



BLACKSPUR HZ LEDUC-WB 16-11-51-2

100/16-11-51-2W5 (BOTTOM HOLE)

14-3-51-2W5 (SURFACE)

COMPLETION PROGRAM

**HORIZONTAL
SPARKY SWEET OIL WELL COMPLETION**

AFE #: TBD

Well Licence: 0502001

Prepared By: Jason Dumanowski



Prepared For: Nick Stanford
Blackspur Oil Corp
Program: REV 01

Date: April 28th, 2022

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Copies To: Blackspur
Well File
Rig Consultant

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1.0 CONTACTS

1.1 Engineering and Operations

CONTACT	COMPANY	POSITION	BUSINESS	CELLULAR
Nick Stanford	Blackspur	D&C Manager	(403) 460-0031 (ext 119)	(403) 804-0296
Graham Veale	Blackspur	VP Engineering	(403) 460-0031 (Ext. 101)	(403) 809-6684
Kevin Saizew	Blackspur	Operations Engineer	(403)460-0031 (ext 112)	(403) 999-8087
Mike Materi	Blackspur	Field Foreman		(403) 501-8333
Jason Dumanowski	West Rock	Operations	(403) 663-8357	(403) 554-1030
Dustin Kreiser	Blackspur	Field Consultant		(403) 502-4023

1.2 Services and Suppliers

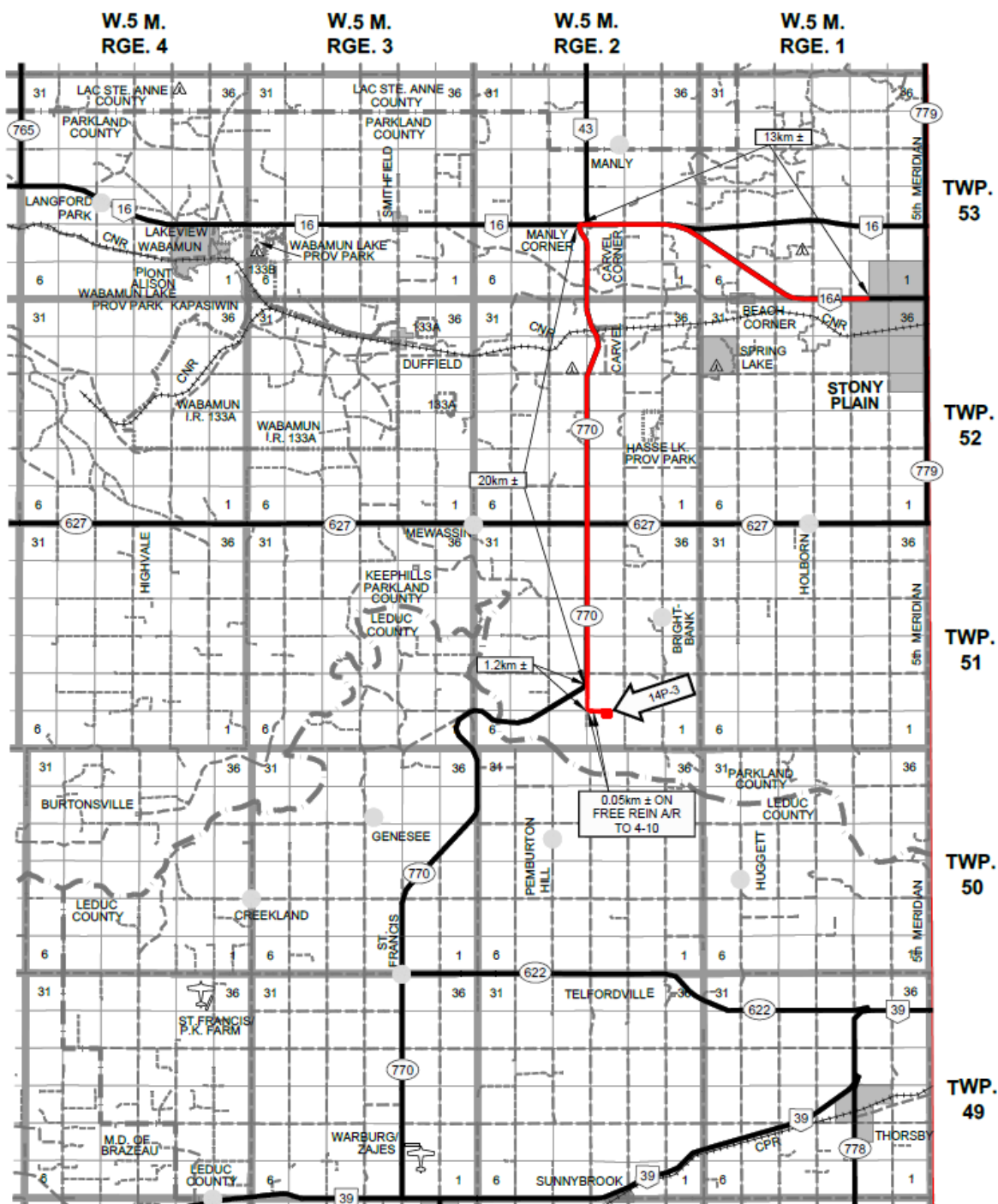
SERVICE	COMPANY	LOCATION	PHONE
Service Rig	TBD (Reliance, Highmark, CWC)		
Wireline	Voltage	Calgary (Bruce)	(403) 852-6309
Slickline	Reliance	Red Deer	(403) 406-1900
Testing	Strataflo	Red Deer	(403) 700-8926
Frac Head	Great North Equip	Red Deer	(403) 348-0941
Stimulation	Calfrac	Red Deer	(866) 772-3722
Frac Ports	NCS	Calgary	(403) 720-3236
Pond / Pumping	New Wave	Calgary	(403) 462-9152
Water Filtration	New Wave	Calgary	(403) 462-9152
Rentals	TKO	Drayton Valley	(780) 405-4541
Frac Monitoring	ABRA	Calgary	(403) 796-9871
Frac Water Hauling	Liquid Transload / Len Car Contractors	Calmar (Eldon)	(780) 910-3744 / (780) 898-6335
Fresh Water	Dugout / Fluid Experts (only if issues with source)	Drayton Valley	(780) 898-5527
Frac Water Heating	Demon	Red Deer	(403) 946-4800
Equipment Hauling	Andy's Oilfield Hauling	Drayton Valley	(780) 542-9595
Fire/Shower unit / Medic	Firemaster	Calgary	816-5757
Vac Truck	Liquid Transload	Calmar (Eldon)	(780) 910-3744
Pressure truck - DFIT	Big Steam	Leduc	(403) 363-3290
Tubing	Alberta Tubular	Calgary (Andre Arlain)	(587) 999-2000
Wellhead	GNE	Red Deer	(403) 348-0941

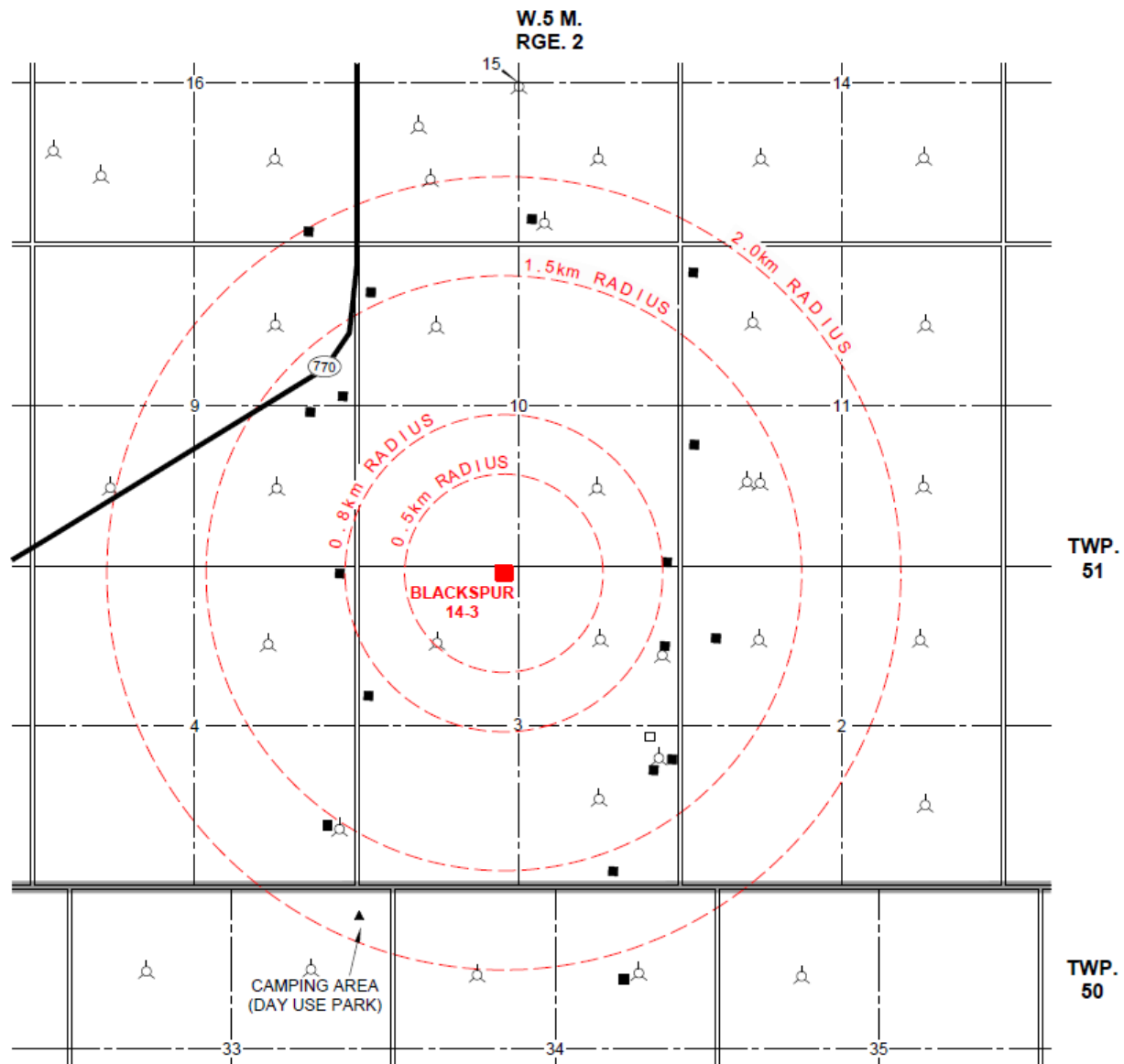
1.3 Emergency Contact Numbers

RCMP:	(780) 980-7267 or 911	Leduc
Fire:	911	Leduc
Hospital:	(780) 980-4500 or 911	Leduc
Ambulance:	911	Leduc
STARS:	1-888-888-4567 or *4567	Calgary
AER:	(780) 542-5182	Drayton Valley

BLACKSPUR 24 HOUR EMERGENCY #: 1-855-585-0554

1.4 Directions & Residence Map





2.0 GENERAL INFORMATION

2.1 Well Information

Well Type: Sweet Sparky HZ oil well
UWI: 100/16-11-051-02W4
AFE Number: **TBD** AFE Amount: \$1,750,805
Licence Number: **0502001**
Spud: January 19th, 2022
Rig Release: January 30th, 2022
KB Elevation: 747.51 m
Ground Elevation: 742.01 m
KB – GL: 5.5 m
TD: 4078 mKB
PBTD: 4071 mKB / **KOP**: 1006 mKB

Surface Casing: 27 jts of 244.5 mm x 53.57 kg/m x J-55 ST&C landed at 271 mKB
Cemented w/ 15 T of TSC 1700+ 0.4% TLA + 2% CaCl₂ + 2% LCM-3
+0.4% TLA + 0.4% AFA-7. 4.5 m³ of good cement returns to surface.

Intermediate Csg: 132 jts of 177.8 mm, 34.23 kg/m J-55 LT&C landed at 1615 mKB MD.
Cemented with 14.57 T Titanium 1400 S + additives and 16 T of TAC +
additives. Plug down with 9.0 m³ of good cement returns to surface.

Production Casing: 133 jts of 114.3 mm, 20.09 kg/m P-110 LT&C Casing landed at 4078.0
mKB MD. Liner Hanger packer top at ~ 1570 mKB MD C/W 52 NCS
Multi-Cycle Sleeves and 2 Toe Ports. Cemented with 38 T of TAC-1600 +
0.4% TLA +0.25% TDH + 0.2% CFR-12 + 0.5% Gel + 0.4% TWR-4. 9 m³
cement returns

Tie Back Casing: 117 jts x 114.3 mm, 20.09 kg/m P-110 LT&C Casing.

Horizontal Interval: Sparky: 1615-4055 mKB (EST (0.00% H₂S/ 12000 KPa BHP/ 60°C BHT)

Tubular and Casing data:	73mm	114.3mm	177.8mm
	9.67kg/m	20.09kg/m	34.23kg/m
	J-55, EUE	P-110	J-55
Length	TBD m	4078 m	1615 m
Capacity (m ³ /m)	0.003021	0.007788	0.021659
Tensile Strength (DaN)	31,907	150300	139,200
Burst Pressure – KPa	68,330	85560	30,060
Collapse Resistance - KPa	72,190	73570	22,550
I.D. (mm)	62.0	99.6	166.07
Drift (mm)	59.61	96.39	162.89

NCS Multi-Cycle Frac Sleeve

Intervals (EST tops):

1. **4041.57 mKB** x 2 T 50/140 x 33 T 20/40 (600 kg/m³) **(TOE PORT SLEEVE)** –
Leave open after frac
2. **4020.79 mKB** x 2 T 50/140 x 33 T 20/40 (800 kg/m³)
3. **3980.06 mKB** x 2 T 50/140 x 33 T 16/30 (1000 kg/m³) – **May ramp up slower.
4. **3940.44 mKB** x 2 T 50/140 x 33 T 16/30 (1000 kg/m³)
5. **3899.76 mKB** x 2 T 50/140 x 33 T 16/30 (1000 kg/m³)
6. **3859.01 mKB** x 2 T 50/140 x 33 T 16/30 (1000 kg/m³)
7. **3818.36 mKB** x 2 T 50/140 x 33 T 16/30 (1000 kg/m³)
8. **3777.66 mKB** x 2 T 50/140 x 33 T 16/30 (1000 kg/m³)
9. **3736.72 mKB** x 2 T 50/140 x 33 T 16/30 (1000 kg/m³)
10. **3696.36 mKB** x 2 T 50/140 x 33 T 16/30 (1000 kg/m³)
11. **3655.99 mKB** x 2 T 50/140 x 33 T 16/30 (1000 kg/m³)
12. **3615.16 mKB** x 2 T 50/140 x 33 T 16/30 (1000 kg/m³)
13. **3574.57 mKB** x 2 T 50/140 x 33 T 16/30 (1000 kg/m³)
14. **3534.09 mKB** x 2 T 50/140 x 33 T 16/30 (1000 kg/m³)
15. **3493.22 mKB** x 2 T 50/140 x 33 T 16/30 (1000 kg/m³)
16. **3452.70 mKB** X 2 T 50/140 x 33 T 16/30 (1000 kg/m³)
17. **3412.04 mKB** X 2 T 50/140 x 33 T 16/30 (1000 kg/m³)
18. **3371.43 mKB** X 2 T 50/140 x 33 T 16/30 (1000 kg/m³)
19. **3331.11 mKB** X 2 T 50/140 x 33 T 16/30 (1000 kg/m³)
20. **3290.35 mKB** X 2 T 50/140 x 33 T 16/30 (1000 kg/m³)
21. **3249.94 mKB** X 2 T 50/140 x 33 T 16/30 (1000 kg/m³)
22. **3209.34 mKB** X 2 T 50/140 x 33 T 16/30 (1000 kg/m³)
23. **3168.71 mKB** X 2 T 50/140 x 33 T 16/30 (1000 kg/m³)

