

**IDAHO DEPARTMENT OF LANDS
DIRECTOR'S OFFICE**
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Boise, ID 83720-0050
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MICK THOMAS, DIVISION ADMINISTRATOR
SECRETARY TO THE COMMISSION

**IDAHO OIL AND GAS
CONSERVATION COMMISSION**
Betty Coppersmith, Chair
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Dustin Miller
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September 27, 2022

Nathan Caldwell
Snake River Oil and Gas /NWGP
Weiser Brown Operating
117 E. Calhoun St. (Box 500)
Magnolia, Arkansas 71753

via e-mail:caldwell.nathan@weiser-brown.com

Re: Permit to Drill #11-075-20040, Barlow #3-14, Payette County Idaho

Dear Mr. Caldwell:

The Idaho Department of Lands (IDL) has completed our review of this Application for Permit to Drill (APD) for oil and gas. The Department has determined that the application meets the requirements of Idaho Code § 47-316, Idaho Code § 47-317, Idaho Code § 47-319 and IDAPA 20.07.02.200.

The Idaho Department of Water Resources (IDWR) has reviewed the application as required under Idaho Code § 47-316(1)(b) and has determined that if this well is cased and cemented as described in the application there should be no adverse effects on the local ground water resources or water supply wells in the immediate vicinity.

The Department conducted a technical review of well log data, completion information, and production information for the Barlow #1-14, Barlow #2-14, Fallon #1-11, and Dutch Lane #1-13 wells. Based on that information and review, the Department determines that the target "C" sand, if productive, is very likely a separate source of supply and should not be in communication with other producing intervals within the unit. Thus, the application meets the requirements of Idaho Code § 47-316 and IDAPA 20.07.02.200.

Enclosed is a copy of the application that is incorporated as part of the approved permit along with the following stipulations:

1. The conductor pipe shall be cemented to the surface as required by IDAPA 20.07.02.310.04. Permittee shall use ready mix cement unless water is encountered, in which case an appropriate slurry mix will be used.

2. During drilling and logging of the hole for the production casing, the permittee shall identify any water bearing zones and isolate those zones in the annular space during cementing or completion activities as required by IDAPA 20.07.02.310.05.d and IDAPA 20.07.02.310.14.
3. The permittee shall submit an affidavit covering the initial BOP pressure test after installation. This affidavit shall be signed by the operator or contractor attesting to the satisfactory pressure test as required by IDAPA 20.07.02.310.06.f.
4. The permittee shall ensure tanks are adequately sized, designed, and constructed for the reception and confinement of mud and cuttings and to prevent contamination of streams and potable water as required by IDAPA 20.07.02.310.10 and 310.11.
5. Drilled holes cannot be used for any other purposes unless they are constructed according to the applicable well construction standards administered by the Idaho Department of Water Resources as required by IDAPA 20.07.02.502.07.
6. Applicant shall obtain any needed water rights from Idaho Department of Water Resources if nearby wells will be used to supply water for the drilling operations.
7. This permit allows for an additional one hundred fifty (150) feet of drill hole below the permitted depth of the well for the purposes of logging and casing. However, the operator shall not complete nor produce the well below the permitted depth without authorization from the Department.
8. All well information required by Idaho Code § 47-324(4), IDAPA 20.07.02.340 and 341 shall be submitted to IDL within 30 days of the operational activity.
9. Well log information shall be submitted in paper and electronic formats as required by IDAPA 20.07.07.340.05. Paper copies shall be submitted on a minimum of 24 lb. Premium Pre-Fold Bond Paper. All log copies shall be the final processed logs as provided by the service company. No field and or preliminary copies, nor thermal paper prints shall be accepted.
10. Idaho Department of Lands inspectors shall have 24-hour, unencumbered access for compliance and regulatory purposes.
11. All cementing operations shall be in accordance with IDAPA 20.07.02.310. Cement will be returned to surface on the surface casing via the pump and plug method or other method as approved by the Department.
12. This permit does not grant any right for ingress or egress to any surface estate; nor does this permit grant the right to production from unleased lands.

13. If the proposed target described in the Geologic Prognosis of the submitted APD (Sand C) is hydrocarbon-bearing, no production may occur without a final processed angular deviation and directional survey being submitted to the Department.
14. If potential hydrocarbon-bearing zones are encountered other than the proposed target described in the Geologic Prognosis of the submitted APD (Sand C), no production may occur from these zones without authorization from the Department. Any production that occurs in the target sands is subject to the conditions set forth in the Integration Order for Docket CC-2016-OGR-01-001, dated August 5, 2016.
15. The Department in accordance with Idaho Code § 47-315, may request well pressure data in the Barlow #3-14 (USWN 11-075-20040), Barlow #1-14 (USWN 11-075-20033) and Barlow #2-14 (USWN 11-075-20036) wells to confirm reservoir separation between the producing intervals in each well.

You must ensure that all operations are conducted in accordance with the requirements of Idaho Code title 47 chapter 3 (Mines and Mining Oil and Gas Wells – Geologic Information, and Prevention of Waste) and IDAPA 20.07.02 (Rules Governing Conservation of Oil and Natural Gas in the State of Idaho).

The Department received and considered the comments filed on this application. The public comment asserted that the application should be denied for the reasons in IDAPA 20.07.02.200.05.d. As explained above, the Department relied on IDWR's technical expertise and IDL's own technical review to determine the application for permit to drill meets the legal requirements in statute and rule.

The potential for fires in the state of Idaho are always a possibility, especially in the drier summer and autumn months. To prevent human-caused fires, please review the guidelines on the Idaho Department of Lands website for operating vehicles and equipment in a safe manner:

<https://www.idl.idaho.gov/fire-management/fire-prevention-and-preparedness/prevent-unwanted-human-caused-wildfires/>

This permit will be administered by IDL staff and possibly a contractor hired by IDL. We will be inspecting the drilling operation. Please contact me at 208-334-0298 if you have any questions.

Nathan Caldwell
September 27, 2022
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Sincerely,



Mick Thomas
Division Administrator
Minerals, Navigable Waters, Oil & Gas
Idaho Department of Lands

Enc.\1Barlow #3-14 Approved APD

ecc: Patti Nitz, Payette County
Chad Hersley, IDWR
Michael Christian, Hardee Piñol & Kracke, PLLC
James Thum, Idaho Dept. of Lands
Clint Harman, Consultant for Snake River Oil & Gas



IDAHO OIL AND GAS CONSERVATION COMMISSION

Application For Permit to Drill, Deepen, or Plug Back



RECEIVED
jthum , 9/2/2022, 3:40:12 PM

APPLICATION TO: [X] Drill (\$2,000) [] Deepen (\$500) [] Plug Back (\$500)

NAME OF OPERATOR: Snake River Oil & Gas Date: 8/22/2022

Address: 117 East Calhoun Street, P.O. Box 500

City: Magnolia State: AR Zip Code: 71753 Telephone: 870-234-3050

Contact Name: Nate Caldwell Email Address: caldwell.nathan@weiser-brown.com

Emergency Contact Name/Phone: Nate Caldwell / 870-904-7305

DESCRIPTION OF WELL AND LEASE

Name of Lease: Barlow Well Number: #3-14 Elevation (ground): 2164.4

Well Location: Section: 14 Township: 8N Range: 5W (or block and survey)

(Give footage from Section lines): 2494' FWL & 1567' FSL

Latitude/Longitude (Dec Degrees NAD83 minimum requirement): N 44deg 01' 47.157" / W116-54'14.399"

Datum: [] WGS84 [X] NAD83 [] NAD27 [] Other:

Field and Reservoir (if wildcat, so state): Harmon / Wildcat County: Payette

Distance, in miles, and direction from nearest town or post office: 1.61 miles to Fruitland, ID Post Office

Nearest distance from proposed location to property or lease line: 1567' feet Nearest producing well: 20' feet

Type of Test/Unit: [X] Gas / 640 acre unit [] Gas / 160 acre unit [] Oil / 40 acre unit [] Other/Docket No. CC-2016-OGR-01-001

Is Operator requesting a well location exception? [] Yes [X] No Confidential Well Status Request? [X] Yes [] No

Distance from proposed location to nearest drilling, completed or applied for on the same lease: 20' feet

Proposed depth: 5500' Approx. date work will start: 9/20/2022 Number of acres in lease(s): 640

Number of wells on lease, including this well, completed in or drilling to this reservoir: One (1)

If lease purchased with one or more wells drilled, complete the following information:

Purchased from (Name): AM Idaho

Address of above: 15,021 Katy Fwy, Ste. 400, Houston, TX 77094

Bond Type and Number: Idaho OGCC Bond # ROG 000 1695

Surface Rights Owner (At proposed surface location): Name Brad/Angie Barlow Phone: 208-452-3630

Does the drilling unit contain state leases? 1 If yes, check all that apply:

[X] IDL [] IDFG [] IDT [] Public Trust [X] Other: State Water Bottoms

Does this application include the following actions? If yes, check all that apply:

[] Well Treatment [] Pit construction [X] Directional or Horizontal Drilling

Applications that include well treatments, pit construction, and directional drilling must provide attachments with the information required from the respective sections of IDAPA 20.07.02 and Idaho Code § 47-3. If these activities are not included in this application, then a separate application and approval will be required prior to commencement of any of these activities.

