

Well Name: JULANDER FEDERAL	Well Location: T29N / R11W / SEC 31 / NESW / 36.679565 / -108.034866	County or Parish/State: SAN JUAN / NM
Well Number: 1E	Type of Well: CONVENTIONAL GAS WELL	Allottee or Tribe Name:
Lease Number: FEE	Unit or CA Name: JULANDER	Unit or CA Number: NMNM73585
US Well Number: 3004525000	Well Status: Producing Gas Well	Operator: LOGOS OPERATING LLC

Notice of Intent

Sundry ID: 2777616

Type of Submission: Notice of Intent	Type of Action: Workover Operations
Date Sundry Submitted: 03/01/2024	Time Sundry Submitted: 03:39
Date proposed operation will begin: 03/04/2024	

**Procedure Description:** LOGOS moved a workover rig onto the Julander 1E on 2/12/2024 to conduct bradenhead diagnostics. A retrievable bridge plug was set at 5905' and the casing was pressure tested to 500 psi. A radial cement bond log was run from the RBP to surface under 500 psi and from the upper DV tool to surface under 0 psi. On 2/15/2024 a noise log was ran from the RBP to surface and identified an acoustic event @ 1450 feet, which is near Pictured Cliffs. Based on the bond log and noise log results, a microannulus was identified in the wellbore. LOGOS has consulted with microannulus expert to determine a path forward. Please see the attached proposal from Seal-Tite International on the path forward to resolving the microannulus that is contributing to bradenhead pressure. LOGOS will submit a Sundry to both the BLM and OCD along with the CBL and Noise log.

Surface Disturbance

Is any additional surface disturbance proposed?: No

NOI Attachments

Procedure Description

- 3931530\_JULANDER\_FEDERAL\_1E\_GAS\_ANALYSIS\_CSG\_11\_09\_23\_20240301153843.pdf
- Julander\_Federal\_1E\_Well\_Schematic\_20240301153844.pdf
- Julander\_Federal\_1E\_Bradenhead\_Test\_20231109\_20240301153844.pdf
- 3931530\_JULANDER\_FEDERAL\_1E\_GAS\_ANALYSIS\_BHD\_11\_09\_23\_20240301153842.pdf

Received by OCD: 3/4/2024 9:20:04 AM

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Well Name: JULANDER FEDERAL	Well Location: T29N / R11W / SEC 31 / NESW / 36.679565 / -108.034866	County or Parish/State: SAN JUAN / NM
Well Number: 1E	Type of Well: CONVENTIONAL GAS WELL	Allottee or Tribe Name:
Lease Number: FEE	Unit or CA Name: JULANDER	Unit or CA Number: NMNM73585
US Well Number: 3004525000	Well Status: Producing Gas Well	Operator: LOGOS OPERATING LLC

Procedure\_Logos\_Operating\_New\_Mexico\_Julander\_Federal\_1E\_Microannulus\_29Feb2024\_20240301153721.pdf

Operator

I certify that the foregoing is true and correct. Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction. Electronic submission of Sundry Notices through this system satisfies regulations requiring a

Operator Electronic Signature: LACEY GRANILLO

Signed on: MAR 01, 2024 03:39 PM

Name: LOGOS OPERATING LLC

Title: REGULATORY SPECIALIST

Street Address: 2010 AFTON PLACE

City: FARMINGTONState: NM

Phone: (505) 324-4145

Email address: LGRANILLO@LOGOSRESOURCESLLC.COM

Field

Representative Name:

Street Address:

City:State:Zip:

Phone:

Email address:

BLM Point of Contact

BLM POC Name: MATTHEW H KADE

BLM POC Title: Petroleum Engineer

BLM POC Phone: 5055647736

BLM POC Email Address: MKADE@BLM.GOV

Disposition: Approved

Disposition Date: 03/04/2024

Signature: Matthew Kade



# NEW MEXICO ENERGY, MINERALS & NATURAL RESOURCES DEPARTMENT

8:30am

OIL CONSERVATION DIVISION  
AZTEC DISTRICT OFFICE  
1000 RIO BRAZOS ROAD  
AZTEC NM 87410  
(505) 334-6178 FAX: (505) 334-6170  
[http://emnrd.state.nm.us/ocd/District III3/district.htm](http://emnrd.state.nm.us/ocd/District%20III3/district.htm)

