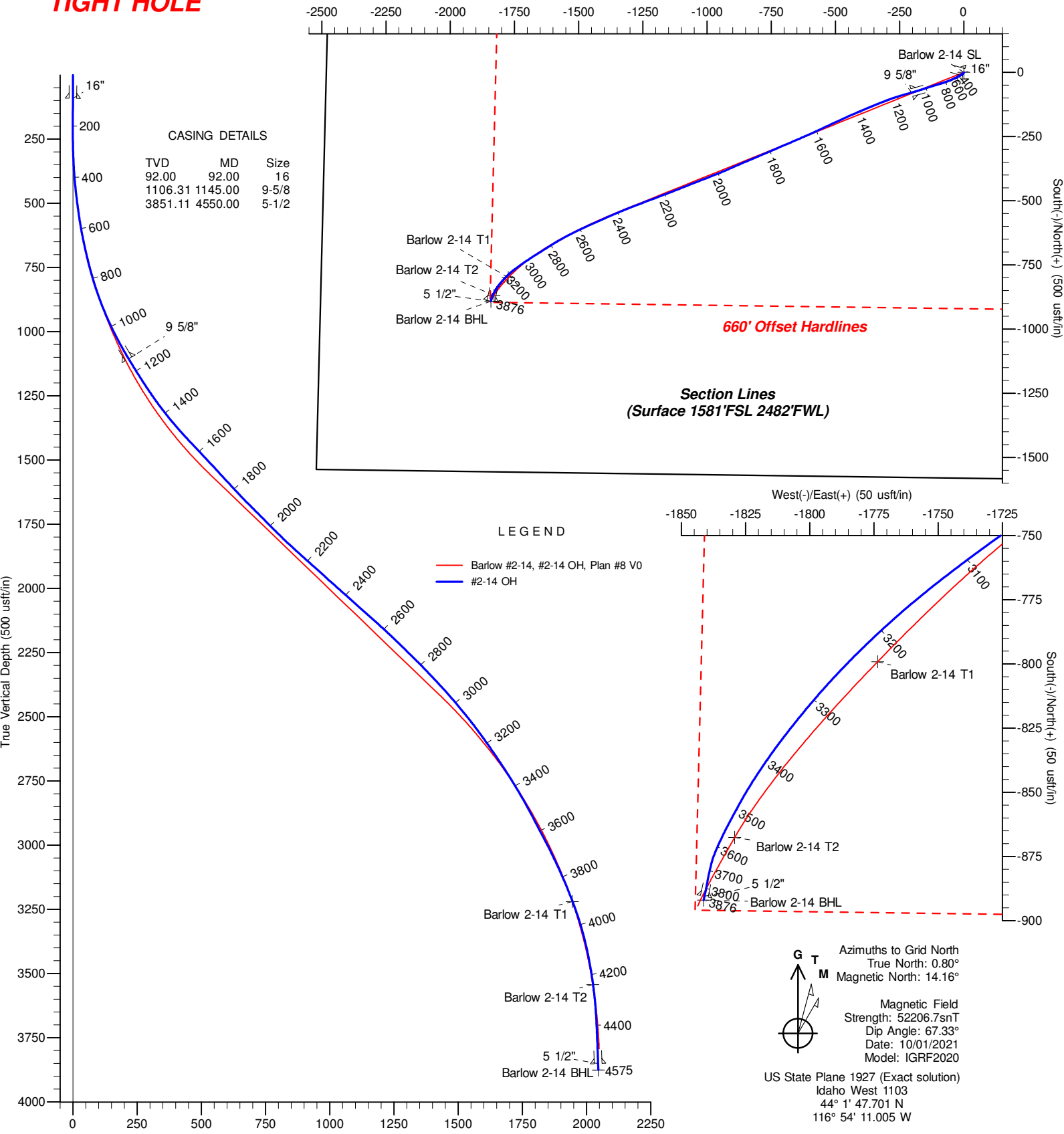


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 By James Thum at 8:53 am, Oct 22, 2021