Remarks: (If this is an application to deepen or plug back, briefly describe work to be done, giving present producing zone and expected new producing zone)



IDAHO OIL AND GAS CONSERVATION COMMISSION
Application For Permit to Drill, Deepen, or Plug Back



Applicant(s) should be familiar with and adhere to IDAPA 20.07.02, Rules Governing Conservation of Oil and Natural Gas in the State of Idaho, and Idaho Code § 47-3, Oil and Gas Wells--Geologic Information and Prevention of Waste.

Please check the boxes below to indicate that you have supplied the required information.

Maps Required

- Attach a survey plat or map, preferably on a scale of one (1) inch equals one thousand (1,000) feet, prepared by a licensed surveyor or engineer. All maps and plats should include a bar scale for reference.
The plat must show:
Distance of the proposed surface location to the nearest occupied structure and the nearest highway.
The proposed well location. For directional wells, both surface and bottom hole locations should be marked.
The location of the well with reference to the nearest lines of an established public survey.
All leased tracts held by the applicant within the drilling unit. Distances of the proposed well from the two nearest unit boundary lines, if applicable, and from the nearest oil or gas wells on the same unit.
The location of the nearest structure with a water supply, or the nearest water well as shown on the IDWR registry of water rights or well log database.

Other Required Information

- Estimated depth to the top of the important geologic markers.
Estimated depth to the top of the target formations.
Information on the type of tools to be used.
Proposed logging program.
Proposed casing program, including size and weight of casing and the depth at which each casing type is to be set.
Type and amount of cement to be used, and the intervals cemented.
Information on the drilling plan (drill pad and rig set up, etc).
Schematic diagram of the BOP and well head assemblies, including the minimum size and pressure rating of all components of the BOP and well head assemblies.
Best management practices to be used for erosion and sediment control.
Plan for interim reclamation of the drill site after the well is completed, and a plan for final reclamation of the drill site following plugging and abandonment of the well.

CERTIFICATION: I, Nate Caldwell the undersigned, state that I am the Operations Manager of Snake River Oil & Gas (company) and that I am authorized by said company to make this application, and that this application was prepared under my supervision and direction, and that the facts stated herein are true, correct and complete to the best of my knowledge.

Date: 9/2/2022 Signature: [Signature]

NOTICE: Before submitting this form, be sure that you have given all information requested.

IDL Office Use Only:
Approval Date: 9/27/2022 Approved by: Mick Thomas DeAdair
Signature and Title

US Well Number: 11-075-20040 Operator Number (if known):



IDAHO OIL AND GAS CONSERVATION COMMISSION
Application For Permit to Drill, Deepen, or Plug Back



ADDITIONAL INFORMATION

State Land Ownership Explanation¹

IDL	Idaho Department of Lands
IDFG	Idaho Department of Fish and Game
IDT	Idaho Department of Transportation
Public Trust	State owned beds and banks of navigable rivers and lakes
Other	Other state agencies not named above. Includes, but is not limited to; Idaho Department of Parks and Recreation, Idaho Military Division, etc.

Fees: IDAPA 20.07.02.200.02

An application fee must accompany each application for permit to drill, deepen, or plug back. No service fee is required for a permit to deepen or plug back in a well for which the fee has been paid for permit to drill unless the drilling permit has expired.

Permit Denial: IDAPA 20.07.02.200.05

Applications may be denied for the following reasons:

- a. Application fee was not submitted.
- b. Application is incomplete.
- c. Failure to post required bonds.
- d. Proposed well will result in a waste of oil or gas, a violation of correlative rights, or the pollution of fresh water supplies.

Well Completion/Recompletion Report: IDAPA 20.07.02.340

Within thirty (30) days after the completion of a well drilled for oil or gas, or the recompletion of a well into a different source of supply, or where the producing interval is changed, a completion report shall be filed with the Department, on a form prescribed by the department.

Log Submittals: IDAPA 20.07.02.341

All wells shall have:

- 1. A lithologic log from the bottom of the hole to the top, to the extent practicable.
- 2. A bottomhole location survey log.
- 3. A cement bond log.
- 4. If other logs were run, including, but not limited to, resistivity, gamma-neutron log, sonic log, etc., then the owner or operator shall retain a copy regardless of results.
- 5. All logs shall be submitted to the Department in paper and digital formats within thirty (30) days of the log being run. If logs were run in color, then the submitted copies shall also be in color. Digital formats must be Tiff and LAS 2.0 or higher. Logs submitted to the department must have a scale of one (1) inch for correlation logs and five (5) inches for detail logs.

Please submit Application to Drill, Deepen, or Plug Back to:

Idaho Department of Lands
Oil and Gas Program
300 N. 6th Street, Suite 103
PO Box 83720
Boise, Idaho 83702-0050

Snake River Oil and Gas, LLC

IDL Permit Supplement

Barlow 3-14

Payette County, ID

August 18, 2022

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Rig Location Plat

Drilling String Configuration/Directional drilling plan

Blowout Preventer (BOP) Schematic

Drilling Plan

Logging Plan

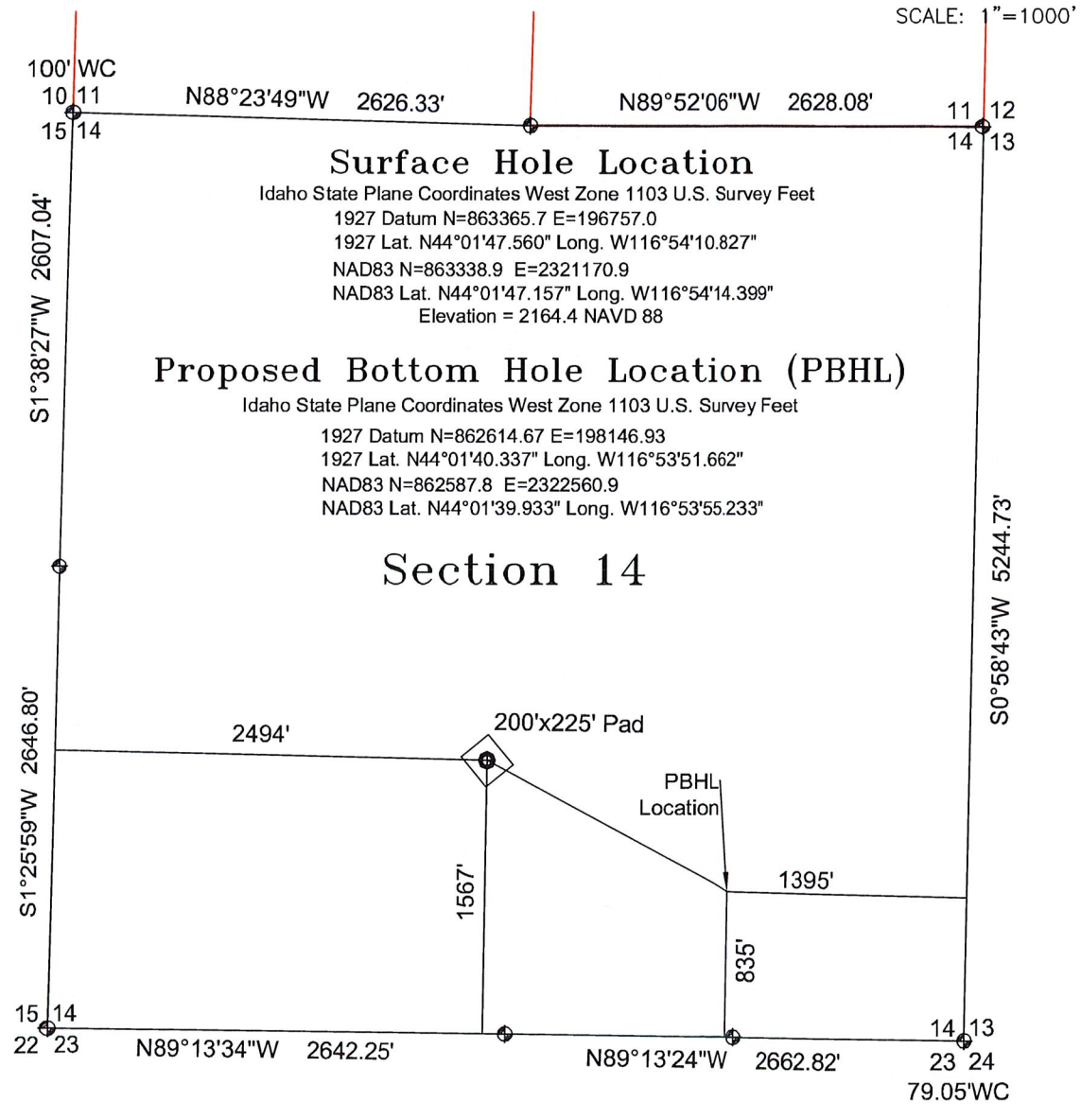
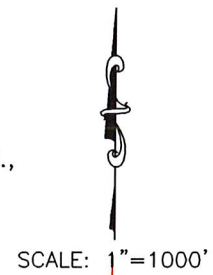
Wellhead

