YELLOWSTONE
RESOURCES

Pauline de Jong
Regulator
Office of the Regulator of Oil and Gas Operations
PO Box 1320, Yellowknife, NWT X1A 2L9

June 15, 2023

Dear Pauline de Jong:

Re: Information Request No. 2, South Pointed Mountain L-68 Well Abandonment (ACW-2021-PPR-L-68-WID1207) – Prairie Provident Resources

Please find attached the requested information and subsequent documentation in support of the proposed abandonment program that will satisfy a variance of section 6A of the Well Suspension and Abandonment Guidelines and Interpretation Notes which is a furtherance from my reply to IR #1 dated June 2, 2023. It should be noted that the handwritten notes on the subsequent Figures are from Tristan Eshuis, P. Geol., Prairie Provident Resources.

Background:

Gas Analysis:

Prairie Provident Resources Geologist Tristan Eshuis has provided subsequent information on the Gas Analysis of the sample taken from the SCVF and analyzed in late 2020. Figure 1 below shows the extended gas analysis of the sample indicating the majority of the sample (98.58%) is C_1, which is considered a dry gas.

Core Lab

EXTENDED GAS ANALYSIS

V0012687 - 1 (CONTAINER IDENTITY) | (METER ID) | N1207 (WELL LICENSE NUMBER) | 52134-2020-6734 (LABORATORY FILE NUMBER)

Prairie Provident Resources Canada Ltd. (OPERATOR) | 1 (PAGE)

L-68-60-20-123-45-2K (LOCATION (UWI)) | L-68-60-20-123-45-2K-02 (WELL NAME) | (KB ELEV (m)) | (GR ELEV (m))

(FIELD OR AREA) | (POOL OR ZONE) | Prairie Resources (SAMPLER)

TEST TYPE AND NO.: Surface Casing Vent | TEST RECOVERY

POINT OF SAMPLE | SAMPLE POINT ID

PUMPING | FLOWING | GAS LIFT | SWAB

WATER m³/d | OIL m³/d | GAS m³/d

TEST INTERVAL or PERFS (meters)

SEPARATOR | RESERVOIR | OTHER | @ °C CONTAINER WHEN SAMPLED | 10 @ 22 °C CONTAINER WHEN RECEIVED

Pressures, kPa (gauge) | SEPARATOR | 4.0 OTHER | Temperatures, °C

10:50 hrs
2020 12 07 (DATE SAMPLED (Y/M/D)) | 2020 12 11 (DATE RECEIVED (Y/M/D)) | 2020 12 15 (DATE ANALYZED (Y/M/D)) | JX (ANALYST) | (AMT. AND TYPE CUSHION) | @ °C MUD RESISTIVITY

COMPONENT	MOLE FRACTION AIR FREE AS RECEIVED	MOLE FRACTION AIR FREE ACID GAS FREE	mL/m³ AIR FREE AS RECEIVED
H_2	0.0000	0.0000	
He	0.0002	0.0002	
N_2	0.0043	0.0043	
CO_2	Trace	0.0000	
H_2S	0.0000	0.0000	
C_1	0.9858	0.9858	
C_2	0.0059	0.0059	21.0
C_3	0.0022	0.0022	8.1
iC_4	0.0005	0.0005	2.2
C_4	0.0003	0.0003	1.3
iC_5	0.0001	0.0001	0.5
C_5	0.0001	0.0001	0.5
C_6	0.0002	0.0002	1.1
C_{7+}	0.0004	0.0004	2.1
Total	1.0000	1.0000	36.8

CALCULATED GROSS HEATING VALUE MJ/m³ @ 15°C & 101.325 kPa (abs.): 38.08 MOISTURE FREE | 38.08 MOISTURE & ACID GAS FREE
CALCULATED VAPOR PRESSURE kPa (abs.) @ 40 °C: 53.1 PENTANES PLUS

CALCULATED TOTAL SAMPLE PROPERTIES (AIR=1) @ 15°C & 101.325 kPa
MOISTURE FREE AS SAMPLED
0.691 kg/m³ DENSITY | 0.584 RELATIVE DENSITY | 16.3 RELATIVE MOLECULAR MASS

CALCULATED PSEUDOCRITICAL PROPERTIES
AS SAMPLED: 4592.1 kPa (abs) pPc | 191.8 K pTc
ACID GAS FREE: 4592.1 kPa (abs) pPc | 191.8 K pTc

C_{7+} PROPERTIES @ 15°C & 101.325 kPa: 749.5 kg/m³ DENSITY | 91.7 MOLECULAR WEIGHT
MOLE FRACTION: 0.0000000 HYDROGEN SULPHIDE | LOCATION: Laboratory | METHOD: Chromatograph

REMARKS:
Field sampling pressure was not available.

