



## **END OF WELL REPORT**

**Prepared For:**

**Kerr-McGee Oil & Gas Onshore LP  
DECHANT 36-36HZ PAD  
DECHANT 37N-W1HZ  
WELD,CO**

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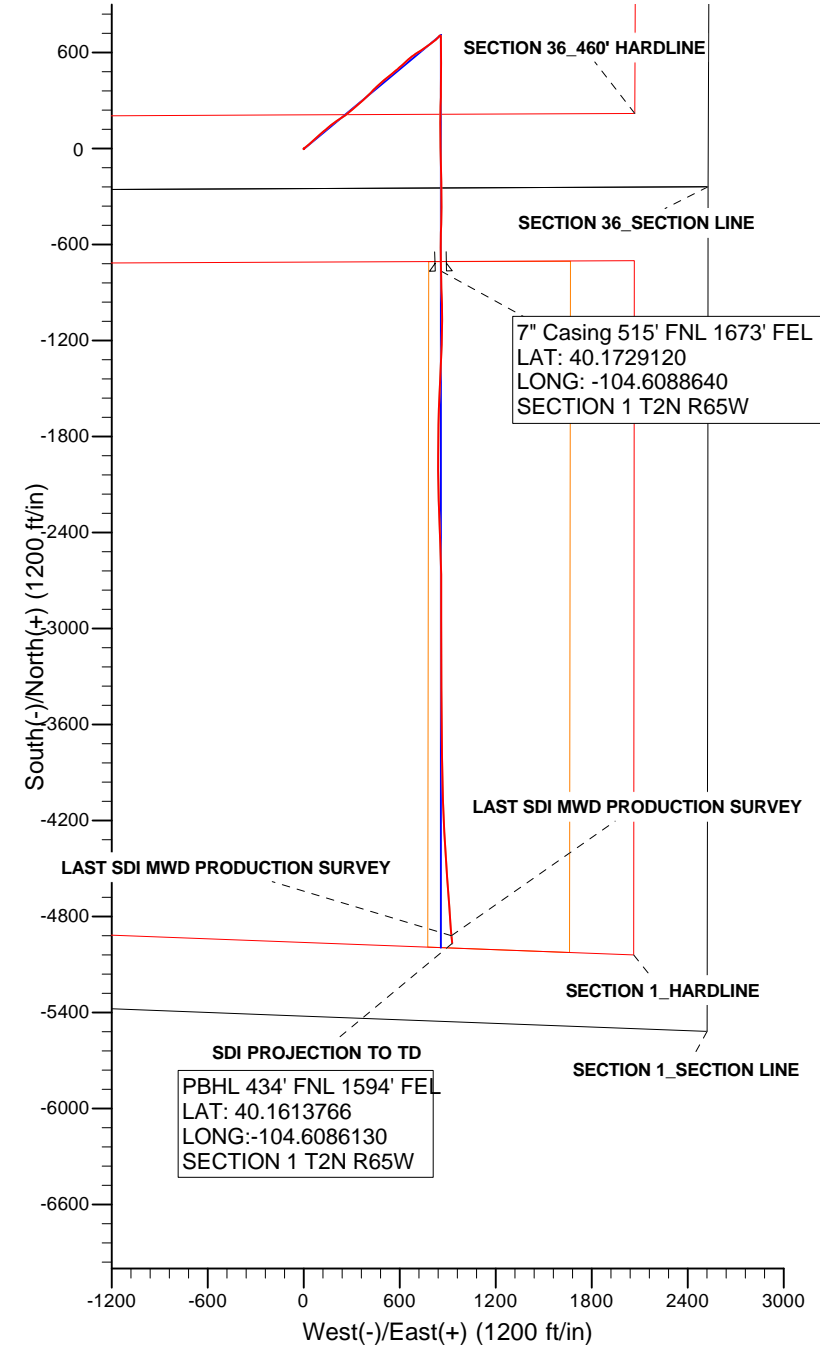
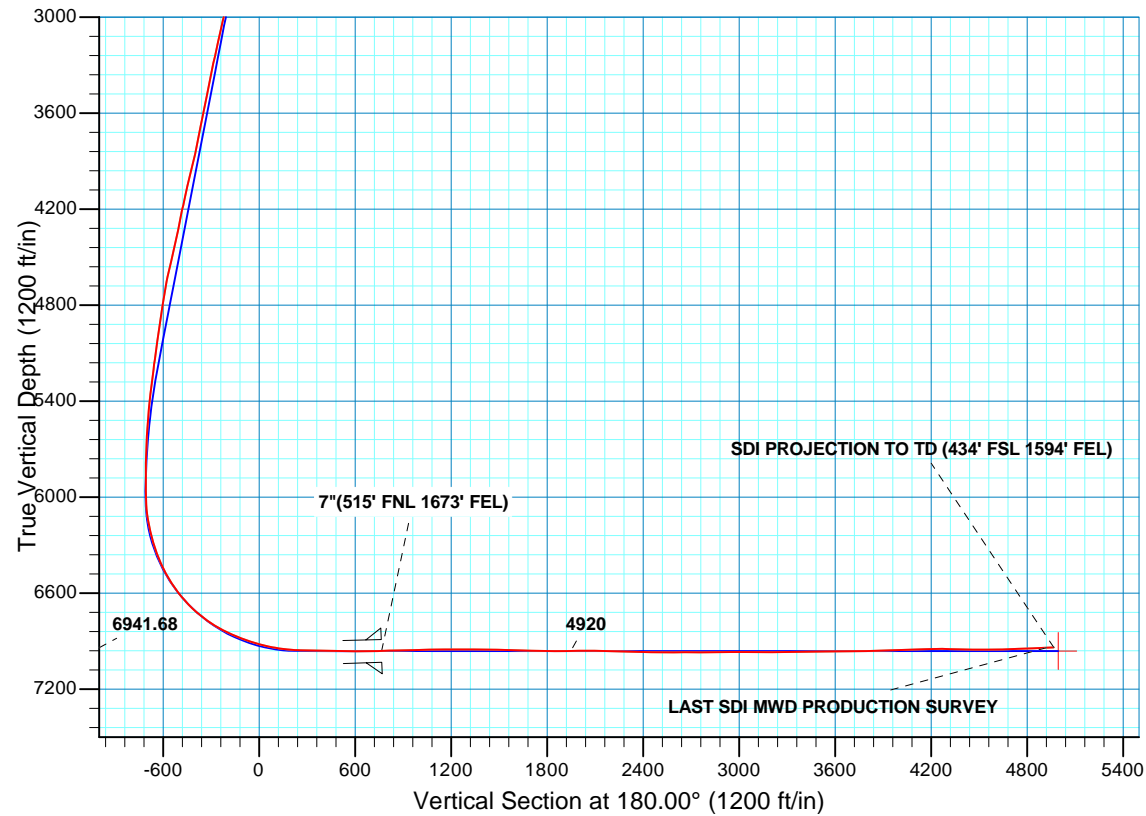
WELL DETAILS: DECHANT 37N-W1HZ

GL 4827' & KB 25' @ 4852.00ft (HP 311)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	1307842.72	3248151.97	40.1750129	-104.6119350

## CASING DETAILS

TVD	MD	Name	Size
6961.62	8178.00	7"(515' FNL 1673' FEL)	7.000





**Scientific Drilling**

## **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83**

**DECHANT 36-36HZ PAD**

**DECHANT 37N-W1HZ**

**OH**

**Design: OH**

## **Standard Survey Report**

**19 February, 2013**

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well DECHANT 37N-W1HZ
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	GL 4827' & KB 25' @ 4852.00ft (HP 311)
<b>Site:</b>	DECHANT 36-36HZ PAD	<b>MD Reference:</b>	GL 4827' & KB 25' @ 4852.00ft (HP 311)
<b>Well:</b>	DECHANT 37N-W1HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM5000-RobertS-Local

<b>Project</b>	COLORADO NORTHERN ZONE - 83, KERR MCGEE OIL & GAS ONSHORE LP		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

Site		DECHANT 36-36HZ PAD, SECTION 36 T3N R65W			
Site Position:		Northing:	1,307,863.66 usft	Latitude:	40.1750710
From:	Lat/Long	Easting:	3,248,130.25 usft	Longitude:	-104.6120120
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.57 °

Well	DECHANT 37N-W1HZ, 250' FSL 2529' FEL					
Well Position	+N/-S	0.00 ft	Northing:	1,307,842.72 usft	Latitude:	40.1750129
	+E/-W	0.00 ft	Easting:	3,248,151.97 usft	Longitude:	-104.6119350
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,827.00 ft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	BGGM2012	2013/01/08	8.61	66.82	52,776

<b>Design</b>	OH				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	180.00	

<b>Survey Program</b>	<b>Date</b>	2013/02/19			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
25.00	680.00	Survey #1 GYRO (OH)	NS-GYRO-MS	North sensing gyrocompassing m/s	
783.00	12,384.00	Survey #2 SDI MWD PRODUCTION (OH)	SDI MWD	SDI MWD - Standard ver 1.0.1	

<b>Survey</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
25.00	0.00	0.00	25.00	0.00	0.00	0.00	0.00	0.00	0.00	
125.00	0.20	130.76	125.00	-0.11	0.13	0.11	0.20	0.20	0.00	
225.00	0.19	123.58	225.00	-0.32	0.40	0.32	0.03	-0.01	-7.18	
325.00	0.13	222.95	325.00	-0.49	0.46	0.49	0.25	-0.06	99.37	
425.00	0.04	346.50	425.00	-0.54	0.38	0.54	0.16	-0.09	123.55	
525.00	0.09	330.79	525.00	-0.44	0.33	0.44	0.05	0.05	-15.71	
625.00	0.13	336.39	625.00	-0.27	0.25	0.27	0.04	0.04	5.60	
680.00	0.17	103.17	680.00	-0.23	0.30	0.23	0.49	0.07	230.51	
783.00	0.21	115.61	783.00	-0.35	0.62	0.35	0.06	0.04	12.08	

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well DECHANT 37N-W1HZ
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	GL 4827' & KB 25' @ 4852.00ft (HP 311)
<b>Site:</b>	DECHANT 36-36HZ PAD	<b>MD Reference:</b>	GL 4827' & KB 25' @ 4852.00ft (HP 311)
<b>Well:</b>	DECHANT 37N-W1HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM5000-RobertS-Local

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
FIRST SDI MWD PRODUCTION SURVEY									
875.00	0.21	225.41	875.00	-0.54	0.65	0.54	0.37	0.00	119.35
967.00	0.51	185.37	967.00	-1.06	0.49	1.06	0.41	0.33	-43.52
1,059.00	0.55	187.52	1,058.99	-1.91	0.40	1.91	0.05	0.04	2.34
1,151.00	0.59	187.59	1,150.99	-2.82	0.28	2.82	0.04	0.04	0.08
1,243.00	0.83	230.92	1,242.98	-3.71	-0.30	3.71	0.62	0.26	47.10
1,335.00	0.65	16.98	1,334.98	-3.63	-0.67	3.63	1.54	-0.20	158.76
1,427.00	2.05	34.45	1,426.95	-1.77	0.42	1.77	1.57	1.52	18.99
1,519.00	3.61	47.10	1,518.84	1.56	3.47	-1.56	1.82	1.70	13.75
1,611.00	4.92	56.17	1,610.58	5.73	8.87	-5.73	1.60	1.42	9.86
1,703.00	5.61	51.09	1,702.19	10.75	15.65	-10.75	0.90	0.75	-5.52
1,795.00	6.78	48.87	1,793.65	17.14	23.24	-17.14	1.30	1.27	-2.41
1,887.00	8.70	46.87	1,884.81	25.47	32.40	-25.47	2.11	2.09	-2.17
1,982.00	9.65	48.23	1,978.59	35.69	43.59	-35.69	1.03	1.00	1.43
2,076.00	10.62	46.00	2,071.13	46.96	55.69	-46.96	1.11	1.03	-2.37
2,171.00	13.08	51.42	2,164.10	59.74	70.40	-59.74	2.84	2.59	5.71
2,266.00	14.77	47.39	2,256.31	74.65	87.71	-74.65	2.05	1.78	-4.24
2,360.00	15.78	49.72	2,346.98	91.02	106.29	-91.02	1.26	1.07	2.48
2,455.00	17.40	47.93	2,438.03	108.89	126.69	-108.89	1.79	1.71	-1.88
2,549.00	17.38	51.76	2,527.73	127.00	148.15	-127.00	1.22	-0.02	4.07
2,644.00	17.08	49.48	2,618.47	144.85	169.90	-144.85	0.78	-0.32	-2.40
2,738.00	18.30	55.18	2,708.03	162.24	192.51	-162.24	2.25	1.30	6.06
2,833.00	20.39	57.24	2,797.66	179.72	218.67	-179.72	2.31	2.20	2.17
2,928.00	19.75	55.19	2,886.90	197.84	245.77	-197.84	1.00	-0.67	-2.16
3,022.00	19.78	51.40	2,975.36	216.83	271.24	-216.83	1.36	0.03	-4.03
3,117.00	18.45	48.71	3,065.12	236.78	295.10	-236.78	1.68	-1.40	-2.83
3,211.00	18.84	50.02	3,154.19	256.34	317.91	-256.34	0.61	0.41	1.39
3,306.00	18.89	48.87	3,244.09	276.31	341.24	-276.31	0.39	0.05	-1.21
3,400.00	17.12	49.38	3,333.48	295.33	363.21	-295.33	1.89	-1.88	0.54
3,495.00	16.08	45.99	3,424.52	313.58	383.28	-313.58	1.50	-1.09	-3.57
3,589.00	15.63	46.60	3,514.95	331.32	401.85	-331.32	0.51	-0.48	0.65
3,684.00	16.29	43.92	3,606.28	349.71	420.39	-349.71	1.04	0.69	-2.82
3,778.00	15.26	42.61	3,696.74	368.31	437.91	-368.31	1.16	-1.10	-1.39
3,873.00	16.32	48.16	3,788.16	386.42	456.32	-386.42	1.94	1.12	5.84
3,967.00	18.68	48.64	3,877.81	405.18	477.46	-405.18	2.52	2.51	0.51
4,062.00	20.98	48.34	3,967.17	426.54	501.59	-426.54	2.42	2.42	-0.32
4,157.00	20.48	52.05	4,056.02	448.07	527.40	-448.07	1.48	-0.53	3.91
4,251.00	19.65	52.00	4,144.31	467.91	552.82	-467.91	0.88	-0.88	-0.05
4,346.00	16.86	48.84	4,234.53	486.82	575.79	-486.82	3.12	-2.94	-3.33
4,440.00	18.03	50.16	4,324.20	505.11	597.22	-505.11	1.31	1.24	1.40
4,534.00	17.86	47.20	4,413.63	524.22	618.97	-524.22	0.99	-0.18	-3.15
4,628.00	19.22	46.60	4,502.75	544.65	640.79	-544.65	1.46	1.45	-0.64
4,723.00	19.26	49.81	4,592.45	565.50	664.12	-565.50	1.11	0.04	3.38

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<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM5000-RobertS-Local

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,818.00	17.18	55.40	4,682.69	583.58	687.64	-583.58	2.86	-2.19	5.88
4,913.00	16.07	57.76	4,773.71	598.57	710.31	-598.57	1.37	-1.17	2.48
5,008.00	15.43	57.34	4,865.15	612.40	732.07	-612.40	0.68	-0.67	-0.44
5,102.00	13.80	54.87	4,956.10	625.60	751.77	-625.60	1.86	-1.73	-2.63
5,197.00	13.83	53.62	5,048.35	638.86	770.18	-638.86	0.32	0.03	-1.32
5,291.00	13.76	54.74	5,139.64	651.97	788.35	-651.97	0.29	-0.07	1.19
5,386.00	11.29	53.96	5,232.38	663.97	805.10	-663.97	2.61	-2.60	-0.82
5,480.00	10.55	49.94	5,324.67	674.92	819.13	-674.92	1.13	-0.79	-4.28
5,575.00	8.37	46.97	5,418.38	685.24	830.84	-685.24	2.35	-2.29	-3.13
5,669.00	6.41	40.86	5,511.59	693.88	839.27	-693.88	2.24	-2.09	-6.50
5,764.00	5.13	42.23	5,606.11	701.03	845.60	-701.03	1.36	-1.35	1.44
5,858.00	3.14	51.41	5,699.86	705.75	850.43	-705.75	2.22	-2.12	9.77
5,953.00	1.94	89.46	5,794.77	707.39	854.08	-707.39	2.11	-1.26	40.05
6,047.00	0.34	92.42	5,888.75	707.39	855.95	-707.39	1.70	-1.70	3.15
6,110.00	0.07	153.87	5,951.75	707.35	856.15	-707.35	0.50	-0.43	97.54
6,142.00	0.29	142.41	5,983.75	707.27	856.21	-707.27	0.69	0.69	-35.81
6,173.00	2.18	174.86	6,014.74	706.62	856.31	-706.62	6.26	6.10	104.68
6,205.00	3.43	174.72	6,046.70	705.06	856.45	-705.06	3.91	3.91	-0.44
6,236.00	5.55	169.90	6,077.61	702.66	856.80	-702.66	6.94	6.84	-15.55
6,268.00	7.69	171.92	6,109.39	699.02	857.37	-699.02	6.73	6.69	6.31
6,299.00	9.70	178.50	6,140.03	694.35	857.73	-694.35	7.22	6.48	21.23
6,331.00	10.96	177.74	6,171.51	688.62	857.92	-688.62	3.96	3.94	-2.38
6,362.00	11.97	179.65	6,201.90	682.46	858.06	-682.46	3.48	3.26	6.16
6,394.00	13.61	179.63	6,233.10	675.37	858.10	-675.37	5.13	5.13	-0.06
6,425.00	15.62	180.60	6,263.10	667.55	858.08	-667.55	6.53	6.48	3.13
6,456.00	16.97	182.64	6,292.85	658.86	857.83	-658.86	4.73	4.35	6.58
6,488.00	18.41	180.85	6,323.34	649.14	857.54	-649.14	4.81	4.50	-5.59
6,519.00	20.36	177.72	6,352.58	638.86	857.68	-638.86	7.13	6.29	-10.10
6,551.00	21.91	179.06	6,382.43	627.32	858.00	-627.32	5.07	4.84	4.19
6,582.00	24.33	178.83	6,410.93	615.15	858.23	-615.15	7.81	7.81	-0.74
6,614.00	26.00	178.81	6,439.90	601.55	858.51	-601.55	5.22	5.22	-0.06
6,645.00	28.16	179.25	6,467.50	587.44	858.74	-587.44	7.00	6.97	1.42
6,677.00	29.38	179.75	6,495.54	572.04	858.88	-572.04	3.89	3.81	1.56
6,708.00	31.44	178.91	6,522.28	556.35	859.06	-556.35	6.79	6.65	-2.71
6,740.00	33.12	180.21	6,549.33	539.26	859.19	-539.26	5.68	5.25	4.06
6,771.00	35.44	180.87	6,574.95	521.80	859.02	-521.80	7.58	7.48	2.13
6,803.00	37.74	181.21	6,600.64	502.73	858.68	-502.73	7.22	7.19	1.06
6,834.00	40.22	180.74	6,624.73	483.24	858.35	-483.24	8.06	8.00	-1.52
6,866.00	41.96	181.09	6,648.85	462.21	858.01	-462.21	5.48	5.44	1.09
6,897.00	44.31	180.73	6,671.47	441.02	857.67	-441.02	7.62	7.58	-1.16
6,929.00	46.62	180.26	6,693.91	418.21	857.48	-418.21	7.29	7.22	-1.47
6,961.00	48.61	180.70	6,715.48	394.58	857.28	-394.58	6.30	6.22	1.38
6,992.00	50.60	179.73	6,735.57	370.97	857.19	-370.97	6.85	6.42	-3.13

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well DECHANT 37N-W1HZ
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	GL 4827' & KB 25' @ 4852.00ft (HP 311)
<b>Site:</b>	DECHANT 36-36HZ PAD	<b>MD Reference:</b>	GL 4827' & KB 25' @ 4852.00ft (HP 311)
<b>Well:</b>	DECHANT 37N-W1HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM5000-RobertS-Local

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
7,024.00	52.60	179.73	6,755.45	345.89	857.31	-345.89	6.25	6.25	0.00	
7,055.00	54.60	180.91	6,773.84	320.94	857.17	-320.94	7.14	6.45	3.81	
7,086.00	56.66	181.65	6,791.34	295.36	856.60	-295.36	6.93	6.65	2.39	
7,118.00	59.20	181.89	6,808.33	268.26	855.76	-268.26	7.96	7.94	0.75	
7,151.00	61.62	181.73	6,824.63	239.58	854.85	-239.58	7.35	7.33	-0.48	
7,181.00	63.54	180.14	6,838.44	212.96	854.42	-212.96	7.94	6.40	-5.30	
7,213.00	65.17	180.48	6,852.29	184.11	854.26	-184.11	5.18	5.09	1.06	
7,244.00	66.88	180.40	6,864.89	155.79	854.05	-155.79	5.52	5.52	-0.26	
7,276.00	68.73	179.31	6,876.98	126.16	854.12	-126.16	6.59	5.78	-3.41	
7,307.00	70.07	180.12	6,887.88	97.15	854.27	-97.15	4.97	4.32	2.61	
7,339.00	71.27	178.98	6,898.47	66.95	854.50	-66.95	5.04	3.75	-3.56	
7,370.00	72.74	178.74	6,908.05	37.47	855.09	-37.47	4.80	4.74	-0.77	
7,402.00	74.02	178.37	6,917.20	6.82	855.87	-6.82	4.15	4.00	-1.16	
7,433.00	75.99	179.23	6,925.22	-23.11	856.49	23.11	6.90	6.35	2.77	
7,465.00	77.58	178.53	6,932.54	-54.26	857.10	54.26	5.41	4.97	-2.19	
7,497.00	79.35	178.91	6,938.94	-85.60	857.80	85.60	5.65	5.53	1.19	
7,528.00	80.97	178.68	6,944.24	-116.14	858.44	116.14	5.28	5.23	-0.74	
7,560.00	82.99	178.95	6,948.70	-147.82	859.10	147.82	6.37	6.31	0.84	
7,591.00	84.89	179.02	6,951.97	-178.64	859.64	178.64	6.13	6.13	0.23	
7,623.00	86.04	179.81	6,954.50	-210.54	859.97	210.54	4.36	3.59	2.47	
7,654.00	87.14	179.03	6,956.35	-241.48	860.28	241.48	4.35	3.55	-2.52	
7,686.00	88.46	178.71	6,957.58	-273.45	860.91	273.45	4.24	4.13	-1.00	
7,749.00	89.30	179.70	6,958.81	-336.43	861.79	336.43	2.06	1.33	1.57	
7,843.00	89.06	182.12	6,960.15	-430.40	860.30	430.40	2.59	-0.26	2.57	
7,938.00	89.09	181.30	6,961.69	-525.35	857.46	525.35	0.86	0.03	-0.86	
8,032.00	89.43	179.88	6,962.90	-619.33	856.49	619.33	1.55	0.36	-1.51	
8,127.00	90.80	179.20	6,962.71	-714.32	857.26	714.32	1.61	1.44	-0.72	
8,178.00	91.65	178.76	6,961.62	-765.30	858.16	765.30	1.88	1.67	-0.87	
7"(515' FNL 1673' FEL)										
8,224.00	92.42	178.36	6,959.98	-811.26	859.32	811.26	1.88	1.67	-0.87	
8,287.00	91.28	178.01	6,957.95	-874.19	861.31	874.19	1.89	-1.81	-0.56	
8,382.00	91.10	179.33	6,955.98	-969.15	863.52	969.15	1.40	-0.19	1.39	
8,476.00	91.80	179.86	6,953.60	-1,063.11	864.18	1,063.11	0.93	0.74	0.56	
8,571.00	89.96	180.47	6,952.14	-1,158.10	863.91	1,158.10	2.04	-1.94	0.64	
8,665.00	89.96	181.18	6,952.20	-1,252.09	862.56	1,252.09	0.76	0.00	0.76	
8,760.00	89.87	183.02	6,952.35	-1,347.02	859.07	1,347.02	1.94	-0.09	1.94	
8,855.00	89.34	183.81	6,953.00	-1,441.85	853.42	1,441.85	1.00	-0.56	0.83	
8,949.00	87.93	182.85	6,955.24	-1,535.66	847.96	1,535.66	1.81	-1.50	-1.02	
9,044.00	88.29	181.44	6,958.37	-1,630.54	844.40	1,630.54	1.53	0.38	-1.48	
9,138.00	88.90	181.00	6,960.68	-1,724.49	842.40	1,724.49	0.80	0.65	-0.47	
9,233.00	89.69	180.03	6,961.85	-1,819.47	841.55	1,819.47	1.32	0.83	-1.02	
9,332.00	90.47	180.51	6,961.71	-1,918.47	841.08	1,918.47	0.93	0.79	0.48	
9,414.00	90.67	179.86	6,960.89	-2,000.47	840.82	2,000.47	0.83	0.24	-0.79	
9,509.00	89.26	178.79	6,960.95	-2,095.46	841.94	2,095.46	1.86	-1.48	-1.13	



<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well DECHANT 37N-W1HZ
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	GL 4827' & KB 25' @ 4852.00ft (HP 311)
<b>Site:</b>	DECHANT 36-36HZ PAD	<b>MD Reference:</b>	GL 4827' & KB 25' @ 4852.00ft (HP 311)
<b>Well:</b>	DECHANT 37N-W1HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM5000-RobertS-Local

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
9,603.00	88.79	178.65	6,962.55	-2,189.42	844.04	2,189.42	0.52	-0.50	-0.15
9,698.00	88.66	178.68	6,964.66	-2,284.37	846.25	2,284.37	0.14	-0.14	0.03
9,793.00	88.09	177.20	6,967.36	-2,379.27	849.66	2,379.27	1.67	-0.60	-1.56
9,887.00	89.63	177.73	6,969.23	-2,473.15	853.82	2,473.15	1.73	1.64	0.56
9,982.00	89.90	178.51	6,969.62	-2,568.10	856.94	2,568.10	0.87	0.28	0.82
10,076.00	90.23	178.59	6,969.51	-2,662.07	859.31	2,662.07	0.36	0.35	0.09
10,171.00	89.61	180.17	6,969.64	-2,757.06	860.34	2,757.06	1.79	-0.65	1.66
10,265.00	90.64	180.07	6,969.44	-2,851.06	860.15	2,851.06	1.10	1.10	-0.11
10,360.00	90.64	179.69	6,968.38	-2,946.05	860.34	2,946.05	0.40	0.00	-0.40
10,454.00	90.03	179.31	6,967.83	-3,040.05	861.16	3,040.05	0.76	-0.65	-0.40
10,549.00	89.36	180.52	6,968.33	-3,135.04	861.31	3,135.04	1.46	-0.71	1.27
10,643.00	90.20	180.13	6,968.70	-3,229.04	860.77	3,229.04	0.99	0.89	-0.41
10,738.00	91.04	180.24	6,967.67	-3,324.03	860.47	3,324.03	0.89	0.88	0.12
10,833.00	90.74	179.55	6,966.19	-3,419.02	860.64	3,419.02	0.79	-0.32	-0.73
10,927.00	90.17	179.22	6,965.45	-3,513.01	861.65	3,513.01	0.70	-0.61	-0.35
11,022.00	90.77	179.52	6,964.67	-3,608.00	862.69	3,608.00	0.71	0.63	0.32
11,117.00	91.07	179.15	6,963.14	-3,702.98	863.80	3,702.98	0.50	0.32	-0.39
11,211.00	91.24	179.26	6,961.25	-3,796.95	865.10	3,796.95	0.22	0.18	0.12
11,306.00	91.51	178.88	6,958.97	-3,891.91	866.64	3,891.91	0.49	0.28	-0.40
11,400.00	91.85	178.63	6,956.21	-3,985.85	868.68	3,985.85	0.45	0.36	-0.27
11,495.00	91.67	178.41	6,953.29	-4,080.78	871.13	4,080.78	0.30	-0.19	-0.23
11,589.00	92.04	177.57	6,950.25	-4,174.67	874.43	4,174.67	0.98	0.39	-0.89
11,684.00	89.43	176.52	6,949.03	-4,269.52	879.33	4,269.52	2.96	-2.75	-1.11
11,778.00	88.22	176.38	6,950.96	-4,363.32	885.15	4,363.32	1.30	-1.29	-0.15
11,873.00	89.10	176.19	6,953.18	-4,458.10	891.30	4,458.10	0.95	0.93	-0.20
11,967.00	90.77	176.58	6,953.29	-4,551.90	897.23	4,551.90	1.82	1.78	0.41
12,062.00	91.14	176.06	6,951.70	-4,646.70	903.32	4,646.70	0.67	0.39	-0.55
12,157.00	92.11	176.31	6,949.01	-4,741.45	909.64	4,741.45	1.05	1.02	0.26
12,251.00	92.31	175.46	6,945.38	-4,835.13	916.38	4,835.13	0.93	0.21	-0.90
12,336.00	92.69	174.46	6,941.68	-4,919.72	923.84	4,919.72	1.26	0.45	-1.18
LAST SDI MWD PRODUCTION SURVEY									
12,384.00	92.69	174.46	6,939.42	-4,967.44	928.47	4,967.44	0.00	0.00	0.00
SDI PROJECTION TO TD (434' FSL 1594' FEL) - PBHL_DECHANT 37N-W1HZ(460' FSL 1665' FEL)									

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
8,178.00	6,961.62	7"(515' FNL 1673' FEL)	7.000	7.500

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well DECHANT 37N-W1HZ
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	GL 4827' & KB 25' @ 4852.00ft (HP 311)
<b>Site:</b>	DECHANT 36-36HZ PAD	<b>MD Reference:</b>	GL 4827' & KB 25' @ 4852.00ft (HP 311)
<b>Well:</b>	DECHANT 37N-W1HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM5000-RobertS-Local

Design Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
783.00	783.00	-0.35	0.62	FIRST SDI MWD PRODUCTION SURVEY
12,336.00	6,941.68	-4,919.72	923.84	LAST SDI MWD PRODUCTION SURVEY
12,384.00	6,939.42	-4,967.44	928.47	SDI PROJECTION TO TD (434' FSL 1594' FEL)

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_



# Scientific Drilling

## **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83**

**DECHANT 36-36HZ PAD**

**DECHANT 37N-W1HZ**

**OH**

**Design: OH**

## **Survey Report - Geographic**

**19 February, 2013**

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well DECHANT 37N-W1HZ
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	GL 4827' & KB 25' @ 4852.00ft (HP 311)
<b>Site:</b>	DECHANT 36-36HZ PAD	<b>MD Reference:</b>	GL 4827' & KB 25' @ 4852.00ft (HP 311)
<b>Well:</b>	DECHANT 37N-W1HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM5000-RobertS-Local

<b>Project</b>	COLORADO NORTHERN ZONE - 83, KERR MCGEE OIL & GAS ONSHORE LP		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

Site		DECHANT 36-36HZ PAD, SECTION 36 T3N R65W			
Site Position:		Northing:	1,307,863.66 usft	Latitude:	40.1750710
From:	Lat/Long	Easting:	3,248,130.25 usft	Longitude:	-104.6120120
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.57 °

Well	DECHANT 37N-W1HZ, 250' FSL 2529' FEL					
Well Position	+N/-S	0.00 ft	Northing:	1,307,842.72 usft	Latitude:	40.1750129
	+E/-W	0.00 ft	Easting:	3,248,151.97 usft	Longitude:	-104.6119350
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,827.00 ft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	BGGM2012	2013/01/08	8.61	66.82	52,776

<b>Design</b>	OH				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00		180.00

<b>Survey Program</b>	<b>Date</b>	2013/02/19			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
25.00	680.00	Survey #1 GYRO (OH)	NS-GYRO-MS	North sensing gyrocompassing m/s	
783.00	12,384.00	Survey #2 SDI MWD PRODUCTION (OH)	SDI MWD	SDI MWD - Standard ver 1.0.1	

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	1,307,842.72	3,248,151.97	40.1750129	-104.6119350
25.00	0.00	0.00	25.00	0.00	0.00	1,307,842.72	3,248,151.97	40.1750129	-104.6119350
125.00	0.20	130.76	125.00	-0.11	0.13	1,307,842.60	3,248,152.11	40.1750126	-104.6119345
225.00	0.19	123.58	225.00	-0.32	0.40	1,307,842.40	3,248,152.38	40.1750121	-104.6119335
325.00	0.13	222.95	325.00	-0.49	0.46	1,307,842.23	3,248,152.44	40.1750116	-104.6119333
425.00	0.04	346.50	425.00	-0.54	0.38	1,307,842.18	3,248,152.36	40.1750114	-104.6119336
525.00	0.09	330.79	525.00	-0.44	0.33	1,307,842.28	3,248,152.31	40.1750117	-104.6119338
625.00	0.13	336.39	625.00	-0.27	0.25	1,307,842.45	3,248,152.22	40.1750122	-104.6119341
680.00	0.17	103.17	680.00	-0.23	0.30	1,307,842.49	3,248,152.28	40.1750123	-104.6119339
783.00	0.21	115.61	783.00	-0.35	0.62	1,307,842.38	3,248,152.60	40.1750120	-104.6119328
FIRST SDI MWD PRODUCTION SURVEY									

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well DECHANT 37N-W1HZ
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	GL 4827' & KB 25' @ 4852.00ft (HP 311)
<b>Site:</b>	DECHANT 36-36HZ PAD	<b>MD Reference:</b>	GL 4827' & KB 25' @ 4852.00ft (HP 311)
<b>Well:</b>	DECHANT 37N-W1HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM5000-RobertS-Local

