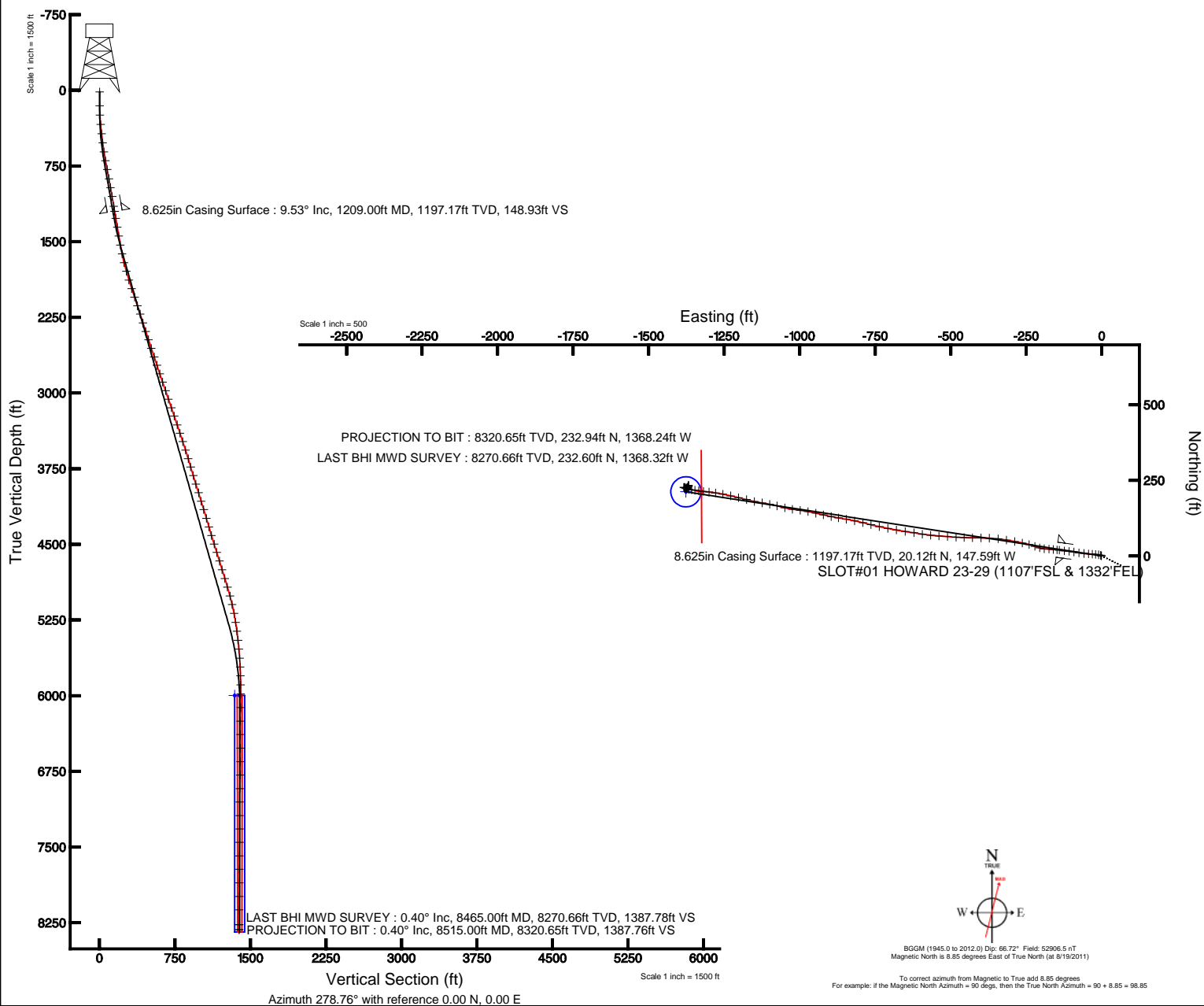


Location:	COLORADO	Slot:	SLOT#01 HOWARD 23-29 (1107'FSL & 1332'FEL)
Field:	WELD COUNTY (KERR MCGEE)	Well:	HOWARD 23-29
Facility:	SEC.29-T1N-R67W	Wellbore:	HOWARD 23-29 PWB



