

KERR-MCGEE OIL & GAS ONSHORE LP_1



PERMIT PLAN



Location:	Compass Import	Slot:	SLOT#01 FEHRN 37C-32HZ (304FNL & 904FEL, SEC.32)
Field:	WELD COUNTY (UTM ZONE 13)/NAD83(TRUE NORTH)	Well:	FEHRN 37C-32HZ
Facility:	SEC.32-T2N-R66W	Wellbore:	FEHRN 37C-32HZ PWB

Plot reference wellpath is FEHRN 37C-32HZ PERMIT REV-1 PWP	Grid System: NAD83 / UTM Zone 13 North, US feet
True vertical depths are referenced to PERMIT (17KB) (RKB)	North Reference: True north
Measured depths are referenced to PERMIT (17KB) (RKB)	Scale: Grid distance
PERMIT (17KB) (RKB) to Mean Sea Level: 4943 feet	Depths are in feet
Mean Sea Level to Mud line (At Slot: SLOT#01 FEHRN 37C-32HZ (304FNL & 904FEL, SEC.32)): 0 feet	Created by: precain on 12/14/2014
Coordinates are in feet referenced to Slot	

Location Information					
Facility Name		Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SEC.32-T2N-R66W		1694937.424	14562911.912	40°05'57.077"N	104°48'18.130"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Longitude
SLOT#01 FEHRN 37C-32HZ (304FNL & 904FEL, SEC.32)	671.61	2843.93	1697779.872	14563589.755	40°06'03.715"N 104°47'41.518"W
PERMIT (17KB) (RKB) to Mud line (At Slot: SLOT#01 FEHRN 37C-32HZ (304FNL & 904FEL, SEC.32))					
Mean Sea Level to Mud line (At Slot: SLOT#01 FEHRN 37C-32HZ (304FNL & 904FEL, SEC.32))					
PERMIT (17KB) (RKB) to Mean Sea Level					

