

KERR-MCGEE OIL & GAS ONSHORE LP

Location: COLORADO Slot: SLOT#05 THOMSEN 3N-18HZ (472'FNL & 905'FEL, SEC.07)
 Field: WELD COUNTY (KERR MCGEE) Well: THOMSEN 3N-18HZ
 Facility: SEC.07-T2N-R65W Wellbore: THOMSEN 3N-18HZ PWB

Plot reference wellpath is THOMSEN 3N-18HZ (PERMIT REV-1) PWP

True vertical depths are referenced to PERMIT (17KB) (RKB)	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
Measured depths are referenced to PERMIT (17KB) (RKB)	North Reference: True north
PERMIT (17KB) (RKB) to Mean Sea Level: 4929 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#05 THOMSEN 3N-18HZ (472'FNL & 905'FEL, SEC.07)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: robale01 on 06/Aug/2014

Location Information

Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude		
SEC.07-T2N-R65W	3219721.272	1297490.241	40°08'50.395"N	104°42'50.411"W		
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SLOT#05 THOMSEN 3N-18HZ (472'FNL & 905'FEL, SEC.07)	4303.75	3816.74	3223499.546	1301824.461	40°09'32.922"N	104°42'01.253"W
PERMIT (17KB) (RKB) to Mud line (At Slot: SLOT#05 THOMSEN 3N-18HZ (472'FNL & 905'FEL, SEC.07))	4929ft					
Mean Sea Level to Mud line (At Slot: SLOT#05 THOMSEN 3N-18HZ (472'FNL & 905'FEL, SEC.07))	0ft					
PERMIT (17KB) (RKB) to Mean Sea Level	4929ft					

Survey Program

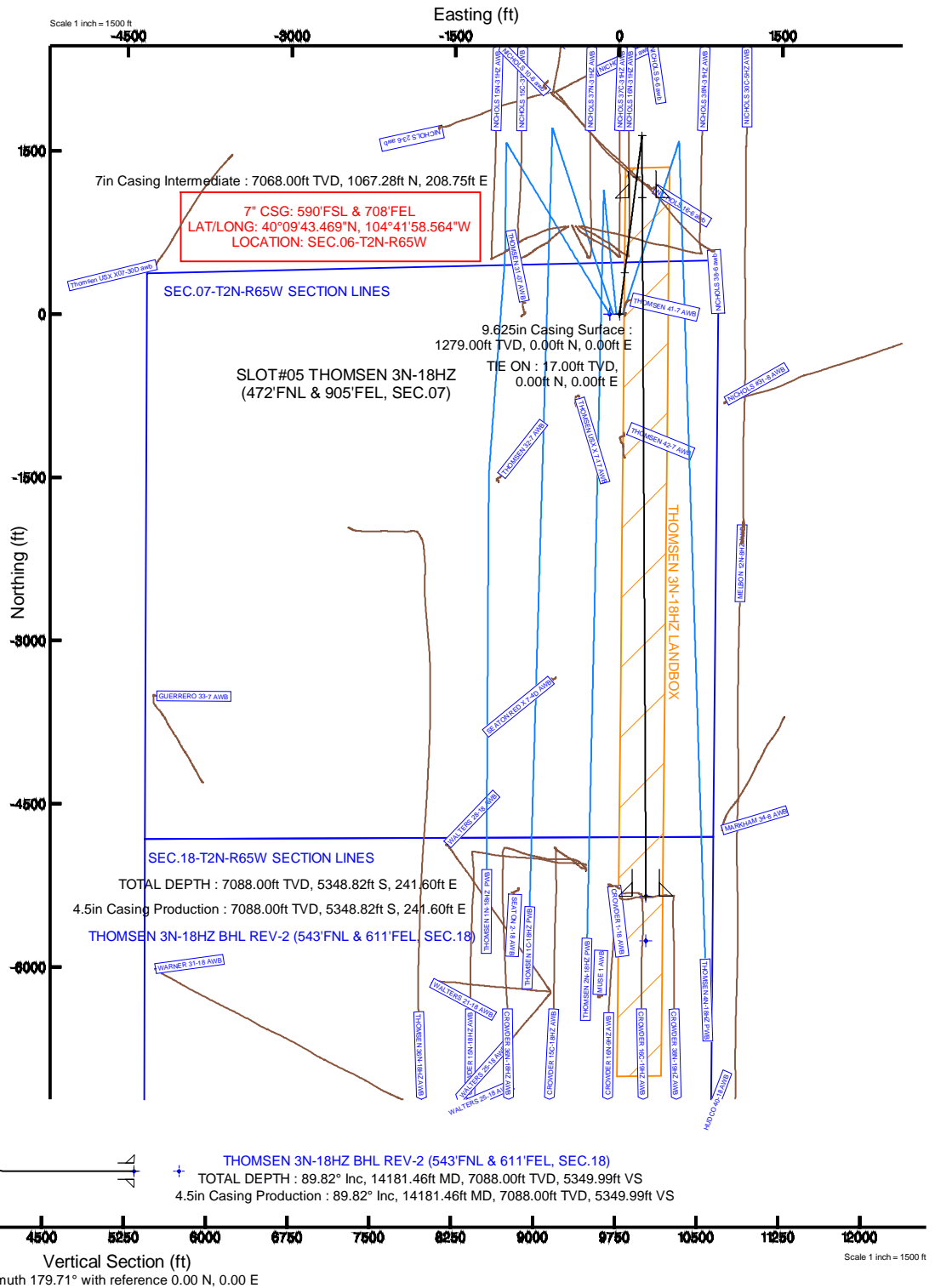
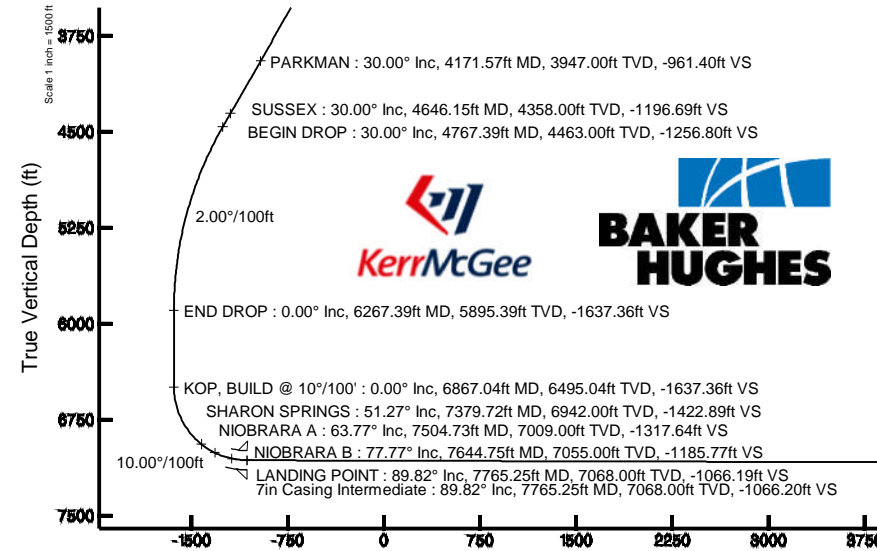
Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
17.00	14181.46	NaviTrak	NaviTrak (MAGCORR.IFR)		THOMSEN 3N-18HZ PWB

