

Coiled Tubing Services Proposal

New Client

Proposal for Well: (Well 1) 100/16-11-051-02W5M

60.3 mm Cleanout

Surface: 14-03-051-02W5M

H2S Present: No

C003745-CTP-01

February 27, 2023

STEP's Standard Value Added Coiled Tubing Fleet Includes:

- True Twin 15k Quint Fluid Pumps
- Fit-for-purpose Ultra-Capacity Coiled Tubing Spreads • 130k Injectors • 10k and 15k BOPs •
- Tandem Stripper Standard • Creator and operator of world's only Articulating Rotating Mast •

Prepared for:

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Well Information

Blackspur Oil Corp
14-03-051-02W5M
C003745-CTP-01
27-Feb-23

UWI:	100/16-11-051-02W5M
Identifier:	Well 1
Well Name:	BLACKSPUR HZ LEDUC-WB 16-11-51-2

Formation:	Sparky
Kick Off Point (m):	1006.00
Total Vertical Depth (m):	1360.00
Total Measured Depth (mKB):	4088.00
Est. Bottom Hole Press. (MPa):	13.00
Est. Bottom Hole Temp. (°C)	50.50

Casing Label	Start Depth (m)	End Depth (m)	OD (mm) \ Type \ Weight (kg/m)	Drift ID (mm)	Collapse Strength (MPa)	Min. Internal Yield Pressure (MPa)	Internal Capacity (m³/m)	Volume (m³)	Annular Capacity (m³/m)	Annular Velocity (m/min) at 0.45 m³/min
Casing 1	0	4078	114.3 \ L-80 \ 20.09	96.4	58.9	62.2	0.0078	31.8	0.00493	91.2

90° Depth (m): 1668.0 30° Depth (m): 1181.0

Confirm all depths and well details with company representative

Continuous Duty Pump Selection

(Usage of more than 3 hours, without possibility of maintenance intervals)

Equation for Pump Amount

$$W(kW) = \frac{Q(m^3/min) * P(Kpa)}{60}$$

$$n = \left\lceil \frac{W(kW)}{666.7} \right\rceil + 1$$

For continuous duty pump selection, divide the work generated by pump rate and pressure by two times the amount of kilowatts needed for 2 pumps (333.3 kW) to find the true value. A safety margin of 1 is then added."

Ex. At 35 Mpa and 0.6 m³/min (600 L/min)

$$\begin{aligned} W &= 350 \text{ kW} \\ n &= (350 \text{ kW} / 666.7) + 1 \\ n &= 1.5 \text{ kW} \end{aligned}$$

Therefore 2 pumps are needed (supported by the chart to the left)

Ex. At 50 MPa and 1.25 m³/min (1,250 L/min)

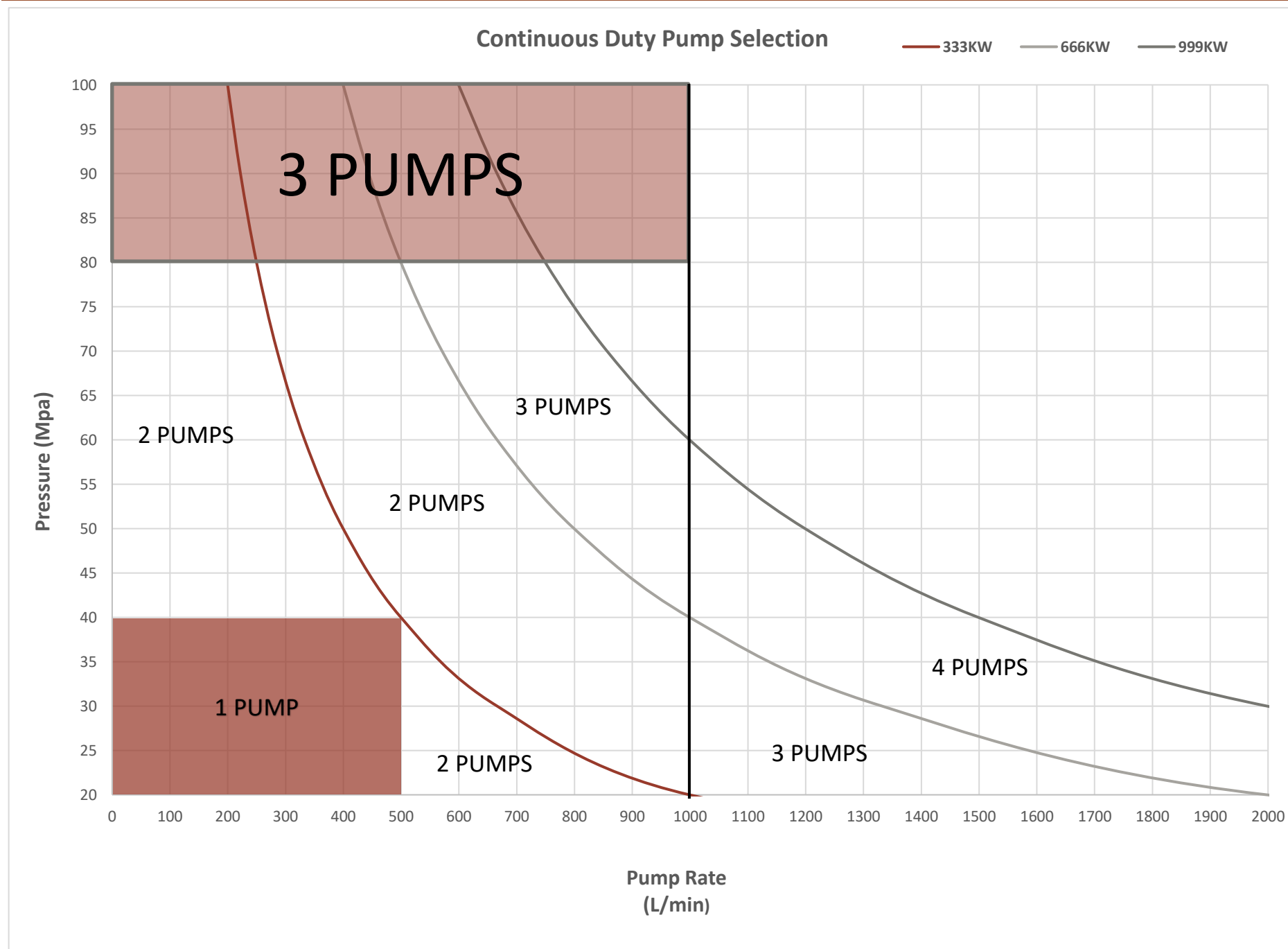
$$\begin{aligned} W &= 1041.67 \text{ kW} \\ n &= (1041.67 \text{ kW} / 666.7) + 1 \\ n &= 2.56 \text{ kW} \end{aligned}$$

Therefore, 3 pumps would be needed. Although the theoretical amount of 3 pumps are calculated, the chart depicts 4 pumps required. This would be due to the higher range of kW.

Ex. At 75 Mpa and 0.5 m³/min (500 L/min)

$$\begin{aligned} W &= 625 \text{ kW} \\ n &= (625 \text{ kW} / 666.7) + 1 \\ n &= 1.93 \text{ kW} \end{aligned}$$

Therefore 2 pumps are needed



Intermittent Duty Pump Selection

(Usage of 3 hours or less with regular maintenance intervals)

Equation for Pump Amount

$$W(kW) = \frac{Q(m^3/min) * P(Kpa)}{60}$$

$$n = \left\lceil \frac{W(kW)}{1920} \right\rceil + 1$$

For intermittent pump selection apply the same equation, but utilize 960kW as the reference point for the usage of two pumps; 1920 as the integer used to determine the amount.

