	75-125	0			SO
Iron	21.1	0.047	0.080	10	12.03	90.7	75-125	0			
Manganese	10.11	0.0017	0.0050	0.1	10.33	-224	75-125	0			SEO
Sodium	71.89	0.13	0.20	10	65.83	60.6	75-125	0			SO
Strontium	0.3837	0.00039	0.0050	0.1	0.2979	85.8	75-125	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Envirocheck of Virginia
Work Order: 24050999
Project: WV UIC Wells near Charleston, WV

QC BATCH REPORT

Batch ID: **240950** Instrument ID **ICPMS3** Method: **SW6020B**

MSD Sample ID: **24050271-01BMSD** Units: **mg/L** Analysis Date: **5/29/2024 01:31 AM**

Client ID: Run ID: **ICPMS3_240528A** SeqNo: **10808434** Prep Date: **5/28/2024** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.6243	0.0057	0.010	0.1	0.4834	141	75-125	0.6318	1.2	20	SO
Arsenic	0.09515	0.00019	0.0050	0.1	0.000847	94.3	75-125	0.09713	2.06	20	
Barium	0.1181	0.00057	0.0050	0.1	0.0171	101	75-125	0.1207	2.18	20	
Calcium	87.98	0.22	0.50	10	81.86	61.3	75-125	88.44	0.52	20	SO
Iron	21.01	0.047	0.080	10	12.03	89.8	75-125	21.1	0.428	20	
Manganese	10.18	0.0017	0.0050	0.1	10.33	-149	75-125	10.11	0.735	20	SEO
Sodium	71.88	0.13	0.20	10	65.83	60.6	75-125	71.89	0.0061	20	SO
Strontium	0.3831	0.00039	0.0050	0.1	0.2979	85.2	75-125	0.3837	0.156	20	

The following samples were analyzed in this batch: 24050999-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Envirocheck of Virginia
Work Order: 24050999
Project: WV UIC Wells near Charleston, WV

QC BATCH REPORT

Batch ID: **240600** Instrument ID **TDS** Method: **A2540 C-15**

MBLK Sample ID: **MBLK-240600-240600** Units: **mg/L** Analysis Date: **5/24/2024 11:13 AM**
Client ID: Run ID: **TDS_240524B** SeqNo: **10797079** Prep Date: **5/21/2024** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids	U	22	30								

MBLK Sample ID: **MBLK-240600-240600** Units: **mg/L** Analysis Date: **5/24/2024 11:13 AM**
Client ID: Run ID: **TDS_240524B** SeqNo: **10806952** Prep Date: **5/21/2024** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids	U	22	30								

LCS Sample ID: **LCS-240600-240600** Units: **mg/L** Analysis Date: **5/24/2024 11:13 AM**
Client ID: Run ID: **TDS_240524B** SeqNo: **10797078** Prep Date: **5/21/2024** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids	494	22	30	495	0	99.8	85-109	0			

LCS Sample ID: **LCS-240600-240600** Units: **mg/L** Analysis Date: **5/24/2024 11:13 AM**
Client ID: Run ID: **TDS_240524B** SeqNo: **10806953** Prep Date: **5/21/2024** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids	494	22	30	495	0	99.8	85-109	0			

DUP Sample ID: **24050953-06A DUP** Units: **mg/L** Analysis Date: **5/24/2024 11:13 AM**
Client ID: Run ID: **TDS_240524B** SeqNo: **10797062** Prep Date: **5/21/2024** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids	676.7	37	50	0	0	0	0-0	663.3	1.99	10	

DUP Sample ID: **24051142-01B DUP** Units: **mg/L** Analysis Date: **5/24/2024 11:13 AM**
Client ID: Run ID: **TDS_240524B** SeqNo: **10797075** Prep Date: **5/21/2024** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids	3210	110	150	0	0	0	0-0	3240	0.93	10	

DUP Sample ID: **24051142-01B DUP** Units: **mg/L** Analysis Date: **5/24/2024 11:13 AM**
Client ID: Run ID: **TDS_240524B** SeqNo: **10806955** Prep Date: **5/21/2024** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids	3210	110	150	0	0	0	0-0	3240	0.93	10	

The following samples were analyzed in this batch: 24050999-01C

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Envirocheck of Virginia
Work Order: 24050999
Project: WV UIC Wells near Charleston, WV

QC BATCH REPORT

Batch ID: **R404326A** Instrument ID **IC3** Method: **E300.0**

MBLK Sample ID: **MBLK-A-R404326A** Units: **mg/L** Analysis Date: **5/22/2024 09:26 AM**
Client ID: Run ID: **IC3_240522A** SeqNo: **10790004** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	U	0.19	1.0								

LCS Sample ID: **LCS-A-R404326A** Units: **mg/L** Analysis Date: **5/22/2024 09:16 AM**
Client ID: Run ID: **IC3_240522A** SeqNo: **10790003** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	9.855	0.19	1.0	10	0	98.6	90-110	0			

MS Sample ID: **24051056-05G MS** Units: **mg/L** Analysis Date: **5/22/2024 02:23 PM**
Client ID: Run ID: **IC3_240522A** SeqNo: **10790006** Prep Date: DF: **40**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	473.9	7.6	40	400	57.83	104	90-110	0			

MS Sample ID: **24051160-01A MS** Units: **mg/L** Analysis Date: **5/22/2024 05:00 PM**
Client ID: Run ID: **IC3_240522A** SeqNo: **10790022** Prep Date: DF: **100**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	1952	19	100	1000	931.8	102	90-110	0			

MSD Sample ID: **24051056-05G MSD** Units: **mg/L** Analysis Date: **5/22/2024 02:33 PM**
Client ID: Run ID: **IC3_240522A** SeqNo: **10790007** Prep Date: DF: **40**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	474.2	7.6	40	400	57.83	104	90-110	473.9	0.0675	10	

