

Results of Directional Survey

API number:	30-025-41366			
OGRID:		Operator:	FASKEN OIL & RANCH LTD	
		Property:	QUAIL 16 STATE	# 8H

surface	ULSTR:	O	16	T 20S	R 34E
				262 FSL	2080 FEL

BH Loc	ULSTR:	B	16	T 20S	R 34E
15515	MD	10938.0	TVD	321 FNL	2111 FEL
				4959 FSL	

Top Perf/OH	ULSTR:	O	16	T 20S	R 34E
11276	MD	10975.8	TVD	722 FSL	2098 FEL

Bot Perf/OH	ULSTR:	B	16	T 20S	R 34E
15364	MD	10937.6	TVD	472 FNL	2117 FEL
				4808 FSL	

NLR

	MD	N/S	E/W	VD
	11244	428.22	-16.66	10974.32
TOP PERFS/OH	11276	460.15	-17.71	10975.75
	11338	522.01	-19.75	10978.51
	15293	4475.24	-39.82	10937.34
BOT PERFS/OH	15364	4546.19	-37.17	10937.55
	15387	4569.17	-36.31	10937.62

NEXT TO LAST	15450	4632.11	-33.60	10937.79
LAST READING	15515	4697.04	-30.52	10938.00
TD	15515	4697.04	-30.52	10938.00

Surface Location	262	FS	2080	FE
Projected BHL	4959	FS	2111	FE
Location of				
Top Perfs/OH	722	FS	2098	FE
Bottom Perfs/OH	4808	FS	2117	FE

SUMMARY of Subsurface Locations

Surface Location	O-16-20S-34E	262	FS	2080	FE	Vert. Depth
Top Perfs/OH	O-16-20S-34E	722	FS	2098	FE	10975.75
Bottom Perfs/OH	B-16-20S-34E	4808	FS	2117	FE	10937.55
Projected TD	B-16-20S-34E	4959	FS	2111	FE	10938.00

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Slot: No.8H SHL
Well: No.8H
Wellbore: No.8H PWB

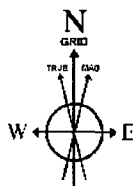


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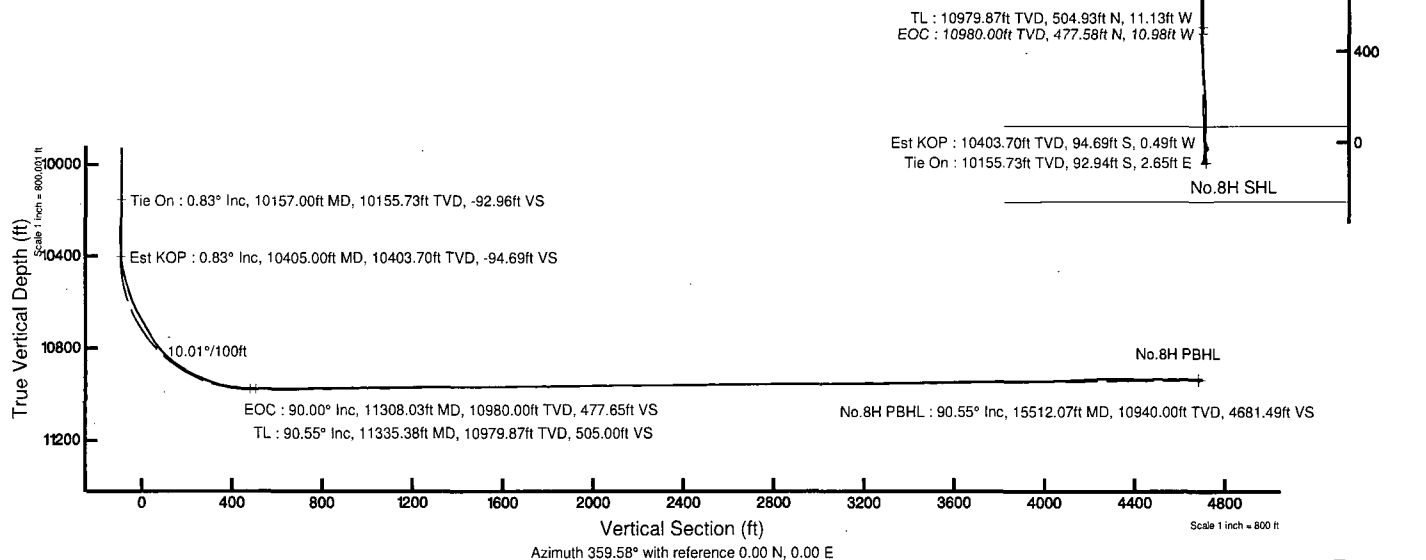
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Well Profile Data								
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	10157.00	0.830	240.790	10155.73	-92.94	2.65	0.00	-92.96
Est KOP	10405.00	0.830	240.790	10403.70	-94.69	-0.49	0.00	-94.69
EOC	11308.03	90.000	359.682	10980.00	477.58	-10.98	10.01	477.65
TL	11335.38	90.547	359.682	10979.87	504.93	-11.13	2.00	505.00
No.8H PBHL	15512.07	90.547	359.682	10940.00	4681.36	-34.33	0.00	4681.49

Plot reference wellpath is Rev-B.0	
True vertical depths are referenced to Rig on No.8H SHL (KB)	Grid System: NAD83 / TM New Mexico SP, Eastern Zone (3001), US feet
Measured depths are referenced to Rig on No.8H SHL (KB)	North Reference: Grid north
Rig on No.8H SHL (KB) to Mean Sea Level: 3665 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: No.8H SHL): -3637 feet	Depths are in feet
Coordinates are in feet referenced to Facility Center	Created by: centry on 22/Sep/2013



BGGM (1945.0 to 2015.0) Dip: 60.44° Field: 48591.8 nT
 Magnetic North = 7.44 degrees East of True North (29/Aug/2013)
 Grid North is 0.41 degrees East of True North
 To correct azimuth from True to Grid subtract 0.41 degrees
 To correct azimuth from Magnetic to Grid add 7.03 degrees
 For example: if the Magnetic North Azimuth = 90 degrees, then the Grid North Azimuth = 90 + 7.03 = 97.03



Rev-B.0

HOBBS OCD



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Actual Wellpath Report

No.8H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	Fasken Oil & Ranch	Slot	No.8H SHL
Area	Lea County, NM	Well	No.8H
Field	(Quail) Sec. 16, T20S-R34E	Wellbore	No.8H AWB
Facility	Quail State 16 No.8H		