Ex. At 70 Mpa and 1.0 m³/min (1000 L/min)

$$W = 1166.7 \text{ kW}$$

$$n = (1166.7 \text{ kW} / 1920) + 1$$

$$n = 1.6 \text{ kW}$$

Therefore 2 pumps are needed

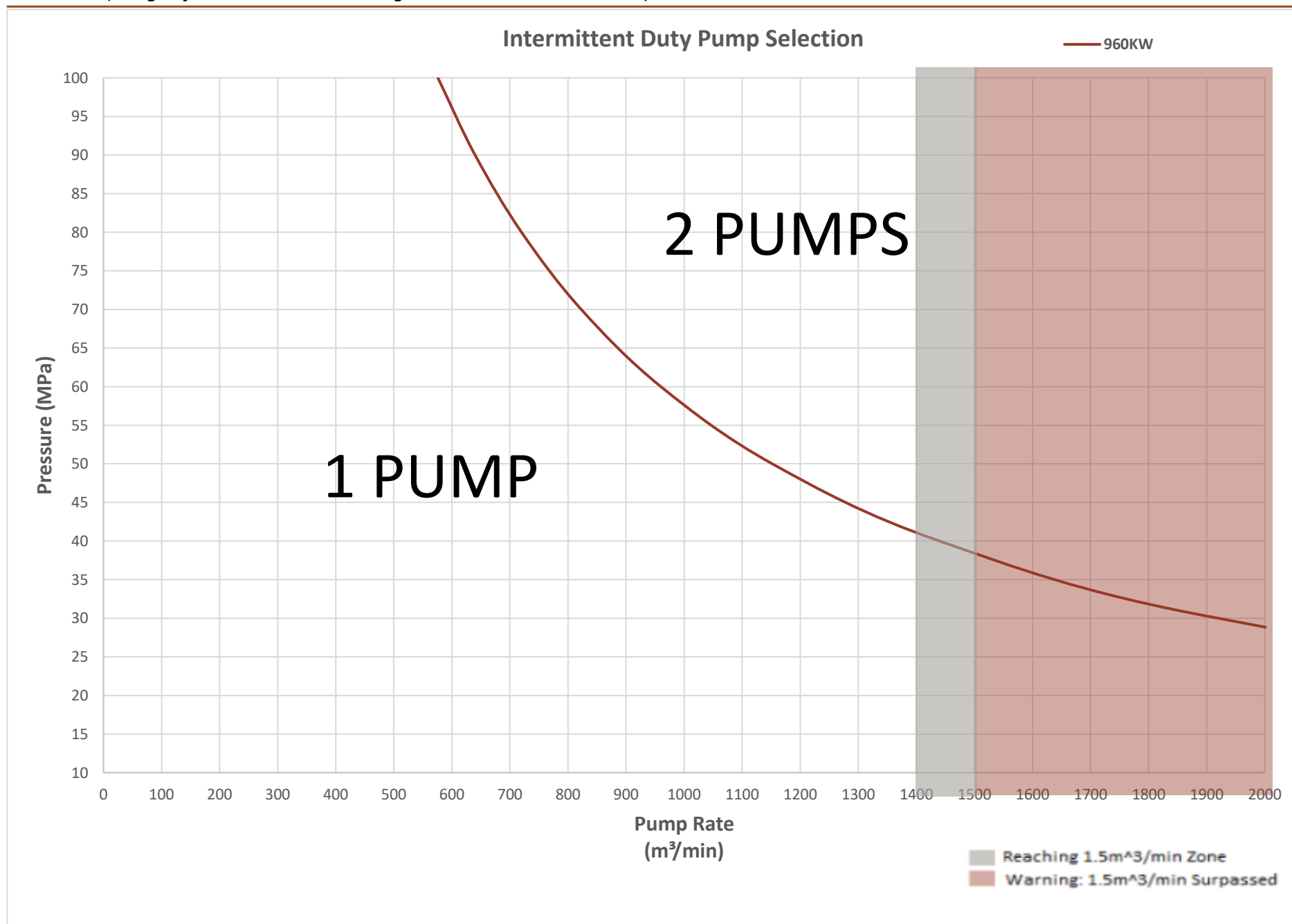
Ex. At 50 MPa and 0.75 m³/min (750 L/min)

$$W = 625 \text{ kW}$$

$$n = (625 \text{ kW} / 1920) + 1$$

$$n = 1.6 \text{ kW}$$

Therefore, 1 pump is needed



Chemical Load Out

Max BHP: 13 MPa
Well Type: Horizontal
Max BHT: 50.5 °C

Base Fluid Requirements

Fresh Water	151.75	m³
Tank Bottoms/Contingency (20%)	30.35	m³
Total Fresh Water Required	182.10	m³
Assumed # of Tanks:	2.00	*

* Hole Volume of each well and volume of assumed # of tanks on location.

Chemical Comments:

- Bring STEP-Vert LT (Diverting Agent) and Accelerator as a contingency to help maintain circulation.

Fluid System Requirements

Fluid System:	Biocide Pre Treatment	Treated Fluid	Gel Sweep	SML Sweep	Purge Package	Inhibitor Sweep	Circulation Treatment	Total Operating Time (Hrs)
Base Fluid:	Fresh Water	Fresh Water	Fresh Water	Fresh Water	Fresh Water	Fresh Water	Fresh Water	14.96
Application:	Volume	Volume	Volume	Volume	Volume	Volume	Volume	
Interval (Hrs):								
Volume of Fluid System (m³):	120.00	368.41	1.00		1.00			

Parent Chemical/Blend		Calculated	Load	Loading	Loading	Loading	Loading	Loading	Loading	Loading
DB7	L 0	78	500	0.300	0.100			5.000		
Secure-Bio 20D	L 0		0							
SFR-101 (Friction Reducer)	L 0	295	1000		0.800					
SWG-301 (Gellant)	KG 0	8	80			8.000			2.000	
SWG-101 (Gellant)	KG 0		0							
SML-LDP1	L 0		500			10.000				
SML-22-S006	L 0		0							
SSC-1 (Corrosion Inhibitor)	L 0	40	50				40.000			
SCI-10	L 0		100					20.000		
SCI-4A (Corrosion Inhibitor)	L 0		0							
STEP-Vert LT (Diverting Agent)	BAG 0		20						2.000	
STEP-PLEX™ Accelerator	KG 0		50						5.000	

Note: Primary chemicals to load are in bold. Alternate chemicals are italicized and can replace the corresponding primary chemical.

Always read the SDS and use proper PPE when handling chemicals. This may include having to wear a rain suit, face shield, half/full face respiratory mask, or acid resistant gloves.

If there are any questions with regards to treatment procedures or chemical loadings, contact CTProgramming.

Fluid Bacteria Biocide Treatment – Standard Operating Procedure

DB7 / Secure-Bio 20D (DBNPA Biocide) – Primary Biocide Treatment

- DBNPA, Liquid Biocides: DB7 and Secure-Bio 20D
 - Non-ionic, quick kill, and broad-spectrum biocides
 - Can be used interchangeably
- Used for fluid bacteria treatment and CT/line purges
- DBNPA takes 3-4 hours to see results, typical half-life is 24 hours

Pre-Treatment:

- Prime the Twin Pump with fluid and before filling coil, pre-treat the 400-bbl tanks with DB7 or Secure-Bio 20D.
- Standard pre-treatment loading is **0.3 L/m³** of the total surface fluid volume. This equates to roughly 20 L of DB7/Secure-Bio 20D per full 400-bbl tank.
- Fill on-board displacement tank with 1 m³ of fluid, mix in the required biocide volume. Mix for a minimum 1 minute, then push tank volume to the 400-bbl tanks with your pressurizer/load pump.
- To properly mix the biocide in the 400bbl tanks, bring on additional fluid from the 400bbl tank into the displacement tanks and push it back. Repeat this for a minimum two times to effectively roll the fluid in the tanks.

Treatment During Operation:

- DB7 or Secure-Bio 20D is to be applied via continuous direct injection into the fluid suction line during all fluid pumping operations. Standard loading during operations is **0.1 L/m³**, applied continuously for the duration of the job.
- Ensure a separate chemical injection port is used on the twin, do not share the same port with another chemical. This will also help avoid any potential compatibility issues with other chemicals.