24. **3127.95 mKB** X 2 T 50/140 x 33 T 16/30 (1000 kg/m³)
25. **3087.23 mKB** X 2 T 50/140 x 33 T 16/30 (1000 kg/m³)
26. **3046.95 mKB** X 2 T 50/140 x 33 T 16/30 (1000 kg/m³)
27. **3006.95 mKB** X 2 T 50/140 x 33 T 16/30 (1000 kg/m³)
28. **2965.51 mKB** X 2 T 50/140 x 33 T 16/30 (1000 kg/m³)
29. **2924.64 mKB** X 2 T 50/140 x 33 T 16/30 (1000 kg/m³)
30. **2883.86 mKB** X 2 T 50/140 x 33 T 16/30 (1000 kg/m³)
31. **2843.22 mKB** X 2 T 50/140 x 33 T 16/30 (1000 kg/m³)
32. **2802.94 mKB** X 2 T 50/140 x 33 T 16/30 (1000 kg/m³)
33. **2762.41 mKB** X 2 T 50/140 x 33 T 16/30 (1000 kg/m³)
34. **2721.91 mKB** X 2 T 50/140 x 33 T 16/30 (1000 kg/m³)
35. **2681.71 mKB** X 2 T 50/140 x 33 T 16/30 (1000 kg/m³)
36. **2640.83 mKB** X 2 T 50/140 x 33 T 16/30 (1000 kg/m³)
37. **2600.40 mKB** X 2 T 50/140 x 33 T 16/30 (1000 kg/m³)
38. **2559.96 mKB** X 2 T 50/140 x 33 T 16/30 (1000 kg/m³)
39. **2520.17 mKB** X 2 T 50/140 x 33 T 16/30 (1000 kg/m³)
40. **2479.36 mKB** X 2 T 50/140 x 33 T 16/30 (1000 kg/m³)
41. **2439.11 mKB** X 2 T 50/140 x 33 T 16/30 (1000 kg/m³)
42. **2398.53 mKB** X 2 T 50/140 x 33 T 16/30 (1000 kg/m³)
43. **2357.70 mKB** X 2 T 50/140 x 33 T 16/30 (1000 kg/m³)
44. **2316.73 mKB** X 2 T 50/140 x 33 T 16/30 (1000 kg/m³)
45. **2276.37 mKB** X 2 T 50/140 x 33 T 16/30 (1000 kg/m³)
46. **2235.59 mKB** X 2 T 50/140 x 33 T 16/30 (1000 kg/m³)
47. **2194.87 mKB** X 2 T 50/140 x 33 T 16/30 (1000 kg/m³)

48.2154.18 mKB X 2 T 50/140 x 33 T 16/30 (1000 kg/m3)

49.2113.56 mKB X 2 T 50/140 x 33 T 16/30 (1000 kg/m3)

50.2072.97 mKB X 2 T 50/140 x 33 T 16/30 (1000 kg/m3)

51.2032.60 mKB X 2 T 50/140 x 33 T 16/30 (1000 kg/m3)

52.1992.24 mKB X 2 T 50/140 x 33 T 16/30 (1000 kg/m3)

53.1951.49 mKB X 2 T 50/140 x 33 T 16/30 (1000 kg/m3)

See NCS As-Run Drawing in attachment section

Current Calfrac Frac Program in attachment section

- 1855T Dyn-Aqua-1 Crosslink Gelled Water Frac Treatment
- ~6200 m3 of compatible fresh water (Check TDL's
- Heat water to 40°C on the fly through buffer tank/line heater (LV)
- 0.5 m3 Synthetic Acid Spearhead will be used for spearhead on every stage.

2.2 Objective

This is a Sweet Sparky oil well completion c/w 52 x 114.3mm NCS Multi-Cycle Annular Mechanical Shift Sleeves and 2 NCS Multi-Cycle Toe Ports **(top toe port to be fractured and left open)**.

- Rig in Wireline. Perform CNL from surface to 600 m. Rig out Wireline
- Install 10k Tubing Head (extended neck tubing hanger)/Frac Head c/w Buffalo Head for 3.0m³/min-3.5 m³/min Frac rate Wellsite Supervisor to meet with Frac Supervisor prior to moving in tank farm
- Buffer tanks/Line Heater to be set up to accommodate ~6200 m³+ of compatible fresh water & flow back.
- Perform Diagnostic Fracture Injection Test (DFIT)
- MORU Slickline, RIH with tandem recorders on a 114.3mm collar stop & surface gauges
- MORU 10k pressure truck and open the Hydraulic Frac Ports at ~4055 mKB and 4041 mKB, pinned to open at ~43 MPa surface opening pressure.
- Pump a maximum of 5m³ 5% KCL (hole is full of 5% KCl), leave well shut in sending daily morning surface pressure readings to VZFOX until they provide green light to conduct reverse static gradient and pull recorders.
- *Fluid to be heated on the fly with buffer tank/LV line heater from 5-40 degrees C.
- Prepare for Calfrac **1855 T Annular Crosslinked Frac (Dyn-Aqua-1)** with using 60.3 mm Coil tubing with NCS's Mechanical MULTI-CYCLE Shift Sleeve Packer BHA.
- MIRU Testing equipment and 14.0m³ x 250psi P-Tank, along with safety and associated equipment
- Conduct Fracture Treatment as per Calfrac with shift/frac/close procedure.
- Pull up past the top NCS sleeve and pressure test casing to 21 MPA for 10 minutes.
- Pull out and lay down packer BHA equipment and release coil. - **(Sleeves will be open after 1 week shut in time with 3rd party coil)
- After the 1 week, move in 3rd party coil and NCS tool hands. Run to bottom with tools and open all the sleeves.
- Run BPV, Remove Frac Head, pull BPV. Install wellhead.
- MIRU service rig
- Pull Tie back string.
- Run Production string as per Blackspur Calgary office.
- ROSR and related equipment
- Turn well over to production operations

NOTE: If there is pressure on wellbore and it will flow, snubbers will be required to snub 60.3 mm tubing in the wellbore **BEFORE TIE BACK** is pulled.

2.3 Health, Safety and Environment

A rig inspection and BOP drill are to be held at the beginning of each job or a minimum of once per week. A walk around rig inspection and safety and procedural meetings are to be held with all service company personnel prior to the start of each shift. Wellsite supervisor must notify contractors of known hazards of which contractor(s) may be unaware. Wellsite supervisor must ensure that workers are aware of their responsibilities and duties under OH&S regulations and workers comply with regulations. All service company personnel must also be reminded at each meeting that they may refuse to work, without any fear of retribution, if they think conditions are unsafe or they do not understand their role in the operation.

All service companies supplying materials will review Material Safety Data Sheets (MSDS's) at this meeting for all products supplied and ensure these MSDS's are available for workers' examination on location in compliance with WHIMIS regulations. All safety meetings will be recorded on the daily report and on the daily tour sheet.

When possible, plan and conduct all workover procedures in a manner that will avoid the mixing of air & hydrocarbons in the wellbore and connected surface piping. If mixing does occur, purge prior to pressurizing or exposing mixture to any other possible source of ignition.

All applicable regulations, including, but not limited to ERCB and Alberta OH&S regulations, are to be strictly adhered to. Written instructions must be posted in doghouse or other conspicuous area prior to wellsite supervisor leaving lease. Wellsite supervisor must designate, in writing, a competent person to carry out principal contractor's responsibilities. All verbal notifications and approvals from government regulatory agencies will be recorded on the daily report and tour sheet. The name of the individual contacted and the subject matter of approval or notification should be recorded also.

All operations on lease will be conducted with safety being first and foremost in everyone's mind. It is important that all persons working for Black Spur Oil Corp including on-site contractors are aware of this policy and its critical components. **Failure to adhere to this policy is grounds for dismissal.**

Safety & Waste Management

- Any vendors not listed under Section 1.2 that will be used for the Completion/Drill must be searched on Comply Works to ensure valid WCB, Insurance & Safety Program. Please use login below: Login: matthew@westrock-energy.com or jason@westrock-energy.com
Password: Safety123
If they are flagged RED, please contact Blackspur's Calgary Office: 403-460-003

2.4 Miscellaneous

Morning reports must include the Unique Well Identifier (UWI). Ensure that this is recorded somewhere on each report as it will be used to manage the well information in Calgary. Please forward copies to: reports@westrock-energy.com & jason@westrock-energy.com . Ensure a hard copy is left at the Field Office.

All materials shipped to this location that are not used must be transferred to an approved stock point. Transfers of tubular materials must include complete tally. Company wellsite supervisor will complete such transfers and forward copies to Calgary office for approval and further handling.

The well site supervisor must sign delivery and field tickets for all services performed or materials purchased. Record the AFE number, sub-code and well location on all purchase and work tickets. Invoices are to be sent:

Blackspur Oil Corp.
Bow Valley Square II
1000, 205 – 5 Avenue SW,
Calgary, AB T2P 2V7
Attention: Nick Stanford
E-mail: nstanford@blackspuroil.com

3.0 RECOMMENDED PROCEDURES

1. Minimum twenty-four hours prior to commencing operations notify:

AER	Drayton Valley	Via DDS
Blackspur Field Foreman	Mike Materi	(403) 501-8333

Advise AER and landowners of intention to flare if applicable.

NOTE: 114.3mm, 20.09kg/m, P-110 PRODUCTION CASING IS RATED TO 85MPA BURST PRESSURE. THE MAXIMUM ALLOWABLE SURFACE PRESSURE WILL BE 65 MPa (75%).

2. A call will be held each morning with the Completions group in the Calgary Office. The purpose of the conference call will be to discuss the previous day's operations, to confirm the plan of operations for the current day and to discuss any HSE issues. This will ensure operational parameters are not exceeded and that current HSE issues are resolved.
3. **Handover of Lease to Completion Team Operations:**
Workovers: Obtain a work permit from the Field Operator prior to moving any equipment onto location. If any lease preparation has been carried out ensure a verbal or written changeover is completed with the Construction Foreman to identify any well site HSE issues (eg. ERP phone numbers, buried lines, ground cover, etc.).
4. Upon arrival to the well site, conduct a walk-around lease inspection. Note the condition of the lease, record any clean-up operations required to address any spills and record any other noteworthy findings on the first morning report.
5. Notify the AER 24 hours in advance via the DDS for a Completion submission, Flaring submission and Frac Notification 5 days prior to Frac date. Notify any landowners/occupants within 3.0km (sour) of the intent to flare gas using the flaring notification letter on the West Rock Daily Report. Document all details in the daily report. Use the following login information:
 - User ID: westrockdds
 - Password: westrock06
6. It is extremely important for the Wellsite supervisor to establish communication with any residents within the vicinity of the well who may be affected by the following operation and keep them informed of any activity that is deemed to be disruptive to their daily living routine.
7. Inspect location and prepare for Equipment move in:
 - Locate overhead Power Lines and flag
 - Locate and flag buried lines and cables

8. ***IMPORTANT NEW INFORMATION REQUIRED: HYDRAULIC FRACTURING – SUBSURFACE INTEGRITY*:**
- A. The Licencee must maintain a copy of its AER Directive 083 Hydraulic Fracturing Program at the subject well site for the duration of the operation. This will (can) be supplied by Rock Solid Planning
 - B. The Hydraulic Fracturing Program must include the following elements:
 - a. Determination of a Fracture Planning Zone (FPZ)
 - b. Identification of all Offset Wells within the FPZ
 - c. An assessment of well integrity for each offset well
 - d. A risk assessment for each offset well
 - e. Determination of at-risk offset wells within the FPZ
 - f. Identification and assessment of special-consideration wells for possible inclusion in the well control plan
 - g. Identification of energizing gas(es) used in fracture fluids
9. Install 103mm x 69 MPa Frac Head c/w Coil Tubing Blast Sleeve, pressure test primary and secondary seal (Ensure extended neck tubing hanger for BPV).
10. Rig in Wireline. Run CNL from 600 m to surface. Rig out Wireline.
11. Perform a 10 min Surface Casing Vent Flow Bubble Test. Record the results on the First Days Report and Complete the Vent Flow Form. Should there be a positive gas flow, shut in the surface casing vent in for 24 hours. Note & Record Buildup. Check shut in pressures and test for H₂S. Report results to Calgary.
12. Conduct daily Pre-Job Safety meetings with all personnel, discussing job procedures and hazards. In safety meetings ensure that all personnel are familiar with their respective role and the hazards that are associated with it. Record meeting minutes and have all personnel initial the records and submit attached report. Hold new meetings anytime the scope of work changes.
13. **NOTE: it is imperative that whenever possible, plan and conduct all workover procedures in a manner which will avoid the mixing of air and hydrocarbons in the wellbore and connected surface piping. If mixing does occur, purge prior to pressurizing or exposing mixture to any other possible source of ignition. Please refer to the IRP 18 or AER Directive 033 for more details.**
14. Move in and set up the Frac fluid containment area; 1 – 200 m³ Buffer Tank and Line Heater. 2 C-Rings already in place, 3-400 barrel flow back tanks, Ensure the tanks are clean.
15. Truck water from appropriate TDL's in sequence as per Secure Spreadsheet. Make sure the water loading spreadsheet is filled out by truckers.