MSD Sample ID: **24051160-01A MSD** Units: **mg/L** Analysis Date: **5/22/2024 05:10 PM**
Client ID: Run ID: **IC3_240522A** SeqNo: **10790023** Prep Date: DF: **100**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	1949	19	100	1000	931.8	102	90-110	1952	0.146	10	

The following samples were analyzed in this batch: 24050999-01B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Envirocheck of Virginia
Work Order: 24050999
Project: WV UIC Wells near Charleston, WV

QC BATCH REPORT

Batch ID: **R404414** Instrument ID **WETCHEM** Method: **D5057-90**

DUP	Sample ID: **24051181-01A DUP**				Units: **none**			Analysis Date: **5/23/2024 10:15 AM**			
Client ID:		Run ID: **WETCHEM_240523J**			SeqNo: **10794305**			Prep Date:		DF: **1**	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Specific Gravity	1.005	0	0	0	0	0	0-0	1.005	0.01	20	

The following samples were analyzed in this batch: 24050999-01D

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Envirocheck of Virginia
Work Order: 24050999
Project: WV UIC Wells near Charleston, WV

QC BATCH REPORT

Batch ID: **R404425A** Instrument ID **IC3** Method: **E300.0**

MBLK Sample ID: **MBLK-A-R404425A** Units: **mg/L** Analysis Date: **5/23/2024 10:54 AM**
Client ID: Run ID: **IC3_240523A** SeqNo: **10794619** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	U	0.032	0.20								
Chloride	U	0.31	1.0								

LCS Sample ID: **LCS-A-R404425A** Units: **mg/L** Analysis Date: **5/23/2024 10:45 AM**
Client ID: Run ID: **IC3_240523A** SeqNo: **10794618** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	2.106	0.032	0.20	2	0	105	90-110	0			
Chloride	9.918	0.31	1.0	10	0	99.2	90-110	0			

MS Sample ID: **24051070-01B MS** Units: **mg/L** Analysis Date: **5/23/2024 01:33 PM**
Client ID: Run ID: **IC3_240523A** SeqNo: **10794628** Prep Date: DF: **400**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	805.6	13	80	800	0	101	90-110	0			
Chloride	3870	120	400	4000	88.52	94.5	90-110	0			

MS Sample ID: **24051246-01A MS** Units: **mg/L** Analysis Date: **5/23/2024 03:21 PM**
Client ID: Run ID: **IC3_240523A** SeqNo: **10794639** Prep Date: DF: **10**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	20.24	0.32	2.0	20	0	101	90-110	0			
Chloride	125.6	3.1	10	100	30.27	95.3	90-110	0			

MSD Sample ID: **24051070-01B MSD** Units: **mg/L** Analysis Date: **5/23/2024 01:43 PM**
Client ID: Run ID: **IC3_240523A** SeqNo: **10794629** Prep Date: DF: **400**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	811.5	13	80	800	0	101	90-110	805.6	0.727	10	
Chloride	3875	120	400	4000	88.52	94.6	90-110	3870	0.124	10	

MSD Sample ID: **24051246-01A MSD** Units: **mg/L** Analysis Date: **5/23/2024 03:30 PM**
Client ID: Run ID: **IC3_240523A** SeqNo: **10794640** Prep Date: DF: **10**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	20.11	0.32	2.0	20	0	101	90-110	20.24	0.654	10	
Chloride	125.5	3.1	10	100	30.27	95.3	90-110	125.6	0.0374	10	

The following samples were analyzed in this batch: 24050999-01B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Subcontractor:
ALS Environmental - Holland
3352 128th Avenue
Holland, MI 49424

TEL: (616) 399-6070
FAX: (616) 399-6185
Acct #:

Salesperson: ALSHN Account

24050999
ENVIROCHECK- VA: Envirocheck of Virginia
Project: WV UIC Wells near Charleston, WV

CHAIN OF CUSTODY RECORD

Date: 15-May-24
COC ID: 25817
Due Date: 24-May-24

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	24050999	A	Total Dissolved Solids (A2540 C-15)
Work Order		Project Number		B	Specific Gravity (D5057-90)
Company Name	ALS Group USA, Corp	Bill To Company	ALS Group USA, Corp	C	Anions by Ion Chromatography (E300.0)
Send Report To	Rebecca Kiser	Inv Attn	Accounts Payable	D	Metals by ICP-MS (SW6020B)
Address	1740 Union Carbide Dr.	Address	1740 Union Carbide Dr.	E	
				F	
City/State/Zip	So. Charleston, WV 25303	City/State/Zip	So. Charleston, WV 25303	G	
Phone	(304) 356-3168	Phone	(304) 356-3168	H	
Fax		Fax		I	
eMail Address	rebecca.kiser@alsglobal.com	eMail CC		J	

ALS Sample ID	Client Sample ID	Matrix	Collection Date 24hr	Bottle	A	B	C	D	E	F	G	H	I	J
24050999-01A	IVANNA #2 #3 HF Lilly #1 Grab	Liquid	15/May/2024 9:45	(1) 250PHNO3				X						
24050999-01B	IVANNA #2 #3 HF Lilly #1 Grab	Liquid	15/May/2024 9:45	(1) 125PNEAT			X							
24050999-01D	IVANNA #2 #3 HF Lilly #1 Grab	Liquid	15/May/2024 9:45	(1) 125PNEAT		X								
24050999-01C	IVANNA #2 #3 HF Lilly #1 Grab	Liquid	15/May/2024 9:45	(2) 250PNEAT	X									

Comments:

WV Samples Sampler: C.C.