Dry gas ie. Low C2+

NOTE: THE GROSS HEATING VALUE HAS BEEN CALCULATED IN ACCORDANCE TO AGA REPORT #5 AND ALL PROPERTIES HAVE BEEN CALCULATED UTILIZING PHYSICAL CONSTANTS AND BOILING POINT GROUPING.

Figure 2 below shows the Carbon Isotope Analysis performed off the same sample dated early 2021. Dr. Muehlenbachs stated this sample is typical of the Nahani, which can be true, but a dry gas can also be typical of other formations as well. The C_1 reading of -28.04 does indicate a Thermogenic sample as it is over the cutoff of -26, however shallower zones can also contain dry gas with thermogenic readings greater than -26 and Vitrinite Reflectance (R_o) values around 1.2% to 1.4%.

Vitrinite Reflectance can be defined as "as measurement of the maturity of organic matter with respect to whether it has generated hydrocarbons or could be an effective source rock'. The measurement is given in units of relectance, $\%R_o$, with typical values ranging from $0\%R_o$ to $3\%R_o$.

Side Note: Carbon Isotope Analysis currently is taking ~30 days to complete at Core Lab.

Core Lab
RESERVOIR OPTIMIZATION

COMPANY	Prairie Provident Resources Canada Ltd.	PAGE	1
SAMPLE	L-68-60-20-123-45-2k-02	FILE	202006734
PROJECT	Carbon Isotope Analysis	DATE	6-Jan-21

Introduction

A Gas sample from L-68-60-20-123-45-2K-02 was received at Core Lab Calgary as described below. The sample was analyzed for composition to C7+ (on separate report) and then undergone Carbon Isotope Analysis.

Sample Description

Sample:	L-68-60-20-123-45-2K-02	Date Sampled:	07-Dec-20 @ 10:50 Hrs
Sample Point:	Surface Casing Vent	Date Received:	11-Dec-20
Location:	L-68-60-20-123-45-2K-02	Date Analyzed:	02-Jan-21

Results

Carbon Isotope Analysis*

Sample ID	Sample Point	$\delta^{13}C$ C_1	$\delta^{13}C$ C_2	$\delta^{13}C$ C_3	$\delta^{13}C$ i-C_4	$\delta^{13}C$ i-C_5	$\delta^{13}C$ n-C_5
L-68-60-20-123-45-2K-02	Surface Casing Vent	-28.04	-29.84	-24.45	-25.07	-23.51	-24.48

This is a deep overmature thermogenic gas, typical of the Nahani. + typical of shallower zones also in dry gas window of Ro 1.2 to 1.4.

-26 → Thermogenic

*Carbon Isotope Analysis and interpretation were performed by Dr. Karlis Muehlenbachs; IISOKM Geochemical Consultants Ltd.

Figure 3 shows a table of the shale gas reservoir attributes taken from the Application for Commercial Discovery Declarations which was used to secure the license for L-68. The highlighted section notes R_o values for the Exshaw and deeper formations to be 1.39% – 2.66%, which is outside of the window of the gas analysis in Figure 2 of 1.2% - 1.4%.

Table 2 : Shale Gas Reservoir Attributes for Liard Basin Based on L-68

Parameters	Desired Data Range	Exshaw	Status	Horn River (Muskwa/Otter/Evie)	Status
Depth (m)	Shallowest Depth in Dry Gas Window	3309-3408		2700-3900	
Gross Thickness (m)	>30 m	100-140	✓	50-70/120-150/60-200	✓
Reservoir Pressure Gradient (kPa/m)	>9.8 kPa/m (over-pressured)	11.7	✓	11/7	✓
Thermal Maturity	Dry Gas Window > 1.4 Ro	1.39-2.50	✓	1.53-2.66	✓
Porosity	>3-5% Gas Filled Porosity	4.3-7.1%	✓	8.5%/13.8%/8.6%	✓
TOC	>1% Cuttings TOC	3.58	✓	2.49/3.03/3.05	✓
Mineralogy	>40% Total Quartz and/or Carbonates, < 30% Clays	Ave. 59Q, Ave. 24C	✓	Ave. 58Q, Ave 29C	✓
Young's Modulus	>3.0 MMPSIA	ND		ND	
Poisson's Ratio	<0.25	ND		ND	
Stress	<2000 psi Net Lateral Stress	ND		ND	
Seals	Fractures Barriers Present		✓		✓
Shows	High Gas Reading/Production		✓		✓
OGIP	>100 Bcf/section	170	✓	125/445/318	✓

Figure 4 shows a table with varying depths and corresponding R_0 values, in the highlighted row. The Meas. % R_o is near the middle columns and clearly shows a depth of 1880 m to 1890 m with a value of 1.35%, which falls behind the 244.5 mm Production Casing, which requires a bond log to understand the cement competency. At a depth of 3350 m (Exshaw Perforations) the R_0 value is 2.00% and only increases with depth in the wellbore to 4115 m which is in the Nahanni formation and shows a R_o value of 2.66%, which clearly means the gas sample from the SCVF cannot be the Nahanni formation. The gas in the SCVF is certainly coming from somewhere behind the production casing. This correlates with the issues observed during the production casing cement job as during the second stage, cement was not seen at surface after pumping.