Refer to documents:

- [*Technical Procedure - DB7 Application*](#)

Viscous Gel Sweep Mixing Procedure

SWG-301 (Powdered Gellant)

- When opening the powdered gel packs, be careful not to spill any dry product while handling SWG-301.
- Standard gel sweep loading is **8 kg/m³** (2 bags of SWG-301).
Note: If SWG-101 is used, the standard loading is 2x that of SWG-301 (16 kg/m³ of SWG-101).
- Fill on-board displacement tank with 1m³ of fluid and increase the agitator paddle speed to create a large vortex in the center of the tank.
- Mix each individual bag, by slowly pouring the bag's contents into the center vortex in the displacement tank. If the full bag is dumped into the tank too quickly, there is a high chance for large insoluble chunks of gel (fisheyes) to form.
- To get an even gel mixture, increase paddle speed, let it mix for 5-10 minutes. After high speed mixing, reduce paddle speed down to regular levels and mix for another 10 minutes. Ensure that gel does not spill from the tanks while agitating.
- Alternate method to help with gel mixing: Circulate through the load-side plumbing, by Pulling the gel out from the bottom of the displacement tank with the load pump and circulate it through the on-board plumbing back into the top of the displacement tank (Closed-loop system). Ensure the plumbing is flushed with water after the gel has been pumped.
- After mixing the gel pill for 20 minutes, measure viscosity with a Marsh Funnel and record it on the coiled tubing treatment report.

Refer to documents:

- [*Marsh Funnel Instructions*](#)

STEP-PLEX LCM Pumping Procedure

- STEP-PLEX LCM (Lost Circulation Material) temporarily blocks leak off zones to maintain or regain circulation.
- Review BHA with Engineering. It is recommended that nozzles are minimum ¼" in diameter and there are no internal screen in the BHA.
 - NOV and TTS agitation tools (including TTS XRV) usually do not contain internal mesh filters. Verify with the tool company representative.
 - DO NOT pump STEP-PLEX LCM through the HydroPull agitation tool, as it contains an internal 100-micron filter.
- Standard loading for a 1 m³ pill is **2 bags of STEP-Vert LT (Diverting Agent), 2 kg (half a bag) of SWG-301, and a BHT dependent loading of STEP-PLEX Accelerator** (shown in table below). Refer to the Circulation Treatment loadings on the Chemical Load Out page for the programmed loading.

Bottom Hole Temperature	STEP-PLEX Accelerator Loading
50°C	5 kg/m ³
60°C	4 kg/m ³
70°C	2 kg/m ³
80°C	1 kg/m ³
> 90°C	0 kg/m ³

- Fill your on-board displacement tank with 1 m³ of fluid and increase the agitation paddle to maximum RPM, to create a large vortex in the center of the tank.
- Slowly pour 2 kg (half a bag) of SWG-301 (or 5 L of SWG-301L if using liquid gel) into the displacement tank and allow it to hydrate. The light gel pill is meant to suspend the STEP-Vert LT in the fluid.
- Before pumping, slowly add the two bags of STEP-Vert LT and the programmed STEP-PLEX Accelerator loading to the displacement tank while the paddles are spinning at maximum RPM. Adding in the STEP-Vert LT to the gel pill too early would allow it to settle to the bottom of the displacement tank. The STEP-PLEX Accelerator will not begin acting until it reaches formation temperature.
- Only STEP-Vert LT, and STEP-PLEX Accelerator is to be pumped through the TP fluid end. Any other diverting agents require additional equipment.
- Before launching the pill, ensure only one fluid end is pumping and isolate the idle side. This ensures diverter only enters one side of the plumbing.
- Maintain a minimum rate of 400 L/min through the single fluid end (higher rate is better to aid in carrying solids).
 - *If comingled with nitrogen, lower rates may be required. Field experience has shown that to manage lower rates, options include slowly pouring STEP-Vert LT into the displacement tank to ensure no product settles out or increase the gel loading to better suspend the diverter.*
- Once the pill is away, ensure a minimum of 3 m³ of fluid is flushed through the fluid end that saw diverter prior to taking the pump to neutral. This ensures the fluid end has been properly flushed.
- Track the volume from when the pill enters coil to when it is expected to reached formation.
- Only one diverter pill in the CT at any given time.

Refer to documents:

- [STEP-PLEX Coiled Tubing Standard Operating Procedures Manual](#)

CT Chemical Purge Package

SSC-1 (Storage Corrosion Inhibitor) Purge Package – Primary Method

- Standard loading of the purge package is a **1 m³ pill** consisting of **5 L of DB7 / Secure Bio-20D** and a loading of **SSC-1** dependent on the **CT size** (shown in the table below).

Coil OD	SSC-1 Loading
1.5"	1 Pail (20L)
2"	2 Pail (40L)
2-3/8"	2 Pail (40L)
2-5/8"	3 Pail (60L)
2-7/8"	3 Pail (60L)

- If a biocide other than DB7 / Secure Bio-20D is the biocide treatment being used for the job, the DB7 / Secure Bio-20D loading can be replaced with that biocide:

(1 kg of 2K7 WSP; 5 L of Secure-BIO 10B; 5 L of Aquacar GA 50)

SCI-10 (Corrosion Inhibitor) Purge Package – Alternate Method

- Standard loading of the purge package is a **1 m³ pill** consisting of **5 L of DB7 / Secure Bio-20D** and **20 L of SCI-10**.
 - Alternative corrosion inhibitors such as SCI-4 / SCI-4A can also replace the SCI-10 loading.

Refer to documents:

- [*Technical Procedures - Coiled Tubing \(Pig and Purge\)*](#)
- [*Technical Procedures - E-Coil \(Purge\)*](#)
- [*Technical Procedures - E-Coil Slack Reset Procedure*](#)

Treatment Schedule

Blackspur Oil Corp
14-03-051-02W5M
C003745-CTP-01
27-Feb-23

Well	Job Type	Time Code	Description	m		m/min		Fluid Type	m³/min	scm/min	min	m³	scm	String
				Start Depth	End Depth	Running Meters	Speed		Fluid Rate	N2 Rate	Time	Fluid Vol	N2 Vol	
100/16-11-051-02W5M	Cleanout	RigIn	Safety Meeting								30.0			60.3 mm 6500 m Eline - No
100/16-11-051-02W5M	Cleanout	RigIn	Spot Equipment								30.0			60.3 mm 6500 m Eline - No
100/16-11-051-02W5M	Cleanout	RigIn	Rig in equipment					Biocide Pre Treatment			480.0	120.0		60.3 mm 6500 m Eline - No
100/16-11-051-02W5M	Cleanout	RigIn	Safety Meeting								30.0			60.3 mm 6500 m Eline - No
100/16-11-051-02W5M	Cleanout	RigIn	PT Lines or Wellhead								60.0			60.3 mm 6500 m Eline - No
100/16-11-051-02W5M	Cleanout	RunInhole	Run in hole to kick off point pumping minimum rates	Surface	1,006.0	1,006.0	20	Treated Fluid	0.100	0.0	50.3	5.0		60.3 mm 6500 m Eline - No
100/16-11-051-02W5M	Cleanout	RunInhole	Run cautiously through build section	1,006.0	1,668.0	662.0	15	Treated Fluid	0.100	0.0	44.1	4.4		60.3 mm 6500 m Eline - No
100/16-11-051-02W5M	Cleanout	RunInhole	Run in hole to total depth	1,668.0	4,088.0	2,420.0	5	Treated Fluid	0.450	20.0	484.0	217.8	9680.0	60.3 mm 6500 m Eline - No
100/16-11-051-02W5M	Cleanout	PullOutOfHole	Begin Pull out of hole	4,088.0	1,668.0	-2,420.0	10	Treated Fluid	0.450	20.0	242.0	108.9	4840.0	60.3 mm 6500 m Eline - No
100/16-11-051-02W5M	Cleanout	PullOutOfHole	Continue to pull through build section	1,668.0	1,412.6	-255.4	10	Treated Fluid	0.450	20.0	25.5	11.5	510.7	60.3 mm 6500 m Eline - No
100/16-11-051-02W5M	Cleanout	HoleCleaning	Pump Gel Sweep for EOC at 30° point	1,412.6	1,412.6	0.0	0	Gel Sweep	0.450	20.0	2.2	1.0	44.4	60.3 mm 6500 m Eline - No
100/16-11-051-02W5M	Cleanout	PullOutOfHole	Continue Pull Out of Hole	1,412.6	1,181.0	-231.6	15	Treated Fluid	0.450	20.0	15.4	6.9	308.8	60.3 mm 6500 m Eline - No
100/16-11-051-02W5M	Cleanout	PullOutOfHole	Pull out of hole to surface	1,181.0	566.7	-614.3	20	Treated Fluid	0.450	20.0	30.7	13.8	614.3	60.3 mm 6500 m Eline - No
100/16-11-051-02W5M	Cleanout	PullOutOfHole	Pump purge package	566.7	500.0	-66.7	20	Purge Package	0.300		3.3	1.0		60.3 mm 6500 m Eline - No
100/16-11-051-02W5M	Cleanout	PullOutOfHole	Shut down pumps, continue out of hole to surface	500.0	Surface	-500.0	20				25.0			60.3 mm 6500 m Eline - No
100/16-11-051-02W5M	Cleanout	RigOut	Nitrogen purge coil and prepare for rig out					Nitrogen		40.0	70.0		2800.0	60.3 mm 6500 m Eline - No
100/16-11-051-02W5M	Cleanout	RigOut	Rig out, ticketing and final paperwork								240.0			60.3 mm 6500 m Eline - No