Relinquished by:	Date/Time	Received by:	Date/Time	Cooler IDs	Report/QC Level
Michelle Holmes	5.16.24 1400	[signature]	5-17-24 8:00	6.0C	Std
Relinquished by:	Date/Time	Received by:	Date/Time	ALSHW pH37	

ALS Group, USA
Holland, Michigan

Sample Receipt Checklist

Client Name: **ENVIROCHECK- VA** Date/Time Received: **15-May-24 14:46**

Work Order: **24050999** Received by: **CMK**

Checklist completed by Caleb Koetje (eSignature) 18-May-24 (Date) Reviewed by: Rebecca Kiser (eSignature) 20-May-24 (Date)

Matrices: Water
Carrier name: Courier

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	<6.0c	Df2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	5/18/2024 8:20:09 AM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:	-		

Login Notes: pH check <2

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

June 10, 2024

Ms. Rebecca Kiser
ALS Environmental
1740 Union Carbide Drive
Charleston, WV 25303

RE: Project: 24050999
Pace Project No.: 30685737

Dear Ms. Kiser:

Enclosed are the analytical results for sample(s) received by the laboratory on May 17, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Carla Cmar
carla.cmar@pacelabs.com
(724)850-5600
Project Manager

Enclosures

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

CERTIFICATIONS

Project: 24050999
Pace Project No.: 30685737

Pace Analytical Services Pennsylvania
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
ANABISO/IEC 17025:2017 Rad Cert#: L24170
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 2950
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA010
Louisiana DEQ/TNI Certification #: 04086
Maine Certification #: 2023021
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572023-03
New Hampshire/TNI Certification #: 297622
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-015
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN02867
Texas/TNI Certification #: T104704188-22-18
Utah/TNI Certification #: PA014572223-14
USDA Soil Permit #: 525-23-67-77263
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

SAMPLE SUMMARY

Project: 24050999
Pace Project No.: 30685737

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30685737001	**24050999-01E**	Water	05/15/24 09:45	05/17/24 09:15

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Greensburg, PA 15601
(724)850-5600

SAMPLE ANALYTE COUNT

Project: 24050999
Pace Project No.: 30685737

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30685737001	**24050999-01E**	EPA 900.0	KET	2	PASI-PA
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

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Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: 24050999
Pace Project No.: 30685737

Method: **EPA 900.0**
Description: 900.0 Gross Alpha/Beta
Client: ALS Life Sciences Division | Environmental
Date: June 10, 2024

General Information:
1 sample was analyzed for EPA 900.0 by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: 24050999
Pace Project No.: 30685737

Method: **EPA 903.1**
Description: 903.1 Radium 226
Client: ALS Life Sciences Division | Environmental
Date: June 10, 2024

General Information:
1 sample was analyzed for EPA 903.1 by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
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Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: 24050999
Pace Project No.: 30685737

Method: **EPA 904.0**
Description: 904.0 Radium 228
Client: ALS Life Sciences Division | Environmental
Date: June 10, 2024

General Information:
1 sample was analyzed for EPA 904.0 by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 24050999
Pace Project No.: 30685737

Sample: 24050999-01E **Lab ID: 30685737001** Collected: 05/15/24 09:45 Received: 05/17/24 09:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Gross Alpha	EPA 900.0	**6,860 ± 1,674 (1,220) C:NA T:NA**	pCi/L	06/06/24 18:40	12587-46-1	
Gross Beta	EPA 900.0	**2,572 ± 832 (984) C:NA T:NA**	pCi/L	06/06/24 18:40	12587-47-2	
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**2,258 ± 362 (123) C:NA T:97%**	pCi/L	06/02/24 15:51	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**1,040 ± 199 (50.8) C:83% T:88%**	pCi/L	05/31/24 12:40	15262-20-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL - RADIOCHEMISTRY

Project: 24050999
Pace Project No.: 30685737

QC Batch: 670510
QC Batch Method: EPA 903.1
Analysis Method: EPA 903.1
Analysis Description: 903.1 Radium-226
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 30685737001

METHOD BLANK: 3265294 Matrix: Water
Associated Lab Samples: 30685737001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.123 ± 0.282 (0.167) C:NA T:83%	pCi/L	06/02/24 15:26	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL - RADIOCHEMISTRY

Project: 24050999
Pace Project No.: 30685737

QC Batch: 671212
QC Batch Method: EPA 900.0
Analysis Method: EPA 900.0
Analysis Description: 900.0 Gross Alpha/Beta
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 30685737001

METHOD BLANK: 3268536 Matrix: Water
Associated Lab Samples: 30685737001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Gross Alpha	0.066 ± 1.04 (2.69) C:NA T:NA	pCi/L	06/07/24 08:18	
Gross Beta	-0.505 ± 1.06 (2.75) C:NA T:NA	pCi/L	06/07/24 08:18	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL - RADIOCHEMISTRY

Project: 24050999
Pace Project No.: 30685737

QC Batch: 670511
QC Batch Method: EPA 904.0
Analysis Method: EPA 904.0
Analysis Description: 904.0 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 30685737001

METHOD BLANK: 3265295 Matrix: Water
Associated Lab Samples: 30685737001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.581 ± 0.437 (0.858) C:74% T:78%	pCi/L	05/31/24 12:37	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALIFIERS

Project: 24050999
Pace Project No.: 30685737

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Act - Activity

Unc - Uncertainty: For Safe Drinking Water Act (SDWA) analyses, the reported Unc. Is the calculated Count Uncertainty (95% confidence interval) using a coverage factor of 1.96. For all other matrices (non-SDWA), the reported Unc. is the calculated Expanded Uncertainty (aka Combined Standard Uncertainty, CSU), reported at the 95% confidence interval using a coverage factor of 1.96.

Gamma Spec: The Unc. reported for all gamma-spectroscopy analyses (EPA 901.1), is the calculated Expanded Uncertainty (CSU) at the 95.4% confidence interval, using a coverage factor of 2.0.