Wellbore Schematic

Reclamation

EXHIBIT MAP OF Barlow 3-14

LOCATED IN
A PORTION OF THE SOUTHWEST 1/4,
OF SECTION 14, TOWNSHIP 8 NORTH, RANGE 5 WEST, B.M.,
PAYETTE COUNTY, IDAHO
-2022-



PROFESSIONAL LAND SURVEYOR
REGISTERED
Craig R. McCullough
STATE OF IDAHO
CRAIG R. McCULLOUGH

22 Aug 22

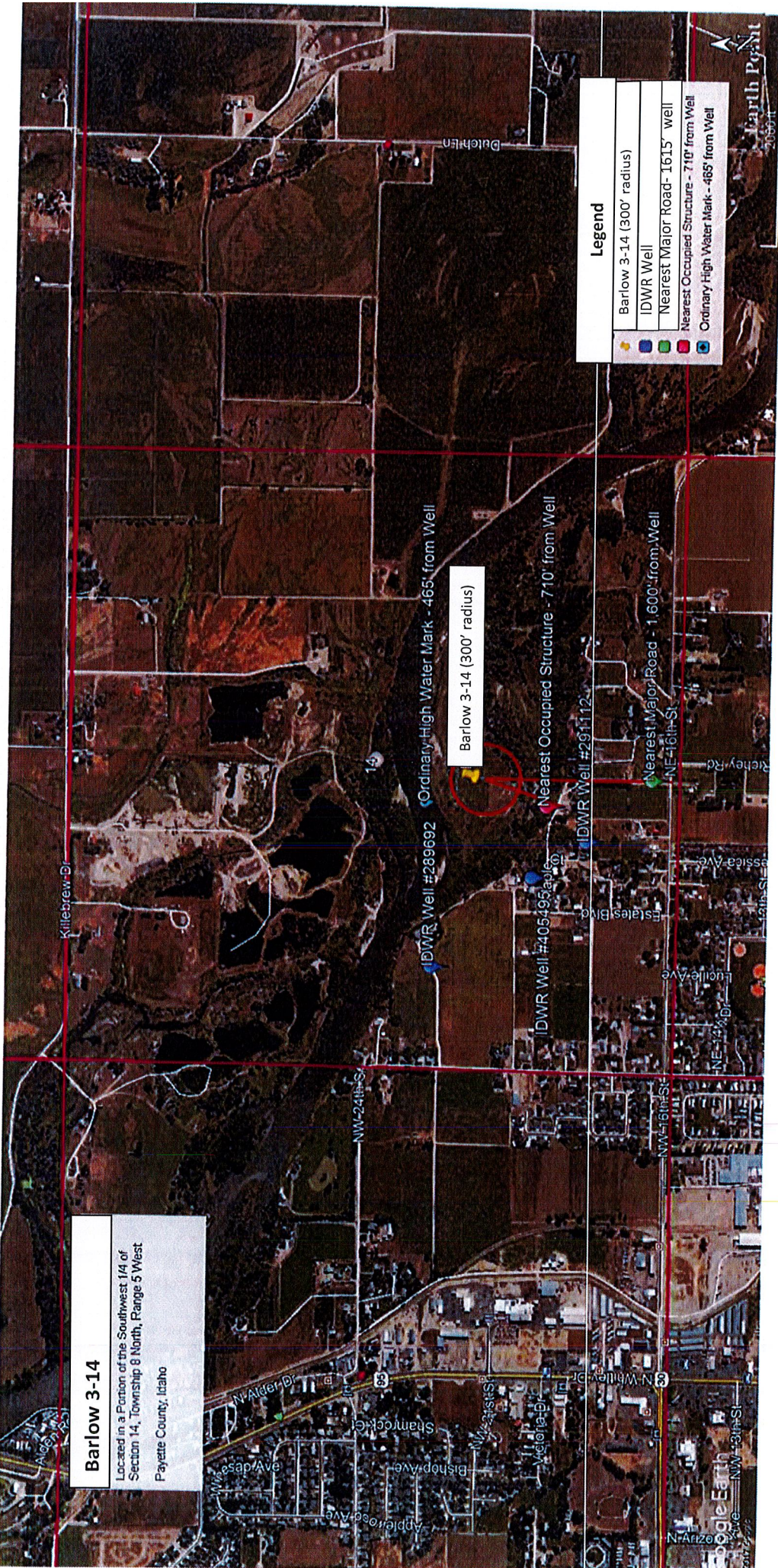
4 Rivers Surveying Inc.

1310 Shady Lane, EMMETT IDAHO
PHONE: 855-477-6901

Barlow 3-14
 Located in a Portion of the Southwest 1/4 of
 Section 14, Township 8 North, Range 5 West
 Payette County, Idaho

Barlow 3-14 (300' radius)

Legend	
	Barlow 3-14 (300' radius)
	IDWR Well
	Nearest Major Road - 1615' - well
	Nearest Occupied Structure - 710' from Well
	Ordinary High Water Mark - 465' from Well



Google Earth
 2000 ft

Geologic Prognosis

2.1 Prospect

The Barlow 3-14 well is designed to test Sand "C". It is estimated that the target Sand "C" will be encountered at +/- 3670' Measured Depth (MD) in the Proposed Well (3670' MD / 3290' TVD / -1112' Subsea Depth). The nearby Barlow #1-14 well is an existing well which produces from a stratigraphically deeper separate source of supply in Sand "D". The nearby Barlow #2-14 well is an existing well that produces from a stratigraphically shallower separate source of supply in Sand "B".

2.2 Proposed Well

The well is to be drilled as a directional well to the southeast to a depth of 5417' MD / 5028' TVD. The surface and bottomhole location will be in Section 14-Township 8N - Range 5W (Payette County, Idaho).

2.3 Estimated Geological Formation Tops

BARLOW #3-14 EXPECTED OCCURRENCE OF GEOLOGIC MARKERS	EXPECTED DEPTH(ft) MD	EXPECTED DEPTH(ft) TVD
Claystone - +/- 3700' of claystone expected with occ. thin Sandstones and siltstones of Glens Ferry/ Chalk Hills Fms. Undiff. From 200' to 3670' MD	200'	200'
Sands A & B	Not Present	Not Present
Sand "C"	3670'	3290'
Sand "D"	3825'	3440'
Basalt	4470'	4081'
Proposed Total Depth	5417'	5028'
Payette Fm	Not Reached	Not Reached

2.4 Sand "C" is a Separate Source of Supply

1. 3-D Seismic data in this area shows 3 distinct stratigraphically separate sands, which we have named Sands "B", "C" and "D" from shallowest to deepest. They are vertically separated by typically 100' to 200' of impermeable claystones resulting in the sands being isolated reservoirs, and thus "Separate Sources of Supply".
2. The Barlow #1-14 well produces from Sand "D", which is approximately 130' gross thickness and is producing on average 3 MMcfgd with 1100 # flowing tubing pressure.

3. The Barlow #2-14 well produces from Sand "B", which is found 230' shallower than Sand "D" and is approximately 30' gross thickness. About 200' of impermeable claystone separates Sands "B" and "D" in this well. An excellent correlation is made between the 1-14 and 2-14 well logs, establishing that Sand "D" is well developed in both wells, and that Sand "B" is not present in the 1-14.
4. The Barlow #1-14 and #2-14 wells have pressure and production histories that document that they are separate reservoirs, and thus "Separate Sources of Supply". The 2-14 is producing typically 700 Mcfgd with 650# of flowing tubing pressure.
5. The 3-D seismic data indicated that Sand "B" would be found productive and separate from Sand "D" where the #2-14 was drilled, prior to drilling the well. This prediction was proven by the well log correlations and well performance post-drilling and completion.
6. The 3-D seismic further indicates that there is another isolated reservoir, (Sand "C"), stratigraphically isolated between Sands "B" and "D" just to the east of the Barlow #1-14 well.
7. This proposed well (#3-14) will test that concept and is expected to find Sand "C" approximately 100' to 150' above Sand "D". The well will continue to drill approximately 1700' below Sand "C" to test deeper sands and to establish a solid stratigraphic correlation between the wells.
8. There is a basalt sill that is expected to be encountered at approximately 4470' MD in the 3-14 (per the 3-D seismic) which should provide a good correlation with the same basalt sill encountered in the Barlow #1-14 at 3902' MD.
9. If Sand "C" is encountered as expected in the 3-14 and the well is completed, well test data obtained from completing the sand should further establish that the presumed Sand "C" reservoir is a "Separate Source of Supply".