REPORT SETUP INFORMATION

Projection System	NAD83 / TM New Mexico SP, Eastern Zone (3001), US feet	Software System	WellArchitect@ 4.0.1
North Reference	Grid	User	Gentbry
Scale	0.999974	Report Generated	10/3/2013 at 8:27:53 AM
Convergence at slot	0.41° East	Database/Source file	MidlandDB/No.8H_AWB.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	0.00	0.00	778527.60	570721.18	32°33'59.795"N	103°33'48.283"W
Facility Reference Pt			778527.60	570721.18	32°33'59.795"N	103°33'48.283"W
Field Reference Pt			780382.62	570662.08	32°33'59.077"N	103°33'26.613"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig on No.8H SHL (KB) to Facility Vertical Datum	28.00ft
Horizontal Reference Pt	Facility Center	Rig on No.8H SHL (KB) to Mean Sea Level	3665.00ft
Vertical Reference Pt	Rig on No.8H SHL (KB)	Rig on No.8H SHL (KB) to Mud Line at Slot (No.8H SHL)	28.00ft
MD Reference Pt	Rig on No.8H SHL (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	359.58°



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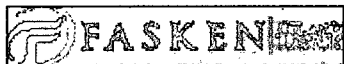


REFERENCE WELLPATH IDENTIFICATION

Operator	Fasken Oil & Ranch	Slot	No.8H SHL
Area	Lea County, NM	Well	No.8H
Field	(Quail) Sec. 16, T20S-R34E	Wellbore	No.8H AWB
Facility	Quail State 16 No.8H		

WELLPATH DATA (179 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00	0.000	100.760	0.00	0.00	0.00	0.00	778527.60	570721.18	32°33'59.795"N	103°33'48.283"W	0.00	
100.00	0.110	100.760	100.00	-0.02	-0.02	0.09	778527.69	570721.16	32°33'59.795"N	103°33'48.282"W	0.11	
200.00	0.040	101.240	200.00	-0.04	-0.04	0.22	778527.82	570721.14	32°33'59.795"N	103°33'48.280"W	0.07	
300.00	0.040	101.220	300.00	-0.06	-0.06	0.29	778527.89	570721.12	32°33'59.795"N	103°33'48.280"W	0.00	
400.00	0.180	147.870	400.00	-0.20	-0.20	0.41	778528.01	570720.98	32°33'59.793"N	103°33'48.278"W	0.16	
500.00	0.540	149.060	500.00	-0.74	-0.73	0.73	778528.33	570720.45	32°33'59.788"N	103°33'48.274"W	0.36	
600.00	0.610	155.600	599.99	-1.63	-1.62	1.20	778528.80	570719.56	32°33'59.779"N	103°33'48.269"W	0.10	
700.00	0.770	177.330	699.99	-2.79	-2.78	1.45	778529.05	570718.40	32°33'59.768"N	103°33'48.266"W	0.30	
800.00	0.840	180.580	799.98	-4.19	-4.18	1.47	778529.07	570717.00	32°33'59.754"N	103°33'48.266"W	0.08	
900.00	0.610	187.890	899.97	-5.45	-5.44	1.39	778528.99	570715.74	32°33'59.741"N	103°33'48.267"W	0.25	
1000.00	0.490	192.460	999.96	-6.40	-6.39	1.23	778528.83	570714.79	32°33'59.732"N	103°33'48.269"W	0.13	
1100.00	0.490	182.110	1099.96	-7.24	-7.23	1.12	778528.72	570713.95	32°33'59.724"N	103°33'48.270"W	0.09	
1200.00	0.770	169.520	1199.95	-8.33	-8.32	1.22	778528.82	570712.86	32°33'59.713"N	103°33'48.269"W	0.31	
1300.00	0.760	173.770	1299.94	-9.65	-9.64	1.42	778529.02	570711.54	32°33'59.700"N	103°33'48.267"W	0.06	
1400.00	0.790	194.250	1399.94	-10.98	-10.97	1.32	778528.92	570710.21	32°33'59.687"N	103°33'48.268"W	0.28	
1500.00	0.730	195.090	1499.93	-12.26	-12.25	0.99	778528.59	570708.93	32°33'59.674"N	103°33'48.272"W	0.06	
1600.00	0.980	217.800	1599.92	-13.54	-13.54	0.30	778527.90	570707.64	32°33'59.661"N	103°33'48.281"W	0.42	