TIGHT HOLE



Vertical Section at 244.10° (500 usft/in)

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Barlow 2-14 SL	0.00	0.00	0.00	863380.03	196744.20	44° 1' 47.701 N	116° 54' 11.005 W
Barlow 2-14 T1	3220.00	-799.06	-1773.52	862580.94	194970.61	44° 1' 39.565 N	116° 54' 35.123 W
Barlow 2-14 T2	3543.00	-867.55	-1829.23	862512.45	194914.90	44° 1' 38.881 N	116° 54' 35.872 W
Barlow 2-14 BHL	3876.06	-891.91	-1841.33	862488.09	194902.80	44° 1' 38.639 N	116° 54' 36.033 W

Legend
 — Barlow #2-14, #2-14 OH, Plan #8 V0
 — #2-14 OH

Magnetic Field
 Strength: 52206.7snT
 Dip Angle: 67.33°
 Date: 10/01/2021
 Model: IGRF2020

US State Plane 1927 (Exact solution)
 Idaho West 1103
 44° 1' 47.701 N
 116° 54' 11.005 W

Titan Directional Drilling

Survey Report

Company: Snake River Oil and Gas	Local Co-ordinate Reference: Well Barlow #2-14
Project: Payette County, ID W'27	TVD Reference: est.GL+KB @ 2178.00usft (Paul Graham 4)
Site: Barlow 2-14 Pad	MD Reference: est.GL+KB @ 2178.00usft (Paul Graham 4)
Well: Barlow #2-14	North Reference: Grid
Wellbore: #2-14 OH	Survey Calculation Method: Minimum Curvature
Design: #2-14 OH	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	Latitude: 44° 1' 48.003 N	
From: Map	Easting: 196,717.00 usft	Longitude: 116° 54' 11.383 W	
Position Uncertainty: 0.00 usft	Slot Radius: 13-3/16 "	Grid Convergence: -0.80 °	

Well Barlow #2-14			
Well Position	+N/-S 0.00 usft	Northing: 863,380.03 usft	Latitude: 44° 1' 47.701 N
	+E/-W 0.00 usft	Easting: 196,744.20 usft	Longitude: 116° 54' 11.005 W
Position Uncertainty	0.00 usft	Wellhead Elevation: usft	Ground Level: 2,164.00 usft

Wellbore #2-14 OH					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	10/01/2021	13.36	67.33	52,206.70843094

Design #2-14 OH				
Audit Notes:				
Version: 1.0	Phase: ACTUAL	Tie On Depth: 0.00		
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	244.10

Survey Program		Date 10/16/2021		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
166.00	4,505.00	Survey #1 (#2-14 OH)	MWD	MWD - Standard
4,575.00	4,575.00	Projection (#2-14 OH)	ZERO-ERROR	Zero Error

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	
92.00	0.44	106.80	92.00	-0.10	0.34	-0.26	0.48	0.48	0.00	
16"										
166.00	0.80	106.80	165.99	-0.33	1.11	-0.85	0.48	0.48	0.00	
255.00	1.10	222.10	254.99	-1.15	1.13	-0.52	1.81	0.34	129.55	
348.00	2.90	234.90	347.93	-3.16	-1.39	2.63	1.98	1.94	13.76	
441.00	6.20	233.00	440.62	-7.54	-7.33	9.89	3.55	3.55	-2.04	
534.00	7.90	240.60	532.92	-13.70	-16.91	21.19	2.08	1.83	8.17	
625.00	10.90	244.10	622.69	-20.53	-30.10	36.04	3.35	3.30	3.85	
717.00	13.50	246.20	712.60	-28.66	-47.75	55.48	2.87	2.83	2.28	

Titan Directional Drilling

Survey Report

Company:	Snake River Oil and Gas	Local Co-ordinate Reference:	Well Barlow #2-14
Project:	Payette County, ID W'27	TVD Reference:	est.GL+KB @ 2178.00usft (Paul Graham 4)
Site:	Barlow 2-14 Pad	MD Reference:	est.GL+KB @ 2178.00usft (Paul Graham 4)
Well:	Barlow #2-14	North Reference:	Grid
Wellbore:	#2-14 OH	Survey Calculation Method:	Minimum Curvature
Design:	#2-14 OH	Database:	EDM 5k-14