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
875.00	0.21	225.41	875.00	-0.54	0.65	1,307,842.19	3,248,152.63	40.1750115	-104.6119326	
967.00	0.51	185.37	967.00	-1.06	0.49	1,307,841.66	3,248,152.48	40.1750100	-104.6119332	
1,059.00	0.55	187.52	1,058.99	-1.91	0.40	1,307,840.81	3,248,152.39	40.1750077	-104.6119336	
1,151.00	0.59	187.59	1,150.99	-2.82	0.28	1,307,839.90	3,248,152.28	40.1750052	-104.6119340	
1,243.00	0.83	230.92	1,242.98	-3.71	-0.30	1,307,839.01	3,248,151.71	40.1750028	-104.6119361	
1,335.00	0.65	16.98	1,334.98	-3.63	-0.67	1,307,839.08	3,248,151.34	40.1750030	-104.6119374	
1,427.00	2.05	34.45	1,426.95	-1.77	0.42	1,307,840.95	3,248,152.41	40.1750081	-104.6119335	
1,519.00	3.61	47.10	1,518.84	1.56	3.47	1,307,844.31	3,248,155.43	40.1750172	-104.6119226	
1,611.00	4.92	56.17	1,610.58	5.73	8.87	1,307,848.53	3,248,160.79	40.1750287	-104.6119032	
1,703.00	5.61	51.09	1,702.19	10.75	15.65	1,307,853.62	3,248,167.51	40.1750424	-104.6118790	
1,795.00	6.78	48.87	1,793.65	17.14	23.24	1,307,860.09	3,248,175.04	40.1750600	-104.6118518	
1,887.00	8.70	46.87	1,884.81	25.47	32.40	1,307,868.51	3,248,184.12	40.1750829	-104.6118190	
1,982.00	9.65	48.23	1,978.59	35.69	43.59	1,307,878.84	3,248,195.20	40.1751109	-104.6117790	
2,076.00	10.62	46.00	2,071.13	46.96	55.69	1,307,890.23	3,248,207.19	40.1751418	-104.6117357	
2,171.00	13.08	51.42	2,164.10	59.74	70.40	1,307,903.16	3,248,221.77	40.1751769	-104.6116830	
2,266.00	14.77	47.39	2,256.31	74.65	87.71	1,307,918.24	3,248,238.94	40.1752179	-104.6116211	
2,360.00	15.78	49.72	2,346.98	91.02	106.29	1,307,934.80	3,248,257.34	40.1752628	-104.6115546	
2,455.00	17.40	47.93	2,438.03	108.89	126.69	1,307,952.87	3,248,277.56	40.1753119	-104.6114816	
2,549.00	17.38	51.76	2,527.73	127.00	148.15	1,307,971.19	3,248,298.84	40.1753616	-104.6114048	
2,644.00	17.08	49.48	2,618.47	144.85	169.90	1,307,989.26	3,248,320.41	40.1754106	-104.6113270	
2,738.00	18.30	55.18	2,708.03	162.24	192.51	1,308,006.88	3,248,342.85	40.1754583	-104.6112461	
2,833.00	20.39	57.24	2,797.66	179.72	218.67	1,308,024.62	3,248,368.83	40.1755063	-104.6111524	
2,928.00	19.75	55.19	2,886.90	197.84	245.77	1,308,043.00	3,248,395.75	40.1755560	-104.6110555	
3,022.00	19.78	51.40	2,975.36	216.83	271.24	1,308,062.25	3,248,421.03	40.1756081	-104.6109643	
3,117.00	18.45	48.71	3,065.12	236.78	295.10	1,308,082.44	3,248,444.69	40.1756629	-104.6108789	
3,211.00	18.84	50.02	3,154.19	256.34	317.91	1,308,102.23	3,248,467.30	40.1757166	-104.6107973	
3,306.00	18.89	48.87	3,244.09	276.31	341.24	1,308,122.43	3,248,490.43	40.1757714	-104.6107138	
3,400.00	17.12	49.38	3,333.48	295.33	363.21	1,308,141.67	3,248,512.21	40.1758237	-104.6106352	
3,495.00	16.08	45.99	3,424.52	313.58	383.28	1,308,160.12	3,248,532.10	40.1758737	-104.6105633	
3,589.00	15.63	46.60	3,514.95	331.32	401.85	1,308,178.05	3,248,550.48	40.1759225	-104.6104969	
3,684.00	16.29	43.92	3,606.28	349.71	420.39	1,308,196.62	3,248,568.84	40.1759729	-104.6104305	
3,778.00	15.26	42.61	3,696.74	368.31	437.91	1,308,215.40	3,248,586.17	40.1760240	-104.6103678	
3,873.00	16.32	48.16	3,788.16	386.42	456.32	1,308,233.69	3,248,604.40	40.1760737	-104.6103019	
3,967.00	18.68	48.64	3,877.81	405.18	477.46	1,308,252.66	3,248,625.35	40.1761252	-104.6102263	
4,062.00	20.98	48.34	3,967.17	426.54	501.59	1,308,274.26	3,248,649.26	40.1761838	-104.6101399	
4,157.00	20.48	52.05	4,056.02	448.07	527.40	1,308,296.04	3,248,674.86	40.1762429	-104.6100476	
4,251.00	19.65	52.00	4,144.31	467.91	552.82	1,308,316.14	3,248,700.08	40.1762974	-104.6099566	
4,346.00	16.86	48.84	4,234.53	486.82	575.79	1,308,335.27	3,248,722.85	40.1763493	-104.6098744	
4,440.00	18.03	50.16	4,324.20	505.11	597.22	1,308,353.78	3,248,744.10	40.1763995	-104.6097977	
4,534.00	17.86	47.20	4,413.63	524.22	618.97	1,308,373.11	3,248,765.66	40.1764520	-104.6097199	
4,628.00	19.22	46.60	4,502.75	544.65	640.79	1,308,393.75	3,248,787.27	40.1765080	-104.6096418	
4,723.00	19.26	49.81	4,592.45	565.50	664.12	1,308,414.84	3,248,810.39	40.1765653	-104.6095583	
4,818.00	17.18	55.40	4,682.69	583.58	687.64	1,308,433.16	3,248,833.73	40.1766149	-104.6094741	
4,913.00	16.07	57.76	4,773.71	598.57	710.31	1,308,448.37	3,248,856.25	40.1766560	-104.6093930	
5,008.00	15.43	57.34	4,865.15	612.40	732.07	1,308,462.42	3,248,877.87	40.1766940	-104.6093151	
5,102.00	13.80	54.87	4,956.10	625.60	751.77	1,308,475.81	3,248,897.44	40.1767303	-104.6092446	
5,197.00	13.83	53.62	5,048.35	638.86	770.18	1,308,489.25	3,248,915.71	40.1767666	-104.6091787	
5,291.00	13.76	54.74	5,139.64	651.97	788.35	1,308,502.55	3,248,933.75	40.1768027	-104.6091137	
5,386.00	11.29	53.96	5,232.38	663.97	805.10	1,308,514.71	3,248,950.38	40.1768356	-104.6090537	
5,480.00	10.55	49.94	5,324.67	674.92	819.13	1,308,525.81	3,248,964.30	40.1768656	-104.6090035	
5,575.00	8.37	46.97	5,418.38	685.24	830.84	1,308,536.24	3,248,975.91	40.1768940	-104.6089616	
5,669.00	6.41	40.86	5,511.59	693.88	839.27	1,308,544.96	3,248,984.25	40.1769177	-104.6089314	
5,764.00	5.13	42.23	5,606.11	701.03	845.60	1,308,552.18	3,248,990.51	40.1769373	-104.6089088	
5,858.00	3.14	51.41	5,699.86	705.75	850.43	1,308,556.95	3,248,995.30	40.1769503	-104.6088915	
5,953.00	1.94	89.46	5,794.77	707.39	854.08	1,308,558.62	3,248,998.92	40.1769548	-104.6088785	

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well DECHANT 37N-W1HZ
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	GL 4827' & KB 25' @ 4852.00ft (HP 311)
<b>Site:</b>	DECHANT 36-36HZ PAD	<b>MD Reference:</b>	GL 4827' & KB 25' @ 4852.00ft (HP 311)
<b>Well:</b>	DECHANT 37N-W1HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM5000-RobertS-Local

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
6,047.00	0.34	92.42	5,888.75	707.39	855.95	1,308,558.64	3,249,000.79	40.1769548	-104.6088718
6,110.00	0.07	153.87	5,951.75	707.35	856.15	1,308,558.60	3,249,001.00	40.1769547	-104.6088710
6,142.00	0.29	142.41	5,983.75	707.27	856.21	1,308,558.52	3,249,001.05	40.1769544	-104.6088708
6,173.00	2.18	174.86	6,014.74	706.62	856.31	1,308,557.87	3,249,001.16	40.1769527	-104.6088705
6,205.00	3.43	174.72	6,046.70	705.06	856.45	1,308,556.32	3,249,001.32	40.1769484	-104.6088700
6,236.00	5.55	169.90	6,077.61	702.66	856.80	1,308,553.92	3,249,001.69	40.1769418	-104.6088687
6,268.00	7.69	171.92	6,109.39	699.02	857.37	1,308,550.28	3,249,002.30	40.1769318	-104.6088667
6,299.00	9.70	178.50	6,140.03	694.35	857.73	1,308,545.62	3,249,002.71	40.1769190	-104.6088654
6,331.00	10.96	177.74	6,171.51	688.62	857.92	1,308,539.89	3,249,002.96	40.1769032	-104.6088647
6,362.00	11.97	179.65	6,201.90	682.46	858.06	1,308,533.73	3,249,003.15	40.1768863	-104.6088642
6,394.00	13.61	179.63	6,233.10	675.37	858.10	1,308,526.65	3,249,003.27	40.1768669	-104.6088640
6,425.00	15.62	180.60	6,263.10	667.55	858.08	1,308,518.83	3,249,003.33	40.1768454	-104.6088641
6,456.00	16.97	182.64	6,292.85	658.86	857.83	1,308,510.13	3,249,003.16	40.1768215	-104.6088650
6,488.00	18.41	180.85	6,323.34	649.14	857.54	1,308,500.41	3,249,002.97	40.1767949	-104.6088661
6,519.00	20.36	177.72	6,352.58	638.86	857.68	1,308,490.13	3,249,003.21	40.1767666	-104.6088656
6,551.00	21.91	179.06	6,382.43	627.32	858.00	1,308,478.60	3,249,003.65	40.1767350	-104.6088644
6,582.00	24.33	178.83	6,410.93	615.15	858.23	1,308,466.43	3,249,004.00	40.1767016	-104.6088636
6,614.00	26.00	178.81	6,439.90	601.55	858.51	1,308,452.83	3,249,004.41	40.1766642	-104.6088626
6,645.00	28.16	179.25	6,467.50	587.44	858.74	1,308,438.73	3,249,004.79	40.1766255	-104.6088618
6,677.00	29.38	179.75	6,495.54	572.04	858.88	1,308,423.33	3,249,005.08	40.1765832	-104.6088613
6,708.00	31.44	178.91	6,522.28	556.35	859.06	1,308,407.64	3,249,005.42	40.1765401	-104.6088606
6,740.00	33.12	180.21	6,549.33	539.26	859.19	1,308,390.56	3,249,005.72	40.1764932	-104.6088602
6,771.00	35.44	180.87	6,574.95	521.80	859.02	1,308,373.10	3,249,005.73	40.1764453	-104.6088608
6,803.00	37.74	181.21	6,600.64	502.73	858.68	1,308,354.03	3,249,005.57	40.1763930	-104.6088620
6,834.00	40.22	180.74	6,624.73	483.24	858.35	1,308,334.53	3,249,005.44	40.1763394	-104.6088632
6,866.00	41.96	181.09	6,648.85	462.21	858.01	1,308,313.50	3,249,005.31	40.1762817	-104.6088644
6,897.00	44.31	180.73	6,671.47	441.02	857.67	1,308,292.30	3,249,005.19	40.1762235	-104.6088656
6,929.00	46.62	180.26	6,693.91	418.21	857.48	1,308,269.49	3,249,005.22	40.1761609	-104.6088663
6,961.00	48.61	180.70	6,715.48	394.58	857.28	1,308,245.86	3,249,005.26	40.1760961	-104.6088670
6,992.00	50.60	179.73	6,735.57	370.97	857.19	1,308,222.25	3,249,005.41	40.1760313	-104.6088673
7,024.00	52.60	179.73	6,755.45	345.89	857.31	1,308,197.18	3,249,005.78	40.1759624	-104.6088669
7,055.00	54.60	180.91	6,773.84	320.94	857.17	1,308,172.23	3,249,005.88	40.1758939	-104.6088674
7,086.00	56.66	181.65	6,791.34	295.36	856.60	1,308,146.64	3,249,005.57	40.1758237	-104.6088695
7,118.00	59.20	181.89	6,808.33	268.26	855.76	1,308,119.54	3,249,005.00	40.1757493	-104.6088725
7,151.00	61.62	181.73	6,824.63	239.58	854.85	1,308,090.85	3,249,004.38	40.1756706	-104.6088757
7,181.00	63.54	180.14	6,838.44	212.96	854.42	1,308,064.22	3,249,004.22	40.1755975	-104.6088773
7,213.00	65.17	180.48	6,852.29	184.11	854.26	1,308,035.38	3,249,004.35	40.1755183	-104.6088778
7,244.00	66.88	180.40	6,864.89	155.79	854.05	1,308,007.05	3,249,004.42	40.1754406	-104.6088786
7,276.00	68.73	179.31	6,876.98	126.16	854.12	1,307,977.43	3,249,004.79	40.1753592	-104.6088784
7,307.00	70.07	180.12	6,887.88	97.15	854.27	1,307,948.41	3,249,005.22	40.1752796	-104.6088778
7,339.00	71.27	178.98	6,898.47	66.95	854.50	1,307,918.22	3,249,005.76	40.1751967	-104.6088770
7,370.00	72.74	178.74	6,908.05	37.47	855.09	1,307,888.75	3,249,006.65	40.1751158	-104.6088749
7,402.00	74.02	178.37	6,917.20	6.82	855.87	1,307,858.11	3,249,007.73	40.1750316	-104.6088721
7,433.00	75.99	179.23	6,925.22	-23.11	856.49	1,307,828.18	3,249,008.65	40.1749494	-104.6088699
7,465.00	77.58	178.53	6,932.54	-54.26	857.10	1,307,797.04	3,249,009.57	40.1748640	-104.6088677
7,497.00	79.35	178.91	6,938.94	-85.60	857.80	1,307,765.71	3,249,010.59	40.1747779	-104.6088652
7,528.00	80.97	178.68	6,944.24	-116.14	858.44	1,307,735.18	3,249,011.54	40.1746941	-104.6088629
7,560.00	82.99	178.95	6,948.70	-147.82	859.10	1,307,703.51	3,249,012.51	40.1746071	-104.6088606
7,591.00	84.89	179.02	6,951.97	-178.64	859.64	1,307,672.70	3,249,013.36	40.1745225	-104.6088586
7,623.00	86.04	179.81	6,954.50	-210.54	859.97	1,307,640.80	3,249,014.01	40.1744349	-104.6088575
7,654.00	87.14	179.03	6,956.35	-241.48	860.28	1,307,609.87	3,249,014.63	40.1743500	-104.6088564
7,686.00	88.46	178.71	6,957.58	-273.45	860.91	1,307,577.90	3,249,015.58	40.1742622	-104.6088541
7,749.00	89.30	179.70	6,958.81	-336.43	861.79	1,307,514.94	3,249,017.09	40.1740894	-104.6088510
7,843.00	89.06	182.12	6,960.15	-430.40	860.30	1,307,420.95	3,249,016.53	40.1738314	-104.6088563
7,938.00	89.09	181.30	6,961.69	-525.35	857.46	1,307,325.99	3,249,014.65	40.1735708	-104.6088665

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well DECHANT 37N-W1HZ
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	GL 4827' & KB 25' @ 4852.00ft (HP 311)
<b>Site:</b>	DECHANT 36-36HZ PAD	<b>MD Reference:</b>	GL 4827' & KB 25' @ 4852.00ft (HP 311)
<b>Well:</b>	DECHANT 37N-W1HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM5000-RobertS-Local

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
8,032.00	89.43	179.88	6,962.90	-619.33	856.49	1,307,232.00	3,249,014.62	40.1733128	-104.6088700
8,127.00	90.80	179.20	6,962.71	-714.32	857.26	1,307,137.02	3,249,016.34	40.1730520	-104.6088673
8,178.00	91.65	178.76	6,961.62	-765.30	858.16	1,307,086.05	3,249,017.76	40.1729120	-104.6088640
<b>7"(515' FNL 1673' FEL)</b>									
8,224.00	92.42	178.36	6,959.98	-811.26	859.32	1,307,040.11	3,249,019.37	40.1727859	-104.6088599
8,287.00	91.28	178.01	6,957.95	-874.19	861.31	1,306,977.20	3,249,022.00	40.1726131	-104.6088527
8,382.00	91.10	179.33	6,955.98	-969.15	863.52	1,306,882.27	3,249,025.15	40.1723525	-104.6088449
8,476.00	91.80	179.86	6,953.60	-1,063.11	864.18	1,306,788.32	3,249,026.76	40.1720945	-104.6088425
8,571.00	89.96	180.47	6,952.14	-1,158.10	863.91	1,306,693.33	3,249,027.44	40.1718338	-104.6088435
8,665.00	89.96	181.18	6,952.20	-1,252.09	862.56	1,306,599.34	3,249,027.02	40.1715758	-104.6088484
8,760.00	89.87	183.02	6,952.35	-1,347.02	859.07	1,306,504.37	3,249,024.49	40.1713152	-104.6088608
8,855.00	89.34	183.81	6,953.00	-1,441.85	853.42	1,306,409.49	3,249,019.78	40.1710549	-104.6088811
8,949.00	87.93	182.85	6,955.24	-1,535.66	847.96	1,306,315.63	3,249,015.27	40.1707973	-104.6089006
9,044.00	88.29	181.44	6,958.37	-1,630.54	844.40	1,306,220.72	3,249,012.66	40.1705369	-104.6089134
9,138.00	88.90	181.00	6,960.68	-1,724.49	842.40	1,306,126.76	3,249,011.60	40.1702790	-104.6089205
9,233.00	89.69	180.03	6,961.85	-1,819.47	841.55	1,306,031.77	3,249,011.70	40.1700182	-104.6089236
9,332.00	90.47	180.51	6,961.71	-1,918.47	841.08	1,305,932.77	3,249,012.23	40.1697465	-104.6089253
9,414.00	90.67	179.86	6,960.89	-2,000.47	840.82	1,305,850.78	3,249,012.78	40.1695214	-104.6089262
9,509.00	89.26	178.79	6,960.95	-2,095.46	841.94	1,305,755.80	3,249,014.85	40.1692606	-104.6089222
9,603.00	88.79	178.65	6,962.55	-2,189.42	844.04	1,305,661.87	3,249,017.89	40.1690027	-104.6089147
9,698.00	88.66	178.68	6,964.66	-2,284.37	846.25	1,305,566.94	3,249,021.06	40.1687420	-104.6089068
9,793.00	88.09	177.20	6,967.36	-2,379.27	849.66	1,305,472.08	3,249,025.42	40.1684815	-104.6088946
9,887.00	89.63	177.73	6,969.23	-2,473.15	853.82	1,305,378.24	3,249,030.52	40.1682238	-104.6088798
9,982.00	89.90	178.51	6,969.62	-2,568.10	856.94	1,305,283.33	3,249,034.58	40.1679631	-104.6088686
10,076.00	90.23	178.59	6,969.51	-2,662.07	859.31	1,305,189.39	3,249,037.90	40.1677052	-104.6088601
10,171.00	89.61	180.17	6,969.64	-2,757.06	860.34	1,305,094.42	3,249,039.88	40.1674444	-104.6088565
10,265.00	90.64	180.07	6,969.44	-2,851.06	860.15	1,305,000.42	3,249,040.63	40.1671864	-104.6088572
10,360.00	90.64	179.69	6,968.38	-2,946.05	860.34	1,304,905.43	3,249,041.78	40.1669256	-104.6088565
10,454.00	90.03	179.31	6,967.83	-3,040.05	861.16	1,304,811.45	3,249,043.54	40.1666676	-104.6088536
10,549.00	89.36	180.52	6,968.33	-3,135.04	861.31	1,304,716.46	3,249,044.63	40.1664068	-104.6088531
10,643.00	90.20	180.13	6,968.70	-3,229.04	860.77	1,304,622.47	3,249,045.04	40.1661488	-104.6088550
10,738.00	91.04	180.24	6,967.67	-3,324.03	860.47	1,304,527.48	3,249,045.68	40.1658880	-104.6088561
10,833.00	90.74	179.55	6,966.19	-3,419.02	860.64	1,304,432.49	3,249,046.81	40.1656273	-104.6088555
10,927.00	90.17	179.22	6,965.45	-3,513.01	861.65	1,304,338.52	3,249,048.76	40.1653692	-104.6088519
11,022.00	90.77	179.52	6,964.67	-3,608.00	862.69	1,304,243.54	3,249,050.76	40.1651085	-104.6088482
11,117.00	91.07	179.15	6,963.14	-3,702.98	863.80	1,304,148.58	3,249,052.81	40.1648477	-104.6088442
11,211.00	91.24	179.26	6,961.25	-3,796.95	865.10	1,304,054.62	3,249,055.05	40.1645898	-104.6088396
11,306.00	91.51	178.88	6,958.97	-3,891.91	866.64	1,303,959.68	3,249,057.55	40.1643291	-104.6088341
11,400.00	91.85	178.63	6,956.21	-3,985.85	868.68	1,303,865.77	3,249,060.53	40.1640712	-104.6088268
11,495.00	91.67	178.41	6,953.29	-4,080.78	871.13	1,303,770.88	3,249,063.93	40.1638107	-104.6088180
11,589.00	92.04	177.57	6,950.25	-4,174.67	874.43	1,303,677.03	3,249,068.17	40.1635529	-104.6088062
11,684.00	89.43	176.52	6,949.03	-4,269.52	879.33	1,303,582.22	3,249,074.01	40.1632925	-104.6087887
11,778.00	88.22	176.38	6,950.96	-4,363.32	885.15	1,303,488.49	3,249,080.77	40.1630350	-104.6087679
11,873.00	89.10	176.19	6,953.18	-4,458.10	891.30	1,303,393.78	3,249,087.87	40.1627749	-104.6087459
11,967.00	90.77	176.58	6,953.29	-4,551.90	897.23	1,303,300.04	3,249,094.74	40.1625173	-104.6087247
12,062.00	91.14	176.06	6,951.70	-4,646.70	903.32	1,303,205.31	3,249,101.78	40.1622571	-104.6087029
12,157.00	92.11	176.31	6,949.01	-4,741.45	909.64	1,303,110.63	3,249,109.05	40.1619970	-104.6086803
12,251.00	92.31	175.46	6,945.38	-4,835.13	916.38	1,303,017.01	3,249,116.73	40.1617399	-104.6086562
12,336.00	92.69	174.46	6,941.68	-4,919.72	923.84	1,302,932.50	3,249,125.04	40.1615076	-104.6086295
<b>LAST SDI MWD PRODUCTION SURVEY</b>									
12,384.00	92.69	174.46	6,939.42	-4,967.44	928.47	1,302,884.83	3,249,130.14	40.1613766	-104.6086130
<b>SDI PROJECTION TO TD (434' FSL 1594' FEL) - PBHL_DECHANT 37N-W1HZ(460' FSL 1665' FEL)</b>									

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well DECHANT 37N-W1HZ
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	GL 4827' & KB 25' @ 4852.00ft (HP 311)
<b>Site:</b>	DECHANT 36-36HZ PAD	<b>MD Reference:</b>	GL 4827' & KB 25' @ 4852.00ft (HP 311)
<b>Well:</b>	DECHANT 37N-W1HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM5000-RobertS-Local

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
8,178.00	6,961.62	7"(515' FNL 1673' FEL)	7.000	7.500	

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
783.00	783.00	-0.35	0.62	FIRST SDI MWD PRODUCTION SURVEY	
12,336.00	6,941.68	-4,919.72	923.84	LAST SDI MWD PRODUCTION SURVEY	
12,384.00	6,939.42	-4,967.44	928.47	SDI PROJECTION TO TD (434' FSL 1594' FEL)	

Checked By: _____	Approved By: _____	Date: _____
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<b>JOB NO.:</b>	41HMP1302056	<b>Report Time:</b>	2400	1 of 11
<b>COMPANY:</b>	Kerr McGee Oil and Gas Onshore LP	<b>API JOB #</b>	0512336382	
<b>LOCATION:</b>	Dechant 36-36HZ	<b>WORK ORDER#</b>	161616	
<b>RIG NAME:</b>	H&P 311	<b>FIELD:</b>	Wattenberg	
<b>STATE:</b>	CO	<b>Township:</b>	3N	
<b>COUNTY:</b>	Weld	<b>SECTRANGE:</b>	36	65W
<b>WELL NAME:</b>	Dechant 37N-W1HZ			

**From Saturday, February 02, 2013 at 0000 to Saturday, February 02, 2013 at 2400**

DRILLING SUMMARY				Drilling Parameters							
Start Depth	0.00	Rotary Hours	0.00	WOB	0	Pick UP	0	Slack Off	0	SPM	
End Depth	0.00	Circulating Hours	0.00	RAB	0	SPP	0	FlowRate	0 - 0	0	
Total Drilled:	0.00	Avg. Total ROP:	NA	Mud Data							
Total Rotary Drilled:	0.00	Avg. Rotary ROP:	NA	Type				PV	0	SOLID	0
Total Drilled Sliding:	0.00	Avg. Slide ROP:	NA	Weight	0	GAS	0	YP	0	BHT°	0
Slide Hours	0.00	Percent Rotary:	NA	Viscosity	0	SAND	0	PH	0	Flow T°	0
Below Rotary Hrs.	0.00	Percent Slide:	NA	Chlorides	0	WL	0			Oil %	0
PERSONNEL				cASING				BHA			
Lead Directional :	Steve Schlamp (10800)			Size	Lb/ft	Set Depth	N/A				
Second Directional :	John Noakes (3089) / Ryan Newell (10462)			Signature:							
MWD Operator1	James Whitley (3520)										
MWD Operator2	Josh Denning (10463)										
Directional Company:	Scientific Drilling International										
Geologist:											
Company Man:	Scott Allred										
Incl. In:	0	Azm. In:	0	Incl. Out:	0	Azm. Out:	0				

#### GENERAL COMMENT

Date	Start Time	End Time	Hours	Start Depth	End Depth	Activity Code	COMMENT
2-Feb-13	00:00	24:00	24.00	713	713	Standby	Standby - Wait to PU BHA #1



<b>JOB NO.:</b>	41HMP1302056	<b>Report Time:</b>	2400	2 of 11
<b>COMPANY:</b>	Kerr McGee Oil and Gas Onshore LP	<b>API JOB #</b>	0512336382	
<b>LOCATION:</b>	Dechant 36-36HZ	<b>WORK ORDER#</b>	161616	
<b>RIG NAME:</b>	H&P 311	<b>FIELD:</b>	Wattenberg	
<b>STATE:</b>	CO	<b>Township:</b>	3N	
<b>COUNTY:</b>	Weld	<b>SECTORANGE:</b>	36	65W
<b>WELL NAME:</b>	Dechant 37N-W1HZ			

From Sunday, February 03, 2013 at 0000 to Sunday, February 03, 2013 at 2400

DRILLING SUMMARY				Drilling Parameters						
Start Depth	713.00	Rotary Hours	3.75	WOB	30	Pick UP	75	Slack Off	72	SPM
End Depth	2202.00	Circulating Hours	0.83	RAB	73	SPP	2250	FlowRate	0 - 600	156
Total Drilled:	1473.00	Avg. Total ROP:	337.33	Mud Data						
Total Rotary Drilled:	1373.00	Avg. Rotary ROP:	366.13	Type				PV	0	SOLID
Total Drilled Sliding:	100.00	Avg. Slide ROP:	162.16	Weight	0	GAS	0	YP	0	BHT°
Slide Hours	0.62	Percent Rotary:	93.21	Viscosity	0	SAND	0	PH	0	Flow T°
Below Rotary Hrs.	12.25	Percent Slide:	6.79	Chlorides	0	WL	0	Oil %		0

PERSONNEL						cASING			BHA
Lead Directional :		Steve Schlamp (NEW)				Size	Lb/ft	Set Depth	BHA # 1:8 3/4" Sec. MMD55M 5X16, 6 1/2" Wenzel 6/7 5.0 2.12 Bend, 6 1/2" NMDC, 6 1/2" NM Pulser Sub, 6 1/2" NMDC, 6 1/2" Steel X-Over 4 1/2" XHP x XT-39B, 4.5" HWDP (XT 39) 20 Stands, Drill Pipe 126Jnts (42stands),
Second Directional :		John Noakes (3089) / Ryan Newell (10462)							
MWD Operator1		Josh Denning (10463)							
MWD Operator2		Jeff Smith (10396)							
Directional Company:		Scientific Drilling International							
Geologist:		Steve Schindler / Mike Dodge				Signature:			
Company Man:		Scott Allred							
Incl. In:	0.21	Azm. In:	115.59	Incl. Out:	10.62	Azm. Out:	46		

#### GENERAL COMMENT

Date	Start Time	End Time	Hours	Start Depth	End Depth	Activity Code	COMMENT
3-Feb-13	11:55	13:00	1.08	713	713	Change BHA	P/U Directional BHA & Install MWD tool
3-Feb-13	13:00	13:45	0.75	713	713	Other	M/U Bit (duct tape & tong dies)
3-Feb-13	00:00	11:45	11.75	713	713	Standby	Standby - Wait to PU BHA#1
3-Feb-13	11:45	11:55	0.17	713	713	Other	Safety meeting w. rig crew
3-Feb-13	13:45	14:45	1.00	713	713	Other	Find & install corrosion ring
3-Feb-13	14:45	15:30	0.75	713	713	TIH	TIH to tag cement @ 671' MD
3-Feb-13	15:30	15:50	0.33	713	713	Drilling	Drill out cement & float equipment
3-Feb-13	15:50	16:10	0.33	713	713	Rig repair	Repair Mudline
3-Feb-13	16:10	17:00	0.83	713	729	Circulating	Drill Shoetrack
3-Feb-13	17:00	17:10	0.17	729	743	Drilling	Drilling - (WOB:0;GPM :0;RPM:0)
3-Feb-13	17:10	17:20	0.17	743	743	Survey & Conn.	Survey & Conn.
3-Feb-13	17:20	17:55	0.58	743	835	Drilling	Drilling - (WOB:5;GPM :500;RPM:30)
3-Feb-13	17:55	18:05	0.17	835	835	Survey & Conn.	Survey & Conn.
3-Feb-13	18:05	18:20	0.25	835	927	Drilling	Drilling - (WOB:5;GPM :500;RPM:30)
3-Feb-13	18:20	18:30	0.17	927	927	Survey & Conn.	Survey & Conn.
3-Feb-13	18:30	18:40	0.17	927	1019	Drilling	Drilling - (WOB:20;GPM :600;RPM:50)
3-Feb-13	18:40	18:50	0.17	1019	1019	Survey & Conn.	Survey & Conn.

