

EXTRACTION OIL & GAS

Location: COLORADO Slot: SLOT#19 WAAG 24 (265°FSL & 2323°FWL, SEC.19)
Field: WELD COUNTY (NAD83/TRUE NORTH) Well: WAAG 24
Facility: SEC.19-T07N-R65W Wellbore: WAAG 24 PWB

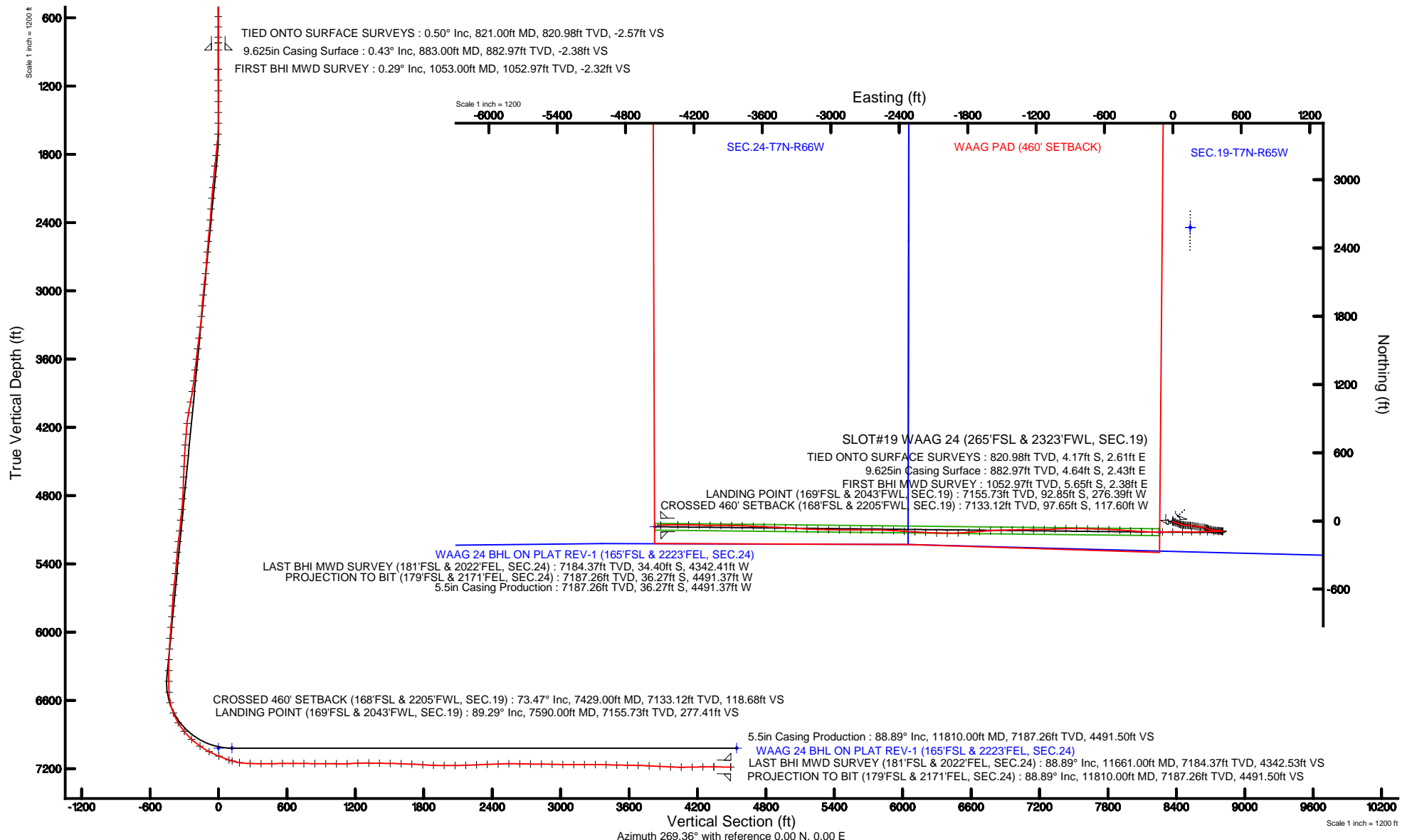
Plot reference wellpath is WAAG 24 PWP (REV-A.0)