Post reference weightings in HOWARD 23-29 (REV.4A) PWP True vertical depths are referenced to XTREME 15 (RK8) Measured depths are referenced to XTREME 15 (RK8) XTREME 15 (RK8) to Mean Sea Level 5038 feet Mean Sea Level to Mud line (At Site: SLO701 HOWARD 23-29 (1107FSL & 1327FEL)): 0 feet Coordinates are in feet referenced to Slot		Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet North Reference: True north Scale: True distance Depths are in feet Created by: coolcaddm on 10/28/2011
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Actual Wellpath Report

HOWARD 23-29 AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#01 HOWARD 23-29 (1107'FSL & 1332'FEL)
Area	COLORADO	Well	HOWARD 23-29
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 23-29 awb
Facility	SEC.29-T1N-R67W		

REPORT SETUP INFORMATION

Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 3.0.1
North Reference	True	User	Cookdanm
Scale	0.999965	Report Generated	10/28/2011 at 10:16:31 AM
Convergence at slot	0.38° East	Database/Source file	WA_Denver/HOWARD_23-29_awb.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-0.10	0.16	3165346.05	1249908.63	40°01'04.350"N	104°54'34.715"W
Facility Reference Pt			3165345.89	1249908.73	40°01'04.351"N	104°54'34.717"W
Field Reference Pt			3197771.84	1268891.29	40°04'09.600"N	104°47'36.000"W

WELLPATH DATUM

Calculation method	Minimum curvature	XTREME 15 (RKB) to Facility Vertical Datum	5038.00ft
Horizontal Reference Pt	Slot	XTREME 15 (RKB) to Mean Sea Level	5038.00ft
Vertical Reference Pt	XTREME 15 (RKB)	XTREME 15 (RKB) to Mud Line at Slot (SLOT#01 HOWARD 23-29 (1107'FSL & 1332'FEL))	5038.00ft
MD Reference Pt	XTREME 15 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	278.76°



Actual Wellpath Report

HOWARD 23-29 AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#01 HOWARD 23-29 (1107'FSL & 1332'FEL)
Area	COLORADO	Well	HOWARD 23-29
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 23-29 awb
Facility	SEC.29-T1N-R67W		

WELLPATH DATA (88 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
0.00†	0.000	333.300	0.00	0.00	0.00	0.00	0.00	
15.00	0.000	333.300	15.00	0.00	0.00	0.00	0.00	
153.00	0.700	333.300	153.00	0.49	0.75	-0.38	0.51	
245.00	2.800	287.500	244.95	3.04	1.93	-2.77	2.57	
338.00	5.600	281.200	337.69	9.82	3.50	-9.39	3.05	
431.00	6.800	277.700	430.15	19.86	5.11	-19.30	1.35	
521.00	7.300	270.700	519.47	30.84	5.90	-30.30	1.10	
611.00	9.100	273.100	608.54	43.59	6.35	-43.12	2.04	
700.00	10.600	277.400	696.23	58.78	7.79	-58.27	1.88	
788.00	10.800	279.100	782.70	75.11	10.13	-74.44	0.42	
882.00	10.500	278.100	875.08	92.49	12.73	-91.61	0.37	
971.00	10.300	277.000	962.62	108.55	14.85	-107.54	0.32	
1060.00	9.800	277.400	1050.25	124.07	16.79	-122.95	0.57	
1160.00	9.500	278.400	1148.84	140.83	19.09	-139.55	0.34	
1280.00	9.600	273.100	1267.18	160.69	21.08	-159.34	0.74	
1370.00	9.600	275.200	1355.92	175.65	22.17	-174.31	0.39	
1459.00	10.100	275.200	1443.61	190.85	23.55	-189.47	0.56	
1550.00	9.400	284.700	1533.30	206.20	26.16	-204.61	1.93	
1639.00	11.900	290.700	1620.76	222.41	31.25	-220.22	3.07	
1728.00	14.500	284.700	1707.41	242.48	37.32	-239.59	3.30	
1817.00	16.000	281.600	1793.27	265.81	42.61	-262.38	1.92	
1907.00	17.200	279.800	1879.52	291.51	47.37	-287.65	1.45	
1997.00	18.100	280.900	1965.28	318.78	52.28	-314.49	1.07	
2087.00	18.500	275.900	2050.73	347.01	56.39	-342.42	1.80	
2177.00	18.900	272.800	2135.99	375.77	58.57	-371.18	1.19	
2264.00	18.500	270.800	2218.39	403.46	59.45	-399.06	0.87	
2356.00	17.600	270.100	2305.86	431.67	59.68	-427.56	1.01	
2444.00	18.900	272.900	2389.44	459.00	60.42	-455.10	1.78	
2530.00	17.700	273.200	2471.09	485.87	61.86	-482.07	1.40	
2620.00	18.500	274.600	2556.63	513.73	63.77	-509.96	1.01	
2710.00	18.500	273.900	2641.98	542.19	65.88	-538.44	0.25	
2798.00	18.100	275.700	2725.53	569.76	68.19	-565.97	0.79	
2887.00	18.500	279.200	2810.03	597.68	71.82	-593.67	1.31	
2974.00	19.200	278.900	2892.37	625.79	76.24	-621.43	0.81	
3064.00	18.900	278.500	2977.44	655.17	80.69	-650.46	0.36	
3153.00	19.200	280.300	3061.56	684.21	85.43	-679.12	0.74	
3242.00	19.300	281.700	3145.59	713.53	91.03	-707.92	0.53	
3330.00	18.400	281.000	3228.87	741.93	96.63	-735.79	1.05	
3421.00	18.400	284.500	3315.22	770.57	102.97	-763.80	1.21	
3509.00	18.300	283.800	3398.74	798.15	109.74	-790.66	0.28	
3597.00	18.500	282.000	3482.25	825.85	115.94	-817.73	0.68	
3685.00	18.400	279.600	3565.72	853.68	121.16	-845.09	0.87	
3774.00	16.400	279.600	3650.65	880.29	125.60	-871.33	2.25	
3860.00	16.800	282.000	3733.06	904.84	130.21	-895.45	0.92	
3950.00	16.800	281.700	3819.22	930.81	135.55	-920.91	0.10	