Date	Start Time	End Time	Hours	Start Depth	End Depth	Activity Code	COMMENT
3-Feb-13	18:50	19:00	0.17	1019	1111	Drilling	Drilling - (WOB:20;GPM :600;RPM:50)
3-Feb-13	19:00	19:10	0.17	1111	1111	Survey & Conn.	Survey & Conn.
3-Feb-13	19:10	19:25	0.25	1111	1203	Drilling	Drilling - (WOB:20;GPM :600;RPM:50)
3-Feb-13	19:25	19:35	0.17	1203	1203	Survey & Conn.	Survey & Conn.
3-Feb-13	19:35	19:45	0.17	1203	1295	Drilling	Drilling - (WOB:20;GPM :600;RPM:50)
3-Feb-13	19:45	19:50	0.08	1295	1295	Survey & Conn.	Survey & Conn.
3-Feb-13	19:50	19:53	0.05	1295	1301	Sliding	Survey & Conn.
3-Feb-13	19:53	20:05	0.20	1301	1387	Drilling	Drilling - (WOB:20;GPM :600;RPM:50)
3-Feb-13	20:05	20:10	0.08	1387	1387	Survey & Conn.	Survey & Conn.
3-Feb-13	20:10	20:13	0.05	1387	1395	Sliding	Sliding - (WOB:20;GPM :600;TFO:50)
3-Feb-13	20:13	20:25	0.20	1395	1479	Drilling	Drilling - (WOB:30;GPM :600;RPM:50)
3-Feb-13	20:25	20:35	0.17	1479	1479	Survey & Conn.	Survey & Conn.
3-Feb-13	20:35	20:38	0.05	1479	1487	Sliding	Sliding - (WOB:20;GPM :600;TFO:60)
3-Feb-13	20:38	20:50	0.20	1487	1571	Drilling	Drilling - (WOB:30;GPM :600;RPM:50)
3-Feb-13	20:50	21:00	0.17	1571	1571	Survey & Conn.	Survey & Conn.
3-Feb-13	21:00	21:02	0.03	1571	1575	Sliding	Sliding - (WOB:20;GPM :600;TFO:60)
3-Feb-13	21:02	21:10	0.13	1575	1663	Drilling	Drilling - (WOB:30;GPM :600;RPM:50)
3-Feb-13	21:10	21:20	0.17	1663	1663	Survey & Conn.	Survey & Conn.
3-Feb-13	21:20	21:22	0.03	1663	1668	Sliding	Sliding - (WOB:20;GPM :600;TFO:60)
3-Feb-13	21:22	21:35	0.22	1668	1755	Drilling	Drilling - (WOB:30;GPM :600;RPM:50)
3-Feb-13	21:35	21:45	0.17	1755	1755	Survey & Conn.	Survey & Conn.
3-Feb-13	21:45	21:47	0.03	1755	1765	Sliding	Sliding - (WOB:20;GPM :600;TFO:360)
3-Feb-13	21:47	21:55	0.13	1765	1847	Drilling	Drilling - (WOB:30;GPM :600;RPM:50)
3-Feb-13	21:55	22:06	0.18	1847	1847	Survey & Conn.	Survey & Conn.
3-Feb-13	22:06	22:10	0.07	1847	1857	Sliding	Sliding - (WOB:20;GPM :600;TFO:360)
3-Feb-13	22:10	22:20	0.17	1857	1939	Drilling	Drilling - (WOB:30;GPM :600;RPM:50)
3-Feb-13	22:20	22:30	0.17	1939	1939	Survey & Conn.	Survey & Conn.
3-Feb-13	22:30	22:33	0.05	1939	1949	Sliding	Sliding - (WOB:20;GPM :600;TFO:20)
3-Feb-13	22:33	22:35	0.03	1949	1971	Drilling	Drilling - (WOB:30;GPM :600;RPM:50)
3-Feb-13	22:35	23:05	0.50	1971	1971	Other	Other - Install Rot. Head
3-Feb-13	23:05	23:10	0.08	1971	2034	Drilling	Drilling - (WOB:30;GPM :600;RPM:50)
3-Feb-13	23:10	23:20	0.17	2034	2034	Survey & Conn.	Survey & Conn.
3-Feb-13	23:20	23:26	0.10	2034	2049	Sliding	Sliding - (WOB:20;GPM :600;TFO:20)
3-Feb-13	23:26	23:38	0.20	2049	2128	Drilling	Drilling - (WOB:30;GPM :600;RPM:50)
3-Feb-13	23:38	23:45	0.12	2128	2128	Survey & Conn.	Survey & Conn.
3-Feb-13	23:45	23:54	0.15	2128	2152	Sliding	Sliding - (WOB:20;GPM :600;TFO:20)
3-Feb-13	23:54	24:00	0.10	2152	2202	Drilling	Drilling - (WOB:30;GPM :600;RPM:50)



<b>JOB NO.:</b>	41HMP1302056	<b>Report Time:</b>	2400	3 of 11
<b>COMPANY:</b>	Kerr McGee Oil and Gas Onshore LP	<b>API JOB #</b>	0512336382	
<b>LOCATION:</b>	Dechant 36-36HZ	<b>WORK ORDER#</b>	161616	
<b>RIG NAME:</b>	H&P 311	<b>FIELD:</b>	Wattenberg	
<b>STATE:</b>	CO	<b>Township:</b>	3N	
<b>COUNTY:</b>	Weld	<b>SECTRANGE:</b>	36	65W
<b>WELL NAME:</b>	Dechant 37N-W1HZ			

**From Monday, February 04, 2013 at 0000 to Monday, February 04, 2013 at 2400**

DRILLING SUMMARY				Drilling Parameters							
Start Depth	2202.00	Rotary Hours	11.45	WOB	38	Pick UP	143	Slack Off	107	SPM	
End Depth	6257.00	Circulating Hours	0.90	RAB	124	SPP	2250	FlowRate	600 - 600	156	
Total Drilled:	4058.00	Avg. Total ROP:	254.42	Mud Data							
Total Rotary Drilled:	3589.00	Avg. Rotary ROP:	313.45	Type				PV	0	SOLID	0
Total Drilled Sliding:	469.00	Avg. Slide ROP:	104.22	Weight	0	GAS	0	YP	0	BHT°	0
Slide Hours	4.50	Percent Rotary:	88.44	Viscosity	0	SAND	0	PH	0	Flow T°	0
Below Rotary Hrs.	24.03	Percent Slide:	11.56	Chlorides	0	WL	0			Oil %	0
PERSONNEL				cASING				BHA			
Lead Directional :	Steve Schlamp (NEW)			Size	Lb/ft	Set Depth		BHA # 1:8 3/4" Sec. MMD55M 5X16, 6 1/2" Wenzel 6/7 5.0 2.12 Bend, 6 1/2" NMDC, 6 1/2" NM Pulser Sub, 6 1/2" NMDC, 6 1/2" Steel X-Over 4 1/2" XHP x XT-39B, 4.5" HWDP (XT 39) 20 Stands, 4 Drill Pipe 126Jnts (42stands),			
Second Directional :	John Noakes (3089) / Ryan Newell (10462)			Signature:							
MWD Operator1	Josh Denning (10463)										
MWD Operator2	Jeff Smith (10396)										
Directional Company:	Scientific Drilling International										
Geologist:	Steve Schindler / Mike Dodge										
Company Man:	Scott Allred										
Incl. In:	10.62	Azm. In:	46	Incl. Out:	2.18	Azm. Out:	174.84				

#### GENERAL COMMENT

Date	Start Time	End Time	Hours	Start Depth	End Depth	Activity Code	COMMENT
4-Feb-13	00:00	00:05	0.08	2202	2223	Drilling	Drilling - (WOB:30;GPM :600;RPM:50)
4-Feb-13	00:05	00:15	0.17	2223	2223	Survey & Conn.	Survey & Conn.
4-Feb-13	00:15	00:22	0.12	2223	2223	Other	Other - Cycle Pumps, Re-Sync MWD
4-Feb-13	00:22	00:27	0.08	2223	2241	Sliding	Sliding - (WOB:20;GPM :600;TFO:360)
4-Feb-13	00:27	00:38	0.18	2241	2318	Drilling	Drilling - (WOB:30;GPM :600;RPM:50)
4-Feb-13	00:38	00:46	0.13	2318	2318	Survey & Conn.	Survey & Conn.
4-Feb-13	00:46	00:57	0.18	2318	2318	Other	Other - Cycle Pumps, Re-Sync MWD
4-Feb-13	00:57	01:03	0.10	2318	2336	Sliding	Sliding - (WOB:20;GPM :600;TFO:25)
4-Feb-13	01:03	01:14	0.18	2336	2412	Drilling	Drilling - (WOB:30;GPM :600;RPM:50)
4-Feb-13	01:14	01:23	0.15	2412	2412	Survey & Conn.	Survey & Conn.
4-Feb-13	01:23	01:31	0.13	2412	2436	Sliding	Sliding - (WOB:20;GPM :600;TFO:15)
4-Feb-13	01:31	01:41	0.17	2436	2507	Drilling	Drilling - (WOB:30;GPM :600;RPM:50)
4-Feb-13	01:41	01:50	0.15	2507	2507	Survey & Conn.	Survey & Conn.
4-Feb-13	01:50	01:56	0.10	2507	2527	Sliding	Sliding - (WOB:20;GPM :600;TFO:35)
4-Feb-13	01:56	02:07	0.18	2527	2601	Drilling	Drilling - (WOB:30;GPM :600;RPM:50)
4-Feb-13	02:07	02:16	0.15	2601	2601	Survey & Conn.	Survey & Conn.
4-Feb-13	02:16	02:20	0.07	2601	2612	Sliding	Sliding - (WOB:20;GPM :600;TFO:10)

Date	Start Time	End Time	Hours	Start Depth	End Depth	Activity Code	COMMENT
4-Feb-13	02:20	02:32	0.20	2612	2696	Drilling	Drilling - (WOB:30;GPM :600;RPM:50)
4-Feb-13	02:32	02:42	0.17	2696	2696	Survey & Conn.	Survey & Conn.
4-Feb-13	02:42	02:50	0.13	2696	2718	Sliding	Sliding - (WOB:20;GPM :600;TFO:30)
4-Feb-13	02:50	03:01	0.18	2718	2790	Drilling	Drilling - (WOB:30;GPM :600;RPM:50)
4-Feb-13	03:01	03:12	0.18	2790	2790	Survey & Conn.	Survey & Conn.
4-Feb-13	03:12	03:18	0.10	2790	2807	Sliding	Sliding - (WOB:20;GPM :600;TFO:360)
4-Feb-13	03:18	03:30	0.20	2807	2885	Drilling	Drilling - (WOB:30;GPM :600;RPM:50)
4-Feb-13	03:30	03:40	0.17	2885	2885	Survey & Conn.	Survey & Conn.
4-Feb-13	03:40	03:55	0.25	2885	2980	Drilling	Drilling - (WOB:30;GPM :600;RPM:50)
4-Feb-13	03:55	04:00	0.08	2980	2980	Circulating	Circulating - SPR's
4-Feb-13	04:00	04:08	0.13	2980	2980	Survey & Conn.	Survey & Conn.
4-Feb-13	04:08	04:11	0.05	2980	2986	Sliding	Sliding - (WOB:20;GPM :600;TFO:-75)
4-Feb-13	04:11	04:25	0.23	2986	3074	Drilling	Drilling - (WOB:30;GPM :600;RPM:50)
4-Feb-13	04:25	04:34	0.15	3074	3074	Survey & Conn.	Survey & Conn.
4-Feb-13	04:34	04:48	0.23	3074	3169	Drilling	Drilling - (WOB:30;GPM :600;RPM:50)
4-Feb-13	04:48	04:58	0.17	3169	3169	Survey & Conn.	Survey & Conn.
4-Feb-13	04:58	05:03	0.08	3169	3185	Sliding	Sliding - (WOB:20;GPM :600;TFO:20)
4-Feb-13	05:03	05:15	0.20	3185	3263	Drilling	Drilling - (WOB:30;GPM :600;RPM:50)
4-Feb-13	05:15	05:29	0.23	3263	3263	Survey & Conn.	Survey & Conn.
4-Feb-13	05:29	05:34	0.08	3263	3275	Sliding	Sliding - (WOB:20;GPM :600;TFO:360)
4-Feb-13	05:34	05:48	0.23	3275	3358	Drilling	Drilling - (WOB:30;GPM :600;RPM:50)
4-Feb-13	05:48	05:58	0.17	3358	3358	Survey & Conn.	Survey & Conn.
4-Feb-13	05:58	06:00	0.03	3358	3364	Sliding	Sliding - (WOB:20;GPM :600;TFO:360)
4-Feb-13	06:00	06:15	0.25	3364	3452	Drilling	Drilling - (WOB:30;GPM :600;RPM:50)
4-Feb-13	06:15	06:25	0.17	3452	3452	Survey & Conn.	Survey & Conn.
4-Feb-13	06:25	06:30	0.08	3452	3464	Sliding	Sliding - (WOB:20;GPM :600;TFO:360)
4-Feb-13	06:30	06:43	0.22	3464	3547	Drilling	Drilling - (WOB:30;GPM :600;RPM:50)
4-Feb-13	06:43	06:50	0.12	3547	3547	Survey & Conn.	Survey & Conn.
4-Feb-13	06:50	06:57	0.12	3547	3574	Sliding	Sliding - (WOB:20;GPM :600;TFO:360)
4-Feb-13	06:57	07:09	0.20	3574	3641	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
4-Feb-13	07:09	07:18	0.15	3641	3641	Survey & Conn.	Survey & Conn.
4-Feb-13	07:18	07:24	0.10	3641	3661	Sliding	Sliding - (WOB:38;GPM :600;TFO:0)
4-Feb-13	07:24	07:37	0.22	3661	3736	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
4-Feb-13	07:37	07:43	0.10	3736	3736	Survey & Conn.	Survey & Conn.
4-Feb-13	07:43	07:49	0.10	3736	3756	Sliding	Sliding - (WOB:38;GPM :600;TFO:0)
4-Feb-13	07:49	07:59	0.17	3756	3830	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
4-Feb-13	07:59	08:01	0.03	3830	3830	Other	Record T&D Data
4-Feb-13	08:01	08:11	0.17	3830	3830	Survey & Conn.	Survey & Conn.
4-Feb-13	08:11	08:20	0.15	3830	3855	Sliding	Sliding - (WOB:38;GPM :600;TFO:0)
4-Feb-13	08:20	08:32	0.20	3855	3925	Drilling	Drilling - (WOB:35;GPM :600;RPM:50)
4-Feb-13	08:32	08:39	0.12	3925	3925	Survey & Conn.	Survey & Conn.
4-Feb-13	08:39	08:47	0.13	3925	3939	Sliding	Sliding - (WOB:38;GPM :600;TFO:0)
4-Feb-13	08:47	09:00	0.22	3939	4019	Drilling	Drilling - (WOB:35;GPM :600;RPM:50)
4-Feb-13	09:00	09:07	0.12	4019	4019	Survey & Conn.	Survey & Conn.
4-Feb-13	09:07	09:12	0.08	4019	4031	Sliding	Sliding - (WOB:38;GPM :600;TFO:0)
4-Feb-13	09:12	09:27	0.25	4031	4114	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
4-Feb-13	09:27	09:35	0.13	4114	4114	Survey & Conn.	Survey & Conn.
4-Feb-13	09:35	09:40	0.08	4114	4124	Sliding	Sliding - (WOB:38;GPM :600;TFO:0)



Date	Start Time	End Time	Hours	Start Depth	End Depth	Activity Code	COMMENT
4-Feb-13	09:40	09:54	0.23	4124	4209	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
4-Feb-13	09:54	10:03	0.15	4209	4209	Survey & Conn.	Survey & Conn.
4-Feb-13	10:03	10:08	0.08	4209	4209	Circulating	Get SPR
4-Feb-13	10:08	10:15	0.12	4209	4240	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
4-Feb-13	10:15	10:19	0.07	4240	4240	MWD Survey	Checkshot
4-Feb-13	10:19	10:30	0.18	4240	4303	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
4-Feb-13	10:30	10:32	0.03	4303	4303	Other	Record T&D info
4-Feb-13	10:32	10:39	0.12	4303	4303	Survey & Conn.	Survey & Conn.
4-Feb-13	10:39	10:55	0.27	4303	4398	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
4-Feb-13	10:55	11:03	0.13	4398	4398	Survey & Conn.	Survey & Conn.
4-Feb-13	11:03	11:09	0.10	4398	4418	Sliding	Sliding - (WOB:38;GPM :600;TFO:0)
4-Feb-13	11:09	11:14	0.08	4418	4430	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
4-Feb-13	11:14	11:18	0.07	4430	4430	MWD Survey	Checkshot
4-Feb-13	11:18	11:28	0.17	4430	4492	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
4-Feb-13	11:28	11:31	0.05	4492	4495	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
4-Feb-13	11:31	11:37	0.10	4492	4492	Survey & Conn.	Survey & Conn.
4-Feb-13	11:35	11:55	0.33	4492	4500	Sliding	Sliding - (WOB:38;GPM :600;TFO:0)
4-Feb-13	22:27	22:53	0.43	6162	6179	Sliding	Sliding - (WOB:38;GPM :600;TFO:210)
4-Feb-13	22:53	22:59	0.10	6179	6194	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
4-Feb-13	22:59	23:08	0.15	6194	6194	Survey & Conn.	Survey & Conn.
4-Feb-13	23:08	23:20	0.20	6194	6211	Sliding	Sliding - (WOB:38;GPM :600;TFO:180)
4-Feb-13	23:20	23:24	0.07	6211	6225	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
4-Feb-13	23:24	23:30	0.10	6225	6225	MWD Survey	MWD Survey
4-Feb-13	23:30	23:46	0.27	6225	6240	Sliding	Sliding - (WOB:38;GPM :600;TFO:180)
4-Feb-13	23:46	23:52	0.10	6240	6257	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
4-Feb-13	23:52	24:00	0.13	6257	6257	Survey & Conn.	Survey & Conn.
4-Feb-13	11:55	12:05	0.17	4500	4555	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
4-Feb-13	12:05	12:09	0.07	4555	4555	MWD Survey	Checkshot
4-Feb-13	12:09	12:15	0.10	4555	4586	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
4-Feb-13	12:15	12:22	0.12	4586	4586	Survey & Conn.	Survey & Conn.
4-Feb-13	12:22	12:28	0.10	4586	4593	Sliding	Sliding - (WOB:38;GPM :600;TFO:0)
4-Feb-13	12:28	12:50	0.37	4593	4680	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
4-Feb-13	12:50	12:58	0.13	4680	4680	Survey & Conn.	Survey & Conn.
4-Feb-13	12:58	13:04	0.10	4680	4687	Sliding	Sliding - (WOB:38;GPM :600;TFO:0)
4-Feb-13	13:04	13:17	0.22	4687	4775	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
4-Feb-13	13:17	13:23	0.10	4775	4775	Survey & Conn.	Survey & Conn.
4-Feb-13	13:23	13:29	0.10	4775	4782	Sliding	Sliding - (WOB:38;GPM :600;TFO:0)
4-Feb-13	13:29	13:45	0.27	4782	4870	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
4-Feb-13	13:45	13:48	0.05	4870	4870	Other	Record T&D Info
4-Feb-13	13:48	13:53	0.08	4870	4870	Survey & Conn.	Survey & Conn.
4-Feb-13	13:53	14:00	0.12	4870	4870	Circulating	Get SPR
4-Feb-13	14:00	14:05	0.08	4870	4875	Sliding	Sliding - (WOB:38;GPM :600;TFO:0)
4-Feb-13	14:05	14:22	0.28	4875	4965	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
4-Feb-13	14:22	14:30	0.13	4965	4965	Survey & Conn.	Survey & Conn.
4-Feb-13	14:30	14:34	0.07	4965	4972	Sliding	Sliding - (WOB:38;GPM :600;TFO:0)
4-Feb-13	14:34	14:50	0.27	4972	5060	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
4-Feb-13	14:50	14:58	0.13	5060	5060	Survey & Conn.	Survey & Conn.
4-Feb-13	14:58	15:04	0.10	5060	5067	Sliding	Sliding - (WOB:38;GPM :600;TFO:0)

Date	Start Time	End Time	Hours	Start Depth	End Depth	Activity Code	COMMENT
4-Feb-13	15:04	15:21	0.28	5067	5154	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
4-Feb-13	15:21	15:29	0.13	5154	5154	Survey & Conn.	Survey & Conn.
4-Feb-13	15:29	15:37	0.13	5154	5164	Sliding	Sliding - (WOB:38;GPM :600;TFO:0)
4-Feb-13	15:37	16:00	0.38	5164	5249	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
4-Feb-13	16:00	16:05	0.08	5249	5249	Survey & Conn.	Survey & Conn.
4-Feb-13	16:05	16:10	0.08	5249	5256	Sliding	Sliding - (WOB:38;GPM :600;TFO:0)
4-Feb-13	16:10	16:27	0.28	5256	5343	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
4-Feb-13	16:27	16:35	0.13	5343	5343	Survey & Conn.	Survey & Conn.
4-Feb-13	16:35	16:55	0.33	5343	5438	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
4-Feb-13	16:55	17:05	0.17	5438	5438	Survey & Conn.	Survey & Conn.
4-Feb-13	17:05	17:10	0.08	5438	5438	Circulating	Record SPR's
4-Feb-13	17:10	17:16	0.10	5438	5443	Sliding	Sliding - (WOB:38;GPM :600;TFO:0)
4-Feb-13	17:16	17:35	0.32	5443	5532	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
4-Feb-13	17:35	17:56	0.35	5532	5532	Rig Service-Inhole	Rig Service-Inhole
4-Feb-13	17:56	18:03	0.12	5532	5532	Survey & Conn.	Survey & Conn.
4-Feb-13	18:03	18:20	0.28	5532	5532	Rig repair	Rig repair
4-Feb-13	18:20	18:28	0.13	5532	5564	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
4-Feb-13	18:28	18:35	0.12	5564	5564	MWD Survey	MWD Survey
4-Feb-13	18:35	18:41	0.10	5564	5568	Sliding	Sliding - (WOB:38;GPM :600;TFO:0)
4-Feb-13	18:41	18:52	0.18	5568	5627	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
4-Feb-13	18:52	19:01	0.15	5627	5627	Survey & Conn.	Survey & Conn.
4-Feb-13	19:01	19:26	0.42	5627	5721	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
4-Feb-13	19:26	19:36	0.17	5721	5721	Survey & Conn.	Survey & Conn.
4-Feb-13	19:36	19:39	0.05	5721	5724	Sliding	Sliding - (WOB:38;GPM :600;TFO:0)
4-Feb-13	19:39	20:03	0.40	5724	5816	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
4-Feb-13	20:03	20:14	0.18	5816	5816	Survey & Conn.	Survey & Conn.
4-Feb-13	20:14	20:18	0.07	5816	5819	Sliding	Sliding - (WOB:38;GPM :600;TFO:0)
4-Feb-13	20:18	20:36	0.30	5819	5910	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
4-Feb-13	20:36	20:47	0.18	5910	5910	Survey & Conn.	Survey & Conn.
4-Feb-13	20:47	20:51	0.07	5910	5913	Sliding	Sliding - (WOB:38;GPM :600;TFO:0)
4-Feb-13	20:51	21:10	0.32	5913	6005	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
4-Feb-13	21:10	21:22	0.20	6005	6012	Sliding	Sliding - (WOB:38;GPM :600;TFO:210)
4-Feb-13	21:22	21:52	0.50	6012	6099	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
4-Feb-13	21:52	22:01	0.15	6099	6099	Survey & Conn.	Survey & Conn.
4-Feb-13	22:01	22:20	0.32	6099	6162	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
4-Feb-13	22:20	22:27	0.12	6162	6162	MWD Survey	MWD Survey



<b>JOB NO.:</b>	41HMP1302056	<b>Report Time:</b>	2400	4 of 11
<b>COMPANY:</b>	Kerr McGee Oil and Gas Onshore LP	<b>API JOB #</b>	0512336382	
<b>LOCATION:</b>	Dechant 36-36HZ	<b>WORK ORDER#</b>	161616	
<b>RIG NAME:</b>	H&P 311	<b>FIELD:</b>	Wattenberg	
<b>STATE:</b>	CO	<b>Township:</b>	3N	
<b>COUNTY:</b>	Weld	<b>SECTRANGE:</b>	36	65W
<b>WELL NAME:</b>	Dechant 37N-W1HZ			

**From Tuesday, February 05, 2013 at 0000 to Tuesday, February 05, 2013 at 2400**

DRILLING SUMMARY				Drilling Parameters						
Start Depth	6257.00	Rotary Hours	7.92	WOB	38	Pick UP	174	Slack Off	125	SPM
End Depth	7895.00	Circulating Hours	3.77	RAB	140	SPP	3300	FlowRate	444 - 600	156
Total Drilled:	1638.00	Avg. Total ROP:	99.27	Mud Data						
Total Rotary Drilled:	913.00	Avg. Rotary ROP:	115.33	Type			PV	0	SOLID	0
Total Drilled Sliding:	725.00	Avg. Slide ROP:	84.47	Weight	0	GAS	0	YP	0	BHT°
Slide Hours	8.58	Percent Rotary:	55.74	Viscosity	0	SAND	0	PH	0	Flow T°
Below Rotary Hrs.	24.00	Percent Slide:	44.26	Chlorides	0	WL	0	Oil %		0

PERSONNEL						cASING			BHA
Lead Directional :		Steve Schlamp (10800)				Size	Lb/ft	Set Depth	BHA # 1:8 3/4" Sec. MMD55M 5X16, 6 1/2" Wenzel 6/7 5.0 2.12 Bend, 6 1/2" NMDC, 6 1/2" NM Pulser Sub, 6 1/2" NMDC, 6 1/2" Steel X-Over 4 1/2" XHP x XT-39B, 4.5" HWDP (XT 39) 20 Stands, Drill Pipe 126Jnts (42stands),
Second Directional :		John Noakes (3089) / Ryan Newell (10462)							
MWD Operator1		Josh Denning (10463)							
MWD Operator2		Jeff Smith (10396)							
Directional Company:		Scientific Drilling International							
Geologist:		Steve Schindler / Mike Dodge				Signature:			
Company Man:		Scott Allred							
Incl. In:	2.18	Azm. In:	174.84	Incl. Out:	89.3	Azm. Out:	179.69		

**GENERAL COMMENT**  
 Drilled with 1 pump at 114 strokes from 7304' at 16:00 until 7548' at 20:10.

Date	Start Time	End Time	Hours	Start Depth	End Depth	Activity Code	COMMENT
5-Feb-13	08:50	09:00	0.17	6886	6886	MWD Survey	MWD Survey
5-Feb-13	09:00	09:10	0.17	6886	6904	Sliding	Sliding - (WOB:38;GPM :600;TFO:20)
5-Feb-13	09:10	09:20	0.17	6904	6918	Drilling	Drilling - (WOB:38;GPM :600;RPM:35)
5-Feb-13	09:20	09:30	0.17	6918	6918	MWD Survey	MWD Survey
5-Feb-13	00:00	00:17	0.28	6257	6280	Sliding	Sliding - (WOB:38;GPM :600;TFO:180)
5-Feb-13	00:17	00:20	0.05	6280	6288	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
5-Feb-13	00:20	00:34	0.23	6288	6288	Survey & Conn.	Survey & Conn.
5-Feb-13	00:34	00:42	0.13	6288	6306	Sliding	Sliding - (WOB:38;GPM :600;TFO:0)
5-Feb-13	00:42	00:44	0.03	6306	6320	Drilling	Drilling - (WOB:38;GPM :600;RPM:35)
5-Feb-13	00:44	00:55	0.18	6320	6320	MWD Survey	MWD Survey
5-Feb-13	00:55	01:05	0.17	6320	6335	Sliding	Sliding - (WOB:38;GPM :600;TFO:0)
5-Feb-13	01:05	01:10	0.08	6335	6351	Drilling	Drilling - (WOB:38;GPM :600;RPM:35)
5-Feb-13	01:10	01:20	0.17	6351	6351	MWD Survey	MWD Survey
5-Feb-13	01:20	01:30	0.17	6351	6369	Sliding	Sliding - (WOB:38;GPM :600;TFO:0)
5-Feb-13	01:30	01:35	0.08	6369	6383	Drilling	Drilling - (WOB:38;GPM :600;RPM:35)
5-Feb-13	01:35	01:45	0.17	6383	6383	Survey & Conn.	Survey & Conn.
5-Feb-13	01:45	01:55	0.17	6383	6404	Sliding	Sliding - (WOB:38;GPM :600;TFO:20)



Date	Start Time	End Time	Hours	Start Depth	End Depth	Activity Code	COMMENT
5-Feb-13	01:55	02:05	0.17	6404	6414	Drilling	Drilling - (WOB:38;GPM :600;RPM:35)
5-Feb-13	02:05	02:10	0.08	6414	6414	MWD Survey	MWD Survey
5-Feb-13	02:10	02:20	0.17	6414	6436	Sliding	Sliding - (WOB:38;GPM :600;TFO:10)
5-Feb-13	02:20	02:25	0.08	6436	6446	Drilling	Drilling - (WOB:38;GPM :600;RPM:35)
5-Feb-13	02:25	02:30	0.08	6446	6446	MWD Survey	MWD Survey
5-Feb-13	02:30	02:40	0.17	6446	6466	Sliding	Sliding - (WOB:38;GPM :600;TFO:10)
5-Feb-13	02:40	02:45	0.08	6466	6477	Drilling	Drilling - (WOB:38;GPM :600;RPM:35)
5-Feb-13	02:45	02:55	0.17	6477	6477	Survey & Conn.	Survey & Conn.
5-Feb-13	02:55	03:05	0.17	6477	6496	Sliding	Sliding - (WOB:38;GPM :600;TFO:0)
5-Feb-13	03:05	03:10	0.08	6496	6508	Drilling	Drilling - (WOB:38;GPM :600;RPM:35)
5-Feb-13	03:10	03:15	0.08	6508	6508	MWD Survey	MWD Survey
5-Feb-13	03:15	03:30	0.25	6508	6530	Sliding	Sliding - (WOB:38;GPM :600;TFO:-20)
5-Feb-13	03:30	03:35	0.08	6530	6540	Drilling	Drilling - (WOB:38;GPM :600;RPM:35)
5-Feb-13	03:35	03:40	0.08	6540	6540	MWD Survey	MWD Survey
5-Feb-13	03:40	03:50	0.17	6540	6564	Sliding	Sliding - (WOB:38;GPM :600;TFO:0)
5-Feb-13	03:50	04:00	0.17	6564	6571	Drilling	Drilling - (WOB:38;GPM :600;RPM:35)
5-Feb-13	04:00	04:10	0.17	6571	6571	Survey & Conn.	Survey & Conn.
5-Feb-13	04:10	04:25	0.25	6571	6591	Sliding	Sliding - (WOB:38;GPM :600;TFO:20)
5-Feb-13	04:25	04:30	0.08	6591	6603	Drilling	Drilling - (WOB:38;GPM :600;RPM:35)
5-Feb-13	04:30	04:40	0.17	6603	6603	MWD Survey	MWD Survey
5-Feb-13	04:40	04:50	0.17	6603	6625	Sliding	Sliding - (WOB:38;GPM :600;TFO:20)
5-Feb-13	04:50	04:55	0.08	6625	6634	Drilling	Drilling - (WOB:38;GPM :600;RPM:35)
5-Feb-13	04:55	05:00	0.08	6634	6634	MWD Survey	MWD Survey
5-Feb-13	05:00	05:10	0.17	6634	6654	Sliding	Sliding - (WOB:38;GPM :600;TFO:20)
5-Feb-13	05:10	05:15	0.08	6654	6666	Drilling	Drilling - (WOB:38;GPM :600;RPM:35)
5-Feb-13	05:15	05:25	0.17	6666	6666	Survey & Conn.	Survey & Conn.
5-Feb-13	05:25	05:40	0.25	6666	6688	Sliding	Sliding - (WOB:38;GPM :600;TFO:20)
5-Feb-13	05:40	05:45	0.08	6688	6697	Drilling	Drilling - (WOB:38;GPM :600;RPM:35)
5-Feb-13	05:45	05:55	0.17	6697	6697	MWD Survey	MWD Survey
5-Feb-13	05:55	06:00	0.08	6697	6699	Sliding	Sliding - (WOB:38;GPM :600;TFO:20)
5-Feb-13	06:00	06:05	0.08	6699	6699	MWD Survey	Re-synch tool
5-Feb-13	06:05	06:15	0.17	6699	6717	Sliding	Sliding - (WOB:38;GPM :600;TFO:20)
5-Feb-13	06:15	06:20	0.08	6717	6729	Drilling	Drilling - (WOB:38;GPM :600;RPM:35)
5-Feb-13	06:20	06:25	0.08	6729	6729	MWD Survey	MWD Survey
5-Feb-13	06:25	06:40	0.25	6729	6754	Sliding	Sliding - (WOB:38;GPM :600;TFO:20)
5-Feb-13	06:40	06:45	0.08	6754	6760	Drilling	Drilling - (WOB:38;GPM :600;RPM:35)
5-Feb-13	06:45	06:55	0.17	6760	6760	Survey & Conn.	Survey & Conn.
5-Feb-13	06:55	07:05	0.17	6760	6781	Sliding	Sliding - (WOB:38;GPM :600;TFO:20)
5-Feb-13	07:05	07:10	0.08	6781	6792	Drilling	Drilling - (WOB:38;GPM :600;RPM:35)
5-Feb-13	07:10	07:20	0.17	6792	6792	MWD Survey	MWD Survey
5-Feb-13	07:20	07:35	0.25	6792	6815	Sliding	Sliding - (WOB:38;GPM :600;TFO:20)
5-Feb-13	07:35	07:40	0.08	6815	6823	Drilling	Drilling - (WOB:38;GPM :600;RPM:35)
5-Feb-13	07:40	07:45	0.08	6823	6823	MWD Survey	MWD Survey
5-Feb-13	07:45	08:00	0.25	6823	6846	Sliding	Sliding - (WOB:38;GPM :600;TFO:20)
5-Feb-13	08:00	08:05	0.08	6846	6855	Drilling	Drilling - (WOB:38;GPM :600;RPM:35)
5-Feb-13	08:05	08:15	0.17	6855	6855	Survey & Conn.	Survey & Conn.
5-Feb-13	08:15	08:30	0.25	6855	6874	Sliding	Sliding - (WOB:38;GPM :600;TFO:20)
5-Feb-13	08:30	08:40	0.17	6874	6874	Rig repair	Rig repair (pump #2 cap gasket)