Objective: Perform the following jobs and follow the procedures below

- Cleanout

Site Manager and Client Representative shall:

- Perform an inspection of the location before moving in STEP equipment.
- After rigging in STEP equipment, perform a safety meeting with all personnel involved in the operation addressing the following:

• <i>Emergency response plan</i>	• <i>Hazard identification</i>	• <i>Areas to avoid ('No go' areas)</i>
• <i>Roles and responsibilities</i>	• <i>PPE requirements</i>	• <i>Location of safety equipment</i>
• <i>Treatment procedures</i>	• <i>Well Specification</i>	• <i>Methods of communication</i>
• <i>Pressure limitations</i>	• <i>Designated safe area</i>	• <i>Signage installations</i>
- Confirm that all STEP equipment is compatible with the formation and treating fluids (contact engineering if in doubt).
- Discuss with OSR if any flammable fluids are to be utilized during the operation. If flammable fluids are to be utilized then a risk assessment must be performed as per STEP's fluid pumping SOP to determine the level of flammability. Proceed only when STEP safety guidelines have been clearly communicated and are being followed (contact fluid pumping superintendent or engineering if in doubt).
- Ensure STEP Pre-Inspection and Daily Checklist is completed prior to rigging in.

Fluid Pumping Unit Rig-Up:

- Rig up STEP Fluid Pumping Unit and surface lines including treatment monitoring equipment.
- Maximum wellhead pressure is to be determined and confirmed by client representative.
- Pressure test surface lines to limit set by client representative.
 - Typically for 10 minutes to the wellhead pressure rating or 1.1 times the estimated maximum potential SITHP (1.3 times for critical sour wells) - whichever is lesser)
 - For a satisfactory pressure test using liquid, all tests shall maintain a stabilized pressure of at least 90% of the test pressure over a 10 minute interval.
 - Where well classification or the greater of reservoir pressure and SITHP is not clear through past operations, pressure tests should be conducted to the wellhead pressure rating.
- Once pressure test is satisfactory and the results have been recorded in the treatment report, proceed in performing treatment as per client representative's instructions.
- All electronic pump gauges must be calibrated to zero prior to the start of every job. High pressure tests 0-69 MPa: Variance must be less than 5%. High pressure tests greater than 69 MPa: Variance must be less than 3%. If guidelines are not met during pressure test or operations, stop and seek assistance from maintenance. Refer to the Fluid Pumping SOP for more information.

Coiled Tubing Rig-Up:

- Perform a Timed Function Test of the BOP/Accumulator System as per STEP BOP/Accumulator JSA #6.3. Confirm that the accumulator and the N2 back-up system have adequate useable fluid/N2 pressure and record all results. This test is to be performed once per well before each job or once per week.
- Record Shut In Tubing Head Pressure (SITHP) before rigging up STEP equipment and record in treatment report.
- Rig up all surface lines, flow tee, and BOP stack. The 3-year BOP certification must be complete (including all riser, flow spools, cross-overs, etc. as per IRP 21).
- Setup CerberusTM Job Manager (CT Fatigue), Hercules (CT Real-Time Stresses Model), and OrionNETTM Data Acquisition. Ensure that Wellsite Geometry in Job Manager is setup correctly. Refer to STEP Cerberus/OrionNet Setup Guide for instruction.
- With the BOP installed on the wellhead, the BOP system shall be pressure tested as follows:
 - a. A low-pressure test of 1,400 kPa shall be conducted on each ram preventer for 10 minutes.
 - b. A high-pressure test shall be conducted on each ram preventer for 10 minutes to the wellhead pressure rating of 1.1 times the estimated maximum potential SITHP (1.3 times for critical sour wells) - whichever is lesser.
 - c. The stuffing box assembly shall be pressure tested as per the high pressure test in Step b.

Record all results in treatment report.

- Other components that shall be pressure tested for 10 min. as per high pressure test in step b. above are:

• <i>Connection between BOP stack & wellhead</i>	• <i>Reel isolation valve</i>
• <i>Lubricators</i>	• <i>Check valves*</i>
• <i>Bleed-off and kill lines</i>	• <i>Rotating joint **</i>
• <i>All valves and manifolds</i>	• <i>Coiled tubing **</i>

* A differential pressure test across the check valve shall be established to confirm check valve integrity before running in hole.

** Shall be pressure tested to criteria in b. Or maximum anticipated wellhead treatment pressure - whichever is greater.

Record all results in treatment report.

Additional Notes On Pressure Testing:

- For a satisfactory pressure test using liquid, all tests shall maintain a stabilized pressure of at least 90% of the test pressure over a 10 minute interval.
- The maximum pressure test will not exceed the von Mises stress (based on the ellipse limits curve) in the tubing and should be less than 80% of the specified minimum material yield strength in the CT string.
- Where well classification or the greater of reservoir pressure and SITHP is not clear through past operations, pressure tests should be conducted to the wellhead pressure rating.

Coiled Tubing Cleanout Procedure:

- Go to STEP Intranet for further information. [STEP CT Cleanout Technical Procedure](#)
- Discuss with client OSR, well and cleanout details.
- If nitrogen and/or diverter is to be used see subsections below.
- If BHP is low, be prepared to use N2 to help with returns, as sand and debris will collect up to and into through the build section.
- WHP trend should be monitored for slow decreases in pressure over time as the cleanout progresses. A decreasing trend indicates reduction in returns.
- Function test tool string motor, varying rates as requested, record results in treatment report.
- Equalize SITHP determined previously and open swab valve. Two STEP Professionals shall count and record the number of rotations.
- Begin running in hole while circulating at minimum to low rates. Ensure that a differential pressure of 10 MPa or less is maintained between the coiled tubing and the wellhead pressure. Run in hole past wellhead with caution for potential tag.
- If BHA assembly has an agitator, in order to alleviate surface equipment damage when utilizing agitation tools, function tests are only to be performed at half rates near surface. Full rate function tests are only to be performed past the depth of the KOP, or deeper than 1,500m.
- **Perform an initial pull test 50-100 m downhole and subsequent pull tests every 500 m. Compare weights with the established RIH & POOH weights. If possible, perform pull tests on sections of pipe with low historical fatigue.**
- Continue RIH into build section, adjust fluid rates as required in relation to what is seen for returns.
- If coiled tubing (CT) encounters lock-up, discuss with the client representative the option of pumping slugs of metal to metal friction reducer.
- If sand bed/plug is encountered, clean out the obstructions in 5-10 m “bites”. Pay close attention to returns and fluctuations in wellhead pressure (WHP) to gauge the amount of sand that is being returned to surface.
- Record pipe weight as CT progresses through the lateral and monitor weight trends.
- If signs of an overpull are detected, pump bottoms up at the highest rate possible and perform a wiper trip. CT should be pulled out of hole to 30° inclination when performing a wiper trip. Do not proceed back in hole until returns are clean.
- If annular velocity is lower than 75 m/min, it is recommended to perform bottoms up at the highest rate possible and perform additional wipers to clear out sand and debris.
- During the cleanout, or wiper trip, if any of the following are seen stop CT until the issue(s) are corrected:
 - Overpull exceeding 4,000 daN
 - Increase in circulating pressure
 - Lost circulation
 - Return rate less than 80% of pump rate
 - Loss of N2 returns
- Clean out the well down to TD and pump (minimum) one bottoms up. Begin to POOH at a speed that ensures the BHA will not contact the swept sand/debris field. Time a gel sweep (if gel is to be used) for the heel. POOH speeds should not exceed 10 m/min or 1/10th of the annular fluid velocity, whichever is lower, while in the horizontal section to ensure proper wellbore cleanout.
- If returns decrease to the point where fluid velocity in the bore is nearing its ability to carry the sand/debris, nitrogen can be introduced to help with improving returns and WHP.
- If thief zones are encountered, where fluid being lost is jeopardizing returns at surface, the use of diverter can be an option to mitigate losses into formation. Discuss with client OSR and contact STEP CT Engineering and Tech Development representative for further info on the product and application in the scenario encountered.