Targets

Name	MD (ft)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SEC.07-T2N-R65W SECTION LINES	0.00	-2.23	-89.99	3223409.59	1301824.42	40°09'32.900"N	104°42'02.412"W	
SEC.18-T2N-R65W SECTION LINES	0.00	-2.23	-89.99	3223409.59	1301824.42	40°09'32.900"N	104°42'02.412"W	
THOMSEN 3N-18HZ BHL ON PLAT REV-1 (935'FNL & 611'FEL, SEC.18)	7088.00	-5758.62	241.60	3223793.06	1296071.31	40°08'36.013"N	104°41'58.142"W	
THOMSEN 3N-18HZ BHL REV-2 (543'FNL & 611'FEL, SEC.18)	14181.46	7088.00	-5348.82	241.60	3223789.36	40°08'40.065"N	104°41'58.142"W	
THOMSEN 3N-18HZ LANDBOX	7088.00	0.00	0.00	3223499.55	1301827.46	40°09'32.922"N	104°42'01.253"W	

Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
TIE ON	17.00	0.000	7.160	17.00	0.00	0.00	0.00	0.00
BEGIN NUDGE	1500.00	0.000	7.160	1500.00	0.00	0.00	0.00	0.00
END NUDGE	3000.00	30.000	7.160	2932.39	380.82	47.84	2.00	-380.57
BEGIN DROP	4767.39	30.000	7.160	4463.00	1257.62	157.98	0.00	-1256.80
END DROP	6267.39	0.000	179.707	5895.39	1638.44	205.82	2.00	-1637.36
KOP, BUILD @ 10°/100'	6867.04	0.000	179.707	6495.04	1638.44	205.82	0.00	-1637.36
LANDING POINT	7765.25	89.821	179.707	7068.00	1067.27	208.75	10.00	-1066.19
TOTAL DEPTH	14181.46	89.821	179.707	7088.00	-5348.82	241.60	0.00	5349.99



Vertical Section (ft)
 Azimuth 179.71° with reference 0.00 N, 0.00 E

Scale 1 inch = 1500 ft

REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#05 THOMSEN 3N-18HZ (472'FNL & 905'FEL, SEC.07)
Area	COLORADO	Well	THOMSEN 3N-18HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	THOMSEN 3N-18HZ PWB
Facility	SEC.07-T2N-R65W		