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

Subcontractor:
Pace Analytical Services, Inc.
1638 Roseytown Rd
Suites 2,3 & 4
Greensburg, PA 15601
TEL: (724) 850-5600
FAX:
Acct #:

Salesperson: ALSHN Account

CHAIN-OF-CUSTODY RECORD

Date: 16-May-24
COC ID: 25826
Due Date:

Customer Information		Project Information		Parameter/Method Request for Analysis
Purchase Order		Project Name	24050999	A Ra226/228, Gross alpha/beta
Work Order		Project Number		B
Company Name	ALS Group USA, Corp	Bill To Company	ALS Group USA, Corp	C
Send Report To	Rebecca Kiser	Inv Attn	Accounts Payable	D
Address	3352 128th Ave	Address	3352 128th Ave	E
				F
City/State/Zip	Holland, Michigan 49424	City/State/Zip	Holland, Michigan 49424	G
Phone	(616) 399-6070	Phone	(616) 399-6070	H
Fax	(616) 399-6185	Fax	(616) 399-6185	I
eMail Address	rebecca.kiser@alsglobal.com	eMail CC		J

ALS Sample ID	Client Sample ID	Matrix	Collection Date 24hr	Bottle	A	B	C	D	E	F	G	H	I	J
24050999-01E	IVANNA #2, IVANNA #1, HF Lilly #1 Composite	Liquid	15/May/2024 9:45	(4) 1LPHNO3	X									

001

WO# : 30685737

30685737

Received by Pace Greensburg
Therm ID ___ Corr Factor +/- ___
Receipt Temp ___
Corrected Temp ___
Correct Preservation (Y) N

Comments:
WV Sample. Sampler: C. Catron

5/16/24 14:32 5/17/24 915

Relinquished by:	Date/Time	Received by:	Date/Time	Cooler IDs	Report/QC Level
					Std
Relinquished by:	Date/Time	Received by:	Date/Time		

DC#_Title: ENV-FRM-GBUR-0088 v07_Sample C... Within Upon Receipt-Greensburg

Effective Date: 01/04/2024

WO# : 30685737

PM: CMC Due Date: 06/10/24

CLIENT: ALS-WV

Client Name: ALS P

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other

Tracking Number: 7764 2004 9074

Initial / Date

Examined By: EJS-17-24

Labeled By: EJS-17-24

Temped By: —

Custody Seal on Cooler/Box Present: ☑ Yes ☐ No Seals Intact: ☑ Yes ☐ No

Thermometer Used: — Type of Ice: Wet Blue (None)

Cooler Temperature: Observed Temp — °C Correction Factor: — °C Final Temp: — °C

Temp should be above freezing to 6°C

Comments:	Yes	No	NA	pH paper Lot# 10DZ931 / D.P.D. Residual Chlorine Lot # —
Chain of Custody Present	✓			1.
Chain of Custody Filled Out:	✓			2.
-Were client corrections present on COC		✓		
Chain of Custody Relinquished	✓			3.
Sampler Name & Signature on COC:		✓		4.
Sample Labels match COC:	✓			5.
-Includes date/time/ID Matrix: WT				
Samples Arrived within Hold Time:	✓			6.
Short Hold Time Analysis (<72hr remaining):		✓		7.
Rush Turn Around Time Requested:		✓		8.
Sufficient Volume:	✓			9.
Correct Containers Used:	✓			10.
-Pace Containers Used		✓		
Containers Intact:	✓			11.
Orthophosphate field filtered:			✓	12.
Hex Cr Aqueous samples field filtered:			✓	13.
Organic Samples checked for dichlorination			✓	14:
Filtered volume received for dissolved tests:			✓	15:
All containers checked for preservation:	✓			16.
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, non-aqueous matrix				pH<2
All containers meet method preservation requirements:	✓			Initial when completed EJS / Date/Time of Preservation / Lot# of added Preservative
8260C/D: Headspace in VOA Vials (> 6mm)			✓	17.
624.1: Headspace in VOA Vials (0mm)			✓	18.
Radon: Headspace in RAD Vials (0mm)			✓	19.
Trip Blank Present:			✓	Trip blank custody seal present? YES or NO
Rad Samples Screened <.05 mrem/hr.	✓			Initial when completed RS / Date: 5/17/24 / Survey Meter SN: 25014380

Comments:

Note: For NC compliance samples with discrepancies, a copy of this form must be sent to the DEHNR Certification office.
PM Review is documented electronically in LIMS through the SRF Review schedule in the Workorder Edit Screen.

Qualtrax ID: 55680

Client ALS

Site 24050999

Page ____ of ____

Profile/EZ Login Number 5573

Notes

Sample Line Item	Matrix	Amber Glass					Plastic								Vials					Other									
		AG1H	AG3S	AG3U	AG5U	AG5T	BP1N	BP1U	BP2S	BP2U	BP3B	BP3N	BP3S	BP3U	DG9S	VG9H	VG9T	VG9U	VOAK	WGFU	WGKU	ZPLC	GCUB	GJN	12GN	AG1U	BG1U	BP2N	
001	WT						4																						

Container Codes

Glass

GJN	1 Gallon Jug with HNO3	DG9S	40mL amber VOA vial H2SO4
AG5U	100mL amber glass unpreserved	VG9U	40mL clear VOA vial
AG5T	100mL amber glass Na Thiosulfate	VG9T	40mL clear VOA vial Na Thiosulfate
GJN	1 Gallon Jug	VG9H	40mL clear VOA vial HCl
AG1S	1L amber glass H2SO4	JGFU	4oz amber wide jar
AG1H	1L amber glass HCl	WGFU	4oz wide jar unpreserved
AG1T	1L amber glass NA Thiosulfate	BG2U	500mL clear glass unpreserved
BG1U	1L clear glass unpreserved	AG2U	500mL amber glass unpreserved
AG3S	250mL amber glass H2SO4	WGKU	8oz wide jar unpreserved
AG3U	250mL amber glass unpreserved	GN	General

Plastic/Misc.