True vertical depths are referenced to SAVANNA 802 (RKB)	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
Measured depths are referenced to SAVANNA 802 (RKB)	North Reference: True north
SAVANNA 802 (RKB) to Mean Sea Level: 4887 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#19 WAAG 24 (265°FSL & 2323°FWL, SEC.19)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: ingmjamm on 9/30/2015



BGGM (1945.0 to 2017.0) Dip: 67.09° Field: 52677.6 nT
Magnetic North is 8.52 degrees East of True North (at 9/21/2015)

To correct azimuth from Magnetic to True add 8.52 degrees





Actual Wellpath Report

WAAG 24 AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	EXTRACTION OIL & GAS	Slot	SLOT#19 WAAG 24 (265'FSL & 2323'FWL, SEC.19)
Area	COLORADO	Well	WAAG 24
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	WAAG 24 AWB
Facility	SEC.19-T07N-R65W		

REPORT SETUP INFORMATION

Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 4.1.1
North Reference	True	User	Ingmjmr
Scale	0.999971	Report Generated	9/30/2015 at 10:50:48 AM
Convergence at slot	0.51° East	Database/Source file	WA_DEN_Denver_Defn/WAAG_24_AWB.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-2721.48	-152.84	3220211.67	1445723.66	40°33'15.156"N	104°42'27.036"W
Facility Reference Pt			3220340.15	1448446.32	40°33'42.048"N	104°42'25.056"W
Field Reference Pt			3185481.27	1419166.81	40°28'55.560"N	104°49'59.556"W

WELLPATH DATUM

Calculation method	Minimum curvature	SAVANNA 802 (RKB) to Facility Vertical Datum	4887.00ft
Horizontal Reference Pt	Slot	SAVANNA 802 (RKB) to Mean Sea Level	4887.00ft
Vertical Reference Pt	SAVANNA 802 (RKB)	SAVANNA 802 (RKB) to Mud Line at Slot (SLOT#19 WAAG 24 (265'FSL & 2323'FWL, SEC.19))	4887.00ft
MD Reference Pt	SAVANNA 802 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	269.54°



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Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	WAAG 24 AWB
Facility	SEC.19-T07N-R65W		