## BRADENHEAD TEST REPORT

(submit 1 copy to above address)

Date of Test 11/9/2023 10/25/2023 Operator LOGOS Operating, LLC API # 3004525000

Property Name JULANDER FEDERAL Well No. 001E Location: Unit K Section 31 Township 29N Range 11W

Well Status(Shut-In or Producing) Initial PSI: Tubing 110 Intermediate 125 Casing 165 Bradenhead 146  
Producing

OPEN BRADENHEAD AND INTERMEDIATE TO ATMOSPHERE INDIVIDUALLY FOR 15 MINUTES EACH

Testing	PRESSURE			FLOW CHARACTERISTICS		
	Bradenhead		INTERM	BRADENHEAD		INTERMEDIATE
	BH	Int		Int	Csg	
TIME						
5 min	<u>✓</u>				<u>175/165</u>	Steady Flow <u>✓</u>
10 min	<u>✓</u>				<u>175/165</u>	Surges <u>—</u>
15 min	<u>✓</u>				<u>175/165</u>	Down to Nothing <u>—</u>
20 min	<u>✓</u>				<u>175/165</u>	Nothing Steady Flow <u>—</u>
25 min	<u>✓</u>				<u>175/165</u>	Gas <u>—</u>
30 min	<u>✓</u>				<u>175/165</u>	Gas & Water <u>—</u>
						Water <u>—</u>

If bradenhead flowed water, check all of the descriptions that apply below:

CLEAR — FRESH — SALTY — SULFUR — BLACK —

5 MINUTE SHUT-IN PRESSURE BRADENHEAD 20 13 INTERMEDIATE —

REMARKS: no fluids no surges slight blow took gas samples of casing and tubing and turning them in on the way in today

first blow down was 2 secs then just a slight blow after that

BLM DIDN'T WANT GAGES DURING TEST ONLY BEGINNING AND END

By Jason Campbell

Witness Monica Kuehling

Operator

(Position)

E-mail address —





Well Name: JULANDER FEDERAL 1E;

API #: 30-045-25000

Source: CASING

Sample Type: GAS

Analysis No: LG20230245

Cust No: 46600-11720

### Well/Lease Information

Customer Name: LOGOS OPERATING LLC  
 Well Name: JULANDER FEDERAL 1E; CSG  
 County/State: SAN JUAN NM  
 Location:  
 Lease/PA/CA: NMNM019407  
 Formation: BASIN DAKOTA  
 Cust. Stn. No.: 30-045-25000  
 3931530  
 CC# 3132366A  
 AREA 4  
 Heat Trace: N  
 Remarks:

Source: CASING  
 Well Flowing: N  
 Pressure: 92 PSIG  
 Flow Temp: 28 DEG. F  
 Ambient Temp: 28 DEG. F  
 Flow Rate: 0 MCF/D  
 Sample Method: Purge & Fill  
 Sample Date: 11/09/2023  
 Sample Time: 8.30 AM  
 Sampled By: JASON CAMPBELL  
 Sampled by (CO): LOGOS

### Analysis

Component:	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.5335	0.5293	0.0590	0.00	0.0052
CO2	1.2267	1.2171	0.2100	0.00	0.0186
Methane	75.4860	74.8972	12.8450	762.41	0.4181
Ethane	11.5552	11.4650	3.1020	204.49	0.1200
Propane	6.9013	6.8474	1.9080	173.64	0.1051
Iso-Butane	1.0209	1.0129	0.3350	33.20	0.0205
N-Butane	1.9478	1.9326	0.6160	63.54	0.0391
I-Pentane	0.5043	0.5004	0.1850	20.18	0.0126
N-Pentane	0.4181	0.4148	0.1520	16.76	0.0104
Hexane Plus	0.4062	0.4030	0.1820	21.41	0.0134
Total	100.0000	99.2197	19.5940	1295.63	0.7630