1700.00	1.010	218.660	1699.90	-14.90	-14.91	-0.78	778526.82	570706.27	32°33'59.648"N	103°33'48.293"W	0.03	
1800.00	0.080	257.820	1799.89	-15.60	-15.61	-1.40	778526.20	570705.57	32°33'59.641"N	103°33'48.301"W	0.95	
1900.00	0.140	57.420	1899.89	-15.55	-15.56	-1.36	778526.24	570705.62	32°33'59.641"N	103°33'48.300"W	0.22	
2000.00	0.170	119.530	1999.89	-15.56	-15.56	-1.13	778526.47	570705.62	32°33'59.641"N	103°33'48.297"W	0.16	
2100.00	0.170	193.030	2099.89	-15.77	-15.78	-1.04	778526.56	570705.40	32°33'59.639"N	103°33'48.296"W	0.20	
2200.00	0.130	226.180	2199.89	-16.00	-16.01	-1.15	778526.45	570705.17	32°33'59.637"N	103°33'48.298"W	0.09	
2300.00	0.120	232.850	2299.89	-16.14	-16.15	-1.32	778526.28	570705.03	32°33'59.636"N	103°33'48.300"W	0.02	
2400.00	0.120	241.090	2399.89	-16.25	-16.26	-1.49	778526.11	570704.92	32°33'59.634"N	103°33'48.302"W	0.02	
2500.00	0.050	224.100	2499.89	-16.33	-16.34	-1.61	778525.99	570704.84	32°33'59.634"N	103°33'48.303"W	0.07	
2600.00	0.430	211.200	2599.89	-16.68	-16.70	-1.84	778525.76	570704.48	32°33'59.630"N	103°33'48.306"W	0.38	
2700.00	0.310	164.270	2699.89	-17.26	-17.28	-1.96	778525.64	570703.90	32°33'59.624"N	103°33'48.307"W	0.31	
2800.00	0.210	94.410	2799.89	-17.54	-17.55	-1.70	778525.90	570703.63	32°33'59.622"N	103°33'48.304"W	0.31	
2900.00	0.730	48.940	2899.89	-17.14	-17.15	-1.04	778526.56	570704.03	32°33'59.626"N	103°33'48.297"W	0.60	
3000.00	0.680	44.940	2999.88	-16.31	-16.31	-0.14	778527.46	570704.87	32°33'59.634"N	103°33'48.286"W	0.07	
3100.00	0.720	29.320	3099.87	-15.34	-15.34	0.59	778528.19	570705.84	32°33'59.643"N	103°33'48.277"W	0.19	
3200.00	0.590	42.930	3199.86	-14.42	-14.42	1.24	778528.84	570706.76	32°33'59.653"N	103°33'48.270"W	0.20	
3300.00	0.470	46.260	3299.86	-13.77	-13.76	1.89	778529.49	570707.42	32°33'59.659"N	103°33'48.262"W	0.12	
3400.00	0.230	122.210	3399.86	-13.60	-13.58	2.36	778529.96	570707.60	32°33'59.661"N	103°33'48.257"W	0.47	
3500.00	0.630	163.630	3499.86	-14.23	-14.21	2.68	778530.28	570706.97	32°33'59.654"N	103°33'48.253"W	0.48	
3600.00	0.780	164.230	3599.85	-15.42	-15.40	3.02	778530.62	570705.78	32°33'59.643"N	103°33'48.249"W	0.15	
3700.00	1.020	171.260	3699.84	-16.95	-16.93	3.34	778530.94	570704.25	32°33'59.627"N	103°33'48.245"W	0.26	
3800.00	1.060	152.200	3799.82	-18.66	-18.63	3.91	778531.51	570702.55	32°33'59.611"N	103°33'48.239"W	0.35	
3900.00	1.060	149.460	3899.80	-20.28	-20.24	4.81	778532.41	570700.94	32°33'59.595"N	103°33'48.228"W	0.05	
4000.00	1.300	140.110	3999.78	-21.95	-21.91	6.01	778533.61	570699.27	32°33'59.578"N	103°33'48.215"W	0.31	
4100.00	0.970	135.530	4099.76	-23.44	-23.38	7.33	778534.93	570697.80	32°33'59.563"N	103°33'48.199"W	0.34	
4200.00	0.730	119.330	4199.75	-24.36	-24.30	8.48	778536.08	570696.88	32°33'59.554"N	103°33'48.186"W	0.34	
4300.00	0.550	142.360	4299.74	-25.06	-24.99	9.33	778536.93	570696.19	32°33'59.547"N	103°33'48.176"W	0.31	
4400.00	0.800	147.930	4399.74	-26.04	-25.96	9.99	778537.59	570695.22	32°33'59.538"N	103°33'48.168"W	0.26	