Cleanout of Low BHP Wells (with Nitrogen)

- For low BHP wells or if circulation is lost, nitrogen should be used to assist in cleanout operations. Discuss with client OSR.
- Ensure to co-ordinate with flowback representative for consistent reporting on fluid and sand/debris returns, fluctuations in WHP. Record in TR.
- Fluid and N2 rates are to be adjusted to achieve best possible returns with consistent WHP.
- If WHP drops down to 1 to 2 MPa, nitrogen should be used to improve and stabilize WHP. At these low pressures hydrostatics may overcome BHP and kill the well, this increases the risk of CT becoming detained in the bore.
- If circulation is lost during the cleanout, begin POOH while monitoring pipe weights. Don't exceed 4,000 daN pull over string weight. Start pumping N2 to attempt to regain circulation. STEP-PLEX™ LCM can also be pumped to mitigate thief zones in combination with N2. Contact CT Engineering to discuss details and confirm loadings.
- For co-mingled N2 fluid, ensure foam quality is under 25% (bubble phase) to avoid slug flow. For those scenarios where 30% foam quality is needed, foam sweeps should be considered. Stable foam offers better resistance to collapse, slower degradation over a longer period of time. The chemicals shown in the table can help achieve this. See table 1 for chem loadings, see table 2 for foam quality ranges.

Chemical	Loading (L/m3)	Where Used
SWG-3 HEC Gel	5	Twin
SWF-1 Water Foamer	8	Twin
SAF-1 Anti-Foamer	20	Testers/ Flowback Tanks

Table 1. Foam Chemical Loadings

Flow Regime	Foam Quality
Liquid Phase (N2, Bubble)	0 to 25
Slug Flow	26 to 60
Foam	60 to 90
Mist	90 to 99

Table 2. Foam Quality

- Target foam quality of 75% to 90%, if losing returns. Decrease fluid rate and increase nitrogen. Foam quality will be dependent on pressure and temperature.
- Foam is not a suitable medium for jetting compacted sand/debris, as it is too light to clear/cut through the pile.
- Hydrocarbons in the well bore will de-stabilize water-based foams. Monitor WHP and returns, perform chemical treatments to improve foam as required.
- Low pressure cleanouts bring the risk of CT becoming detained in the bore from sand/debris and also hydrates (if bore conditions are right). Ensure to review the immobilized CT technical procedures for further info.
- **Immobilized CT (Hydrate) Technical Procedure:**
 - Chemical and mechanical solutions for hydrates, along with explanation of hydrate formation.
 - [Hydrate Technical Procedure](#)
- **Nitrogen Bomb Pumping:**
 - Nitrogen bombs (slugs) simulate jarring effects on the CT, as sequential N2 bombs exit CT.
 - [Nitrogen Bomb Technical Procedure](#)
- **Immobilized CT (Without Circulation - Low BHP)**
 - STEP Plex, Nitrogen application, mechanical solutions with CT, also chemical cutting details.
 - [Immobilized CT Without Circulation-Low BHP Technical Procedure](#)
- **Immobilized CT (Without Circulation - Debris)**
 - Mechanical CT, nitrogen, fluid solutions.
 - [Immobilized CT Without Circulation-Debris Technical Procedure](#)
- **Immobilized CT (With Circulation)**
 - Mechanical CT, nitrogen, STEP Plex, fluid solutions.
 - [Immobilized CT with Circulation Technical Procedure](#)

Coiled Tubing Rig Out:

- When coiled tubing has reached surface, close master valve, count and record the number of rotations, and assist in rigging out tools.
- Rig back onto the wellhead and purge coiled tubing with nitrogen. Do not exceed 40 scm/min when purging coiled tubing with nitrogen. Refer to **Chemical** page for more details on required N2 rates.

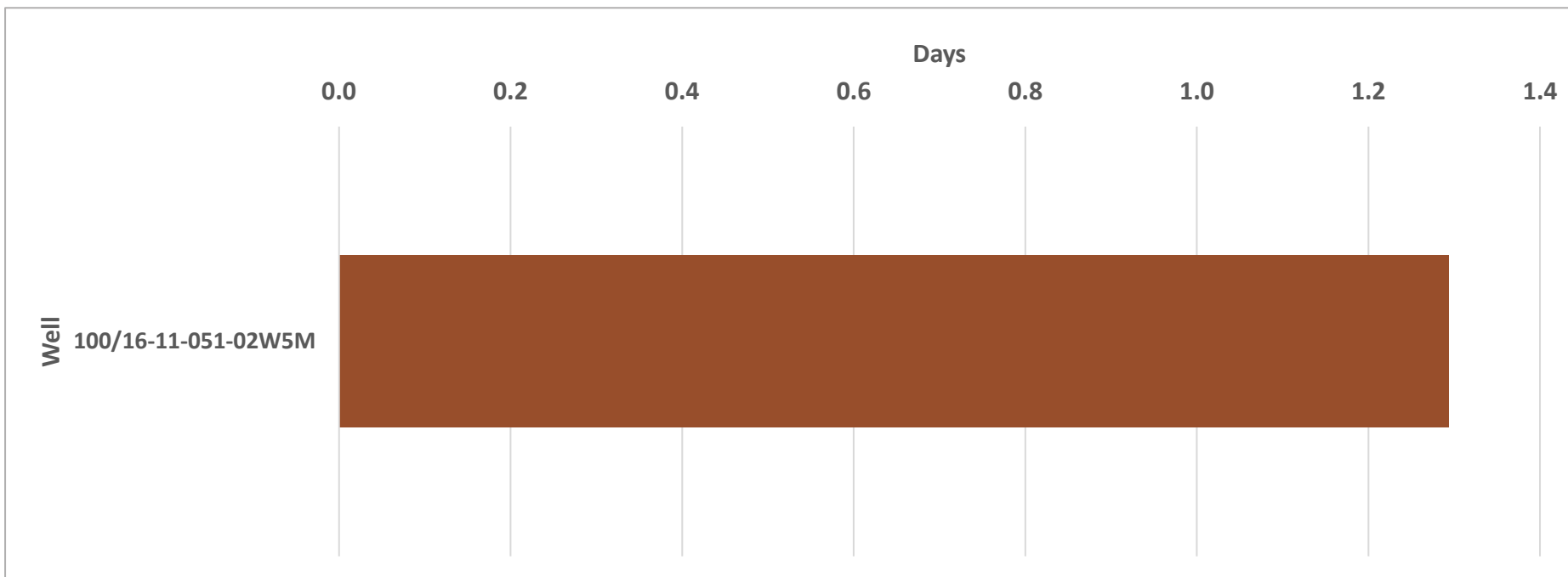
Fluid Pump Rig Out:

- Discuss with the Blackspur Oil Corp on-site representative the method for controlled unloading of well fluids from the fluid pumping equipment prior to disconnecting any enclosed fluid transfer systems.
- When fluid lines are to be disconnected, ensure all intake and discharge valves have been shut in and all internal plumbing has been adequately drained prior to breaking any connections. Continue to rig out as per the Fluid Pumping Standard Operating Procedures Manual.