REPORT SETUP INFORMATION

Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 4.0.0
North Reference	True	User	Robiale01
Scale	0.999958	Report Generated	06/Aug/2014 at 07:29
Convergence at slot	n/a	Database/Source file	WellArchitectDB/THOMSEN_3N-18HZ_PWB.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	4303.75	3816.74	3223499.55	1301827.46	40°09'32.922"N	104°42'01.253"W
Facility Reference Pt			3219721.27	1297490.24	40°08'50.395"N	104°42'50.411"W
Field Reference Pt			3197771.84	1268891.29	40°04'09.600"N	104°47'36.000"W

WELLPATH DATUM

Calculation method	Minimum curvature	PERMIT (17'KB) (RKB) to Facility Vertical Datum	4929.00ft
Horizontal Reference Pt	Slot	PERMIT (17'KB) (RKB) to Mean Sea Level	4929.00ft
Vertical Reference Pt	PERMIT (17'KB) (RKB)	PERMIT (17'KB) (RKB) to Mud Line at Slot (SLOT#05 THOMSEN 3N-18HZ (472'FNL & 905'FEL, SEC.07))	4929.00ft
MD Reference Pt	PERMIT (17'KB) (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	179.71°

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#05 THOMSEN 3N-18HZ (472'FNL & 905'FEL, SEC.07)
Area	COLORADO	Well	THOMSEN 3N-18HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	THOMSEN 3N-18HZ PWB
Facility	SEC.07-T2N-R65W		

WELLPATH DATA (157 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00†	0.000	7.160	0.00	0.00	0.00	0.00	40°09'32.922"N	104°42'01.253"W	0.00	
17.00	0.000	7.160	17.00	0.00	0.00	0.00	40°09'32.922"N	104°42'01.253"W	0.00	TIE ON
117.00†	0.000	7.160	117.00	0.00	0.00	0.00	40°09'32.922"N	104°42'01.253"W	0.00	
217.00†	0.000	7.160	217.00	0.00	0.00	0.00	40°09'32.922"N	104°42'01.253"W	0.00	
317.00†	0.000	7.160	317.00	0.00	0.00	0.00	40°09'32.922"N	104°42'01.253"W	0.00	
417.00†	0.000	7.160	417.00	0.00	0.00	0.00	40°09'32.922"N	104°42'01.253"W	0.00	
517.00†	0.000	7.160	517.00	0.00	0.00	0.00	40°09'32.922"N	104°42'01.253"W	0.00	
617.00†	0.000	7.160	617.00	0.00	0.00	0.00	40°09'32.922"N	104°42'01.253"W	0.00	
717.00†	0.000	7.160	717.00	0.00	0.00	0.00	40°09'32.922"N	104°42'01.253"W	0.00	
793.00†	0.000	7.160	793.00	0.00	0.00	0.00	40°09'32.922"N	104°42'01.253"W	0.00	BASE FOX HILLS
817.00†	0.000	7.160	817.00	0.00	0.00	0.00	40°09'32.922"N	104°42'01.253"W	0.00	
917.00†	0.000	7.160	917.00	0.00	0.00	0.00	40°09'32.922"N	104°42'01.253"W	0.00	
1017.00†	0.000	7.160	1017.00	0.00	0.00	0.00	40°09'32.922"N	104°42'01.253"W	0.00	
1117.00†	0.000	7.160	1117.00	0.00	0.00	0.00	40°09'32.922"N	104°42'01.253"W	0.00	
1217.00†	0.000	7.160	1217.00	0.00	0.00	0.00	40°09'32.922"N	104°42'01.253"W	0.00	
1279.00†	0.000	7.160	1279.00	0.00	0.00	0.00	40°09'32.922"N	104°42'01.253"W	0.00	SURFACE CASING SETTING DEPTH
1317.00†	0.000	7.160	1317.00	0.00	0.00	0.00	40°09'32.922"N	104°42'01.253"W	0.00	