Actual Wellpath Report

No.8H AWP

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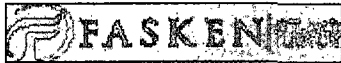


REFERENCE WELLPATH IDENTIFICATION

Operator	Fasken Oil & Ranch	Slot	No.8H SHL
Area	Lea County, NM	Well	No.8H
Field	(Quail) Sec. 16, T20S-R34E	Wellbore	No.8H AWB
Facility	Quail State 16 No.8H		

WELLPATH DATA (179 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4500.00	0.500	161.380	4499.73	-27.05	-26.97	10.50	778538.10	570694.21	32°33'59.528"N	103°33'48.163"W	0.33	
4600.00	1.150	214.040	4599.72	-28.29	-28.21	10.08	778537.68	570692.97	32°33'59.515"N	103°33'48.168"W	0.94	
4700.00	0.990	215.330	4699.70	-29.82	-29.75	9.02	778536.62	570691.43	32°33'59.500"N	103°33'48.180"W	0.16	
4800.00	1.070	219.630	4799.69	-31.23	-31.18	7.92	778535.52	570690.01	32°33'59.486"N	103°33'48.193"W	0.11	
4900.00	1.110	221.240	4899.67	-32.67	-32.62	6.69	778534.29	570688.56	32°33'59.472"N	103°33'48.208"W	0.05	
5000.00	1.150	222.750	4999.65	-34.13	-34.09	5.37	778532.97	570687.09	32°33'59.458"N	103°33'48.223"W	0.05	
5100.00	1.750	218.770	5099.62	-36.04	-36.02	3.73	778531.33	570685.17	32°33'59.439"N	103°33'48.242"W	0.61	
5200.00	2.040	218.530	5199.56	-38.61	-38.60	1.66	778529.26	570682.58	32°33'59.413"N	103°33'48.267"W	0.29	
5300.00	1.640	209.330	5299.51	-41.24	-41.24	-0.15	778527.46	570679.94	32°33'59.387"N	103°33'48.288"W	0.50	
5400.00	1.630	206.520	5399.47	-43.75	-43.76	-1.48	778526.12	570677.42	32°33'59.362"N	103°33'48.304"W	0.08	
5500.00	1.450	204.450	5499.43	-46.16	-46.18	-2.64	778524.96	570675.00	32°33'59.338"N	103°33'48.318"W	0.19	
5600.00	1.200	199.760	5599.41	-48.29	-48.32	-3.52	778524.08	570672.86	32°33'59.317"N	103°33'48.328"W	0.27	
5700.00	1.180	191.140	5699.39	-50.28	-50.32	-4.07	778523.53	570670.87	32°33'59.298"N	103°33'48.335"W	0.18	
5800.00	1.070	187.240	5799.37	-52.22	-52.25	-4.39	778523.21	570668.93	32°33'59.279"N	103°33'48.339"W	0.13	
5900.00	1.040	194.150	5899.35	-54.02	-54.06	-4.73	778522.87	570667.12	32°33'59.261"N	103°33'48.343"W	0.13	
6000.00	1.210	198.490	5999.33	-55.90	-55.94	-5.28	778522.32	570665.24	32°33'59.242"N	103°33'48.349"W	0.19	
6100.00	0.920	203.960	6099.31	-57.63	-57.67	-5.94	778521.66	570663.51	32°33'59.225"N	103°33'48.357"W	0.31	
6200.00	0.850	180.530	6199.30	-59.10	-59.15	-6.28	778521.32	570662.03	32°33'59.210"N	103°33'48.361"W	0.37	
6300.00	0.680	162.410	6299.29	-60.41	-60.46	-6.10	778521.50	570660.72	32°33'59.197"N	103°33'48.359"W	0.29	
6400.00	0.650	155.310	6399.29	-61.49	-61.54	-5.69	778521.91	570659.64	32°33'59.187"N	103°33'48.355"W	0.09	
6500.00	0.600	153.530	6499.28	-62.48	-62.52	-5.22	778522.38	570658.66	32°33'59.177"N	103°33'48.349"W	0.05	
6600.00	0.770	166.190	6599.27	-63.61	-63.64	-4.82	778522.78	570657.54	32°33'59.166"N	103°33'48.345"W	0.23	
6700.00	0.870	208.590	6699.26	-64.92	-64.96	-5.03	778522.57	570656.22	32°33'59.153"N	103°33'48.347"W	0.60	
6800.00	0.800	216.560	6799.25	-66.15	-66.19	-5.81	778521.79	570654.99	32°33'59.141"N	103°33'48.356"W	0.14	
6900.00	1.190	197.660	6899.24	-67.69	-67.74	-6.54	778521.06	570653.44	32°33'59.125"N	103°33'48.365"W	0.50	
7000.00	0.730	185.250	6999.22	-69.31	-69.36	-6.91	778520.69	570651.82	32°33'59.109"N	103°33'48.370"W	0.50	
7100.00	1.400	183.690	7099.21	-71.16	-71.22	-7.05	778520.55	570649.96	32°33'59.091"N	103°33'48.371"W	0.67	
7200.00	1.280	172.930	7199.18	-73.49	-73.55	-6.99	778520.61	570647.64	32°33'59.068"N	103°33'48.371"W	0.28	
7300.00	0.880	177.530	7299.16	-75.37	-75.42	-6.82	778520.78	570645.76	32°33'59.049"N	103°33'48.369"W	0.41	
7400.00	1.100	177.370	7399.15	-77.10	-77.15	-6.74	778520.86	570644.04	32°33'59.032"N	103°33'48.368"W	0.22	
7500.00	1.120	180.930	7499.13	-79.03	-79.08	-6.71	778520.89	570642.10	32°33'59.013"N	103°33'48.368"W	0.07	
7600.00	1.100	201.210	7599.11	-80.90	-80.95	-7.08	778520.52	570640.23	32°33'58.995"N	103°33'48.372"W	0.39	
7700.00	0.810	207.760	7699.10	-82.42	-82.48	-7.75	778519.85	570638.71	32°33'58.980"N	103°33'48.380"W	0.31	
7800.00	1.020	219.340	7799.08	-83.72	-83.79	-8.65	778518.95	570637.39	32°33'58.967"N	103°33'48.391"W	0.28	
7900.00	0.920	219.220	7899.07	-85.03	-85.10	-9.72	778517.88	570636.08	32°33'58.954"N	103°33'48.404"W	0.10	
8000.00	1.180	219.800	7999.05	-86.43	-86.51	-10.88	778516.72	570634.67	32°33'58.940"N	103°33'48.417"W	0.26	
8100.00	1.120	223.030	8099.03	-87.93	-88.02	-12.21	778515.39	570633.16	32°33'58.925"N	103°33'48.433"W	0.09	
8200.00	1.000	242.270	8199.01	-89.04	-89.14	-13.65	778513.95	570632.04	32°33'58.914"N	103°33'48.450"W	0.37	
8300.00	1.330	211.960	8298.99	-90.42	-90.53	-15.04	778512.56	570630.65	32°33'58.901"N	103°33'48.466"W	0.69	
8400.00	0.820	203.980	8398.98	-92.05	-92.17	-15.94	778511.66	570629.02	32°33'58.884"N	103°33'48.477"W	0.53	
8500.00	0.600	118.720	8498.97	-92.95	-93.07	-15.77	778511.83	570628.11	32°33'58.875"N	103°33'48.475"W	0.98	
8600.00	0.910	52.300	8598.96	-92.73	-92.84	-14.69	778512.91	570628.34	32°33'58.878"N	103°33'48.462"W	0.87	
8700.00	1.400	49.570	8698.94	-91.46	-91.56	-13.13	778514.47	570629.62	32°33'58.890"N	103°33'48.444"W	0.49	
8800.00	1.230	71.230	8798.92	-90.34	-90.42	-11.18	778516.42	570630.76	32°33'58.901"N	103°33'48.421"W	0.52	
8900.00	0.400	79.800	8898.91	-89.94	-90.02	-9.82	778517.78	570631.17	32°33'58.905"N	103°33'48.405"W	0.84	



Actual Wellpath Report

No.8H AWP

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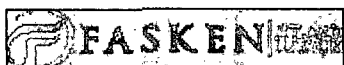
**BAKER
HUGHES**

REFERENCE WELLPATH IDENTIFICATION

Operator	Fasken Oil & Ranch	Slot	No.8H SHL
Area	Lea County, NM	Well	No.8H
Field	(Quail) Sec. 16, T20S-R34E	Wellbore	No.8H AWB
Facility	Quail State 16 No.8H		