Actual Wellpath Report

HOWARD 23-29 AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#01 HOWARD 23-29 (1107'FSL & 1332'FEL)
Area	COLORADO	Well	HOWARD 23-29
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 23-29 awb
Facility	SEC.29-T1N-R67W		

WELLPATH DATA (88 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
4039.00	17.200	283.400	3904.33	956.77	141.21	-946.31	0.72	
4128.00	17.400	279.900	3989.31	983.20	146.54	-972.22	1.19	
4216.00	17.400	277.400	4073.28	1009.51	150.50	-998.23	0.85	
4303.00	17.000	279.200	4156.39	1035.23	154.21	-1023.68	0.77	
4393.00	16.800	283.100	4242.51	1061.35	159.26	-1049.34	1.28	
4483.00	16.500	284.100	4328.74	1087.05	165.32	-1074.40	0.46	
4570.00	16.800	281.300	4412.09	1111.91	170.80	-1098.72	0.98	
4659.00	17.200	278.500	4497.20	1137.92	175.26	-1124.34	1.02	
4747.00	17.400	282.400	4581.22	1164.06	180.01	-1150.06	1.34	
4836.00	17.600	284.400	4666.11	1190.73	186.21	-1176.09	0.71	
4926.00	17.300	283.100	4751.96	1217.62	192.63	-1202.31	0.55	
5017.00	17.100	282.400	4838.89	1244.46	198.57	-1228.55	0.32	
5107.00	16.500	282.000	4925.05	1270.43	204.07	-1253.98	0.68	
5198.00	15.600	277.800	5012.51	1295.56	208.42	-1278.74	1.61	
5286.00	12.900	276.700	5097.79	1317.22	211.17	-1300.22	3.08	
5376.00	11.100	277.400	5185.82	1335.92	213.46	-1318.79	2.01	
5465.00	8.800	277.100	5273.48	1351.29	215.40	-1334.05	2.58	
5554.00	7.800	277.800	5361.54	1364.13	217.06	-1346.79	1.13	
5645.00	6.400	276.700	5451.84	1375.38	218.49	-1357.94	1.55	
5733.00	5.400	283.100	5539.38	1384.41	220.00	-1366.85	1.36	
5822.00	3.600	289.000	5628.10	1391.33	221.86	-1373.57	2.09	
5910.00	3.300	298.200	5715.94	1396.44	223.96	-1378.41	0.71	
5999.00	1.600	304.900	5804.86	1399.97	225.88	-1381.69	1.93	
6089.00	0.400	232.100	5894.84	1401.32	226.41	-1382.97	1.70	
6179.00	0.200	146.700	5984.84	1401.43	226.08	-1383.13	0.48	
6313.00	0.300	88.000	6118.84	1400.93	225.90	-1382.65	0.19	
6448.00	0.100	75.300	6253.84	1400.47	225.94	-1382.18	0.15	
6580.00	0.100	308.700	6385.84	1400.46	226.04	-1382.16	0.14	
6714.00	0.000	229.600	6519.84	1400.57	226.12	-1382.25	0.07	
6849.00	0.400	62.300	6654.84	1400.19	226.34	-1381.84	0.30	
6981.00	1.400	105.900	6786.82	1398.22	226.11	-1379.88	0.87	
7116.00	2.300	101.700	6921.75	1393.87	225.11	-1375.64	0.67	
7249.00	0.300	180.100	7054.71	1391.16	224.22	-1373.03	1.70	