NOTE: DFIT PROCEDURES

16. MORU Slickline, install lubricator and purge/pressure test to 10MPa. RIH and set a 114.3mm collar stop at 1352 mKB (55° inclination). MU/RIH with tandem 10K recorders. **Set gauge(s) to record 1 sample-per-second for the first day, and then decrease to 1 sample every 10 seconds for the remainder of the test.** Land pressure recorders on collar stop set previously, rig out and release the slickline unit.
17. Rig-in electronic surface pressure monitoring equipment to record pressures/temperatures on annulus and Frac-String. Ensure surface data logger is rated to 69MPa. **Set data logger to record 1 sample-per-second for the first day, and then decrease to 1 sample every 10 seconds for the remainder of the test.**
18. Rig-up (high pressure w/ low-rate capability) pump and flow lines (c/w fluid metering/recording capability if possible). Pressure-test all connections for 10 minutes each. **It is important to purge any trapped air in the surface lines prior to pump-in, which may require special considerations during the initial rig-in.**
19. **Be prepared to record the pump rate, volume, and pressure once every 1 minute during the pumping period of this test.**
20. Pressure up to 70% of Surface Activation Pressure of Toe Port. Hold for 5-10 minutes and look for leak off.
21. Increase pressure to 85% of Surface Activation Pressure. Hold for 5-10 minute and look for leak off.
22. Increase pressure to tool initiation. . Port is expected to open at ~40 MPa surface pressure.
23. Continue to Pump 5% KCl water into the well at a **constant rate between 0.16 to 0.32 m³/min. (1-2 bpm)** to achieve breakdown. Do not exceed 0.48 m³/min. (3 bbl's/min). After opening toe-port/breakdown or when fracture propagation is established, continue pumping at a constant rate for the remainder of the test. Total fluid pumped after wellbore fill-up should be in the order of 4 to 5 m³ (25 to 30 bbl's), unless a higher pump rate is required to achieve breakdown.
24. After required volume has been pumped at a constant rate, **perform hard shut down.** The total volume pumped in should be less than 5 m³ (30 bbl's). Isolate the wellhead from the pump as soon as possible.
25. Following shut down, record pressure data for about 30 minutes. Then rig down the pumping equipment without disturbing the electronic gauges, which are continuously recording the pressure falloff data. Ensure that the well stays shut-in without any disturbances for the entire falloff period.

26. Record the total amount of fluid pumped, including the fluid density and details of pump rate and pressure. It is preferred to have an electronic record of the pump rate/volumes whenever possible.
27. During the shut in period, please ensure to send daily surface recorder data to DFIT analyzing company representative. This individual will be analyzing the surface data and notifying when it is time to pull the gauges. A gradient survey will be run when recovering the downhole gauges

NOTES:

The following conditions must be met if surface data from a frac fall-off are used to determine an acceptable reservoir pressure:

- The column of fluid used is “dead fluid” and has no gas present.
 - The density of the frac fluid being used is known and samples are obtained and analyzed.
 - The well does not go on vacuum (hydrostatic pressure is less than reservoir pressure).
 - Fluid levels may be determined but further acoustic validation is required.
 - The surface gauges used must have reasonable resolution and accuracy and have been properly calibrated.
 - The wellbore has less than 10 per cent of its volume saturated with a proppant even with properly calculated slurry densities; corrections can be erroneous (unless a dead-leg is used).
 - The final fall-off pressure and the extrapolated pressures are within five per cent of each other. The analytical method for extrapolations and comparison must be validated. If a flow regime can be identified the appropriate analytical method of analysis can then be applied.
 - The operator must verify and substantiate that the bottom hole pressures have been properly calculated and are representative of reasonable values. The submission must include a discussion of the methods used and the relevance of the pressure measurement.
-

28. Move on and set up an adjustable work floor for safe working conditions around the wellhead.
29. Ensure to heat the frac water ON THE FLY with LV Line Heater (pull from Buffer tank) to a minimum 40C and maintain this temperature during entire frac process.
30. Move on and rig up Calfrac 60.3 mm Frac equipment c/w 24-hour Frac crews. Ensure spacing conforms to Blackspur, OH&S and AER regulations. Double check well testing equipment to handle Frac flow back of Frac water, Frac sand and wellbore gas and fluid.
31. Conduct a detailed equipment inspection and report any equipment/safety deficiencies, inoperable components, or failed pressure tests to Calgary before proceeding. **Coil Tubing operator must provide proof of the last 12 months of preventative maintenance performed on the injector head/BOP assembly and also the last injector head/BOP certification by a qualified inspector.** (Ensure before coil arrives, that coil fatigue, wall thickness and # of welds are discussed with Calgary, so that a suitable coil string will be ran to reach the toe of the wellbore)

32. Hold a safety and procedures meeting with all personnel, review the Frac program in detail and ensure all personnel understand their job roles. Identify hazards, and have all meeting attendees sign off.
33. Pressure-test all Frac surface lines to 65 MPa and CT to 65MPa.
34. The FPZ for the well is 352 m. Operator wells are: NONE
 - GM test completed pre-frac on 4-11 as per notification letter
35. Make up and RIH with the NCS Annulus Frac Packer BHA on 60.3 mm coil tubing as follows from bottom up:
 - 96.27 mm Solid 4.5" 1 Dot Bullnose
 - 78 mm x-over
 - 78 mm decompression chamber
 - 76.20 mm gauge carrier (Won't need gauges)
 - 78 mm Flow Cross over
 - 87.88 Mechanical Sleeve Locator
 - 92.71 mm Dot packer
 - 73.03 mm EQvalve
 - 73.03 mm Blast Jt
 - 73.03 mm Expansion Jt
 - 73.03 mm Disconnect / Release Tool
 - 73.03 mm Dual Flapper Check Valve
 - 73.03 mm 2 3/8" coil connector

*** Confirm with NCS about BHA/Packer OD's**
***Ensure no tandem recorders are installed in the BHA**
36. Make up and RIH with the NCS Packer on 60.3mm coil tubing. RIH at maximum safe rate ~ 30m/min while pumping at minimum rate if required. Stop and function test the tool as per NCS BHA Technician and perform pull tests accordingly; at 100m and then every 500m thereafter.
37. Conduct stage 1 – 53 fracs as per Calfrac program to open/frac/close/pressure test the following NCS intervals.

1. 4041.57 mKB (TOE PORT)	18. 3371.43 mKB	36. 2640.83 mKB
2. 4020.79 mKB	19. 3331.11 mKB	37. 2600.40 mKB
3. 3980.06 mKB	20. 3290.35 mKB	38. 2559.96 mKB
4. 3940.44 mKB	21. 3249.94 mKB	39. 2520.17 mKB
5. 3899.76 mKB	22. 3209.34 mKB	40. 2479.36 mKB
6. 3859.01 mKB	23. 3168.71 mKB	41. 2439.11 mKB
7. 3818.36 mKB	24. 3127.95 mKB	42. 2398.53 mKB
8. 3777.86 mKB	25. 3087.23 mKB	43. 2357.70 mKB
9. 3736.72 mKB	26. 3046.95 mKB	44. 2316.73 mKB
10. 3696.36 mKB	27. 3006.35 mKB	45. 2276.37 mKB
11. 3655.99 mKB	28. 2965.51 mKB	46. 2235.59 mKB
12. 3615.16 mKB	29. 2924.64 mKB	47. 2194.87 mKB
13. 3574.57 mKB	30. 2883.86 mKB	48. 2154.18 mKB
14. 3534.09 mKB	31. 2843.22 mKB	49. 2113.56 mKB
15. 3493.22 mKB	32. 2802.94 mKB	50. 2072.97 mKB
16. 3452.70 mKB	33. 2762.41 mKB	51. 2032.60 mKB
17. 3412.04 mKB	34. 2721.91 mKB	52. 1992.24 mKB
	35. 2681.71 mKB	53. 1951.49 mKB

38. Once the Frac to the first zone (4041.51 KB MD – TOP Toe Port) is complete, flush, close sleeve, unset the Packer and move up hole to second zone/1st sleeve and the interval at (4020.79) mKB. Set the packer and, follow the latest version of the Calfrac stimulation program for the remainder of the Frac schedule. Adjust rates and concentrations as required to ensure a good stimulation is achieved. **ANY QUESTIONS REGARDING TIGHT STAGES, DISCUSS WITH CALGARY BEFORE MAKING FINAL DECISION.**
39. Ensure after **each zone** is fractured, that the sleeve is closed and pressure tested before moving up hole to the next interval. Pressure test won't be required, once tool hand is confident in the weight indicator as the frac moves up the lateral.
40. If a Fracture Treatment hits maximum pressure (65 MPa) and cannot be pumped away open the un-loader valve on the Packer and circulate to the production tester's vessel with 5% KCl.
41. Ensure there are multiple back-up Frac packers on location in the case that one fails and has to be pulled out of the hole and replaced.
42. Once the Frac is complete and all ports are closed, set the packer above the last port and proceed to pressure test the wellbore to 21.0MPa for 10 minutes.
43. Pull coil and tools to surface. Rig out frac equipment.
44. ****Leave sleeves closed for 1 week.**
45. Move on and rig in 3rd party 60.3 mm coil and NCS tool hands. Install and pressure test tools and run to bottom and open all fractured sleeves. Pull to surface and rig out equipment.
46. Assuming the wellbore is dead/vacuum, close Frac valve, rig in GNE lubricator, install BPV, remove Frac Head, remove BPV.
47. Move in and rig up service rig c/w Class II BOP's, light tower, rig pump, and clean rig tank. Spot equipment and rig up according to Blackspur, AER and OH&S spacing regulations, stand and secure derrick.
48. N/U Class II BOP's. Function test and pressure test pipe rams, blind rams and stabbing valve from a low 1.4MPa to 21MPa for 10 minutes each. Function test as per manufacturer's specifications. Record results in the daily report and on the rig tour reports.
49. Rotate 114.3mm Frac tie-back string and sting out of Liner Hanger Packer as per Packer's Plus instruction. POOH and lay out on a tubing trailer. Use pipe tongs to minimize damage to threads and then haul away for inspection, cut and re-thread as required. *Confirm with Calgary office where tieback is going and fill out Material Transfer.
50. MU and RIH with 73 mm, 9.67 kg/m J-55 / 89 mm, 13.84 kg/m J-55 EUE production final assembly as follows:

- 89 mm bull plug
- ~5 x 89 mm, 13.84 kg/m J-55 tubing jts
- Hybrid Gas Separator (two pieces) FN x/o top and bottom 73mm-89 mm
- 1.2 m x 89 mm pup jt
- 177.8 mm CTA Dynamic NTT
- Standard Tag Bar – Solid
- 56-1800 new Weatherford stator
- 1.2 m x 89 mm pup jt
- 89 mm Mac200 jt
- Appropriate 89 mm tubing jts
- Appropriate 89 mm pup jts
- 89 mm tubing hanger.

***Final production string and BHA to be confirmed by BLACKSPUR Calgary.**

***Ensure that all components of the BHA are properly made up, callipered and measured prior to running in the wellbore. Supervisor is to be on the rig floor at all times when making up any BHA. Land pump bottom at ~1450 mKB MD.**

51. Set NTT, land tubing hanger

52. N/D Bop's and N/U wellhead

53. Rig in gripper unit and run BHP and rods/PROROD as follows.

- 56-1800 Weatherford Rotor (confirm size with Calgary office)
- 25 mm 970 N PROROD with 25 mm pins top and bottom
- 31.75 mm polish rod

54. Clean up location and remove all debris, call field superintendent and turn the well over to Blackspur operations. If equipment is sent to stock or back to the suppliers insure a material transfer is filled out. Complete and submit all well records.

NOTE: If there is sufficient pressure on the wellbore after the frac is complete and sleeves are opened back up, a 60.3 mm work string will be snubbed into the wellbore **BEFORE the tieback is pulled.**



Prepared by: **Jason Dumanowski**
West Rock Energy Consultants

Approved by: **Nick Stanford**
D&C Manager, Blackspur Oil Corp.

PERMIT TO PRACTICE
WEST ROCK ENERGY CONSULTANTS LTD.

RM SIGNATURE: _____

RM APEGA ID #: _____

DATE: _____

PERMIT NUMBER: P012406

The Association of Professional Engineers and
Geoscientists of Alberta (APEGA)

Matthew Gillett
West Rock Energy Consultants

For Office Use Only:

*****PLEASE SIGN AND FAX THIS PAGE BACK TO WEST ROCK UPON FINAL REVIEW*****

4.0 LIST OF ATTACHMENTS

- Notice of Well Site Supervisor
- Checklist
- Calfrac Frac Program
- NCS Frac Sleeve As-run
- NCS Packer BHA
- Final Directional Reports
- Well Site Survey
- Final Drilling Reports
- Toe Port settings and burst step procedure

Pre-Job Checklist

- | | |
|---|--|
| <input type="checkbox"/> Review Program & AFE/Account Codes | <input type="checkbox"/> Crews are HSE Orientated |
| <input type="checkbox"/> Regulatory Notifications are Completed | <input type="checkbox"/> Site Inspection Completed |
| <input type="checkbox"/> Safe Work Permits/JSA Filled Out (Daily) | <input type="checkbox"/> Flare Notifications Completed |

End of Job Checklist

Attach the following files

- | | |
|--|--|
| <input type="checkbox"/> Surface Casing Vent Flow | <input type="checkbox"/> Wireline Logs |
| <input type="checkbox"/> Stimulation/Cementing Field Notes | <input type="checkbox"/> Production Test Reports |
| <input type="checkbox"/> Downhole Schematics | <input type="checkbox"/> Pictures |

Drilling & Completion Report Data

- | | |
|---|---|
| <input type="checkbox"/> AFE # and amount entered | <input type="checkbox"/> Job contacts entered |
| <input type="checkbox"/> Rig release and Job End dates entered | <input type="checkbox"/> Directions to well are entered |
| <input type="checkbox"/> Final Load Fluids entered on final report | <input type="checkbox"/> Schematic is up to date |
| <input type="checkbox"/> Material Transfers entered | <input type="checkbox"/> Casing Details are entered |
| <input type="checkbox"/> Frac Strings/Tie-backs are entered | <input type="checkbox"/> Wellhead details (pictures) |
| <input type="checkbox"/> All Frac Sleeves/Burst Sleeves are entered as perforations | <input type="checkbox"/> Stimulation/cement details entered |
| <input type="checkbox"/> Fill in Perforation Statuses and all Gun Details | |

Upon Job Completion

- ☐ ALL TICKETS FOR WATER/OIL TAKEN TO/FROM BATTERY SITES MUST BE HANDED IN TO THE FIELD OFFICE. THIS INCLUDES WASTE MANIFESTS FOR ANY FLUIDS HAULED TO DISPOSAL
- ☐ ANY MATERIALS TAKEN FROM PIPE YARDS/BATTERIES MUST BE DOCUMENTED AND REPORTED
- ☐ NOTIFY FIELD OPERATIONS (CONSTRUCTION/PRODUCTION) WHEN THE JOB IS COMPLETE
- ☐ ALL RENTALS AND MISCELLANIOUS EQUIPMENT IS OFF LOCATION
- ☐ ALL SAFETY PAPERWORK SENT IN TO WEST ROCK HEAD OFFICE ATTENTION: WEST ROCK SAFETY

***ALBERTA ENERGY REGULATOR (AER) DIGITAL DATA SUBMISSION**
INFORMATION STEPS*

- 1) AER website: www.aer.ca
- 2) Look to the top menu bar, click on "Systems & Tools".
- 3) Look to the middle of the page, click on "Digital Data Submission (DDS)".
- 4) Look to the top left corner of the page, fill in the User ID & Password provided by your West Rock Project Manager or Superintendent, and click the "Log on" box.
- 5) Look to the left hand side of the page underneath the User information, click on the expandable heading "AER".
- 6) Then click the expandable heading "Field Surveillance".
- 7) Then click the expandable heading "Notifications".
- 8) Look to the top/center of the page under "New Notification" Tab, click on the drop down arrow beside the word "Licence", and click "Well Licence".
- 9) To the right of the drop down box is another empty box where you must input the well licence number of the well you are submitting for.
- 10) Once the licence information is input click on the drop down arrow beside the words "Notification Type", click on the notification type you wish to do.
- 11) ***Please note that there are time sensitivities with certain notifications.***
 - a. Examples:
 - i. Well Flaring Notification must be done a minimum of 24 hours prior to the start of any Flaring.
 - ii. Hydraulic Fracking must be done a minimum of 5 days prior to the estimated Frac date. The AER Hydraulic Fracturing Notification Excel Form must also be filled out and emailed in to the AER prior to the start of Fracking operations.
- 12) Once the desired Notification Type is selected from the drop down selection click on the "Add" button, this will bring up information tabs in the center of the screen. Fill in the requested information and be sure to click on each tab (General, Details & Comments) as there is required information to be filled in before you can click submit.
- 13) When the information is all filled in click the "Submit to AER" button. If the information is filled in correctly you will see an "Accepted" screen pop up. Please document the Reference number for your records.
- 14) At this point you can return to Notifications to do more AER notification submissions or click the "Log off" button in the top left corner of the screen.