WELLPATH DATA (179 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
9000.00	0.340	82.830	8998.90	-89.85	-89.92	-9.18	778518.42	570631.27	32°33'58.906"N	103°33'48.398"W	0.06	
9100.00	1.280	107.320	9098.89	-90.15	-90.21	-7.82	778519.78	570630.97	32°33'58.903"N	103°33'48.382"W	0.98	
9200.00	0.700	99.110	9198.88	-90.59	-90.64	-6.15	778521.45	570630.54	32°33'58.899"N	103°33'48.363"W	0.60	
9300.00	0.710	61.660	9298.87	-90.41	-90.44	-5.00	778522.60	570630.74	32°33'58.901"N	103°33'48.349"W	0.45	
9400.00	0.760	46.670	9398.86	-89.66	-89.70	-3.98	778523.62	570631.49	32°33'58.908"N	103°33'48.337"W	0.20	
9500.00	1.120	34.110	9498.85	-88.41	-88.43	-2.95	778524.65	570632.75	32°33'58.920"N	103°33'48.325"W	0.41	
9600.00	1.150	60.450	9598.83	-87.11	-87.13	-1.53	778526.07	570634.06	32°33'58.933"N	103°33'48.308"W	0.52	
9700.00	0.780	115.930	9698.82	-86.93	-86.93	-0.04	778527.56	570634.25	32°33'58.935"N	103°33'48.291"W	0.96	
9800.00	1.680	136.040	9798.79	-88.29	-88.28	1.59	778529.19	570632.90	32°33'58.922"N	103°33'48.272"W	0.98	
9900.00	1.680	156.710	9898.75	-90.71	-90.68	3.19	778530.79	570630.50	32°33'58.898"N	103°33'48.253"W	0.60	
10000.00	0.290	157.070	9998.74	-92.29	-92.26	3.86	778531.46	570628.92	32°33'58.882"N	103°33'48.246"W	1.39	
10100.00	0.720	255.890	10098.73	-92.67	-92.65	3.35	778530.95	570628.53	32°33'58.878"N	103°33'48.252"W	0.82	
10157.00	0.830	240.790	10155.73	-92.96	-92.94	2.65	778530.25	570628.24	32°33'58.875"N	103°33'48.260"W	0.41	
10280.00	0.260	334.120	10278.72	-93.13	-93.12	1.75	778529.35	570628.06	32°33'58.874"N	103°33'48.270"W	0.72	
10343.00	0.810	195.480	10341.72	-93.43	-93.42	1.57	778529.17	570627.76	32°33'58.871"N	103°33'48.273"W	1.62	
10375.00	0.670	6.300	10373.72	-93.46	-93.46	1.53	778529.13	570627.73	32°33'58.870"N	103°33'48.273"W	4.61	
10406.00	4.330	4.690	10404.68	-92.12	-92.11	1.64	778529.24	570629.07	32°33'58.884"N	103°33'48.272"W	11.81	
10438.00	8.370	359.590	10436.48	-88.58	-88.57	1.72	778529.32	570632.61	32°33'58.919"N	103°33'48.270"W	12.74	
10470.00	12.430	357.920	10467.95	-82.81	-82.80	1.58	778529.18	570638.38	32°33'58.976"N	103°33'48.271"W	12.72	
10501.00	15.580	356.850	10498.02	-75.31	-75.31	1.23	778528.83	570645.87	32°33'59.050"N	103°33'48.275"W	10.20	
10533.00	17.460	355.890	10528.70	-66.23	-66.23	0.65	778528.25	570654.95	32°33'59.140"N	103°33'48.281"W	5.94	
10572.00	19.150	355.450	10565.73	-54.01	-54.01	-0.28	778527.32	570667.17	32°33'59.261"N	103°33'48.291"W	4.35	
10603.00	21.310	355.320	10594.81	-43.32	-43.33	-1.14	778526.46	570677.85	32°33'59.367"N	103°33'48.300"W	6.97	
10635.00	24.890	355.200	10624.24	-30.80	-30.82	-2.18	778525.42	570690.36	32°33'59.490"N	103°33'48.311"W	11.19	
10667.00	28.970	355.720	10652.77	-16.35	-16.38	-3.32	778524.28	570704.80	32°33'59.633"N	103°33'48.323"W	12.77	
10699.00	31.630	0.190	10680.40	-0.22	-0.25	-3.87	778523.73	570720.93	32°33'59.793"N	103°33'48.328"W	10.89	
10730.00	29.760	5.410	10707.06	15.56	15.54	-3.12	778524.48	570736.72	32°33'59.949"N	103°33'48.318"W	10.50	
10769.00	29.360	4.420	10740.98	34.72	34.71	-1.47	778526.13	570755.89	32°34'00.139"N	103°33'48.297"W	1.62	
10801.00	33.520	4.460	10768.28	51.35	51.35	-0.18	778527.42	570772.52	32°34'00.303"N	103°33'48.281"W	13.00	
10832.00	38.700	2.820	10793.31	69.56	69.57	0.97	778528.57	570790.75	32°34'00.484"N	103°33'48.266"W	17.00	
10864.00	44.060	1.250	10817.32	90.69	90.70	1.70	778529.30	570811.88	32°34'00.693"N	103°33'48.255"W	17.06	
10895.00	48.500	359.590	10838.74	113.08	113.10	1.86	778529.46	570834.28	32°34'00.914"N	103°33'48.252"W	14.84	
10927.00	52.200	358.270	10859.15	137.72	137.73	1.39	778528.99	570858.91	32°34'01.158"N	103°33'48.255"W	11.99	
10959.00	55.400	357.170	10878.05	163.52	163.53	0.36	778527.96	570884.70	32°34'01.413"N	103°33'48.265"W	10.38	
10991.00	59.420	356.810	10895.28	190.45	190.45	-1.06	778526.54	570911.62	32°34'01.680"N	103°33'48.279"W	12.60	
11023.00	62.580	356.790	10910.79	218.40	218.39	-2.62	778524.98	570939.56	32°34'01.956"N	103°33'48.295"W	9.88	
11054.00	65.350	356.680	10924.40	246.22	246.19	-4.21	778523.39	570967.37	32°34'02.231"N	103°33'48.311"W	8.94	
11086.00	68.440	356.490	10936.96	275.61	275.57	-5.96	778521.64	570996.74	32°34'02.522"N	103°33'48.329"W	9.67	
11117.00	71.720	356.190	10947.52	304.70	304.65	-7.83	778519.77	571025.82	32°34'02.810"N	103°33'48.349"W	10.62	
11148.00	74.570	355.910	10956.50	334.31	334.25	-9.87	778517.73	571055.42	32°34'03.103"N	103°33'48.370"W	9.23	
11180.00	77.680	355.780	10964.18	365.31	365.23	-12.12	778515.48	571086.40	32°34'03.410"N	103°33'48.394"W	9.73	
11212.00	80.790	355.730	10970.15	396.67	396.57	-14.45	778513.15	571117.74	32°34'03.720"N	103°33'48.418"W	9.72	
11244.00	84.240	356.280	10974.32	428.33	428.22	-16.66	778510.94	571149.39	32°34'04.033"N	103°33'48.441"W	10.92	
11338.00	90.650	359.930	10978.51	522.14	522.01	-19.75	778507.85	571243.18	32°34'04.962"N	103°33'48.470"W	7.84	
11432.00	90.430	359.600	10977.62	616.14	616.01	-20.14	778507.46	571337.17	32°34'05.892"N	103°33'48.466"W	0.42	



Actual Wellpath Report

No.8H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	Fasken Oil & Ranch	Slot	No.8H SHL
Area	Lea County, NM	Well	No.8H
Field	(Quail) Sec. 16, T20S-R34E	Wellbore	No.8H AWB
Facility	Quail State 16 No.8H		