Date	Start Time	End Time	Hours	Start Depth	End Depth	Activity Code	COMMENT
5-Feb-13	08:40	08:50	0.17	6874	6886	Drilling	Drilling - (WOB:38;GPM :600;RPM:35)
5-Feb-13	09:30	09:40	0.17	6918	6940	Sliding	Sliding - (WOB:38;GPM :444;TFO:20)
5-Feb-13	09:40	09:50	0.17	6940	6949	Drilling	Drilling - (WOB:38;GPM :600;RPM:35)
5-Feb-13	09:50	10:00	0.17	6949	6949	Survey & Conn.	Survey & Conn.
5-Feb-13	10:00	10:10	0.17	6949	6967	Sliding	Sliding - (WOB:38;GPM :444;TFO:20)
5-Feb-13	10:10	10:15	0.08	6967	6981	Drilling	Drilling - (WOB:38;GPM :600;RPM:35)
5-Feb-13	10:15	10:20	0.08	6981	6981	MWD Survey	MWD Survey
5-Feb-13	10:20	10:30	0.17	6981	6998	Sliding	Sliding - (WOB:38;GPM :444;TFO:20)
5-Feb-13	10:30	10:35	0.08	6998	7013	Drilling	Drilling - (WOB:38;GPM :600;RPM:35)
5-Feb-13	10:35	10:40	0.08	7013	7013	MWD Survey	MWD Survey
5-Feb-13	10:40	11:00	0.33	7013	7033	Sliding	Sliding - (WOB:38;GPM :444;TFO:20)
5-Feb-13	11:00	11:05	0.08	7033	7044	Drilling	Drilling - (WOB:38;GPM :600;RPM:35)
5-Feb-13	11:05	11:15	0.17	7044	7044	Survey & Conn.	Survey & Conn.
5-Feb-13	11:15	11:25	0.17	7044	7062	Sliding	Sliding - (WOB:38;GPM :444;TFO:20)
5-Feb-13	11:25	11:35	0.17	7062	7076	Drilling	Drilling - (WOB:38;GPM :600;RPM:35)
5-Feb-13	11:35	11:40	0.08	7076	7076	MWD Survey	MWD Survey
5-Feb-13	11:40	11:50	0.17	7076	7092	Sliding	Sliding - (WOB:38;GPM :444;TFO:20)
5-Feb-13	11:50	12:00	0.17	7092	7107	Drilling	Drilling - (WOB:38;GPM :600;RPM:35)
5-Feb-13	12:00	12:05	0.08	7107	7107	MWD Survey	MWD Survey
5-Feb-13	12:05	12:20	0.25	7107	7123	Sliding	Sliding - (WOB:38;GPM :444;TFO:20)
5-Feb-13	12:20	12:30	0.17	7123	7138	Drilling	Drilling - (WOB:38;GPM :600;RPM:35)
5-Feb-13	12:30	12:35	0.08	7138	7138	Other	Record T&D info
5-Feb-13	12:35	12:45	0.17	7138	7138	Survey & Conn.	Survey & Conn.
5-Feb-13	12:45	13:00	0.25	7138	7154	Sliding	Sliding - (WOB:38;GPM :444;TFO:20)
5-Feb-13	13:00	13:10	0.17	7154	7170	Drilling	Drilling - (WOB:38;GPM :600;RPM:35)
5-Feb-13	13:10	13:15	0.08	7170	7170	Survey & Conn.	Survey & Conn.
5-Feb-13	13:15	13:20	0.08	7170	7180	Sliding	Sliding - (WOB:38;GPM :444;TFO:20)
5-Feb-13	13:20	13:30	0.17	7180	7202	Drilling	Drilling - (WOB:38;GPM :600;RPM:35)
5-Feb-13	13:30	13:40	0.17	7202	7202	MWD Survey	MWD Survey
5-Feb-13	13:40	13:55	0.25	7202	7202	Other	Troubleshoot MWD
5-Feb-13	13:55	14:05	0.17	7202	7214	Sliding	Sliding - (WOB:38;GPM :444;TFO:20)
5-Feb-13	14:05	14:20	0.25	7214	7233	Drilling	Drilling - (WOB:38;GPM :444;RPM:35)
5-Feb-13	14:20	14:30	0.17	7233	7233	Survey & Conn.	Survey & Conn.
5-Feb-13	14:30	14:45	0.25	7233	7243	Sliding	Sliding - (WOB:38;GPM :444;TFO:-20)
5-Feb-13	14:45	15:00	0.25	7243	7265	Drilling	Drilling - (WOB:38;GPM :444;RPM:35)
5-Feb-13	15:00	15:05	0.08	7265	7265	MWD Survey	MWD Survey
5-Feb-13	15:05	15:20	0.25	7265	7275	Sliding	Sliding - (WOB:38;GPM :444;TFO:-20)
5-Feb-13	15:20	15:35	0.25	7275	7296	Drilling	Drilling - (WOB:38;GPM :444;RPM:35)
5-Feb-13	15:35	15:50	0.25	7296	7296	MWD Survey	Troubleshoot MWD
5-Feb-13	15:50	16:00	0.17	7296	7301	Sliding	Sliding - (WOB:38;GPM :444;TFO:-20)
5-Feb-13	16:00	16:05	0.08	7301	7301	Rig repair	Down to 1 pump
5-Feb-13	16:05	16:10	0.08	7301	7306	Sliding	Sliding - (WOB:38;GPM :444;TFO:-20)
5-Feb-13	16:10	16:25	0.25	7306	7328	Drilling	Drilling - (WOB:38;GPM :444;RPM:35)
5-Feb-13	16:25	16:45	0.33	7328	7328	Survey & Conn.	Survey & Conn. & put hole on buster
5-Feb-13	16:45	16:50	0.08	7328	7333	Sliding	Sliding - (WOB:38;GPM :444;TFO:-20)
5-Feb-13	16:50	17:05	0.25	7333	7359	Drilling	Drilling - (WOB:38;GPM :444;RPM:35)
5-Feb-13	17:05	17:15	0.17	7359	7359	MWD Survey	MWD Survey
5-Feb-13	17:15	17:25	0.17	7359	7369	Sliding	Sliding - (WOB:38;GPM :444;TFO:-20)

Date	Start Time	End Time	Hours	Start Depth	End Depth	Activity Code	COMMENT
5-Feb-13	17:25	17:40	0.25	7369	7391	Drilling	Drilling - (WOB:38;GPM :444;RPM:35)
5-Feb-13	17:40	17:45	0.08	7391	7391	MWD Survey	MWD Survey
5-Feb-13	17:45	17:55	0.17	7391	7395	Sliding	Sliding - (WOB:38;GPM :444;TFO:-20)
5-Feb-13	17:55	18:10	0.25	7395	7422	Drilling	Drilling - (WOB:38;GPM :444;RPM:35)
5-Feb-13	18:10	18:20	0.17	7422	7422	Survey & Conn.	Survey & Conn.
5-Feb-13	18:20	18:30	0.17	7422	7435	Sliding	Sliding - (WOB:38;GPM :444;TFO:-20)
5-Feb-13	18:30	18:45	0.25	7435	7454	Drilling	Drilling - (WOB:38;GPM :444;RPM:35)
5-Feb-13	18:45	18:50	0.08	7454	7454	MWD Survey	MWD Survey
5-Feb-13	18:50	19:00	0.17	7454	7458	Sliding	Sliding - (WOB:38;GPM :444;TFO:-20)
5-Feb-13	19:00	19:15	0.25	7458	7486	Drilling	Drilling - (WOB:38;GPM :444;RPM:35)
5-Feb-13	19:15	19:20	0.08	7486	7486	MWD Survey	MWD Survey
5-Feb-13	19:20	19:30	0.17	7486	7495	Sliding	Sliding - (WOB:38;GPM :444;TFO:-20)
5-Feb-13	19:30	19:45	0.25	7495	7517	Drilling	Drilling - (WOB:38;GPM :444;RPM:35)
5-Feb-13	19:45	19:55	0.17	7517	7517	Survey & Conn.	Survey & Conn.
5-Feb-13	19:55	20:00	0.08	7517	7521	Sliding	Sliding - (WOB:38;GPM :444;TFO:30)
5-Feb-13	20:00	20:10	0.17	7521	7549	Drilling	Drilling - (WOB:38;GPM :444;RPM:35)
5-Feb-13	20:10	20:20	0.17	7549	7549	MWD Survey	MWD Survey
5-Feb-13	20:20	20:30	0.17	7549	7559	Sliding	Sliding - (WOB:38;GPM :600;TFO:15)
5-Feb-13	20:30	20:40	0.17	7559	7580	Drilling	Drilling - (WOB:38;GPM :600;RPM:35)
5-Feb-13	20:40	20:55	0.25	7580	7580	MWD Survey	MWD Survey
5-Feb-13	20:55	21:00	0.08	7580	7587	Sliding	Sliding - (WOB:38;GPM :600;TFO:30)
5-Feb-13	21:00	21:10	0.17	7587	7612	Drilling	Drilling - (WOB:38;GPM :600;RPM:35)
5-Feb-13	21:10	21:20	0.17	7612	7612	Survey & Conn.	Survey & Conn.
5-Feb-13	21:20	21:25	0.08	7612	7618	Sliding	Sliding - (WOB:38;GPM :600;TFO:30)
5-Feb-13	21:25	21:40	0.25	7618	7643	Drilling	Drilling - (WOB:38;GPM :600;RPM:35)
5-Feb-13	21:40	21:45	0.08	7643	7643	MWD Survey	MWD Survey
5-Feb-13	21:45	22:00	0.25	7643	7675	Drilling	Drilling - (WOB:38;GPM :600;RPM:35)
5-Feb-13	22:00	22:05	0.08	7675	7675	MWD Survey	MWD Survey
5-Feb-13	22:05	22:15	0.17	7675	7706	Drilling	Drilling - (WOB:38;GPM :600;RPM:35)
5-Feb-13	22:15	22:25	0.17	7706	7706	Survey & Conn.	Survey & Conn.
5-Feb-13	22:25	22:40	0.25	7706	7738	Drilling	Drilling - (WOB:38;GPM :600;RPM:35)
5-Feb-13	22:40	22:45	0.08	7738	7738	MWD Survey	MWD Survey
5-Feb-13	22:45	22:55	0.17	7738	7745	Sliding	Sliding - (WOB:38;GPM :600;TFO:135)
5-Feb-13	22:55	23:10	0.25	7745	7801	Drilling	Drilling - (WOB:38;GPM :600;RPM:35)
5-Feb-13	23:10	23:20	0.17	7801	7801	Survey & Conn.	Survey & Conn.
5-Feb-13	23:20	23:30	0.17	7801	7817	Sliding	Sliding - (WOB:38;GPM :600;TFO:150)
5-Feb-13	23:30	24:00	0.50	7817	7895	Drilling	Drilling - (WOB:38;GPM :600;RPM:35)



<b>JOB NO.:</b>	41HMP1302056	<b>Report Time:</b>	2400	5 of 11
<b>COMPANY:</b>	Kerr McGee Oil and Gas Onshore LP	<b>API JOB #</b>	0512336382	
<b>LOCATION:</b>	Dechant 36-36HZ	<b>WORK ORDER#</b>	161616	
<b>RIG NAME:</b>	H&P 311	<b>FIELD:</b>	Wattenberg	
<b>STATE:</b>	CO	<b>Township:</b>	3N	
<b>COUNTY:</b>	Weld	<b>SECTORANGE:</b>	36	65W
<b>WELL NAME:</b>	Dechant 37N-W1HZ			

From Wednesday, February 06, 2013 at 0000 to Wednesday, February 06, 2013 at 2400

DRILLING SUMMARY				Drilling Parameters							
Start Depth	7895.00	Rotary Hours	1.58	WOB	38	Pick UP	174	Slack Off	125	SPM	
End Depth	8188.00	Circulating Hours	3.25	RAB	140	SPP	3300	FlowRate	600 - 600	156	
Total Drilled:	293.00	Avg. Total ROP:	140.64	Mud Data							
Total Rotary Drilled:	264.00	Avg. Rotary ROP:	166.74	Type				PV	0	SOLID	0
Total Drilled Sliding:	29.00	Avg. Slide ROP:	58.00	Weight	0	GAS	0	YP	0	BHT°	0
Slide Hours	0.50	Percent Rotary:	90.10	Viscosity	0	SAND	0	PH	0	Flow T°	0
Below Rotary Hrs.	10.50	Percent Slide:	9.90	Chlorides	0	WL	0			Oil %	0
PERSONNEL				cASING				BHA			
Lead Directional :	Steve Schlamp (NEW)			Size	Lb/ft	Set Depth		BHA # 1:8 3/4" Sec. MMD55M 5X16, 6 1/2" Wenzel 6/7 5.0 2.12 Bend, 6 1/2" NMDC, 6 1/2" NM Pulser Sub, 6 1/2" NMDC, 6 1/2" Steel X-Over 4 1/2" XHP x XT-39B, 4.5" HWDP (XT 39) 20 Stands, 4 Drill Pipe 126Jnts (42stands),			
Second Directional :	John Noakes (3089) / Ryan Newell (10462)			Signature:							
MWD Operator1	Josh Denning (10463)										
MWD Operator2	Jeff Smith (10396)										
Directional Company:	Scientific Drilling International										
Geologist:	Steve Schindler / Mike Dodge										
Company Man:	Scott Allred										
Incl. In:	89.3	Azm. In:	179.69	Incl. Out:	90.8	Azm. Out:	179.19				

#### GENERAL COMMENT

Date	Start Time	End Time	Hours	Start Depth	End Depth	Activity Code	COMMENT
6-Feb-13	00:00	00:10	0.17	7895	7895	Survey & Conn.	Survey & Conn.
6-Feb-13	00:10	00:30	0.33	7895	7908	Sliding	Sliding - (WOB:38;GPM :600;TFO:180)
6-Feb-13	00:30	01:00	0.50	7908	7990	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
6-Feb-13	01:00	01:10	0.17	7990	7990	Survey & Conn.	Survey & Conn.
6-Feb-13	01:10	01:15	0.08	7990	8000	Sliding	Sliding - (WOB:38;GPM :600;TFO:-165)
6-Feb-13	01:15	01:45	0.50	8000	8084	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
6-Feb-13	01:45	02:00	0.25	8084	8084	Survey & Conn.	Survey & Conn. - Pick up, Slack off, and Rot. weights
6-Feb-13	02:00	02:05	0.08	8084	8090	Sliding	Sliding - (WOB:38;GPM :600;TFO:-165)
6-Feb-13	02:05	02:35	0.50	8090	8179	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
6-Feb-13	02:35	02:40	0.08	8179	8179	Survey & Conn.	Survey & Conn.
6-Feb-13	02:40	02:45	0.08	8179	8188	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
6-Feb-13	02:45	06:00	3.25	8188	8188	Circulating	Circulating
6-Feb-13	06:00	08:45	2.75	8188	8188	POOH	POOH
6-Feb-13	08:45	10:30	1.75	8188	8188	Other	L/D Directional Tools
6-Feb-13	10:30	24:00	13.50	8188	8188	Standby	Standby while rig runs csg & cement



<b>JOB NO.:</b>	41HMP1302056	<b>Report Time:</b>	2400	6 of 11
<b>COMPANY:</b>	Kerr McGee Oil and Gas Onshore LP	<b>API JOB #</b>	0512336382	
<b>LOCATION:</b>	Dechant 36-36HZ	<b>WORK ORDER#</b>	161616	
<b>RIG NAME:</b>	H&P 311	<b>FIELD:</b>	Wattenberg	
<b>STATE:</b>	CO	<b>Township:</b>	3N	
<b>COUNTY:</b>	Weld	<b>SECTRANGE:</b>	36	65W
<b>WELL NAME:</b>	Dechant 37N-W1HZ			

From Thursday, February 07, 2013 at 0000 to Thursday, February 07, 2013 at 2400

DRILLING SUMMARY				Drilling Parameters							
Start Depth	0.00	Rotary Hours	0.00	WOB	38	Pick UP	174	Slack Off	125	SPM	
End Depth	0.00	Circulating Hours	0.00	RAB	140	SPP	3300	FlowRate	600 - 600	156	
Total Drilled:	0.00	Avg. Total ROP:	NA	Mud Data							
Total Rotary Drilled:	0.00	Avg. Rotary ROP:	NA	Type				PV	0	SOLID	0
Total Drilled Sliding:	0.00	Avg. Slide ROP:	NA	Weight	0	GAS	0	YP	0	BHT°	0
Slide Hours	0.00	Percent Rotary:	NA	Viscosity	0	SAND	0	PH	0	Flow T°	0
Below Rotary Hrs.	6.00	Percent Slide:	NA	Chlorides	0	WL	0			Oil %	0
PERSONNEL				cASING				BHA			
Lead Directional :	Steve Schlamp (NEW)			Size	Lb/ft	Set Depth		BHA # 2:6 1/8" Smith MDI513 5x16's, 4 3/4" BICO Motor 1.50, 5 7/8 Integral Blade Stab., 4 3/4" NMDC, 4 3/4" Pulser Sub, 4 3/4" NMDC, 5 7/8 Integral Blade Stab., 5" Steel X-Over 3 1/2" IFP x XT-39B, 4" Drill Pipe 1 Jnts., 6" Ghost Reamer, 4" Drill pipe 24 jnts. (8 Stands), 4.75" SDI DHV Tool 4" Drill Pipe 111 jnts. (33 Stands), 4" HWDP 60 jnts. (20 Stands),			
Second Directional :	John Noakes (3089) / Ryan Newell (10462)			Signature:							
MWD Operator1	Josh Denning (10463)										
MWD Operator2	Jeff Smith (10396)										
Directional Company:	Scientific Drilling International										
Geologist:	Steve Schindler / Mike Dodge										
Company Man:	Scott Allred										
Incl. In:	90.8	Azm. In:	179.19	Incl. Out:	90.8	Azm. Out:	179.19				

#### GENERAL COMMENT

Date	Start Time	End Time	Hours	Start Depth	End Depth	Activity Code	COMMENT
7-Feb-13	00:00	18:00	18.00	8188	8188	Standby	Standby while rig runs csg & cement/ prepare to P/U 4 3/4" tools
7-Feb-13	18:00	20:30	2.50	8188	8188	Change BHA	Change BHA - PU BHA #2
7-Feb-13	20:30	24:00	3.50	8188	8188	TIH	TIH





<b>JOB NO.:</b>	41HMP1302056	<b>Report Time:</b>	2400	7 of 11
<b>COMPANY:</b>	Kerr McGee Oil and Gas Onshore LP	<b>API JOB #</b>	0512336382	
<b>LOCATION:</b>	Dechant 36-36HZ	<b>WORK ORDER#</b>	161616	
<b>RIG NAME:</b>	H&P 311	<b>FIELD:</b>	Wattenberg	
<b>STATE:</b>	CO	<b>Township:</b>	3N	
<b>COUNTY:</b>	Weld	<b>SECTRANGE:</b>	36	65W
<b>WELL NAME:</b>	Dechant 37N-W1HZ			

**From Friday, February 08, 2013 at 0000 to Friday, February 08, 2013 at 2400**

DRILLING SUMMARY				Drilling Parameters							
Start Depth	8188.00	Rotary Hours	5.73	WOB	17	Pick UP	215	Slack Off	102	SPM	
End Depth	9380.00	Circulating Hours	1.98	RAB	142	SPP	3300	FlowRate	600 - 600	156	
Total Drilled:	1192.00	Avg. Total ROP:	99.06	Mud Data							
Total Rotary Drilled:	1005.00	Avg. Rotary ROP:	175.29	Type				PV	0	SOLID	0
Total Drilled Sliding:	187.00	Avg. Slide ROP:	29.68	Weight	0	GAS	0	YP	0	BHT°	0
Slide Hours	6.30	Percent Rotary:	84.31	Viscosity	0	SAND	0	PH	0	Flow T°	0
Below Rotary Hrs.	24.25	Percent Slide:	15.69	Chlorides	0	WL	0			Oil %	0
PERSONNEL				cASING					BHA		
Lead Directional :	Steve Schlamp (NEW)			Size	Lb/ft	Set Depth		BHA # 2:6 1/8" Smith MDI513 5x16's, 4 3/4" BICO Motor 1.50, 5 7/8 Integral Blade Stab., 4 3/4" NMDC, 4 3/4" Pulser Sub, 4 3/4" NMDC, 5 7/8 Integral Blade Stab., 5" Steel X-Over 3 1/2" IFP x XT-39B, 4" Drill Pipe 1 Jnts., 6" Ghost Reamer, 4" Drill pipe 24 jnts. (8 Stands), 4.75" SDI DHV Tool 4" Drill Pipe 111 jnts. (33 Stands), 4" HWDP 60 jnts. (20 Stands),			
Second Directional :	John Noakes (3089) / Ryan Newell (10462)			Signature:							
MWD Operator1	Josh Denning (10463)										
MWD Operator2	Jeff Smith (10396)										
Directional Company:	Scientific Drilling International										
Geologist:	Steve Schindler / Mike Dodge										
Company Man:	Scott Allred										
Incl. In:	90.8	Azm. In:	179.19	Incl. Out:	89.69	Azm. Out:	180.03				

#### GENERAL COMMENT

Date	Start Time	End Time	Hours	Start Depth	End Depth	Activity Code	COMMENT
8-Feb-13	00:00	02:00	2.00	8188	8188	TIH	TIH
8-Feb-13	02:00	04:05	2.08	8188	8188	Other	Other - Drilling cement, tagged at 7880'
8-Feb-13	04:05	05:15	1.17	8188	8246	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
8-Feb-13	05:00	05:25	0.42	8246	8246	Survey & Conn.	Survey & Conn. - Re-sync MWD
8-Feb-13	05:25	05:55	0.50	8246	8246	Other	Other - Try to Orient toolface
8-Feb-13	05:55	06:00	0.08	8246	8260	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
8-Feb-13	06:00	06:35	0.58	8260	8270	Sliding	Sliding - (WOB:38;GPM :600;TFO:-165)
8-Feb-13	06:35	06:40	0.08	8270	8277	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
8-Feb-13	06:40	06:45	0.08	8277	8277	MWD Survey	MWD Survey
8-Feb-13	06:45	06:50	0.08	8277	8282	Sliding	Sliding - (WOB:38;GPM :600;TFO:-165)
8-Feb-13	06:50	07:00	0.17	8282	8309	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
8-Feb-13	07:00	07:05	0.08	8309	8309	MWD Survey	Checkshot
8-Feb-13	07:05	07:15	0.17	8309	8314	Sliding	Sliding - (WOB:38;GPM :600;TFO:-165)
8-Feb-13	07:15	07:20	0.08	8314	8340	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
8-Feb-13	07:20	07:25	0.08	8340	8340	Survey & Conn.	Survey & Conn.
8-Feb-13	07:25	07:35	0.17	8340	8345	Sliding	Sliding - (WOB:38;GPM :600;TFO:-165)
8-Feb-13	07:35	07:43	0.13	8345	8372	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)

Date	Start Time	End Time	Hours	Start Depth	End Depth	Activity Code	COMMENT
8-Feb-13	07:43	07:48	0.08	8372	8372	MWD Survey	Checkshot
8-Feb-13	07:48	07:55	0.12	8372	8372	Circulating	Watch gain & gas
8-Feb-13	07:55	08:05	0.17	8372	8380	Sliding	Sliding - (WOB:38;GPM :600;TFO:-165)
8-Feb-13	08:05	08:09	0.07	8380	8401	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
8-Feb-13	08:09	08:15	0.10	8401	8401	Other	Trouleshoot MWD
8-Feb-13	08:15	08:25	0.17	8401	8435	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
8-Feb-13	08:25	08:27	0.03	8435	8435	Circulating	Get SPR
8-Feb-13	08:27	08:34	0.12	8435	8435	Survey & Conn.	Survey & Conn.
8-Feb-13	08:34	08:50	0.27	8435	8445	Sliding	Sliding - (WOB:38;GPM :600;TFO:-165)
8-Feb-13	08:50	09:05	0.25	8445	8498	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
8-Feb-13	09:05	09:20	0.25	8498	8508	Sliding	Sliding - (WOB:38;GPM :600;TFO:0)
8-Feb-13	09:20	09:25	0.08	8508	8529	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
8-Feb-13	09:25	09:32	0.12	8529	8529	Survey & Conn.	Survey & Conn.
8-Feb-13	09:32	09:47	0.25	8529	8539	Sliding	Sliding - (WOB:38;GPM :600;TFO:0)
8-Feb-13	09:47	09:53	0.10	8539	8561	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
8-Feb-13	09:53	09:58	0.08	8561	8561	MWD Survey	MWD Survey
8-Feb-13	09:58	10:05	0.12	8561	8566	Sliding	Sliding - (WOB:38;GPM :600;TFO:0)
8-Feb-13	10:05	10:12	0.12	8566	8592	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
8-Feb-13	10:12	10:17	0.08	8592	8592	MWD Survey	MWD Survey
8-Feb-13	10:17	10:31	0.23	8592	8599	Sliding	Sliding - (WOB:38;GPM :600;TFO:0)
8-Feb-13	10:31	10:38	0.12	8599	8624	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
8-Feb-13	10:38	10:45	0.12	8624	8624	Survey & Conn.	Survey & Conn.
8-Feb-13	10:45	10:58	0.22	8624	8634	Sliding	Sliding - (WOB:38;GPM :600;TFO:0)
8-Feb-13	10:58	11:10	0.20	8634	8687	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
8-Feb-13	11:10	11:22	0.20	8687	8694	Sliding	Sliding - (WOB:38;GPM :600;TFO:0)
8-Feb-13	11:22	11:28	0.10	8694	8718	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
8-Feb-13	11:28	11:32	0.07	8718	8718	Other	Record T&D
8-Feb-13	11:32	11:40	0.13	8718	8718	Survey & Conn.	Survey & Conn.
8-Feb-13	11:40	11:55	0.25	8718	8728	Sliding	Sliding - (WOB:38;GPM :600;TFO:0)
8-Feb-13	11:55	12:07	0.20	8728	8781	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
8-Feb-13	12:07	12:20	0.22	8781	8791	Sliding	Sliding - (WOB:5;GPM :600;TFO:0)
8-Feb-13	12:20	12:28	0.13	8791	8813	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
8-Feb-13	12:28	12:38	0.17	8813	8813	Survey & Conn.	Survey & Conn.
8-Feb-13	12:38	13:04	0.43	8813	8820	Sliding	Sliding - (WOB:5;GPM :600;TFO:0)
8-Feb-13	13:04	13:19	0.25	8820	8876	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
8-Feb-13	13:19	13:35	0.27	8876	8885	Sliding	Sliding - (WOB:5;GPM :600;TFO:0)
8-Feb-13	13:35	13:40	0.08	8885	8908	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
8-Feb-13	13:40	13:47	0.12	8908	8908	Survey & Conn.	Survey & Conn.
8-Feb-13	13:47	14:10	0.38	8908	8918	Sliding	Sliding - (WOB:5;GPM :600;TFO:0)
8-Feb-13	14:10	14:18	0.13	8918	8939	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
8-Feb-13	14:18	14:23	0.08	8939	8939	MWD Survey	MWD Survey
8-Feb-13	14:23	14:36	0.22	8939	8944	Sliding	Sliding - (WOB:5;GPM :600;TFO:0)
8-Feb-13	14:36	14:45	0.15	8944	8977	Drilling	Drilling - (WOB:38;GPM :600;RPM:50)
8-Feb-13	14:45	14:50	0.08	8977	8977	MWD Survey	MWD Survey
8-Feb-13	14:50	14:57	0.12	8977	8990	Sliding	Sliding - (WOB:5;GPM :600;TFO:0)
8-Feb-13	14:57	15:05	0.13	8990	9002	Drilling	Drilling - (WOB:17;GPM :600;RPM:50)
8-Feb-13	15:05	15:11	0.10	9002	9002	Survey & Conn.	Survey & Conn.
8-Feb-13	15:11	15:25	0.23	9002	9008	Sliding	Sliding - (WOB:5;GPM :600;TFO:0)

Date	Start Time	End Time	Hours	Start Depth	End Depth	Activity Code	COMMENT
8-Feb-13	15:25	15:40	0.25	9008	9065	Drilling	Drilling - (WOB:17;GPM :600;RPM:50)
8-Feb-13	15:40	15:45	0.08	9065	9065	MWD Survey	MWD Survey
8-Feb-13	15:45	15:51	0.10	9065	9097	Drilling	Drilling - (WOB:17;GPM :600;RPM:50)
8-Feb-13	15:51	15:58	0.12	9097	9097	Survey & Conn.	Survey & Conn.
8-Feb-13	15:58	16:27	0.48	9097	9107	Sliding	Sliding - (WOB:5;GPM :600;TFO:0)
8-Feb-13	16:27	16:45	0.30	9107	9191	Drilling	Drilling - (WOB:17;GPM :600;RPM:50)
8-Feb-13	16:45	16:50	0.08	9191	9191	Other	Record Dry Weight, P/U, S/O, Rot & Torque
8-Feb-13	16:50	17:05	0.25	9191	9191	Rig Service-Inhole	Rig Service-Inhole
8-Feb-13	17:05	17:10	0.08	9191	9191	Survey & Conn.	Survey & Conn.
8-Feb-13	17:10	17:45	0.58	9191	9201	Sliding	Sliding - (WOB:5; :600;TFO:0) Stalled Motor 4X
8-Feb-13	17:45	17:55	0.17	9201	9223	Drilling	Drilling - (WOB:17; :600;RPM:50)
8-Feb-13	17:55	18:05	0.17	9223	9223	MWD Survey	MWD Survey
8-Feb-13	18:05	18:25	0.33	9223	9286	Drilling	Drilling - (WOB:17; :600;RPM:50) Stalled Motor 1X
8-Feb-13	18:25	18:30	0.08	9286	9286	Survey & Conn.	Survey & Conn.
8-Feb-13	18:30	18:35	0.08	9286	9296	Drilling	Drilling - (WOB:17;GPM :600;RPM:50)
8-Feb-13	18:35	19:00	0.42	9296	9301	Sliding	Sliding - (WOB:5;GPM :600;TFO:0) Motor Stalled 3X
8-Feb-13	19:00	19:30	0.50	9301	9380	Drilling	Drilling - (WOB:17;GPM :600;RPM:50)
8-Feb-13	19:30	20:30	1.00	9380	9380	Circulating	Circulating
8-Feb-13	20:30	24:00	3.50	9380	9380	POOH	POOH





<b>JOB NO.:</b>	41HMP1302056	<b>Report Time:</b>	2400	8 of 11
<b>COMPANY:</b>	Kerr McGee Oil and Gas Onshore LP	<b>API JOB #</b>	0512336382	
<b>LOCATION:</b>	Dechant 36-36HZ	<b>WORK ORDER#</b>	161616	
<b>RIG NAME:</b>	H&P 311	<b>FIELD:</b>	Wattenberg	
<b>STATE:</b>	CO	<b>Township:</b>	3N	
<b>COUNTY:</b>	Weld	<b>SECTRANGE:</b>	36	65W
<b>WELL NAME:</b>	Dechant 37N-W1HZ			

**From Saturday, February 09, 2013 at 0000 to Saturday, February 09, 2013 at 2400**

DRILLING SUMMARY				Drilling Parameters							
Start Depth	9380.00	Rotary Hours	3.08	WOB	17	Pick UP	215	Slack Off	102	SPM	
End Depth	9861.00	Circulating Hours	4.08	RAB	142	SPP	2650	FlowRate	600 - 600	156	
Total Drilled:	481.00	Avg. Total ROP:	108.91	Mud Data							
Total Rotary Drilled:	453.00	Avg. Rotary ROP:	146.92	Type				PV	0	SOLID	0
Total Drilled Sliding:	28.00	Avg. Slide ROP:	21.00	Weight	0	GAS	0	YP	0	BHT°	0
Slide Hours	1.33	Percent Rotary:	94.18	Viscosity	0	SAND	0	PH	0	Flow T°	0
Below Rotary Hrs.	23.83	Percent Slide:	5.82	Chlorides	0	WL	0			Oil %	0
PERSONNEL				cASING				BHA			
Lead Directional :	Steve Schlamp (NEW)			Size	Lb/ft	Set Depth		BHA # 3:6 1/8" Smith MDI513 5x16's, 4 3/4" BICO 5:6, 8.3 1.5 FBH, 4 3/4" NMDC, 4 3/4" Pulser Sup, 4 3/4" NMDC, 5" Steel X-Over 3 1/2" IFP x XT-398, 4" Drill Pipe 1 Jnts., 6" Ghost Reamer, 4" Drill pipe 24 jnts. (8 Stands), 4.75" SDI DHV Tool, 4" Drill Pipe 111 jnts. (33 Stands), 4" HWDP 60 jnts. (20 Stands),			
Second Directional :	John Noakes (3089) / Ryan Newell (10462)			Signature:							
MWD Operator1	Josh Denning (10463)										
MWD Operator2	Jeff Smith (10396)										
Directional Company:	Scientific Drilling International										
Geologist:	Steve Schindler / Mike Dodge										
Company Man:	Scott Allred										
Incl. In:	89.69	Azm. In:	180.03	Incl. Out:	88.09	Azm. Out:	177.2				

#### GENERAL COMMENT

Date	Start Time	End Time	Hours	Start Depth	End Depth	Activity Code	COMMENT
9-Feb-13	00:00	00:25	0.42	9380	9380	POOH	POOH
9-Feb-13	00:25	04:25	4.00	9380	9380	TIH	TIH - Well flowing, TIH to kill flow
9-Feb-13	04:25	08:15	3.83	9380	9380	Circulating	Circulate and monitor well
9-Feb-13	08:15	12:25	4.17	9380	9380	POOH	POOH
9-Feb-13	12:25	12:55	0.50	9380	9380	Other	L/D DHV rack back 8 STD's
9-Feb-13	12:55	13:00	0.08	9380	9380	Other	Safety Meeting & JSA w/ rig crew
9-Feb-13	13:00	13:40	0.67	9380	9380	Other	L/D Ghost Reamer, 2X stabilizers
9-Feb-13	13:40	14:40	1.00	9380	9380	Change BHA	P/U New BHA
9-Feb-13	14:40	15:00	0.33	9380	9380	Other	Run 8 Stds DP & Install DHV Tool
9-Feb-13	15:00	15:05	0.08	9380	9380	Other	Install Rotating head rubber
9-Feb-13	15:05	15:15	0.17	9380	9380	Circulating	Surface Test Tools
9-Feb-13	15:15	18:55	3.67	9380	9380	TIH	TIH
9-Feb-13	18:55	19:00	0.08	9380	9380	MWD Survey	MWD Survey
9-Feb-13	19:00	19:05	0.08	9380	9387	Drilling	Drilling - (WOB:17;GPM :600;RPM:50)
9-Feb-13	19:05	19:15	0.17	9387	9389	Sliding	Sliding - (WOB:10;GPM :600;TFO:180) Stalled 2x
9-Feb-13	19:15	19:25	0.17	9389	9389	Standby	Standby - Put well on gas buster
9-Feb-13	19:25	19:35	0.17	9389	9395	Sliding	Sliding - (WOB:10;GPM :600;TFO:-175)