\* @ 14.730 PSIA DRY &amp; UNCORRECTED FOR COMPRESSIBILITY

\*\*@ 14.730 PSIA &amp; 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.004  
 BTU/CU.FT IDEAL: 1298.6  
 BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1303.8  
 BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1281.1  
 DRY BTU @ 15.025: 1329.9  
 REAL SPECIFIC GRAVITY: 0.7657

CYLINDER #: 6205  
 CYLINDER PRESSURE: 179 PSIG  
 ANALYSIS DATE: 11/13/2023  
 ANALYSIS TIME: 03:10:39 PM  
 ANALYSIS RUN BY: ALEXIS MITCHELL

GPM, BTU, and SPG calculations as shown above are based on current GPA constants.

GPA Standard: GPA-2261

GC: Danalyzer Model 500 Last Cal/Verify: 11/14/2023

GC Method: C6+ Gas



LOGOS OPERATING LLC  
WELL ANALYSIS COMPARISON

<b>Lease:</b>	JULANDER FEDERAL 1E; CSG	CASING	11/14/2023
<b>Stn. No.:</b>	30-045-25000	BASIN DAKOTA	46600-11720
<b>Mtr. No.:</b>	3931530		

<b>Smpl Date:</b>	11/09/2023	10/25/2023	04/14/2023	06/01/2020
<b>Test Date:</b>	11/13/2023	10/27/2023	04/24/2023	06/08/2020
<b>Run No:</b>	LG20230245	LG20230241	LG20230066	LG200113
<b>Nitrogen:</b>	0.5335	0.3459	0.4611	0.3462
<b>CO2:</b>	1.2267	1.2271	1.3034	1.1778
<b>Methane:</b>	75.4860	70.3585	74.9226	69.3122
<b>Ethane:</b>	11.5552	13.9527	12.3561	13.5116
<b>Propane:</b>	6.9013	8.4437	6.6990	8.8510
<b>I-Butane:</b>	1.0209	1.1843	0.9477	1.3489
<b>N-Butane:</b>	1.9478	2.6111	1.8369	3.0713
<b>I-Pentane:</b>	0.5043	0.7055	0.5314	0.9165
<b>N-Pentane:</b>	0.4181	0.6993	0.4466	0.8678
<b>Hexane+:</b>	0.4062	0.4719	0.4952	0.5967
<b>BTU:</b>	1303.8	1384.4	1308.2	1419.0
<b>GPM:</b>	19.5940	20.2530	19.6630	20.4610
<b>SPG:</b>	0.7657	0.8153	0.7689	0.8369



Well Name: JULANDER FEDERAL #1E;  
 API #: 3004525000  
 Source: BRADENHEAD  
 Sample Type: GAS  
 Analysis No: LG20230244  
 Cust No: 46600-11705

### Well/Lease Information

Customer Name:	LOGOS OPERATING LLC	Source:	BRADENHEAD
Well Name:	JULANDER FEDERAL #1E; BHD	Well Flowing:	N
County/State:	SAN JUAN NM	Pressure:	92 PSIG
Location:		Flow Temp:	28 DEG. F
Lease/PA/CA:		Ambient Temp:	28 DEG. F
Formation:	DK	Flow Rate:	0 MCF/D
Cust. Stn. No.:	3004525000	Sample Method:	Purge & Fill
	3931530	Sample Date:	11/09/2023
	CC# 3132366A	Sample Time:	8.30 AM
	AREA 4	Sampled By:	JASON CAMPBELL
Heat Trace:	N	Sampled by (CO):	LOGOS
Remarks:			

### Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.2731	0.2676	0.0300	0.00	0.0026
CO2	0.0083	0.0081	0.0010	0.00	0.0001
Methane	88.6762	86.9020	15.0720	895.63	0.4912
Ethane	6.7945	6.6586	1.8220	120.24	0.0705
Propane	2.6665	2.6132	0.7360	67.09	0.0406
Iso-Butane	0.4449	0.4360	0.1460	14.47	0.0089
N-Butane	0.6075	0.5953	0.1920	19.82	0.0122
I-Pentane	0.2047	0.2006	0.0750	8.19	0.0051
N-Pentane	0.1323	0.1297	0.0480	5.30	0.0033
Hexane Plus	0.1920	0.1882	0.0860	10.12	0.0064
Total	100.0000	97.9993	18.2080	1140.86	0.6410

\* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

\*\*@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z):	1.0028	CYLINDER #:	4200
BTU/CU.FT IDEAL:	1143.5	CYLINDER PRESSURE:	146 PSIG
BTU/CU.FT (DRY) CORRECTED FOR (1/Z):	1146.7	ANALYSIS DATE:	11/13/2023
BTU/CU.FT (WET) CORRECTED FOR (1/Z):	1126.7	ANALYSIS TIME:	03:02:57 AM
DRY BTU @ 15.025:	1169.7	ANALYSIS RUN BY:	ALEXIS MITCHELL
REAL SPECIFIC GRAVITY:	0.6425		

GPM, BTU, and SPG calculations as shown above are based on current GPA constants.

GPA Standard: GPA-2261

GC: Danalyzer Model 500 Last Cal/Verify: 11/14/2023

GC Method: C6+ Gas





LOGOS OPERATING LLC  
WELL ANALYSIS COMPARISON

<b>Lease:</b>	JULANDER FEDERAL #1E; BHD	BRADENHEAD	11/14/2023
<b>Stn. No.:</b>	3004525000	DK	46600-11705
<b>Mtr. No.:</b>	3931530		

<b>Smpl Date:</b>	11/09/2023	04/27/2023	05/12/2020
<b>Test Date:</b>	11/13/2023	04/24/2023	05/14/2020
<b>Run No:</b>	LG20230244	LG20230067	LG200110
<b>Nitrogen:</b>	0.2731	0.2987	0.2923
<b>CO2:</b>	0.0083	0.0018	0.0036
<b>Methane:</b>	88.6762	88.5051	90.6059
<b>Ethane:</b>	6.7945	6.7736	5.9909
<b>Propane:</b>	2.6665	2.7121	2.0423
<b>I-Butane:</b>	0.4449	0.4722	0.3323
<b>N-Butane:</b>	0.6075	0.6570	0.3898
<b>I-Pentane:</b>	0.2047	0.2237	0.1240
<b>N-Pentane:</b>	0.1323	0.1438	0.0764
<b>Hexane+:</b>	0.1920	0.2120	0.1425
<b>BTU:</b>	1146.7	1150.6	1117.1
<b>GPM:</b>	18.2080	18.2320	17.9680
<b>SPG:</b>	0.6425	0.6451	0.6236



Well Name: JULANDER FEDERAL #1E;  
 API #: 3004525000  
 Source: BRADENHEAD  
 Sample Type: GAS  
 Analysis No: LG20230244  
 Cust No: 46600-11705

### Well/Lease Information

Customer Name:	LOGOS OPERATING LLC	Source:	BRADENHEAD
Well Name:	JULANDER FEDERAL #1E; BHD	Well Flowing:	N
County/State:	SAN JUAN NM	Pressure:	92 PSIG
Location:		Flow Temp:	28 DEG. F
Lease/PA/CA:		Ambient Temp:	28 DEG. F
Formation:	DK	Flow Rate:	0 MCF/D
Cust. Stn. No.:	3004525000	Sample Method:	Purge & Fill
	3931530	Sample Date:	11/09/2023
	CC# 3132366A	Sample Time:	8.30 AM
	AREA 4	Sampled By:	JASON CAMPBELL
Heat Trace:	N	Sampled by (CO):	LOGOS
Remarks:			

### Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.2731	0.2676	0.0300	0.00	0.0026
CO2	0.0083	0.0081	0.0010	0.00	0.0001
Methane	88.6762	86.9020	15.0720	895.63	0.4912
Ethane	6.7945	6.6586	1.8220	120.24	0.0705
Propane	2.6665	2.6132	0.7360	67.09	0.0406
Iso-Butane	0.4449	0.4360	0.1460	14.47	0.0089
N-Butane	0.6075	0.5953	0.1920	19.82	0.0122
I-Pentane	0.2047	0.2006	0.0750	8.19	0.0051
N-Pentane	0.1323	0.1297	0.0480	5.30	0.0033
Hexane Plus	0.1920	0.1882	0.0860	10.12	0.0064
Total	100.0000	97.9993	18.2080	1140.86	0.6410

\* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

\*\*@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z):	1.0028	CYLINDER #:	4200
BTU/CU.FT IDEAL:	1143.5	CYLINDER PRESSURE:	146 PSIG
BTU/CU.FT (DRY) CORRECTED FOR (1/Z):	1146.7	ANALYSIS DATE:	11/13/2023
BTU/CU.FT (WET) CORRECTED FOR (1/Z):	1126.7	ANALYSIS TIME:	03:02:57 AM
DRY BTU @ 15.025:	1169.7	ANALYSIS RUN BY:	ALEXIS MITCHELL
REAL SPECIFIC GRAVITY:	0.6425		

GPM, BTU, and SPG calculations as shown above are based on current GPA constants.

GPA Standard: GPA-2261

GC: Danalyzer Model 500 Last Cal/Verify: 11/14/2023

GC Method: C6+ Gas





LOGOS OPERATING LLC  
WELL ANALYSIS COMPARISON

<b>Lease:</b>	JULANDER FEDERAL #1E; BHD	BRADENHEAD	11/14/2023
<b>Stn. No.:</b>	3004525000	DK	46600-11705
<b>Mtr. No.:</b>	3931530		

<b>Smpl Date:</b>	11/09/2023	04/27/2023	05/12/2020
<b>Test Date:</b>	11/13/2023	04/24/2023	05/14/2020
<b>Run No:</b>	LG20230244	LG20230067	LG200110
<b>Nitrogen:</b>	0.2731	0.2987	0.2923
<b>CO2:</b>	0.0083	0.0018	0.0036
<b>Methane:</b>	88.6762	88.5051	90.6059
<b>Ethane:</b>	6.7945	6.7736	5.9909
<b>Propane:</b>	2.6665	2.7121	2.0423
<b>I-Butane:</b>	0.4449	0.4722	0.3323
<b>N-Butane:</b>	0.6075	0.6570	0.3898
<b>I-Pentane:</b>	0.2047	0.2237	0.1240
<b>N-Pentane:</b>	0.1323	0.1438	0.0764
<b>Hexane+:</b>	0.1920	0.2120	0.1425
<b>BTU:</b>	1146.7	1150.6	1117.1
<b>GPM:</b>	18.2080	18.2320	17.9680
<b>SPG:</b>	0.6425	0.6451	0.6236

**Proposed Procedure  
for  
Logos Operating  
Diagnostics and Repair of Microannulus Cement Leak  
Prepared by  
Seal-Tite International**

**Location:** New Mexico  
**Well:** Julander Federal 1E

**Date:** February 29, 2024

**Objectives**

Conduct diagnostics to evaluate the possibility of micro-annulus leak repair. If leak repair is within the capabilities of Seal-Tite, proceed to repair the leak using Seal-Tite sealants and procedures.

**Mechanical Considerations**

This is a production well making 0.2 bopd, 0 bwpd, 30 mcf/d.

Well information is attached.

The well is experiencing pressure build up in the 8 5/8" surface casing (8 5/8" x 4 1/2" cemented annulus) as follows.

- 5 psi in 15 minutes
- 125 psi in 24 hours
- Stabilizes @ 150 psi.
- 8 5/8" surface casing shoe @ 267 feet.

The annulus bleeds to zero with no liquids in return, all gas. Gas analysis indicates influx from the Fruitland Coal or Pictured Cliffs formations located above the upper DV tool. A noise log identified an acoustic event @ 1450 feet, which is near Pictured Cliffs.

Cementing report for the upper DV tool tells us that cement was circulated to surface. Subsequent casing bond log shows top of cement 130 feet below the wellhead.

The production casing hanger was tested successfully and the annulus pressure behavior is typical of a micro-annulus cement leak.