IMPORTANT INFORMATION REQUIRED

DIRECTIVE 083: HYDRAULIC FRACTURING – SUBSURFACE INTEGRITY:

- C. The Licensee must maintain a copy of its ERCB Directive 083 Hydraulic Fracturing Program at the subject well site for the duration of the operation. This will (can) be supplied by Rock Solid Planning
- D. The Hydraulic Fracturing Program must include the following elements:
 - a. Determination of a Fracture Planning Zone (FPZ)
 - b. Identification of all Offset Wells within the FPZ
 - c. An assessment of well integrity for each offset well
 - d. A risk assessment for each offset well
 - e. Determination of at-risk offset wells within the FPZ
 - f. Identification and assessment of special-consideration wells for possible inclusion in the well control plan
 - g. Identification of energizing gas used in fracture fluids

**DIRECTIVE 059: WELL DRILLING & COMPLETION DATA FILING REQUIREMENTS
IN SUPPORT OF DISCLOSURE OF HYDRAULIC FRACTURING FLUID:**

- 1) In Alberta the requirement to accurately record well completion fluid documentation is a very important part of our daily operations. The Wellsite Supervisor must obtain and record the following details so that West Rock and its clients are able to submit Hydraulic Fracturing Fluid Information to the AER.
 - a. Water Type
 - b. Latitude
 - c. Longitude
 - d. Start Date of Diversion
 - e. End Date of Diversion
 - f. Average Daily Diversion
 - g. Total Volume Obtained From Source
 - h. Total Dissolved Solids (TDS)
 - i. AER Reporting Facility ID
 - j. UWI of Source Well
 - k. Facility Name
 - l. Diversion Authorization Type
 - m. Diversion Authorization ID
 - n. Water Well ID
 - o. AER Well UWI
- 2) Please refer to the Water Source Data Tab in the West Rock Completion Reports spreadsheet and AER Directive 059 for further details.
- 3)

***ALL HS&E material is in Petrosight and can be accessed at any time; all material and forms can be downloaded.**



Worksite Safety Plan Checklist – Well Operations

Location: _____ Rig: _____
Period of Operations - Start: _____ Finish: _____
Supervisor #1: _____ Start Date: _____
Supervisor #2: _____ Start Date: _____

Blackspur is the Prime Contractor for this project. The following checklist summarizes Blackspur's safety management system for temporary worksites. This checklist identifies the key elements of the required worksite safety plan. Worksite Supervisors are required to submit the completed checklist and any comments to the Project Manager, or delegate, upon completion of the work.

Yes No N/A General

- | | | | |
|--------------------------|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Review, sign and post Appointment of Supervisor (Worksites & Camps). |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Confirm that the contractors have valid liability and WCB insurance. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Confirm that contractors have valid safety programs in place and available on site. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Confirm that all identified stakeholder requirements have been addressed (i.e. public, landowner). |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Review regulatory permits, license conditions, and other approvals and plans (i.e. agreements – road use, crossings, etc.). See also B.C. Resource Roads – Safe Road Use Plan requirements (Section 3). |

Hazard Identification & Controls (Sec. 3, 4)

- | | | | |
|--------------------------|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | If applicable, contact Owner / Operator of facility to confirm safety & security requirements (ie: well secured/capped, valves locked, lock keys returned, etc.). |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Notify Owner/Operator, identify site-specific hazards and work requirements. Obtain Permit or Lease Hand-Off. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Identify other operations on site. Prepare Concurrent Ops Plan in cooperation with supervisors. (Form 03-05) |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Rig Mobilization - Demobilization. Confirm responsibilities for truck push and rig manager. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Review lease layout, as per regulatory requirements (i.e. AER). |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Drilling Worksite Supervisor – ensure mouse / rat hole is staked and flagged. Required in all cases, holes open or filled in – NO EXCEPTIONS. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Completions Worksite Supervisor – identify the mouse / rat hole before driving onto lease. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Install and test rig anchors if required. Include anchor for escape buggy. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Review Hazard Assessment Flowchart for the worksite / job procedures. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Ensure BOP inspections and function tests are completed, as required. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Ensure equipment inspections are completed & deficiencies addressed (i.e. AER, CAODC checklists). |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Ensure required safety equipment is installed and tested (i.e. crown saver, etc.). |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Ensure fire and explosion hazards identified & control practices addressed as per OGC D-33. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Work Permits - Identify requirements and issue work permits, as required. |

Work Permits are mandatory for: Hot Work, Confined Space Entry, Flow Back Operations to Open Tanks, Ground Disturbance, and Locking Out or Disabling Safety Devices (i.e. Crown Savers). A work permit may be required if an operation is non-routine or has hazards that require special controls. The Worksite Supervisor must exercise judgment and issue work permits when necessary. Work permits for any other operation may be issued at the discretion of the Worksite Supervisor to identify hazards and implement controls.

- | | | | |
|--------------------------|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Ensure safety review conducted when administrative, operational, or technical changes have occurred or (i.e. crew, modified equipment, well program). |
|--------------------------|--------------------------|--------------------------|---|

Safety Meetings & Communication (Sec. 5)

- | | | | |
|--------------------------|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | For large or high risk projects, conduct formal project kick-off meeting. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Conduct pre-job operations and safety meetings; review program and hazard control. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Conduct daily tailgate meetings prior to specialized or hazardous operations. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Review general and/or landowner notifications (i.e. flaring, emergency response, wildfire control, etc.). |

Basic Safety Rules & Requirements (Sec. 10)

- | | | | |
|--------------------------|--------------------------|--------------------------|--|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Confirm use of required personal protective equipment (i.e. F/R clothing). |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Confirm use of special monitoring equipment (i.e. H ₂ S, LEL, O ₂). |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Review journey management, vehicle and mobile equipment operations (i.e. access hazards, speed limits, fatigue / hours of service, working alone, etc.). |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Review current Safety Data Sheet (SDS) during pre-job meeting. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Review housekeeping issues (i.e. slips/trips/falls, etc.). |

Worksite Safety Plan Checklist (cont'd) – Location: _____

Yes	No	N/A	Emergency Preparedness & Response (Sec. 7)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Identify, verify, and post critical emergency response numbers. Also Blackspur first aid procedure.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Test communication equipment.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ensure Emergency Response Plan on site and reviewed with workers (Corporate or site-specific ERP, Wildfire)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ensure appropriate fire protection on site and checked.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ensure appropriate first aid supplies and services on site, as required.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ensure first aid / injured worker transportation plan in place and communicated.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Provide site security and signs, as required.

Practices, Plans and Procedures – identify unique job hazards (Sec. 11, 12)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Hazardous substances: <input type="checkbox"/> H ₂ S <input type="checkbox"/> Invert fluids <input type="checkbox"/> Silica <input type="checkbox"/> Hazardous chemicals. N.B. Exposure Control Plan
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ground Disturbance / Trenching and Excavations; buried pipelines or utilities – use Work Permit.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Isolate energy sources (Lock Out / Tag Out). Ensure zero energy when working on an operational system.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LEL Monitoring – use Work Permit to document readings.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Well Flow Back Operations including DST Testing – Work Permit required for open tanks.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Confined Space Entry – Work Permit required.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Hot Work – Work Permit required.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Overhead Power Lines – Notification of power company may be required as per crossing agreement.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Cranes and Hoists – Confirm operator certification. Identify any critical lifts – Work Permit required.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Pressure Piping – Confirm line restraints. Flowback lines must be anchored.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Pressure Testing.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Radioactive Sources.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Fall Protection Plan – required when working over 3 metres.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Fire & Explosion Prevention Plan – as per OGC D-33 and Enform Fire & explosion guideline.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Other hazardous materials or non-routine operations (list).
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Appropriate work practices are confirmed and reviewed, as required.

Qualifications, Orientations and Training (Sec. 6, 14)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Conduct Site-Specific Safety Orientation (Form 06-01) - review Blackspur's requirements (Handbook), site-specific hazards and controls. Obtain sign-off on orientation.				
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	First Aid / CPR - verify number of qualified personnel on-site: _____				
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	H ₂ S - verify number of qualified personnel on-site: _____				
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Confirm contractors have the appropriate / specialized training required to complete their activities:				
	Basic Safety Awareness (eGSO)	Site Supervisor	<input type="checkbox"/>	Rig Manager	<input type="checkbox"/>	Driller	<input type="checkbox"/>
	WHMIS / TDG	Rig Manager	<input type="checkbox"/>	Driller	<input type="checkbox"/>	Crew	<input type="checkbox"/>
	Fall Protection / Fall Rescue	Rig Manager	<input type="checkbox"/>	Driller	<input type="checkbox"/>	Crew	<input type="checkbox"/>
	Blow Out Prevention (BOP)	Site Supervisor	<input type="checkbox"/>	Rig Manager	<input type="checkbox"/>	Driller	<input type="checkbox"/>
	Hazard Assessment	Site Supervisor	<input type="checkbox"/>	Rig Manager	<input type="checkbox"/>	Driller	<input type="checkbox"/>
	Confined Space Entry	Site Supervisor	<input type="checkbox"/>	Rig Manager	<input type="checkbox"/>	Driller	<input type="checkbox"/>
	Detection of Flammable Fluids	Site Supervisor	<input type="checkbox"/>	Rig Manager	<input type="checkbox"/>	Driller	<input type="checkbox"/>

Environmental Requirements (Sec. 13)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Confirm fuel and chemicals properly stored.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ensure required waste handling, storage and disposal procedures are in place / followed.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ensure required TDG Consignor Declaration is completed when required.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Monitor and record all fresh water withdrawal and use on location. Test any surface water release off site.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Monitor for noxious weeds and arrange for cleaning of equipment if required.

Reporting (Sec. 4, 8, 13, 15)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ensure environmental incidents (spills, releases, etc.) are reported immediately, controlled and cleaned up (Section 13).
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ensure hazards and incidents are reported, investigated, and corrective measures are implemented, as required. (Section 4 and 8). Assess need for post incident alcohol & drug testing.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Worksite Supervisor to ensure appropriate hand-off/review of permits, license conditions, and other approvals (i.e. agreements – road use, crossings, etc.) with Rig Manager or delegate in charge of rig move.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Submit records and supporting documentation with End-of-Project Records (Form 15-01).

Comments:

Worksite Supervisor (signature) _____

Date _____

Notes: 1) Site-specific operations and safety requirements for each well location are specified in the Drilling/Completion/Workover program.
 2) This HSE Management Manual highlights key policy and procedure information and is an important reference tool at any worksite.



WORKSITE SAFETY ORIENTATION

LOCATION (L.S.D.) _____ DATE: _____

DESCRIPTION OF PROJECT: _____

SITE SPECIFIC ORIENTATION: Blackspur Representatives are required to provide contract workers with a site-specific orientation. If applicable, specific sections of Blackspur's HSE Management Manual or Handbook should be reviewed as dictated by the nature of the project.

- | | |
|---|--|
| <input type="checkbox"/> Confirmation of Prime Contractor, Blackspur HSE Policy, Notice of Worksite Supervisor. | <input type="checkbox"/> Hazardous Materials (WHMIS/SDS)
<input type="checkbox"/> Blackspur <input type="checkbox"/> Contractor |
| <input type="checkbox"/> Blackspur Policies: HSE, A&D, Harassment | <input type="checkbox"/> Transportation of Dangerous Goods (TDG) |
| <input type="checkbox"/> Site Hazards: Identification and Control | <input type="checkbox"/> Work Clearances & Permit Requirements |
| <input type="checkbox"/> Safety-Critical Equipment Inspections | <input type="checkbox"/> Exposure Control Plans: _____ |
| <input type="checkbox"/> Review of Planned Work Activities | <input type="checkbox"/> Blackspur / Contractor Codes of Practice |
| <input type="checkbox"/> Specific High-Risk Activities | <input type="checkbox"/> Hot Work or Confined Space Entry |
| <input type="checkbox"/> Multiple Contractors On Site | <input type="checkbox"/> Ground Disturbance |
| <input type="checkbox"/> Other Activities (as per Site Safety Plan) | <input type="checkbox"/> Other Critical Tasks: _____ |
| <input type="checkbox"/> Emergency Procedures – evacuation, mustering, emergency / fire equipment | <input type="checkbox"/> Contractor ¹ & Worker Responsibilities (including Right to Refuse Unsafe Work) |
| <input type="checkbox"/> Emergency Contact Numbers (post) | <input type="checkbox"/> Worker Training and Certifications ² |
| <input type="checkbox"/> First Aid / Injured Worker Transportation Plan | <input type="checkbox"/> Clothing and PPE |
| <input type="checkbox"/> Pre-job and Tailgate Safety Meetings | <input type="checkbox"/> Housekeeping |
| <input type="checkbox"/> Vehicle Operations (Driving Safety, Access, etc.) | <input type="checkbox"/> Inspections (Equipment / Work Area) |
| <input type="checkbox"/> Environmental Protection Requirements | <input type="checkbox"/> Need for Hazard & Incident Reporting |
| <input type="checkbox"/> Landowner Issues and Requirements | <input type="checkbox"/> Other: _____ |

¹ All contractors must show that they have adequate WCB and liability insurance coverage.

² Workers require Basic Safety Awareness Training, (eGSO or equivalent). If there are workers on site without basic safety training, expand scope of orientation and ensure they are supervised.

HAZARD REVIEW TOPICS & UNSAFE CONDITIONS IDENTIFIED:

SPECIAL INSTRUCTIONS:

I have conducted the orientation, reviewed training and obtained a sign-off (See 2nd page). I believe that the participants have a good understanding of the information that was covered.