WELLPATH DATA (116 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
821.00	0.500	204.800	820.98	-2.58	-4.17	2.61	0.47	TIED ONTO SURFACE SURVEYS
1053.00	0.290	160.850	1052.97	-2.33	-5.65	2.38	0.15	FIRST BHI MWD SURVEY
1148.00	0.530	167.400	1147.97	-2.50	-6.30	2.56	0.26	
1243.00	0.280	190.750	1242.97	-2.55	-6.96	2.61	0.31	
1337.00	0.410	150.610	1336.97	-2.67	-7.48	2.73	0.28	
1432.00	0.040	198.280	1431.96	-2.82	-7.81	2.89	0.40	
1527.00	0.370	254.140	1526.96	-2.52	-7.92	2.58	0.37	
1622.00	2.820	99.830	1621.93	-4.52	-8.40	4.59	3.32	
1716.00	6.420	107.910	1715.61	-11.79	-10.42	11.87	3.88	
1811.00	6.590	108.050	1810.00	-22.00	-13.74	22.11	0.18	
1905.00	6.430	110.410	1903.39	-32.03	-17.24	32.17	0.33	
2000.00	5.670	110.250	1997.86	-41.39	-20.72	41.56	0.80	
2095.00	5.470	109.470	2092.41	-50.04	-23.86	50.23	0.23	
2190.00	5.080	111.070	2187.01	-58.20	-26.88	58.42	0.44	
2285.00	4.620	109.660	2281.67	-65.71	-29.68	65.95	0.50	
2380.00	4.120	109.330	2376.39	-72.51	-32.09	72.77	0.53	
2475.00	6.250	96.380	2471.00	-80.86	-33.80	81.13	2.54	
2570.00	5.340	94.940	2565.52	-90.39	-34.75	90.68	0.97	
2664.00	4.630	101.160	2659.16	-98.47	-35.87	98.76	0.95	
2759.00	4.250	99.030	2753.88	-105.69	-37.16	106.00	0.44	
2855.00	6.450	92.950	2849.45	-114.59	-38.00	114.90	2.36	
2949.00	6.040	92.270	2942.89	-124.80	-38.46	125.11	0.44	
3044.00	5.820	96.860	3037.39	-134.57	-39.24	134.89	0.55	
3139.00	4.830	93.090	3131.98	-143.34	-40.03	143.66	1.10	
3233.00	4.260	91.800	3225.68	-150.77	-40.35	151.10	0.62	
3328.00	7.180	93.960	3320.20	-160.22	-40.87	160.56	3.08	
3423.00	6.690	93.600	3414.50	-171.66	-41.63	172.00	0.52	
3518.00	7.870	103.820	3508.74	-183.48	-43.53	183.84	1.84	
3612.00	5.930	104.720	3602.05	-194.41	-46.30	194.79	2.07	
3707.00	7.850	93.740	3696.37	-205.61	-47.97	206.01	2.44	
3802.00	6.300	101.090	3790.64	-217.19	-49.40	217.60	1.89	
3897.00	9.580	101.780	3884.72	-230.03	-52.02	230.46	3.45	
3992.00	9.890	96.300	3978.35	-245.86	-54.52	246.30	1.03	
4087.00	10.250	95.340	4071.89	-262.37	-56.21	262.83	0.42	
4182.00	6.090	102.240	4165.91	-275.70	-58.06	276.18	4.49	
4277.00	5.110	106.150	4260.45	-284.67	-60.31	285.16	1.11	
4372.00	4.090	111.800	4355.14	-291.86	-62.74	292.37	1.17	
4466.00	3.680	112.230	4448.93	-297.74	-65.13	298.28	0.44	
4561.00	3.060	121.090	4543.76	-302.72	-67.59	303.27	0.85	
4656.00	2.480	129.180	4638.65	-306.46	-70.20	307.04	0.73	
4750.00	2.310	138.010	4732.57	-309.28	-72.89	309.88	0.43	
4845.00	4.350	90.800	4827.42	-314.15	-74.37	314.77	3.43	
4939.00	5.930	96.580	4921.04	-322.54	-74.97	323.15	1.77	
5034.00	4.860	97.530	5015.62	-331.39	-76.06	332.02	1.13	
5129.00	7.070	103.190	5110.10	-341.06	-77.92	341.70	2.40	



Actual Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION

Operator	EXTRACTION OIL & GAS	Slot	SLOT#19 WAAG 24 (265'FSL & 2323'FWL, SEC.19)
Area	COLORADO	Well	WAAG 24
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	WAAG 24 AWB
Facility	SEC.19-T07N-R65W		