1417.00†	0.000	7.160	1417.00	0.00	0.00	0.00	40°09'32.922"N	104°42'01.253"W	0.00	
1500.00	0.000	7.160	1500.00	0.00	0.00	0.00	40°09'32.922"N	104°42'01.253"W	0.00	BEGIN NUDGE
1517.00†	0.340	7.160	1517.00	-0.05	0.05	0.01	40°09'32.922"N	104°42'01.253"W	2.00	
1617.00†	2.340	7.160	1616.97	-2.37	2.37	0.30	40°09'32.945"N	104°42'01.249"W	2.00	
1717.00†	4.340	7.160	1716.79	-8.15	8.15	1.02	40°09'33.003"N	104°42'01.240"W	2.00	
1817.00†	6.340	7.160	1816.35	-17.37	17.38	2.18	40°09'33.094"N	104°42'01.225"W	2.00	
1917.00†	8.340	7.160	1915.53	-30.04	30.06	3.78	40°09'33.219"N	104°42'01.204"W	2.00	
2017.00†	10.340	7.160	2014.20	-46.13	46.16	5.80	40°09'33.378"N	104°42'01.178"W	2.00	
2117.00†	12.340	7.160	2112.24	-65.63	65.67	8.25	40°09'33.571"N	104°42'01.147"W	2.00	
2217.00†	14.340	7.160	2209.54	-88.50	88.56	11.13	40°09'33.797"N	104°42'01.110"W	2.00	
2317.00†	16.340	7.160	2305.97	-114.73	114.81	14.42	40°09'34.057"N	104°42'01.067"W	2.00	
2417.00†	18.340	7.160	2401.42	-144.28	144.38	18.14	40°09'34.349"N	104°42'01.019"W	2.00	
2517.00†	20.340	7.160	2495.77	-177.12	177.24	22.26	40°09'34.673"N	104°42'00.966"W	2.00	
2617.00†	22.340	7.160	2588.91	-213.20	213.34	26.80	40°09'35.030"N	104°42'00.908"W	2.00	
2717.00†	24.340	7.160	2680.72	-252.48	252.65	31.74	40°09'35.419"N	104°42'00.844"W	2.00	
2817.00†	26.340	7.160	2771.10	-294.92	295.11	37.07	40°09'35.838"N	104°42'00.776"W	2.00	
2917.00†	28.340	7.160	2859.92	-340.46	340.68	42.80	40°09'36.289"N	104°42'00.702"W	2.00	
3000.00	30.000	7.160	2932.39	-380.57	380.82	47.84	40°09'36.685"N	104°42'00.637"W	2.00	END NUDGE
3017.00†	30.000	7.160	2947.12	-388.99	389.25	48.90	40°09'36.769"N	104°42'00.623"W	0.00	
3117.00†	30.000	7.160	3033.72	-438.57	438.86	55.13	40°09'37.259"N	104°42'00.543"W	0.00	
3217.00†	30.000	7.160	3120.32	-488.15	488.47	61.36	40°09'37.749"N	104°42'00.463"W	0.00	
3317.00†	30.000	7.160	3206.92	-537.73	538.08	67.59	40°09'38.239"N	104°42'00.382"W	0.00	
3417.00†	30.000	7.160	3293.53	-587.30	587.69	73.83	40°09'38.730"N	104°42'00.302"W	0.00	
3517.00†	30.000	7.160	3380.13	-636.88	637.30	80.06	40°09'39.220"N	104°42'00.222"W	0.00	
3617.00†	30.000	7.160	3466.73	-686.46	686.91	86.29	40°09'39.710"N	104°42'00.142"W	0.00	
3717.00†	30.000	7.160	3553.33	-736.04	736.52	92.52	40°09'40.200"N	104°42'00.061"W	0.00	
3817.00†	30.000	7.160	3639.94	-785.62	786.13	98.75	40°09'40.691"N	104°41'59.981"W	0.00	
3917.00†	30.000	7.160	3726.54	-835.19	835.74	104.99	40°09'41.181"N	104°41'59.901"W	0.00	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#05 THOMSEN 3N-18HZ (472'FNL & 905'FEL, SEC.07)
Area	COLORADO	Well	THOMSEN 3N-18HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	THOMSEN 3N-18HZ PWB
Facility	SEC.07-T2N-R65W		

