

# KERR-MCGEE OIL & GAS ONSHORE LP

Location: COLORADO Slot: SLOT#09 CRUICKSHANK 27N-24HZ (634'FSL & 694'FEL, SEC.24)  
 Field: WELD COUNTY (KERR MCGEE) Well: CRUICKSHANK 27N-24HZ  
 Facility: SEC.24-T3N-R66W Wellbore: CRUICKSHANK 27N-24HZ PWB

Plot reference wellpath is CRUICKSHANK 27N-24HZ (PERMIT REV-2) PWP

True vertical depths are referenced to PERMIT (17RKB) (RKB)	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
Measured depths are referenced to PERMIT (17RKB) (RKB)	North Reference: True north
PERMIT (17RKB) (RKB) to Mean Sea Level: 5031 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#09 CRUICKSHANK 27N-24HZ (634'FSL & 694'FEL, SEC.24)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: robaleo1 on 12/Mar/2014

## Location Information

Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude		
SEC.24-T3N-R66W	3219374.916	1319931.915	40°12'32.508"N	104°43'38.712"W		
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SLOT#09 CRUICKSHANK 27N-24HZ (634'FSL & 694'FEL, SEC.24)	-1333.91	2963.87	3218350.195	1318620.448	40°12'19.325"N	104°43'05.668"W
PERMIT (17RKB) (RKB) to Mud line (At Slot: SLOT#09 CRUICKSHANK 27N-24HZ (634'FSL & 694'FEL, SEC.24))						5031ft
Mean Sea Level to Mud line (At Slot: SLOT#09 CRUICKSHANK 27N-24HZ (634'FSL & 694'FEL, SEC.24))						0ft
PERMIT (17RKB) (RKB) to Mean Sea Level						5031ft

## Survey Program

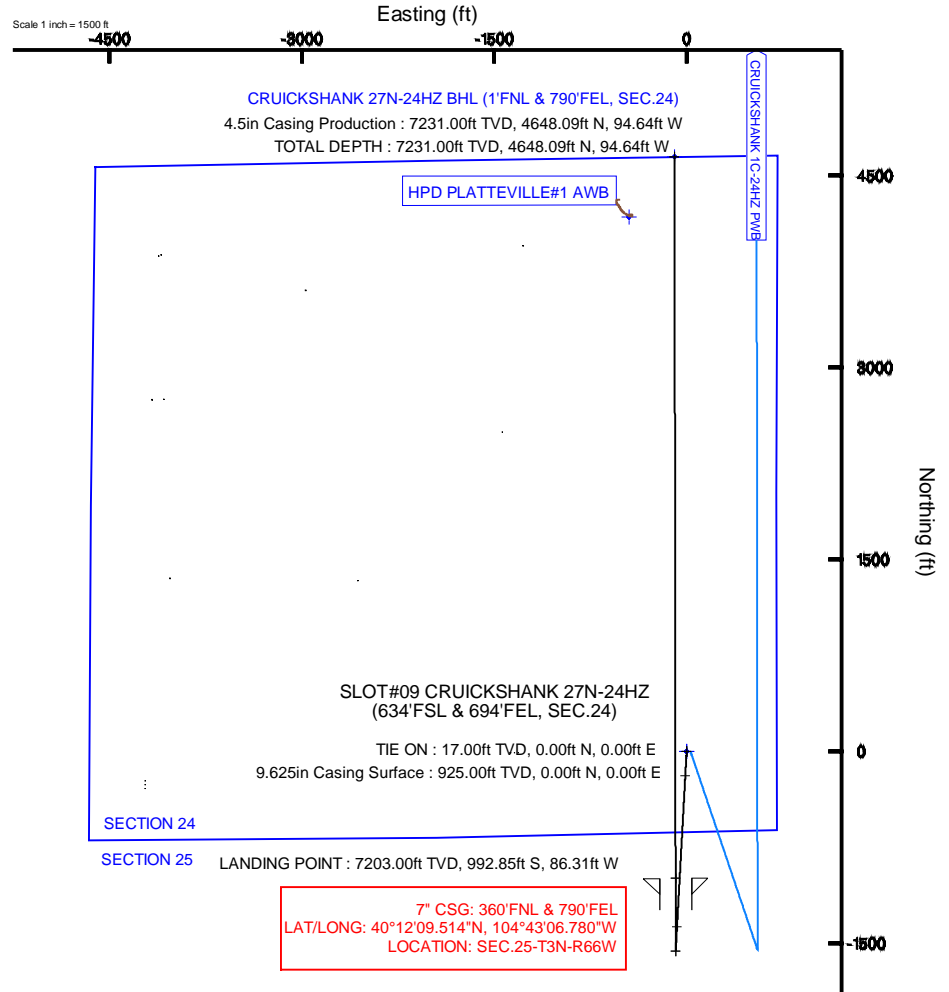
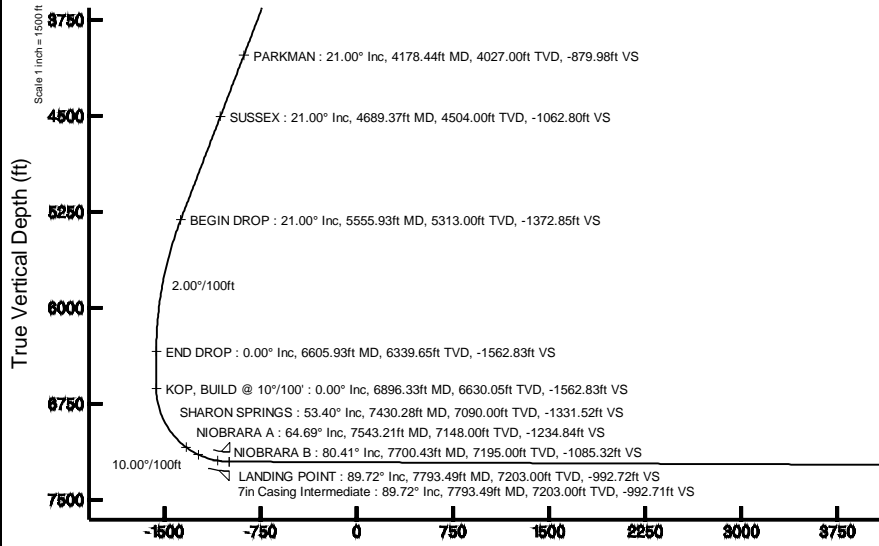
Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
17.00	7793.49	NavTrak	NavTrak (MAGCORR,IFR)		CRUICKSHANK 27N-24HZ PWB
7793.49	13434.49	NavTrak	NavTrak (MAGCORR,IFR)		CRUICKSHANK 27N-24HZ PWB