GCUB	1 gallon cubitainer
12GN	1/2
SP5T	120
BP1N	1L
BP1U	1L
BP3S	250
BP3N	250mL plastic HNO3
BP3U	250mL plastic unpreserved
BP3B	250mL plastic NAOH
BP2S	500mL plastic H2SO4
BP2U	500mL plastic unpreserved

EZL 5g Encore

le Solid

ab

ag

SL	Solid
OL	Non-Aq Liquid
WP	Wipe

WO#: 30685737

PM: CMC Due Date: 06/10/24

CLIENT: ALS-WV

Section 10 – Monitoring

UIC 2D03904844

Section 10 – Monitoring

Monitoring of all injection parameters shall be logged during manned site activity and with the assistance of on-site monitoring devices.

Monitoring consists of all parameters necessary to record and report the state required records. These parameters include:

- Disposal station records to ensure the integrity of all tanks, containment, equipment, and manifolds/lines including
  - Filter maintenance
  - Walk around inspections conducted during on-site presents
- Well monitoring
  - Operating hours
  - Injection fluid volumes for total and cumulative injected fluid and flow rate
  - Annulus injection pressures for operational and shut in activity
  - Date specific walk around inspection activity

Documentation of thorough tank inspections exist per the company's scheduled tank inspection procedures.

WR-40s shall be completed and filed in accordance with state regulations and kept on file at the district office to be made available upon request.

Fluid manifest shall be completed documenting every load of fluid delivered to the facility for disposal. These manifests will be kept on file at the district office to be made available upon request and shall report the following:

- Operator
- Date
- Hauler's name with signature
- Receiver's name and signature / initials
- Source well name and API identification
- Amount of fluid in barrel units

Manifest signature acknowledges that responsible person certifies that the contents of each shipment are Class II fluids that were brought to the surface in connection with oil or natural gas production.

Injectate sampling is performed in accordance with the requirements and parameters set forth in the permit.

Section 11 – Groundwater Protection Plan

UIC 2D03904844

(4/25)

4703904844

APPENDIX H

GROUNDWATER PROTECTION PLAN

Facility Name Ivana TR 3 #1

County: Kanawha

Facility Location:

Postal Service Address:	588 Equine Dr, Elkview, WV 25071
Latitude: 38.4820161	Longitude: -81.486754

Contact Information:

Person:	Lisa Raffle
Phone Number:	724-579-2320
E-mail Address:	lraffle@dgoc.com

Date: 10/29/2024

1. A list of all operations that may contaminate the groundwater.

CONTAMINATION WOULD MOST LIKELY OCCUR FROM A LEAK OR FAILURE OF THE UIC. SPILLS ON-SITE WOULD MOST LIKELY BE THE RESULT OF THE FAILURE OF TANKS OR LIQUIDS UNLOADING OPERATIONS. SECONDARY CONTAINMENT STRUCTURES ARE IN PLACE TO LIMIT THE IMPACTED AREA. INSPECTIONS AND CONTINUED MAINTENANCE ARE ON-GOING AND UTILIZED TO ENSURE THE RISK OF GROUNDWATER CONTAMINATION IS MINIMAL.

2. A description of procedures and facilities used to protect groundwater quality from the list of potential contaminant sources above.

QUARTERLY INSPECTIONS ARE CONDUCTED TO ENSURE THE FACILITY IS PROPERLY MAINTAINED TO PREVENT GROUNDWATER CONTAMINATION. ANNULUS MONITORING IS OBSERVED AS WELL AS SECONDARY CONTAINMENT INSPECTIONS QUARTERLY.

3. List procedures to be used when designing and adding new equipment or operations.

IF NEW EQUIPMENT IS ADDED TO THE SITE, SECONDARY CALCULATIONS AND DESIGN WILL BE CONDUCTED IN ORDER TO ENSURE THAT TANKS HAVE APPROPRIATE CONTAINMENT. FURTHERMORE, RECORDS OF INJECTION WILL BE MAINTAINED, AS WELL AS QUARTERLY INSPECTIONS CONDUCTED TO ENSURE THE WELL IS MAINTAINED PROPERLY.

4. Summarize all activities at your facility that are already regulated for groundwater protection.

THE FACILITY IS REGULATED UNDER THE UIC PROGRAM, SPCC REGULATIONS, AND WVDEP AST REGULATIONS.

5. Discuss any existing groundwater quality data for your facility or an adjacent property.

See Section 7 of this permit.

6. Provide a statement that no waste material will be used for deicing or fill material on the property unless allowed by another rule.

NO WASTE MATERIAL WILL BE USED FOR DEICING OR FILL MATERIAL AT THE SITE.

7. Describe the groundwater protection instruction and training to be provided to the employees. Job procedures shall provide direction on how to prevent groundwater contamination.

DIVERSIFIED MAINTAINS A FORMAL WRITTEN PROCEDURE AND CONDUCTS ROUTINE TRAINING ON GROUNDWATER CONTAMINATION PREVENTION.

8. Include provisions for inspections of all OPP elements and equipment. Inspections must be made quarterly at a minimum.