IDL Permit Supplement
Barlow 3-14

Payette County, ID
August 18, 2022

Leasing Exhibit

The 640 acre drilling unit was spaced and integrated under Idaho OGCC Order 2016-OGR-01-001.

Site Preparation

Erosion Control

This well is to be drilled on an existing drill site pad that also accommodates the Barlow 1&2-14 wells. The location is soil cemented with a 36" containment berm surrounding the entire pad. All cut and fill slopes are designed with a minimum 2:1 grade to minimize runoff erosion and ensure mechanical stability.

Well Construction

Well Interval	<u>Bit/Hole</u>	<u>CSG, Grade/Wt</u>	<u>CSG Depth</u>	<u>TOC</u>	<u>CMT Type/Volume</u>
Conductor	20"	16"/H-40/65#/ft	120'	Surface	200 SKS A/C
Surface	12.25"	9-5/8"/K55/40#/ft	1125'	Surface	Lead-247 sks Typelll-RC Econolite Plus. Tail-80sks Typelll-RC Gas Bond.
Production	8.5"	5.5"/J/K-55/17#/ft	5500'	Surface	Lead-394 sks ClassG-RC Gas Bond. Tail-400 sks ClassG-RC Gas Bond.

Surface Casing Detail

- 9 5/8" float shoe
- 1 full length joint 9 5/8" 40# K-55 STC for shoe track - centralized
- 9 5/8" float collar
- 9 5/8" 40# K-55 STC Casing jts to surface
- Cement basket for 9 5/8" casing approx. 80' below surface.
- Centralization – Install 1 cent /jt

Production Casing Detail

- 5 1/2" float shoe
- 2 full length jts 5 1/2" 17# K-55 LTC for shoe track – centralized
- 5 1/2" float collar
- 5 1/2" 17# K-55 LTC csg with 1 centralizer / joint to surface (turbolizers and scratchers placement TBD).

Cementing Program

Conductor: 200 sks Class A or C – surface to 120'

Surface Casing: 9 5/8" (Excess 150%)

<u>Stage</u>	<u>Volume</u>	<u>Yield</u>	<u>Density</u>	<u>Description</u>
<u>Spacer</u>	20 bbls	N/A	8.54 ppg	20 bbls 4% KCL
<u>Lead Cement</u>	768 ft3	3.11 ft3/sk	11.0 ppg	247 sks Type III - RC Econolite Plus
Tail Cement	100 ft3	1.36 ft3/sk	14.8 ppg	80 sks Type III - RC Surface Tail
Displacement	80 bbls	N/A	9-10 ppg	Drilling fluids/Water
T/O CMT	102 ft3	1.36 ft3/sk	14.8 ppg	75 sks Type III - RC Surface Tail

***Depth: 1,125' MD Hole Size: 12 ¼" Mud weight: 8.7 ppg**

Production Casing (Excess 20%)

<u>Stage</u>	<u>Volume</u>	<u>Yield</u>	<u>Density</u>	<u>Description</u>
Spacer	20 bbls	N/A	8.34 pg	10 bbls mud flush
Spacer	40 bbls	N/A	12 ppg	40 bbls 4% KCL weighted spacer
Lead Cement	677 ft3	1.72 ft3/sk	13.0 ppg	394 sks Class G - RC Gas Bond Lead
Tail Cement	528 ft3	1.32 ft3/sk	14.2 ppg	400 sks Class G - RC Gas Bond Tail
Displacement	102 bbls	N/A	8.54 ppg	102 bbls 4% KCL

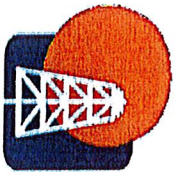
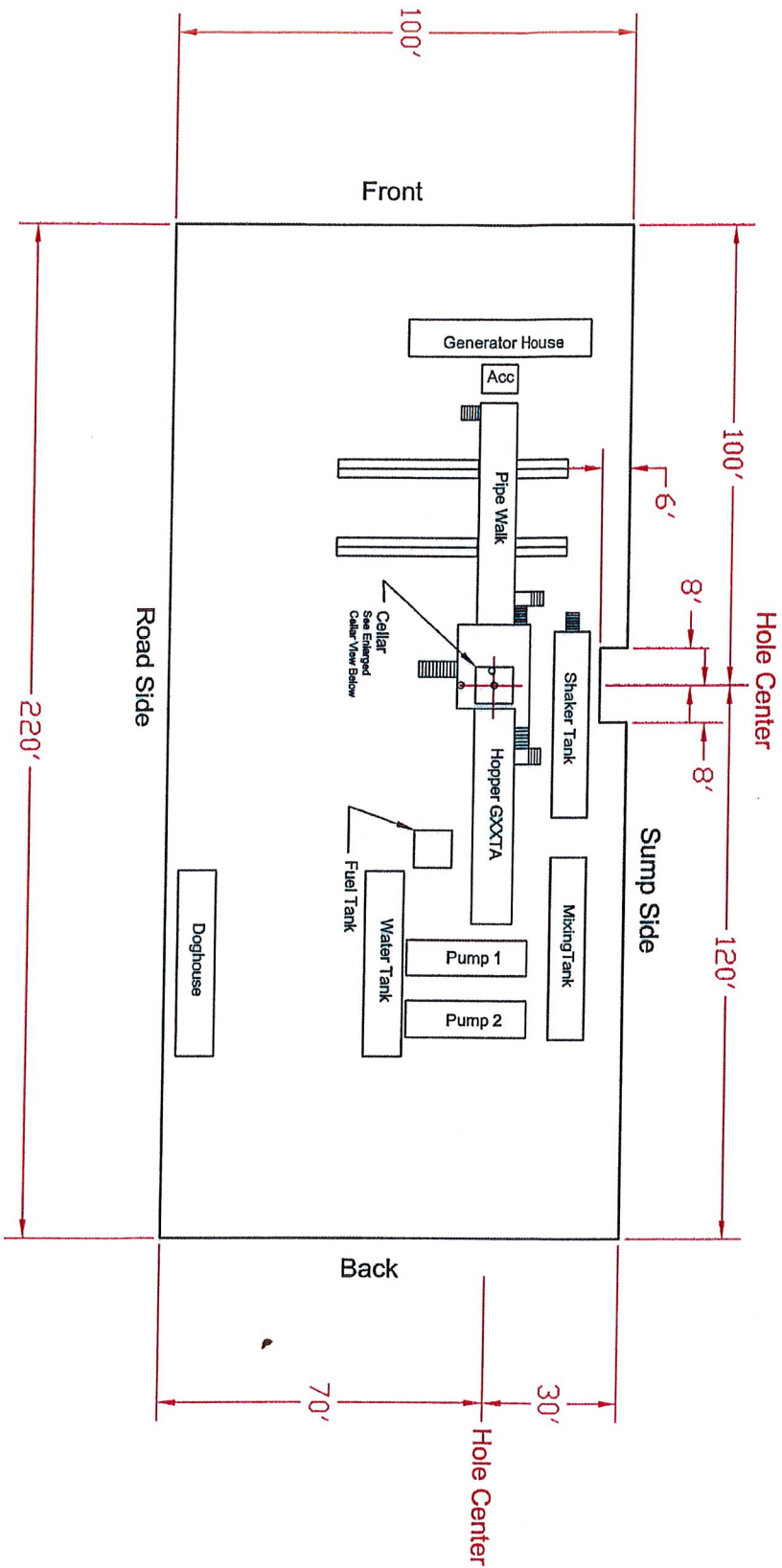
Depth: 5,500' MD Hole Size: 8 ½" Mud weight: 11.5 ppg

IDL Permit Supplement
Barlow 3-14

Payette County, ID
August 18, 2022

Rig Location Plat

See Paul Graham Drilling Rig 4 Location Diagram.