Date	Start Time	End Time	Hours	Start Depth	End Depth	Activity Code	COMMENT
9-Feb-13	19:35	19:55	0.33	9395	9462	Drilling	Drilling - (WOB:17;GPM :600;RPM:50)
9-Feb-13	19:55	20:00	0.08	9462	9462	Survey & Conn.	Survey & Conn.
9-Feb-13	20:00	20:05	0.08	9462	9472	Drilling	Drilling - (WOB:17;GPM :600;RPM:50)
9-Feb-13	20:05	20:25	0.33	9472	9482	Sliding	Sliding - (WOB:10;GPM :600;TFO:-175)
9-Feb-13	20:25	21:00	0.58	9482	9557	Drilling	Drilling - (WOB:17;GPM :600;RPM:50)
9-Feb-13	21:00	21:05	0.08	9557	9557	Survey & Conn.	Survey & Conn.
9-Feb-13	21:05	21:30	0.42	9557	9651	Drilling	Drilling - (WOB:17;GPM :600;RPM:50)
9-Feb-13	21:30	21:35	0.08	9651	9651	Survey & Conn.	Survey & Conn.
9-Feb-13	21:35	22:10	0.58	9651	9746	Drilling	Drilling - (WOB:17;GPM :600;RPM:50)
9-Feb-13	22:10	22:15	0.08	9746	9746	Survey & Conn.	Survey & Conn.
9-Feb-13	22:15	23:10	0.92	9746	9841	Drilling	Drilling - (WOB:17;GPM :600;RPM:50)
9-Feb-13	23:10	23:15	0.08	9841	9841	Survey & Conn.	Survey & Conn.
9-Feb-13	23:15	23:20	0.08	9841	9851	Drilling	Drilling - (WOB:17;GPM :600;RPM:50)
9-Feb-13	23:20	24:00	0.67	9851	9861	Sliding	Sliding - (WOB:17;GPM :600;TFO:0) Stall Motor 3X



<b>JOB NO.:</b>	41HMP1302056	<b>Report Time:</b>	2400	9 of 11
<b>COMPANY:</b>	Kerr McGee Oil and Gas Onshore LP	<b>API JOB #</b>	0512336382	
<b>LOCATION:</b>	Dechant 36-36HZ	<b>WORK ORDER#</b>	161616	
<b>RIG NAME:</b>	H&P 311	<b>FIELD:</b>	Wattenberg	
<b>STATE:</b>	CO	<b>Township:</b>	3N	
<b>COUNTY:</b>	Weld	<b>SECTRANGE:</b>	36	65W
<b>WELL NAME:</b>	Dechant 37N-W1HZ			

From Sunday, February 10, 2013 at 0000 to Sunday, February 10, 2013 at 2400

DRILLING SUMMARY				Drilling Parameters							
Start Depth	9861.00	Rotary Hours	9.00	WOB	17	Pick UP	225	Slack Off	95	SPM	
End Depth	11480.00	Circulating Hours	2.28	RAB	140	SPP	2650	FlowRate	600 - 600	156	
Total Drilled:	1619.00	Avg. Total ROP:	81.63	Mud Data							
Total Rotary Drilled:	1524.00	Avg. Rotary ROP:	169.33	Type				PV	0	SOLID	0
Total Drilled Sliding:	95.00	Avg. Slide ROP:	8.77	Weight	0	GAS	0	YP	0	BHT°	0
Slide Hours	10.83	Percent Rotary:	94.13	Viscosity	0	SAND	0	PH	0	Flow T°	0
Below Rotary Hrs.	24.00	Percent Slide:	5.87	Chlorides	0	WL	0			Oil %	0
PERSONNEL				cASING				BHA			
Lead Directional :	Steve Schlamp (10800)			Size	Lb/ft	Set Depth		BHA # 3:6 1/8" Smith MDI513 5x16's, 4 3/4" BICO 5:6, 8.3 1.5 FBH, 4 3/4" NMDC, 4 3/4" Pulser Sub, 4 3/4" NMDC, 5" Steel X-Over 3 1/2" IFP x XT-398, 4" Drill Pipe 1 Jnts., 6" Ghost Reamer, 4 " Drill pipe 24 jnts. (8 Stands), 4.75" SDI DHV Tool, 4" Drill Pipe 111 jnts. (33 Stands), 4" HWDP 60 jnts. (20 Stands),			
Second Directional :	John Noakes (3089) / Ryan Newell (10462)			Signature:							
MWD Operator1	Josh Denning (10463)										
MWD Operator2	Jeff Smith (10396)										
Directional Company:	Scientific Drilling International										
Geologist:	Steve Schindler / Mike Dodge										
Company Man:	Scott Allred										
Incl. In:	88.09	Azm. In:	177.2	Incl. Out:	91.85	Azm. Out:	178.63				

#### GENERAL COMMENT

Date	Start Time	End Time	Hours	Start Depth	End Depth	Activity Code	COMMENT
10-Feb-13	20:20	20:43	0.38	11172	11259	Drilling	Drilling - (WOB:17;GPM :600;RPM:50)
10-Feb-13	20:43	20:48	0.08	11259	11259	Survey & Conn.	Survey & Conn.
10-Feb-13	20:48	21:10	0.37	11259	11354	Drilling	Drilling - (WOB:17;GPM :600;RPM:50)
10-Feb-13	21:10	21:15	0.08	11354	11354	Survey & Conn.	Survey & Conn.
10-Feb-13	21:15	21:35	0.33	11354	11417	Drilling	Drilling - (WOB:17;GPM :600;RPM:50)
10-Feb-13	21:35	21:40	0.08	11417	11417	MWD Survey	MWD Survey
10-Feb-13	21:40	22:55	1.25	11417	11420	Sliding	Sliding - (WOB:17;GPM :600;TFO:145) Stall motor 4x
10-Feb-13	22:55	22:57	0.03	11420	11425	Drilling	Drilling - (WOB:17;GPM :600;RPM:50)
10-Feb-13	00:00	00:20	0.33	9861	9895	Drilling	Drilling - (WOB:17;GPM :600;RPM:50)
10-Feb-13	00:20	00:25	0.08	9895	9895	MWD Survey	MWD Survey
10-Feb-13	00:25	00:55	0.50	9895	9935	Drilling	Drilling - (WOB:17;GPM :600;RPM:50) - Stalled 3x in Ro
10-Feb-13	00:55	01:00	0.08	9935	9935	Survey & Conn.	Survey & Conn.
10-Feb-13	01:00	01:05	0.08	9935	9944	Drilling	Drilling - (WOB:17;GPM :600;RPM:50)
10-Feb-13	01:05	01:45	0.67	9944	9953	Sliding	Sliding - (WOB:17;GPM :600;TFO:60)
10-Feb-13	01:45	02:25	0.67	9953	10030	Drilling	Drilling - (WOB:17;GPM :600;RPM:50) - Stalled 4x in Ro
10-Feb-13	02:25	02:30	0.08	10030	10030	Survey & Conn.	Survey & Conn.
10-Feb-13	02:30	02:35	0.08	10030	10040	Drilling	Drilling - (WOB:17;GPM :600;RPM:50)

Date	Start Time	End Time	Hours	Start Depth	End Depth	Activity Code	COMMENT
10-Feb-13	02:35	03:30	0.92	10040	10050	Sliding	Sliding - (WOB:17;GPM :600;TFO:60)
10-Feb-13	03:30	03:55	0.42	10050	10124	Drilling	Drilling - (WOB:17;GPM :600;RPM:50)
10-Feb-13	03:55	04:00	0.08	10124	10124	Survey & Conn.	Survey & Conn.
10-Feb-13	04:00	04:05	0.08	10124	10137	Drilling	Drilling - (WOB:17;GPM :600;RPM:50)
10-Feb-13	04:05	05:20	1.25	10137	10149	Sliding	Sliding - (WOB:17;GPM :600;TFO:75)
10-Feb-13	05:20	05:55	0.58	10149	10219	Drilling	Drilling - (WOB:17;GPM :600;RPM:50)
10-Feb-13	05:55	06:00	0.08	10219	10219	Survey & Conn.	Survey & Conn.
10-Feb-13	06:00	06:05	0.08	10219	10226	Drilling	Drilling - (WOB:17;GPM :600;RPM:50)
10-Feb-13	06:05	06:10	0.08	10226	10226	MWD Survey	MWD Survey
10-Feb-13	06:10	06:55	0.75	10226	10235	Sliding	Sliding - (WOB:17;GPM :600;TFO:75) Stalled motor 4x
10-Feb-13	06:55	07:02	0.12	10235	10250	Drilling	Drilling - (WOB:17;GPM :600;RPM:50)
10-Feb-13	07:02	07:33	0.52	10250	10250	MWD Survey	Troubleshoot MWD
10-Feb-13	07:33	07:50	0.28	10250	10282	Drilling	Drilling - (WOB:17;GPM :600;RPM:50)
10-Feb-13	07:50	07:58	0.13	10282	10282	MWD Survey	MWD Survey CKST
10-Feb-13	07:58	08:10	0.20	10282	10313	Drilling	Drilling - (WOB:17;GPM :600;RPM:50) Stalled motor 1x
10-Feb-13	08:10	08:15	0.08	10313	10313	Survey & Conn.	Survey & Conn.
10-Feb-13	08:15	08:40	0.42	10313	10408	Drilling	Drilling - (WOB:17;GPM :600;RPM:50)
10-Feb-13	08:40	08:45	0.08	10408	10408	Survey & Conn.	Survey & Conn.
10-Feb-13	08:45	09:40	0.92	10408	10502	Drilling	Drilling - (WOB:17;GPM :600;RPM:50)
10-Feb-13	09:40	09:43	0.05	10502	10502	Other	Record T&D
10-Feb-13	09:43	09:48	0.08	10502	10502	Survey & Conn.	Survey & Conn.
10-Feb-13	09:48	09:52	0.07	10502	10513	Drilling	Drilling - (WOB:17;GPM :600;RPM:50)
10-Feb-13	09:52	11:07	1.25	10513	10519	Sliding	Sliding - (WOB:17;GPM :600;TFO:75)
10-Feb-13	11:07	11:23	0.27	10519	10597	Drilling	Drilling - (WOB:17;GPM :600;RPM:50)
10-Feb-13	11:23	11:30	0.12	10597	10597	Survey & Conn.	Survey & Conn.
10-Feb-13	11:30	11:33	0.05	10597	10607	Drilling	Drilling - (WOB:17;GPM :600;RPM:50)
10-Feb-13	11:33	12:10	0.62	10607	10617	Sliding	Sliding - (WOB:17;GPM :600;TFO:75)
10-Feb-13	12:10	12:28	0.30	10617	10660	Drilling	Drilling - (WOB:17;GPM :600;RPM:50)
10-Feb-13	12:28	12:33	0.08	10660	10660	MWD Survey	MWD Survey
10-Feb-13	12:33	12:54	0.35	10660	10667	Sliding	Sliding - (WOB:17;GPM :600;TFO:75)
10-Feb-13	12:54	12:59	0.08	10667	10691	Drilling	Drilling - (WOB:17;GPM :600;RPM:50)
10-Feb-13	12:59	13:05	0.10	10691	10691	Survey & Conn.	Survey & Conn.
10-Feb-13	13:05	13:08	0.05	10691	10704	Drilling	Drilling - (WOB:17;GPM :600;RPM:50)
10-Feb-13	13:08	14:05	0.95	10704	10708	Sliding	Sliding - (WOB:17;GPM :600;TFO:75)
10-Feb-13	14:05	14:22	0.28	10708	10786	Drilling	Drilling - (WOB:17;GPM :600;RPM:50)
10-Feb-13	14:22	14:29	0.12	10786	10786	Survey & Conn.	Survey & Conn.
10-Feb-13	14:29	14:50	0.35	10786	10881	Drilling	Drilling - (WOB:17;GPM :600;RPM:50)
10-Feb-13	14:50	14:57	0.12	10881	10881	Survey & Conn.	Survey & Conn.
10-Feb-13	14:57	15:20	0.38	10881	10975	Drilling	Drilling - (WOB:17;GPM :600;RPM:50)
10-Feb-13	15:20	15:25	0.08	10975	10975	Survey & Conn.	Survey & Conn.
10-Feb-13	15:25	15:28	0.05	10975	10985	Drilling	Drilling - (WOB:17;GPM :600;RPM:50)
10-Feb-13	15:28	16:20	0.87	10985	10995	Sliding	Sliding - (WOB:17;GPM :600;TFO:75)
10-Feb-13	16:20	16:30	0.17	10995	11038	Drilling	Drilling - (WOB:17;GPM :600;RPM:50)
10-Feb-13	16:30	16:35	0.08	11038	11038	MWD Survey	MWD Survey
10-Feb-13	16:35	16:40	0.08	11038	11070	Drilling	Drilling - (WOB:17;GPM :600;RPM:50)
10-Feb-13	16:40	17:00	0.33	11070	11070	Rig Service-Inhole	Rig Service-Inhole
10-Feb-13	17:00	18:00	1.00	11070	11070	Circulating	Clean up cycle, 40BBL Sweep, add 1 more BBL of Lube.
10-Feb-13	18:00	18:05	0.08	11070	11070	Survey & Conn.	Survey & Conn.

Date	Start Time	End Time	Hours	Start Depth	End Depth	Activity Code	COMMENT
10-Feb-13	18:05	19:00	0.92	11070	11076	Sliding	Sliding - (WOB:17;GPM :600;TFO:75)
10-Feb-13	19:00	19:35	0.58	11076	11165	Drilling	Drilling - (WOB:17;GPM :600;RPM:50)
10-Feb-13	19:35	19:43	0.13	11165	11165	Circulating	SPR's
10-Feb-13	19:43	19:46	0.05	11165	11165	Survey & Conn.	Survey & Conn.
10-Feb-13	19:46	20:20	0.57	11165	11172	Sliding	Sliding - (WOB:17;GPM :600;TFO:30)
10-Feb-13	22:57	23:26	0.48	11425	11427	Sliding	Sliding - (WOB:17;GPM :600;TFO:145)
10-Feb-13	23:26	23:33	0.12	11427	11448	Drilling	Drilling - (WOB:17;GPM :600;RPM:50)
10-Feb-13	23:33	23:38	0.08	11448	11448	Survey & Conn.	Survey & Conn.
10-Feb-13	23:38	23:55	0.28	11448	11480	Drilling	Drilling - (WOB:17;GPM :600;RPM:50)
10-Feb-13	23:55	24:00	0.08	11480	11480	MWD Survey	MWD Survey CKST



<b>JOB NO.:</b>	41HMP1302056	<b>Report Time:</b>	2400	10 of 11
<b>COMPANY:</b>	Kerr McGee Oil and Gas Onshore LP	<b>API JOB #</b>	0512336382	
<b>LOCATION:</b>	Dechant 36-36HZ	<b>WORK ORDER#</b>	161616	
<b>RIG NAME:</b>	H&P 311	<b>FIELD:</b>	Wattenberg	
<b>STATE:</b>	CO	<b>Township:</b>	3N	
<b>COUNTY:</b>	Weld	<b>SECTRANGE:</b>	36	65W
<b>WELL NAME:</b>	Dechant 37N-W1HZ			

**From Monday, February 11, 2013 at 0000 to Monday, February 11, 2013 at 2400**

DRILLING SUMMARY				Drilling Parameters							
Start Depth	11480.00	Rotary Hours	5.47	WOB	0	Pick UP	225	Slack Off	95	SPM	
End Depth	12384.00	Circulating Hours	4.03	RAB	140	SPP	0	FlowRate	0 - 600	0	
Total Drilled:	904.00	Avg. Total ROP:	85.15	Mud Data							
Total Rotary Drilled:	871.00	Avg. Rotary ROP:	159.33	Type				PV	0	SOLID	0
Total Drilled Sliding:	33.00	Avg. Slide ROP:	6.41	Weight	0	GAS	0	YP	0	BHT°	0
Slide Hours	5.15	Percent Rotary:	96.35	Viscosity	0	SAND	0	PH	0	Flow T°	0
Below Rotary Hrs.	24.00	Percent Slide:	3.65	Chlorides	0	WL	0			Oil %	0
PERSONNEL				cASING				BHA			
Lead Directional :	Steve Schlamp (10800)			Size	Lb/ft	Set Depth	BHA # 3:6 1/8" Smith MDI513 5x16's, 4 3/4" BICO 5:6, 8.3 1.5 FBH, 4 3/4" NMDC, 4 3/4" Pulser Sub, 4 3/4" NMDC, 5" Steel X-Over 3 1/2" IFP x XT-393, 4" Drill Pipe 1 Jnts., 6" Ghost Reamer, 4" Drill pipe 24 jnts. (8 Stands), 4.75" SDI DHV Tool, 4" Drill Pipe 111 jnts. (33 Stands), 4" HWDP 60 jnts. (20 Stands),				
Second Directional :	John Noakes (3089) / Ryan Newell (10462)			Signature:							
MWD Operator1	Josh Denning (10463)										
MWD Operator2	Jeff Smith (10396)										
Directional Company:	Scientific Drilling International										
Geologist:	Steve Schindler / Mike Dodge										
Company Man:	Scott Allred										
Incl. In:	91.85	Azm. In:	178.63	Incl. Out:	92.69	Azm. Out:	174.46				

#### GENERAL COMMENT

Date	Start Time	End Time	Hours	Start Depth	End Depth	Activity Code	COMMENT
11-Feb-13	00:00	00:22	0.37	11480	11511	Drilling	Drilling - (WOB:17;GPM :600;RPM:85)
11-Feb-13	00:22	00:27	0.08	11511	11511	MWD Survey	MWD Survey
11-Feb-13	00:27	00:55	0.47	11511	11543	Drilling	Drilling - (WOB:17;GPM :600;RPM:85)
11-Feb-13	00:55	01:00	0.08	11543	11543	Survey & Conn.	Survey & Conn.
11-Feb-13	01:00	01:20	0.33	11543	11574	Drilling	Drilling - (WOB:17;GPM :600;RPM:85)
11-Feb-13	01:20	01:30	0.17	11574	11574	MWD Survey	MWD Survey
11-Feb-13	01:30	01:55	0.42	11574	11606	Drilling	Drilling - (WOB:17;GPM :600;RPM:85)
11-Feb-13	01:55	02:00	0.08	11606	11606	MWD Survey	MWD Survey
11-Feb-13	02:00	03:50	1.83	11606	11616	Sliding	Sliding - (WOB:17;GPM :600;TFO:135)
11-Feb-13	03:50	04:05	0.25	11616	11637	Drilling	Drilling - (WOB:17;GPM :600;RPM:85)
11-Feb-13	04:05	04:20	0.25	11637	11637	Survey & Conn.	Survey & Conn.
11-Feb-13	04:20	04:36	0.27	11637	11669	Drilling	Drilling - (WOB:17;GPM :600;RPM:85)
11-Feb-13	04:36	04:43	0.12	11669	11669	MWD Survey	MWD Survey - Checkshot
11-Feb-13	04:43	05:13	0.50	11669	11732	Drilling	Drilling - (WOB:17;GPM :600;RPM:85)
11-Feb-13	05:13	05:18	0.08	11732	11732	Survey & Conn.	Survey & Conn.
11-Feb-13	05:18	05:45	0.45	11732	11826	Drilling	Drilling - (WOB:17;GPM :600;RPM:85)
11-Feb-13	05:45	05:55	0.17	11826	11826	Survey & Conn.	Survey & Conn.



Date	Start Time	End Time	Hours	Start Depth	End Depth	Activity Code	COMMENT
11-Feb-13	05:55	06:00	0.08	11826	11836	Drilling	Drilling - (WOB:17;GPM :600;RPM:85)
11-Feb-13	06:00	07:11	1.18	11836	11846	Sliding	Sliding - (WOB:17;GPM :600;TFO:135)
11-Feb-13	07:11	07:15	0.07	11846	11859	Drilling	Drilling - (WOB:17;GPM :600;RPM:85)
11-Feb-13	07:15	07:20	0.08	11859	11859	Survey & Conn.	Survey & Conn.
11-Feb-13	07:20	07:28	0.13	11859	11889	Drilling	Drilling - (WOB:17;GPM :600;RPM:85)
11-Feb-13	07:28	07:33	0.08	11889	11889	Survey & Conn.	Survey & Conn.
11-Feb-13	07:33	07:40	0.12	11889	11921	Drilling	Drilling - (WOB:17;GPM :600;RPM:85)
11-Feb-13	07:40	07:45	0.08	11921	11921	Survey & Conn.	Survey & Conn.
11-Feb-13	07:45	07:48	0.05	11921	11931	Drilling	Drilling - (WOB:17;GPM :600;RPM:85)
11-Feb-13	07:48	09:04	1.27	11931	11940	Sliding	Sliding - (WOB:17;GPM :600;TFO:135)
11-Feb-13	09:04	09:08	0.07	11940	11952	Drilling	Drilling - (WOB:17;GPM :600;RPM:85)
11-Feb-13	09:08	09:13	0.08	11952	11952	Survey & Conn.	Survey & Conn.
11-Feb-13	09:13	09:16	0.05	11952	11984	Drilling	Drilling - (WOB:17;GPM :600;RPM:85)
11-Feb-13	09:16	09:21	0.08	11984	11984	Survey & Conn.	Survey & Conn.
11-Feb-13	09:21	09:28	0.12	11984	12015	Drilling	Drilling - (WOB:17;GPM :600;RPM:85)
11-Feb-13	09:28	09:33	0.08	12015	12015	Survey & Conn.	Survey & Conn.
11-Feb-13	09:33	09:42	0.15	12015	12047	Drilling	Drilling - (WOB:17;GPM :600;RPM:85)
11-Feb-13	09:42	09:47	0.08	12047	12047	Survey & Conn.	Survey & Conn.
11-Feb-13	09:47	09:52	0.08	12047	12079	Drilling	Drilling - (WOB:17;GPM :600;RPM:85)
11-Feb-13	09:52	09:57	0.08	12079	12079	Survey & Conn.	Survey & Conn.
11-Feb-13	09:57	10:05	0.13	12079	12110	Drilling	Drilling - (WOB:17;GPM :600;RPM:85)
11-Feb-13	10:05	10:08	0.05	12110	12110	Survey & Conn.	Survey & Conn.
11-Feb-13	10:08	10:18	0.17	12110	12142	Drilling	Drilling - (WOB:17;GPM :600;RPM:85)
11-Feb-13	10:18	10:23	0.08	12142	12142	Survey & Conn.	Survey & Conn.
11-Feb-13	10:23	10:29	0.10	12142	12173	Drilling	Drilling - (WOB:17;GPM :600;RPM:85)
11-Feb-13	10:29	10:33	0.07	12173	12173	Survey & Conn.	Survey & Conn.
11-Feb-13	10:33	10:40	0.12	12173	12205	Drilling	Drilling - (WOB:17;GPM :600;RPM:85)
11-Feb-13	10:40	10:45	0.08	12205	12205	Survey & Conn.	Survey & Conn.
11-Feb-13	10:45	11:37	0.87	12205	12209	Sliding	Sliding - (WOB:17;GPM :600;TFO:135)
11-Feb-13	11:37	11:45	0.13	12209	12236	Drilling	Drilling - (WOB:17;GPM :600;RPM:85)
11-Feb-13	11:45	11:50	0.08	12236	12236	Survey & Conn.	Survey & Conn.
11-Feb-13	11:50	11:59	0.15	12236	12268	Drilling	Drilling - (WOB:17;GPM :600;RPM:85)
11-Feb-13	11:59	12:05	0.10	12268	12268	Survey & Conn.	Survey & Conn.
11-Feb-13	12:05	12:15	0.17	12268	12299	Drilling	Drilling - (WOB:17;GPM :600;RPM:85)
11-Feb-13	12:15	12:20	0.08	12299	12299	Survey & Conn.	Survey & Conn.
11-Feb-13	12:20	12:33	0.22	12299	12331	Drilling	Drilling - (WOB:17;GPM :600;RPM:85)
11-Feb-13	12:33	12:38	0.08	12331	12331	Survey & Conn.	Survey & Conn.
11-Feb-13	12:38	12:48	0.17	12331	12362	Drilling	Drilling - (WOB:17;GPM :600;RPM:85)
11-Feb-13	12:48	12:54	0.10	12362	12362	Survey & Conn.	Survey & Conn.
11-Feb-13	12:54	13:03	0.15	12362	12384	Drilling	Drilling - (WOB:17;GPM :600;RPM:85)
11-Feb-13	13:03	13:08	0.08	12384	12384	MWD Survey	MWD Survey
11-Feb-13	13:08	14:00	0.87	12384	12384	Short Trip	Wiper trip 8 stands
11-Feb-13	14:00	17:30	3.50	12384	12384	Reaming	Ream & wash back to bottom
11-Feb-13	17:30	24:00	6.50	12384	12384	Short Trip	Short Trip - Wiper trip to shoe and back to bottom



<b>JOB NO.:</b>	41HMP1302056	<b>Report Time:</b>	2400	11 of 11
<b>COMPANY:</b>	Kerr McGee Oil and Gas Onshore LP	<b>API JOB #</b>	0512336382	
<b>LOCATION:</b>	Dechant 36-36HZ	<b>WORK ORDER#</b>	161616	
<b>RIG NAME:</b>	H&P 311	<b>FIELD:</b>	Wattenberg	
<b>STATE:</b>	CO	<b>Township:</b>	3N	
<b>COUNTY:</b>	Weld	<b>SECTRANGE:</b>	36	65W
<b>WELL NAME:</b>	Dechant 37N-W1HZ			

**From Tuesday, February 12, 2013 at 0000 to Tuesday, February 12, 2013 at 2400**

DRILLING SUMMARY				Drilling Parameters							
Start Depth	0.00	Rotary Hours	0.00	WOB	0	Pick UP	225	Slack Off	95	SPM	
End Depth	0.00	Circulating Hours	3.00	RAB	140	SPP	2650	FlowRate	0 - 600	156	
Total Drilled:	0.00	Avg. Total ROP:	NA	Mud Data							
Total Rotary Drilled:	0.00	Avg. Rotary ROP:	NA	Type				PV	0	SOLID	0
Total Drilled Sliding:	0.00	Avg. Slide ROP:	NA	Weight	0	GAS	0	YP	0	BHT°	0
Slide Hours	0.00	Percent Rotary:	NA	Viscosity	0	SAND	0	PH	0	Flow T°	0
Below Rotary Hrs.	15.00	Percent Slide:	NA	Chlorides	0	WL	0			Oil %	0
PERSONNEL				cASING				BHA			
Lead Directional :	Steve Schlamp (10800)			Size	Lb/ft	Set Depth		BHA # 3:6 1/8" Smith MDI513 5x16's, 4 3/4" BICO 5:6, 8.3 1.5 FBH, 4 3/4" NMDC, 4 3/4" Pulser Sub, 4 3/4" NMDC, 5" Steel X-Over 3 1/2" IFP x XT-393, 4" Drill Pipe 1 Jnts., 6" Ghost Reamer, 4 " Drill pipe 24 jnts. (8 Stands), 4.75" SDI DHV Tool, 4" Drill Pipe 111 jnts. (33 Stands), 4" HWDP 60 jnts. (20 Stands),			
Second Directional :	John Noakes (3089)			Signature:							
MWD Operator1	Josh Denning (10463)										
MWD Operator2	Jeff Smith (10396)										
Directional Company:	Scientific Drilling International										
Geologist:	Steve Schindler / Mike Dodge										
Company Man:	Scott Allred										
Incl. In:	92.69	Azm. In:	174.46	Incl. Out:	92.69	Azm. Out:	174.46				

#### GENERAL COMMENT

Date	Start Time	End Time	Hours	Start Depth	End Depth	Activity Code	COMMENT
12-Feb-13	00:00	03:00	3.00	12384	12384	Short Trip	Short Trip - Wiper trip to shoe and back to bottom
12-Feb-13	03:00	06:00	3.00	12384	12384	Circulating	Circulating
12-Feb-13	06:00	12:05	6.08	12384	12384	POOH	Trip out of hole
12-Feb-13	12:05	12:15	0.17	12384	12384	Other	Safety meeting w. rig crew
12-Feb-13	12:15	13:30	1.25	12384	12384	Other	L/O BHA
12-Feb-13	13:30	15:00	1.50	12384	12384	Other	Ship tools
12-Feb-13	15:00	24:00	9.00	12384	12384	Standby	Standby for rig move



## BHA # 1

## PDT



<b>JOB NO.:</b> 41HMP1302056	<b>FIELD:</b> Wattenberg
<b>COMPANY:</b> Kerr McGee Oil and Gas Onshore LP	<b>Township:</b> 3N
<b>LOCATION:</b> Dechant 36-36HZ	<b>SECT. RANGE:</b> 36 65W
<b>RIG NAME:</b> H&P 311	<b>Lead DD:</b> Steve Schlamp (NEW)
<b>STATE:</b> CO	<b>Co. Man:</b> Scott Allred
<b>COUNTY:</b> Weld	<b>BHA TYPE:</b> Steerable Assembly
<b>WELL NAME:</b> Dechant 37N-W1HZ	<b>BHA WT:</b> N/A <b>Wt @ Jars:</b> N/A

Time and Depths	MOTOR DATA	Drilling Parameters
<b>Date In:</b> 03-Feb-13 @ 11:55	6 1/2 6:7 5.0 2.12 FBH	<b>SO/PU:</b> 0 - 125 / 0-174
<b>Date Out:</b> 07-Feb-13 @ 18:00	<b>MFG.:</b> Wenzel	<b>Rot Strg Wt:</b> 0-140
<b>Hrs In Hole:</b> 70.62	<b>Pad OD:</b> 7.85	<b>WOB:</b> 0 - 38
<b>Start Depth:</b> 713.00	<b>NB Stab:</b> 0	<b>TORQ:</b> 0 - 15
<b>End Depth:</b> 8188.00	<b>Bit to Bend:</b> 4.9	<b>SPP:</b> 0 - 3450
<b>Total Drilled:</b> 7462.00	<b>Bent Hsg/Sub°:</b> 2.12 /	<b>Motor RPM:</b> 129 - 174
<b>Avg. Total ROP:</b> 191.83	<b>Lobe/Stage:</b> 6:7 / 5	<b>Rotary RPM:</b> 0 - 50
<b>Circ Hrs: Tot/Only</b> 47.65 / 8.75	<b>Rev/GAL:</b> 0.29	<b>Flow Rate:</b> 0 - 600
<b>Percent Slide:</b> 17.73	<b>Rotor Jet:</b> 0	<b>Avg Diff:</b>
<b>Percent Hrs:</b> 36.50	<b>Prop BUR:</b> 0.29	<b>Stall Pres.:</b>
<b>Slide Hours:</b> 14.20	<b>Act BUR:</b> 0	<b>Off Bot Pres.:</b>
<b>Total Sliding:</b> 1323.00		
<b>Avg. Slide ROP:</b> 93.17		
<b>Percent Rotary:</b> 82.27		
<b>Percent Hrs:</b> 63.50		
<b>Rotary Hours:</b> 24.70		
<b>Total Rotary:</b> 6139.00		
<b>Avg. Rotary ROP:</b> 248.54		
<b>Reason POOH:</b>		

MWD Spacing	Gamma: 45.18	Restiv: 0	Sensor: 49.77	Last Casing
	GYRO: 0	DNSC: 713	Sonic: 0	Shoe @: Hanger @:

INC IN: .2 INC OUT: 91.8 AZM IN: 107.34 AZM OUT: 178.57

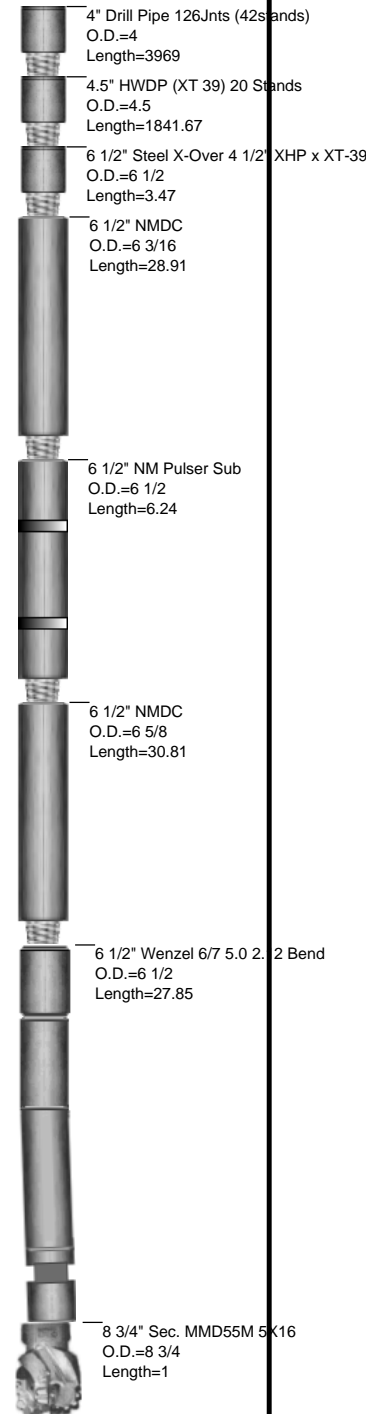
6 1/2" Wenzel 6:7, 5.0 0.29RPG FBH @ 2.12\*

Max Flow - 600 GPM  
Max Diff - 1250 PSI

Bit to Sensor: 49.77'  
Bit to Survey: 52'  
Bit to Gamma: 45.18'