Programmed Operational Summary

Blackspur Oil Corp
14-03-051-02W5M
C003745-CTP-01
27-Feb-23

Number of Wells: 1
Number of Job Types: 1

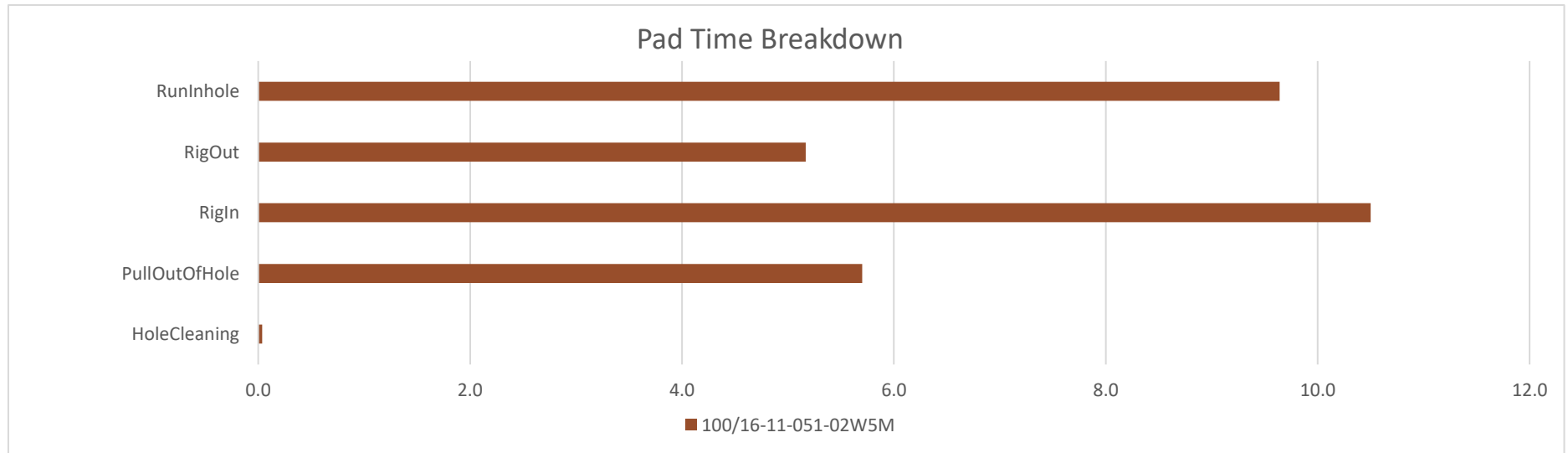


OPERATIONAL REQUIREMENTS

UWI	Base Fluid Volume (m³)	Running Meters (m)	Total Operating Hours (Hrs)	Total Days	Total Shifts	Number of Job Types	Number of Gel Sweeps	Number of Tools Used	Nitrogen Pumped (scm)
100/16-11-051-02W5M	490	4,088	31	1.3	3	1	1	1	18,798

Number of Wells: 1
Number of Job Types: 1

	100/16-11-051-02W5M	Grand Total
HoleCleaning	0.0	0.0
PullOutOfHole	5.7	5.7
RigIn	10.5	10.5
RigOut	5.2	5.2
RunInhole	9.6	9.6
Grand Total	31.0	31.0





1200, 205-5th Ave SW
Calgary, AB T2P 2V7

Client Info	
Client:	Blackspur Oil Corp
Address:	1110, 335 – 8th Ave SW Calgary, AB T2P 1C9

Job Info	
Job Type:	Cleanout
Job #:	C003745
Program #:	C003745-CTP-01
Surface Location:	14-03-051-02W5M
Well ID:	Well 1
Downhole Location (UWI):	100/16-11-051-02W5M
Province:	AB

Summary					
Service Line		Nitrogen	Fluid Pumping	Coiled Tubing	Total
Equipment And Services	\$	20,159.53	\$ -	\$ 53,612.00	\$ 73,771.53
Product Charges	\$	7,919.19	\$ 4,911.86	\$ -	\$ 12,831.05
Miscellaneous	\$	3,857.10	\$ 1,600.00	\$ 5,771.00	\$ 11,228.10
Travel	\$	1,485.00	\$ 1,402.50	\$ 3,630.00	\$ 6,517.50
Other				\$ 521.74	\$ 521.74
Total	\$	33,420.82	\$ 7,914.36	\$ 63,534.74	\$ 104,869.92

Ticket Detail							
Item Code	Description	Comment	Actual QTY	Second QTY	Unit Price	UOM	Total
Coiled Tubing Services							
22019	Coiled Tubing Spread Execution (per hr)		31.05		\$ 1,200.00	HR	\$ 37,260.00
22022	Coiled Tubing Spread Standby (per hr)		0.00		\$ 1,200.00	HR	\$ -
22035	Coiled Tubing Spread NPT (per hr)		0.00		\$ 1,200.00	HR	\$ -
20301	60.3 mm (2-3/8”) Cycling Charge		4,088.00		\$ 4.00	M	\$ 16,352.00
20607	60.3 mm (2-3/8”) Excess Fatigue Charge (per 0.1%)		0.00		\$ 125.00	0.001	\$ -
20451	CT Excessive Pressure Charge (35.1 MPa – 50.0 MPa)		0.00		\$ 0.20	M	\$ -
20452	CT Excessive Pressure Charge (> 50.0 MPa)		0.00		\$ 0.20	M	\$ -
10200	Subsistence		9.00	2	\$ 225.00	MANDAY	\$ 4,050.00
10226	Data Management Services (Tier 2)		31.05		\$ 20.00	HR	\$ 621.00
10131	Fuel Surcharge - Coil Tubing		2.00		\$ 550.00	DAY	\$ 1,100.00
10124	Heavy Unit Travel		4.00	165	\$ 4.50	KM	\$ 2,970.00
10105	Light Unit Travel		2.00	165	\$ 2.00	KM	\$ 660.00
Coiled Tubing Services Sub Total:							\$ 63,013.00

Fluid Pumping Services							
80213	DB7		77.84		\$ 16.95	L	\$ 1,319.39
80205	Secure-Bio 20D		0.00		\$ 18.75	L	\$ -
80800	SFR-101 (Friction Reducer)		294.73		\$ 8.51	L	\$ 2,508.15
80910	SWG-301 (Gellant)		8.00		\$ 30.94	KG	\$ 247.52
80906	SWG-301L (Gellant)		0.00		\$ 14.17	L	\$ -
80900	SWG-101 (Gellant)		0.00		\$ 12.64	KG	\$ -
89000	SML-LDP1		0.00		\$ 9.82	L	\$ -
89320	SML-22-S006		0.00		\$ 9.45	L	\$ -
83101	SSC-1 (Corrosion Inhibitor)		40.00		\$ 20.92	L	\$ 836.80
83102	SCI-10		0.00		\$ 13.60	L	\$ -
80045	SCI-4A (Corrosion Inhibitor)		0.00		\$ 10.03	L	\$ -
10132	Fuel Surcharge - Fluid		2.00		\$ 800.00	DAY	\$ 1,600.00
10124	Heavy Unit Travel		1.00	165	\$ 4.50	KM	\$ 742.50
10105	Light Unit Travel		2.00	165	\$ 2.00	KM	\$ 660.00
Fluid Pumping Services Sub Total:							\$ 7,914.36

Nitrogen Services							
50216	N2 Purge Package		1.00		\$ 4,800.00	EACH	\$ 4,800.00
50100	Low Rate N2 Pumping Unit Execution	min 4 hrs	27.05	1	\$ 325.00	HR	\$ 8,791.25
50105	Low Rate N2 Pumping Unit Standby		0.00	1	\$ 201.72	HR	\$ -
50124	Low Rate N2 Pumping Unit NPT		0.00	1	\$ 325.00	HR	\$ -
50200	N2 Transport Unit Execution	min 4 hrs	27.05	1	\$ 242.82	HR	\$ 6,568.28
50205	N2 Transport Unit Standby		0.00	1	\$ 156.90	HR	\$ -
50207	N2 Transport Unit NPT		0.00	1	\$ 242.82	HR	\$ -
81700	N2	Incl. 10% losses & cooldown	17,598.19		\$ 0.45	SCM	\$ 7,919.19
10134	Fuel Surcharge - N2		2.00		\$ 300.00	DAY	\$ 600.00
10200	Subsistence		2.00	2	\$ 225.00	MANDAY	\$ 900.00
50316	N2 Power Surcharge	If product sourced from Joffre	21,428.19		\$ 0.11	SCM	\$ 2,357.10
50317	N2 Power Surcharge - GP / Dawson		0.00		\$ 0.03	SCM	\$ -
10124	Heavy Unit Travel		2.00	165	\$ 4.50	KM	\$ 1,485.00
10105	Light Unit Travel		0.00	165	\$ 2.00	KM	\$ -
Nitrogen Services Sub Total:							\$ 33,420.82
Total							\$ 104,348.18

Other Charges							
10917	Environmental Charge	0.5% of ticket total	1.00		\$ 521.74	EACH	\$ 521.74
Other Charges Sub Total:							\$ 521.74
Total							\$ 104,869.92

At time of programming 24 hours operations are planned.