## Targets

Name	MD (ft)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
HPD PLATTEVILLE#1 (SWD WELL @ 10500')	0.00	4175.59	-449.32	3217864.10	1322791.73	40°13'00.588"N	104°43'11.460"W	
CRUICKSHANK 27N-24HZ BHL (1'FNL & 790'FEL, SEC.24)	13434.49	7231.00	4648.09	-94.64	3218214.59	40°13'05.257"N	104°43'06.888"W	
CRUICKSHANK PAD HARDLINES (460' SETBACKS)	7426.00	0.00	0.00	3218350.19	1318620.45	40°12'19.325"N	104°43'05.668"W	
CRUICKSHANK PAD SECTION 24	7426.00	0.00	0.00	3218350.19	1318620.45	40°12'19.325"N	104°43'05.668"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	183.130	17.00	0.00	0.00	0.00	0.00
BEGIN NUDGE	1200.00	0.000	183.130	1200.00	0.00	0.00	0.00	0.00
END NUDGE	2250.00	21.000	183.130	2226.65	-189.99	-10.39	2.00	-189.98
BEGIN DROP	5555.93	21.000	183.130	5313.00	-1372.97	-75.08	0.00	-1372.85
END DROP	6605.93	0.000	359.915	6339.65	-1562.96	-85.47	2.00	-1562.83
KOP, BUILD @ 10°/100'	6896.33	0.000	359.915	6630.05	-1562.96	-85.47	0.00	-1562.83
LANDING POINT	7793.49	89.716	359.915	7203.00	-992.85	-86.31	10.00	-992.72
TOTAL DEPTH	13434.49	89.716	359.915	7231.00	4648.09	-94.64	0.00	4648.22



CRUICKSHANK 27N-24HZ BHL (1'FNL & 790'FEL, SEC.24)

TOTAL DEPTH : 89.72° Inc, 13434.49ft MD, 7231.00ft TVD, 4648.22ft VS  
 4.5in Casing Production : 89.72° Inc, 13434.49ft MD, 7231.00ft TVD, 4648.22ft VS

Azimuth 359.92° 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#09 CRUICKSHANK 27N-24HZ (634'FSL & 694'FEL, SEC.24)
Area	COLORADO	Well	CRUICKSHANK 27N-24HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	CRUICKSHANK 27N-24HZ PWB
Facility	SEC.24-T3N-R66W		