Table 4: L-68 TOC, Pyrolysis & Vitrinite Reflectance Analysis

Client ID	Depth (m) Top	Depth (m) Bottom	Formation	TOC	SRA S1	SRA S2	SRA S3	Tmax (°C)	**	Meas. % Ro	HI	OI	S2/S3	S1/TOC*1	PI	Notes Checks	Notes Pyrogram
1	1880	1890	Flett	0.96	0.15	0.81	0.27	433		1.35	84	28	3	16	0.16	SRA TOC	n
2	1970	1980	Flett	0.69	0.12	0.49	0.21	433	**		71	31	2	17	0.20		n
3	2110	2120	U BR	1.21	0.22	1.32	0.26	433			109	21	5	18	0.14	SRA	n
4	2200	2210	U BR	1.08	0.13	0.87	0.33	432			81	31	3	12	0.13		n
5	2255	2265	U BR	0.81	0.13	0.38	0.27	432	**	1.44	47	33	1	16	0.25		n
6	2335	2345	U BR	1.02	0.21	0.60	0.31	432			59	31	2	21	0.26	TOC	n
7	2430	2440	U BR	1.44	0.21	0.44	0.48	429	**		31	33	1	15	0.32	TOC	n
8	2495	2505	U BR	1.08	0.15	0.30	0.29	427	**		28	27	1	14	0.33		n
9	2605	2615	U BR	2.17	0.23	0.26	0.17	425	**	1.55	12	8	2	11	0.47	SRA TOC	n lts2sh
10	2720	2730	U BR	1.52	0.13	0.43	0.48	429	**		28	32	1	9	0.23		n
11	2820	2830	U BR	0.90	0.19	0.39	0.31	422	**		44	35	1	21	0.33	TOC	n lts2p
12	2945	2955	U BR	0.81	0.66	2.26	0.18	426			279	22	13	81	0.23	SRA TOC	n lts2sh
13	3060	3070	U BR	0.79	0.60	1.85	0.27	427			234	34	7	76	0.24	SRA TOC	n lts2sh
14	3230	3240	U BR	1.25	0.10	0.15	0.16	422	**	1.77	12	13	1	8	0.40	SRA	n lts2sh
15	3270	3280	U BR	1.80	0.26	0.87	0.15	428			48	8	6	14	0.23	TOC	n lts2sh
16	3360	3370	Exshaw	3.66	0.17	0.24	0.20	413	**	2.00	7	5	1	5	0.41	SRA TOC	f
17	3390	3400	Exshaw	3.50	0.23	0.41	0.28	414	**		12	8	1	7	0.36		n lts2sh
18	3430	3440	M BR	1.47	0.18	0.33	0.21	417	**		22	14	2	12	0.35		n lts2sh
19	3735	3745	M BR	0.96	0.57	1.32	0.22	423		2.58	138	23	6	60	0.30	SRA TOC	n lts2sh
20	3775	3785	HRS (musk)	2.86	0.54	1.13	0.27	411			39	9	4	19	0.32	TOC	n lts2sh
21	3815	3825	HRS (musk)	2.11	0.33	0.72	0.25	412			34	12	3	16	0.31	SRA	n lts2sh
22	3855	3865	HRS (OP)	2.05	0.31	0.51	0.21	405			25	10	2	15	0.38	SRA TOC	n lts2sh
23	3975	3985	HRS (OP)	3.47	1.25	2.70	0.36	425			78	10	8	36	0.32	SRA	n lts2sh
24	3935	3945	HRS (OP)	4.10	0.31	0.54	0.31	410		2.69	13	8	2	8	0.36	TOC	n lts2sh
25	4015	4025	HRS (OP)	2.49	0.34	0.49	0.26	408	**		20	10	2	14	0.41		n lts2sh
26	4035	4045	HRS (evi)	3.10	0.42	0.56	0.25	398			18	8	2	14	0.43		n lts2sh
27	4075	4085	HRS (evi)	3.25	0.33	0.50	0.21	418			15	6	2	10	0.40		n lts2sh
28	4115	4125	HRS (evi)	2.79	0.26	0.48	0.26	416	**	2.66	17	9	2	9	0.35	SRA TOC	n lts2sh

** low S2, T max unreliable

RO Measurement
X X – Measured on Vitrinite
X X – Translation to Vitrinite Reflectance using Jacob's equation, measured on Pyrobitumen

→ Samples are in the Dry Gas Window
Higher TOC in Exshaw and Lower Besa River

In summary, the gas contained in the SCVF sample cannot be from the Nahani, due to the low R_o value of the gas. The R_o value indicates the gas to be from somewhere behind the Production Casing. The Nahani is behind the 177.8 mm Liner which was cemented full length and had 2.3 m^3 of cement returns. Additionally, the Liner had a Bond Log performed which indicated excellent bond throughout the length of the 177.8 mm Liner, which was verified by experts at Encore Wireline.