Blackspur Representative: _____ **Signature:** _____

CONFIRMATION OF COMPETENCY & CERTIFICATIONS:

Contractors are required to have the following training to complete their activities (Blackspur Representative to ✓ all applicable contractor training requirements):

General Safety Training & Certifications:

Basic Safety (eGSO or equivalent)	Site Supervisor <input type="checkbox"/>	Rig Manager <input type="checkbox"/>	Driller <input type="checkbox"/>
Confined Space Entry	Rig Manager <input type="checkbox"/>	Driller <input type="checkbox"/>	Crew <input type="checkbox"/>
Detection of Flammable Fluids	Site Supervisor <input type="checkbox"/>	Rig Manager <input type="checkbox"/>	Driller <input type="checkbox"/>
Emergency Response	Site Supervisor <input type="checkbox"/>	Rig Manager <input type="checkbox"/>	Crew <input type="checkbox"/>
First Aid / CPR	Site Supervisor <input type="checkbox"/>	Rig Manager <input type="checkbox"/>	Crew <input type="checkbox"/>
Hazard Assessment	Site Supervisor <input type="checkbox"/>	Rig Manager <input type="checkbox"/>	Driller <input type="checkbox"/>
H ₂ S Alive (Mandatory for sour ops)	Rig Manager <input type="checkbox"/>	Driller <input type="checkbox"/>	Crew <input type="checkbox"/>
WHMIS / TDG	Rig Manager <input type="checkbox"/>	Driller <input type="checkbox"/>	Crew <input type="checkbox"/>
Wildlife / Bear Awareness	Rig Manager <input type="checkbox"/>	Driller <input type="checkbox"/>	Crew <input type="checkbox"/>

Drilling & Completions Specific:

Blow Out Prevention (BOP)	Site Supervisor <input type="checkbox"/>	Rig Manager <input type="checkbox"/>	Driller <input type="checkbox"/>
Fall Protection / Fall Rescue	Rig Manager <input type="checkbox"/>	Driller <input type="checkbox"/>	Crew <input type="checkbox"/>
Water Withdrawal (AER)	Site Supervisor <input type="checkbox"/>	Rig Manager <input type="checkbox"/>	Others <input type="checkbox"/>

Construction / Production Operations Projects:

ATV / UTV / Snowmobile Ops.	Site Supervisor <input type="checkbox"/>	Workers <input type="checkbox"/>	Others <input type="checkbox"/>
Chainsaw Faller	Site Supervisor <input type="checkbox"/>	Workers <input type="checkbox"/>	Others <input type="checkbox"/>
Ground Disturbance	Site Supervisor <input type="checkbox"/>	Workers <input type="checkbox"/>	Others <input type="checkbox"/>

PERSONNEL IN ATTENDANCE:

Company/Contractor (Print Name)	Signature	I have insurance coverage (liability, WCB)?	I have <u>current</u> certifications needed to complete the planned work?
		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No



Worksite Safety Orientation including: Review of Planned Activities, Site Hazards and Control, Critical Tasks / JSAs, Fire & Explosion Prevention Plan, Emergency Procedures and Contacts including Muster Point & First Aid Transportation Plan

[illegible]

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FIRST AID / INJURED WORKER TRANSPORTATION PLAN

Date:	Location:	LSD:
Sour? <input type="checkbox"/> Yes ____ % H2S <input type="checkbox"/> No ____ EPZ (distance, kms) or ____ Awareness Zone (distance, kms)		
GPS: or STARS #	Supervisor:	# of Workers:
Directions to Site:		
First Aider(s) – Name:	Name:	Name:
Transportation will be summoned by - Primary:		Secondary:
Information to be provided to the Ambulance Service when making the call: 1) Name of Person Making the Call 2) Location of & Directions to Worksite 3) Nature of Injury 4) Number of injured to be transported 5) Telephone number at worksite		
First Aider(s) – Name:	Name:	Name:
Complement this plan with: 1) A worksite plot plan showing muster points, first aid & emergency equipment, etc. 2) Key Emergency Contacts (i.e. Company's 24 hour #, RCMP, Regulatory, Contractor Emergency Contacts, etc.)		
HEALTH CARE FACILITY - Nearest 24 hour/day (Hospital, Medical Clinic or Physician's Office)		
Facility Name:	City/Town:	Phone Number:
Distance by road from worksite to facility: ____ kms ____ Time		
LOCAL AMBULANCE SERVICE - <input type="checkbox"/> Air <input type="checkbox"/> Ground <input type="checkbox"/> Contacted / Verified		
Can local ground ambulance arrive on worksite in 40 mins (AB), 20 mins (BC), 30 mins (SK) under current road conditions? <input type="checkbox"/> Yes <input type="checkbox"/> No (If no, a direct means of transportation at the worksite is required)		
If, Air Ambulance - <input type="checkbox"/> Helicopter, or <input type="checkbox"/> Fixed Wing Landing - GPS ____ Equipped for Night? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Ambulance Service:	City/Town:	Phone Number:
Ambulance Service will normally be summoned by <input type="checkbox"/> Cell Phone <input type="checkbox"/> Satellite Phone <input type="checkbox"/> Landline		
ON SITE EMERGENCY CONVEYANCE VEHICLE - <input type="checkbox"/> Yes <input type="checkbox"/> No		
Communication in vehicle: <input type="checkbox"/> Cell / Satellite Phone: ____ <input type="checkbox"/> Two-way Radio Channel Number: ____		
SHARED EMERGENCY CONVEYANCE VEHICLE - <input type="checkbox"/> Yes - Response time: <input type="checkbox"/> No		
Communication in vehicle: <input type="checkbox"/> Cell / Satellite Phone: ____ <input type="checkbox"/> Two-way Radio Channel Number: ____		
Note: On-site or shared conveyance vehicles must – <ul style="list-style-type: none"> • Afford protection against the weather, • Be equipped with cell to enable communication with health care facility and worksite, • Be of sufficient size to accommodate a stretcher and an accompanying person, • Be accompanied by at least one (1) trained first aider other than the driver of the vehicle if a worker is acutely ill or injured, or otherwise needs to be accompanied during transport to a 24 hr/day Health Care Facility. 		
WHEN PRIMARY MEANS OF TRANSPORTATION IS BEING USED -		
Alternate Emergency Transportation:		
PLAN COMMUNICATED TO WORKERS BY- <input type="checkbox"/> Safety Meeting <input type="checkbox"/> Work Permit		
POST IN CENTRAL LOCATION!		



Fire and Explosion Prevention Plan

A. What Are We Doing?

Date: _____	Location: _____
Worksite Supervisor (print name): _____	Work Permit #: _____
Work to be performed: _____	
	Yes No N/A
1. Have you done this job before?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
2. Are the people on this site qualified to help assess the fire explosion hazards for this work?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

B. What Can Go Wrong?

Identify what fuel, oxygen and energy sources can combine to cause a problem (See Reverse Side)			
Fuel Sources	Oxygen Sources	Energy Sources	Critical Risk Factors STOP work & implement controls

C. What Are We Doing To Stop Things From Going Wrong?

Identify and list Engineering and Administrative Controls. (See Reverse Side)			
Engineering Controls		Administrative Controls	
1.		1.	
2.		2.	
2.		2.	
4.		4.	
5.		5.	

D. What If Something Goes Wrong Anyways?

Identify and list emergency equipment and PPE required for the planned work. (See Reverse Side)			
Emergency Controls		PPE	
1.		1.	
2.		2.	
2.		2.	
4.		4.	
5.		5.	

Pre-Start-Up Review

	Yes	No	N/A
1. Is a detailed, operations-specific fire and explosion prevention plan (FEPP) required?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Have work plans, site hazard assessment and the FEPP been reviewed with workers?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Have all applicable MSDS and manufacturers specifications been reviewed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Are more detailed work procedures required for job? Prime Contractor <input type="checkbox"/> Contractor <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Have you issued all required work permits and held safety meetings with workers?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Who will be supplying detection equipment? Is the person trained and qualified?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Has all equipment been inspected? Has any detection equipment been function tested?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Do all workers understand their roles in controlling and responding to an emergency?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Have you stopped and thought about the work procedures and possible human errors?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Are there any changes to operations or working conditions that require revisions to FEPP?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Worksite Supervisor (signature): _____			

Reference List of Fuel, Oxygen and Energy Sources

Fuel Sources	Oxygen Sources	Energy Sources
Gases: <input type="checkbox"/> Natural Gas <input type="checkbox"/> Hydrogen Sulphide <input type="checkbox"/> Liquid Propane Gases (LPGs), including propane and butane <input type="checkbox"/> Others gases such as hydrogen or acetylene Liquids and Vapours: <input type="checkbox"/> Crude Oil and Condensate <input type="checkbox"/> Natural Gas Liquids (NGLs) <input type="checkbox"/> Hydrocarbon-based drilling, frac and workover fluids <input type="checkbox"/> Gasoline, diesel, other fuels <input type="checkbox"/> Methanol <input type="checkbox"/> Lubricants Chemicals and Lubricants: <input type="checkbox"/> Solvents and cleaning agents <input type="checkbox"/> Hydraulic fluids and lubricants <input type="checkbox"/> Chemicals for well servicing and stimulations Solids: <input type="checkbox"/> Wax <input type="checkbox"/> Lubricants <input type="checkbox"/> Sealants <input type="checkbox"/> Packings, "O" rings, diaphragms and valve seats <input type="checkbox"/> Paints and coatings	Oxygen Sources during planned introduction of air: <input type="checkbox"/> Air-based operations <input type="checkbox"/> Air purging Oxygen Sources during unplanned introduction of air: <input type="checkbox"/> Trucking and other surface operations that may pull air into a tank (during emptying) or pipeline <input type="checkbox"/> Overbalanced operations <input type="checkbox"/> Swabbing and other downhole operations that may create a vacuum in a well <input type="checkbox"/> Other operations that can cause a negative pressure (vacuum) <input type="checkbox"/> Pockets of trapped air created during the installation and servicing of equipment <input type="checkbox"/> Oxidized (weathered) hydrocarbons <input type="checkbox"/> Oxidizing chemicals <input type="checkbox"/> Chemical reactions <input type="checkbox"/> On-site generated nitrogen	<input type="checkbox"/> Flames <input type="checkbox"/> Heating sources <input type="checkbox"/> Hot work <input type="checkbox"/> Electric arcs and sparks from non-explosion proof equipment and other electrical sources <input type="checkbox"/> Static electricity <input type="checkbox"/> Hot surfaces <input type="checkbox"/> Friction and mechanical sparks <input type="checkbox"/> Chemical action and sparks <input type="checkbox"/> Spontaneous combustion <input type="checkbox"/> Pyrophors, such as iron sulphide from corrosion <input type="checkbox"/> Pressure or compression ignition (dieseling) <input type="checkbox"/> Sudden decompression <input type="checkbox"/> Hypergolic reactions such as those involving chemicals used to fracture wells <input type="checkbox"/> Vehicles (Including ignition or exhaust piping. Also diesel engines) <input type="checkbox"/> Smoking <input type="checkbox"/> Cell Phones, Pagers, Radios and other communication devices

Reference List of Possible Fire and Explosion Controls

Engineering/Design	Administrative	Emergency	PPE
<input type="checkbox"/> Design Specifications <input type="checkbox"/> Equipment Spacing <input type="checkbox"/> Emergency Shutdowns <input type="checkbox"/> Inventory Control <input type="checkbox"/> Explosion Proof Equip. <input type="checkbox"/> Grounding / Bonding <input type="checkbox"/> Isolate (Blank/Blind) <input type="checkbox"/> Material Substitution <input type="checkbox"/> Pressure Control <input type="checkbox"/> Preventive Maintenance <input type="checkbox"/> Purge Into Service <input type="checkbox"/> Purge Out of Service <input type="checkbox"/> Seals and Gaskets <input type="checkbox"/> Temperature Control <input type="checkbox"/> Workspace Ventilation	<input type="checkbox"/> Vehicle Access Control <input type="checkbox"/> Area Classifications <input type="checkbox"/> Change Management <input type="checkbox"/> Code of Practice <input type="checkbox"/> Industry Best Practices <input type="checkbox"/> Job Safety Assessment <input type="checkbox"/> Lockout / Tagout <input type="checkbox"/> Pre-Start-up Review <input type="checkbox"/> Restricted Areas <input type="checkbox"/> Safety Rules <input type="checkbox"/> Task Specific Procedure <input type="checkbox"/> Training / Awareness <input type="checkbox"/> Warning Signs <input type="checkbox"/> Work Permits <input type="checkbox"/> Written Procedures	<input type="checkbox"/> ERP – Site Specific <input type="checkbox"/> Escape Equipment <input type="checkbox"/> Evacuation Plans <input type="checkbox"/> First Aid Trans. Plan <input type="checkbox"/> Emergency Vehicle <input type="checkbox"/> First Aid Equipment <input type="checkbox"/> First Aid Attendant <input type="checkbox"/> Fire Extinguishers <input type="checkbox"/> Fire Control Equip. <input type="checkbox"/> Muster Area <input type="checkbox"/> Safety Stand-by Man <input type="checkbox"/> Safety Watch <input type="checkbox"/> Spill Containment <input type="checkbox"/> Wash Facilities <input type="checkbox"/> Wind Indicator	<input type="checkbox"/> Personal Monitor <input type="checkbox"/> Eye Guards <input type="checkbox"/> Face Shields <input type="checkbox"/> Foot Protection <input type="checkbox"/> Hand (Gloves) <input type="checkbox"/> Head Protection <input type="checkbox"/> Hearing Protection <input type="checkbox"/> Body (FR Clothing) <input type="checkbox"/> Body (Other) <input type="checkbox"/> SCBA / SABA <input type="checkbox"/> Other Respirators <input type="checkbox"/> Safety Harness / Line <input type="checkbox"/> Fire / Spark Barriers <input type="checkbox"/> Local Exhaust / Vent <input type="checkbox"/> Other Specialized PPE



End of Project Records: HSE Documents

Supervisor: _____

Location: _____

Date: _____

- ☐ **Blackspur Appointment of Supervisor** (Form 02-01)
(Recommend review & sign off by personnel on lease)
- ☐ **Blackspur Worksite Safety Plan Checklist** (Form 03-01/-02)
(Completed and signed by site supervisor)
- ☐ **Blackspur Handoff of Worksite Responsibility** (Form 03-04 - As required)
- ☐ **Blackspur Concurrent Operations / Handover Plan** (Form 03-05 - As required)
- ☐ **Emergency Contacts Listing - Emergency Transportation Plan**
(i.e. ERP Quick Reference Guide) (As required. Use Blackspur Form 07-02 or by Medic)
- ☐ **Emergency Drills / Site-Specific Training**, where applicable
- ☐ **Safety Meeting Minutes**
(May include minutes for Pre-Shift, Pre-Critical Jobs or contractors' safety meetings)
- ☐ **Safe Work Permits and Clearances**
(Include addition documentation attached to permit such as Pre-Confined Space Entry, Ground Disturbance, Hot Work / Fire and Explosion Prevention Plan etc.)
- ☐ **Blackspur Worksite Safety Orientation + Sign In Sheet(s)**
- ☐ **JHA-JSA Reviews, Hazard I.D., Assessment Forms**
- ☐ **Inspection Checklists** (e.g. Camps, Cranes, Truckers, Rig Inspections etc - minimum of one per location. Include BOP inspection report if applicable)
- ☐ **Hazardous Goods Information**
(Include any Consignor TDG Declarations, Waste Manifests and Specialized Safety Data Sheets)
- ☐ **Incident / Near Miss Reports and Investigations**, where required.
(Blackspur and / or contractor depending on nature of incident and who needs to take corrective action)
- ☐ **Any other relevant safety information**