Royalty Fees - a 6.5% fee will apply to the total fracturing, coiled tubing, and tools tickets proportionately based on the number of zones that are abrasively cut/perforated
 - does not apply to toe frac perforation

Please note additional charges apply when work is performed on Statutory Holidays – 10620 Statutory Holiday Surcharge, \$600/man-day

Unforeseen circumstances may result in additional line items on the field ticket. These line items will be added as per document: 2020 Canadian Pricebook and Guidance

Allocated equipment is assumed at the creation of the proposal. This is subject to change, and additional charges may apply, based on equipment availability at time of service and conditions of lease.

GENERAL TERMS AND CONDITIONS

In consideration of the performance of services ("Services"), or the supply of tools, equipment, products and materials ("Products") by STEP Energy Services Ltd. ("STEP") to its customer ("Client") as contemplated or provided for in the STEP document to which these terms and conditions are attached or printed (the "Order"), Client agrees that, subject to the terms of a Master Service Agreement in effect between STEP and Client ("MSA"), the following terms and conditions apply to such performance of Services Products or supply of Products (the "Terms and Conditions"):

ENTIRE AGREEMENT

Entire Agreement: A contract is formed between STEP and Client upon acceptance of the Order; such acceptance occurring on the earlier of notice from the Client or the Client allowing STEP to provide the Products or Services. The Order and these Terms and Conditions constitute the entire agreement between STEP and Client with respect to the Products and Services (the "Agreement") and there are no other agreements, express or implied. This Agreement may not be modified or replaced by any of Client's standard or pre-printed terms or conditions, including any in a purchase order, service order, invoice, website or other document.

PRICING AND PAYMENT

Price: The price for the Product and Services shall be as set forth in the Order, or if not listed therein in accordance with STEP's standard prices.

Cost Plus Items: If the price for any Products or Services purchased by STEP from any third party has not been set out in an Order, Client shall pay all of STEP's costs associated with the procurement of such Products or Services, plus an administrative fee as agreed to by STEP and Client (a "Cost Plus Item"). Where STEP and client have not agreed in writing on the amount of such administrative fee, it shall be deemed to be 25% of STEP's cost to obtain such Cost Plus Item.

Taxes: All prices are exclusive of taxes and levies (including GST, HST and PST, as applicable) imposed on the sale or use of the Products or Services, which shall be identified as a line item in the invoice.

Credit: Unless STEP agrees to extend credit to Client, Client shall pay all amounts set forth in the invoice from STEP by way of cash in advance. If STEP agrees in writing to extend credit, Client shall pay all amounts set forth in any invoice within 30 days of the date of the applicable invoice. All amounts unpaid at the end of such 30 day period shall bear interest at a rate equal to the lesser of: (i) 1.5% per month (18% per annum) compounded daily, and (ii) the maximum interest rate permitted by applicable law, until paid in full. Client shall be responsible for all costs of collection for any overdue amounts, including all legal fees on a solicitor and client basis and litigation expenses.

No set-off: Client shall not set-off or otherwise withhold any amount owed under an invoice on account of any obligation owed by STEP.

Cancellation & Suspension: In the event that STEP is unable to perform a job due to a cancellation or suspension by Client, or in the event of termination (by either party) due to Force Majeure, Client will be charged for all Products and Services provided and time spent. The Client agrees that STEP retains the right to leave the Client's work site prior to the provision of Products or Services being completed by STEP where the timing of the provision of such Products or Services is significantly delayed due to any reason other than the fault of STEP. Such right will exist regardless of whether any applicable standby rate has been quoted by STEP and/or paid by the Client. Notwithstanding the foregoing, STEP shall work with the Client in order to minimize the disruption to the Client's operations resulting from the exercise of such right.

WARRANTY

Product Warranty: STEP warrants that: (a) at the time of delivery the Products shall be new (or like new if allowed by Client), (b) at the time title to Products transfers to Client, the Products will be free from third party liens, claims and encumbrances, and (c) during the Warranty Period the Products provided by STEP will conform to the specifications in the applicable Order and meet the technical specifications for such Products required by applicable laws, regulations, codes and standards (but implied conditions and warranties set out in the Sales of Products Act, RSA 2000, C. S-2, or other applicable provincial equivalents, shall not apply to the Products).

Service Warranty: STEP warrants that during the Warranty Period the Services will: (a) conform to the specifications in the applicable Order; and (b) have been performed in a good and workmanlike manner, in accordance with good oilfield industry practices in the Province the Services are delivered.

Warranty Limitations: The "Warranty Period" shall: (1) with respect to Services, commence on the day STEP completes the Services and terminates at midnight 30 days from that date; and (2) with respect to Products, commence on the date the Products are delivered, and terminates at the earlier of: (i) midnight 30 days from that date; (ii) the expiration of the applicable Product manufacturer's warranty period; and (iii) the date the Product is utilized below the rotary table or ground level. Except as set forth herein, there are no warranties or conditions express, implied, statutory or otherwise related to the Services or the Products, including any as to their merchantability or fitness for a particular purpose. STEP will give the Client the benefit of its experience in the field, but the Client acknowledges that the Services are of such a nature that no certainty of results can be assured by the STEP, nor any guarantee concerning the accuracy or completeness of any data, the effectiveness of materials used, or the recommendations or interpretations given. All other representations and warranties are hereby disclaimed.

Exclusive Remedy: In the event that Operator provides notice of a breach of warranty prior to expiration of the Warranty Period, STEP shall: (a) re-perform, replace or repair the non-conforming Product or Service; or b) refund or credit to the Client, as applicable, that portion of the compensation that is attributable to the non-conforming Product or Service. If STEP is unwilling, unable, or fails to re-perform, repair or replace the non-conforming Good or Service, the Client may have the non-conforming Product or Service re-performed, repaired or replaced by itself or by another contractor, and STEP shall be responsible for the reasonable additional costs incurred by the Client as a result; provided, however, **STEP's maximum liability to Client for such additional costs is: i) 120% of the cost of the non-conforming Products or Services if STEP has already been paid for such non-conforming Products or Services; or (ii) 20% of the estimated cost of the Products or Services if the STEP has not yet been paid by the Client; and the Client releases and shall indemnify STEP from all Losses and Liabilities (as defined below) which exceed that amount arising from such re-performance, repair or replacement by the Client or another contractor.** The remedies set out in this Agreement are the Client Group's sole and exclusive remedies for any breach of the warranties set out in this Agreement, whether at law or equity, in contract, tort or other theory of law.

CUSTOMER RESPONSIBILITIES

Custody and Control of Well: Client shall retain full care, custody and control of Client's well during the performance of the Services and shall at all times have a representative present on site, and secure and maintain rights of access for STEP as necessary to perform the Services. The Client shall advise STEP of any limitations or restrictions affecting access to the work site.

Access to Location: Client shall reasonably prepare the work site so that it is fully capable of supporting STEP's equipment. Client is responsible for ensuring that STEP has proper and safe access to the work site for the performance of Services. STEP will make reasonable efforts to access the work site; however, if towing equipment is required, Client will provide such towing equipment at Client's expense. If Client does not provide towing, STEP may arrange for it as a Cost Plus Item.

Disposal of Waste: Client agrees that it will, at its sole expense and risk, provide an appropriate receptacle for, and transport and dispose of, any chemicals or other waste materials resulting from the provision of Products or Services at the work site in accordance with applicable law.