Paul Graham Drilling
Rig 4 Location Diagram

Filename: Rig4 Plot LD.dwg

Revision: May 25, 2006

IDL Permit Supplement
Barlow 3-14

Payette County, ID
August, 2022

Drill String Configuration/Directional Drilling plan

- See Titan Directional drilling plan
- See Drill string configuration

Types of Tools to be Used

BHA #1 Pendulum Drilling Assembly

- 12 ¼" Mill tooth bit
- Bit sub w/ float
- 1 (8") Drill Collar (DC)
- 12 ¼" Weld Blade Stabilizer (1/8" UG)
- 1 – 8" Drill Collar
- 12 ¼" Weld Blade Stabilizer (1/8" UG)
- X/O (if needed)
- 15 – 4" HWDP
- Drilling Jars
- 5 – 4" HWDP
- X/O to 4" Drill Pipe (if needed)

BHA #2 Directional Drilling Assembly

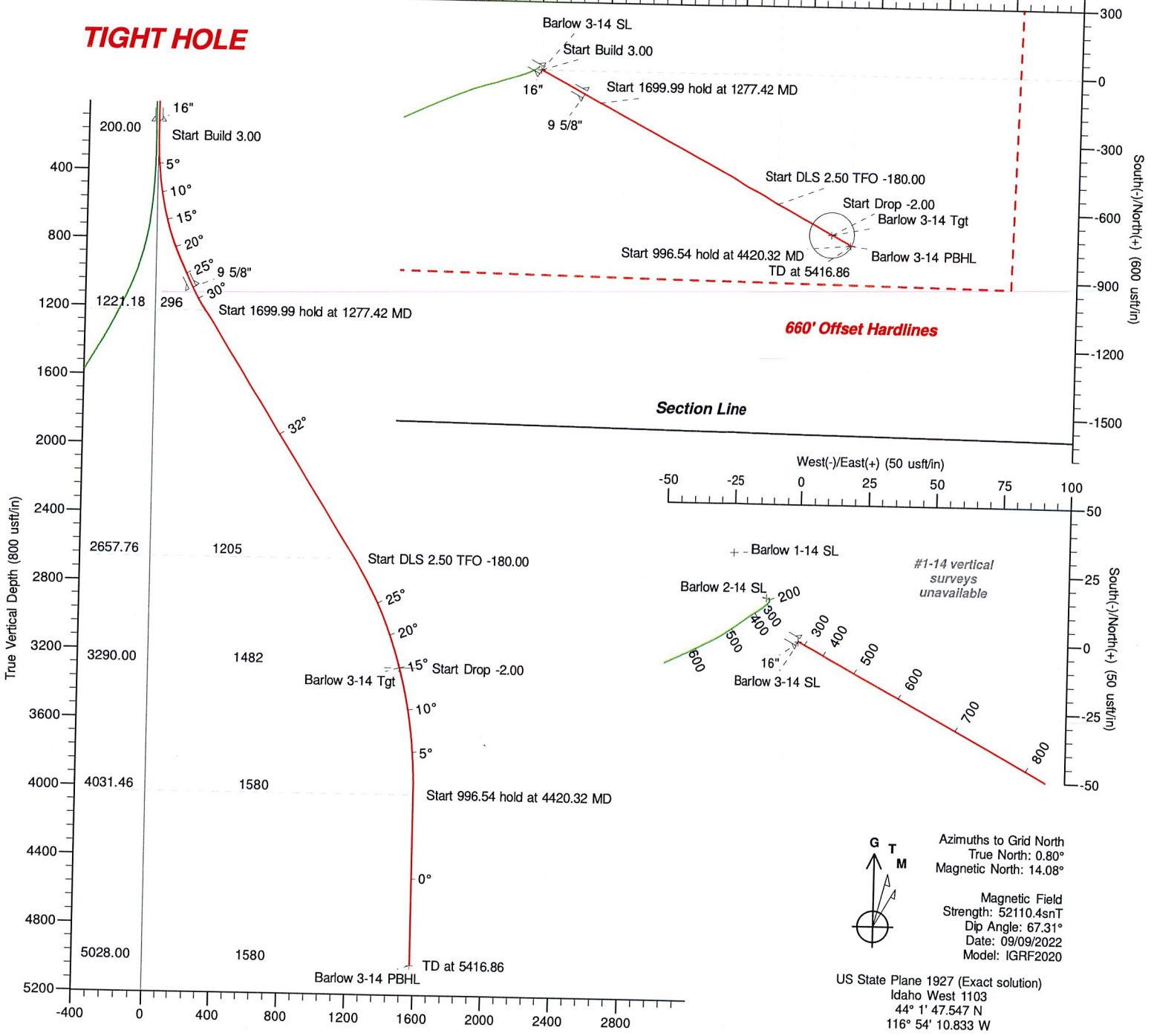
- 8 ½" Smith FDS bit or equivalent, with 6 ¾" directional motor assembly
- 1 – 6 ¾" float sub
- 8" Spiral integral blade stabilizer
- 6 ¾" mule shoe sub
- 6 ¾" non-mag drill collar (MWD)
- 6 ¾" non-mag drill collar
- X/O (if needed)
- 15 – 4" Heavy weight drill pipe
- Drilling jar assembly
- 5 – 4" Heavy weight drill pipe
- 4" 14.00 #/ft XH Drill pipe

EST. CASING DETAILS

TVD	MD	Size
120.00	120.00	16
1089.26	1125.00	9-5/8

Wellbore: #3-14 OH
 Design: Plan #2

TIGHT HOLE



G T M
 Azimuths to Grid North
 True North: 0.80°
 Magnetic North: 14.08°
 Magnetic Field
 Strength: 52110.4snT
 Dip Angle: 67.31°
 Date: 09/09/2022
 Model: IGRF2020

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Barlow 3-14 SL	0.00	0.00	0.00	863364.28	196756.52	44° 1' 47.547 N	116° 54' 10.833 W	Point
Barlow 3-14 Tgt	3290.00	-703.25	1304.43	862661.00	198061.00	44° 1' 40.782 N	116° 53' 52.847 W	Circle (Radius: 100.00)
Barlow 3-14 PBHL	5028.00	-749.57	1390.35	862614.67	198146.93	44° 1' 40.337 N	116° 53' 51.662 W	Point

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
3	1277.42	32.32	118.33	1221.18	-140.43	260.49	3.00	118.33	295.93	
4	2977.42	32.32	118.33	2657.76	-571.78	1060.58	0.00	0.00	1204.90	
5	3670.32	15.00	118.33	3290.00	-703.25	1304.43	2.50	-180.00	1481.92	Barlow 3-14 Tgt
6	4420.32	0.00	118.33	4031.46	-749.57	1390.35	2.00	180.00	1579.54	
7	5416.86	0.00	118.33	5028.00	-749.57	1390.35	0.00	118.33	1579.54	Barlow 3-14 PBHL

Titan Directional Drilling

Survey Report

Company:	Snake River Oil and Gas	Local Co-ordinate Reference:	Well Barlow #3-14
Project:	Payette County, ID W'27	TVD Reference:	est.GL+KB @ 2178.00usft (Grahm)
Site:	Barlow 2-14 Pad	MD Reference:	est.GL+KB @ 2178.00usft (Grahm)
Well:	Barlow #3-14	North Reference:	Grid
Wellbore:	#3-14 OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #2	Database:	EDM 5k-14

Project: Payette County, ID W'27			
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Idaho West 1103		Using geodetic scale factor

Site: Barlow 2-14 Pad, Centered on 2017 prelim #2 stake			
Site Position:		Northing:	863,411.00 usft
From:	Map	Easting:	196,717.00 usft
		Latitude:	44° 1' 48.003 N
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Longitude:	116° 54' 11.383 W
		Grid Convergence:	-0.80 °

Well: Barlow #3-14			
Well Position	+N-S	0.00 usft	Northing: 863,364.27 usft
	+E-W	0.00 usft	Easting: 196,756.52 usft
			Latitude: 44° 1' 47.547 N
Position Uncertainty		0.00 usft	Longitude: 116° 54' 10.833 W
			Ground Level: 2,164.00 usft

Wellbore: #3-14 OH					
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
	IGRF2020	09/09/22	(°) 13.28	(°) 67.31	(nT) 52,110.35463385

Design: Plan #2			
Audit Notes: p2 from surface on line of Well #1 to #2; 20' SE of #2			
Version:	Phase:	PLAN	Tie On Depth: 0.00

Vertical Section:	Depth From (TVD)	+N-S	+E-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.00	0.00	0.00	118.33