WELLPATH DATA (179 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11528.00	90.370	1.330	10976.95	712.12	712.00	-19.36	778508.24	571433.16	32°34'06.841"N	103°33'48.449"W	1.80	
11622.00	90.430	4.110	10976.30	805.97	805.88	-14.90	778512.70	571527.04	32°34'07.770"N	103°33'48.389"W	2.96	
11717.00	90.490	2.540	10975.54	900.76	900.71	-9.39	778518.21	571621.87	32°34'08.708"N	103°33'48.317"W	1.65	
11811.00	90.520	359.310	10974.71	994.72	994.68	-7.87	778519.73	571715.84	32°34'09.638"N	103°33'48.291"W	3.44	
11906.00	90.550	359.200	10973.82	1089.71	1089.67	-9.11	778518.49	571810.82	32°34'10.577"N	103°33'48.297"W	0.12	
12001.00	90.580	358.530	10972.88	1184.70	1184.65	-10.99	778516.61	571905.79	32°34'11.517"N	103°33'48.311"W	0.71	
12096.00	90.520	0.520	10971.97	1279.69	1279.64	-11.78	778515.82	572000.78	32°34'12.457"N	103°33'48.312"W	2.10	
12191.00	90.580	358.930	10971.06	1374.68	1374.63	-12.23	778515.37	572095.77	32°34'13.397"N	103°33'48.310"W	1.67	
12286.00	90.520	356.560	10970.15	1469.62	1469.54	-15.97	778511.63	572190.68	32°34'14.337"N	103°33'48.345"W	2.50	
12381.00	90.580	356.920	10969.23	1564.50	1564.38	-21.37	778506.23	572285.52	32°34'15.275"N	103°33'48.400"W	0.38	
12476.00	90.520	358.140	10968.32	1659.43	1659.29	-25.47	778502.14	572380.42	32°34'16.215"N	103°33'48.440"W	1.29	
12570.00	90.990	358.910	10967.08	1753.41	1753.25	-27.88	778499.72	572474.38	32°34'17.144"N	103°33'48.461"W	0.96	
12666.00	90.460	0.850	10965.87	1849.39	1849.24	-28.09	778499.52	572570.36	32°34'18.094"N	103°33'48.455"W	2.09	
12760.00	90.430	2.800	10965.14	1943.31	1943.18	-25.09	778502.51	572664.31	32°34'19.024"N	103°33'48.412"W	2.07	
12855.00	90.400	1.610	10964.45	2038.21	2038.11	-21.44	778506.16	572759.23	32°34'19.963"N	103°33'48.361"W	1.25	
12950.00	90.430	359.770	10963.76	2133.19	2133.09	-20.29	778507.31	572854.21	32°34'20.902"N	103°33'48.340"W	1.94	
13045.00	90.400	359.180	10963.07	2228.18	2228.09	-21.16	778506.44	572949.20	32°34'21.842"N	103°33'48.342"W	0.62	
13140.00	90.460	0.580	10962.36	2323.18	2323.08	-21.36	778506.24	573044.20	32°34'22.782"N	103°33'48.336"W	1.47	
13234.00	90.490	0.680	10961.58	2417.16	2417.07	-20.33	778507.27	573138.18	32°34'23.712"N	103°33'48.316"W	0.11	
13329.00	90.490	1.020	10960.77	2512.13	2512.06	-18.92	778508.68	573233.17	32°34'24.652"N	103°33'48.292"W	0.36	
13425.00	90.460	1.050	10959.97	2608.10	2608.04	-17.19	778510.41	573329.15	32°34'25.601"N	103°33'48.263"W	0.04	
13520.00	90.460	1.110	10959.21	2703.06	2703.02	-15.40	778512.20	573424.12	32°34'26.541"N	103°33'48.234"W	0.06	
13615.00	90.400	0.180	10958.50	2798.04	2798.01	-14.33	778513.27	573519.11	32°34'27.481"N	103°33'48.214"W	0.98	
13710.00	90.550	355.730	10957.71	2892.97	2892.92	-17.72	778509.89	573614.02	32°34'28.420"N	103°33'48.245"W	4.69	
13805.00	90.490	357.100	10956.85	2987.82	2987.73	-23.66	778503.95	573708.83	32°34'29.359"N	103°33'48.307"W	1.44	
13900.00	90.520	358.020	10956.01	3082.76	3082.64	-27.70	778499.90	573803.73	32°34'30.298"N	103°33'48.346"W	0.97	
13995.00	90.430	358.580	10955.22	3177.73	3177.59	-30.52	778497.08	573898.68	32°34'31.238"N	103°33'48.371"W	0.60	
14090.00	90.520	359.320	10954.44	3272.72	3272.57	-32.26	778495.34	573993.66	32°34'32.178"N	103°33'48.383"W	0.78	
14184.00	90.430	359.120	10953.66	3366.72	3366.56	-33.54	778494.06	574087.65	32°34'33.108"N	103°33'48.390"W	0.23	
14279.00	90.710	359.470	10952.71	3461.71	3461.55	-34.71	778492.89	574182.63	32°34'34.047"N	103°33'48.396"W	0.47	
14374.00	90.710	359.980	10951.53	3556.70	3556.54	-35.16	778492.44	574277.62	32°34'34.987"N	103°33'48.393"W	0.54	
14470.00	90.680	0.390	10950.37	3652.69	3652.53	-34.85	778492.75	574373.61	32°34'35.937"N	103°33'48.381"W	0.43	
14565.00	90.710	359.770	10949.22	3747.68	3747.53	-34.72	778492.88	574468.60	32°34'36.877"N	103°33'48.372"W	0.65	
14660.00	90.460	359.940	10948.25	3842.67	3842.52	-34.96	778492.64	574563.59	32°34'37.817"N	103°33'48.367"W	0.32	
14755.00	90.490	0.120	10947.46	3937.67	3937.52	-34.91	778492.69	574658.59	32°34'38.757"N	103°33'48.358"W	0.19	
14849.00	91.080	359.370	10946.17	4031.66	4031.51	-35.33	778492.27	574752.57	32°34'39.687"N	103°33'48.355"W	1.02	
14944.00	92.560	358.770	10943.16	4126.60	4126.44	-36.87	778490.73	574847.51	32°34'40.626"N	103°33'48.365"W	1.68	
15040.00	92.590	358.210	10938.84	4222.49	4222.31	-39.40	778488.20	574943.37	32°34'41.575"N	103°33'48.386"W	0.58	
15103.00	90.490	358.870	10937.15	4285.45	4285.27	-41.00	778486.60	575006.32	32°34'42.198"N	103°33'48.400"W	3.49	
15198.00	89.750	0.250	10936.95	4380.45	4380.26	-41.73	778485.87	575101.31	32°34'43.138"N	103°33'48.400"W	1.65	
15293.00	89.780	2.060	10937.34	4475.41	4475.24	-39.82	778487.79	575196.29	32°34'44.078"N	103°33'48.370"W	1.91	
15387.00	89.880	2.210	10937.62	4569.31	4569.17	-36.31	778491.29	575290.22	32°34'45.007"N	103°33'48.321"W	0.19	
15450.00	89.810	2.720	10937.79	4632.23	4632.11	-33.60	778494.00	575353.16	32°34'45.629"N	103°33'48.284"W	0.82	
15515.00	89.810	2.720	10938.00	4697.13	4697.04	-30.52	778497.08	575418.08	32°34'46.271"N	103°33'48.242"W	0.00	Proj to Bit