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	0.999957	Report Generated	12/Mar/2014 at 15:25
Convergence at slot	n/a	Database/Source file	WellArchitectDB/CRUICKSHANK_27N-24HZ_PWB.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-1333.91	2563.87	3218350.20	1318620.45	40°12'19.325"N	104°43'05.668"W
Facility Reference Pt			3215774.92	1319931.92	40°12'32.508"N	104°43'38.712"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'RKB) (RKB) to Facility Vertical Datum	5031.00ft
Horizontal Reference Pt	Slot	PERMIT (17'RKB) (RKB) to Mean Sea Level	5031.00ft
Vertical Reference Pt	PERMIT (17'RKB) (RKB)	PERMIT (17'RKB) (RKB) to Mud Line at Slot (SLOT#09 CRUICKSHANK 27N-24HZ (634'FSL & 694'FEL, SEC.24))	5031.00ft
MD Reference Pt	PERMIT (17'RKB) (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	359.92°

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#09 CRUICKSHANK 27N-24HZ (634'FSL & 694'FEL, SEC.24)
Area	COLORADO	Well	CRUICKSHANK 27N-24HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	CRUICKSHANK 27N-24HZ PWB
Facility	SEC.24-T3N-R66W		

WELLPATH DATA (149 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	183.130	0.00	0.00	0.00	0.00	40°12'19.325"N	104°43'05.668"W	0.00	
17.00	0.000	183.130	17.00	0.00	0.00	0.00	40°12'19.325"N	104°43'05.668"W	0.00	TIE ON
117.00†	0.000	183.130	117.00	0.00	0.00	0.00	40°12'19.325"N	104°43'05.668"W	0.00	
217.00†	0.000	183.130	217.00	0.00	0.00	0.00	40°12'19.325"N	104°43'05.668"W	0.00	
317.00†	0.000	183.130	317.00	0.00	0.00	0.00	40°12'19.325"N	104°43'05.668"W	0.00	
417.00†	0.000	183.130	417.00	0.00	0.00	0.00	40°12'19.325"N	104°43'05.668"W	0.00	
517.00†	0.000	183.130	517.00	0.00	0.00	0.00	40°12'19.325"N	104°43'05.668"W	0.00	
617.00†	0.000	183.130	617.00	0.00	0.00	0.00	40°12'19.325"N	104°43'05.668"W	0.00	
717.00†	0.000	183.130	717.00	0.00	0.00	0.00	40°12'19.325"N	104°43'05.668"W	0.00	
817.00†	0.000	183.130	817.00	0.00	0.00	0.00	40°12'19.325"N	104°43'05.668"W	0.00	
874.00†	0.000	183.130	874.00	0.00	0.00	0.00	40°12'19.325"N	104°43'05.668"W	0.00	FOX HILLS BASE
917.00†	0.000	183.130	917.00	0.00	0.00	0.00	40°12'19.325"N	104°43'05.668"W	0.00	
1017.00†	0.000	183.130	1017.00	0.00	0.00	0.00	40°12'19.325"N	104°43'05.668"W	0.00	
1117.00†	0.000	183.130	1117.00	0.00	0.00	0.00	40°12'19.325"N	104°43'05.668"W	0.00	
1200.00	0.000	183.130	1200.00	0.00	0.00	0.00	40°12'19.325"N	104°43'05.668"W	0.00	BEGIN NUDDGE
1217.00†	0.340	183.130	1217.00	-0.05	-0.05	0.00	40°12'19.325"N	104°43'05.668"W	2.00	
1317.00†	2.340	183.130	1316.97	-2.39	-2.39	-0.13	40°12'19.301"N	104°43'05.670"W	2.00	
1417.00†	4.340	183.130	1416.79	-8.20	-8.20	-0.45	40°12'19.244"N	104°43'05.674"W	2.00	
1517.00†	6.340	183.130	1516.35	-17.49	-17.49	-0.96	40°12'19.152"N	104°43'05.680"W	2.00	