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
120.00	0.00	0.00	120.00	0.00	0.00	0.00	0.00	0.00	0.00	
16"										
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	3.00	118.33	299.95	-1.24	2.30	2.62	3.00	3.00	0.00	
400.00	6.00	118.33	399.63	-4.96	9.21	10.46	3.00	3.00	0.00	
500.00	9.00	118.33	498.77	-11.16	20.70	23.51	3.00	3.00	0.00	
600.00	12.00	118.33	597.08	-19.81	36.74	41.74	3.00	3.00	0.00	
700.00	15.00	118.33	694.31	-30.88	57.28	65.08	3.00	3.00	0.00	
800.00	18.00	118.33	790.18	-44.36	82.28	93.48	3.00	3.00	0.00	
900.00	21.00	118.33	884.43	-60.20	111.66	126.85	3.00	3.00	0.00	
1,000.00	24.00	118.33	976.81	-78.36	145.34	165.12	3.00	3.00	0.00	
1,100.00	27.00	118.33	1,067.06	-98.78	183.23	208.16	3.00	3.00	0.00	
1,125.00	27.75	118.33	1,089.26	-104.24	193.35	219.66	3.00	3.00	0.00	
9 5/8"										
1,200.00	30.00	118.33	1,154.93	-121.42	225.23	255.87	3.00	3.00	0.00	

Titan Directional Drilling

Survey Report

Company:	Snake River Oil and Gas	Local Co-ordinate Reference:	Well Barlow #3-14
Project:	Payette County, ID W'27	TVD Reference:	est.GL+KB @ 2178.00usft (Grahm)
Site:	Barlow 2-14 Pad	MD Reference:	est.GL+KB @ 2178.00usft (Grahm)
Well:	Barlow #3-14	North Reference:	Grid
Wellbore:	#3-14 OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #2	Database:	EDM 5k-14

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
1,277.42	32.32	118.33	1,221.18	-140.43	260.49	295.93	3.00	3.00	0.00	
1,300.00	32.32	118.33	1,240.26	-146.16	271.11	308.00	0.00	0.00	0.00	
1,400.00	32.32	118.33	1,324.76	-171.54	318.18	361.47	0.00	0.00	0.00	
1,500.00	32.32	118.33	1,409.27	-196.91	365.24	414.94	0.00	0.00	0.00	
1,600.00	32.32	118.33	1,493.77	-222.28	412.31	468.41	0.00	0.00	0.00	
1,700.00	32.32	118.33	1,578.28	-247.66	459.37	521.88	0.00	0.00	0.00	
1,800.00	32.32	118.33	1,662.78	-273.03	506.44	575.35	0.00	0.00	0.00	
1,900.00	32.32	118.33	1,747.29	-298.41	553.50	628.82	0.00	0.00	0.00	
2,000.00	32.32	118.33	1,831.79	-323.78	600.57	682.28	0.00	0.00	0.00	
2,100.00	32.32	118.33	1,916.30	-349.15	647.63	735.75	0.00	0.00	0.00	
2,200.00	32.32	118.33	2,000.80	-374.53	694.70	789.22	0.00	0.00	0.00	
2,300.00	32.32	118.33	2,085.31	-399.90	741.76	842.69	0.00	0.00	0.00	
2,400.00	32.32	118.33	2,169.81	-425.27	788.83	896.16	0.00	0.00	0.00	
2,500.00	32.32	118.33	2,254.32	-450.65	835.89	949.63	0.00	0.00	0.00	
2,600.00	32.32	118.33	2,338.82	-476.02	882.95	1,003.10	0.00	0.00	0.00	
2,700.00	32.32	118.33	2,423.33	-501.39	930.02	1,056.57	0.00	0.00	0.00	
2,800.00	32.32	118.33	2,507.83	-526.77	977.08	1,110.03	0.00	0.00	0.00	
2,900.00	32.32	118.33	2,592.34	-552.14	1,024.15	1,163.50	0.00	0.00	0.00	
2,977.42	32.32	118.33	2,657.76	-571.78	1,060.58	1,204.90	0.00	0.00	0.00	
3,000.00	31.76	118.33	2,676.90	-577.47	1,071.13	1,216.88	2.50	-2.50	0.00	
3,100.00	29.26	118.33	2,763.05	-601.56	1,115.81	1,267.64	2.50	-2.50	0.00	
3,200.00	26.76	118.33	2,851.33	-623.84	1,157.14	1,314.60	2.50	-2.50	0.00	
3,300.00	24.26	118.33	2,941.58	-644.28	1,195.05	1,357.66	2.50	-2.50	0.00	
3,400.00	21.76	118.33	3,033.61	-662.82	1,229.45	1,396.74	2.50	-2.50	0.00	
3,500.00	19.26	118.33	3,127.27	-679.45	1,260.28	1,431.77	2.50	-2.50	0.00	
3,600.00	16.76	118.33	3,222.36	-694.12	1,287.49	1,462.68	2.50	-2.50	0.00	
3,670.32	15.00	118.33	3,290.00	-703.25	1,304.43	1,481.92	2.50	-2.50	0.00	
3,700.00	14.41	118.33	3,318.70	-706.82	1,311.06	1,489.46	2.00	-2.00	0.00	
3,800.00	12.41	118.33	3,415.97	-717.82	1,331.47	1,512.64	2.00	-2.00	0.00	
3,900.00	10.41	118.33	3,513.99	-727.21	1,348.88	1,532.42	2.00	-2.00	0.00	
4,000.00	8.41	118.33	3,612.64	-734.96	1,363.26	1,548.76	2.00	-2.00	0.00	
4,100.00	6.41	118.33	3,711.80	-741.08	1,374.61	1,561.65	2.00	-2.00	0.00	
4,200.00	4.41	118.33	3,811.35	-745.55	1,382.90	1,571.07	2.00	-2.00	0.00	
4,300.00	2.41	118.33	3,911.17	-748.37	1,388.13	1,577.01	2.00	-2.00	0.00	
4,400.00	0.41	118.33	4,011.14	-749.54	1,390.29	1,579.47	2.00	-2.00	0.00	
4,420.32	0.00	118.33	4,031.46	-749.57	1,390.35	1,579.54	2.00	-2.00	0.00	
4,500.00	0.00	118.33	4,111.14	-749.57	1,390.35	1,579.54	0.00	0.00	0.00	
4,600.00	0.00	118.33	4,211.14	-749.57	1,390.35	1,579.54	0.00	0.00	0.00	
4,700.00	0.00	118.33	4,311.14	-749.57	1,390.35	1,579.54	0.00	0.00	0.00	
4,800.00	0.00	118.33	4,411.14	-749.57	1,390.35	1,579.54	0.00	0.00	0.00	
4,900.00	0.00	118.33	4,511.14	-749.57	1,390.35	1,579.54	0.00	0.00	0.00	
5,000.00	0.00	118.33	4,611.14	-749.57	1,390.35	1,579.54	0.00	0.00	0.00	
5,100.00	0.00	118.33	4,711.14	-749.57	1,390.35	1,579.54	0.00	0.00	0.00	

Titan Directional Drilling

Survey Report

Company:	Snake River Oil and Gas	Local Co-ordinate Reference:	Well Barlow #3-14
Project:	Payette County, ID W'27	TVD Reference:	est.GL+KB @ 2178.00usft (Grahm)
Site:	Barlow 2-14 Pad	MD Reference:	est.GL+KB @ 2178.00usft (Grahm)
Well:	Barlow #3-14	North Reference:	Grid
Wellbore:	#3-14 OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #2	Database:	EDM 5k-14