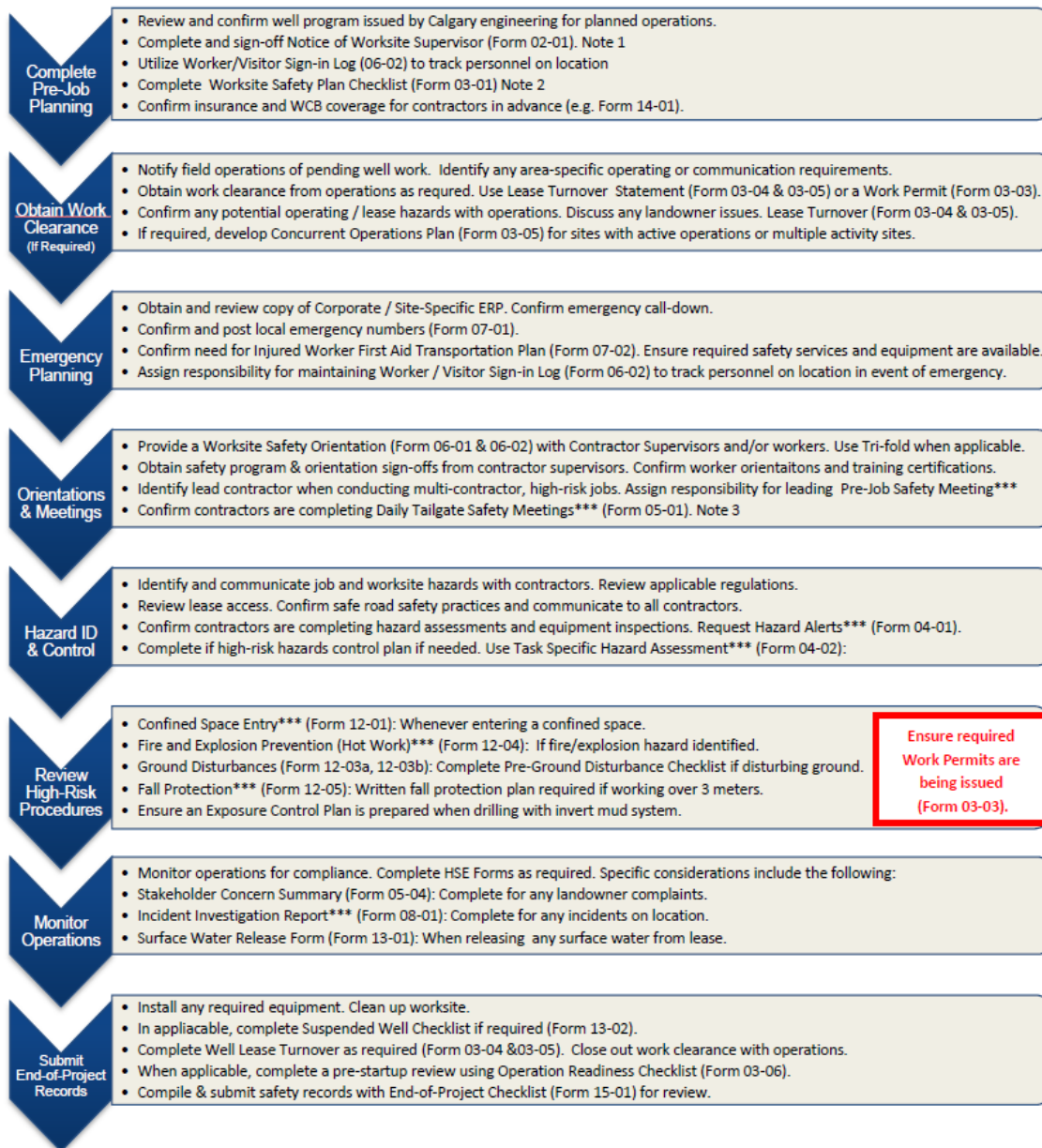
Comments: _____

Completed by: _____ Date: _____

Reviewed by: _____ Date: _____

Well Operations: Drilling, Completions and Workovers

Site Safety Plan - Simplified Workflow Diagram



Notes:

1. Copies of all highlighted forms are included in this quick reference guide.
2. Confirm any province specific safety regulations. An overview of Alberta regulations provided on page 2.
3. ***Acceptable to use lead / sub-contractor forms when available as noted.

IMPORTANT: Refer to USB Flash drive, Blackspur Petrosight software,
 S:\HS&E\Blackspur HSE Forms or contact Company Safety Coordinator
 at hse@blackspuroil.com for access to ALL SAFETY FORMS

Important Drilling and Well Servicing Safety Regulations

1. **NOTICE OF WELLSITE SUPERVISOR:** An employer must appoint a supervisor to supervise an exploration, drilling, servicing, snubbing, testing, or production operation. An employer must ensure the supervisor is competent in each of the following that is within the supervisor's area of responsibility: (a) safe work practices, including the safe operation of a plant at the work site; (b) the safe handling, use, and storage of hazardous substances; (c) well control and blowout prevention; (d) detecting and controlling worker exposure to hydrogen sulphide; (e) handling, using, maintaining, and storing personal protective equipment; (f) appropriate responses to emergencies at the work site; (g) the duties and responsibilities of all workers supervised by the supervisor; (h) training workers supervised by the supervisor in safe work practices and procedures; (i) health and safety programs.
2. **RESPIRATORY EQUIPMENT:** If a worker is undertaking emergency response activities at a well site and the worker may be exposed to a harmful substance in excess of its occupational exposure limit (see OHS Regulations), an employer must ensure that sufficient self-contained breathing apparatus units are provided as per hazard assessment and emergency response plan.
3. **CAODC DERRICK INSPECTION / REPAIR LOG BOOK:** An employer must ensure that inspections and repairs on a derrick or mast are recorded in a log book issued by the Canadian Association of Oil Well Drilling Contractors or its equivalent. An employer must ensure that the log book is available at the work site for review by an officer.
4. **CAODC RIG / BOP INSPECTIONS:** An employer must ensure that the drilling rig, service rig, or snubbing unit is inspected by a competent worker: (a) before it is placed into service, and (b) every seventh day on which it is used for as long as it is in service. The competent worker must prepare a report of the inspection and the employer must keep a copy of the report (a) at the work site where the drilling rig, service rig or snubbing unit is in service, and (b) at the employer's principal place of business in Alberta for at least one year from the date of the inspection.
5. **INSTALLATION OF GUARDS AND BARRIERS:** An employer must ensure that no worker services or works on a drilling rig, service rig, or snubbing unit until a competent worker ensures that: (a) all guards are installed and secure, (b) all platforms, stairways, handrails, and guardrails are installed and secure, (c) the emergency escape line and its components are installed and secure, and (d) all fastening devices required in the erection of the rig and its substructure are installed and secure.
6. **EMERGENCY ESCAPE:** If a primary exit from the principal working platform above the drill floor may be blocked or otherwise compromised, an employer must ensure there is an emergency means of escape from the principal working platform that: (a) is visually inspected by a competent worker at least once a week, and (b) is kept free of obstructions. If the emergency means of escape includes using an anchored line, the employer must ensure the line is: (a) installed, tested, and maintained according to the manufacturer's specifications, and (b) able to successfully withstand a pull-test load of 13.3 kilonewtons at the time of its installation. If an emergency escape safety buggy is used as part of the emergency means of escape, the employer must ensure it is: (a) installed and maintained according to the manufacturer's specifications, (b) kept at the principal working platform when not in use, and (c) easily accessible to workers in an emergency.
7. **STORAGE OF DRILL PIPE AND TUBULARS:** An employer must ensure that a trailer that is used as a pipe rack: (a) has guardrails and toe boards along the full length of both sides of the trailer, (b) has a stairway at the end farthest from the drilling or service rig floor, and (c) is constructed so that the lower end of the pipe does not roll off the trailer when the pipe is hoisted into the derrick. An employer must ensure that a trailer used as a pipe rack is secured from movement.
8. **HANDLING DRILL PIPE, TUBULARS AND WELL EQUIPMENT:** An employer must ensure that provision is made for completely draining fluids from standing drill pipes, drill collars, and tubing racked in a derrick. An employer must ensure that drill pipes, drill collars, tubing, casing, and rods racked in a derrick or mast are secured and cannot fall out of or across the derrick or mast.
9. **IDENTIFYING DANGER ZONES:** An employer must ensure that a danger zone is established and clearly marked around a rotary table used in a drilling operation. When a rotary table is in motion during an operation, a worker must not enter the danger zone or allow other equipment or loose materials to enter the danger zone.
10. **HAZARDOUS ATMOSPHERES & CHEMICALS:** An employer must ensure that a rig tank or pit used for the circulation of drilling fluids containing flammable or combustible material is protected from sources of ignition. An employer must ensure that a rig tank or pit that is enclosed: (a) is properly vented, and (b) that vented vapours are directed away from ignition sources. **NOTE:** In BC a written exposure control plan is required when drilling with hydrocarbon-based fluid systems.
11. **FUEL STORAGE:** An employer must ensure that fuel is not stored within 25 metres of a well. A worker must not store fuel within 25 metres of a well. This does not apply to diesel fuel provided that: (a) it is used solely as fuel for machinery operating at the well, (b) it is stored in fully enclosed storage containers, (c) no more than 8000 litres total is stored in the storage containers, and, (d) it is more than 7 metres away from the well.

In addition to Part 37, the other sections of the OHS Code also apply to all well operations. Key sections are:

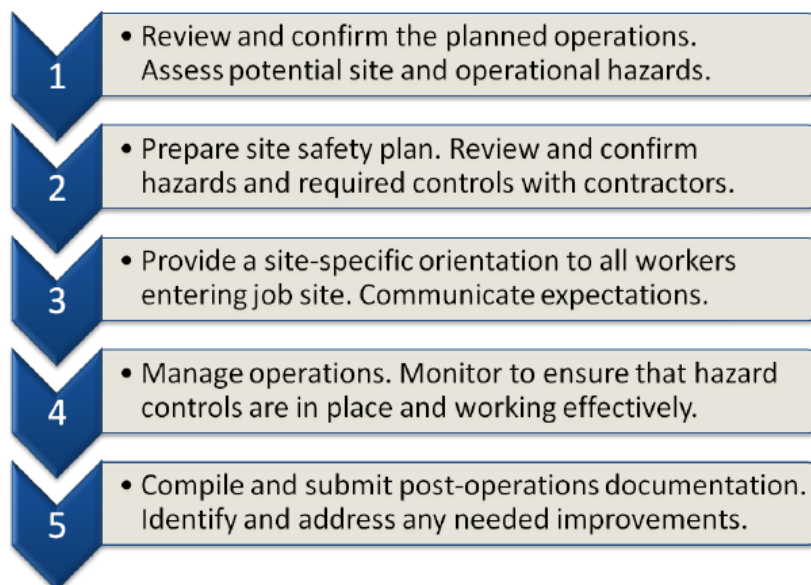
- Part 2: Hazard Assessment, Elimination and Control
 - Part 3: Specifications and Certification (with an emphasis of required equipment inspections by contractors)
 - Part 4: Chemical Hazards, Biological Hazards and Harmful Substances
 - Part 15: Managing the Control of Hazardous Energy
- Company Representatives are asked to pay particular attention to these critical safety issues.



SECTION 2

REQUIRED FORMS

- ☐ **Appointment of Supervisor (Form 02-01)**
- ☐ **Worksite Safety Plan Checklist: Well Ops (Form 03-01)**
- ☐ **Worksite Safety Orientation (Form 06-01a)**
- ☐ **Sign-In Sheet (Form 06-02)**
- ☐ **Injured Worker - First Aid Transportation Plan (Form 07-02)**
- ☐ **Fire and Explosion Prevention Plan (Form 12-06)**
- ☐ **End-of-Project Records (Form 15-01)**





SECTION 3

Activity & Issue-Specific Forms

- ☐ Work Permit (Form 03-03)
- ☐ Hand-Off of Worksite Responsibility (Form 03-04)
- ☐ Concurrent Operations - Handover Plan (Form 03-05)
- ☐ Operational Readiness Checklist (Form 03-06)
- ☐ Hazard ID / Near Miss – Job Observation Report (Form 04-01)
- ☐ Job Hazard Assessment (Form 04-02)
- ☐ Pre-Job / Tailgate Safety Meeting & Hazard Assessment (Form 05-01)
- ☐ Stakeholder Concern Summary (Form 05-04)
- ☐ Worksite Emergency Contact Information (Form 07-01)
- ☐ Incident Investigation Report (Form 08-01)
- ☐ Witness Statement (Form 08-02)
- ☐ Crane Spot Inspection Checklist (Form 09-08)
- ☐ TDG Consignor Declaration / Trucker Inspection Checklist (Form 11-02)
- ☐ Silica Exposure Control Plan (Form 11-05)
- ☐ Confined Space Pre-Entry Checklist (Form 12-01)
- ☐ Critical Lift Checklist (Form 12-02)
- ☐ Lock Out Sheet (Form 12-04a)
- ☐ Safety & Shutdown Device Bypass Checklist (Form 12-04b)
- ☐ Shut Down Bypass Tracking Sheet (Form 12-04C)
- ☐ Bypassing Risk Assessment Worksheet (Form 12-04d)
- ☐ Fall Protection Plan (Form 12-05)
- ☐ Pre-Ground Disturbance Checklist (Form 12-07a)
- ☐ Backfill Inspection Form (Form 12-07b)
- ☐ Surface Water Release Form (Form 13-01)
- ☐ Suspended Well Checklist (Form 13-02)
- ☐ Simplified Contractor Safety Analysis (Form 14-01)
- ☐ Contractor Spot Check (Form 14-02)

IMPORTANT: Refer to USB Flash drive, Blackspur Petrosight software,
S:\HS&E\Blackspur HSE Forms or contact Company Safety Coordinator at
hse@blackspuroil.com for access to ALL SAFETY FORMS



Appointment of Supervisor

TAKE NOTICE THAT BLACKSPUR OIL CORP. (Prime Contractor) HEREBY APPOINTS

_____ (name of supervisor) as the Worksite Supervisor of the following undertaking:

☐ Drilling ☐ Completion/Workover ☐ Pipeline/Facilities Construction ☐ Other (indicate activity) - _____

Description of operations / activities to be carried out: _____

Located at the following locations: _____

During the time period from: _____ day, _____ month, _____ year, to _____ day, _____ month, _____ year

ALTERNATE CONTACT: representative for the Prime Contractor if the Worksite Supervisor becomes incapacitated, is inaccessible or you are unable to resolve your concern: (name) _____

Contact phone numbers: _____ (work); _____ (cell); _____ (home)

The Supervisor's duties and responsibilities include the following matters:

- ☐ Implement the Prime Contractor's safety program at the worksite.
- ☐ Check that all employers on the worksite have a safety program, including safe work procedures.
- ☐ Ensure all employers understand and agree to follow all requirements of the Prime Contractor's safety program that are not already met by their own safety program.
- ☐ Direct and coordinate the efforts of all employers at the worksite, including:
 - Review HSE Policy and clarify roles and responsibilities of all employers and supervisors;
 - Ensure orientation of all employers and visitors on arrival to worksite;
 - Identify and document the name of on-site supervisor for each employer. Identify 'lead' and 'supporting' service contractors;
 - Communicate and address overall job and task specific hazards;
 - Resolution of any discrepancies between safe work procedures;
 - Safe transportation, storage, use and disposal of all hazardous substances.
- ☐ Identify hazards related to the specific worksite, the planned program or the materials provided by the Prime Contractor. Inform all employers of these hazards and ensure procedures are in place to control these hazards. All work is to be stopped when an unsafe act or condition is identified. **Remember: Every person has the right and responsibility to question their supervisor about a job that they believe to be unsafe or unnecessarily dangerous without fear of repercussion.**
- ☐ Ensure the following site specific hazard controls meet requirements and standards:
 - Well control and blowout prevention, as applicable;
 - Detection and control of hydrogen sulfide gas emissions;
 - Detection and control of any flammable substances that may be emitted. Consult IRP 18 / Fire and Explosion Prevention Plan form.
- ☐ Establish, review with employers, post information and direct site-specific emergency response procedures, ensuring required drills are conducted.
- ☐ Monitor work activities of all employers and work activities to verify:
 - Compliance with safety legislation;
 - Safe work procedures and proper use of PPE are followed;
 - Hazards are identified, addressed and reported;
 - Participation in tailgate safety meetings;
 - All employees receive supervision and training from their employer, as applicable (e.g. New/Young Worker, IRP 7).
- ☐ Ensure accidents / incidents / close calls are reported and participate in investigation, as required.