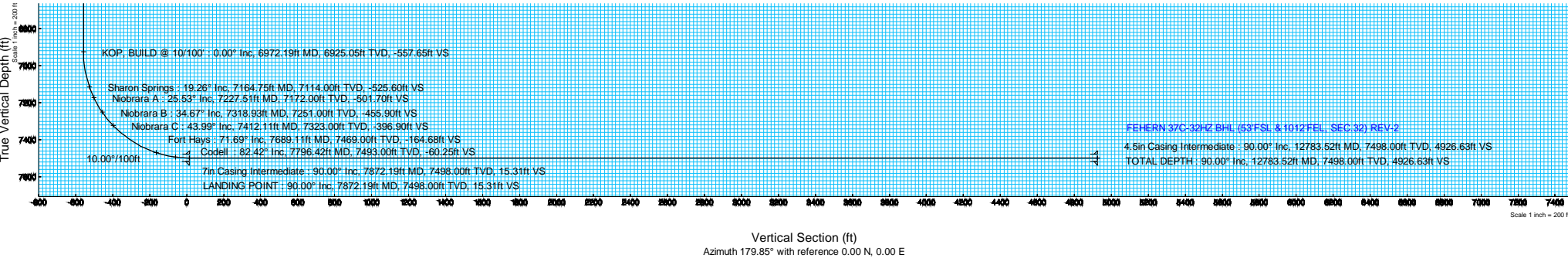
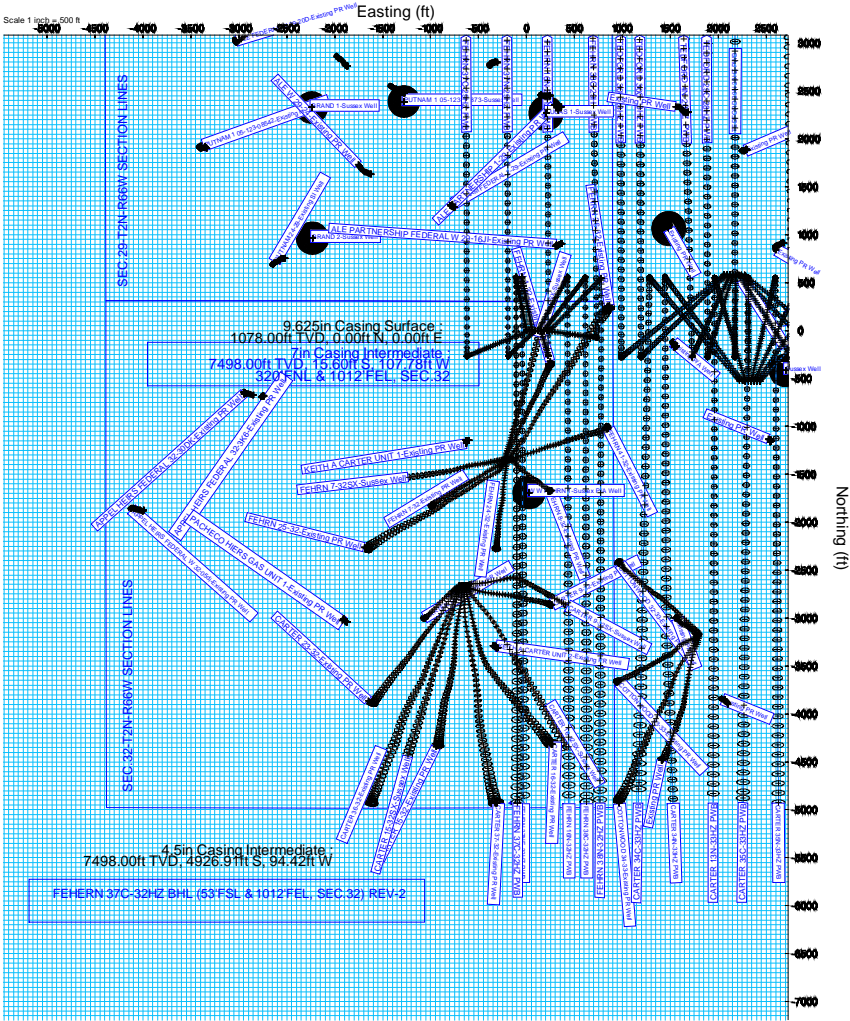
Survey Program					
Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
17.00	1000.00	ISCVSAMWD, Rev. 2, axial magnetic correction	ISCVSAMWD, Rev. 2, axial magnetic correction (Standard) (MagVAR IFR Wattenberg)		FEHRN 37C-32HZ PWB
1000.00	7872.19	ISCVSAMWD, Rev. 2, axial magnetic correction	ISCVSAMWD, Rev. 2, axial magnetic correction (Standard) (MagVAR IFR Wattenberg)		FEHRN 37C-32HZ PWB
7872.19	12783.52	ISCVSAMWD, Rev. 2, axial magnetic correction	ISCVSAMWD, Rev. 2, axial magnetic correction (Standard) (MagVAR IFR Wattenberg)		FEHRN 37C-32HZ PWB

Well Profile Data							
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)
TIE-ON	17.00	0.000	348.900	17.00	0.00	0.00	0.00
BEGIN NUDGE	1300.00	0.000	348.900	1300.00	0.00	0.00	0.00
END NUDGE	1800.00	10.000	348.900	1797.47	42.71	-8.38	2.00
BEGIN DROP	4569.61	10.000	348.900	4525.00	514.65	-100.97	0.00
END DROP	5069.61	0.000	179.844	5022.47	557.36	-109.35	2.00
KOP, BUILD @ 10/100'	6972.19	0.000	179.844	6925.05	557.36	-109.35	0.00
LANDING POINT	7872.19	90.000	179.844	7498.00	-15.60	-107.78	10.00
TOTAL DEPTH	12783.52	90.000	179.845	7498.00	-4926.91	-94.42	0.00

Targets							
Name	MD (ft)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude
SEC.29-T2N-R66W SECTION LINES		4.00	0.00	0.00	1697779.87	14563589.76	40°06'03.715"N
SEC.32-T2N-R66W SECTION LINES		4.00	0.00	0.00	1697779.87	14563589.76	40°06'03.715"N
FEHRN 37C-32HZ BHL (53FSL & 1012FEL, SEC.32) REV-2	12783.52	7498.00	-4926.91	-94.42	1697696.81	14558662.65	40°05'15.007"N