WELLPATH DATA (157 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4017.00†	30.000	7.160	3813.14	-884.77	885.35	111.22	40°09'41.671"N	104°41'59.821"W	0.00	
4117.00†	30.000	7.160	3899.74	-934.35	934.96	117.45	40°09'42.161"N	104°41'59.740"W	0.00	
4171.57†	30.000	7.160	3947.00	-961.40	962.03	120.85	40°09'42.429"N	104°41'59.696"W	0.00	PARKMAN
4217.00†	30.000	7.160	3986.35	-983.93	984.57	123.68	40°09'42.652"N	104°41'59.660"W	0.00	
4317.00†	30.000	7.160	4072.95	-1033.50	1034.18	129.91	40°09'43.142"N	104°41'59.580"W	0.00	
4417.00†	30.000	7.160	4159.55	-1083.08	1083.79	136.15	40°09'43.632"N	104°41'59.499"W	0.00	
4517.00†	30.000	7.160	4246.16	-1132.66	1133.40	142.38	40°09'44.122"N	104°41'59.419"W	0.00	
4617.00†	30.000	7.160	4332.76	-1182.24	1183.01	148.61	40°09'44.613"N	104°41'59.339"W	0.00	
4646.15†	30.000	7.160	4358.00	-1196.69	1197.47	150.43	40°09'44.755"N	104°41'59.315"W	0.00	SUSSEX
4717.00†	30.000	7.160	4419.36	-1231.81	1232.62	154.84	40°09'45.103"N	104°41'59.259"W	0.00	
4767.39	30.000	7.160	4463.00	-1256.80	1257.62	157.98	40°09'45.350"N	104°41'59.218"W	0.00	BEGIN DROP
4817.00†	29.008	7.160	4506.18	-1281.02	1281.86	161.03	40°09'45.589"N	104°41'59.179"W	2.00	
4917.00†	27.008	7.160	4594.46	-1327.58	1328.45	166.88	40°09'46.050"N	104°41'59.104"W	2.00	
5017.00†	25.008	7.160	4684.33	-1371.06	1371.96	172.35	40°09'46.480"N	104°41'59.033"W	2.00	
5117.00†	23.008	7.160	4775.67	-1411.40	1412.32	177.42	40°09'46.879"N	104°41'58.968"W	2.00	
5217.00†	21.008	7.160	4868.38	-1448.55	1449.50	182.09	40°09'47.246"N	104°41'58.908"W	2.00	
5317.00†	19.008	7.160	4962.34	-1482.48	1483.45	186.35	40°09'47.582"N	104°41'58.853"W	2.00	
5417.00†	17.008	7.160	5057.44	-1513.13	1514.12	190.20	40°09'47.885"N	104°41'58.803"W	2.00	
5517.00†	15.008	7.160	5153.55	-1540.47	1541.48	193.64	40°09'48.155"N	104°41'58.759"W	2.00	
5617.00†	13.008	7.160	5250.58	-1564.47	1565.50	196.66	40°09'48.392"N	104°41'58.720"W	2.00	
5717.00†	11.008	7.160	5348.38	-1585.10	1586.14	199.25	40°09'48.596"N	104°41'58.687"W	2.00	
5817.00†	9.008	7.160	5446.86	-1602.33	1603.38	201.42	40°09'48.767"N	104°41'58.659"W	2.00	
5917.00†	7.008	7.160	5545.88	-1616.14	1617.20	203.15	40°09'48.903"N	104°41'58.636"W	2.00	
6017.00†	5.008	7.160	5645.32	-1626.52	1627.59	204.46	40°09'49.006"N	104°41'58.619"W	2.00	
6117.00†	3.008	7.160	5745.07	-1633.45	1634.52	205.33	40°09'49.074"N	104°41'58.608"W	2.00	
6217.00†	1.008	7.160	5845.01	-1636.92	1638.00	205.77	40°09'49.109"N	104°41'58.603"W	2.00	
6267.39	0.000	179.707	5895.39	-1637.36	1638.44	205.82	40°09'49.113"N	104°41'58.602"W	2.00	END DROP
6317.00†	0.000	179.707	5945.00	-1637.36	1638.44	205.82	40°09'49.113"N	104°41'58.602"W	0.00	
6417.00†	0.000	179.707	6045.00	-1637.36	1638.44	205.82	40°09'49.113"N	104°41'58.602"W	0.00	
6517.00†	0.000	179.707	6145.00	-1637.36	1638.44	205.82	40°09'49.113"N	104°41'58.602"W	0.00	
6617.00†	0.000	179.707	6245.00	-1637.36	1638.44	205.82	40°09'49.113"N	104°41'58.602"W	0.00	
6717.00†	0.000	179.707	6345.00	-1637.36	1638.44	205.82	40°09'49.113"N	104°41'58.602"W	0.00	
6817.00†	0.000	179.707	6445.00	-1637.36	1638.44	205.82	40°09'49.113"N	104°41'58.602"W	0.00	
6867.04	0.000	179.707	6495.04	-1637.36	1638.44	205.82	40°09'49.113"N	104°41'58.602"W	0.00	KOP, BUILD @ 10°/100'
6917.00†	4.996	179.707	6544.94	-1635.19	1636.26	205.83	40°09'49.092"N	104°41'58.602"W	10.00	
7017.00†	14.996	179.707	6643.30	-1617.85	1618.92	205.92	40°09'48.920"N	104°41'58.601"W	10.00	
7117.00†	24.996	179.707	6737.15	-1583.70	1584.77	206.10	40°09'48.583"N	104°41'58.598"W	10.00	
7217.00†	34.996	179.707	6823.65	-1533.77	1534.84	206.35	40°09'48.089"N	104°41'58.595"W	10.00	
7317.00†	44.996	179.707	6900.16	-1469.58	1470.65	206.68	40°09'47.455"N	104°41'58.591"W	10.00	
7379.72†	51.268	179.707	6942.00	-1422.89	1423.97	206.92	40°09'46.994"N	104°41'58.588"W	10.00	SHARON SPRINGS
7417.00†	54.996	179.707	6964.36	-1393.07	1394.15	207.07	40°09'46.699"N	104°41'58.586"W	10.00	
7504.73†	63.769	179.707	7009.00	-1317.64	1318.72	207.46	40°09'45.954"N	104°41'58.581"W	10.00	NIOBRARA A
7517.00†	64.996	179.707	7014.30	-1306.58	1307.66	207.51	40°09'45.844"N	104°41'58.580"W	10.00	
7617.00†	74.996	179.707	7048.47	-1212.74	1213.82	208.00	40°09'44.917"N	104°41'58.574"W	10.00	
7644.75†	77.770	179.707	7055.00	-1185.77	1186.85	208.13	40°09'44.651"N	104°41'58.572"W	10.00	NIOBRARA B