The 244.5 mm Production Casing requires a bond log to determine where the top of cement is, as during the second stage of the two stage production cement job, cement returns were not seen at surface. This factor combined with the R_0 value of the gas sample indicates the gas is coming from behind the 244.5 mm Production Casing.

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Retainer Cement Program:

A cement program has been completed by Stingray well solutions which is shown below. This cement program shows the volume of the cement required to perform the cement retainer squeeze to be 16.6T. Stingray calculates the required fluid volume by taking the Liner Volume (this can be considered an excess factor) and the volume required to be placed on top of the cement retainer:

Volume of cement below retainer inside 177.8 mm, 38.7 kg/m casing:
Casing Capacity = 0.0199589 m3/m
3953 m (deepest perforation) - 3341 m (retainer depth) = 612 m =12.2 m3

Volume of cement above retainer:
Casing Capacity = 0.0199589 m3/m
15 m (0.30 m3) on top of the retainer
Volume Total = 12.2 m3 + 0.3 m3 = 12.5 m3 / 0.751 m3/tonne = **16.6 T**
The actual volume of cement when taking into account the 114.3 mm tie back string in the 177.8 mm liner is:

Volume above Cement Retainer
Casing Capacity = 0.0199589 m3/m
15 m = 0.30 m3

Packer 1 to Packer 2 Volume
Annular Capacity = 0.0097 m3/m
3389.8 m – 3313 m = 76.8 m = 0.74 m3

Packer 3 to Packer 4
Annular Capacity = 0.0097 m^3/m
3862 - 3406 m = 456 m = 4.23 m^3

Packer to Bottom Muskwa Perforations
Liner Capacity = 0.02 m^3/m
3953 m - 3862 = 91 m = 1.82 m^3

Cement Retainer to End of 114.3 mm Tie Back
Tie Back Capacity = 0.0074 m^3/m
3899 - 3341 m = 558 m = 4.13 m^3

Total Volume = 11.22 m^3 / 0.751 m^3/tonne = **14.9 T**

By calculating the cement volume on the higher volume, this will count as excess and ensure there is more than an adequate amount of cement to cover the proposed interval.

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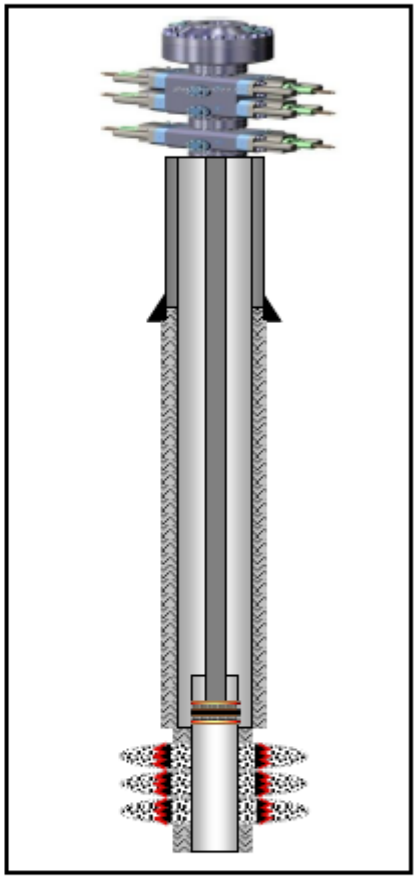
Retainer Cement Squeeze - Data
Yellowstone Resources, Inc.
CFOL LT LIARD L-68-60-20-123-45

STINGRAY WELL SOLUTIONS

Job Objective: To perform a retainer squeeze on multiple perforations from 3351 - 3953 m for abandonment purposes.

Wellbore Information:

Surface Casing:	339.7 mm, 107.15 Kg/m (SOO-95), set at 1424 m
Prod/Int. OH Csg:	244.5 mm, 64.74 Kg/m (S00-95), set at 3297 m
Liner Casing:	177.8 mm, 38.7 Kg/m (SOO-95), from 3244 - 4130 m
Tubing:	73 mm, 9.673 Kg/m
Tubing Depth:	3341mMD (3341 mTVD)
Retainer at:	3341 mMD
Est. Feed Rate:	500 L/min @ 30000 KPa
Wellbore Fluid:	Fresh Water at 1000 Kg/m3
BHCT / BHST:	127 degC / 127 degC (Customer Supplied)



Perforations	3351 m to 3370 m	(Exshaw)
Perforations	3784 m to 3810 m	(Upper Muskwa)
Perforations	3935 m to 3953 m	(Lower Muskwa)

Surf Csg cap:	0.0772 m3/m
Prod Csg cap:	0.0388 m3/m
Tubing cap:	0.003 m3/m
Liner cap:	0.0199589 m3/m
Surf/Prod Csg cap:	0.0302 m3/m
Tbg/Prod cap:	0.0346 m3/m
Prod/Liner cap:	0.0140 m3/m

Comments: Verify all parameters on location. Tubing is 60.3 mm inside 177.3 mm Liner, and 73 mm from Liner to Surface.