TARGETS

Name	MD	TVD	North	East	Grid East	Grid North	Latitude	Longitude	Shape
------	----	-----	-------	------	-----------	------------	----------	-----------	-------

	[ft]	[ft]	[ft]	[ft]	[US ft]	[US ft]			
No.8H PBHL		10940.00	4681.36	-34.33	778493.27	575402.41	32°34'46.117"N	103°33'48.288"W	point

WELLPATH COMPOSITION - Ref Wellbore: No.8H AWB Ref Wellpath: No.8H AWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	10157.00	Generic gyro - northseeking (Standard)	VES Gyro - <100-10157>	No.8H AWB
10157.00	15450.00	AT Curve (Short Spaced)	BHI MWD ATC <10280-XXXX>	No.8H AWB
15450.00	15515.00	Blind Drilling (std)	Projection to bit	No.8H AWB



Company: Faskin Oil and Ranch

Lease/Well: Quail State 16/#8H

Rig Name: Patterson Rig #187

State/County: New Mexico/Eddy

Latitude: 32.57

GRID North is 0.41 Degrees East of True North

VS-Azi: 0.00 Degrees



FIELD COPY ONLY (NOT DEFINITIVE)

Depth Reference : RKB = 28 Feet

HOBBS OCD

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: quail state 16 #8h_01.ut

Minimum Curvature Method

Report Date/Time: 9/22/2013 / 05:48

FEB 24 2014

RECEIVED

Vaughn Energy Services

Ft.Worth Tx

817-741-3610

Kenny Gabel

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
100.00	0.11	100.76	100.00	-0.02	0.09	-0.02	0.09	100.76	0.11
200.00	0.04	101.24	200.00	-0.04	0.22	-0.04	0.22	100.83	0.07
300.00	0.04	101.22	300.00	-0.05	0.28	-0.05	0.28	100.92	0.00
400.00	0.18	147.87	400.00	-0.19	0.39	-0.19	0.44	115.86	0.15
500.00	0.54	149.06	500.00	-0.72	0.72	-0.72	1.02	135.29	0.36
600.00	0.61	155.60	599.99	-1.61	1.17	-1.61	1.99	143.82	0.09
700.00	0.77	177.33	699.99	-2.76	1.42	-2.76	3.10	152.69	0.31
800.00	0.84	180.58	799.98	-4.17	1.45	-4.17	4.41	160.83	0.09
900.00	0.61	187.89	899.97	-5.43	1.37	-5.43	5.60	165.85	0.26
1000.00	0.49	192.46	999.96	-6.37	1.20	-6.37	6.48	169.29	0.12
1100.00	0.49	182.11	1099.96	-7.21	1.10	-7.21	7.29	171.36	0.09
1200.00	0.77	169.52	1199.95	-8.29	1.20	-8.29	8.38	171.76	0.31
1300.00	0.76	173.77	1299.94	-9.61	1.40	-9.61	9.71	171.74	0.06
1400.00	0.79	194.25	1399.94	-10.94	1.30	-10.94	11.01	173.23	0.28
1500.00	0.73	195.09	1499.93	-12.22	0.96	-12.22	12.26	175.50	0.06
1600.00	0.98	217.80	1599.92	-13.51	0.27	-13.51	13.52	178.85	0.42
1700.00	1.01	218.66	1699.90	-14.88	-0.81	-14.88	14.90	183.10	0.03
1800.00	0.08	257.82	1799.89	-15.59	-1.43	-15.59	15.65	185.24	0.95
1900.00	0.14	57.42	1899.89	-15.54	-1.40	-15.54	15.60	185.14	0.22
2000.00	0.17	119.53	1999.89	-15.55	-1.17	-15.55	15.59	184.29	0.16
2100.00	0.17	193.03	2099.89	-15.77	-1.07	-15.77	15.80	183.87	0.21
2200.00	0.13	226.18	2199.89	-15.99	-1.18	-15.99	16.03	184.23	0.09
2300.00	0.12	232.85	2299.89	-16.13	-1.35	-16.13	16.19	184.78	0.02
2400.00	0.12	241.09	2399.89	-16.25	-1.53	-16.25	16.32	185.36	0.02
2500.00	0.05	224.10	2499.89	-16.33	-1.65	-16.33	16.41	185.76	0.08
2600.00	0.43	211.20	2599.89	-16.68	-1.87	-16.68	16.78	186.40	0.39
2700.00	0.31	164.27	2699.89	-17.26	-1.99	-17.26	17.38	186.58	0.32
2800.00	0.21	94.41	2799.89	-17.54	-1.73	-17.54	17.63	185.64	0.31