1617.00†	8.340	183.130	1615.53	-30.25	-30.25	-1.65	40°12'19.026"N	104°43'05.689"W	2.00	
1717.00†	10.340	183.130	1714.20	-46.45	-46.45	-2.54	40°12'18.866"N	104°43'05.701"W	2.00	
1817.00†	12.340	183.130	1812.24	-66.08	-66.09	-3.61	40°12'18.672"N	104°43'05.715"W	2.00	
1917.00†	14.340	183.130	1909.54	-89.12	-89.12	-4.87	40°12'18.444"N	104°43'05.731"W	2.00	
2017.00†	16.340	183.130	2005.97	-115.53	-115.54	-6.32	40°12'18.183"N	104°43'05.749"W	2.00	
2117.00†	18.340	183.130	2101.42	-145.28	-145.30	-7.95	40°12'17.889"N	104°43'05.770"W	2.00	
2217.00†	20.340	183.130	2195.77	-178.35	-178.36	-9.75	40°12'17.562"N	104°43'05.794"W	2.00	
2250.00	21.000	183.130	2226.65	-189.98	-189.99	-10.39	40°12'17.447"N	104°43'05.802"W	2.00	END NUDDGE
2317.00†	21.000	183.130	2289.20	-213.95	-213.97	-11.70	40°12'17.211"N	104°43'05.819"W	0.00	
2417.00†	21.000	183.130	2382.56	-249.73	-249.75	-13.66	40°12'16.857"N	104°43'05.844"W	0.00	
2517.00†	21.000	183.130	2475.91	-285.51	-285.54	-15.61	40°12'16.503"N	104°43'05.869"W	0.00	
2617.00†	21.000	183.130	2569.27	-321.29	-321.32	-17.57	40°12'16.150"N	104°43'05.894"W	0.00	
2717.00†	21.000	183.130	2662.63	-357.07	-357.10	-19.53	40°12'15.796"N	104°43'05.920"W	0.00	
2817.00†	21.000	183.130	2755.99	-392.85	-392.89	-21.48	40°12'15.443"N	104°43'05.945"W	0.00	
2917.00†	21.000	183.130	2849.35	-428.63	-428.67	-23.44	40°12'15.089"N	104°43'05.970"W	0.00	
3017.00†	21.000	183.130	2942.70	-464.41	-464.45	-25.40	40°12'14.735"N	104°43'05.995"W	0.00	
3117.00†	21.000	183.130	3036.06	-500.19	-500.24	-27.35	40°12'14.382"N	104°43'06.021"W	0.00	
3217.00†	21.000	183.130	3129.42	-535.97	-536.02	-29.31	40°12'14.028"N	104°43'06.046"W	0.00	
3317.00†	21.000	183.130	3222.78	-571.76	-571.80	-31.27	40°12'13.674"N	104°43'06.071"W	0.00	
3417.00†	21.000	183.130	3316.14	-607.54	-607.59	-33.22	40°12'13.321"N	104°43'06.096"W	0.00	
3517.00†	21.000	183.130	3409.49	-643.32	-643.37	-35.18	40°12'12.967"N	104°43'06.121"W	0.00	
3617.00†	21.000	183.130	3502.85	-679.10	-679.15	-37.14	40°12'12.614"N	104°43'06.147"W	0.00	
3717.00†	21.000	183.130	3596.21	-714.88	-714.94	-39.09	40°12'12.260"N	104°43'06.172"W	0.00	
3817.00†	21.000	183.130	3689.57	-750.66	-750.72	-41.05	40°12'11.906"N	104°43'06.197"W	0.00	
3917.00†	21.000	183.130	3782.93	-786.44	-786.50	-43.01	40°12'11.553"N	104°43'06.222"W	0.00	
4017.00†	21.000	183.130	3876.29	-822.22	-822.29	-44.97	40°12'11.199"N	104°43'06.248"W	0.00	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#09 CRUICKSHANK 27N-24HZ (634'FSL & 694'FEL, SEC.24)
Area	COLORADO	Well	CRUICKSHANK 27N-24HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	CRUICKSHANK 27N-24HZ PWB
Facility	SEC.24-T3N-R66W		