Cement Information:

Blend #1

Thermal 40 G + 1 % SMS + 1 % SCFR-2 + 2 % HTR + 1 % SFL-3

Density:	1876 Kg/m3	Fluid Loss:	30 cc/30min
Yield:	0.751 m3/tonne	Free Water:	0% @ Vertical
Water:	0.416 m3/tonne	TT40 / TT70:	4:48 hrs. / 5:00 hrs. @ 127 degC
AER Code:	30		

Source of Lab Information: Tested using field water and cement samples

B #1 Volume: 12.4 m3
Cement: 16.5 tonnes
Mix Water: 6.9 m3

Total Blend 1 = 16.5 tonnes

Liner & Formation Isolation:

Isolation of the 177.8 mm Liner along with the Exshaw and Muskwa formations will occur in several ways:

- The annulus of the 177.8 mm Liner and the 216 mm hole is cemented with a very competent cement bond from 3990 m (depth of log) to the Liner Top at 3244 m as per L-68 Bond Log Interpretation from Encore Dataline who performed the Bond Log and are experts in their field.
    - The Exshaw and Muskwa formation are isolated on the annular side of the Liner
- The cement retainer will be set at ~3341 m (and pressured tested) which is 10 m above the Exshaw formation. An injectivity test will be performed prior to cementing.
    - The expected injection rate is 0.5 m^3/min at 30,000 kPa
    - During the 2011 Completions Activity, 1420 m^3 of Produced Water was injected into these formations which gives high confidence the formations will take fluid.
    - On 10/7/2011 a Production Spinner Log was run by Boreal Wireline while the well was flowing to attempt to determine how much flow was coming from either zone (Exshaw and Muskwa). The results show clearly that the bulk of the production was coming from the Upper Muskwa which indicates a higher porosity and permeability.
    - The above bullet points all indicate that the Muskwa will be the dominant formation to accept fluid and cement therefore creating internal isolation of the formation in the 114.3 mm tie back string.
    - Once cementing through the cement retainer at 3341 m, the tubing will be stung out and a cement cap of 15 m will be left on top of the retainer. This will create another impermeable barrier within the 114.3 mm tie back string
    - Once the 139.7 mm tie back string is pulled from the wellbore out of the liner top hanger at 3217 m, a 244.5 mm cast iron bridge plug will be run and set ~3205 m, which is 12 m above the liner top. This plug will be successfully pressure tested and then a cap of 15 m of cement will be placed on top, which will fully isolate and abandon the 177.8 mm liner and all previously open perforations

Production Casing Isolation:

A bond log will be run on the 244.5 mm Production Casing from ~3190 m to surface. After interpretation, a plan will be made to perforate and perform retainer squeezes as necessary to remediate any production cement deficiencies to ensure cement to surface on the production casing.

Surface & Intermediate Casing Isolation:

As per drilling reports, both the surface and intermediate casing strings recorded cement returns to surface during the cement jobs.

Additional Relevant Information

As previously discussed in IR #1, the Production Spinner log that was completed on 10/7/2011 shows clearly the production was coming from the Muskwa perforations and very little production coming from the Exshaw perforations.

Combined with the previously completed Rock Analysis and Scanning Electron Microscope work completed, it is noted the permeability in the Muskwa formation is an order of magnitude larger than the permeability of the Exshaw formation. Also, the Exshaw reservoir pore throats are extremely tight, which means it will be difficult to squeeze much cement into the formation.

With the above three factors combined, the logical scenario is to set the cement retainer above the Exshaw and cement squeeze both zones together. This will allow the majority of the fluid to enter into the Muskwa while still

squeezing off the Exshaw which is unlikely to take much cement.

Safety is of the utmost concern while planning and completing these operations. It is expected that if all operations go as per plan, performing two retainer cement squeezes on the Muskwa and Exshaw formations will add a minimum of four days of operations (providing all operations go as per plan). These four days are an increase in operational exposure to the rig crew and support vendors (~20 people).