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
2900.00	0.73	48.94	2899.89	-17.14	-1.07	-17.14	17.17	183.57	0.60
3000.00	0.68	44.94	2999.88	-16.30	-0.17	-16.30	16.30	180.59	0.07
3100.00	0.72	29.32	3099.87	-15.33	0.56	-15.33	15.34	177.91	0.19
3200.00	0.59	42.93	3199.86	-14.41	1.22	-14.41	14.46	175.18	0.21
3300.00	0.47	46.26	3299.86	-13.75	1.86	-13.75	13.87	172.29	0.12
3400.00	0.23	122.21	3399.86	-13.57	2.33	-13.57	13.76	170.27	0.47
3500.00	0.63	163.63	3499.86	-14.20	2.65	-14.20	14.44	169.43	0.48
3600.00	0.78	164.23	3599.85	-15.38	2.99	-15.38	15.66	169.01	0.16
3700.00	1.02	171.26	3699.84	-16.91	3.31	-16.91	17.23	168.93	0.26
3800.00	1.06	152.20	3799.82	-18.61	3.88	-18.61	19.01	168.24	0.35
3900.00	1.06	149.46	3899.80	-20.23	4.78	-20.23	20.79	166.71	0.05
4000.00	1.30	140.11	3999.78	-21.90	5.98	-21.90	22.70	164.73	0.31
4100.00	0.97	135.53	4099.76	-23.37	7.30	-23.37	24.49	162.66	0.35
4200.00	0.73	119.33	4199.75	-24.29	8.44	-24.29	25.71	160.83	0.34
4300.00	0.55	142.36	4299.74	-24.97	9.29	-24.97	26.64	159.61	0.31
4400.00	0.80	147.93	4399.74	-25.94	9.95	-25.94	27.79	159.02	0.26
4500.00	0.50	161.38	4499.73	-26.95	10.46	-26.95	28.91	158.79	0.34
4600.00	1.15	214.04	4599.72	-28.20	10.04	-28.20	29.93	160.41	0.94
4700.00	0.99	215.33	4699.70	-29.73	8.97	-29.73	31.06	163.21	0.16
4800.00	1.07	219.63	4799.69	-31.16	7.87	-31.16	32.14	165.82	0.11
4900.00	1.11	221.24	4899.67	-32.61	6.64	-32.61	33.28	168.49	0.04
5000.00	1.15	222.75	4999.65	-34.07	5.32	-34.07	34.49	171.12	0.05
5100.00	1.75	218.77	5099.62	-36.00	3.68	-36.00	36.19	174.16	0.61
5200.00	2.04	218.53	5199.56	-38.59	1.61	-38.59	38.62	177.61	0.29
5300.00	1.64	209.33	5299.51	-41.23	-0.20	-41.23	41.23	180.27	0.50
5400.00	1.63	206.52	5399.47	-43.75	-1.53	-43.75	43.77	182.00	0.08
5500.00	1.45	204.45	5499.43	-46.17	-2.69	-46.17	46.25	183.33	0.19
5600.00	1.20	199.76	5599.41	-48.31	-3.57	-48.31	48.44	184.22	0.26
5700.00	1.18	191.14	5699.39	-50.30	-4.12	-50.30	50.47	184.68	0.18
5800.00	1.07	187.24	5799.37	-52.24	-4.44	-52.24	52.42	184.85	0.14
5900.00	1.04	194.15	5899.35	-54.04	-4.77	-54.04	54.25	185.05	0.13
6000.00	1.21	198.49	5999.33	-55.92	-5.33	-55.92	56.17	185.45	0.20
6100.00	0.92	203.96	6099.31	-57.66	-5.99	-57.66	57.97	185.93	0.31
6200.00	0.85	180.53	6199.30	-59.13	-6.33	-59.13	59.47	186.11	0.37
6300.00	0.68	162.41	6299.29	-60.44	-6.15	-60.44	60.75	185.81	0.29
6400.00	0.65	155.31	6399.29	-61.52	-5.74	-61.52	61.79	185.33	0.09
6500.00	0.60	153.53	6499.28	-62.51	-5.26	-62.51	62.73	184.81	0.05
6600.00	0.77	166.19	6599.27	-63.63	-4.87	-63.63	63.82	184.38	0.22
6700.00	0.87	208.59	6699.26	-64.95	-5.07	-64.95	65.15	184.46	0.60
6800.00	0.80	216.56	6799.25	-66.17	-5.85	-66.17	66.43	185.05	0.14
6900.00	1.19	197.66	6899.24	-67.72	-6.58	-67.72	68.04	185.55	0.51
7000.00	0.73	185.25	6999.22	-69.35	-6.95	-69.35	69.70	185.72	0.50
7100.00	1.40	183.69	7099.21	-71.20	-7.09	-71.20	71.55	185.68	0.67
7200.00	1.28	172.93	7199.18	-73.53	-7.03	-73.53	73.86	185.46	0.28
7300.00	0.88	177.53	7299.16	-75.40	-6.86	-75.40	75.71	185.20	0.41
7400.00	1.10	177.37	7399.15	-77.12	-6.78	-77.12	77.42	185.02	0.23
7500.00	1.12	180.93	7499.13	-79.06	-6.75	-79.06	79.35	184.88	0.07

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
7600.00	1.10	201.21	7599.11	-80.94	-7.12	-80.94	81.25	185.02	0.39
7700.00	0.81	207.76	7699.10	-82.46	-7.79	-82.46	82.82	185.40	0.31
7800.00	1.02	219.34	7799.08	-83.77	-8.68	-83.77	84.22	185.92	0.28
7900.00	0.92	219.22	7899.07	-85.08	-9.76	-85.08	85.63	186.54	0.10
8000.00	1.18	219.80	7999.05	-86.49	-10.92	-86.49	87.18	187.20	0.26
8100.00	1.12	223.03	8099.03	-88.00	-12.25	-88.00	88.85	187.93	0.09
8200.00	1.00	242.27	8199.01	-89.12	-13.69	-89.12	90.17	188.73	0.38
8300.00	1.33	211.96	8298.99	-90.51	-15.07	-90.51	91.75	189.45	0.69
8400.00	0.82	203.98	8398.98	-92.14	-15.97	-92.14	93.51	189.84	0.53
8500.00	0.60	118.72	8498.97	-93.04	-15.81	-93.04	94.37	189.64	0.97
8600.00	0.91	52.30	8598.96	-92.81	-14.72	-92.81	93.97	189.01	0.87
8700.00	1.40	49.57	8698.94	-91.53	-13.17	-91.53	92.47	188.19	0.49
8800.00	1.23	71.23	8798.92	-90.40	-11.22	-90.40	91.09	187.08	0.52
8900.00	0.40	79.80	8898.91	-89.99	-9.86	-89.99	90.53	186.26	0.84
9000.00	0.34	82.83	8998.90	-89.89	-9.22	-89.89	90.36	185.86	0.06
9100.00	1.28	107.32	9098.89	-90.18	-7.86	-90.18	90.53	184.98	0.98
9200.00	0.70	99.11	9198.88	-90.61	-6.19	-90.61	90.82	183.91	0.59
9300.00	0.71	61.66	9298.87	-90.42	-5.04	-90.42	90.56	183.19	0.45
9400.00	0.76	46.67	9398.86	-89.67	-4.01	-89.67	89.76	182.56	0.20
9500.00	1.12	34.11	9498.85	-88.40	-2.98	-88.40	88.45	181.93	0.42
9600.00	1.15	60.45	9598.83	-87.09	-1.55	-87.09	87.11	181.02	0.52
9700.00	0.78	115.93	9698.82	-86.90	-0.07	-86.90	86.90	180.04	0.96
9800.00	1.68	136.04	9798.79	-88.25	1.56	-88.25	88.26	178.99	0.99
9900.00	1.68	156.71	9898.75	-90.65	3.16	-90.65	90.71	178.00	0.60
10000.00	0.29	157.07	9998.74	-92.23	3.84	-92.23	92.31	177.62	1.39
10100.00	0.72	255.89	10098.73	-92.61	3.32	-92.61	92.67	177.94	0.82
10157.00	0.83	240.79	10155.73	-92.90	2.61	-92.90	92.94	178.39	0.41

HORIZONTAL DISPLACEMENT IS
92.94 FEET AT 178.39 DEGREES