7384.00	0.100	218.400	7189.71	1391.16	223.77	-1373.10	0.17	
7518.00	0.300	21.500	7323.71	1391.14	224.01	-1373.04	0.30	
7650.00	0.500	41.900	7455.71	1390.75	224.76	-1372.53	0.18	
7784.00	0.400	29.200	7589.71	1390.27	225.60	-1371.91	0.10	
7917.00	0.900	32.800	7722.70	1389.68	226.88	-1371.12	0.38	
8051.00	0.900	26.100	7856.68	1388.94	228.71	-1370.09	0.08	
8185.00	0.700	41.500	7990.67	1388.18	230.27	-1369.08	0.22	
8319.00	0.500	5.300	8124.66	1387.77	231.47	-1368.49	0.31	
8465.00	0.400	12.400	8270.66	1387.78	232.60	-1368.32	0.08	LAST BHI MWD SURVEY
8515.00	0.400	12.400	8320.65	1387.76	232.94	-1368.24	0.00	PROJECTION TO BIT



Actual Wellpath Report

HOWARD 23-29 AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#01 HOWARD 23-29 (1107'FSL & 1332'FEL)
Area	COLORADO	Well	HOWARD 23-29
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 23-29 awb
Facility	SEC.29-T1N-R67W		

HOLE & CASING SECTIONS - Ref Wellbore: HOWARD 23-29 awb Ref Wellpath: HOWARD 23-29 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]
12.25in Open Hole	15.00	1215.00	1200.00	15.00	1203.08	0.00	0.00	20.23	-148.57
8.625in Casing Surface	15.00	1209.00	1194.00	15.00	1197.17	0.00	0.00	20.12	-147.59
7.875in Open Hole	1215.00	8515.00	7300.00	1203.08	8320.65	20.23	-148.57	232.94	-1368.24

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
HOWARD 23-29 GEO TARGET 50' RADIUS (1320'FSL & 2590'FWL, REV-1)		6000.00	212.03	-1376.63	3163968.08	1250111.49	40°01'06.445"N	104°54'52.409"W	circle
HOWARD 23-29 HARDLINE 53'E		6000.00	212.05	-1324.63	3164020.08	1250111.85	40°01'06.445"N	104°54'51.741"W	point

WELLPATH COMPOSITION - Ref Wellbore: HOWARD 23-29 awb Ref Wellpath: HOWARD 23-29 AWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
15.00	8465.00	NaviTrak (Standard)	BHI MWD SURVEYS <153-8465>	HOWARD 23-29 awb
8465.00	8515.00	Blind Drilling (std)	Projection to bit	HOWARD 23-29 awb



Actual Wellpath Report

HOWARD 23-29 AWP

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Area	COLORADO	Well	HOWARD 23-29
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 23-29 awb
Facility	SEC.29-T1N-R67W		

WELLPATH COMMENTS

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
8465.00	0.400	12.400	8270.66	LAST BHI MWD SURVEY
8515.00	0.400	12.400	8320.65	PROJECTION TO BIT