WELLPATH DATA (116 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
5224.00	6.700	102.620	5204.41	-352.14	-80.47	352.80	0.40	
5319.00	4.990	104.540	5298.92	-361.53	-82.72	362.21	1.81	
5414.00	5.820	93.100	5393.50	-370.33	-84.01	371.02	1.43	
5508.00	4.200	94.760	5487.13	-378.51	-84.56	379.21	1.73	
5603.00	6.810	91.550	5581.69	-387.61	-85.00	388.31	2.77	
5698.00	5.260	89.120	5676.16	-397.59	-85.08	398.29	1.65	
5792.00	3.270	90.380	5769.89	-404.58	-85.04	405.28	2.12	
5887.00	4.300	114.700	5864.69	-410.52	-86.54	411.23	1.98	
5981.00	5.070	98.740	5958.38	-417.81	-88.65	418.54	1.60	
6077.00	4.040	96.150	6054.08	-425.35	-89.65	426.09	1.09	
6171.00	2.760	96.410	6147.91	-430.89	-90.26	431.63	1.36	
6266.00	1.730	92.460	6242.83	-434.59	-90.58	435.34	1.10	
6362.00	0.960	84.200	6338.81	-436.84	-90.56	437.59	0.83	
6456.00	1.080	244.450	6432.80	-436.82	-90.86	437.57	2.14	
6551.00	1.490	268.820	6527.78	-434.78	-91.27	435.53	0.71	
6645.00	12.140	269.320	6620.98	-423.64	-91.42	424.39	11.33	
6739.00	21.820	268.330	6710.78	-396.22	-92.04	396.98	10.30	
6834.00	30.690	269.460	6795.89	-354.24	-92.79	355.01	9.35	
6928.00	38.370	268.660	6873.27	-301.00	-93.70	301.77	8.18	
7023.00	47.650	268.150	6942.66	-236.29	-95.52	237.07	9.78	
7117.00	54.220	269.790	7001.87	-163.35	-96.79	164.14	7.12	
7212.00	62.970	270.880	7051.33	-82.36	-96.28	83.14	9.26	
7306.00	67.820	270.020	7090.46	3.07	-95.62	-2.30	5.23	
7401.00	70.290	268.160	7124.42	91.78	-97.04	-91.00	3.18	
7429.00†	73.475	269.215	7133.12	118.38	-97.65	-117.60	11.92	CROSSED 460' SETBACK (168'FSL & 2205'FWL, SEC.19)
7495.00	81.000	271.580	7147.69	182.70	-97.18	-181.92	11.92	
7590.00	89.290	273.660	7155.73	277.13	-92.85	-276.39	8.99	LANDING POINT (169'FSL & 2043'FWL, SEC.19)
7685.00	89.780	273.960	7156.50	371.86	-86.53	-371.18	0.60	
7780.00	90.310	273.760	7156.42	466.59	-80.14	-465.96	0.60	
7875.00	91.260	273.120	7155.12	561.36	-74.44	-560.78	1.21	
7969.00	89.200	271.310	7154.75	655.25	-70.81	-654.70	2.92	
8063.00	89.690	271.230	7155.66	749.20	-68.72	-748.67	0.53	
8158.00	90.000	271.110	7155.91	844.16	-66.78	-843.65	0.35	
8253.00	89.480	268.520	7156.34	939.15	-67.09	-938.64	2.78	
8348.00	88.490	265.820	7158.03	1034.04	-71.78	-1033.50	3.03	
8442.00	92.710	269.670	7157.04	1127.95	-75.48	-1127.38	6.08	
8536.00	92.030	269.940	7153.16	1221.87	-75.80	-1221.30	0.78	
8631.00	89.600	269.010	7151.80	1316.85	-76.67	-1316.28	2.74	
8725.00	89.050	268.680	7152.91	1410.84	-78.56	-1410.25	0.68	
8820.00	88.740	268.090	7154.74	1505.80	-81.24	-1505.20	0.70	
8915.00	88.000	266.300	7157.45	1600.68	-85.89	-1600.04	2.04	
9010.00	87.320	265.780	7161.33	1695.42	-92.44	-1694.73	0.90	
9105.00	86.700	265.620	7166.28	1790.08	-99.55	-1789.34	0.67	
9199.00	88.000	267.220	7170.63	1883.84	-105.42	-1883.05	2.19	
9294.00	88.950	269.730	7173.16	1978.78	-107.94	-1977.97	2.82	



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REFERENCE WELLPATH IDENTIFICATION

Operator	EXTRACTION OIL & GAS	Slot	SLOT#19 WAAG 24 (265'FSL & 2323'FWL, SEC.19)
Area	COLORADO	Well	WAAG 24
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	WAAG 24 AWB
Facility	SEC.19-T07N-R65W		