Hole and Casing Sections									
Name	Start MD (ft)	End MD (ft)	Interval (ft)	Start TVD (ft)	End TVD (ft)	Start Local N (ft)	End Local N (ft)	Start Local E (ft)	End Local E (ft)
13.5in Open Hole	17.00	1078.00	1061.00	17.00	1078.00	0.00	0.00	0.00	0.00
9.625in Casing Surface	17.00	1078.00	1061.00	17.00	1078.00	0.00	0.00	0.00	0.00
8.75in Open Hole	1078.00	7872.19	6794.19	1078.00	7498.00	0.00	-15.60	-107.78	-107.78
7in Casing Intermediate	17.00	7872.19	7855.19	17.00	7498.00	0.00	-15.60	-107.78	-107.78
6.125in Open Hole	7872.19	12783.52	4911.33	7498.00	7498.00	-15.60	-107.78	-94.42	-94.42
4.5in Casing Intermediate	17.00	12783.52	12766.52	17.00	7498.00	0.00	-4926.91	-94.42	-94.42

Wellpath Comments						
MD (ft)	X (ft)	Y (ft)	TVD (ft)	Inclination (°)	Azimuth (°)	Comment
1028.00	0.00	0.00	1028.00	0.000	348.900	Fox Hills Base
3990.82	-81.62	416.02	3955.00	10.000	348.900	Parkman
4571.64	-101.04	514.99	4527.00	9.959	348.900	Sussex
7164.75	-109.26	525.30	7114.00	19.256	179.843	Sharon Springs
7227.51	-109.20	501.40	7172.00	25.532	179.843	Niobrara A
7318.93	-109.07	455.61	7251.00	34.673	179.844	Niobrara B
7412.11	-108.91	396.61	7323.00	43.992	179.844	Niobrara C
7689.11	-108.28	164.38	7469.00	71.692	179.844	Fort Hays
7796.42	-107.99	59.95	7493.00	82.423	179.844	Codell



Planned Wellpath Report

FEHRN 37C-32HZ PERMIT REV-1 PWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP_1	Slot	SLOT#01 FEHRN 37C-32HZ (304'FNL & 904'FEL, SEC.32)
Area	Compass Import	Well	FEHRN 37C-32HZ
Field	WELD COUNTY (UTM (ZONE 13)/NAD83/TRUE NORTH)	Wellbore	FEHRN 37C-32HZ PWB
Facility	SEC.32-T2N-R66W		

REPORT SETUP INFORMATION

Projection System	NAD83 / UTM Zone 13 North, US feet	Software System	WellArchitect® 4.0.0
North Reference	True	User	Precain
Scale	0.999604	Report Generated	12/14/2014 at 3:45:46 PM
Convergence at slot	n/a	Database/Source file	WellArchitect Review/FEHRN_37C-32HZ_PWB.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	671.61	2843.93	1697779.87	14563589.76	40°06'03.715"N	104°47'41.518"W
Facility Reference Pt			1694937.42	14562911.91	40°05'57.077"N	104°48'18.130"W
Field Reference Pt			1700626.56	14568707.73	40°06'54.245"N	104°47'04.711"W

WELLPATH DATUM

Calculation method	Minimum curvature	PERMIT (17'KB) (RKB) to 2N-66W-32 Offsets vertical datum	4943.00ft
Horizontal Reference Pt	Slot	PERMIT (17'KB) (RKB) to Mean Sea Level	4943.00ft
Vertical Reference Pt	PERMIT (17'KB) (RKB)	PERMIT (17'KB) (RKB) to Mud Line at Slot (SLOT#01 FEHRN 37C-32HZ (304'FNL & 904'FEL, SEC.32))	4943.00ft
MD Reference Pt	PERMIT (17'KB) (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	179.85°

Planned Wellpath Report

FEHRN 37C-32HZ PERMIT REV-1 PWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP_1	Slot	SLOT#01 FEHRN 37C-32HZ (304'FNL & 904'FEL, SEC.32)
Area	Compass Import	Well	FEHRN 37C-32HZ
Field	WELD COUNTY (UTM (ZONE 13)/NAD83/TRUE NORTH)	Wellbore	FEHRN 37C-32HZ PWB
Facility	SEC.32-T2N-R66W		