Included in performing two retainer squeezes is picking up a power swivel to mill out the frac ports. The power swivel is a heavier piece of equipment required to rotate the tubing string to mill out the frac ports. While power swivels are fairly common pieces of equipment, there is still an increase in safety exposure by lifting up the swivel to the rig floor and milling with it. By completing only one retainer squeeze, the need to drill out the frac ports is negated and there isn't a need to utilize the power swivel.

The calculated cost to perform two retainer squeezes is $287,000 which will take four days to complete, assuming all operations go as per plan. The depth and temperature of this well can make operations more challenging and the chances of having operational issues increase. When operational issues arise, it increases the amount of time to complete an operation and also increases the safety exposure to the rig crew and service providers. This proposal is designed to meet the requirements of section 6A of the Well Suspension and Abandonment Guidelines and Interpretation Notes through a variance, while balancing concerns for reducing additional safety exposure and making this procedure cost effective.

I am available at any time to discuss IR #2 as there is a lot of information included.

Regards,

Jeremy Sadleir

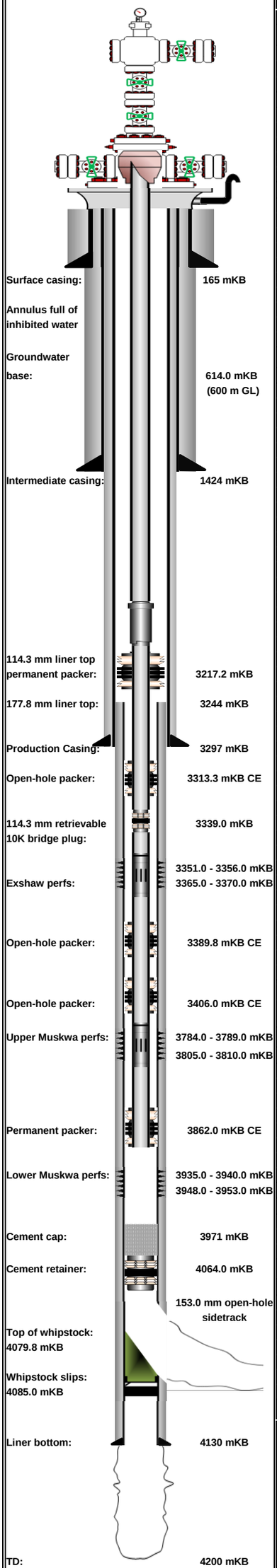
Jeremy Sadleir, P.L. (Eng.)
Completions Engineer

WELLBORE PROFILE

Prairie Provident Resources Ltd.

CFOL LT LIARD L-68-60-20-123-45

YELLOWSTONE RESOURCES



UWI:	L-68-60-20-123-45	Licence:	N1207	DATE:	April 6, 2018

ELEVATIONS (meters)

TMD	4200.00	KB ELEV	737.00	KB TO SCF	
TVD		GL ELEV	723.00	KB TO THF	4.70
PBTD	3971.00	KB - GL	14.00	Well Status	Suspended

CASING DESCRIPTION & GRADE	OD (mm)	WEIGHT (kg/m)	TOP LOCATION	LANDED DEPTH (m)
Surface Casing: SOO-95, LT&C	508.0	139.9	Surface	165.00
Intermediate Casing: SOO-95, LT&C	339.7	107.2	Surface	1424.00
Production Casing: SOO-95, LT&C	244.5	64.7	Surface	3297.00
Liner: SOO-95, LT&C	177.8	38.7	3244	4130.00
Tie-back: P-110, LT&C	139.7	34.2	Surface	3217.20

Perf Date	Zones	Top Shot	Bottom Shot	Status	Gun Data
5-Sep-11	Exshaw	3351.00	3356.00	Suspended	17 SPM, 25 gr, 60°
5-Sep-11	Exshaw	3365.00	3370.00	Suspended	17 SPM, 25 gr, 60°
4-Sep-11	Upper Muskwa	3784.00	3789.00	Suspended	17 SPM, 25 gr, 60°
4-Sep-11	Upper Muskwa	3805.00	3810.00	Suspended	17 SPM, 25 gr, 60°
4-Sep-11	Lower Muskwa	3935.00	3940.00	Suspended	17 SPM, 25 gr, 60°
4-Sep-11	Lower Muskwa	3948.00	3953.00	Suspended	17 SPM, 25 gr, 60°
	Open-hole Side-Track	4079.80	4085.00	Abandoned	
	Open-hole	4130.00	4200.00	Abandoned	

DOWNHOLE DESCRIPTION FROM BOTTOM UP (Tubing String)