The Worksite Supervisor is knowledgeable about and experienced in all of the matters listed above.

Assigned by (Blackspur Representative): _____

Contact phone numbers: _____ (work); _____ (cell); _____ (home)

Accepted by (Worksite Supervisor): _____

Contact phone numbers: _____ (work); _____ (cell); _____ (home)



Safety Orientation

The Blackspur Representative is required to provide workers with a site-specific orientation. When applicable, specific sections of Blackspur's HSE Manual or Handbook will be reviewed for the planned work.

Complete the Acknowledgement form and give it to the Blackspur Representative at the end of this orientation.

- ☐ Blackspur's Commitment to Worker Safety
- ☐ Prime Contractor / Worker Responsibilities
- ☐ Planned Work Activities
- ☐ Work Plans and Procedures
- ☐ Blackspur Basic Safety Rules and Requirements
- ☐ Site Specific Hazards and Controls
- ☐ Specific High-Risk Activities
- ☐ Work Permits Requirements
- ☐ Worker Training and Certifications
- ☐ Personal Protective Equipment (PPE)
- ☐ Hazardous Materials (WHMIS/MSDS)
- ☐ Emergency Contact Numbers (post)
- ☐ First Aid / Injured Worker Transportation Plan (if required, post)
- ☐ Emergency Procedures - evacuation, muster point, emergency / fire equipment
- ☐ Tailgate Safety Meeting
- ☐ Hazard & Incident Reporting Requirements
- ☐ Housekeeping Requirements
- ☐ Vehicle Operations (driving safety, access, etc.)
- ☐ Environmental Protection Requirements
- ☐ Landowner Issues and Requirements
- ☐ Other: _____

REMEMBER: If you have concerns about any item consult with your immediate Supervisor or the Blackspur Representative during this meeting.

1. Safety Responsibilities

Supervisors/Representatives are the key individuals in the workplace that are involved in all the daily workplace activities. Main responsibilities are:

- ☐ To provide supervision, instruction and training as they relate to all work activities
- ☐ Develop and implement a Site Safety Plan appropriate for the work being completed.
- ☐ To enforce worker adherence to safe work permit and any work procedures.
- ☐ To ensure that workers are adequately supervised.
- ☐ To convey to workers that company procedures are mandatory, which will be accomplished through consistent enforcement.
- ☐ To ensure that Blackspur's compliance/disciplinary procedures are followed.
- ☐ To be involved in hazard analysis, hazard identification and requiring workers to report hazards. This includes prompt follow-through and corrective action.
- ☐ To conduct inspections of equipment, machinery and work processes and observe workers doing the work on a regular basis.
- ☐ To make sure regular safety meetings are being held and recorded so that unsafe acts and/or conditions can be addressed and corrections made.

Contractor personnel shall:

- ☐ Report to their appropriate Blackspur supervisor upon arrival at a Blackspur work site.
- ☐ Be given appropriate safety orientations by the Blackspur supervisor/representative for familiarization with potential job site hazards and emergency procedures.
- ☐ Take all reasonable steps to protect the health and safety of all workers, employees and third parties from injury or illness as a result of the work contracted.
- ☐ Be made aware of the safety requirements of the Blackspur and OHS regulations applicable to the work.
- ☐ Ensure that accurate documentation is kept of all training, equipment maintenance and any other information deemed relevant by Blackspur.
- ☐ Refuse to work under unsafe conditions or perform work for which they are not adequately prepared.
- ☐ Ensure that Workers Compensation Board is in good standing for the province in which the contractor company is working and appropriate amount of liability insurance is carried.

2. Basic Safety Rules & Requirements

Alcohol and/or Illegal Drugs are prohibited on any Blackspur work site. Workers under prescribed

medication that may impair their ability to work must notify their supervisor.

Driving and Vehicle Safety is important on every Blackspur worksite. All drivers are to operate vehicles in accordance with provincial laws and regulations.

Existing Medical Conditions that may affect your safety are important. Have you advised your site supervisor of any Existing Medical Conditions that could affect site safety? i.e.: Prescription, medication, diabetes, epilepsy, etc.

Head and Facial Hair, head hair must be contained so it does not extend below the collar when the person is in the standing position or cut short. Facial hair that will interfere with an effective seal of respiratory equipment is prohibited.

Housekeeping of work areas must be kept clean and free of obstructions. Spilled toxic or corrosive chemicals must be cleaned up and all wastes must be disposed of properly.

Smoking signs must be obeyed. Smoking is permitted only in designated areas. All hazardous areas must be classified as non-smoking areas.

Theft, burglaries or acts of vandalism must be reported to a supervisor as soon as possible.

3. Hazard Assessment/Identification

All personnel involved at the site must be aware of all hazards associated with the task to be performed and should be a part of the assessment review process:

- ☐ All hazard assessments must be written.
- ☐ Hazards must be re-assessed if work scope or activities change.
- ☐ Assessments must contain a description of the task being assessed, identify all sources of hazards or harmful energy, identify controls for each identified hazard, ensure controls are in place prior to conducting task, and communicate these hazards and controls to all workers involved in the task.

4. Safety Training

First Aid/CPR: All Personnel;

WHMIS: All Personnel;

TDG: All personnel who receive, transport, offer for transport or receive dangerous goods;

H2S Alive: All personnel who could be exposed to H2S or Oxygen deficient atmosphere;

Confined Space: All personnel who could be working in a confined space;

Service Rig BOP: Service Rig Supervisor; and

Drilling BOP: Driller and Second Line Supervisor;

Competency Questions

A worker has the right and responsibility to refuse to carry out work if a condition of imminent danger exists? ☐ Yes ☐ No

Safe Work Permits are used to:

- a) Define scope of job ☐ Yes ☐ No
- b) Discuss hazards of the job ☐ Yes ☐ No
- c) Confirm hazard controls ☐ Yes ☐ No
- d) Document LEL-H₂S monitoring ☐ Yes ☐ No

There are no illegal drugs or alcohol allowed at this worksite? True False

The PPE required at this worksite includes:

- a) CSA approved hardhat ☐ Yes ☐ No
- b) CSA safety-toed footwear ☐ Yes ☐ No
- c) Flame resistant outerwear when working with hydrocarbons or residue ☐ Yes ☐ No
- d) Other PPE as required by job ☐ Yes ☐ No

All injuries/accidents must be reported to Blackspur's Representative? ☐ Yes ☐ No

Your responsibilities at the worksite include:

- a) Protecting you & co-workers ☐ Yes ☐ No
- b) Following regulations and Blackspur safety requirements ☐ Yes ☐ No
- c) Reporting and correcting unsafe conditions ☐ Yes ☐ No
- d) Reviewing the MSDS for a hazardous chemical ☐ Yes ☐ No

First Aid information about a controlled product (Chemical) would be found on an:

- a) MOC ☐ Yes ☐ No
- b) MSDS ☐ Yes ☐ No
- c) TDG placard ☐ Yes ☐ No

Would you immediately leave an area if your gas monitor began to alarm? ☐ Yes ☐ No

Worker orientations are required to provide you with information about:

- a) Potential work site hazards True False
- b) Site specific safety rules True False
- c) Emergency muster points True False
- d) Accident investigation training True False

Smoking is permitted everywhere on this worksite True False

Small amounts of gas leak leaking into an enclosed area may cause:

- a) An explosive atmosphere True False
- b) Oxygen deficient atmosphere True False
- c) Neither of the above True False

SAFETY ORIENTATION SIGN OFF

- 1 All contractors must confirm that they have adequate WCB and liability insurance coverage.
- 2 Workers require Basic Safety Awareness Training, (IRP #16 or equivalent). If there are workers on site without basic safety training, expand scope of orientation and ensure they are appropriately supervised.

Please complete this acknowledgement sheet, detach from booklet, and keep orientation form for further reference. Acknowledgement form must be given to the company site supervisor or representative.

Training & Certification Tickets	Expiry Date
First Aid/CPR	
WHMIS	
TDG	
H2S Alive	
Confined Space	
Service Rig BOP	
Drilling Rig BOP	
Fall Protection/Rescue	
Ground Disturbance	
Driver's License	

I have read, understand and agree to abide by the procedures contained in this safety orientation.

Name (Print) _____

Signature _____

Employer _____

Date _____

An understanding of the orientation information will only be considered satisfactory when the worker has been able to answer all of the questions correctly. In some cases, additional coaching may be required by the Blackspur Representative providing the orientation to reinforce the required expectation.

Form 06-01b; June 2017

Fall Protection/Rescue: All personnel exposed to a falling hazard in excess of 3 metres;

Driver's License: All required personnel; and

Ground Disturbance: All personnel supervising or performing excavation operations below 30 cm. must have Ground Disturbance training.

5. Personal Protective Equipment (PPE)

All workers at Blackspur work sites must wear the following personal protective equipment:

- ☐ CSA approved, Class B rated non-conducting high impact plastic, industrial head gear.
- ☐ CSA Class 1 (green label) approved steel toed footwear.
- ☐ Fire Resistant Work Clothing. The exceptions to this policy are when the worker is in an office, lunchroom or the cab of a vehicle.
- ☐ CSA safety glasses appropriate to the work being done. (Face shields for grinding and goggles when handling chemicals)
- ☐ Hearing protection in areas where noise levels exceed 85 dB i.
- ☐ CSA approved safety harness and lifelines when working more than 3 meters above the ground or more than 3 meters above a permanent worksite or platform.
- ☐ Personal H₂S monitors or area monitors strategically placed to cover the work area must be used where the danger of H₂S exists.
- ☐ SCBA where H₂S concentrations exceed 10 PPM or oxygen content is less than 18%.

6. Manufacturers Specifications

Be sure to follow the manufacturer's requirements for using, inspecting and maintaining equipment. Key pieces of equipment that require attention include:

- ☐ **Ladders:** Positioned at approximately 25% of their length away from the base of the structure. They must be placed on a firm surface and extended 1 meter past the landing platform. Equipped with non-slip feet, and securely tied off to avoid accidental movement during use. Made of non-conductive material when used in electrical work activities.
- ☐ **Cranes and Hoists** must be operated by trained personnel. Workers must not stand on or under suspended loads. Tag lines must be used and hooks must be equipped with safety latches. Only devices built and approved for that purpose shall be used to lift people.
- ☐ **Machine guards** are provided to protect personnel from moving parts on machinery and must be kept in place at all times when equipment is being used.

7. Emergency Equipment and Procedures

- ☐ All workers must be familiar with the location of emergency contact numbers, first aid kits, eyewash, emergency showers and fire extinguishers on site.
- ☐ Contractors will ensure all workers on the job site are aware of the job site and its applicable site specific emergency response plan.

8. Safe Work Permits

Work permits are used to ensure all contractors are aware of the scope of the job, and that hazards and safe operating procedures are identified. They are required for all construction, maintenance, well servicing, drilling and seismic operations. Other types of work where work permits are required are:

- ☐ Confined Space Entry
- ☐ Hot Work & other Fire and Explosion Hazards
- ☐ Lockout / Tagout
- ☐ Pressure Testing
- ☐ Ground Disturbance

If conditions change from those outlined in the permit, the permit becomes invalid and all work must stop until a new work permit is prepared.

9. Safety Meetings

Pre-job safety meeting must be held prior to undertaking a hazardous or potentially hazardous activity.

- ☐ Ensure everyone on lease understands the work to be done, hazards they may encounter and safety precautions to be taken
- ☐ Document the meeting separately or as part of permit.
- ☐ Document attendance of all personnel at meeting.

10. Incident/Accident Reporting

All incidents, injuries and near misses that occur on the job, no matter how small, must have a preliminary written report within 24 hours to a Blackspur supervisor / representative and to a Health & Safety Representative in Calgary within 48 hours.

Remember: Do not disturb the scene of an accident when there has been an injury.

11. Blackspur Codes of Practice

Confined Space Entry must be performed according to Blackspur's confined space entry code of practice. Reference - Section 12 of Blackspur's Health & Safety Policies & Procedures Manual.

Flammable Atmospheres (Hot Work) require a work permit to be issued. A Fire and Explosion Prevention plan is required for all service rig activities.

Ground Disturbances shall be authorized by issuing a "Safe Work Permit" and completing a Pre-Ground Disturbance Checklist. Never enter an excavation deeper than 1.5 m (1.4 m in Saskatchewan and B.C.), unless the well is properly cut back, shored or protected by a cage designed by an engineer.

- ☐ Locations of underground pipelines, cables and conduits must be identified before digging.
- ☐ Buried pipelines and cables must be hand exposed.
- ☐ Adequate access and egress required for excavations.
- ☐ Mechanical equipment is not permitted within 60 cm of energized pipelines and electrical cables at any time.

- ☐ Spoil piles must be at least one meter from the edge of the trench.

Excavations and trenches must be adequately marked or barricaded to prevent accidental entry by personnel, livestock or wildlife.

Overhead Power Lines and Electrical Safety

requires qualified personnel. Equipment must be properly locked out before electrical maintenance can be performed. Workers must maintain appropriate distances between power lines and their equipment. Truckers must use bonding cables when loading hydrocarbons.