Terms and Conditions

LIABILITY & INDEMNITY OBLIGATIONS

"STEP Group" means STEP, its subcontractors at any tier, its and their affiliates and the officers, directors, employees, agents, consultants, and the invitees of any of them. **"Client Group"** means Client, its co-interest owners, joint venturers, partners, co-lessors, its and their affiliates and the officers, directors, employees, agents, consultants, contractors at any tier (other than STEP Group), servants, and the invitees of any of them. **Client shall release and indemnify STEP Group from all claims, demands, causes of action, liabilities, damages, judgments, fines, penalties, awards, losses, costs, expenses (including reasonable legal fees on a solicitor client basis and costs of litigation) of any kind or character related to the Products or Services ("Losses and Liabilities") arising from loss of life or bodily injury to any member of Client Group. STEP shall release and indemnify Client Group from all Losses and Liabilities arising from loss of life or bodily injury to any member of STEP Group. However, nothing in the foregoing shall limit apportionment for associated costs under applicable workers' compensation legislation. STEP shall release and indemnify Client Group from all Losses and Liabilities related to the Products or Services arising from pollution or contamination that originates above the surface of the ground from the STEP Group's equipment, including spills of fuels, lubricants, motor oils, wire cuttings, contaminated water, paints, solvents and garbage. Client shall release and indemnify STEP Group from all Losses and Liabilities related to the Products or Services arising from any pollution or contamination which is not the responsibility of STEP pursuant to the foregoing sentence, including any arising from below the surface of the earth, radiation damage, loss of radiation source, contamination that may result from slush pit or Client's storage tank breakage or seepage, or from any uncontrolled flow of oil, gas, water or other substances, as well as from the use or disposition of servicing fluids, flowback, disposal, storage or treatment of any dangerous and/or hazardous waste on the well site associated with the Products or Services. If loss, damage, or destruction of any of STEP Group's equipment occurs while below the rotary table, or if no rotary table the ground level, Client shall indemnify STEP for the lesser of: (i) STEP Group's actual repair cost for its equipment; and STEP Group's replacement cost DDP STEP's facility (Incoterms 2010), with Client responsible for transportation costs to the work site if requested by Client. Client shall use reasonable efforts to recover, at its expense, any STEP Group equipment lost or stuck downhole. Client shall release and indemnify the STEP Group from all Losses and Liabilities related to the Products or Services arising from any loss, damage or destruction of any Client Group equipment while below the rotary table, or if no rotary table the ground level. Notwithstanding any provision to the contrary in this Agreement, Client shall release and indemnify STEP Group from all Losses and Liabilities related to the Products or Services arising from any one or more of the following: (a) loss or damage to any hole, well, well bore, casing or tubulars; (b) any injury to, destruction of, or loss or impairment of any property right in or to oil, gas or other mineral substance or water; (c) loss or damage to any underground reservoir, geological formation, or strata; and (d) repairing, re-drilling or re-servicing any of the foregoing; (e) blowout, cratering, seepage, subsurface trespass, interwellbore communication, fire, explosion or uncontrolled well condition; (f) rupture of any Client Group pressure vessel, pipework, containment device or pipeline; (g) expenses of regaining control of a wild well or uncontrolled well condition, including the results of intentional firing of a well in order to gain control of any wild well or uncontrolled well condition; and (h) cleanup and removal of wreck and debris associated with any of the foregoing. Neither STEP Group nor Client Group will be liable to the other for indirect, consequential, special, remote, or speculative damages, or any breach-of-contract damages that the breaching party could not reasonably have foreseen on entry into this agreement; and except for any breach of the confidentiality provisions herein, each party releases and shall indemnify the other and the other party's Group from all Losses and Liabilities of the indemnifying party and its Group arising from any one or more of the following: (i) delay of operations, including overhead and standby fees (except to the extent set out in an Order); (ii) loss of profit, including loss or deferral of production; (iii) increased operational costs; and (iv) loss of goodwill; regardless of whether they were foreseeable by any member of the indemnified party Group. STEP's maximum liability to Client Group for all Losses and Liabilities arising from any one or more of this Agreement, the Products or the Services is the lesser of: (i) two times (2x) the estimated price of the applicable Products or Services; and (ii) \$1,000,000; and Client releases and shall indemnify STEP Group from all such Losses and Liabilities which exceed that amount.**

EXTENT OF INDEMNITY: The releases, limitations, assumptions of liability, and indemnities specified under this Agreement shall apply: (i) without regard to the cause or causes thereof, including the negligence (whether sole, contributory, concurrent, ordinary, gross, active, passive or otherwise) or the fault or omission of either party or any other person, natural or otherwise, (ii) without regard to any breach of duty (whether contractual, statutory or otherwise), breach of representation (except any fraudulent misrepresentation) or breach of warranty, and (iii) without regard to whether any damages, losses, injuries, liabilities, claims or demands arise from tort, contract, quasi-contract or otherwise.

INSURANCE OBLIGATIONS

In support of the indemnity obligations and liabilities, STEP and Client agree to carry and maintain insurance with limits no less than the following: (i) workers' compensation insurance covering all of members of the party's Group on the work site or performing activities governed by the Order in accordance with applicable law; (ii) Employer's Liability insurance having a limit of not less than \$1,000,000 per occurrence, for bodily injury, death and property damage; (iii) commercial general liability insurance covering damages resulting from bodily injury (including death) or property damage with limits not less than \$1,000,000 per occurrence, including coverage for employer's liability, action over claims, products and completed operations, sudden and accidental pollution liability coverage, contractual liability, cross liability, severability of interest, non-owned automobile liability, broad form property damage, and in the case of the Client Operator's Extra Expense (control of well) liability and forest fire fighting liability; (iv) if any vehicles are used, automobile liability insurance covering all motor vehicles owned, leased or licensed covering injury, death and property damage with a limit of not less than \$1,000,000 per occurrence; and (v) Umbrella/Excess Liability insurance of not less than \$10,000,000 covering in excess of the above described limits. To the extent that Customer fails to carry such insurance, it is agreed that the Customer will provide such coverage via self-insurance. Each party shall ensure the other party and its Group are named as an additional insured to the extent of the party's liability hereunder, and ensure that its carriers waive rights of subrogation against the other party (except in the case of automobile liability insurance). Client shall ensure that its other contractors and invitees who are present on the work site with STEP maintain insurance policies substantially similar to those required of the Client with policy limits not less than those required to be maintained by Client.

FORCE MAJEURE

Suspension of Obligations: If, as a result of any cause beyond the reasonable control of a party, which such party could not have avoided by the exercise of reasonable diligence and at reasonable cost and which does not result from such party's inability to pay or other financial circumstances (a "Force Majeure"), such party is prevented from carrying out any of its obligations hereunder, the obligations of such party that are affected shall be suspended insofar and for so long as they are affected by the Force Majeure.

Duty to Remedy: The party claiming Force Majeure shall immediately notify the other party of the event causing the Force Majeure and shall, if it is reasonably able to do so at a reasonable cost, promptly and diligently remedy the cause and effect of such event. The foregoing obligation shall not apply to a Force Majeure caused by a labour dispute. If a Force Majeure event continues for a period that is longer than thirty (30) days, either Client or STEP shall have the right to terminate the Agreement.

GENERAL PROVISIONS

Confidentiality: Any non-public information that a party learns about the other in connection with the Agreement, including the relationship, is confidential information of the disclosing party, and a party shall not use confidential information of the other party, or disclose it to any third party, without the prior written consent of the disclosing party. However, a receiving party may use confidential information of the other to perform under this Agreement, and may share such confidential information with its management, employees, consultants and subcontractors on a need-to-know basis. Each party shall be responsible to for the compliance of such management, employees, consultants and subcontractors with the terms of this agreement.

Independent Contractor: STEP is an independent contractor with respect to the performance of the Services and is not an employee, agent or servant of Client.

Waiver: All waivers must be in writing. The failure to enforce any act or omission contrary to these Terms and Conditions shall not constitute waiver of any right with respect to such act or omission or any subsequent act or omissions.

Governing Laws: The Agreement shall be governed by the laws of the Province of Alberta, without giving effect to conflicts of law principles. The parties hereby agree that the United Nations Convention on Contracts for the International Sale of Goods will not apply to this contract.