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#05 THOMSEN 3N-18HZ (472'FNL & 905'FEL, SEC.07)
Area	COLORADO	Well	THOMSEN 3N-18HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	THOMSEN 3N-18HZ PWB
Facility	SEC.07-T2N-R65W		

WELLPATH DATA (157 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7717.00†	84.996	179.707	7065.82	-1114.38	1115.46	208.50	40°09'43.945"N	104°41'58.568"W	10.00	
7765.25	89.821	179.707	7068.00	-1066.19	1067.27	208.75	40°09'43.469"N	104°41'58.564"W	10.00	LANDING POINT
7817.00†	89.821	179.707	7068.16	-1014.45	1015.53	209.01	40°09'42.957"N	104°41'58.561"W	0.00	
7917.00†	89.821	179.707	7068.47	-914.45	915.53	209.52	40°09'41.969"N	104°41'58.554"W	0.00	
8017.00†	89.821	179.707	7068.78	-814.45	815.53	210.03	40°09'40.981"N	104°41'58.548"W	0.00	
8117.00†	89.821	179.707	7069.10	-714.45	715.53	210.55	40°09'39.993"N	104°41'58.541"W	0.00	
8217.00†	89.821	179.707	7069.41	-614.45	615.54	211.06	40°09'39.005"N	104°41'58.535"W	0.00	
8317.00†	89.821	179.707	7069.72	-514.45	515.54	211.57	40°09'38.017"N	104°41'58.528"W	0.00	
8417.00†	89.821	179.707	7070.03	-414.45	415.54	212.08	40°09'37.028"N	104°41'58.521"W	0.00	
8517.00†	89.821	179.707	7070.34	-314.45	315.54	212.59	40°09'36.040"N	104°41'58.515"W	0.00	
8617.00†	89.821	179.707	7070.65	-214.45	215.54	213.11	40°09'35.052"N	104°41'58.508"W	0.00	
8717.00†	89.821	179.707	7070.97	-114.45	115.54	213.62	40°09'34.064"N	104°41'58.502"W	0.00	
8817.00†	89.821	179.707	7071.28	-14.45	15.55	214.13	40°09'33.076"N	104°41'58.495"W	0.00	
8917.00†	89.821	179.707	7071.59	85.55	-84.45	214.64	40°09'32.087"N	104°41'58.488"W	0.00	
9017.00†	89.821	179.707	7071.90	185.55	-184.45	215.16	40°09'31.099"N	104°41'58.482"W	0.00	
9117.00†	89.821	179.707	7072.21	285.55	-284.45	215.67	40°09'30.111"N	104°41'58.475"W	0.00	
9217.00†	89.821	179.707	7072.52	385.55	-384.45	216.18	40°09'29.123"N	104°41'58.469"W	0.00	
9317.00†	89.821	179.707	7072.84	485.55	-484.45	216.69	40°09'28.135"N	104°41'58.462"W	0.00	
9417.00†	89.821	179.707	7073.15	585.55	-584.44	217.20	40°09'27.146"N	104°41'58.456"W	0.00	
9517.00†	89.821	179.707	7073.46	685.55	-684.44	217.72	40°09'26.158"N	104°41'58.449"W	0.00	
9617.00†	89.821	179.707	7073.77	785.55	-784.44	218.23	40°09'25.170"N	104°41'58.442"W	0.00	
9717.00†	89.821	179.707	7074.08	885.54	-884.44	218.74	40°09'24.182"N	104°41'58.436"W	0.00	
9817.00†	89.821	179.707	7074.40	985.54	-984.44	219.25	40°09'23.194"N	104°41'58.429"W	0.00	
9917.00†	89.821	179.707	7074.71	1085.54	-1084.43	219.76	40°09'22.206"N	104°41'58.423"W	0.00	
10017.00†	89.821	179.707	7075.02	1185.54	-1184.43	220.28	40°09'21.217"N	104°41'58.416"W	0.00	
10117.00†	89.821	179.707	7075.33	1285.54	-1284.43	220.79	40°09'20.229"N	104°41'58.409"W	0.00	
10217.00†	89.821	179.707	7075.64	1385.54	-1384.43	221.30	40°09'19.241"N	104°41'58.403"W	0.00	
10317.00†	89.821	179.707	7075.95	1485.54	-1484.43	221.81	40°09'18.253"N	104°41'58.396"W	0.00	
10417.00†	89.821	179.707	7076.27	1585.54	-1584.43	222.32	40°09'17.265"N	104°41'58.390"W	0.00	
10517.00†	89.821	179.707	7076.58	1685.54	-1684.42	222.84	40°09'16.276"N	104°41'58.383"W	0.00	
10617.00†	89.821	179.707	7076.89	1785.54	-1784.42	223.35	40°09'15.288"N	104°41'58.377"W	0.00	
10717.00†	89.821	179.707	7077.20	1885.54	-1884.42	223.86	40°09'14.300"N	104°41'58.370"W	0.00	
10817.00†	89.821	179.707	7077.51	1985.54	-1984.42	224.37	40°09'13.312"N	104°41'58.363"W	0.00	
10917.00†	89.821	179.707	7077.82	2085.54	-2084.42	224.88	40°09'12.324"N	104°41'58.357"W	0.00	
11017.00†	89.821	179.707	7078.14	2185.54	-2184.41	225.40	40°09'11.335"N	104°41'58.350"W	0.00	
11117.00†	89.821	179.707	7078.45	2285.54	-2284.41	225.91	40°09'10.347"N	104°41'58.344"W	0.00	
11217.00†	89.821	179.707	7078.76	2385.54	-2384.41	226.42	40°09'09.359"N	104°41'58.337"W	0.00	
11317.00†	89.821	179.707	7079.07	2485.54	-2484.41	226.93	40°09'08.371"N	104°41'58.330"W	0.00	
11417.00†	89.821	179.707	7079.38	2585.54	-2584.41	227.45	40°09'07.383"N	104°41'58.324"W	0.00	
11517.00†	89.821	179.707	7079.69	2685.54	-2684.41	227.96	40°09'06.395"N	104°41'58.317"W	0.00	
11617.00†	89.821	179.707	7080.01	2785.54	-2784.40	228.47	40°09'05.406"N	104°41'58.311"W	0.00	
11717.00†	89.821	179.707	7080.32	2885.54	-2884.40	228.98	40°09'04.418"N	104°41'58.304"W	0.00	
11817.00†	89.821	179.707	7080.63	2985.53	-2984.40	229.49	40°09'03.430"N	104°41'58.298"W	0.00	
11917.00†	89.821	179.707	7080.94	3085.53	-3084.40	230.01	40°09'02.442"N	104°41'58.291"W	0.00	
12017.00†	89.821	179.707	7081.25	3185.53	-3184.40	230.52	40°09'01.454"N	104°41'58.284"W	0.00	

REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#05 THOMSEN 3N-18HZ (472'FNL & 905'FEL, SEC.07)
Area	COLORADO	Well	THOMSEN 3N-18HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	THOMSEN 3N-18HZ PWB
Facility	SEC.07-T2N-R65W		

WELLPATH DATA (157 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
12117.00†	89.821	179.707	7081.56	3285.53	-3284.39	231.03	40°09'00.465"N	104°41'58.278"W	0.00	
12217.00†	89.821	179.707	7081.88	3385.53	-3384.39	231.54	40°08'59.477"N	104°41'58.271"W	0.00	
12317.00†	89.821	179.707	7082.19	3485.53	-3484.39	232.05	40°08'58.489"N	104°41'58.265"W	0.00	
12417.00†	89.821	179.707	7082.50	3585.53	-3584.39	232.57	40°08'57.501"N	104°41'58.258"W	0.00	
12517.00†	89.821	179.707	7082.81	3685.53	-3684.39	233.08	40°08'56.513"N	104°41'58.251"W	0.00	
12617.00†	89.821	179.707	7083.12	3785.53	-3784.39	233.59	40°08'55.524"N	104°41'58.245"W	0.00	
12717.00†	89.821	179.707	7083.44	3885.53	-3884.38	234.10	40°08'54.536"N	104°41'58.238"W	0.00	
12817.00†	89.821	179.707	7083.75	3985.53	-3984.38	234.61	40°08'53.548"N	104°41'58.232"W	0.00	
12917.00†	89.821	179.707	7084.06	4085.53	-4084.38	235.13	40°08'52.560"N	104°41'58.225"W	0.00	
13017.00†	89.821	179.707	7084.37	4185.53	-4184.38	235.64	40°08'51.572"N	104°41'58.219"W	0.00	
13117.00†	89.821	179.707	7084.68	4285.53	-4284.38	236.15	40°08'50.584"N	104°41'58.212"W	0.00	
13217.00†	89.821	179.707	7084.99	4385.53	-4384.37	236.66	40°08'49.595"N	104°41'58.205"W	0.00	
13317.00†	89.821	179.707	7085.31	4485.53	-4484.37	237.17	40°08'48.607"N	104°41'58.199"W	0.00	
13417.00†	89.821	179.707	7085.62	4585.53	-4584.37	237.69	40°08'47.619"N	104°41'58.192"W	0.00	
13517.00†	89.821	179.707	7085.93	4685.53	-4684.37	238.20	40°08'46.631"N	104°41'58.186"W	0.00	
13617.00†	89.821	179.707	7086.24	4785.53	-4784.37	238.71	40°08'45.643"N	104°41'58.179"W	0.00	
13717.00†	89.821	179.707	7086.55	4885.53	-4884.37	239.22	40°08'44.654"N	104°41'58.173"W	0.00	
13817.00†	89.821	179.707	7086.86	4985.52	-4984.36	239.73	40°08'43.666"N	104°41'58.166"W	0.00	
13917.00†	89.821	179.707	7087.18	5085.52	-5084.36	240.25	40°08'42.678"N	104°41'58.159"W	0.00	
14017.00†	89.821	179.707	7087.49	5185.52	-5184.36	240.76	40°08'41.690"N	104°41'58.153"W	0.00	
14117.00†	89.821	179.707	7087.80	5285.52	-5284.36	241.27	40°08'40.702"N	104°41'58.146"W	0.00	
14181.46	89.821	179.707	7088.00 ¹	5349.99	-5348.82	241.60	40°08'40.065"N	104°41'58.142"W	0.00	TOTAL DEPTH