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)	
809.00	17.00	250.80	801.35	-37.42	-70.29	79.57	4.02	3.80	5.00	
901.00	21.30	253.90	888.24	-46.49	-99.06	109.41	4.80	4.67	3.37	
996.00	25.30	252.30	975.48	-57.45	-134.99	146.52	4.26	4.21	-1.68	
1,085.00	29.30	251.80	1,054.55	-70.04	-173.81	186.94	4.50	4.49	-0.56	
1,145.00	31.47	254.78	1,106.31	-78.73	-202.87	216.89	4.40	3.62	4.97	
9 5/8"										
1,154.00	31.80	255.20	1,113.97	-79.95	-207.43	221.52	4.40	3.68	4.62	
1,248.00	33.00	252.70	1,193.34	-93.89	-255.82	271.14	1.91	1.28	-2.66	
1,342.00	35.90	248.80	1,270.85	-111.48	-305.97	323.93	3.88	3.09	-4.15	
1,437.00	39.70	247.60	1,345.91	-133.12	-360.01	382.00	4.07	4.00	-1.26	
1,531.00	43.10	246.70	1,416.41	-157.27	-417.28	444.07	3.67	3.62	-0.96	
1,626.00	43.30	245.50	1,485.66	-183.62	-476.74	509.06	0.89	0.21	-1.26	
1,721.00	42.80	244.60	1,555.08	-210.97	-535.53	573.90	0.83	-0.53	-0.95	
1,816.00	43.00	245.80	1,624.68	-238.10	-594.24	638.55	0.89	0.21	1.26	
1,911.00	45.40	246.90	1,692.78	-264.65	-654.90	704.72	2.65	2.53	1.16	
2,005.00	44.50	246.40	1,759.30	-290.97	-715.87	771.07	1.03	-0.96	-0.53	
2,100.00	47.00	247.10	1,825.59	-317.82	-778.39	839.03	2.68	2.63	0.74	
2,193.00	48.50	246.90	1,888.12	-344.72	-841.76	907.79	1.62	1.61	-0.22	
2,288.00	47.80	246.20	1,951.50	-372.88	-906.68	978.48	0.92	-0.74	-0.74	
2,382.00	48.50	248.30	2,014.22	-399.94	-971.25	1,048.39	1.82	0.74	2.23	
2,476.00	48.40	248.80	2,076.57	-425.67	-1,036.72	1,118.52	0.41	-0.11	0.53	
2,571.00	48.20	248.30	2,139.76	-451.61	-1,102.74	1,189.24	0.45	-0.21	-0.53	
2,666.00	46.00	249.20	2,204.43	-476.84	-1,167.59	1,258.60	2.42	-2.32	0.95	
2,760.00	45.50	249.40	2,270.02	-500.64	-1,230.58	1,325.65	0.55	-0.53	0.21	
2,856.00	43.80	248.80	2,338.31	-524.70	-1,293.60	1,392.86	1.82	-1.77	-0.63	
2,951.00	41.60	246.90	2,408.13	-548.96	-1,353.27	1,457.14	2.68	-2.32	-2.00	
3,046.00	39.40	245.80	2,480.36	-573.70	-1,409.79	1,518.78	2.43	-2.32	-1.16	
3,140.00	36.70	245.80	2,554.38	-597.45	-1,462.63	1,576.69	2.87	-2.87	0.00	
3,234.00	34.60	244.10	2,630.76	-620.62	-1,512.26	1,631.46	2.47	-2.23	-1.81	
3,329.00	33.00	241.10	2,709.71	-644.91	-1,559.18	1,684.27	2.43	-1.68	-3.16	
3,425.00	30.80	238.10	2,791.21	-670.54	-1,602.94	1,734.83	2.82	-2.29	-3.13	
3,519.00	28.20	237.40	2,873.02	-695.22	-1,642.09	1,780.83	2.79	-2.77	-0.74	
3,614.00	27.80	237.60	2,956.90	-719.19	-1,679.71	1,825.14	0.43	-0.42	0.21	
3,706.00	26.50	235.50	3,038.76	-742.31	-1,714.74	1,866.75	1.76	-1.41	-2.28	
3,801.00	24.00	232.30	3,124.68	-766.14	-1,747.50	1,906.63	3.00	-2.63	-3.37	
3,895.00	22.20	226.50	3,211.15	-790.06	-1,775.51	1,942.27	3.08	-1.91	-6.17	
3,990.00	18.70	220.40	3,300.16	-814.02	-1,798.41	1,973.34	4.31	-3.68	-6.42	
4,085.00	14.70	215.40	3,391.14	-835.45	-1,815.27	1,997.87	4.47	-4.21	-5.26	
4,180.00	11.70	209.10	3,483.62	-853.70	-1,826.94	2,016.33	3.50	-3.16	-6.63	
4,275.00	8.30	205.60	3,577.17	-868.30	-1,834.59	2,029.60	3.63	-3.58	-3.68	
4,370.00	4.70	193.30	3,671.55	-878.28	-1,838.45	2,037.42	4.04	-3.79	-12.95	
4,465.00	4.00	190.30	3,766.27	-885.32	-1,839.94	2,041.84	0.77	-0.74	-3.16	
4,505.00	3.40	192.40	3,806.19	-887.86	-1,840.44	2,043.40	1.54	-1.50	5.25	