ITEM #	DESCRIPTION	LENGTH (m)	TOP OF (mKB)
1	125 mm pump out shoe (28.7 MPa shear)	0.25	3899.46
2	3 - 114.3 mm, 22.47 kg/m, P-110 casing joints	34.25	3865.21
3	114.3 mm pup joint	2.76	3862.45
4	149 mm Weatherford Ultrapak HU hydraulic set permanent packer	3.40	3859.05
5	4 - 114.3 mm, 22.47 kg/m, P-110 casing joints	46.19	3812.86
6	139.7 mm Weatherford frac sleeve port (84 mm ball seat)	1.23	3811.63
7	35 - 114.3 mm, 22.47 kg/m, P-110 casing joints	403.64	3407.99
8	147.3 mm ARES Hydraulic set open-hole packer	3.60	3404.39
9	1 - 114.3 mm, 22.47 kg/m, P-110 casing joint	11.55	3392.84
10	114.3 mm pup joint	1.86	3390.98
11	147.3 mm ARES Hydraulic set open-hole packer	3.60	3387.38
12	1 - 114.3 mm, 22.47 kg/m, P-110 casing joint	11.35	3376.03
13	114.3 mm pup joint	3.07	3372.96
14	139.7 mm Weatherford frac sleeve port (89.2 mm ball seat)	1.23	3371.73
15	5 - 114.3 mm, 22.47 kg/m, P-110 casing joints	57.23	3314.50
16	147.3 mm ARES Hydraulic set open-hole packer	3.60	3310.90
17	8 - 114.3 mm, 22.47 kg/m, P-110 casing joints	91.85	3219.05
18	219.1 mm Ultrapack Liner Top Packer	1.40	3217.65
19	176.9 mm Ultrapack Latch Seal Assembly	0.76	3216.89
20	229 - 139.7 mm, 34.23 kg/m, P-110, LT&C joints (frac string)	3193.10	23.79
21	1 - 139.7 mm pup joint	4.94	18.85
22	1 - 139.7 mm casing joint	13.85	5.00
23	279.4 x 139.7 mm tubing hanger	0.30	4.70
			-
	SITP before setting 114.3 mm bridge plug: 26,000 kPa		-
			-
	ECP at 1368 mKB		-
			-
			-
			-
			-
			-
			-
			-
			-
			-
			-
			-
			-
			-

WEIGHT OF TUBING STRING (daN)		TOTAL STRING LENGTH	3895.01
TENSION/COMPRESSION (+/- daN)		STRETCH/SLACKOFF (+/- m)	
LANDED STRING WEIGHT (daN)	-	TUBING BOTTOM (mKB)	3899.71

DOWNHOLE DESCRIPTION FROM BOTTOM UP (Rod String)

AMOUNT	DESCRIPTION	LENGTH (m)	TOTAL (m)
			-
			-
			-
			-
			-
			-
			-

POLISH ROD STICK-UP (m)		TOTAL ROD STRING LENGTH	

PUMP DESCRIPTION	PUMPJACK DESCRIPTION

WELLHEAD DESCRIPTION

ITEM #	DESCRIPTION	SERIAL #	MWP (MPa)	SIZE (mm)
	Casing Bowl		35.0	346 x 339.7
	Upper flowing style wellhead		69.0	279.4 x 139.7

REMARKS

Prepared by: Jonah Urton

WELLBORE PROFILE

Prairie Provident Resources Ltd.

CFOL LT LIARD L-68-60-20-123-45

YELLOWSTONE RESOURCES

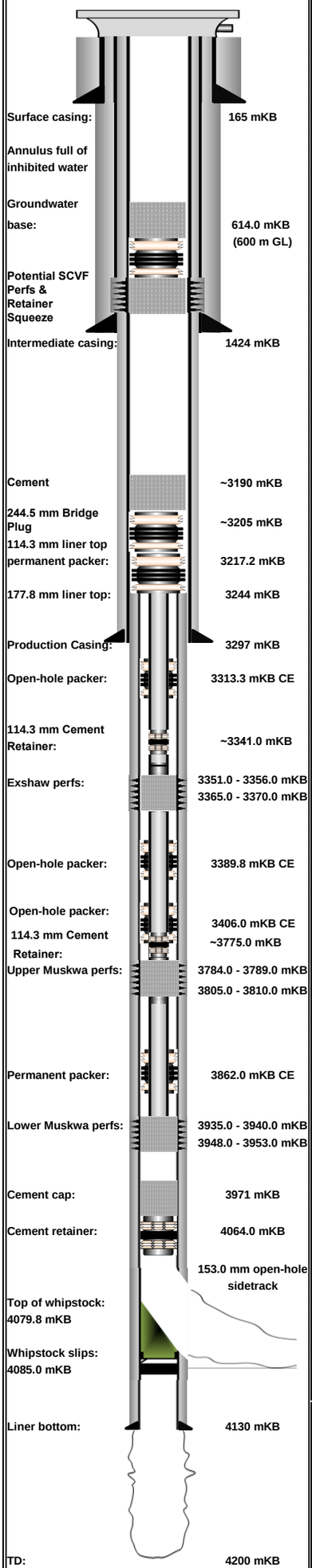
UWI:	L-68-60-20-123-45	Licence:	N1207	DATE:	June 9, 2023