## BHA Detail

Description	Serial #	I.D.	O.D.	Length	Sum	Top Conn	Fishing Neck
8 3/4" Sec. MMD55M 5X16	12115327		8 3/4	1.00	1.00	4 1/2 REGP	
6 1/2" Wenzel 6/7 5.0 2.12 Bend	650-M6-102		6 1/2	27.85	28.85	4 1/2 IFB	
6 1/2" NMDC	SD50360	3 1/4	6 5/8	30.81	59.66	4 1/2 XHB	
6 1/2" NM Pulser Sub	129-035	3 1/4	6 1/2	6.24	65.90	4 1/2 XHB	
6 1/2" NMDC	SD39733	3 1/4	6 3/16	28.91	94.81	4 1/2 XHB	
6 1/2" Steel X-Over 4 1/2" XHP x XT-39B	SD107223	2 1/4	6 1/2	3.47	98.28	4 1/2 XHB	
4.5" HWDP (XT 39) 20 Stands	HWDP 123	2 3/4	4.5	1,841.67	1939.95	XT 39B	
4" Drill Pipe 126Jnts (42stands)	DP456	2 1/4	4	3,969.00	5908.95	XT 39B	





**JOB NO.:** 41HMP1302056  
**COMPANY:** Kerr McGee Oil and Gas Onshore LP  
**LOCATION:** Dechant 36-36HZ  
**RIG NAME:** H&P 311  
**STATE:** CO  
**COUNTY:** Country  
**WELL NAME:** Dechant 37N-W1HZ

**FIELD:** Wattenberg  
**Township:** 3N  
**Range** 65W

#### MOTOR INFORMATION

**Desc:** 6 1/2 6:7 5.0 2.12 FBH  
**Bent Hsg/Sub:** 2.12/ 0 **Bit to Bend:** 4.9  
**Pad OD:** 7.85 **NB Stab:**

## Slide Report for BHA # 1

Note: Surveys listed are interpolated from the actual surveys

#	Date	Drill Mode	Start Time	End Time	Hours	Start MD	End MD	Depth Drilled	WOB	ROP	RPM	Surf. Torque	Flow Rate	SPP	TFO	INC	AZM	DLS	Note
1	3-Feb	Drilling	15:30	15:50	0.33	713	713	0		0.0	0	0				0.18	107.34	0.06	
1	3-Feb	Drilling	17:00	17:10	0.17	729	743	14	5	84.0	30	0	500	1200		0.19	111.12	0.06	
1	3-Feb	Drilling	17:20	17:55	0.58	743	835	92	5	157.7	30	0	500	1200		0.21	333.74	0.37	
1	3-Feb	Drilling	18:05	18:20	0.25	835	927	92	20	368.0	50	0	600	1900		0.38	202.80	0.41	
1	3-Feb	Drilling	18:30	18:40	0.17	927	1019	92	20	552.0	50	0	600	1900		0.53	187.07	0.05	
1	3-Feb	Drilling	18:50	19:00	0.17	1019	1111	92	20	552.0	50	0	600	1900		0.57	187.52	0.04	
1	3-Feb	Drilling	19:10	19:25	0.25	1111	1203	92	20	368.0	50	0	600	1900		0.73	211.89	0.62	
1	3-Feb	Drilling	19:35	19:45	0.17	1203	1295	92	20	552.0	50	0	600	2250		0.73	313.44	1.54	
1	3-Feb	Sliding	19:50	19:53	0.05	1295	1301	6	20	120.0	50	0	600	2250	50	0.72	322.96	1.54	
1	3-Feb	Drilling	19:53	20:05	0.20	1301	1387	86	20	430.0	50	0	600	2250		1.44	26.59	1.57	
1	3-Feb	Sliding	20:10	20:13	0.05	1387	1395	8	20	160.0	50	0	600	2250	50	1.56	28.07	1.57	
1	3-Feb	Drilling	20:13	20:25	0.20	1395	1479	84	30	420.0	50	0	600	2250		2.93	41.80	1.82	
1	3-Feb	Sliding	20:35	20:38	0.05	1479	1487	8	20	160.0	50	0	600	2250	60	3.07	42.93	1.82	
1	3-Feb	Drilling	20:38	20:50	0.20	1487	1571	84	30	420.0	50	0	600	2250		4.35	52.19	1.60	
1	3-Feb	Sliding	21:00	21:02	0.03	1571	1575	4	20	120.0	50	0	600	2250	60	4.41	52.58	1.60	
1	3-Feb	Drilling	21:02	21:10	0.13	1575	1663	88	30	660.0	50	0	600	2250		5.31	53.34	0.90	
1	3-Feb	Sliding	21:20	21:22	0.03	1663	1668	5	20	150.0	50	5	600	2250	50	5.35	53.07	0.90	
1	3-Feb	Drilling	21:22	21:35	0.22	1668	1755	87	30	401.5	50	5	600	2250		6.27	49.96	1.30	
1	3-Feb	Sliding	21:45	21:47	0.03	1755	1765	10	20	300.0	50	5	600	2250	360	6.40	49.74	1.30	
1	3-Feb	Drilling	21:47	21:55	0.13	1765	1847	82	30	615.0	50	5	600	2250		7.87	47.74	2.11	
1	3-Feb	Sliding	22:06	22:10	0.07	1847	1857	10	20	150.0	50	5	600	2250	360	8.07	47.52	2.11	
1	3-Feb	Drilling	22:10	22:20	0.17	1857	1939	82	30	492.0	50	5	600	2250		9.22	47.42	1.03	
1	3-Feb	Sliding	22:30	22:33	0.05	1939	1949	10	20	200.0	50	5	600	2250	20	9.32	47.52	1.03	
1	3-Feb	Drilling	22:33	22:35	0.03	1949	1971	22	30	660.0	50	5	600	2250		9.54	47.75	1.03	
1	3-Feb	Drilling	23:05	23:10	0.08	1971	2034	63	30	756.0	50	5	600	2250		10.19	47.12	1.11	
1	3-Feb	Sliding	23:20	23:26	0.10	2034	2049	15	20	150.0	50	5	600	2250	20	10.34	46.80	1.11	
1	3-Feb	Drilling	23:26	23:38	0.20	2049	2128	79	30	395.0	50	5	600	2250		11.97	48.74	2.84	

# Slide Report for BHA # 1

Note: Surveys listed are interpolated from the actual surveys

#	Date	Drill Mode	Start Time	End Time	Hours	Start MD	End MD	Depth Drilled	WOB	ROP	RPM	Surf. Torque	Flow Rate	SPP	TFO	INC	AZM	DLS	Note
1	3-Feb	Sliding	23:45	23:54	0.15	2128	2152	24	20	160.0	50	5	600	2250	20	12.59	50.00	2.84	
1	3-Feb	Drilling	23:54	24:00	0.10	2152	2202	50	30	500.0	50	5	600	2250		13.63	50.11	2.05	
1	4-Feb	Drilling	00:00	00:05	0.08	2202	2223	21	30	252.0	50	5	600	2250		14.01	49.23	2.05	
1	4-Feb	Sliding	00:22	00:27	0.08	2223	2241	18	20	216.0	50	5	600	2250	360	14.33	48.47	2.05	
1	4-Feb	Drilling	00:27	00:38	0.18	2241	2318	77	30	420.0	50	5	600	2250		15.33	49.05	1.26	
1	4-Feb	Sliding	00:57	01:03	0.10	2318	2336	18	20	180.0	50	5	600	2250	25	15.52	49.62	1.26	
1	4-Feb	Drilling	01:03	01:14	0.18	2336	2412	76	30	414.5	50	5	600	2250		16.67	48.63	1.79	
1	4-Feb	Sliding	01:23	01:31	0.13	2412	2436	24	20	180.0	50	5	600	2250	15	17.08	48.12	1.79	
1	4-Feb	Drilling	01:31	01:41	0.17	2436	2507	71	30	426.0	50	5	600	2250		17.39	50.14	1.22	
1	4-Feb	Sliding	01:50	01:56	0.10	2507	2527	20	20	200.0	50	5	600	2250	35	17.38	50.99	1.22	
1	4-Feb	Drilling	01:56	02:07	0.18	2527	2601	74	30	403.6	50	5	600	2250		17.22	50.12	0.78	
1	4-Feb	Sliding	02:16	02:20	0.07	2601	2612	11	20	165.0	50	5	600	2250	10	17.18	49.77	0.78	
1	4-Feb	Drilling	02:20	02:32	0.20	2612	2696	84	30	420.0	50	5	600	2250		17.75	52.80	2.25	
1	4-Feb	Sliding	02:42	02:50	0.13	2696	2718	22	20	165.0	50	5	600	2250	30	18.04	54.20	2.25	
1	4-Feb	Drilling	02:50	03:01	0.18	2718	2790	72	30	392.7	50	5	600	2250		19.44	56.27	2.31	
1	4-Feb	Sliding	03:12	03:18	0.10	2790	2807	17	20	170.0	50	5	600	2250	360	19.82	56.63	2.31	
1	4-Feb	Drilling	03:18	03:30	0.20	2807	2885	78	30	390.0	50	5	600	2250		20.04	56.15	1.00	
1	4-Feb	Drilling	03:40	03:55	0.25	2885	2980	95	30	380.0	50	5	600	2250		19.77	52.98	1.36	
1	4-Feb	Sliding	04:08	04:11	0.05	2980	2986	6	20	120.0	50	5	600	2250	-75	19.77	52.72	1.36	
1	4-Feb	Drilling	04:11	04:25	0.23	2986	3074	88	30	377.1	50	5	600	2250		19.05	50.31	1.68	
1	4-Feb	Drilling	04:34	04:48	0.23	3074	3169	95	30	407.1	50	5	600	2250		18.67	49.26	0.61	
1	4-Feb	Sliding	04:58	05:03	0.08	3169	3185	16	20	192.0	50	5	600	2250	20	18.73	49.43	0.61	
1	4-Feb	Drilling	05:03	05:15	0.20	3185	3263	78	30	390.0	50	5	600	2250		18.87	49.47	0.39	
1	4-Feb	Sliding	05:29	05:34	0.08	3263	3275	12	20	144.0	50	5	600	2250	360	18.87	49.35	0.39	
1	4-Feb	Drilling	05:34	05:48	0.23	3275	3358	83	30	355.7	50	5	600	2250		17.91	48.87	1.89	
1	4-Feb	Sliding	05:58	06:00	0.03	3358	3364	6	20	180.0	50	5	600	2250	360	17.80	48.87	1.89	
1	4-Feb	Drilling	06:00	06:15	0.25	3364	3452	88	30	352.0	50	5	600	2250		16.55	47.74	1.50	
1	4-Feb	Sliding	06:25	06:30	0.08	3452	3464	12	20	144.0	50	5	600	2250	360	16.42	47.36	1.50	
1	4-Feb	Drilling	06:30	06:43	0.22	3464	3547	83	38	383.1	50	5	600	2250		15.83	46.54	0.51	
1	4-Feb	Sliding	06:50	06:57	0.12	3547	3574	27	38	231.4	50	5	600	2250		15.70	46.83	0.51	
1	4-Feb	Drilling	06:57	07:09	0.20	3574	3641	67	38	335.0	50	5	600	2250		15.99	44.96	1.04	
1	4-Feb	Sliding	07:18	07:24	0.10	3641	3661	20	38	200.0	50	5	600	2250		16.13	44.33	1.04	
1	4-Feb	Drilling	07:24	07:37	0.22	3661	3736	75	38	346.2	50	5	600	2250		15.72	43.37	1.16	
1	4-Feb	Sliding	07:43	07:49	0.10	3736	3756	20	38	200.0	50	5	600	2250		15.50	43.15	1.16	
1	4-Feb	Drilling	07:49	07:59	0.17	3756	3830	74	35	444.0	50	5	600	2250		15.84	45.35	1.94	

# Slide Report for BHA # 1

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#	Date	Drill Mode	Start Time	End Time	Hours	Start MD	End MD	Depth Drilled	WOB	ROP	RPM	Surf. Torque	Flow Rate	SPP	TFO	INC	AZM	DLS	Note
1	4-Feb	Sliding	08:11	08:20	0.15	3830	3855	25	38	166.7	50	15	600	2250		16.12	46.66	1.94	
1	4-Feb	Drilling	08:20	08:32	0.20	3855	3925	70	35	350.0	50	15	600	2250		17.63	48.71	2.52	
1	4-Feb	Sliding	08:39	08:47	0.13	3925	3939	14	38	105.0	50	15	600	2250		17.98	48.86	2.52	
1	4-Feb	Drilling	08:47	09:00	0.22	3939	4019	80	38	369.2	50	15	600	2250		19.94	48.09	2.42	
1	4-Feb	Sliding	09:07	09:12	0.08	4019	4031	12	38	144.0	50	15	600	2250		20.23	47.97	2.42	
1	4-Feb	Drilling	09:12	09:27	0.25	4031	4114	83	38	332.0	50	15	600	2250		20.71	50.53	1.48	
1	4-Feb	Sliding	09:35	09:40	0.08	4114	4124	10	38	120.0	50	15	600	2250		20.65	50.95	1.48	
1	4-Feb	Drilling	09:40	09:54	0.23	4124	4209	85	38	364.3	50	15	600	2250		20.02	52.05	0.88	
1	4-Feb	Drilling	10:08	10:15	0.12	4209	4240	31	38	265.7	50	15	600	2250		19.75	52.05	0.88	
1	4-Feb	Drilling	10:19	10:30	0.18	4240	4303	63	38	343.6	50	15	600	2250		18.12	50.36	3.12	
1	4-Feb	Drilling	10:39	10:55	0.27	4303	4398	95	38	356.3	50	15	600	2250		17.51	49.39	1.31	
1	4-Feb	Sliding	11:03	11:09	0.10	4398	4418	20	38	200.0	50	15	600	2250		17.76	49.61	1.31	
1	4-Feb	Drilling	11:09	11:14	0.08	4418	4430	12	38	144.0	50	15	600	2250		17.91	49.73	1.31	
1	4-Feb	Drilling	11:18	11:28	0.17	4430	4492	62	38	372.0	50	15	600	2250		17.94	48.50	0.99	
1	4-Feb	Drilling	11:28	11:31	0.05	4492	4495	3	38	60.0	50	15	600	2250		17.93	48.40	0.99	
1	4-Feb	Sliding	11:35	11:55	0.33	4492	4500	8	38	24.0	50	15	600	2250		17.92	48.25	0.99	
1	4-Feb	Drilling	11:55	12:05	0.17	4500	4555	55	38	330.0	50	15	600	2250		18.16	47.20	1.46	
1	4-Feb	Drilling	12:09	12:15	0.10	4555	4586	31	38	310.0	50	15	600	2250		18.61	47.20	1.46	
1	4-Feb	Sliding	12:22	12:28	0.10	4586	4593	7	38	70.0	50	15	600	2250		18.71	47.20	1.46	
1	4-Feb	Drilling	12:28	12:50	0.37	4593	4680	87	38	237.3	50	15	600	2250		19.24	48.24	1.11	
1	4-Feb	Sliding	12:58	13:04	0.10	4680	4687	7	38	70.0	50	15	600	2250		19.24	48.46	1.11	
1	4-Feb	Drilling	13:04	13:17	0.22	4687	4775	88	38	406.2	50	15	600	2250		18.12	52.55	2.86	
1	4-Feb	Sliding	13:23	13:29	0.10	4775	4782	7	38	70.0	50	15	600	2250		17.97	52.92	2.86	
1	4-Feb	Drilling	13:29	13:45	0.27	4782	4870	88	38	330.0	50	15	600	2250		16.57	57.04	1.37	
1	4-Feb	Sliding	14:00	14:05	0.08	4870	4875	5	38	60.0	50	15	600	2250		16.51	57.20	1.37	
1	4-Feb	Drilling	14:05	14:22	0.28	4875	4965	90	38	317.6	50	15	600	2250		15.72	57.21	0.68	
1	4-Feb	Sliding	14:30	14:34	0.07	4965	4972	7	38	105.0	50	15	600	2250		15.67	57.14	0.68	
1	4-Feb	Drilling	14:34	14:50	0.27	4972	5060	88	38	330.0	50	15	600	2250		14.53	56.23	1.86	
1	4-Feb	Sliding	14:58	15:04	0.10	5060	5067	7	38	70.0	50	15	600	2250		14.41	56.08	1.86	
1	4-Feb	Drilling	15:04	15:21	0.28	5067	5154	87	38	307.1	50	15	600	2250		13.82	54.32	0.32	
1	4-Feb	Sliding	15:29	15:37	0.13	5154	5164	10	38	75.0	50	15	600	2250		13.82	54.22	0.32	
1	4-Feb	Drilling	15:37	16:00	0.38	5164	5249	85	38	221.7	50	15	600	2250		13.79	54.17	0.29	
1	4-Feb	Sliding	16:05	16:10	0.08	5249	5256	7	38	84.0	50	15	600	2250		13.79	54.25	0.29	
1	4-Feb	Drilling	16:10	16:27	0.28	5256	5343	87	38	307.1	50	15	600	2250		12.41	54.19	2.61	
1	4-Feb	Drilling	16:35	16:55	0.33	5343	5438	95	38	285.0	50	15	600	2250		10.88	51.75	1.13	

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#	Date	Drill Mode	Start Time	End Time	Hours	Start MD	End MD	Depth Drilled	WOB	ROP	RPM	Surf. Torque	Flow Rate	SPP	TFO	INC	AZM	DLS	Note
1	4-Feb	Sliding	17:10	17:16	0.10	5438	5443	5	38	50.0	50	15	600	2250		10.84	51.53	1.13	
1	4-Feb	Drilling	17:16	17:35	0.32	5443	5532	89	38	281.1	50	15	600	2250		9.36	48.30	2.35	
1	4-Feb	Drilling	18:20	18:28	0.13	5532	5564	32	38	240.0	50	15	600	2250		8.62	47.29	2.35	
1	4-Feb	Sliding	18:35	18:41	0.10	5564	5568	4	38	40.0	50	15	600	2250		8.53	47.16	2.35	
1	4-Feb	Drilling	18:41	18:52	0.18	5568	5627	59	38	321.8	50	15	600	2250		7.29	43.65	2.24	
1	4-Feb	Drilling	19:01	19:26	0.42	5627	5721	94	38	225.6	50	15	600	2250		5.71	41.41	1.36	
1	4-Feb	Sliding	19:36	19:39	0.05	5721	5724	3	38	60.0	50	15	600	2250		5.67	41.44	1.36	
1	4-Feb	Drilling	19:39	20:03	0.40	5724	5816	92	38	230.0	50	15	600	2250		4.03	47.21	2.22	
1	4-Feb	Sliding	20:14	20:18	0.07	5816	5819	3	38	45.0	50	15	600	2250		3.97	47.50	2.22	
1	4-Feb	Drilling	20:18	20:36	0.30	5819	5910	91	38	303.3	50	15	600	2250		2.48	72.21	2.11	
1	4-Feb	Sliding	20:47	20:51	0.07	5910	5913	3	38	45.0	50	15	600	2250	210	2.45	73.41	2.11	
1	4-Feb	Drilling	20:51	21:10	0.32	5913	6005	92	38	290.5	50	15	600	2250		1.05	91.12	1.70	
1	4-Feb	Sliding	21:10	21:22	0.20	6005	6012	7	38	35.0	50	15	600	2250	210	0.94	91.34	1.70	
1	4-Feb	Drilling	21:22	21:52	0.50	6012	6099	87	38	174.0	50	15	600	2250		0.12	143.59	0.50	
1	4-Feb	Drilling	22:01	22:20	0.32	6099	6162	63	38	198.9	50	15	600	2250		1.51	163.70	6.26	
1	4-Feb	Sliding	22:27	22:53	0.43	6162	6179	17	38	39.2	50	15	600	2250	180	2.41	174.86	3.91	
1	4-Feb	Drilling	22:53	22:59	0.10	6179	6194	15	38	150.0	50	15	600	2250		3.00	174.86	3.91	
1	4-Feb	Sliding	23:08	23:20	0.20	6194	6211	17	38	85.0	50	15	600	2250	180	3.84	173.75	6.94	
1	4-Feb	Drilling	23:20	23:24	0.07	6211	6225	14	38	210.0	50	15	600	2250		4.80	171.49	6.94	
1	4-Feb	Sliding	23:30	23:46	0.27	6225	6240	15	38	56.3	50	15	600	2250	180	5.82	170.15	6.73	
1	4-Feb	Drilling	23:46	23:52	0.10	6240	6257	17	38	170.0	50	15	600	2250		6.95	171.21	6.73	
1	5-Feb	Sliding	00:00	00:17	0.28	6257	6280	23	38	81.2	50	15	600	3450	180	8.47	174.24	7.22	
1	5-Feb	Drilling	00:17	00:20	0.05	6280	6288	8	38	160.0	50	15	600	3450		8.99	175.79	7.22	
1	5-Feb	Sliding	00:34	00:42	0.13	6288	6306	18	38	135.0	50	15	600	3450		9.98	178.50	3.96	
1	5-Feb	Drilling	00:42	00:44	0.03	6306	6320	14	38	420.0	35	15	600	3450		10.53	178.50	3.96	
1	5-Feb	Sliding	00:55	01:05	0.17	6320	6335	15	38	90.0	35	15	600	3450		11.09	131.55	3.48	
1	5-Feb	Drilling	01:05	01:10	0.08	6335	6351	16	38	192.0	35	15	600	3450		11.61	306.77	3.48	
1	5-Feb	Sliding	01:20	01:30	0.17	6351	6369	18	38	108.0	35	15	600	3450		12.33	179.65	5.13	
1	5-Feb	Drilling	01:30	01:35	0.08	6369	6383	14	38	168.0	35	15	600	3450		13.05	179.65	5.13	
1	5-Feb	Sliding	01:45	01:55	0.17	6383	6404	21	38	126.0	35	15	600	3450	20	14.26	179.95	6.53	
1	5-Feb	Drilling	01:55	02:05	0.17	6404	6414	10	38	60.0	35	15	600	3450		14.91	180.28	6.53	
1	5-Feb	Sliding	02:10	02:20	0.17	6414	6436	22	38	132.0	35	15	600	3450	10	16.10	181.31	4.73	
1	5-Feb	Drilling	02:20	02:25	0.08	6436	6446	10	38	120.0	35	15	600	3450		16.53	181.95	4.73	
1	5-Feb	Sliding	02:30	02:40	0.17	6446	6466	20	38	120.0	35	15	600	3450	10	17.42	182.02	4.81	
1	5-Feb	Drilling	02:40	02:45	0.08	6466	6477	11	38	132.0	35	15	600	3450		17.92	181.33	4.81	

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#	Date	Drill Mode	Start Time	End Time	Hours	Start MD	End MD	Depth Drilled	WOB	ROP	RPM	Surf. Torque	Flow Rate	SPP	TFO	INC	AZM	DLS	Note
1	5-Feb	Sliding	02:55	03:05	0.17	6477	6496	19	38	114.0	35	15	600	3450		18.91	272.98	7.13	
1	5-Feb	Drilling	03:05	03:10	0.08	6496	6508	12	38	144.0	35	15	600	3450		19.67	51.17	7.13	
1	5-Feb	Sliding	03:15	03:30	0.25	6508	6530	22	38	88.0	35	15	600	3450	-20	20.89	178.06	5.07	
1	5-Feb	Drilling	03:30	03:35	0.08	6530	6540	10	38	120.0	35	15	600	3450		21.38	178.38	5.07	
1	5-Feb	Sliding	03:40	03:50	0.17	6540	6564	24	38	144.0	35	15	600	3450		22.92	179.06	7.81	
1	5-Feb	Drilling	03:50	04:00	0.17	6564	6571	7	38	42.0	35	15	600	3450		23.47	179.06	7.81	
1	5-Feb	Sliding	04:10	04:25	0.25	6571	6591	20	38	80.0	35	15	600	3450	20	24.80	178.83	5.22	
1	5-Feb	Drilling	04:25	04:30	0.08	6591	6603	12	38	144.0	35	15	600	3450		25.43	178.83	5.22	
1	5-Feb	Sliding	04:40	04:50	0.17	6603	6625	22	38	132.0	35	15	600	3450	20	26.77	178.81	7.00	
1	5-Feb	Drilling	04:50	04:55	0.08	6625	6634	9	38	108.0	35	15	600	3450		27.39	178.81	7.00	
1	5-Feb	Sliding	05:00	05:10	0.17	6634	6654	20	38	120.0	35	15	600	3450	20	28.50	78.28	3.89	
1	5-Feb	Drilling	05:10	05:15	0.08	6654	6666	12	38	144.0	35	15	600	3450		28.96	303.66	3.89	
1	5-Feb	Sliding	05:25	05:40	0.25	6666	6688	22	38	88.0	35	15	600	3450	20	30.11	307.14	6.79	
1	5-Feb	Drilling	05:40	05:45	0.08	6688	6697	9	38	108.0	35	15	600	3450		30.71	51.36	6.79	
1	5-Feb	Sliding	05:55	06:00	0.08	6697	6699	2	38	24.0	35	15	600	3450	20	30.84	74.53	6.79	
1	5-Feb	Sliding	06:05	06:15	0.17	6699	6717	18	38	108.0	35	15	600	3450	20	31.91	77.94	5.68	
1	5-Feb	Drilling	06:15	06:20	0.08	6717	6729	12	38	144.0	35	15	600	3450		32.54	303.32	5.68	
1	5-Feb	Sliding	06:25	06:40	0.25	6729	6754	25	38	100.0	35	15	600	3450	20	34.17	180.66	7.58	
1	5-Feb	Drilling	06:40	06:45	0.08	6754	6760	6	38	72.0	35	15	600	3450		34.62	180.86	7.58	
1	5-Feb	Sliding	06:55	07:05	0.17	6760	6781	21	38	126.0	35	15	600	3450	20	36.16	180.87	7.22	
1	5-Feb	Drilling	07:05	07:10	0.08	6781	6792	11	38	132.0	35	15	600	3450		36.95	180.87	7.22	
1	5-Feb	Sliding	07:20	07:35	0.25	6792	6815	23	38	92.0	35	15	600	3450	20	38.70	181.21	8.06	
1	5-Feb	Drilling	07:35	07:40	0.08	6815	6823	8	38	96.0	35	15	600	3450		39.34	181.21	8.06	
1	5-Feb	Sliding	07:45	08:00	0.25	6823	6846	23	38	92.0	35	15	600	3450	20	40.87	180.74	5.48	
1	5-Feb	Drilling	08:00	08:05	0.08	6846	6855	9	38	108.0	35	15	600	3450		41.36	180.74	5.48	
1	5-Feb	Sliding	08:15	08:30	0.25	6855	6874	19	38	76.0	35	15	600	3450	20	42.57	181.09	7.62	
1	5-Feb	Drilling	08:40	08:50	0.17	6874	6886	12	38	72.0	35	15	600	3450		43.48	181.09	7.62	
1	5-Feb	Sliding	09:00	09:10	0.17	6886	6904	18	38	108.0	35	15	444	2250	20	44.82	180.51	7.29	
1	5-Feb	Drilling	09:10	09:20	0.17	6904	6918	14	38	84.0	35	15	600	2250		45.83	180.07	7.29	
1	5-Feb	Sliding	09:30	09:40	0.17	6918	6940	22	38	132.0	35	15	444	2250	20	47.30	180.60	6.30	
1	5-Feb	Drilling	09:40	09:50	0.17	6940	6949	9	38	54.0	35	15	600	2250		47.86	180.89	6.30	
1	5-Feb	Sliding	10:00	10:10	0.17	6949	6967	18	38	108.0	35	15	444	2250	20	49.00	180.51	6.85	
1	5-Feb	Drilling	10:10	10:15	0.08	6967	6981	14	38	168.0	35	15	600	2250		49.89	180.05	6.85	
1	5-Feb	Sliding	10:20	10:30	0.17	6981	6998	17	38	102.0	35	15	444	2250	20	50.98	179.73	6.25	
1	5-Feb	Drilling	10:30	10:35	0.08	6998	7013	15	38	180.0	35	15	600	2250		51.91	179.73	6.25	



# Slide Report for BHA # 1

Note: Surveys listed are interpolated from the actual surveys

#	Date	Drill Mode	Start Time	End Time	Hours	Start MD	End MD	Depth Drilled	WOB	ROP	RPM	Surf. Torque	Flow Rate	SPP	TFO	INC	AZM	DLS	Note
1	5-Feb	Sliding	10:40	11:00	0.33	7013	7033	20	38	60.0	35	15	444	2250	20	53.18	180.02	7.14	
1	5-Feb	Drilling	11:00	11:05	0.08	7033	7044	11	38	132.0	35	15	600	2250		53.89	180.38	7.14	
1	5-Feb	Sliding	11:15	11:25	0.17	7044	7062	18	38	108.0	35	15	444	2250	20	55.07	181.14	6.93	
1	5-Feb	Drilling	11:25	11:35	0.17	7062	7076	14	38	84.0	35	15	600	2250		56.00	181.59	6.93	
1	5-Feb	Sliding	11:40	11:50	0.17	7076	7092	16	38	96.0	35	15	444	2250	20	57.14	181.65	7.96	
1	5-Feb	Drilling	11:50	12:00	0.17	7092	7107	15	38	90.0	35	15	600	2250		58.33	181.65	7.96	
1	5-Feb	Sliding	12:05	12:20	0.25	7107	7123	16	38	64.0	35	15	444	2250	20	59.57	181.89	7.35	
1	5-Feb	Drilling	12:20	12:30	0.17	7123	7138	15	38	90.0	35	15	600	2250		60.67	181.89	7.35	
1	5-Feb	Sliding	12:45	13:00	0.25	7138	7154	16	38	64.0	35	15	444	2250	20	61.81	181.53	7.94	
1	5-Feb	Drilling	13:00	13:10	0.17	7154	7170	16	38	96.0	35	15	600	2250		62.84	180.46	7.94	
1	5-Feb	Sliding	13:15	13:20	0.08	7170	7180	10	38	120.0	35	15	444	2250	20	63.48	179.80	7.94	
1	5-Feb	Drilling	13:20	13:30	0.17	7180	7202	22	38	132.0	35	15	444	2250	20	64.61	180.14	5.18	
1	5-Feb	Sliding	13:55	14:05	0.17	7202	7214	12	38	72.0	35	15	444	2250	-20	65.23	180.48	5.52	
1	5-Feb	Drilling	14:05	14:20	0.25	7214	7233	19	38	76.0	35	15	444	2250		66.27	180.48	5.52	
1	5-Feb	Sliding	14:30	14:45	0.25	7233	7243	10	38	40.0	35	15	444	2250	-20	66.82	180.48	5.52	
1	5-Feb	Drilling	14:45	15:00	0.25	7243	7265	22	38	88.0	35	15	444	2250	-20	68.09	55.99	6.59	
1	5-Feb	Sliding	15:05	15:20	0.25	7265	7275	10	38	40.0	35	15	444	2250	-20	68.67	168.18	6.59	
1	5-Feb	Drilling	15:20	15:35	0.25	7275	7296	21	38	84.0	35	15	444	2250		69.59	307.70	4.97	
1	5-Feb	Sliding	15:50	16:00	0.17	7296	7301	5	38	30.0	35	15	444	2250	-20	69.81	249.79	4.97	
1	5-Feb	Sliding	16:05	16:10	0.08	7301	7306	5	38	60.0	35	15	444	2250	-20	70.03	191.89	4.97	
1	5-Feb	Drilling	16:10	16:25	0.25	7306	7328	22	38	88.0	35	15	444	2250		70.86	55.71	5.04	
1	5-Feb	Sliding	16:45	16:50	0.08	7328	7333	5	38	60.0	35	15	444	2250	-20	71.05	111.81	5.04	
1	5-Feb	Drilling	16:50	17:05	0.25	7333	7359	26	38	104.0	35	15	444	2250		72.22	178.98	4.80	
1	5-Feb	Sliding	17:15	17:25	0.17	7359	7369	10	38	60.0	35	15	444	2250	-20	72.69	178.98	4.80	
1	5-Feb	Drilling	17:25	17:40	0.25	7369	7391	22	38	88.0	35	15	444	2250		73.58	178.08	4.15	
1	5-Feb	Sliding	17:45	17:55	0.17	7391	7395	4	38	24.0	35	15	444	2250	-20	73.74	177.96	4.15	
1	5-Feb	Drilling	17:55	18:10	0.25	7395	7422	27	38	108.0	35	15	444	2250		75.29	179.02	6.90	
1	5-Feb	Sliding	18:20	18:30	0.17	7422	7435	13	38	78.0	35	15	444	2250	-20	76.09	179.23	5.41	
1	5-Feb	Drilling	18:30	18:45	0.25	7435	7454	19	38	76.0	35	15	444	2250		77.03	179.23	5.41	
1	5-Feb	Sliding	18:50	19:00	0.17	7454	7458	4	38	24.0	35	15	444	2250	-20	77.23	179.23	5.41	
1	5-Feb	Drilling	19:00	19:15	0.25	7458	7486	28	38	112.0	35	15	444	2250		78.74	178.53	5.65	
1	5-Feb	Sliding	19:20	19:30	0.17	7486	7495	9	38	54.0	35	15	444	2250	-20	79.24	178.53	5.65	
1	5-Feb	Drilling	19:30	19:45	0.25	7495	7517	22	38	88.0	35	15	444	2250		80.40	178.91	5.28	
1	5-Feb	Sliding	19:55	20:00	0.08	7517	7521	4	38	48.0	35	15	444	2250	30	80.60	178.91	5.28	
1	5-Feb	Drilling	20:00	20:10	0.17	7521	7549	28	38	168.0	35	15	444	2250		82.30	178.68	6.37	