QUARTERLY INSPECTIONS ARE CONDUCTED ON-SITE IN ORDER TO FULFILL GPP REQUIREMENTS. THE INSPECTIONS INCLUDE EVALUATIONS OF THE SECONDARY CONTAINMENT, AST'S, AND INJECTION WELL INSPECTIONS ARE RECORDED AND MAINTAINED BY DIVERSIFIED

Signature: Lisa Raffle

Date: 10/29/2024

Section 12 – Plugging and Abandonment UIC

UIC 2D03904844

Plugging Prognosis
API #: 47-039-04844
Ivana TR3 #1
West Virginia, Kanawha County, Elk District, Clendenin 15' Quad, Blue Creek 7.5' Quad
Lat/Long – 38.481967, -81.486593
Nearest ER: Charleston Area Medical Center: Emergency Room – 501 Morris St, Charleston, WV 25301

Casing Schedule

8-5/8", 20 ppf, J-55 @ 722' – CTS
4-1/2", 10.5 ppf, J-55 @ 2220' – Cemented w/ 210 sks – Schematic in old permit shows TOC @ 1050'+/-
2-3/8", Sealtite, J-55 @ 1452' – 4-1/2" x 2-3/8" R-4 Halliburton Packer @ 1452'
TD @ 2264'

Completion: Big Injun – 31 Perfs 2120'-2150' – 520 bbl fluid, 200 sks 10/20 sand
Lower Salt Sand – 121 Perfs 1660'-1800' – 758 bbls fluid, 500 sks 20/40 sand

Fresh Water: 450'
Salt Water: 1340'
Gas Shows: None Reported
Oil Shows: None Reported
Coal: None Reported
Open None Reported
Elevation: 1150'

1. Notify Inspector Terry Urban @ 304-549-5915, 48 hrs prior to commencing operations.
2. Check and record pressures on csg/tbg.
3. Pump 6% Bentonite Gel between each plug.
4. If necessary, blow down and kill well with fluid.
5. Unset 4-1/2" x 2-3/8" R-4 Halliburton Packer @ 1452' and TOOH w/ 2-3/8" tbg & packer.
6. Check TD w/ sandline/tbg.
7. TIH w/ tbg to 2254'. Kill well as needed with 6% bentonite gel and fill rat hole with gel. Pump at least 15 bbls gel. Pump 1154' Class L/Class A cement plug from **2254' to 1100' (4-1/2" Csg Shoe, Completion Plug – Big Injun & Lower Salt Sand, Saltwater, & Elevation Plug).** Approximately 91 sks @ 1.14 yield. WOC. Tag TOC. Top off as needed. Do not omit any plugs listed below. Perforate as needed. **Can break into two plugs for operational feasibility.**
8. Free point 4-1/2" csg. Cut and TOOH. Set 100' Class L/Class A cement plug across csg cut. 50' in/out of cut. Approximately 14 sks @ 1.14 yield. Do not omit any plugs listed below. Perforate as needed. **Can be combined and set with 4-1/2" Csg Shoe, Completion Plug – Big Injun & Lower Salt Sand, Saltwater, & Elevation Plug Plug if feasible.**
9. TOOH w/ tbg to 772'. Pump 372' Class L/Class A cement plug from **772' to 400' (8-5/8" Csg Shoe & Fresh Water Plug).** Approximately 118 sks @ 1.14 yield. Top off as needed. Do not omit any plugs listed below. Perforate as needed.

10. TOOH w/ tbg to 150'. Pump 150' Class L/Class A cement plug from **150' to Surface (Surface Plug).** Approximately 48 sks @ 1.14 yield. Top off as needed. Perforate as needed.
11. Reclaim location and well road to WV DEP specifications and erect P&A well monument.

4703904844

API: 37-039-04844
WELL: Ivana TR3 #1
PERMIT:

Cement Plug 150'-Surface

6% Bentonite Gel 400'-150'

Cement Plug 772'-400'

6% Bentonite Gel ~1000'-772'

Cement Plug ~1100'-~1000'

4-1/2" TOC @ 1050+/-'

Cement Plug 2254'-1100'

TD @ 2264'

Cemented from Drilling
P&A Ops Cement
6% Bentonite Gel
Water in hole

Fresh Water @ 450'

8-5/8", 20 ppf, J-55 csg @ 722' - CTS

Not To Scale

Saltwater @ 1340'

Lower Salt Sand Perfs - 1660'-1800' - 121 Shots

Big Injun Perfs - 2120'-2150' - 31 Shots

4-1/2", 10.5 ppf, J-55 csg @ 2220' - Cemented w/ 210 sks - Schematic in old permit shows TOC @ 1050' +/-

Section 13 – Additional Bonding

UIC 2D03904844

OP-7
Rev. 1/12

*This Bond Replaces and Supersedes Berkley Insurance Company Bond No. 0231212.

BOND NUMBER 612423827
OPERATOR CODE _____

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS BOND FOR SINGLE OIL OR GAS WELL,
SINGLE LIQUID INJECTION WELL OR SINGLE WASTE DISPOSAL WELL

KNOWN ALL MEN BY THESE PRESENTS:

(1) That we, Diversified Production LLC
(2) 1600 Corporate Drive, Birmingham, AL 35242
As Principal, and (3) United States Fire Insurance Company
(4) 305 MADISON AVENUE, MORRISTOWN, NJ 07960

a firm and/or a corporation authorized to do business in the State of West Virginia, as Surety, are held and firmly bound unto the State of West Virginia in the just and full sum of (5) Five thousand and No/100 dollars ($ 5,000.00) to the payment whereof well and truly to make, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the above bound Principal in pursuance of the provisions of Chapter 22, Article 6 and 6A of the Code of West Virginia, 1931, as amended, and the regulations promulgated thereunder, has made or intends to make application to the Chief of the Office of Oil and Gas, Department of Environmental Protection, the State of West Virginia for a permit to drill, redrill, deepen, fracture, stimulate, plug, pressure, convert, combine, physically change, partially plug, case and/or reclaim, purchase or acquire, a single oil or gas well or liquid injection well or waste disposal well, located on the waters of (6) _____, in (7) _____ District, (8) Kanawha County, West Virginia, assigned by said Department of Environmental Protection, (9) API Well No. 47- 039 - 04844 ; and