ELEVATIONS (meters)

TMD	4200.00	KB ELEV	737.00	KB TO SCF	
TVD		GL ELEV	723.00	KB TO THF	4.70
PBTD	3971.00	KB - GL	14.00	Well Status	Abandoned

CASING DESCRIPTION & GRADE	OD (mm)	WEIGHT (kg/m)	TOP LOCATION	LANDED DEPTH (m)
Surface Casing: SOO-95, LT&C	508.0	139.9	Surface	165.00
Intermediate Casing: SOO-95, LT&C	339.7	107.2	Surface	1424.00
Production Casing: SOO-95, LT&C	244.5	64.7	Surface	3297.00
Liner: SOO-95, LT&C	177.8	38.7	3244	4130.00
Tie-back: P-110, LT&C	139.7	34.2	Surface	3217.20

Perf Date	Zones	Top Shot	Bottom Shot	Status	Gun Data
5-Sep-11	Exshaw	3351.00	3356.00	Suspended	17 SPM, 25 gr, 60°
5-Sep-11	Exshaw	3365.00	3370.00	Suspended	17 SPM, 25 gr, 60°
4-Sep-11	Upper Muskwa	3784.00	3789.00	Suspended	17 SPM, 25 gr, 60°
4-Sep-11	Upper Muskwa	3805.00	3810.00	Suspended	17 SPM, 25 gr, 60°
4-Sep-11	Lower Muskwa	3935.00	3940.00	Suspended	17 SPM, 25 gr, 60°
4-Sep-11	Lower Muskwa	3948.00	3953.00	Suspended	17 SPM, 25 gr, 60°
	Open-hole Side-Track	4079.80	4085.00	Abandoned	
	Open-hole	4130.00	4200.00	Abandoned	



DOWNHOLE DESCRIPTION FROM BOTTOM UP (Tubing String)

ITEM #	DESCRIPTION	LENGTH (m)	TOP OF (mKB)
1	125 mm pump out shoe (28.7 MPa shear)	0.25	3899.46
2	3 - 114.3 mm, 22.47 kg/m, P-110 casing joints	34.25	3865.21
3	114.3 mm pup joint	2.76	3862.45
4	149 mm Weatherford Ultrapak HU hydraulic set permanent packer	3.40	3859.05
5	4 - 114.3 mm, 22.47 kg/m, P-110 casing joints	46.19	3812.86
6	139.7 mm Weatherford frac sleeve port (84 mm ball seat)	1.23	3811.63
7	35 - 114.3 mm, 22.47 kg/m, P-110 casing joints	403.64	3407.99
8	147.3 mm ARES Hydraulic set open-hole packer	3.60	3404.39
9	1 - 114.3 mm, 22.47 kg/m, P-110 casing joint	11.55	3392.84
10	114.3 mm pup joint	1.86	3390.98
11	147.3 mm ARES Hydraulic set open-hole packer	3.60	3387.38
12	1 - 114.3 mm, 22.47 kg/m, P-110 casing joint	11.35	3376.03
13	114.3 mm pup joint	3.07	3372.96
14	139.7 mm Weatherford frac sleeve port (89.2 mm ball seat)	1.23	3371.73
15	5 - 114.3 mm, 22.47 kg/m, P-110 casing joints	57.23	3314.50
16	147.3 mm ARES Hydraulic set open-hole packer	3.60	3310.90
17	8 - 114.3 mm, 22.47 kg/m, P-110 casing joints	91.85	3219.05
18	219.1 mm Ultrapack Liner Top Packer	1.40	3217.65
19	176.9 mm Ultrapack Latch Seal Assembly	0.76	3216.89
	ECP at 1368 mKB		-
			-
			-
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			-
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			-
			-
			-

WEIGHT OF TUBING STRING (daN)		TOTAL STRING LENGTH	
TENSION/COMPRESSION (+/- daN)		STRETCH/SLACKOFF (+/- m)	
LANDED STRING WEIGHT (daN)	-	TUBING BOTTOM (mKB)	

DOWNHOLE DESCRIPTION FROM BOTTOM UP (Rod String)

AMOUNT	DESCRIPTION	LENGTH (m)	TOTAL (m)
			-
			-
			-
			-
			-
			-
			-
			-

POLISH ROD STICK-UP (m)		TOTAL ROD STRING LENGTH	

PUMP DESCRIPTION	PUMPJACK DESCRIPTION

WELLHEAD DESCRIPTION

ITEM #	DESCRIPTION	SERIAL #	MWP (MPa)	SIZE (mm)
	Casing Bowl		35.0	346 x 339.7
	Upper flowing style wellhead		69.0	279.4 x 139.7

REMARKS

Prepared by: Jeremy Sadleir