Energy Isolation (Lockout/Tagout) of all sources of energy or valves is required, if their accidental opening or closing will create a hazard to workers.

- ☐ Every worker conducting maintenance or repairs must lock out the equipment they are working on, using a lock that is operated by only one key.
- ☐ The worker must retain possession of that key while he is working on the equipment.
- ☐ The worker must remove the lock when he is finished the repair or maintenance work.

Working at Heights above 3 meters requires a written fall protection plan.

Working Alone is potentially a high-risk activity. The Site-Specific or Contractor working alone procedure must include requirements for conducting hazard assessments and tracking workers.

12. Hazardous Substances

Some of the substances you may be exposed to while working at these facilities can be harmful to your health;

- ☐ Personal Protective equipment is required when working with: Asbestos, Benzene, heavy metals, Hydrogen Sulphide, pesticides, radioactive material, solvents and acids, etc.; as identified in Black's Hazardous Exposure Codes of Practice.
- ☐ It is important to refer to MSDS found at the work site or Blackspur's field offices.



Blackspur 24 Hr. Emergency #
1-855-585-1554

Safe Work Permit

A. General		Permit #																															
Location/Facility:		Issued to:																															
Type of Permit: <input type="checkbox"/> Hot Work <input type="checkbox"/> Confined Space ¹ <input type="checkbox"/> Ground Disturbance ² <input type="checkbox"/> Work Clearance <input type="checkbox"/> Other - _____ ¹ Complete Confined Space Pre-Entry Checklist ² Complete Pre-Ground Disturbance Checklist																																	
Permit Period - Start: yy mm dd Time:		Expiry: yy mm dd Time:																															
Work to be performed: _____																																	
Risk Assessment Matrix:		How many workers are required to complete the task / job safely?																															
B. Hazard Management ³ Note: For Hot Work, if critical risk factors are possible or probable, complete Fire & Explosion Prevention Plan Checklist Potential Hazards: <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <input type="checkbox"/> Fuel / Hydrocarbon Sources ³ <input type="checkbox"/> Air / Oxygen Sources ³ <input type="checkbox"/> Energy / Ignition Sources ³ <input type="checkbox"/> Toxic Gas / H₂S / O₂ Deficiency <input type="checkbox"/> Radiation <input type="checkbox"/> NORM <input type="checkbox"/> Weather Conditions: _____ </div> <div style="width: 50%;"> <input type="checkbox"/> Concurrent Operations <input type="checkbox"/> Electrical ³ or <input type="checkbox"/> Chemical Hazard <input type="checkbox"/> Working at Heights <input type="checkbox"/> Slip/Trip/Fall <input type="checkbox"/> Critical Lift or <input type="checkbox"/> Routine Lift <input type="checkbox"/> Other Overhead Hazard <input type="checkbox"/> Road Conditions: _____ </div> <div style="width: 50%;"> <input type="checkbox"/> Pressurized Equipment <input type="checkbox"/> Rotating / Hoisting Equipment <input type="checkbox"/> Heavy Equipment <input type="checkbox"/> Valid Tickets <input type="checkbox"/> Buried Equipment <input type="checkbox"/> Excavation / Trenching <input type="checkbox"/> Lease/ROW Conditions: _____ </div> <div style="width: 50%;"> <input type="checkbox"/> Ergonomics <input type="checkbox"/> Restricted Work Space <input type="checkbox"/> Noise Exposure <input type="checkbox"/> Working Alone <input type="checkbox"/> Line of Fire: _____ <input type="checkbox"/> Other: _____ </div> </div> Hot Work in Hazardous Areas ³: <input type="checkbox"/> Vehicle Access Into Work Area <input type="checkbox"/> Welding / Cutting → <input type="checkbox"/> Polyurethane <input type="checkbox"/> Bypass Fire Detection <input type="checkbox"/> Explosive Actuated Tools <input type="checkbox"/> Electrical (Non-Intrinsically Safe) <input type="checkbox"/> Power Tools (Non-Intrinsically Safe) <input type="checkbox"/> Air Impact Tools <input type="checkbox"/> Other: _____																																	
Comments: _____																																	
C. Hazard Control Requirements and Special Instructions: <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <input type="checkbox"/> Safety Meeting/Orientation <input type="checkbox"/> Lock-out / Tag-out <input type="checkbox"/> Ventilate (Air Mover) <input type="checkbox"/> Contractor Work Procedures <input type="checkbox"/> SDS Review <input type="checkbox"/> Emergency Procedure Review </div> <div style="width: 50%;"> <input type="checkbox"/> Job Hazard Assessment (JHA) <input type="checkbox"/> Block & Bleed / Depressurize <input type="checkbox"/> Housekeeping <input type="checkbox"/> Review Code of Practice <input type="checkbox"/> Communication Systems (i.e. Radios, Pagers, Phone, Fax) </div> <div style="width: 50%;"> <input type="checkbox"/> Notices / Warnings / Barricades <input type="checkbox"/> Purge / Steam / Wash <input type="checkbox"/> Electrically Isolate (inc. Cathodic) <input type="checkbox"/> Fire & Explosion Prevention Plan <input type="checkbox"/> Notifications Complete (i.e. Regulator, One Call, Landowner) </div> <div style="width: 50%;"> <input type="checkbox"/> Lighting (Perm. / Temp.) <input type="checkbox"/> Wheel Chocks <input type="checkbox"/> Ground Cable <input type="checkbox"/> Fall Protection Plan <input type="checkbox"/> Concurrent Ops. Plan. <input type="checkbox"/> Other - _____ </div> </div>																																	
Comments: _____																																	
<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Area free of:</th> <th style="width: 15%;">First Test</th> <th style="width: 15%;">Retest #</th> <th style="width: 15%;">Retest #</th> <th style="width: 15%;">Retest #</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/> Continuous Monitoring or</td> <td>Time</td> <td>Time</td> <td>Time</td> <td>Time</td> </tr> <tr> <td>Combustible Gas</td> <td>% LEL</td> <td>% LEL</td> <td>% LEL</td> <td>% LEL</td> </tr> <tr> <td>Hydrogen (H₂S) Sulphide</td> <td>ppm H₂S</td> <td>ppm H₂S</td> <td>ppm H₂S</td> <td>ppm H₂S</td> </tr> <tr> <td>Oxygen (O₂) Content</td> <td>O₂%</td> <td>O₂%</td> <td>O₂%</td> <td>O₂%</td> </tr> <tr> <td>Carbon Dioxide (CO₂) Content</td> <td>CO₂%</td> <td>CO₂%</td> <td>CO₂%</td> <td>CO₂%</td> </tr> </tbody> </table>				Area free of:	First Test	Retest #	Retest #	Retest #	<input type="checkbox"/> Continuous Monitoring or	Time	Time	Time	Time	Combustible Gas	% LEL	% LEL	% LEL	% LEL	Hydrogen (H ₂ S) Sulphide	ppm H ₂ S	ppm H ₂ S	ppm H ₂ S	ppm H ₂ S	Oxygen (O ₂) Content	O ₂ %	O ₂ %	O ₂ %	O ₂ %	Carbon Dioxide (CO ₂) Content	CO ₂ %	CO ₂ %	CO ₂ %	CO ₂ %
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Oxygen (O ₂) Content	O ₂ %	O ₂ %	O ₂ %	O ₂ %																													
Carbon Dioxide (CO ₂) Content	CO ₂ %	CO ₂ %	CO ₂ %	CO ₂ %																													
D. Protective Clothing & Equipment – Mandatory: Hardhats, Eye Protection, Steel-toed Boots <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <input type="checkbox"/> Fire Resistant (FR) Clothing <input type="checkbox"/> Fire Suppression Equipment <input type="checkbox"/> First Aid Personnel / Equipment </div> <div style="width: 50%;"> <input type="checkbox"/> Personal Monitors / Bump Test <input type="checkbox"/> SCBA / SABA <input type="checkbox"/> Safety Harness / Lanyard </div> <div style="width: 50%;"> <input type="checkbox"/> Face Shield / Goggles <input type="checkbox"/> Other Respiratory Equipment <input type="checkbox"/> Rubber Suit / Boots </div> <div style="width: 50%;"> <input type="checkbox"/> Hearing Protection <input type="checkbox"/> Local Communications <input type="checkbox"/> Other - _____ </div> </div>																																	
Work Permit Agreement: We have reviewed both the Permit and the work to be completed. We understand the nature of the work and the precautions required to complete the work safely. Failure to identify all hazards in the above work permit does not mean that they do not exist. The issuing of this work permit does not relieve the permit recipient from the obligation of being alert, identifying hazards, following all legislated requirements and taking the necessary precautions.																																	
Issuer Signature:		Print Name:																															
Receiver Signature:		Phone:																															
# of Vehicles:	# of Personnel:	Current Blackspur Onboarding Orientation <input type="checkbox"/> Yes <input type="checkbox"/> No	Pre-Job Meeting Completed & Hazards Reviewed <input type="checkbox"/> Attach attendance list. Complete hazard assessment if NO JSA (See Over)																														
Permit Sign-off	Permit Receiver:	Time:	Note: Permit to be reviewed and signed off by receiver and issuer before works starts and when complete.																														
	Permit Issuer:	Time:																															
Work Completed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Work will not continue until a new permit is issued																																	
Comments on work not completed:																																	

WHITE: Blackspur Representative

YELLOW: Contractor / Worker (Retain)

PINK: Contractor / Worker (Return when complete)



Pre-Job Hazard Assessment

Types of Work List all the types of work being done at the worksite.	Activities Related to Work List all the activities required to complete each type of work.	Hazards List the health and safety hazards associated with each activity.	Hazard Controls List the proposed controls for each identified hazard.	Completion Identify the date the control will be in place.

--NOTICE OF SUPERVISION AND EMERGENCY CONTACTS



Date: 2022-05-10		2 well Frac Pad				
Location (Attach list if necessary)	Muster Point: Lease Entrance	Stars Site #				
	Surface:	Downhole:				
NOTICE OF SUPERVISION						
	Name	Phone	Signature/Verbal			
Prime Contact						
VP Operations	Dorn Cassidy	403-863-4299	Verbal			
VP Engineering	Graham Veale	403-809-6684	Verbal			
Production Sup.	Dwayne Collett	403-382-7251	Verbal			
Night Consultant						
2 nd call for onsite operations	Jason Dumanowski	403-554-1030	Verbal			
Operations	Laurie Renner	1-403-382-8848				
Medics						
SCOPE OF WORK						
Activities: 2 well pad – Annular frac						
Direction to site						
AIR/LAND EVACUATION/TRANSPORTING INJURED WORKERS PLAN						
Describe: Non Life Threatening Call 911 / Ambulance, Life Threatening Stars air ambulance # , 1-888-888-4567, Site #						
EMERGENCY CONTACT NUMBERS						
AMBULANCE/STARS	911 / Stars # , 1-888-888-4567	POLICE	911			
HOSPITAL	911 or	OH&S	1-866-415-8690			
FIRE/FORESTRY	Fire 911	ENVIRONMENT	Alberta 1-800-222-6514			
EUB/SIR/OGC	Drayton Valley 780-542-5182	WCB	1-866-922-9221			
LAND OWNER		OCCUPANT				
Black Spur Emergency	1-855-585-0554					
As a Supervisor or Designated Supervisor, you must adhere to the Blackspur and Contractor Health, Safety and Environment Programs, confirm orientation and training records of all on-site workers, identify hazards and controls related to the worksite prior to commencement of activity, insure proper PPE is utilized for tasks, direct emergency response plan if required, insure well control and blow out prevention, insure compliance with applicable Blackspur Codes of Practice and regulatory, health, safety and environmental legislation.						
SEVEN STEP INITIAL RESPONSE STRATEGY						
1: Evacuate	2: Alarm	3: Assess	4: Protect	5: Rescue	6: Revive	7: Medical Aid



Appointment of Supervisor

TAKE NOTICE THAT BLACKSPUR OIL CORP. (Prime Contractor) HEREBY APPOINTS

Dustin Kreiser (name of supervisor) as the Worksite Supervisor of the
following undertaking:

☐ Drilling ☒ Completion/Workover ☐ Pipeline/Facilities Construction ☐ Other (indicate activity) – _____

Description of operations / activities to be carried out: Completions Supervisor for Thorsby Completion

Located at the following locations: _____

During the time period from: __ day, __ month, 2019 year, to __ day, __ month, 2019 year

ALTERNATE CONTACT: representative for the Prime Contractor if the Worksite Supervisor becomes incapacitated, is inaccessible or you are unable to resolve your concern: (name) Jason Dumanowski

Contact phone numbers: 403-663-8357 (work); 403-554-1030 (cell); _____ (home)

The Supervisor's duties and responsibilities include the following matters:

- ☒ Implement the Prime Contractor's safety program at the worksite.
- ☒ Check that all employers on the worksite have a safety program, including safe work procedures.
- ☒ Ensure all employers understand and agree to follow all requirements of the Prime Contractor's safety program that are not already met by their own safety program.
- ☒ Direct and coordinate the efforts of all employers at the worksite, including:
 - Review HSE Policy and clarify roles and responsibilities of all employers and supervisors;
 - Ensure orientation of all employers and visitors on arrival to worksite;
 - Identify and document the name of on-site supervisor for each employer. Identify 'lead' and 'supporting' service contractors;
 - Communicate and address overall job and task specific hazards;
 - Resolution of any discrepancies between safe work procedures;
 - Safe transportation, storage, use and disposal of all hazardous substances.
- ☒ Identify hazards related to the specific worksite, the planned program or the materials provided by the Prime Contractor. Inform all employers of these hazards and ensure procedures are in place to control these hazards. All work is to be stopped when an unsafe act or condition is identified.
Remember: Every person has the right and responsibility to question their supervisor about a job that they believe to be unsafe or unnecessarily dangerous without fear of repercussion.
- ☒ Ensure the following site specific hazard controls meet requirements and standards:
 - Well control and blowout prevention, as applicable;
 - Detection and control of hydrogen sulfide gas emissions;
 - Detection and control of any flammable substances that may be emitted. Consult IRP 18 / Fire and Explosion Prevention Plan form.
- ☒ Establish, review with employers, post information and direct site-specific emergency response procedures, ensuring required drills are conducted.
- ☒ Monitor work activities of all employers and work activities to verify:
 - Compliance with safety legislation;
 - Safe work procedures and proper use of PPE are followed;
 - Hazards are identified, addressed and reported;

- Participation in tailgate safety meetings;
- All employees receive supervision and training from their employer, as applicable (e.g. New/Young Worker, IRP 7).

☒ Ensure accidents / incidents / close calls are reported and participate in investigation, as required.

The Worksite Supervisor is knowledgeable about and experienced in all of the matters listed above.

Assigned by (Blackspur Representative): Graham Veale

Contact phone numbers: 403-460-0031 ext 101 (work); 403-809-6684 (cell); _____
(home)

Accepted by (Worksite Supervisor): _____

Contact phone numbers: _____ (work); 403-502-4023 (cell); _____
(home)