WHEREAS, THE Obligee as a condition precedent to the issuance of such Permit or release of other obligation has required the Principal to furnish a SURETY BOND acceptable to the Obligee guaranteeing the performance of said provisions of Chapter 22, Article 6 and/or 6A, of the Code of West Virginia, 1931, as amended, and the regulations promulgated thereunder;

NOW THEREFORE, the condition of this obligation is such that if the Principal, its personal representatives, successors, heirs and assigns shall either (1) in drilling, redrilling, deepening, fracturing, stimulating, plugging, pressuring, converting, combining, physically changing, partiallly plugging, casing, and reclaiming, and furnish all reports, information and affidavits as may be required by the Department of Environmental Protection, Office of Oil and Gas, documenting that said well has been plugged and abandoned in accordance with Chapter 22, Article 6, of the Code of West Virginia, 1931, as amended, and the regulations promulgated thereunder, or (2) deposit with the Chief cash from the sale of the oil and gas or bond in the amount of (10) Five Thousand and No/100 dollars ($ 5,000.00) then this obligation to be void; otherwise to remain in full force and effect.

This bond shall be effective from the (11) 31st day of July, 2024, until released by the Department of Environmental Protection.

IN WITNESS WHEREOF the said Principal has hereunder set his or its hand and affixed his or its seal, and the said surety has caused its corporate name to be signed hereto and its corporate seal to be hereunto affixed by its duly authorized officer or agent this instrument this (12) 31st day of July, 2024.

(15) Principal Corporate Seal

(13) Diversified Production LLC (Seal)
(Principal)
(14) By: _____ SVP
(Title)
(Must be President or V. President)

(18) Surety Corporate Seal

United States Fire Insurance Company
(16) _____ (Seal)
(Surety)
Mark W. Edwards, II, Attorney-in-Fact

(REVERSE)

ACKNOWLEDGMENTS

Acknowledgment by Principal if Individual or Partnership

1. STATE OF _____

2. County of _____ to-wit:

3. I, _____, a Notary Public in and for the

4. county and state aforesaid, do hereby certify that _____

whose name is signed to the foregoing writing, has this day acknowledged the same before me in my said county.

5. Given under my hand this _____ day of _____ 20_____.

6. Notary Seal 7. _____

(Notary Public)

8. My commission expires on the _____ day of _____ 20____.

Acknowledgment by Principal if Corporation or Limited Liability Company

9. STATE OF Oklahoma

10. County of Oklahoma to-wit:

11. I, Desiree Morain, a Notary Public in and for the

12. county and state aforesaid, do hereby certify that John Crain

13. who as, SVP & Treasurer signed the foregoing writing for

14. Diversified Production LLC a corporation/LLC,

has this day, in my said county, before me, acknowledged the said writing to be the act and deed of the said corp/LLC.

15. Given under my hand this 31st day of July 20 24

16. Notary Seal

DESIREE MORAIN
Notary Public
State of Oklahoma
Commission #24008392
My Comm. Expires July 1, 2028

17. _____

(Notary Public)

18. My commission expires on the 1st day of July 20 2028

Acknowledgment by Surety

19. STATE OF Alabama

20. County of Jefferson to-wit:

21. I, Tyler Joseph Tucker, a Notary Public in and for the

22. county and state aforesaid, do hereby certify that Mark W. Edwards, II

23. who as, Attorney-in-Fact signed the foregoing writing for

24. United States Fire Insurance Company a corporation

has this day, in my said county, before me, acknowledged the said writing to be the act and deed of the said corporation.

25. Given under my hand this 31st day of July 20 24

26. Notary Seal

27. Tyler Joseph Tucker

(Notary Public)

28. My commission expires on the 3rd day of May 20 26

Sufficiency In Form and Manner Of Execution Approved

This _____ day of _____ 20 ___

Attorney General

By _____
(Assistant Attorney General)

POWER OF ATTORNEY
UNITED STATES FIRE INSURANCE COMPANY
PRINCIPAL OFFICE - MORRISTOWN, NEW JERSEY

KNOW ALL MEN BY THESE PRESENTS: That United States Fire Insurance Company, a corporation duly organized and existing under the laws of the state of Delaware, has made, constituted and appointed, and does hereby make, constitute and appoint:

Mark W. Edwards, II; Jeffrey M. Wilson; Anna Childress; William M. Smith; Alisa B. Ferris; Richard H. Mitchell; Robert R. Freel

each, its true and lawful Attorney(s)-In-Fact, with full power and authority hereby conferred in its name, place and stead, to execute, acknowledge and deliver: Any and all bonds and undertakings of surety and other documents that the ordinary course of surety business may require, and to bind United States Fire Insurance Company thereby as fully and to the same extent as if such bonds or undertakings had been duly executed and acknowledged by the regularly elected officers of United States Fire Insurance Company at its principal office, in amounts or penalties: **One Hundred Twenty Five Million Eight Hundred Thousand Dollars ($125,800,000)**

This Power of Attorney limits the act of those named therein to the bonds and undertakings specifically named therein, and they have no authority to bind United States Fire Insurance Company except in the manner and to the extent therein stated.

This Power of Attorney revokes all previous Powers of Attorney issued on behalf of the Attorneys-In-Fact named above.