WELLPATH DATA (145 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	348.900	0.00	0.00	0.00	0.00	40°06'03.715"N	104°47'41.518"W	0.00	
17.00	0.000	348.900	17.00	0.00	0.00	0.00	40°06'03.715"N	104°47'41.518"W	0.00	TIE-ON
117.00†	0.000	348.900	117.00	0.00	0.00	0.00	40°06'03.715"N	104°47'41.518"W	0.00	
217.00†	0.000	348.900	217.00	0.00	0.00	0.00	40°06'03.715"N	104°47'41.518"W	0.00	
317.00†	0.000	348.900	317.00	0.00	0.00	0.00	40°06'03.715"N	104°47'41.518"W	0.00	
417.00†	0.000	348.900	417.00	0.00	0.00	0.00	40°06'03.715"N	104°47'41.518"W	0.00	
517.00†	0.000	348.900	517.00	0.00	0.00	0.00	40°06'03.715"N	104°47'41.518"W	0.00	
617.00†	0.000	348.900	617.00	0.00	0.00	0.00	40°06'03.715"N	104°47'41.518"W	0.00	
717.00†	0.000	348.900	717.00	0.00	0.00	0.00	40°06'03.715"N	104°47'41.518"W	0.00	
817.00†	0.000	348.900	817.00	0.00	0.00	0.00	40°06'03.715"N	104°47'41.518"W	0.00	
917.00†	0.000	348.900	917.00	0.00	0.00	0.00	40°06'03.715"N	104°47'41.518"W	0.00	
1017.00†	0.000	348.900	1017.00	0.00	0.00	0.00	40°06'03.715"N	104°47'41.518"W	0.00	
1028.00†	0.000	348.900	1028.00	0.00	0.00	0.00	40°06'03.715"N	104°47'41.518"W	0.00	Fox Hills Base
1117.00†	0.000	348.900	1117.00	0.00	0.00	0.00	40°06'03.715"N	104°47'41.518"W	0.00	
1217.00†	0.000	348.900	1217.00	0.00	0.00	0.00	40°06'03.715"N	104°47'41.518"W	0.00	
1300.00	0.000	348.900	1300.00	0.00	0.00	0.00	40°06'03.715"N	104°47'41.518"W	0.00	BEGIN NUDGE
1317.00†	0.340	348.900	1317.00	-0.05	0.05	-0.01	40°06'03.715"N	104°47'41.518"W	2.00	
1417.00†	2.340	348.900	1416.97	-2.35	2.34	-0.46	40°06'03.738"N	104°47'41.524"W	2.00	
1517.00†	4.340	348.900	1516.79	-8.07	8.06	-1.58	40°06'03.795"N	104°47'41.538"W	2.00	
1617.00†	6.340	348.900	1616.35	-17.20	17.19	-3.37	40°06'03.885"N	104°47'41.561"W	2.00	
1717.00†	8.340	348.900	1715.53	-29.74	29.73	-5.83	40°06'04.009"N	104°47'41.593"W	2.00	
1800.00	10.000	348.900	1797.47	-42.73	42.71	-8.38	40°06'04.137"N	104°47'41.626"W	2.00	END NUDGE
1817.00†	10.000	348.900	1814.21	-45.63	45.61	-8.95	40°06'04.166"N	104°47'41.633"W	0.00	
1917.00†	10.000	348.900	1912.69	-62.68	62.65	-12.29	40°06'04.334"N	104°47'41.676"W	0.00	
2017.00†	10.000	348.900	2011.17	-79.73	79.69	-15.63	40°06'04.503"N	104°47'41.719"W	0.00	
2117.00†	10.000	348.900	2109.65	-96.78	96.73	-18.98	40°06'04.671"N	104°47'41.762"W	0.00	
2217.00†	10.000	348.900	2208.13	-113.83	113.77	-22.32	40°06'04.840"N	104°47'41.805"W	0.00	
2317.00†	10.000	348.900	2306.61	-130.87	130.81	-25.66	40°06'05.008"N	104°47'41.848"W	0.00	
2417.00†	10.000	348.900	2405.09	-147.92	147.84	-29.01	40°06'05.177"N	104°47'41.891"W	0.00	
2517.00†	10.000	348.900	2503.57	-164.97	164.88	-32.35	40°06'05.345"N	104°47'41.934"W	0.00	
2617.00†	10.000	348.900	2602.05	-182.02	181.92	-35.69	40°06'05.514"N	104°47'41.977"W	0.00	
2717.00†	10.000	348.900	2700.53	-199.07	198.96	-39.04	40°06'05.682"N	104°47'42.021"W	0.00	
2817.00†	10.000	348.900	2799.01	-216.12	216.00	-42.38	40°06'05.850"N	104°47'42.064"W	0.00	
2917.00†	10.000	348.900	2897.50	-233.17	233.04	-45.72	40°06'06.019"N	104°47'42.107"W	0.00	
3017.00†	10.000	348.900	2995.98	-250.22	250.08	-49.06	40°06'06.187"N	104°47'42.150"W	0.00	
3117.00†	10.000	348.900	3094.46	-267.27	267.12	-52.41	40°06'06.356"N	104°47'42.193"W	0.00	
3217.00†	10.000	348.900	3192.94	-284.31	284.16	-55.75	40°06'06.524"N	104°47'42.236"W	0.00	
3317.00†	10.000	348.900	3291.42	-301.36	301.20	-59.09	40°06'06.693"N	104°47'42.279"W	0.00	
3417.00†	10.000	348.900	3389.90	-318.41	318.24	-62.44	40°06'06.861"N	104°47'42.322"W	0.00	
3517.00†	10.000	348.900	3488.38	-335.46	335.28	-65.78	40°06'07.030"N	104°47'42.365"W	0.00	
3617.00†	10.000	348.900	3586.86	-352.51	352.32	-69.12	40°06'07.198"N	104°47'42.408"W	0.00	
3717.00†	10.000	348.900	3685.34	-369.56	369.36	-72.47	40°06'07.367"N	104°47'42.451"W	0.00	
3817.00†	10.000	348.900	3783.82	-386.61	386.40	-75.81	40°06'07.535"N	104°47'42.494"W	0.00	
3917.00†	10.000	348.900	3882.30	-403.66	403.44	-79.15	40°06'07.703"N	104°47'42.537"W	0.00	
3990.82†	10.000	348.900	3955.00	-416.24	416.02	-81.62	40°06'07.828"N	104°47'42.569"W	0.00	Parkman