WELLPATH DATA (149 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4117.00†	21.000	183.130	3969.64	-858.00	-858.07	-46.92	40°12'10.846"N	104°43'06.273"W	0.00	
4178.44†	21.000	183.130	4027.00	-879.98	-880.05	-48.12	40°12'10.628"N	104°43'06.288"W	0.00	PARKMAN
4217.00†	21.000	183.130	4063.00	-893.78	-893.85	-48.88	40°12'10.492"N	104°43'06.298"W	0.00	
4317.00†	21.000	183.130	4156.36	-929.56	-929.64	-50.84	40°12'10.138"N	104°43'06.323"W	0.00	
4417.00†	21.000	183.130	4249.72	-965.34	-965.42	-52.79	40°12'09.785"N	104°43'06.348"W	0.00	
4517.00†	21.000	183.130	4343.08	-1001.12	-1001.20	-54.75	40°12'09.431"N	104°43'06.374"W	0.00	
4617.00†	21.000	183.130	4436.43	-1036.90	-1036.99	-56.71	40°12'09.078"N	104°43'06.399"W	0.00	
4689.37†	21.000	183.130	4504.00	-1062.80	-1062.88	-58.12	40°12'08.822"N	104°43'06.417"W	0.00	SUSSEX
4717.00†	21.000	183.130	4529.79	-1072.68	-1072.77	-58.66	40°12'08.724"N	104°43'06.424"W	0.00	
4817.00†	21.000	183.130	4623.15	-1108.46	-1108.55	-60.62	40°12'08.370"N	104°43'06.449"W	0.00	
4917.00†	21.000	183.130	4716.51	-1144.24	-1144.34	-62.58	40°12'08.017"N	104°43'06.474"W	0.00	
5017.00†	21.000	183.130	4809.87	-1180.02	-1180.12	-64.53	40°12'07.663"N	104°43'06.500"W	0.00	
5117.00†	21.000	183.130	4903.22	-1215.80	-1215.90	-66.49	40°12'07.309"N	104°43'06.525"W	0.00	
5217.00†	21.000	183.130	4996.58	-1251.58	-1251.69	-68.45	40°12'06.956"N	104°43'06.550"W	0.00	
5317.00†	21.000	183.130	5089.94	-1287.36	-1287.47	-70.40	40°12'06.602"N	104°43'06.575"W	0.00	
5417.00†	21.000	183.130	5183.30	-1323.14	-1323.25	-72.36	40°12'06.249"N	104°43'06.601"W	0.00	
5517.00†	21.000	183.130	5276.66	-1358.92	-1359.04	-74.32	40°12'05.895"N	104°43'06.626"W	0.00	
5555.93	21.000	183.130	5313.00	-1372.85	-1372.97	-75.08	40°12'05.757"N	104°43'06.636"W	0.00	BEGIN DROP
5617.00†	19.779	183.130	5370.24	-1394.10	-1394.21	-76.24	40°12'05.547"N	104°43'06.651"W	2.00	
5717.00†	17.779	183.130	5464.91	-1426.23	-1426.35	-78.00	40°12'05.230"N	104°43'06.673"W	2.00	
5817.00†	15.779	183.130	5560.65	-1455.06	-1455.18	-79.57	40°12'04.945"N	104°43'06.694"W	2.00	
5917.00†	13.779	183.130	5657.34	-1480.52	-1480.64	-80.97	40°12'04.693"N	104°43'06.711"W	2.00	
6017.00†	11.779	183.130	5754.86	-1502.60	-1502.73	-82.17	40°12'04.475"N	104°43'06.727"W	2.00	
6117.00†	9.779	183.130	5853.09	-1521.28	-1521.40	-83.20	40°12'04.291"N	104°43'06.740"W	2.00	
6217.00†	7.779	183.130	5951.91	-1536.51	-1536.64	-84.03	40°12'04.140"N	104°43'06.751"W	2.00	
6317.00†	5.779	183.130	6051.21	-1548.30	-1548.42	-84.67	40°12'04.024"N	104°43'06.759"W	2.00	
6417.00†	3.779	183.130	6150.86	-1556.61	-1556.74	-85.13	40°12'03.941"N	104°43'06.765"W	2.00	
6517.00†	1.779	183.130	6250.73	-1561.45	-1561.58	-85.39	40°12'03.893"N	104°43'06.768"W	2.00	
6605.93	0.000	359.915	6339.65	-1562.83	-1562.96	-85.47	40°12'03.880"N	104°43'06.769"W	2.00	END DROP
6617.00†	0.000	359.915	6350.72	-1562.83	-1562.96	-85.47	40°12'03.880"N	104°43'06.769"W	0.00	
6717.00†	0.000	359.915	6450.72	-1562.83	-1562.96	-85.47	40°12'03.880"N	104°43'06.769"W	0.00	
6817.00†	0.000	359.915	6550.72	-1562.83	-1562.96	-85.47	40°12'03.880"N	104°43'06.769"W	0.00	
6896.33	0.000	359.915	6630.05	-1562.83	-1562.96	-85.47	40°12'03.880"N	104°43'06.769"W	0.00	KOP, BUILD @ 10°/100'
6917.00†	2.067	359.915	6650.71	-1562.46	-1562.59	-85.47	40°12'03.884"N	104°43'06.769"W	10.00	
7017.00†	12.067	359.915	6749.83	-1550.17	-1550.30	-85.49	40°12'04.005"N	104°43'06.770"W	10.00	
7117.00†	22.067	359.915	6845.30	-1520.86	-1520.99	-85.53	40°12'04.295"N	104°43'06.770"W	10.00	
7217.00†	32.067	359.915	6934.24	-1475.41	-1475.54	-85.60	40°12'04.744"N	104°43'06.771"W	10.00	
7317.00†	42.067	359.915	7013.93	-1415.22	-1415.34	-85.69	40°12'05.339"N	104°43'06.772"W	10.00	
7417.00†	52.067	359.915	7081.96	-1342.09	-1342.22	-85.79	40°12'06.061"N	104°43'06.774"W	10.00	
7430.28†	53.395	359.915	7090.00	-1331.52	-1331.65	-85.81	40°12'06.166"N	104°43'06.774"W	10.00	SHARON SPRINGS
7517.00†	62.067	359.915	7136.25	-1258.27	-1258.40	-85.92	40°12'06.890"N	104°43'06.775"W	10.00	
7543.21†	64.688	359.915	7148.00	-1234.84	-1234.97	-85.95	40°12'07.121"N	104°43'06.776"W	10.00	NIOBRARA A
7617.00†	72.067	359.915	7175.17	-1166.29	-1166.42	-86.05	40°12'07.798"N	104°43'06.777"W	10.00	
7700.43†	80.410	359.915	7195.00	-1085.32	-1085.45	-86.17	40°12'08.599"N	104°43'06.779"W	10.00	NIOBRARA B
7717.00†	82.067	359.915	7197.52	-1068.95	-1069.08	-86.20	40°12'08.760"N	104°43'06.779"W	10.00	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#09 CRUICKSHANK 27N-24HZ (634'FSL & 694'FEL, SEC.24)
Area	COLORADO	Well	CRUICKSHANK 27N-24HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	CRUICKSHANK 27N-24HZ PWB
Facility	SEC.24-T3N-R66W		