HOLE & CASING SECTIONS - Ref Wellbore: THOMSEN 3N-18HZ PWB Ref Wellpath: THOMSEN 3N-18HZ (PERMIT REV-1) PWP

String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
13.5in Open Hole	17.00	1289.00	1272.00	17.00	1289.00	0.00	0.00	0.00	0.00
9.625in Casing Surface	17.00	1279.00	1262.00	17.00	1279.00	0.00	0.00	0.00	0.00
8.75in Open Hole	1289.00	7765.25	6476.25	1289.00	7068.00	0.00	0.00	1067.28	208.75
7in Casing Intermediate	17.00	7765.25	7748.25	17.00	7068.00	0.00	0.00	1067.28	208.75
6.125in Open Hole	7765.25	14181.46	6416.21	7068.00	7088.00	1067.28	208.75	-5348.82	241.60
4.5in Casing Production	17.00	14181.46	14164.46	17.00	7088.00	0.00	0.00	-5348.82	241.60

REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#05 THOMSEN 3N-18HZ (472'FNL & 905'FEL, SEC.07)
Area	COLORADO	Well	THOMSEN 3N-18HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	THOMSEN 3N-18HZ PWB
Facility	SEC.07-T2N-R65W		

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SEC.07-T2N-R65W SECTION LINES		0.00	-2.23	-89.99	3223409.59	1301824.42	40°09'32.900"N	104°42'02.412"W	polygon
SEC.18-T2N-R65W SECTION LINES		0.00	-2.23	-89.99	3223409.59	1301824.42	40°09'32.900"N	104°42'02.412"W	polygon
THOMSEN 3N-18HZ BHL ON PLAT REV-1 (953'FNL & 611'FEL, SEC.18)		7088.00	-5758.82	241.60	3223793.06	1296071.31	40°08'36.013"N	104°41'58.142"W	point
1) THOMSEN 3N-18HZ BHL REV-2 (543'FNL & 611'FEL, SEC.18)	14181.46	7088.00	-5348.82	241.60	3223789.36	1296481.27	40°08'40.065"N	104°41'58.142"W	point
THOMSEN 3N-18HZ LANDBOX		7088.00	0.00	0.00	3223499.55	1301827.46	40°09'32.922"N	104°42'01.253"W	polygon

SURVEY PROGRAM - Ref Wellbore: THOMSEN 3N-18HZ PWB Ref Wellpath: THOMSEN 3N-18HZ (PERMIT REV-1) PWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
17.00	14181.46	NaviTrak (MAGCORR,IFR)		THOMSEN 3N-18HZ PWB

REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#05 THOMSEN 3N-18HZ (472'FNL & 905'FEL, SEC.07)
Area	COLORADO	Well	THOMSEN 3N-18HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	THOMSEN 3N-18HZ PWB
Facility	SEC.07-T2N-R65W		

WELLPATH COMMENTS

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
793.00	0.000	7.160	793.00	BASE FOX HILLS
1279.00	0.000	7.160	1279.00	SURFACE CASING SETTING DEPTH
4171.57	30.000	7.160	3947.00	PARKMAN
4646.15	30.000	7.160	4358.00	SUSSEX
7379.72	51.268	179.707	6942.00	SHARON SPRINGS
7504.73	63.769	179.707	7009.00	NIOBRARA A
7644.75	77.770	179.707	7055.00	NIOBRARA B

DESIGN COMMENTS

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
17.00	0.000	7.160	17.00	TIE ON
1500.00	0.000	7.160	1500.00	BEGIN NUDGE
3000.00	30.000	7.160	2932.39	END NUDGE
4767.39	30.000	7.160	4463.00	BEGIN DROP
6267.39	0.000	179.707	5895.39	END DROP
6867.04	0.000	179.707	6495.04	KOP, BUILD @ 10°/100'
7765.25	89.821	179.707	7068.00	LANDING POINT
14181.46	89.821	179.707	7088.00	TOTAL DEPTH