# Slide Report for BHA # 1

Note: Surveys listed are interpolated from the actual surveys

#	Date	Drill Mode	Start Time	End Time	Hours	Start MD	End MD	Depth Drilled	WOB	ROP	RPM	Surf. Torque	Flow Rate	SPP	TFO	INC	AZM	DLS	Note
1	5-Feb	Sliding	20:20	20:30	0.17	7549	7559	10	38	60.0	35	15	600	3300	15	82.93	178.68	6.37	
1	5-Feb	Drilling	20:30	20:40	0.17	7559	7580	21	38	126.0	35	15	600	3300		84.22	178.95	6.13	
1	5-Feb	Sliding	20:55	21:00	0.08	7580	7587	7	38	84.0	35	15	600	3300	30	84.64	178.95	6.13	
1	5-Feb	Drilling	21:00	21:10	0.17	7587	7612	25	38	150.0	35	15	600	3300		85.64	303.43	4.36	
1	5-Feb	Sliding	21:20	21:25	0.08	7612	7618	6	38	72.0	35	15	600	3300	30	85.86	236.11	4.36	
1	5-Feb	Drilling	21:25	21:40	0.25	7618	7643	25	38	100.0	35	15	600	3300		86.75	51.42	4.35	
1	5-Feb	Drilling	21:45	22:00	0.25	7643	7675	32	38	128.0	35	15	600	3300		88.01	179.03	4.24	
1	5-Feb	Drilling	22:05	22:15	0.17	7675	7706	31	38	186.0	35	15	600	3300		88.73	64.74	2.06	
1	5-Feb	Drilling	22:25	22:40	0.25	7706	7738	32	38	128.0	35	15	600	3300		89.15	242.39	2.06	
1	5-Feb	Sliding	22:45	22:55	0.17	7738	7745	7	38	42.0	35	15	600	3300	135	89.25	202.50	2.06	
1	5-Feb	Drilling	22:55	23:10	0.25	7745	7801	56	38	224.0	35	15	600	3300		89.17	180.81	2.59	
1	5-Feb	Sliding	23:20	23:30	0.17	7801	7817	16	38	96.0	35	15	600	3300	150	89.13	181.15	2.59	
1	5-Feb	Drilling	23:30	24:00	0.50	7817	7895	78	38	156.0	35	15	600	3300		89.08	181.57	0.86	
1	6-Feb	Sliding	00:10	00:30	0.33	7895	7908	13	38	39.0	50	15	600	3300	180	89.08	181.44	0.86	
1	6-Feb	Drilling	00:30	01:00	0.50	7908	7990	82	38	164.0	50	15	600	3300		89.28	180.75	1.55	
1	6-Feb	Sliding	01:10	01:15	0.08	7990	8000	10	38	120.0	50	15	600	3300	-165	89.31	180.64	1.55	
1	6-Feb	Drilling	01:15	01:45	0.50	8000	8084	84	38	168.0	50	15	600	3300		90.18	16.39	1.61	
1	6-Feb	Sliding	02:00	02:05	0.08	8084	8090	6	38	72.0	50	15	600	3300	-165	90.27	39.06	1.61	
1	6-Feb	Drilling	02:05	02:35	0.50	8090	8179	89	38	178.0	50	15	600	3300		91.67	178.66	1.88	
1	6-Feb	Drilling	02:40	02:45	0.08	8179	8188	9	38	108.0	50	15	600	3300		91.82	178.57	1.88	

**Total Drilled:** 7462 **Avg. Total ROP:** 191.83

**DEPTH% - TIME %**

**Total Rotary Drilled:** 6139 **Avg. Rotary ROP:** 248.54

**Percent Rotary:** 82.27 - 63.50

**Total Drilled Sliding:** 1323 **Avg. Slide ROP:** 93.17

**Percent Slide:** 17.73 - 36.50



**BHA # 2****PDT**

<b>JOB NO.:</b>	41HMP1302056	<b>FIELD:</b>	Wattenberg
<b>COMPANY:</b>	Kerr McGee Oil and Gas Onshore LP	<b>Township:</b>	3N
<b>LOCATION:</b>	Dechant 36-36HZ	<b>SECT. RANGE:</b>	36 65W
<b>RIG NAME:</b>	H&P 311	<b>Lead DD:</b>	Steve Schlamp (NEW)
<b>STATE:</b>	CO	<b>Co. Man:</b>	Scott Allred
<b>COUNTY:</b>	Weld	<b>BHA TYPE:</b>	Steerable Assembly
<b>WELL NAME:</b>	Dechant 37N-W1HZ	<b>BHA WT:</b>	50607 <b>Wt @ Jars:</b> N/A

Time and Depths		MOTOR DATA	Drilling Parameters	
<b>Date In:</b>	07-Feb-13 @ 18:00	Bico SS160 5:6, 8.3 FBH	<b>SO/PU:</b>	102 - 125 / 174-215
<b>Date Out:</b>	09-Feb-13 @ 14:40	<b>MFG.:</b> Bico	<b>Rot Strg Wt:</b>	140-142
<b>Hrs In Hole:</b>	44.92	<b>Pad OD:</b> 4 7/8	<b>WOB:</b>	5 - 38
<b>Start Depth:</b>	8188.00	<b>NB Stab:</b> 0	<b>TORQ:</b>	15 - 15
<b>End Depth:</b>	9380.00	<b>Bit to Bend:</b> 6	<b>SPP:</b>	3300 - 3300
<b>Total Drilled:</b>	1192.00	<b>Bent Hsg/Sub°:</b> 1.5 / 1.5	<b>Motor RPM:</b>	630
<b>Avg. Total ROP:</b>	99.06	<b>Lobe/Stage:</b> 5:6 / 8.3	<b>Rotary RPM:</b>	50 - 50
<b>Circ Hrs: Tot/Only</b>	17.85 / 5.82	<b>Rev/GAL:</b> 1.05	<b>Flow Rate:</b>	600 - 600
<b>Percent Slide:</b>	15.69	<b>Rotor Jet:</b> 0	<b>Avg Diff:</b>	800
<b>Percent Hrs:</b>	52.35	<b>Prop BUR:</b> 1.05	<b>Stall Pres.:</b>	3300
<b>Slide Hours:</b>	6.30	<b>Act BUR:</b> 0	<b>Off Bot Pres.:</b>	2300
<b>Total Sliding:</b>	187.00	<b>Mud Data</b>		<b>Bit Record</b>
<b>Avg. Slide ROP:</b>	29.68	<b>Type</b>		Other / 6 1/8" Smith MDI513 5x16's
<b>Percent Rotary:</b>	84.31	<b>WT:</b> 0	<b>GAS:</b> 0	<b>Run #:</b> 3
<b>Percent Hrs:</b>	47.65	<b>Vis:</b> 0	<b>PV:</b> 0	<b>Type Bit:</b> PDC
<b>Rotary Hours:</b>	5.73	<b>WL:</b> 0	<b>PH:</b> 0	<b>IADC#:</b> TFA: 0.981
<b>Total Rotary:</b>	1005.00	<b>SOL:</b> 0	<b>SAND:</b> 0	<b>JETS:</b> 5-16
<b>Avg. Rotary ROP:</b>	175.29	<b>Oil %:</b> 0	<b>T °:</b> 0	<b>Bit Drop:</b> 0 PSI @ 600 GPM
<b>Reason POOH:</b>	DMF	<b>Chlor:</b> 0	<b>YP:</b> 0	<b>Cond.:</b> Green
<b>MWD Spacing</b>	Gamma: 48.09 Restiv: 0 Sensor: 62.91	<b>Last Casing</b> 7		
	GYRO: 0 DNSC: 8188 Sonic: 0	<b>Shoe @:</b> 8178 <b>Hanger @:</b>		

**INC IN:** 91.8 **INC OUT:** 90.6 **AZM IN:** 178.57 **AZM OUT:** 179.92

BICO SS160 5:6 8.3 FBH @ 1.5\* RPG - 1.05

MAX GPM - 300 GPM  
MAX DIFF - 940 PSI

Bit to Sensor - 51.39'  
Bit to Survey - 53'  
Bit to Gamma - 46.79'

**BHA Detail**

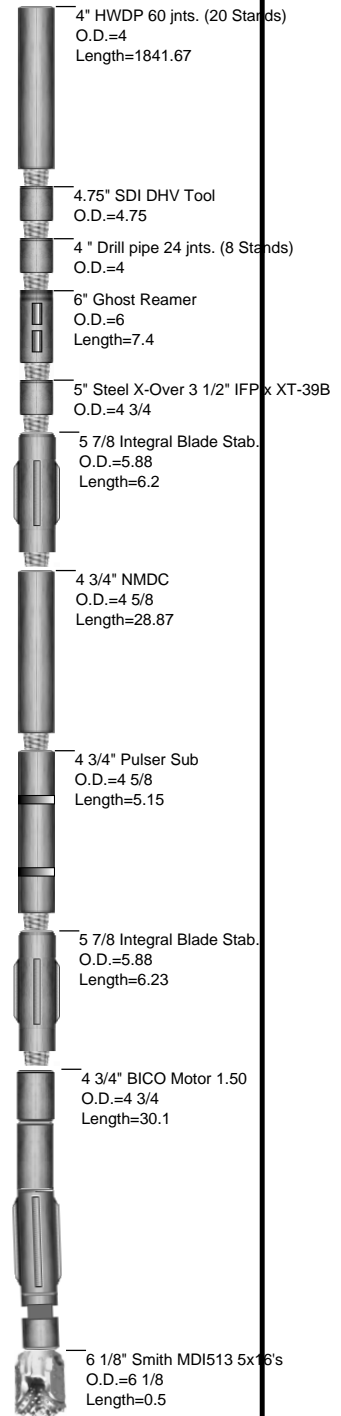
Description	Serial #	I.D.	O.D.	Length	Sum	Top Conn	Fishing Neck
6 1/8" Smith MDI513 5x16's	JG6228		6 1/8	0.50	0.50	3 1/2 REGP	
4 3/4" BICO Motor 1.50	G255		4 3/4	30.10	30.60	3 1/2 IFB	
5 7/8 Integral Blade Stab.	SD600254	2 5/8	5.88	6.23	36.83	3 1/2 IFB	
4 3/4" NMDC	SD39548	2 3/4	4 5/8	28.51	65.34	3 1/2 IFB	
4 3/4" Pulser Sub	65-074	2 5/8	4 5/8	5.15	70.49	3 1/2 IFB	
4 3/4" NMDC	SD46814	2 3/4	4 5/8	28.87	99.36	3 1/2 IFB	
5 7/8 Integral Blade Stab.	SD600419	2 5/8	5.88	6.20	105.56	3 1/2 IFB	
5" Steel X-Over 3 1/2" IFP x XT-39B	SD111687	2 5/8	4 3/4	1.92	107.48	XT 39B	
4" Drill Pipe 1 Jnts.	DP-3-S-135	3	4	31.50	138.98	XT 39B	
6" Ghost Reamer	SD802407	2 5/8	6	7.40	146.38	XT 39B	
4 " Drill pipe 24 jnts. (8 Stands)	DP123	2 1/4	4	756.51	902.89	XT 39B	
4.75" SDI DHV Tool	47023	2 5/8	4.75	18.64	921.53	XT 39	

**WinSURV II BHA Report**

BHA Detail							
Description	Serial #	I.D.	O.D.	Length	Sum	Top Conn	Fishing Neck

Description	Serial #	I.D.	O.D.	Length	Sum	Top Conn	Fishing Neck
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4" Drill Pipe 111 jnts. (33 Stands)	DP-3-S-135	3	4	3,119.63	4041.16	XT 39
4" HWDP 60 jnts. (20 Stands)	Rig 1		4	1,841.67	5882.83	XT 39





**JOB NO.:** 41HMP1302056  
**COMPANY:** Kerr McGee Oil and Gas Onshore LP  
**LOCATION:** Dechant 36-36HZ  
**RIG NAME:** H&P 311  
**STATE:** CO  
**COUNTY:** Country  
**WELL NAME:** Dechant 37N-W1HZ

**FIELD:** Wattenberg  
**Township:** 3N  
**Range** 65W

#### MOTOR INFORMATION

**Desc:** Bico SS160 5:6, 8.3 FBH @ 1.5\*  
**Bent Hsg/Sub:** 1.5 / 1.5 **Bit to Bend:** 6  
**Pad OD:** 4 7/8 **NB Stab:** 5 7/8

## Slide Report for BHA # 2

Note: Surveys listed are interpolated from the actual surveys

#	Date	Drill Mode	Start Time	End Time	Hours	Start MD	End MD	Depth Drilled	WOB	ROP	RPM	Surf. Torque	Flow Rate	SPP	TFO	INC	AZM	DLS	Note
2	8-Feb	Drilling	04:05	05:15	1.17	8188	8246	58	38	49.7	50	15	600	3300		92.02	178.36	1.89	
2	8-Feb	Drilling	05:55	06:00	0.08	8246	8260	14	38	168.0	50	15	600	3300		91.77	178.36	1.89	
2	8-Feb	Sliding	06:00	06:35	0.58	8260	8270	10	38	17.1	50	15	600	3300	-165	91.59	178.36	1.89	
2	8-Feb	Drilling	06:35	06:40	0.08	8270	8277	7	38	84.0	50	15	600	3300		91.46	178.36	1.89	
2	8-Feb	Sliding	06:45	06:50	0.08	8277	8282	5	38	60.0	50	15	600	3300	-165	91.37	178.36	1.89	
2	8-Feb	Drilling	06:50	07:00	0.17	8282	8309	27	38	162.0	50	15	600	3300		91.24	178.24	1.40	
2	8-Feb	Sliding	07:05	07:15	0.17	8309	8314	5	38	30.0	50	15	600	3300	-165	91.23	178.29	1.40	
2	8-Feb	Drilling	07:15	07:20	0.08	8314	8340	26	38	312.0	50	15	600	3300		91.18	178.57	1.40	
2	8-Feb	Sliding	07:25	07:35	0.17	8340	8345	5	38	30.0	50	15	600	3300	-165	91.17	178.62	1.40	
2	8-Feb	Drilling	07:35	07:43	0.13	8345	8372	27	38	202.5	50	15	600	3300		91.12	178.90	1.40	
2	8-Feb	Sliding	07:55	08:05	0.17	8372	8380	8	38	48.0	50	15	600	3300	-165	91.10	178.99	1.40	
2	8-Feb	Drilling	08:05	08:09	0.07	8380	8401	21	38	315.0	50	15	600	3300		91.24	106.77	0.93	
2	8-Feb	Drilling	08:15	08:25	0.17	8401	8435	34	38	204.0	50	15	600	3300		91.49	336.92	0.93	
2	8-Feb	Sliding	08:34	08:50	0.27	8435	8445	10	38	37.5	50	15	600	3300		91.57	298.72	0.93	
2	8-Feb	Drilling	08:50	09:05	0.25	8445	8498	53	38	212.0	50	15	600	3300		91.37	179.86	2.04	
2	8-Feb	Sliding	09:05	09:20	0.25	8498	8508	10	38	40.0	50	15	600	3300		91.18	179.86	2.04	
2	8-Feb	Drilling	09:20	09:25	0.08	8508	8529	21	38	252.0	50	15	600	3300		90.77	179.86	2.04	
2	8-Feb	Sliding	09:32	09:47	0.25	8529	8539	10	38	40.0	50	15	600	3300		90.58	179.86	2.04	
2	8-Feb	Drilling	09:47	09:53	0.10	8539	8561	22	38	220.0	50	15	600	3300		90.15	179.86	2.04	
2	8-Feb	Sliding	09:58	10:05	0.12	8561	8566	5	38	42.9	50	15	600	3300		90.06	179.86	2.04	
2	8-Feb	Drilling	10:05	10:12	0.12	8566	8592	26	38	222.9	50	15	600	3300		89.96	180.69	0.76	
2	8-Feb	Sliding	10:17	10:31	0.23	8592	8599	7	38	30.0	50	15	600	3300		89.96	180.77	0.76	
2	8-Feb	Drilling	10:31	10:38	0.12	8599	8624	25	38	214.3	50	15	600	3300		89.96	181.03	0.76	
2	8-Feb	Sliding	10:45	10:58	0.22	8624	8634	10	38	46.2	50	15	600	3300		89.96	181.14	0.76	
2	8-Feb	Drilling	10:58	11:10	0.20	8634	8687	53	38	265.0	50	15	600	3300		89.94	181.64	1.94	
2	8-Feb	Sliding	11:10	11:22	0.20	8687	8694	7	38	35.0	50	15	600	3300		89.93	181.79	1.94	
2	8-Feb	Drilling	11:22	11:28	0.10	8694	8718	24	38	240.0	50	15	600	3300		89.91	182.30	1.94	

# Slide Report for BHA # 2

Note: Surveys listed are interpolated from the actual surveys

#	Date	Drill Mode	Start Time	End Time	Hours	Start MD	End MD	Depth Drilled	WOB	ROP	RPM	Surf. Torque	Flow Rate	SPP	TFO	INC	AZM	DLS	Note
2	8-Feb	Sliding	11:40	11:55	0.25	8718	8728	10	5	40.0	50	15	600	3300		89.90	182.51	1.94	
2	8-Feb	Drilling	11:55	12:07	0.20	8728	8781	53	38	265.0	50	15	600	3300		89.75	183.24	1.00	
2	8-Feb	Sliding	12:07	12:20	0.22	8781	8791	10	5	46.2	50	15	600	3300		89.70	183.35	1.00	
2	8-Feb	Drilling	12:20	12:28	0.13	8791	8813	22	38	165.0	50	15	600	3300		89.57	183.58	1.00	
2	8-Feb	Sliding	12:38	13:04	0.43	8813	8820	7	5	16.2	50	15	600	3300		89.54	183.65	1.00	
2	8-Feb	Drilling	13:04	13:19	0.25	8820	8876	56	38	224.0	50	15	600	3300		89.03	183.59	1.81	
2	8-Feb	Sliding	13:19	13:35	0.27	8876	8885	9	5	33.8	50	15	600	3300		88.89	183.49	1.81	
2	8-Feb	Drilling	13:35	13:40	0.08	8885	8908	23	38	276.0	50	15	600	3300		88.55	183.25	1.81	
2	8-Feb	Sliding	13:47	14:10	0.38	8908	8918	10	5	26.1	50	15	600	3300		88.40	183.14	1.81	
2	8-Feb	Drilling	14:10	14:18	0.13	8918	8939	21	38	157.5	50	15	600	3300		88.08	182.92	1.81	
2	8-Feb	Sliding	14:23	14:36	0.22	8939	8944	5	5	23.1	50	15	600	3300		88.01	182.86	1.81	
2	8-Feb	Drilling	14:36	14:45	0.15	8944	8977	33	17	220.0	50	15	600	3300		88.04	182.26	1.53	
2	8-Feb	Sliding	14:50	14:57	0.12	8977	8990	13	5	111.4	50	15	600	3300		88.09	181.99	1.53	
2	8-Feb	Drilling	14:57	15:05	0.13	8990	9002	12	17	90.0	50	15	600	3300		88.13	181.73	1.53	
2	8-Feb	Sliding	15:11	15:25	0.23	9002	9008	6	5	25.7	50	15	600	3300		88.15	181.61	1.53	
2	8-Feb	Drilling	15:25	15:40	0.25	9008	9065	57	17	228.0	50	15	600	3300		88.43	181.44	0.80	
2	8-Feb	Drilling	15:45	15:51	0.10	9065	9097	32	17	320.0	50	15	600	3300		88.63	181.44	0.80	
2	8-Feb	Sliding	15:58	16:27	0.48	9097	9107	10	5	20.7	50	15	600	3300		88.70	181.44	0.80	
2	8-Feb	Drilling	16:27	16:45	0.30	9107	9191	84	17	280.0	50	15	600	3300		89.34	180.44	1.32	
2	8-Feb	Sliding	17:10	17:45	0.58	9191	9201	10	5	17.1	50	15	600	3300		89.42	180.34	1.32	
2	8-Feb	Drilling	17:45	17:55	0.17	9201	9223	22	17	132.0	50	15	600	3300		89.61	180.11	1.32	
2	8-Feb	Drilling	18:05	18:25	0.33	9223	9286	63	17	189.0	50	15	600	3300		90.11	180.57	0.93	
2	8-Feb	Drilling	18:30	18:35	0.08	9286	9296	10	17	120.0	50	15	600	3300		90.19	180.67	0.93	
2	8-Feb	Sliding	18:35	19:00	0.42	9296	9301	5	5	12.0	50	15	600	3300		90.23	180.72	0.93	
2	8-Feb	Drilling	19:00	19:30	0.50	9301	9380	79	17	158.0	50	15	600	3300		90.59	179.92	0.83	

Total Drilled:

1192

Avg. Total ROP:

99.06

DEPTH% - TIME %

Total Rotary Drilled:

1005

Avg. Rotary ROP:

175.29

Percent Rotary:

84.31 - 47.65

Total Drilled Sliding:

187

Avg. Slide ROP:

29.68

Percent Slide:

15.69 - 52.35

## BHA # 3

## PDT



**JOB NO.:** 41HMP1302056  
**COMPANY:** Kerr McGee Oil and Gas Onshore LP  
**LOCATION:** Dechant 36-36HZ  
**RIG NAME:** H&P 311  
**STATE:** CO  
**COUNTY:** Weld  
**WELL NAME:** Dechant 37N-W1HZ

**FIELD:** Wattenberg  
**Township:** 3N  
**SECT. RANGE:** 36 65W  
**Lead DD:** Steve Schlamp (10800)  
**Co. Man:** Scott Allred  
**BHA TYPE:** Steerable Assembly  
**BHA WT:** 50607 **Wt @ Jars:** N/A

Time and Depths	MOTOR DATA	Drilling Parameters
<b>Date In:</b> 09-Feb-13 @ 14:40	4 3/4 Bico SS160 5:6, 8.3	<b>SO/PU:</b> 95 - 102 / 199-225
<b>Date Out:</b> 12-Feb-13 @ 13:30	<b>MFG.:</b> Bico	<b>Rot Strg Wt:</b> 134-142
<b>Hrs In Hole:</b> 70.67	<b>Pad OD:</b> 4.98	<b>WOB:</b> 10 - 17
<b>Start Depth:</b> 9380.00	<b>NB Stab:</b> 0	<b>TORQ:</b> 15 - 15
<b>End Depth:</b> 12384.00	<b>Bit to Bend:</b> 6.17	<b>SPP:</b> 2650 - 3300
<b>Total Drilled:</b> 3004.00	<b>Bent Hsg/Sub°:</b> 1.5 / 1.5	<b>Motor RPM:</b> 630
<b>Avg. Total ROP:</b> 86.16	<b>Lobe/Stage:</b> 5:6 / 8.3	<b>Rotary RPM:</b> 50 - 85
<b>Circ Hrs: Tot/Only</b> 44.43 / 9.57	<b>Rev/GAL:</b> 1.05	<b>Flow Rate:</b> 600 - 600
<b>Percent Slide:</b> 5.19	<b>Rotor Jet:</b> 0	<b>Avg Diff:</b>
<b>Percent Hrs:</b> 49.67	<b>Prop BUR:</b> 1.05	<b>Stall Pres.:</b>
<b>Slide Hours:</b> 17.32	<b>Act BUR:</b> 0	<b>Off Bot Pres.:</b>
<b>Total Sliding:</b> 156.00		
<b>Avg. Slide ROP:</b> 9.01		
<b>Percent Rotary:</b> 94.81		
<b>Percent Hrs:</b> 50.33		
<b>Rotary Hours:</b> 17.55		
<b>Total Rotary:</b> 2848.00		
<b>Avg. Rotary ROP:</b> 162.28		
<b>Reason POOH:</b>		

MWD Spacing	Gamma: 41.02	Restiv: 0	Sensor: 46.01	Last Casing	Shoe @:	8178 Hanger @:
	GYRO: 0	DNSC: 9380	Sonic: 0			

**INC IN:** 90.6 **INC OUT:** 92.7 **AZM IN:** 179.92 **AZM OUT:** 174.46

BICO SS160 5:6 8.3 FBH @ 1.5\* RPG - 1.05

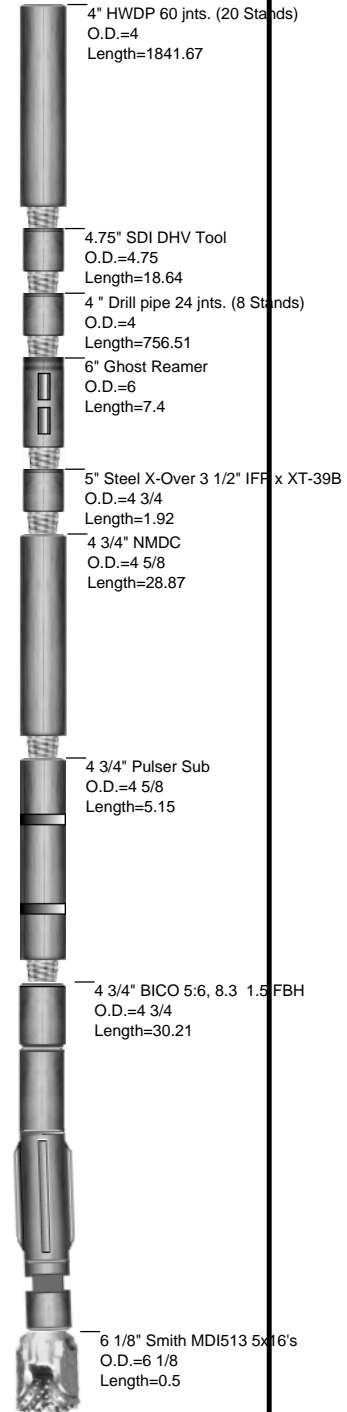
MAX GPM - 300 GPM  
MAX DIFF - 1250 PSI

Bit to Sensor - 46.01'  
Bit to Survey - 48'  
Bit to Gamma - 41.02'

## BHA Detail

Description	Serial #	I.D.	O.D.	Length	Sum	Top Conn	Fishing Neck
6 1/8" Smith MDI513 5x16's	JG65759		6 1/8	0.50	0.50	3 1/2 REGP	
4 3/4" BICO 5:6, 8.3 1.5 FBH	G-285		4 3/4	30.21	30.71	3 1/2 IFB	
4 3/4" NMDC	SD39548	2 3/4	4 5/8	28.51	59.22	3 1/2 IFB	
4 3/4" Pulser Sub	65-074	2 5/8	4 5/8	5.15	64.37	3 1/2 IFB	
4 3/4" NMDC	SD46814	2 3/4	4 5/8	28.87	93.24	3 1/2 IFB	
5" Steel X-Over 3 1/2" IFF x XT-39B	SD111687	2 5/8	4 3/4	1.92	95.16	XT 39B	
4" Drill Pipe 1 Jnts.	DP-3-S-135	3	4	31.50	126.66	XT 39B	
6" Ghost Reamer	SD802407	2 5/8	6	7.40	134.06	XT 39B	
4" Drill pipe 24 jnts. (8 Stands)	DP123	2 1/4	4	756.51	890.57	XT 39B	
4.75" SDI DHV Tool	47023	2 5/8	4.75	18.64	909.21	XT 39	
4" Drill Pipe 111 jnts. (33 Stands)	DP-3-S-135	3	4	3,119.63	4028.84	XT 39	
4" HWDP 60 jnts. (20 Stands)	Rig 1		4	1,841.67	5870.51	XT 39	

## WinSURV II BHA Report





**JOB NO.:** 41HMP1302056  
**COMPANY:** Kerr McGee Oil and Gas Onshore LP  
**LOCATION:** Dechant 36-36HZ  
**RIG NAME:** H&P 311  
**STATE:** CO  
**COUNTY:** Country  
**WELL NAME:** Dechant 37N-W1HZ

**FIELD:** Wattenberg  
**Township:** 3N  
**Range** 65W

#### MOTOR INFORMATION

**Desc:** 4 3/4 Bico SS160 5:6, 8.3 FBH @ 1.5\*  
**Bent Hsg/Sub:** 1.5 / 1.5 **Bit to Bend:** 6.17  
**Pad OD:** 4.98 **NB Stab:**

## Slide Report for BHA # 3

Note: Surveys listed are interpolated from the actual surveys

#	Date	Drill Mode	Start Time	End Time	Hours	Start MD	End MD	Depth Drilled	WOB	ROP	RPM	Surf. Torque	Flow Rate	SPP	TFO	INC	AZM	DLS	Note
3	9-Feb	Drilling	19:00	19:05	0.08	9380	9387	7	17	84.0	50	15	600	3300		90.60	179.84	0.83	
3	9-Feb	Sliding	19:05	19:15	0.17	9387	9389	2	10	12.0	50	15	600	2650	180	90.61	179.81	0.83	
3	9-Feb	Sliding	19:25	19:35	0.17	9389	9395	6	10	36.0	50	15	600	2650	-175	90.62	179.74	0.83	
3	9-Feb	Drilling	19:35	19:55	0.33	9395	9462	67	17	201.0	50	15	600	2650		89.96	1.25	1.86	
3	9-Feb	Drilling	20:00	20:05	0.08	9462	9472	10	17	120.0	50	15	600	2650		89.81	39.04	1.86	
3	9-Feb	Sliding	20:05	20:25	0.33	9472	9482	10	17	30.0	50	15	600	2650		89.66	76.83	1.86	
3	9-Feb	Drilling	20:25	21:00	0.58	9482	9557	75	17	128.6	50	15	600	2650		89.02	178.79	0.52	
3	9-Feb	Drilling	21:05	21:30	0.42	9557	9651	94	17	225.6	50	15	600	2650		88.72	178.65	0.14	
3	9-Feb	Drilling	21:35	22:10	0.58	9651	9746	95	17	162.9	50	15	600	2650		88.37	177.67	1.67	
3	9-Feb	Drilling	22:15	23:10	0.92	9746	9841	95	17	103.6	50	15	600	2650		88.88	177.71	1.73	
3	9-Feb	Drilling	23:15	23:20	0.08	9841	9851	10	17	120.0	50	15	600	2650		89.04	177.82	1.73	
3	9-Feb	Sliding	23:20	24:00	0.67	9851	9861	10	17	15.0	50	15	600	2650		89.20	177.92	1.73	
3	10-Feb	Drilling	00:00	00:20	0.33	9861	9895	34	17	102.0	50	15	600	2650		89.65	177.81	0.87	
3	10-Feb	Drilling	00:25	00:55	0.50	9895	9935	40	17	80.0	50	15	600	2650		89.77	178.24	0.87	
3	10-Feb	Drilling	01:00	01:05	0.08	9935	9944	9	17	108.0	50	15	600	2650		89.79	178.33	0.87	
3	10-Feb	Sliding	01:05	01:45	0.67	9944	9953	9	17	13.5	50	15	600	2650	60	89.82	178.42	0.87	
3	10-Feb	Drilling	01:45	02:25	0.67	9953	10030	77	17	115.5	50	15	600	2650		90.07	178.51	0.36	
3	10-Feb	Drilling	02:30	02:35	0.08	10030	10040	10	17	120.0	50	15	600	2650		90.10	178.51	0.36	
3	10-Feb	Sliding	02:35	03:30	0.92	10040	10050	10	17	10.9	50	15	600	2650	60	90.14	178.51	0.36	
3	10-Feb	Drilling	03:30	03:55	0.42	10050	10124	74	17	177.6	50	15	600	2650		89.92	357.20	1.79	
3	10-Feb	Drilling	04:00	04:05	0.08	10124	10137	13	17	156.0	50	15	600	2650		89.83	308.07	1.79	
3	10-Feb	Sliding	04:05	05:20	1.25	10137	10149	12	17	9.6	50	15	600	2650	75	89.75	262.73	1.79	
3	10-Feb	Drilling	05:20	05:55	0.58	10149	10219	70	17	120.0	50	15	600	2650		90.14	180.17	1.10	
3	10-Feb	Drilling	06:00	06:05	0.08	10219	10226	7	17	84.0	50	15	600	2650		90.21	180.17	1.10	
3	10-Feb	Sliding	06:10	06:55	0.75	10226	10235	9	17	12.0	50	15	600	2650	75	90.31	180.17	1.10	
3	10-Feb	Drilling	06:55	07:02	0.12	10235	10250	15	17	128.6	50	15	600	2650		90.48	180.17	1.10	
3	10-Feb	Drilling	07:33	07:50	0.28	10250	10282	32	17	112.9	50	15	600	2650		90.64	180.07	0.40	