This Power of Attorney is granted pursuant to Article IV of the By-Laws of United States Fire Insurance Company as now in full force and effect, and consistent with Article III thereof, which Articles provide, in pertinent part:

Article IV, Execution of Instruments - Except as the Board of Directors may authorize by resolution, the Chairman of the Board, President, any Vice-President, any Assistant Vice President, the Secretary, or any Assistant Secretary shall have power on behalf of the Corporation:

(a) to execute, affix the corporate seal manually or by facsimile to, acknowledge, verify and deliver any contracts, obligations, instruments and documents whatsoever in connection with its business including, without limiting the foregoing, any bonds, guarantees, undertakings, recognizances, powers of attorney or revocations of any powers of attorney, stipulations, policies of insurance, deeds, leases, mortgages, releases, satisfactions and agency agreements;
(b) to appoint, in writing, one or more persons for any or all of the purposes mentioned in the preceding paragraph (a), including affixing the seal of the Corporation.

Article III, Officers, Section 3.11, Facsimile Signatures. The signature of any officer authorized by the Corporation to sign any bonds, guarantees, undertakings, recognizances, stipulations, powers of attorney or revocations of any powers of attorney and policies of insurance issued by the Corporation may be printed, facsimile, lithographed or otherwise produced. In addition, if and as authorized by the Board of Directors, dividend warrants or checks, or other numerous instruments similar to one another in form, may be signed by the facsimile signature or signatures, lithographed or otherwise produced, of such officer or officers of the Corporation as from time to time may be authorized to sign such instruments on behalf of the Corporation. The Corporation may continue to use for the purposes herein stated the facsimile signature of any person or persons who shall have been such officer or officers of the Corporation, notwithstanding the fact that he may have ceased to be such at the time when such instruments shall be issued.

IN WITNESS WHEREOF, United States Fire Insurance Company has caused these presents to be signed and attested by its appropriate officer and its corporate seal hereunto affixed this 28th day of September, 2021.

UNITED STATES FIRE INSURANCE COMPANY

Matthew E. Lubin, President

State of New Jersey}
County of Morris }

On this 28th day of September, 2021, before me, a Notary public of the State of New Jersey, came the above named officer of United States Fire Insurance Company, to me personally known to be the individual and officer described herein, and acknowledged that he executed the foregoing instrument and affixed the seal of United States Fire Insurance Company thereto by the authority of his office.

MELISSA H. D'ALESSIO
NOTARY PUBLIC OF NEW JERSEY
Commission # 50125833
My Commission Expires 4/7/2025

Melissa H. D'Alessio (Notary Public)

I, the undersigned officer of United States Fire Insurance Company, a Delaware corporation, do hereby certify that the original Power of Attorney of which the foregoing is a full, true and correct copy is still in force and effect and has not been revoked.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the corporate seal of United States Fire Insurance Company on the 31st day of July, 20 24.

UNITED STATES FIRE INSURANCE COMPANY

Michael C. Fay, Senior Vice President

*For verification of the authenticity of the Power of Attorney, please contact SuretyInquiries@amyntagroup.com

Section 14 – Financial Responsibility

UIC 2D03904844

APPENDIX I

Requirement for Financial Responsibility to Plug/Abandon an Injection Well

In accordance with WV Code 47CSR13.13.7.g, all UIC permits shall require the permittee to maintain financial responsibility and resources to close, plug, and abandon underground injection wells in a manner prescribed by the Chief. The permittee must show evidence of financial responsibility to the Chief by submission of a surety bond, or other adequate assurance, such as a financial statement or other material acceptable to the Chief. This certification must be signed by one of the following:

1. For a corporation: by a principle corporate officer of at least the level of vice-president;
2. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively;
3. For a municipality, State, Federal, or other public agency: by either a principle executive officer or ranking elected official;
4. Or a duly authorized representative in accordance with 47CSR13.13.11.b.
   (A person may be duly authorized by one of the primary entities (1-3) listed above by submitting a written authorization to the Chief of the WVDEP Office of Oil and Gas designating an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or position of equivalent responsibility. A duly authorized representative may thus be either a named individual or any individual occupying a named position.)

Diversified Production LLC

(Company Name)

UIC 2D03904844

(UIC Permit Number)

I certify in accordance with 47CSR13.13.7.g., that the company/permit holder cited above will maintain financial responsibility and resources to close, plug, and abandon underground injection wells(s) in a manner prescribed by the Chief of the Office of Oil and Gas and that documents to support this requirement are on record with the same.

Travis Cooke

(Print Name)

VP Upstream Operations

(Print Title)

Travis H. Cooke

(Signature)

12/12/24

(Date)

DIVERSIFIED
energy

Section 15 – Site Security Plan

UIC 2D03904844

The Ivana TR3 No.1 well (4703904844) is operated under commercial status and may accept Class 2 fluids from any qualified supplier. The pump facility operates manually twice weekly for five hours. The operations building, front gate, perimeter fence, and storage tanks are securely locked when not in operation.

DIVERSIFIED
energy

Section 16 – Additional Information

UIC 2D03904844

4703904844

APPENDIX K

Identify permit or construction approvals received or applied for under the following programs:

Permit/approvals	ID Number
Hazardous Waste Management Program under RCRA	N/A
NPDES Program	N/A
Prevention of Significant Deterioration (PSD)	N/A
Nonattainment Program	N/A
Dredge or Fill	N/A
NPDES/NPDES – Stormwater	N/A
WVDEP – Office of Waste Management (OWM) – Solid Waste Facility	N/A
WVDEP – OWM – RCRA (Hazardous Waste TSD or Transporter)	N/A
WVDEP – OWM – UST	N/A
CERCLA – Superfund	N/A
WV Voluntary Remediation – Brownfields	N/A
FIFRA – Federal Insecticide, Fungicide and Rodenticide Act	N/A
Well Head Protection Program (WHPP)	N/A
Underground Injection Control (UIC)	UIC2D0292327
Toxic Substances Control Act (TSCA)	N/A
Best Management Plans	N/A
Management of Used Oil	N/A
Other Relevant Permits (Specify):	
AST ACT	Tanks registered