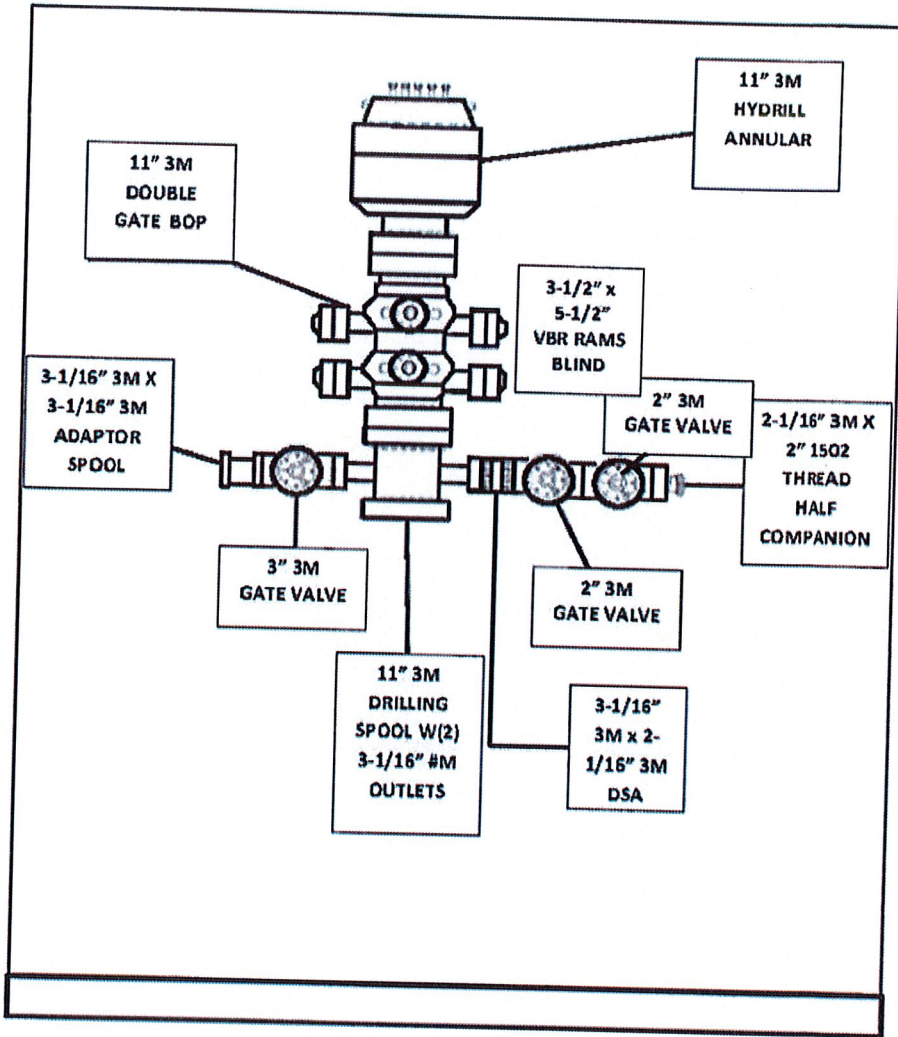
Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
5,200.00	0.00	118.33	4,811.14	-749.57	1,390.35	1,579.54	0.00	0.00	0.00	
5,300.00	0.00	118.33	4,911.14	-749.57	1,390.35	1,579.54	0.00	0.00	0.00	
5,400.00	0.00	118.33	5,011.14	-749.57	1,390.35	1,579.54	0.00	0.00	0.00	
5,416.86	0.00	118.33	5,028.00	-749.57	1,390.35	1,579.54	0.00	0.00	0.00	

Casing Points						
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")		
120.00	120.00	16"	16	20		
1,125.00	1,089.26	9 5/8"	9-5/8	12-1/4		

Blowout Preventer (BOP) Schematic

Stack from bottom up; pipe rams, mud cross, blind rams and annular. Pressure control equipment to include upper Kelly cock, Kelly, lower Kelly valve, stand-by full opening drill string valve (TIW), stand-by drill string inside BOP (Gray).

See diagram



BOP Diagram

Drilling Plan

Drilling Plan expected to include but not limited to:

1. Drill 20" hole to 120' with water well rig and run 16" casing, set same with cement back to surface.
2. Move in drilling rig.
3. Drill 12 ¼" hole with drilling rig to 1,125' and run 9 5/8" casing set same with cement back to surface.
4. Drill 8 ½" hole to 5,500' and run open hole logs. If logs look good, run 5 ½" casing to TD and cement back to surface.
5. Move out drilling rig.

IDL Permit Supplement

Payette County, ID

Barlow 3-14

August 18, 2022

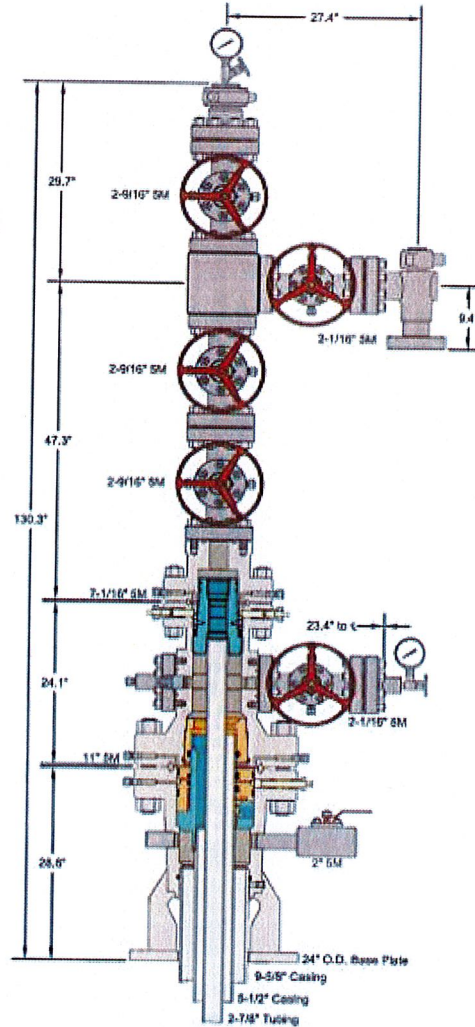
Logging Plan

1. Mud loggers will collect and analyze the lithology of drill cuttings from below the conductor casing shoe to Total Depth of the well (+/- 120' to 5500' MD).
2. Open Hole Logging Program: 1125' to 5500' MD
3. Run 1: TD to surface casing shoe (5500' to +/- 1125' MD) Quad Combo – Induction, Gamma Ray, Sonic and Neutron/Density Porosity Tools.
4. Run 2: Optional – may run wireline SWC's or other diagnostic logs if warranted

Wellhead

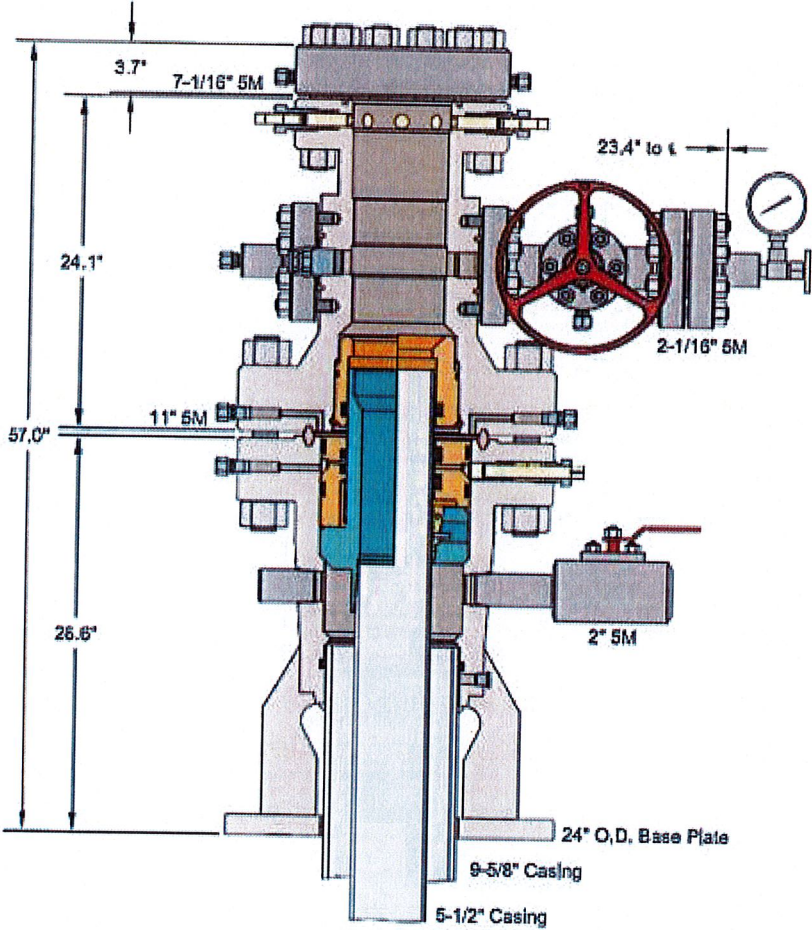
See surface Wellhead System Diagram.

See surface Wellhead system with Wellhead Assembly Diagram.