WELLPATH DATA (149 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7793.49	89.716	359.915	7203.00	-992.72	-992.85	-86.31	40°12'09.514"N	104°43'06.780"W	10.00	LANDING POINT
7817.00†	89.716	359.915	7203.12	-969.20	-969.33	-86.34	40°12'09.746"N	104°43'06.781"W	0.00	
7917.00†	89.716	359.915	7203.61	-869.21	-869.33	-86.49	40°12'10.734"N	104°43'06.783"W	0.00	
8017.00†	89.716	359.915	7204.11	-769.21	-769.34	-86.64	40°12'11.722"N	104°43'06.785"W	0.00	
8117.00†	89.716	359.915	7204.61	-669.21	-669.34	-86.79	40°12'12.711"N	104°43'06.787"W	0.00	
8217.00†	89.716	359.915	7205.10	-569.21	-569.34	-86.94	40°12'13.699"N	104°43'06.788"W	0.00	
8317.00†	89.716	359.915	7205.60	-469.21	-469.34	-87.08	40°12'14.687"N	104°43'06.790"W	0.00	
8417.00†	89.716	359.915	7206.09	-369.21	-369.34	-87.23	40°12'15.675"N	104°43'06.792"W	0.00	
8517.00†	89.716	359.915	7206.59	-269.21	-269.34	-87.38	40°12'16.663"N	104°43'06.794"W	0.00	
8617.00†	89.716	359.915	7207.09	-169.21	-169.34	-87.53	40°12'17.652"N	104°43'06.796"W	0.00	
8717.00†	89.716	359.915	7207.58	-69.22	-69.35	-87.67	40°12'18.640"N	104°43'06.798"W	0.00	
8817.00†	89.716	359.915	7208.08	30.78	30.65	-87.82	40°12'19.628"N	104°43'06.800"W	0.00	
8917.00†	89.716	359.915	7208.58	130.78	130.65	-87.97	40°12'20.616"N	104°43'06.802"W	0.00	
9017.00†	89.716	359.915	7209.07	230.78	230.65	-88.12	40°12'21.604"N	104°43'06.804"W	0.00	
9117.00†	89.716	359.915	7209.57	330.78	330.65	-88.26	40°12'22.592"N	104°43'06.806"W	0.00	
9217.00†	89.716	359.915	7210.07	430.78	430.65	-88.41	40°12'23.581"N	104°43'06.808"W	0.00	
9317.00†	89.716	359.915	7210.56	530.78	530.65	-88.56	40°12'24.569"N	104°43'06.809"W	0.00	
9417.00†	89.716	359.915	7211.06	630.78	630.65	-88.71	40°12'25.557"N	104°43'06.811"W	0.00	
9517.00†	89.716	359.915	7211.55	730.77	730.64	-88.86	40°12'26.545"N	104°43'06.813"W	0.00	
9617.00†	89.716	359.915	7212.05	830.77	830.64	-89.00	40°12'27.533"N	104°43'06.815"W	0.00	
9717.00†	89.716	359.915	7212.55	930.77	930.64	-89.15	40°12'28.522"N	104°43'06.817"W	0.00	
9817.00†	89.716	359.915	7213.04	1030.77	1030.64	-89.30	40°12'29.510"N	104°43'06.819"W	0.00	
9917.00†	89.716	359.915	7213.54	1130.77	1130.64	-89.45	40°12'30.498"N	104°43'06.821"W	0.00	
10017.00†	89.716	359.915	7214.04	1230.77	1230.64	-89.59	40°12'31.486"N	104°43'06.823"W	0.00	
10117.00†	89.716	359.915	7214.53	1330.77	1330.64	-89.74	40°12'32.474"N	104°43'06.825"W	0.00	
10217.00†	89.716	359.915	7215.03	1430.77	1430.63	-89.89	40°12'33.462"N	104°43'06.827"W	0.00	
10317.00†	89.716	359.915	7215.53	1530.76	1530.63	-90.04	40°12'34.451"N	104°43'06.828"W	0.00	
10417.00†	89.716	359.915	7216.02	1630.76	1630.63	-90.18	40°12'35.439"N	104°43'06.830"W	0.00	
10517.00†	89.716	359.915	7216.52	1730.76	1730.63	-90.33	40°12'36.427"N	104°43'06.832"W	0.00	
10617.00†	89.716	359.915	7217.01	1830.76	1830.63	-90.48	40°12'37.415"N	104°43'06.834"W	0.00	
10717.00†	89.716	359.915	7217.51	1930.76	1930.63	-90.63	40°12'38.403"N	104°43'06.836"W	0.00	
10817.00†	89.716	359.915	7218.01	2030.76	2030.63	-90.78	40°12'39.392"N	104°43'06.838"W	0.00	
10917.00†	89.716	359.915	7218.50	2130.76	2130.63	-90.92	40°12'40.380"N	104°43'06.840"W	0.00	
11017.00†	89.716	359.915	7219.00	2230.76	2230.62	-91.07	40°12'41.368"N	104°43'06.842"W	0.00	
11117.00†	89.716	359.915	7219.50	2330.76	2330.62	-91.22	40°12'42.356"N	104°43'06.844"W	0.00	
11217.00†	89.716	359.915	7219.99	2430.75	2430.62	-91.37	40°12'43.344"N	104°43'06.846"W	0.00	
11317.00†	89.716	359.915	7220.49	2530.75	2530.62	-91.51	40°12'44.332"N	104°43'06.848"W	0.00	
11417.00†	89.716	359.915	7220.99	2630.75	2630.62	-91.66	40°12'45.321"N	104°43'06.849"W	0.00	
11517.00†	89.716	359.915	7221.48	2730.75	2730.62	-91.81	40°12'46.309"N	104°43'06.851"W	0.00	
11617.00†	89.716	359.915	7221.98	2830.75	2830.62	-91.96	40°12'47.297"N	104°43'06.853"W	0.00	
11717.00†	89.716	359.915	7222.47	2930.75	2930.61	-92.10	40°12'48.285"N	104°43'06.855"W	0.00	
11817.00†	89.716	359.915	7222.97	3030.75	3030.61	-92.25	40°12'49.273"N	104°43'06.857"W	0.00	
11917.00†	89.716	359.915	7223.47	3130.75	3130.61	-92.40	40°12'50.262"N	104°43'06.859"W	0.00	
12017.00†	89.716	359.915	7223.96	3230.74	3230.61	-92.55	40°12'51.250"N	104°43'06.861"W	0.00	
12117.00†	89.716	359.915	7224.46	3330.74	3330.61	-92.70	40°12'52.238"N	104°43'06.863"W	0.00	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#09 CRUICKSHANK 27N-24HZ (634'FSL & 694'FEL, SEC.24)
Area	COLORADO	Well	CRUICKSHANK 27N-24HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	CRUICKSHANK 27N-24HZ PWB
Facility	SEC.24-T3N-R66W		