**Intended Diagnostic Procedure**

1. Perform Job Safety Analysis with all involved personnel.

2. Take pressure readings as follows.
  - 2 3/8" tubing
  - 4 1/2" production casing
  - 8 5/8" surface casing
3. Install a chart recorder on the 4 1/2" x 8 5/8" annulus.
4. Bleed the annulus to zero through a 1/2"-needle valve. Carefully record time to bleed to zero and the volume and type of any fluid returned. Note action on the chart.
5. With the annulus at zero pressure and vented to atmosphere, drop a weighted soft line down the annulus to tag the fluid level (if any) and measure the distance to the top of cement. Analyze any liquid captured by the line upon return to surface.
6. Shoot an Echometer to attempt to confirm fluid level or top of cement.
7. Rig up an 8-pack of 2300 psi nitrogen bottles (with regulator) to the annulus. Test the rig up to 200 psi for 5 minutes and to the maximum allowable pressure for the subject annulus for 5 minutes.
8. Inject nitrogen to increase annulus pressure to predetermined starting pressure.
9. Shut in and record pressure loss versus time.
10. Increase annulus pressure with nitrogen in 500 psi increments until reaching maximum allowable pressure for the subject annulus. Shut in and record pressure loss versus time at each pressure step to determine nitrogen injection rate down the micro-annulus cement channels versus applied pressure.
11. Bleed the annulus to 0 psi through a 1/2" needle valve. Carefully record time to bleed off and the volume/type of any fluid returned. Note action on the chart.
12. Relay results to office to determine feasibility for repair and required modifications to the following repair procedure.

### **Intended Repair Procedure**

13. Rig up Seal-Tite atomizing tee to allow for the injection of pressure-activated liquid sealant into the nitrogen flow stream entering the annulus.
14. Test the rig up to 200 psi and maximum allowable pressure for the subject annulus.
15. Inject sealant into the nitrogen flow stream per instructions from office based on diagnostic results.

16. Once the required amount of sealant has been injected into micro-annulus channels and injection pressure reaches maximum allowable pressure for the subject annulus, shut in and monitor annulus pressure for minimum 12 hours.
17. Bleed annulus pressure to zero in steps while monitoring for flow back (pressure increase from below).
18. If flow back observed, cycle pressure from max allowable pressure to zero five times.
19. Bleed applied pressure to zero in steps while monitoring for flow back.
20. After curing the leak, rig down service equipment and return well to normal operation.
21. Record annulus pressure on a regular basis and advise Seal-Tite if any pressure build up is observed.