ALL DIMENSIONS ARE APPROXIMATE		SNAKE RIVER OIL AND GAS, LLC PAYETTE COUNTY	
This drawing is the property of GE Oil & Gas Pressure Control LP and is considered confidential. Unless otherwise approved in writing, neither it nor its contents may be used, copied, transmitted or reproduced except for the sole purpose of GE Oil & Gas Pressure Control LP.			
9-5/8" x 5-1/2" x 2-7/8" 5M SH2-R Wellhead Assembly, With T-EBS Tubing Head, T-EN Tubing Hanger and A5PEN Adapter Flange		DRAWN	VJK 29APR14
		APPRV	KN 29APR14
		FOR REFERENCE ONLY	
		DRAWING NO.	AE25547

Surface Wellhead System



SNAKE RIVER OIL AND GAS, LLC
 WELL NAME: Barlow #3-14
 LOCATION: 19-8N-14W
 PAYETTE COUNTY, IDAHO
 FIELD: HARMON
PROPOSED WELLBORE DIAGRAM

Date: 8/16/2022

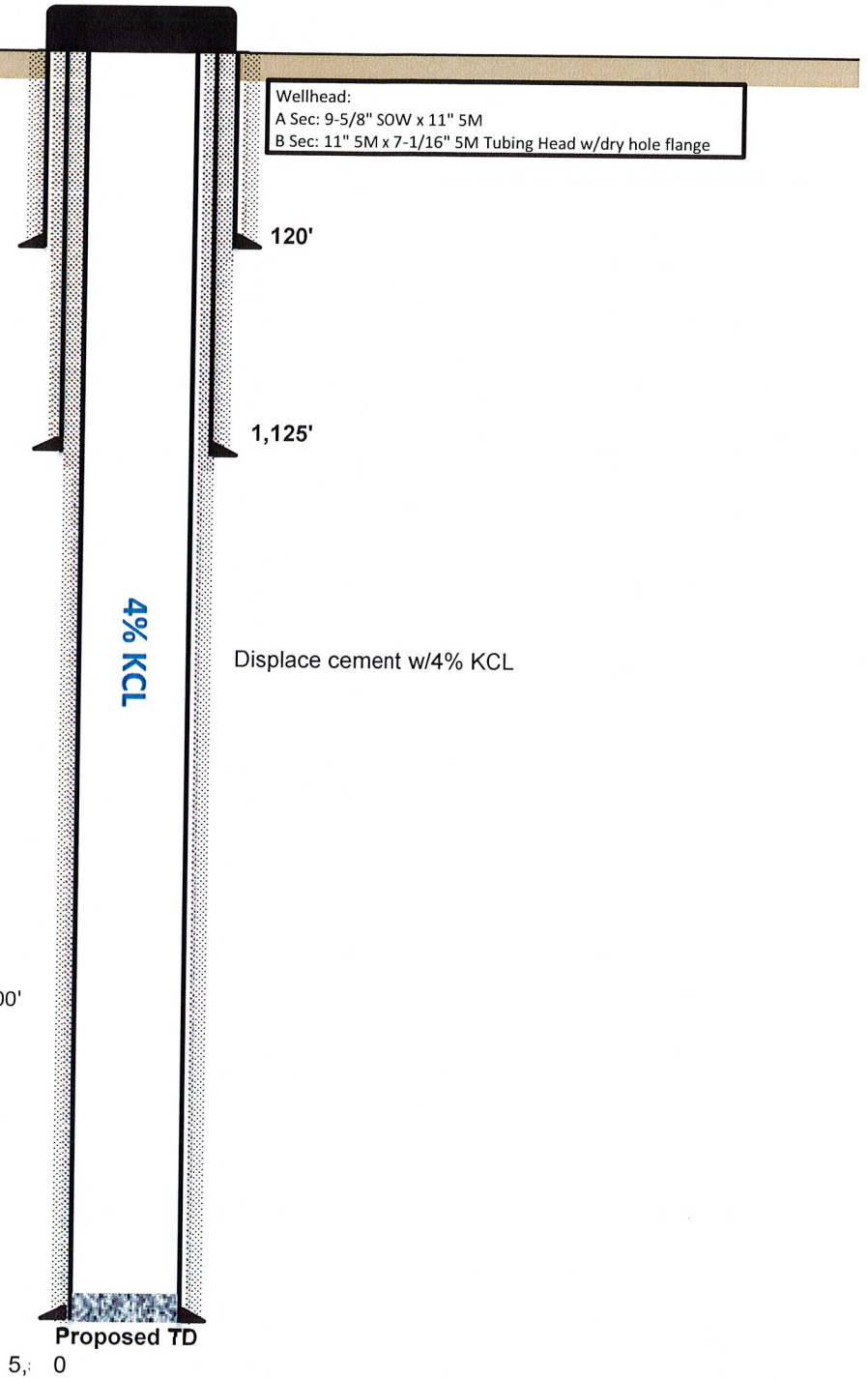
GL: 2,164.4'

Conductor: 16" 65# H-40 @120'
 Cemented to surface w/200 sks Class A or C
 Hole Size 20"

Surface Casing: 9-5/8" 40# K-55 STC @ 1,125'
 Cemented w/402 sks Type III Cmt
 Lead: 247 sks RC Econolite Plus
 Tail: 80 sks RC Surface Tail
 TOC: Cement to Surface
 Top out cement - 75 sks RC Surface Tail
 Est Mud weight 8.7 pg Surface TD
 Hole Size 12.25"

Production Casing: 5-1/2" 17# J/K-55 LTC @ 5,500'
 Float collar @ 5,418'
 Cemented w/794 sks Class G Cmt
 Lead: 394 sks RC Gas Bond Lead
 Tail: 400 sks RC Gas Bond
 TOC: Cemented to Surface
 Est Mud weight: 11.5 ppg at TD
 Hole Size 8.5"

Logging
 Run #1 - Triple Combo on shuttle



Well Name: Barlow #3-14	Field: Harmon
County: Payette	State: ID
Total Depth (MD): 5,500'	TVD: 5,028'

Reclamation

Reclamation will be conducted in accordance with IDAPA 20.07.02.310.16;.510. To achieve those requirements, Snake River Oil and Gas, LLC proposes to address reclamation through a multistep process which is outlined below. As provided for in IDAPA 20.07.02.510.08, Snake River Oil and Gas, LLC may enter into a Surface Use Agreement with the landowner the terms of which will ensure that the site is left in stable, non-eroding condition as required.

1. Interim drill site clean-up: Debris and waste materials including, but not limited to, concrete, sack bentonite and other drilling mud additives, sand, plastic, pipe, and cable associated with the drilling, re-entry, or completion operations shall be removed and disposed of properly.
2. Re-establish slope stability, surface stability, and desired topographic diversity.
 - a. Reconstruct the landscape to the approximate original contour unless otherwise provided for in the Surface Use Agreement.
 - b. Maximize geomorphic stability and topographic diversity of the reclaimed topography.
 - c. Eliminate high walls, cut slopes, and/or topographic depressions on site, unless otherwise approved.
 - d. Minimize sheet and rill erosion on the reclaimed area. Eliminate mass wasting, head cutting, large rills or gullies, down cutting in drainages, or overall slope instability on the reclaimed area.
3. Maintain the integrity of the topsoil and subsoil (where appropriate and not otherwise dictated by the Surface Use Agreement).
 - a. Identify salvaged topsoil and subsoil.
 - b. Segregation of salvaged soils to protect those materials from erosion, degradation, and contamination.
 - c. Incorporate stored soil material into the disturbed landscape to the extent practicable.
 - d. Stockpiled soils to be stored beyond one growing season shall be stabilized with appropriate vegetation.
 - e. Record location and approximate volumes of stockpiles.
4. Prepare site for revegetation upon completion of well activities – plugging/abandonment.
 - a. Redistribute soil materials in a manner similar to the original vertical profile.
 - b. Reduce compaction to an appropriate depth (generally below the root zone) prior to redistribution of topsoil, to accommodate appropriate site-specific plant species.
 - c. Provide suitable conditions to support the long-term establishment and viability of the desired plant community.

d. Protect seed and seedling establishment (e.g. erosion control matting, mulching, hydro-seeding, surface roughening, fencing, etc.) to be determined based upon site specific conditions.

5. Establish a desired self-perpetuating native plant community based upon region specific guidance available from NRCS.

a. Establish species composition, diversity, structure, and total ground cover appropriate for the desired plant community.

b. Select genetically appropriate and locally adapted native plant materials based on the site characteristic and setting

i. Seed mixtures shall be selected based on soil type, site conditions and intended final use.

ii. Seed shall not be used later than one year after the test date that appears on the label.

iii. The bags of seed shall be clearly labeled indicating test date, weed percentage or % Pure Live Seed (PLS), viability or germination percentage, and inert material.

c. Select non-native plants only as a short term and non-persistent alternative to native plant materials. Ensure the non-natives are designed to aid in the re-establishment of native plant communities. Revegetate in accordance with best practices described below:

i. Re-spread topsoil to a minimum depth of 4 inches.

ii. Prepare a friable but firm and weed free seedbed that is not compacted by prior construction work.

iii. Appropriate firmness can be estimated when a person leaves about a ¼ inch deep footprint.

iv. Remove rocks, twigs, concrete, foreign material and clods over 2 inches that can't be broken down.

v. Soil moisture content shall be at least 30% soil capacity (estimated). Do not seed into undesirable moisture conditions (e.g. "dust" or "mud").

d. Plant communities shall be evaluated annually for two years to ensure revegetation success as determined by IDAPA 20.07.02.510.07.

i. Repair and reseed areas that have erosion damage as necessary.

ii. If a stand has less than 70% ground cover after two years, re-evaluate the choice of plant materials, methods and available light and moisture. Re-establish the stand with modifications based the evaluation.

6. Reestablish initial visual composition.

a. Ensure the reclaimed landscape features conform to the prior conditions of the site.