WELLPATH DATA (116 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
9389.00	90.800	272.700	7173.36	2073.72	-105.93	-2072.94	3.68	
9484.00	91.880	273.010	7171.14	2168.54	-101.20	-2167.79	1.18	
9578.00	93.080	272.870	7167.07	2262.28	-96.38	-2261.58	1.29	
9673.00	91.540	273.820	7163.25	2356.99	-90.84	-2356.33	1.90	
9768.00	92.500	273.380	7159.90	2451.69	-84.88	-2451.09	1.11	
9863.00	90.310	272.310	7157.57	2546.50	-80.17	-2545.93	2.57	
9958.00	88.920	270.040	7158.21	2641.45	-78.22	-2640.90	2.80	
10053.00	88.860	269.780	7160.05	2736.43	-78.37	-2735.88	0.28	
10147.00	89.940	269.800	7161.03	2830.42	-78.71	-2829.88	1.15	
10242.00	88.490	271.030	7162.33	2925.40	-78.03	-2924.86	2.00	
10336.00	88.680	270.820	7164.65	3019.34	-76.51	-3018.82	0.30	
10431.00	90.960	271.560	7164.95	3114.29	-74.54	-3113.79	2.52	
10526.00	89.170	273.060	7164.84	3209.18	-70.71	-3208.71	2.46	
10621.00	90.550	273.610	7165.08	3303.96	-65.18	-3303.54	1.56	
10715.00	88.240	272.930	7166.07	3397.75	-59.82	-3397.38	2.56	
10810.00	88.580	272.720	7168.70	3492.56	-55.14	-3492.23	0.42	
10904.00	89.350	272.770	7170.40	3586.40	-50.64	-3586.10	0.82	
10999.00	88.180	272.450	7172.45	3681.24	-46.31	-3680.98	1.28	
11094.00	87.570	272.350	7175.97	3776.05	-42.34	-3775.83	0.65	
11188.00	86.550	270.550	7180.79	3869.87	-39.96	-3869.67	2.20	
11283.00	87.380	270.030	7185.82	3964.73	-39.48	-3964.54	1.03	
11377.00	90.030	270.810	7187.95	4058.68	-38.79	-4058.50	2.94	
11472.00	91.080	271.340	7187.03	4153.64	-37.01	-4153.48	1.24	
11566.00	91.630	271.280	7184.81	4247.57	-34.86	-4247.43	0.59	
11661.00	88.890	269.280	7184.37	4342.55	-34.40	-4342.41	3.57	LAST BHI MWD SURVEY (181'FSL & 2022'FEL, SEC.24)
11810.00	88.890	269.280	7187.26	4491.52	-36.27	-4491.37	0.00	PROJECTION TO BIT (179'FSL & 2171'FEL, SEC.24)

HOLE & CASING SECTIONS - Ref Wellbore: WAAG 24 AWB Ref Wellpath: WAAG 24 AWP

String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
9.625in Casing Surface	20.00	883.00	863.00	20.00	882.97	-0.01	0.01	-4.64	2.43
7.875in Open Hole	883.00	11810.00	10927.00	882.97	7187.26	-4.64	2.43	-36.27	-4491.37
5.5in Casing Production	20.00	11810.00	11790.00	20.00	7187.26	-0.01	0.01	-36.27	-4491.37



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Facility	SEC.19-T07N-R65W		

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SEC.19-T7N-R65W	-24.00	2579.40	152.82	3220341.42	1448304.24	40°33'40.644"N	104°42'25.056"W	polygon
SEC.24-T7N-R66W	-24.00	2579.40	152.82	3220341.42	1448304.24	40°33'40.644"N	104°42'25.056"W	polygon
WAAG 24 BHL ON PLAT REV-1 (165'FSL & 2223'FEL, SEC.24)	7020.00	-50.59	-4543.44	3215669.00	1445632.47	40°33'14.652"N	104°43'25.896"W	point
WAAG 24 DRILLING CORRIDOR (60')	7020.00	0.00	0.00	3220211.66	1445723.66	40°33'15.156"N	104°42'27.036"W	polygon
WAAG 24 LANDING POINT	7020.00	-98.37	-116.71	3220095.84	1445624.25	40°33'14.184"N	104°42'28.548"W	point
WAAG PAD (460' SETBACK)	7144.00	2579.40	152.82	3220341.42	1448304.24	40°33'40.644"N	104°42'25.056"W	polygon

WELLPATH COMPOSITION - Ref Wellbore: WAAG 24 AWB					Ref Wellpath: WAAG 24 AWP	
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment		Wellbore	
0.00	821.00	ISCWSA MWD, Rev. 3 (Standard)	NEWSCO SURVEYS <141-821>		WAAG 24 AWB	
821.00	11661.00	NaviTrak (Standard)	BHI MWD/NAVITRAK (STD) 7.875" HOLE <1053-11661>		WAAG 24 AWB	
11661.00	11810.00	Blind Drilling (std)	Projection to bit		WAAG 24 AWB	



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WELLPATH COMMENTS

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1053.00	0.290	160.850	1052.97	FIRST BHI MWD SURVEY
7429.00	73.475	269.215	7133.12	CROSSED 460' SETBACK (168'FSL & 2205'FWL, SEC.19)
7590.00	89.290	273.660	7155.73	LANDING POINT (169'FSL & 2043'FWL, SEC.19)
11661.00	88.890	269.280	7184.37	LAST BHI MWD SURVEY (181'FSL & 2022'FEL, SEC.24)
11810.00	88.890	269.280	7187.26	PROJECTION TO BIT (179'FSL & 2171'FEL, SEC.24)