# Slide Report for BHA # 3

Note: Surveys listed are interpolated from the actual surveys

#	Date	Drill Mode	Start Time	End Time	Hours	Start MD	End MD	Depth Drilled	WOB	ROP	RPM	Surf. Torque	Flow Rate	SPP	TFO	INC	AZM	DLS	Note
3	10-Feb	Drilling	07:58	08:10	0.20	10282	10313	31	17	155.0	50	15	600	2650		90.64	180.07	0.40	
3	10-Feb	Drilling	08:15	08:40	0.42	10313	10408	95	17	228.0	50	15	600	2650		90.33	3.01	0.76	
3	10-Feb	Drilling	08:45	09:40	0.92	10408	10502	94	17	102.5	50	15	600	2650		89.69	358.43	1.46	
3	10-Feb	Drilling	09:48	09:52	0.07	10502	10513	11	17	165.0	50	15	600	2650		89.61	316.97	1.46	
3	10-Feb	Sliding	09:52	11:07	1.25	10513	10519	6	17	4.8	50	15	600	2650	75	89.57	294.36	1.46	
3	10-Feb	Drilling	11:07	11:23	0.27	10519	10597	78	17	292.5	50	15	600	2650		89.79	180.01	0.99	
3	10-Feb	Drilling	11:30	11:33	0.05	10597	10607	10	17	200.0	50	15	600	2650		89.88	179.90	0.99	
3	10-Feb	Sliding	11:33	12:10	0.62	10607	10617	10	17	16.2	50	15	600	2650	75	89.97	179.80	0.99	
3	10-Feb	Drilling	12:10	12:28	0.30	10617	10660	43	17	143.3	50	15	600	2650		90.35	180.13	0.89	
3	10-Feb	Sliding	12:33	12:54	0.35	10660	10667	7	17	20.0	50	15	600	2650	75	90.41	180.13	0.89	
3	10-Feb	Drilling	12:54	12:59	0.08	10667	10691	24	17	288.0	50	15	600	2650		90.62	180.13	0.89	
3	10-Feb	Drilling	13:05	13:08	0.05	10691	10704	13	17	260.0	50	15	600	2650		90.74	180.13	0.89	
3	10-Feb	Sliding	13:08	14:05	0.95	10704	10708	4	17	4.2	50	15	600	2650	75	90.77	180.13	0.89	
3	10-Feb	Drilling	14:05	14:22	0.28	10708	10786	78	17	275.3	50	15	600	2650		90.89	180.24	0.79	
3	10-Feb	Drilling	14:29	14:50	0.35	10786	10881	95	17	271.4	50	15	600	2650		90.45	2.87	0.70	
3	10-Feb	Drilling	14:57	15:20	0.38	10881	10975	94	17	245.2	50	15	600	2650		90.47	357.83	0.71	
3	10-Feb	Drilling	15:25	15:28	0.05	10975	10985	10	17	200.0	50	15	600	2650		90.54	320.04	0.71	
3	10-Feb	Sliding	15:28	16:20	0.87	10985	10995	10	17	11.5	50	15	600	2650	30	90.60	282.25	0.71	
3	10-Feb	Drilling	16:20	16:30	0.17	10995	11038	43	17	258.0	50	15	600	2650		90.82	239.98	0.50	
3	10-Feb	Drilling	16:35	16:40	0.08	11038	11070	32	17	384.0	50	15	600	2650		90.92	0.91	0.50	
3	10-Feb	Sliding	18:05	19:00	0.92	11070	11076	6	17	6.5	50	15	600	2650	30	90.94	23.58	0.50	
3	10-Feb	Drilling	19:00	19:35	0.58	11076	11165	89	17	152.6	50	15	600	2650		91.16	179.15	0.22	
3	10-Feb	Sliding	19:46	20:20	0.57	11165	11172	7	17	12.4	50	15	600	2650	30	91.17	179.15	0.22	
3	10-Feb	Drilling	20:20	20:43	0.38	11172	11259	87	17	227.0	50	15	600	2650		91.38	179.26	0.49	
3	10-Feb	Drilling	20:48	21:10	0.37	11259	11354	95	17	259.1	50	15	600	2650		91.68	178.88	0.45	
3	10-Feb	Drilling	21:15	21:35	0.33	11354	11417	63	17	189.0	50	15	600	2650		91.82	178.45	0.30	
3	10-Feb	Sliding	21:40	22:55	1.25	11417	11420	3	17	2.4	50	15	600	2650	145	91.81	178.42	0.30	
3	10-Feb	Drilling	22:55	22:57	0.03	11420	11425	5	17	150.0	50	15	600	2650		91.80	178.37	0.30	
3	10-Feb	Sliding	22:57	23:26	0.48	11425	11427	2	17	4.1	50	15	600	2650	145	91.80	178.35	0.30	
3	10-Feb	Drilling	23:26	23:33	0.12	11427	11448	21	17	180.0	50	15	600	2650		91.76	178.12	0.30	
3	10-Feb	Drilling	23:38	23:55	0.28	11448	11480	32	17	112.9	50	15	600	2650		91.70	177.79	0.30	
3	11-Feb	Drilling	00:00	00:22	0.37	11480	11511	31	17	84.5	85	15	600	2650		91.73	178.41	0.98	
3	11-Feb	Drilling	00:27	00:55	0.47	11511	11543	32	17	68.6	85	15	600	2650		91.86	178.41	0.98	
3	11-Feb	Drilling	01:00	01:20	0.33	11543	11574	31	17	93.0	85	15	600	2650		91.98	178.41	0.98	
3	11-Feb	Drilling	01:30	01:55	0.42	11574	11606	32	17	76.8	85	15	600	2650		91.57	177.39	2.96	



# Slide Report for BHA # 3

Note: Surveys listed are interpolated from the actual surveys

#	Date	Drill Mode	Start Time	End Time	Hours	Start MD	End MD	Depth Drilled	WOB	ROP	RPM	Surf. Torque	Flow Rate	SPP	TFO	INC	AZM	DLS	Note
3	11-Feb	Sliding	02:00	03:50	1.83	11606	11616	10	17	5.5	85	15	600	2650	135	91.30	177.29	2.96	
3	11-Feb	Drilling	03:50	04:05	0.25	11616	11637	21	17	84.0	85	15	600	2650		90.72	177.06	2.96	
3	11-Feb	Drilling	04:20	04:36	0.27	11637	11669	32	17	120.0	85	15	600	2650		89.84	176.73	2.96	
3	11-Feb	Drilling	04:43	05:13	0.50	11669	11732	63	17	126.0	85	15	600	2650		88.81	176.01	1.30	
3	11-Feb	Drilling	05:18	05:45	0.45	11732	11826	94	17	208.9	85	15	600	2650		88.66	176.38	0.95	
3	11-Feb	Drilling	05:55	06:00	0.08	11826	11836	10	17	120.0	85	15	600	2650		88.76	176.38	0.95	
3	11-Feb	Sliding	06:00	07:11	1.18	11836	11846	10	17	8.5	85	15	600	2650	135	88.85	176.38	0.95	
3	11-Feb	Drilling	07:11	07:15	0.07	11846	11859	13	17	195.0	85	15	600	2650		88.97	176.38	0.95	
3	11-Feb	Drilling	07:20	07:28	0.13	11859	11889	30	17	225.0	85	15	600	2650		89.38	176.36	1.82	
3	11-Feb	Drilling	07:33	07:40	0.12	11889	11921	32	17	274.3	85	15	600	2650		89.95	176.70	1.82	
3	11-Feb	Drilling	07:45	07:48	0.05	11921	11931	10	17	200.0	85	15	600	2650		90.13	176.81	1.82	
3	11-Feb	Sliding	07:48	09:04	1.27	11931	11940	9	17	7.1	85	15	600	2650	135	90.29	176.90	1.82	
3	11-Feb	Drilling	09:04	09:08	0.07	11940	11952	12	17	180.0	85	15	600	2650		90.50	177.03	1.82	
3	11-Feb	Drilling	09:13	09:16	0.05	11952	11984	32	17	640.0	85	15	600	2650		90.84	176.40	0.67	
3	11-Feb	Drilling	09:21	09:28	0.12	11984	12015	31	17	265.7	85	15	600	2650		90.96	176.07	0.67	
3	11-Feb	Drilling	09:33	09:42	0.15	12015	12047	32	17	213.3	85	15	600	2650		91.08	175.74	0.67	
3	11-Feb	Drilling	09:47	09:52	0.08	12047	12079	32	17	384.0	85	15	600	2650		91.31	176.06	1.05	
3	11-Feb	Drilling	09:57	10:05	0.13	12079	12110	31	17	232.5	85	15	600	2650		91.63	176.06	1.05	
3	11-Feb	Drilling	10:08	10:18	0.17	12110	12142	32	17	192.0	85	15	600	2650		91.96	176.06	1.05	
3	11-Feb	Drilling	10:23	10:29	0.10	12142	12173	31	17	310.0	85	15	600	2650		92.14	176.14	0.93	
3	11-Feb	Drilling	10:33	10:40	0.12	12173	12205	32	17	274.3	85	15	600	2650		92.21	175.80	0.93	
3	11-Feb	Sliding	10:45	11:37	0.87	12205	12209	4	17	4.6	85	15	600	2650	135	92.22	175.76	0.93	
3	11-Feb	Drilling	11:37	11:45	0.13	12209	12236	27	17	202.5	85	15	600	2650		92.28	175.47	0.93	
3	11-Feb	Drilling	11:50	11:59	0.15	12236	12268	32	17	213.3	85	15	600	2650		92.39	175.26	1.26	
3	11-Feb	Drilling	12:05	12:15	0.17	12268	12299	31	17	186.0	85	15	600	2650		92.52	174.90	1.26	
3	11-Feb	Drilling	12:20	12:33	0.22	12299	12331	32	17	147.7	85	15	600	2650		92.67	174.52	1.26	
3	11-Feb	Drilling	12:38	12:48	0.17	12331	12362	31	17	186.0	85	15	600	2650		92.69	174.46	0.00	
3	11-Feb	Drilling	12:54	13:03	0.15	12362	12384	22	17	146.7	85	15	600	2650		92.69	174.46	0.00	

**Total Drilled:** 3004 **Avg. Total ROP:** 86.16

**DEPTH% - TIME %**

**Total Rotary Drilled:** 2848 **Avg. Rotary ROP:** 162.28

**Percent Rotary:** 94.81 - 50.33

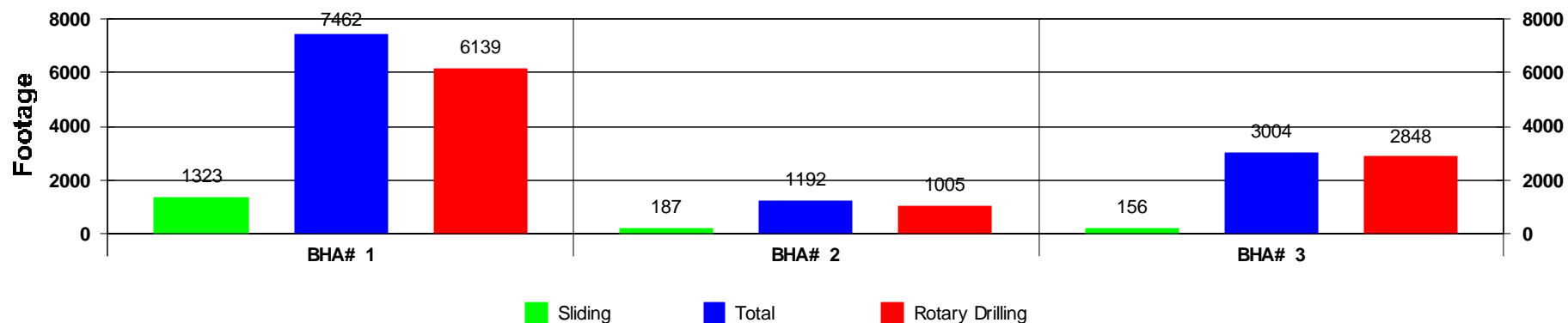
**Total Drilled Sliding:** 156 **Avg. Slide ROP:** 9.01

**Percent Slide:** 5.19 - 49.67

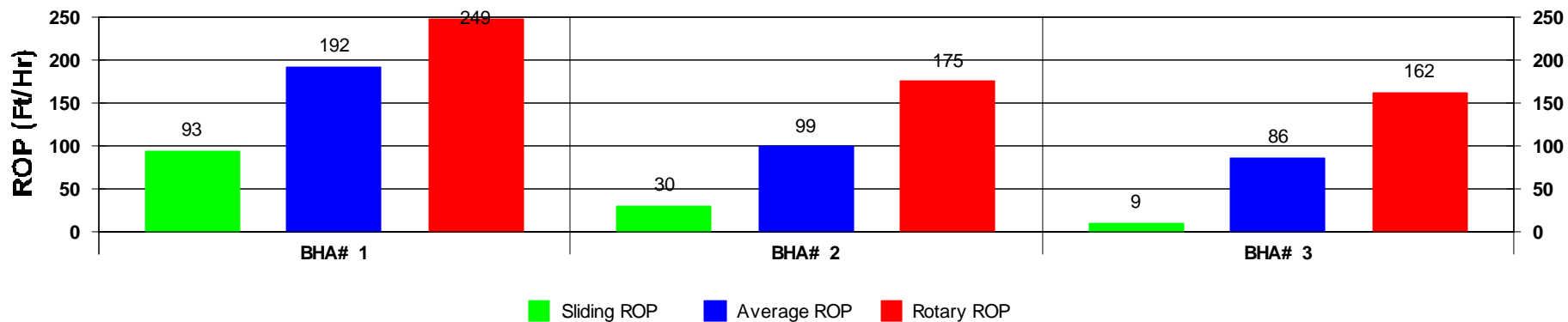


JOB NO.:	41HMP1302056	FIELD:	Wattenberg
COMPANY:	Kerr McGee Oil and Gas Onshore LP	Township:	3N
LOCATION:	Dechant 36-36HZ	SECT\ RANGE:	36 65W
RIG NAME:	H&P 311	COMMENT	
STATE:	CO		
COUNTY:	Weld		
WELL NAME:	Dechant 37N-W1HZ		

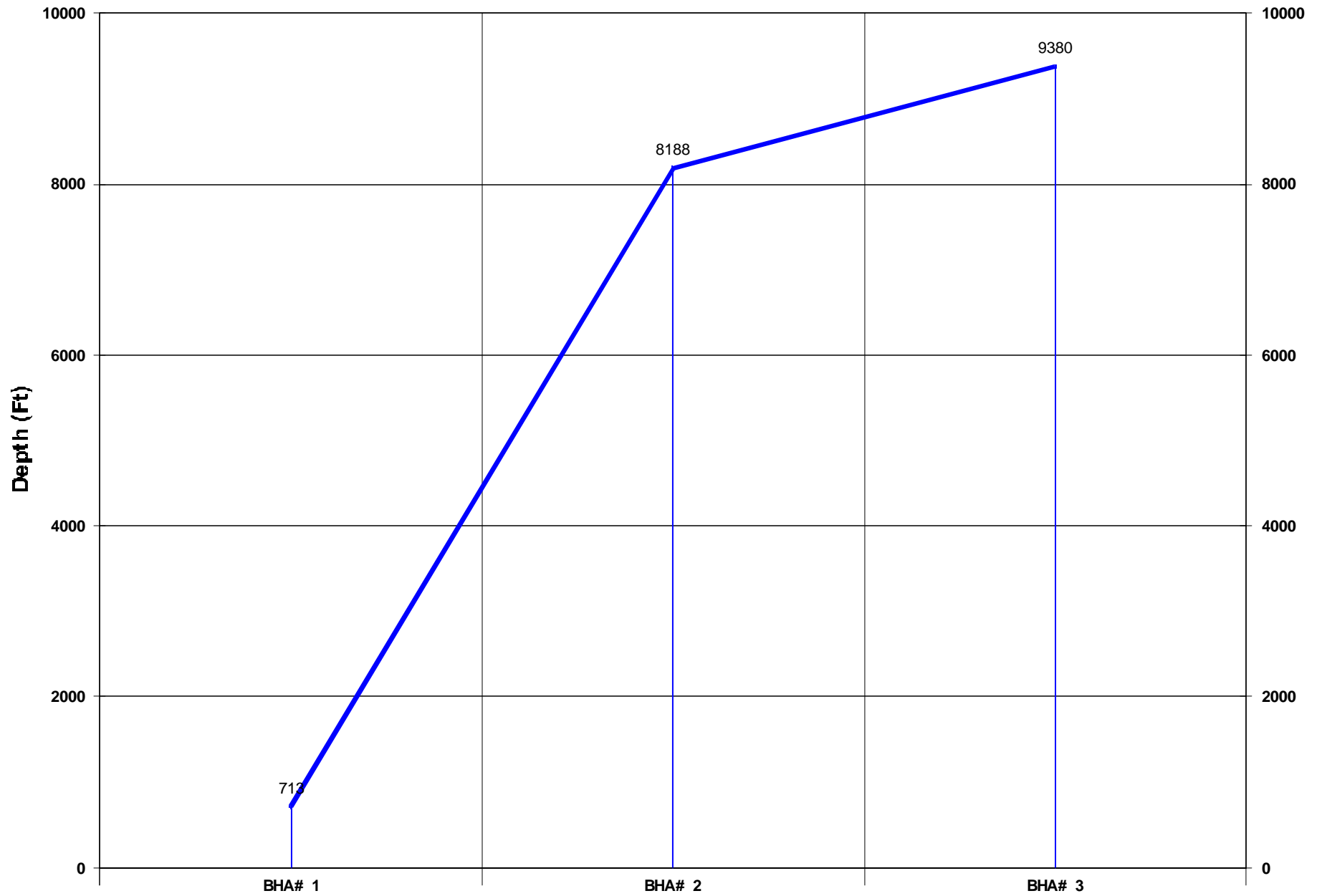
### Footage Drilled with BHA



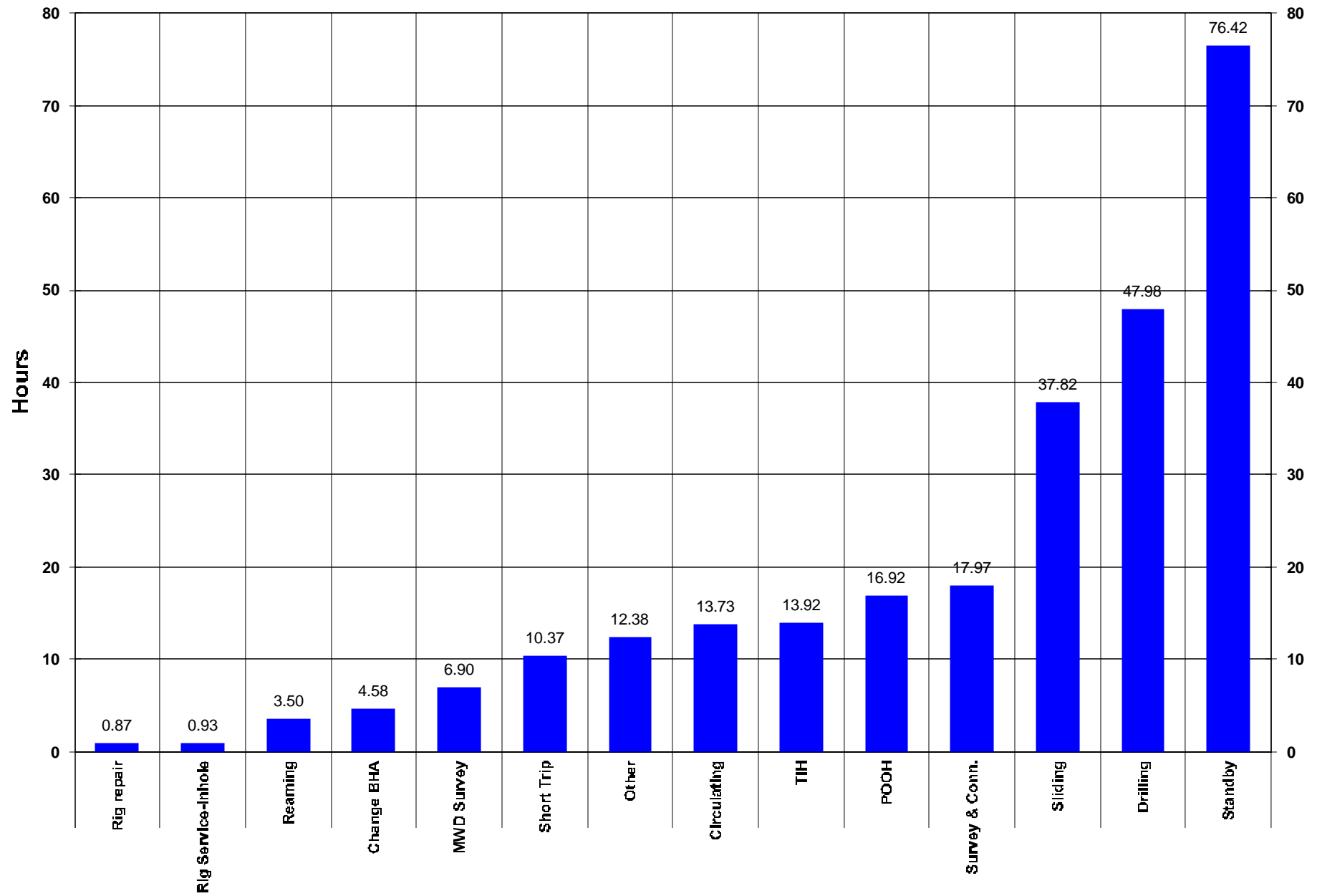
### ROP vs BHA



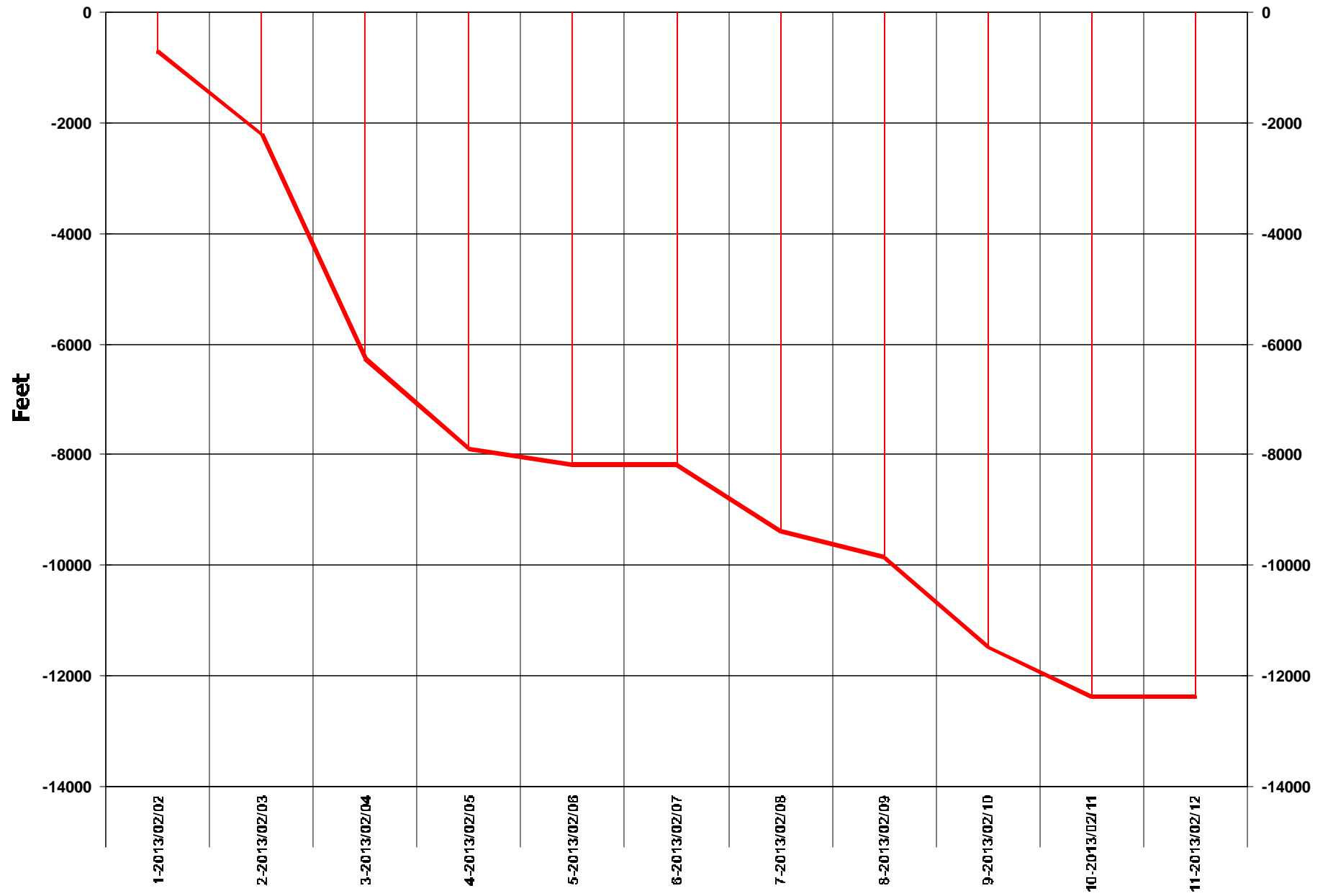
## Depth vs BHA



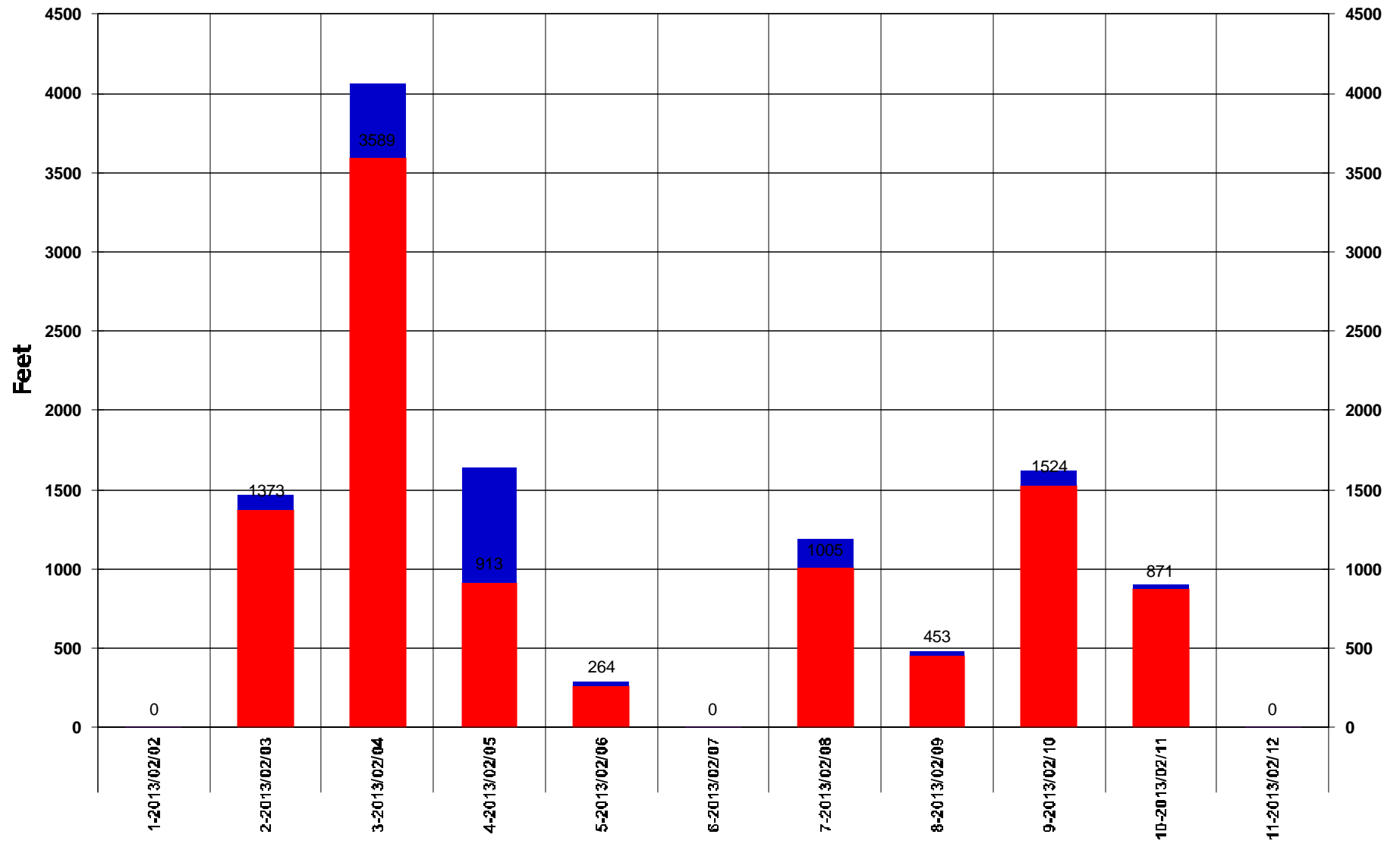
## Activity Histogram



Measured Depth vs Days

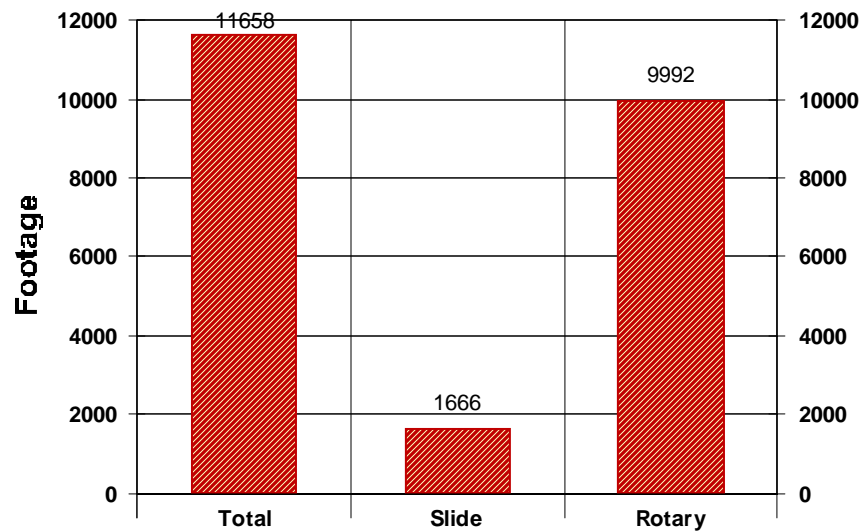


## Daily Footage

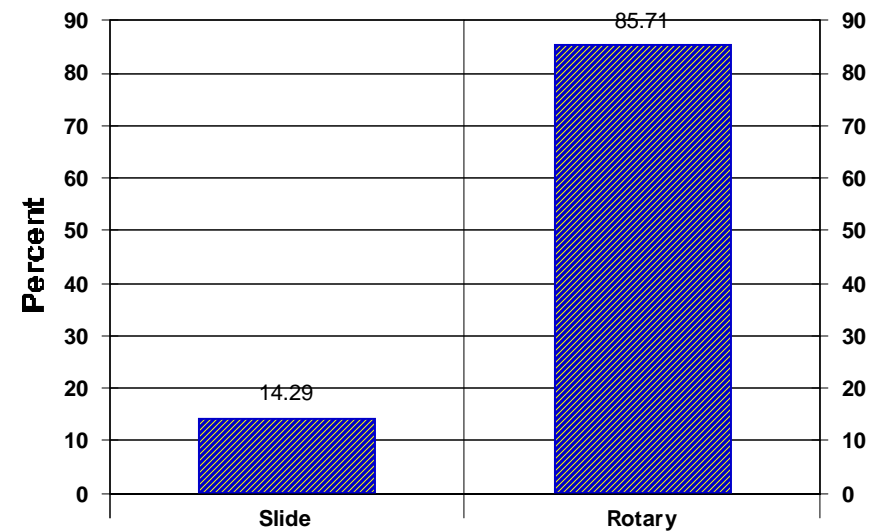


Rotary Drilling Sliding

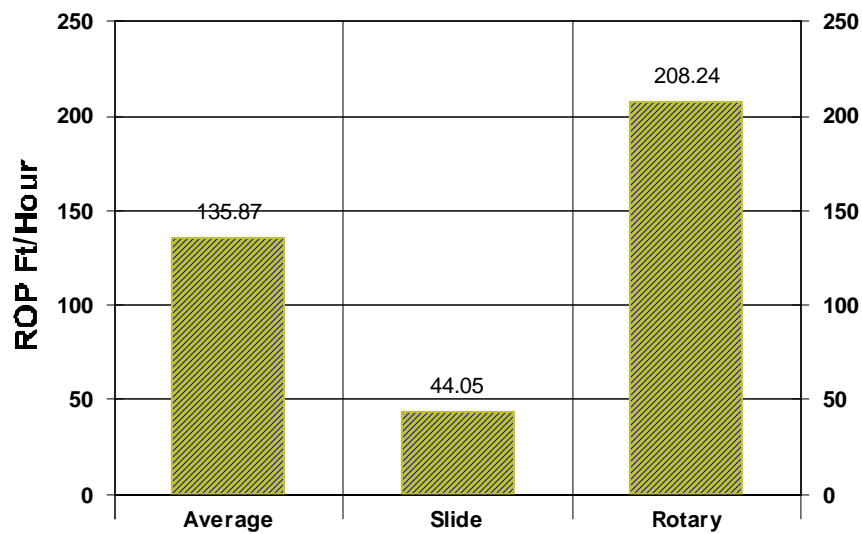
Footage Drilled Totals



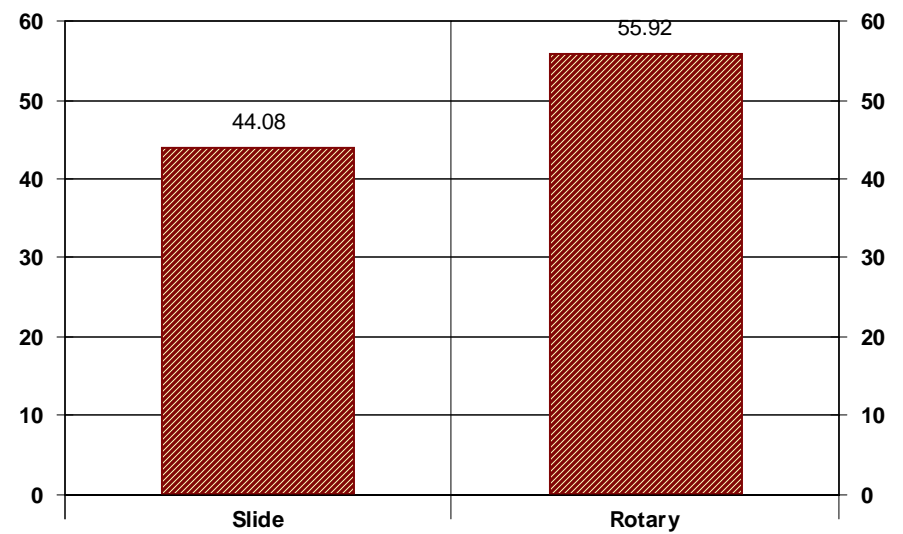
Footage Percent



Rate of Penetration Totals



Time Percent







**Scientific Drilling**  
Rocky Mountain Operations

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