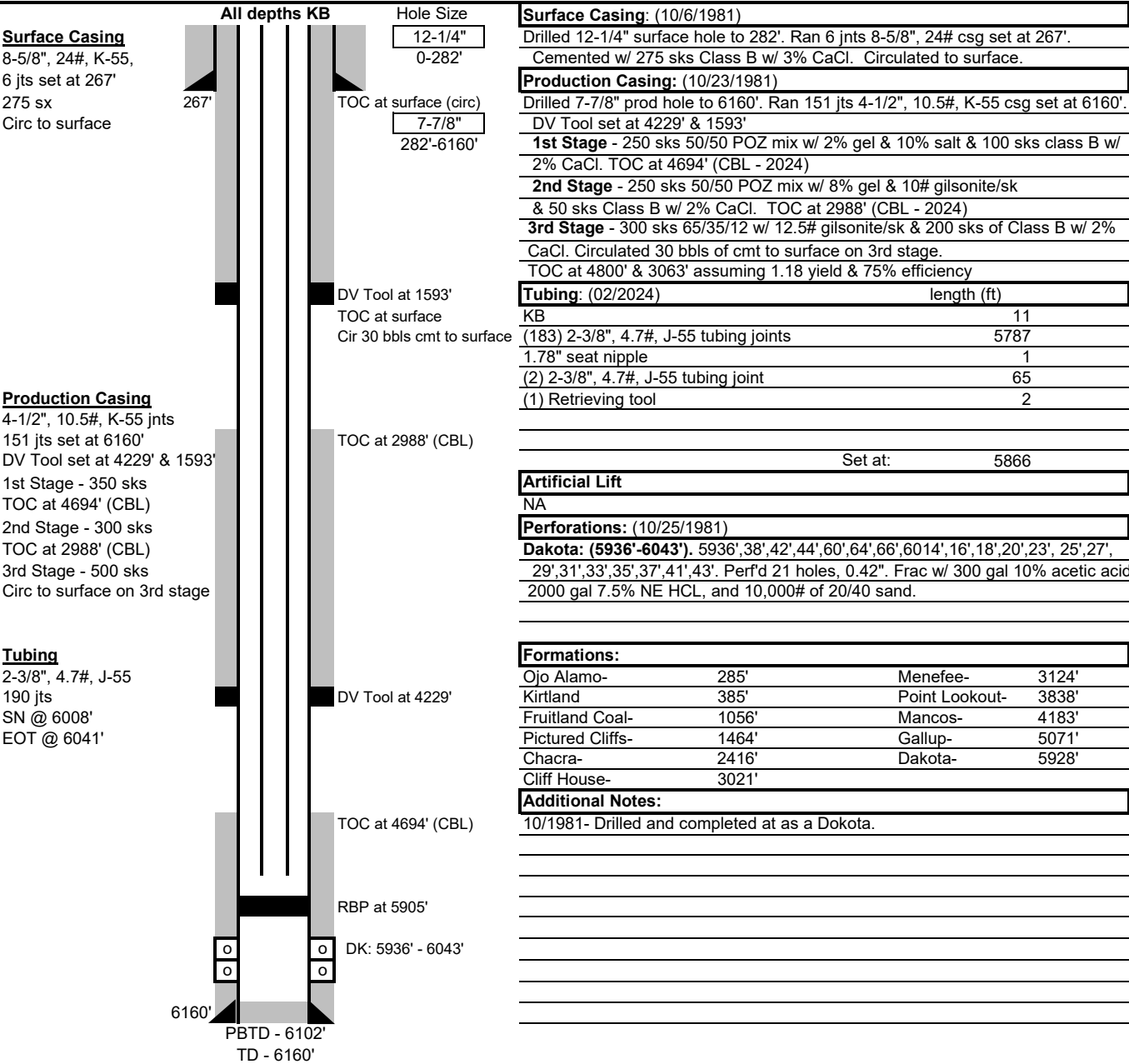
End            Gary Webb



Wellbore Schematic

Well Name:	Julander Federal 1E
Location:	UL K, Sec 31, T29N, R11W & 1525' FSL & 1840' FWL
County:	San Juan
API #:	30-045-25000
Co-ordinates:	Lat 36.6797485° Long -108.0354767° NAD83
Elevations:	GROUND: 5441'
	KB: 5452'
Depths (KB):	PBTD: 6102'
	TD: 6160'

Date Prepared:	11/16/2023 Peace
Reviewed By:	11/20/2023 CR
Spud Date:	10/6/1981
Completion Date:	10/25/1981
Last Workover Date:	N/A





Well Name: JULANDER FEDERAL 1E;

API #: 30-045-25000

Source: CASING

Sample Type: GAS

Analysis No: LG20230245

Cust No: 46600-11720

### Well/Lease Information

Customer Name: LOGOS OPERATING LLC  
 Well Name: JULANDER FEDERAL 1E; CSG  
 County/State: SAN JUAN NM  
 Location:  
 Lease/PA/CA: NMNM019407  
 Formation: BASIN DAKOTA  
 Cust. Stn. No.: 30-045-25000  
 3931530  
 CC# 3132366A  
 AREA 4  
 Heat Trace: N  
 Remarks:

Source: CASING  
 Well Flowing: N  
 Pressure: 92 PSIG  
 Flow Temp: 28 DEG. F  
 Ambient Temp: 28 DEG. F  
 Flow Rate: 0 MCF/D  
 Sample Method: Purge & Fill  
 Sample Date: 11/09/2023  
 Sample Time: 8.30 AM  
 Sampled By: JASON CAMPBELL  
 Sampled by (CO): LOGOS

### Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
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Ethane	11.5552	11.4650	3.1020	204.49	0.1200
Propane	6.9013	6.8474	1.9080	173.64	0.1051
Iso-Butane	1.0209	1.0129	0.3350	33.20	0.0205
N-Butane	1.9478	1.9326	0.6160	63.54	0.0391
I-Pentane	0.5043	0.5004	0.1850	20.18	0.0126
N-Pentane	0.4181	0.4148	0.1520	16.76	0.0104
Hexane Plus	0.4062	0.4030	0.1820	21.41	0.0134
Total	100.0000	99.2197	19.5940	1295.63	0.7630

\* @ 14.730 PSIA DRY &amp; UNCORRECTED FOR COMPRESSIBILITY

\*\*@ 14.730 PSIA &amp; 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.004  
 BTU/CU.FT IDEAL: 1298.6  
 BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1303.8  
 BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1281.1  
 DRY BTU @ 15.025: 1329.9  
 REAL SPECIFIC GRAVITY: 0.7657

CYLINDER #: 6205  
 CYLINDER PRESSURE: 179 PSIG  
 ANALYSIS DATE: 11/13/2023  
 ANALYSIS TIME: 03:10:39 PM  
 ANALYSIS RUN BY: ALEXIS MITCHELL

GPM, BTU, and SPG calculations as shown above are based on current GPA constants.

GPA Standard: GPA-2261

GC: Danalyzer Model 500 Last Cal/Verify: 11/14/2023

GC Method: C6+ Gas





LOGOS OPERATING LLC  
WELL ANALYSIS COMPARISON

<b>Lease:</b>	JULANDER FEDERAL 1E; CSG	CASING	11/14/2023
<b>Stn. No.:</b>	30-045-25000	BASIN DAKOTA	46600-11720
<b>Mtr. No.:</b>	3931530		

<b>Smpl Date:</b>	11/09/2023	10/25/2023	04/14/2023	06/01/2020
<b>Test Date:</b>	11/13/2023	10/27/2023	04/24/2023	06/08/2020
<b>Run No:</b>	LG20230245	LG20230241	LG20230066	LG200113
<b>Nitrogen:</b>	0.5335	0.3459	0.4611	0.3462
<b>CO2:</b>	1.2267	1.2271	1.3034	1.1778
<b>Methane:</b>	75.4860	70.3585	74.9226	69.3122
<b>Ethane:</b>	11.5552	13.9527	12.3561	13.5116
<b>Propane:</b>	6.9013	8.4437	6.6990	8.8510
<b>I-Butane:</b>	1.0209	1.1843	0.9477	1.3489
<b>N-Butane:</b>	1.9478	2.6111	1.8369	3.0713
<b>I-Pentane:</b>	0.5043	0.7055	0.5314	0.9165
<b>N-Pentane:</b>	0.4181	0.6993	0.4466	0.8678
<b>Hexane+:</b>	0.4062	0.4719	0.4952	0.5967
<b>BTU:</b>	1303.8	1384.4	1308.2	1419.0
<b>GPM:</b>	19.5940	20.2530	19.6630	20.4610
<b>SPG:</b>	0.7657	0.8153	0.7689	0.8369

**District I**  
1625 N. French Dr., Hobbs, NM 88240  
Phone:(575) 393-6161 Fax:(575) 393-0720  
**District II**  
811 S. First St., Artesia, NM 88210  
Phone:(575) 748-1283 Fax:(575) 748-9720  
**District III**  
1000 Rio Brazos Rd., Aztec, NM 87410  
Phone:(505) 334-6178 Fax:(505) 334-6170  
**District IV**  
1220 S. St Francis Dr., Santa Fe, NM 87505  
Phone:(505) 476-3470 Fax:(505) 476-3462

**State of New Mexico**  
**Energy, Minerals and Natural Resources**  
**Oil Conservation Division**  
**1220 S. St Francis Dr.**  
**Santa Fe, NM 87505**

CONDITIONS  
  
Action 319710

CONDITIONS

Operator: LOGOS OPERATING, LLC 2010 Afton Place Farmington, NM 87401	OGRID: 289408
	Action Number: 319710
	Action Type: [C-103] NOI Workover (C-103G)

CONDITIONS

Created By	Condition	Condition Date
mkuehling	Approval is given for items 1 through 12. Items13 through 21 are not approved. Notify this office when moving on. Please send results of testing as soon as possible.	3/15/2024