WELLPATH DATA (149 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
12217.00†	89.716	359.915	7224.96	3430.74	3430.61	-92.84	40°12'53.226"N	104°43'06.865"W	0.00	
12317.00†	89.716	359.915	7225.45	3530.74	3530.61	-92.99	40°12'54.214"N	104°43'06.867"W	0.00	
12417.00†	89.716	359.915	7225.95	3630.74	3630.60	-93.14	40°12'55.203"N	104°43'06.869"W	0.00	
12517.00†	89.716	359.915	7226.45	3730.74	3730.60	-93.29	40°12'56.191"N	104°43'06.870"W	0.00	
12617.00†	89.716	359.915	7226.94	3830.74	3830.60	-93.43	40°12'57.179"N	104°43'06.872"W	0.00	
12717.00†	89.716	359.915	7227.44	3930.74	3930.60	-93.58	40°12'58.167"N	104°43'06.874"W	0.00	
12817.00†	89.716	359.915	7227.93	4030.73	4030.60	-93.73	40°12'59.155"N	104°43'06.876"W	0.00	
12917.00†	89.716	359.915	7228.43	4130.73	4130.60	-93.88	40°13'00.143"N	104°43'06.878"W	0.00	
13017.00†	89.716	359.915	7228.93	4230.73	4230.60	-94.02	40°13'01.132"N	104°43'06.880"W	0.00	
13117.00†	89.716	359.915	7229.42	4330.73	4330.60	-94.17	40°13'02.120"N	104°43'06.882"W	0.00	
13217.00†	89.716	359.915	7229.92	4430.73	4430.59	-94.32	40°13'03.108"N	104°43'06.884"W	0.00	
13317.00†	89.716	359.915	7230.42	4530.73	4530.59	-94.47	40°13'04.096"N	104°43'06.886"W	0.00	
13417.00†	89.716	359.915	7230.91	4630.73	4630.59	-94.62	40°13'05.084"N	104°43'06.888"W	0.00	
13434.49	89.716	359.915	7231.00 <sup>†</sup>	4648.22	4648.09	-94.64	40°13'05.257"N	104°43'06.888"W	0.00	TOTAL DEPTH