Titan Directional Drilling

Survey Report

Company:	Snake River Oil and Gas	Local Co-ordinate Reference:	Well Barlow #2-14
Project:	Payette County, ID W'27	TVD Reference:	est.GL+KB @ 2178.00usft (Paul Graham 4)
Site:	Barlow 2-14 Pad	MD Reference:	est.GL+KB @ 2178.00usft (Paul Graham 4)
Well:	Barlow #2-14	North Reference:	Grid
Wellbore:	#2-14 OH	Survey Calculation Method:	Minimum Curvature
Design:	#2-14 OH	Database:	EDM 5k-14

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)	
4,550.00	3.40	192.40	3,851.11	-890.46	-1,841.02	2,045.05	0.00	0.00	0.00	
5 1/2"										
4,575.00	3.40	192.40	3,876.06	-891.91	-1,841.33	2,045.97	0.00	0.00	0.00	

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
Barlow 2-14 SL - hit/miss target - Shape	0.00	360.00	0.00	0.00	0.00	863,380.03	196,744.20	44° 1' 47.701 N	116° 54' 11.005 W	
- actual wellpath hits target center										
- Point										
Barlow 2-14 T1 - actual wellpath misses target center by 7.96usft at 3905.09usft MD (3220.50 TVD, -792.67 N, -1778.24 E) - Point	0.00	360.00	3,220.00	-799.06	-1,773.52	862,580.94	194,970.62	44° 1' 39.565 N	116° 54' 35.123 W	
Barlow 2-14 T2 - actual wellpath misses target center by 5.01usft at 4240.80usft MD (3543.38 TVD, -863.56 N, -1832.23 E) - Point	0.00	360.00	3,543.00	-867.55	-1,829.23	862,512.45	194,914.91	44° 1' 38.881 N	116° 54' 35.872 W	
Barlow 2-14 BHL - actual wellpath hits target center - Point	0.00	0.00	3,876.06	-891.91	-1,841.33	862,488.09	194,902.80	44° 1' 38.639 N	116° 54' 36.033 W	

Casing Points						
Measured Depth (usft)	Vertical Depth (usft)		Name	Casing Diameter (")	Hole Diameter (")	
92.00	92.00	16"		16	19	
1,145.00	1,106.31	9 5/8"		9-5/8	12-1/4	
4,550.00	3,851.11	5 1/2"		5-1/2	8-1/2	