HOLE & CASING SECTIONS - Ref Wellbore: CRUICKSHANK 27N-24HZ PWB Ref Wellpath: CRUICKSHANK 27N-24HZ (PERMIT REV-2) 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	925.00	908.00	17.00	925.00	0.00	0.00	0.00	0.00	
9.625in Casing Surface	17.00	925.00	908.00	17.00	925.00	0.00	0.00	0.00	0.00	
8.75in Open Hole	925.00	7793.49	6868.49	925.00	7203.00	0.00	0.00	-992.84	-86.31	
7in Casing Intermediate	17.00	7793.49	7776.49	17.00	7203.00	0.00	0.00	-992.84	-86.31	
6.125in Open Hole	7793.49	13434.49	5641.00	7203.00	7231.00	-992.84	-86.31	4648.09	-94.64	
4.5in Casing Production	17.00	13434.49	13417.49	17.00	7231.00	0.00	0.00	4648.09	-94.64	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#09 CRUICKSHANK 27N-24HZ (634'FSL & 694'FEL, SEC.24)
Area	COLORADO	Well	CRUICKSHANK 27N-24HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	CRUICKSHANK 27N-24HZ PWB
Facility	SEC.24-T3N-R66W		

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
HPD PLATTEVILLE#1 (SWD WELL @ 10500')		0.00	4175.59	-449.32	3217864.10	1322791.73	40°13'00.588"N	104°43'11.460"W	circle
1) CRUICKSHANK 27N-24HZ BHL (1'FNL & 790'FEL, SEC.24)	13434.49	7231.00	4648.09	-94.64	3218214.59	1323267.31	40°13'05.257"N	104°43'06.888"W	point
CRUICKSHANK PAD HARDLINES (460' SETBACKS)		7426.00	0.00	0.00	3218350.19	1318620.45	40°12'19.325"N	104°43'05.668"W	polygon
CRUICKSHANK PAD SECTION 24		7426.00	0.00	0.00	3218350.19	1318620.45	40°12'19.325"N	104°43'05.668"W	polygon

SURVEY PROGRAM - Ref Wellbore: CRUICKSHANK 27N-24HZ PWB Ref Wellpath: CRUICKSHANK 27N-24HZ (PERMIT REV-2) PWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
17.00	7793.49	NaviTrak (MAGCORR,IFR)		CRUICKSHANK 27N-24HZ PWB
7793.49	13434.49	NaviTrak (MAGCORR,IFR)		CRUICKSHANK 27N-24HZ PWB

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#09 CRUICKSHANK 27N-24HZ (634'FSL & 694'FEL, SEC.24)
Area	COLORADO	Well	CRUICKSHANK 27N-24HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	CRUICKSHANK 27N-24HZ PWB
Facility	SEC.24-T3N-R66W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
874.00	0.000	183.130	874.00	FOX HILLS BASE
4178.44	21.000	183.130	4027.00	PARKMAN
4689.37	21.000	183.130	4504.00	SUSSEX
7430.28	53.395	359.915	7090.00	SHARON SPRINGS
7543.21	64.688	359.915	7148.00	NIOBRARA A
7700.43	80.410	359.915	7195.00	NIOBRARA B

DESIGN COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
17.00	0.000	183.130	17.00	TIE ON
1200.00	0.000	183.130	1200.00	BEGIN NUDGE
2250.00	21.000	183.130	2226.65	END NUDGE
5555.93	21.000	183.130	5313.00	BEGIN DROP
6605.93	0.000	359.915	6339.65	END DROP
6896.33	0.000	359.915	6630.05	KOP, BUILD @ 10°/100'
7793.49	89.716	359.915	7203.00	LANDING POINT
13434.49	89.716	359.915	7231.00	TOTAL DEPTH