Planned Wellpath Report

FEHRN 37C-32HZ PERMIT REV-1 PWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP_1	Slot	SLOT#01 FEHRN 37C-32HZ (304'FNL & 904'FEL, SEC.32)
Area	Compass Import	Well	FEHRN 37C-32HZ
Field	WELD COUNTY (UTM (ZONE 13)/NAD83/TRUE NORTH)	Wellbore	FEHRN 37C-32HZ PWB
Facility	SEC.32-T2N-R66W		

WELLPATH DATA (145 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4017.00†	10.000	348.900	3980.78	-420.71	420.48	-82.50	40°06'07.872"N	104°47'42.580"W	0.00	
4117.00†	10.000	348.900	4079.26	-437.76	437.52	-85.84	40°06'08.040"N	104°47'42.623"W	0.00	
4217.00†	10.000	348.900	4177.75	-454.80	454.56	-89.18	40°06'08.209"N	104°47'42.666"W	0.00	
4317.00†	10.000	348.900	4276.23	-471.85	471.60	-92.53	40°06'08.377"N	104°47'42.709"W	0.00	
4417.00†	10.000	348.900	4374.71	-488.90	488.64	-95.87	40°06'08.546"N	104°47'42.752"W	0.00	
4517.00†	10.000	348.900	4473.19	-505.95	505.68	-99.21	40°06'08.714"N	104°47'42.795"W	0.00	
4569.61	10.000	348.900	4525.00	-514.92	514.65	-100.97	40°06'08.803"N	104°47'42.818"W	0.00	BEGIN DROP
4571.64†	9.959	348.900	4527.00	-515.27	514.99	-101.04	40°06'08.806"N	104°47'42.819"W	2.00	Sussex
4617.00†	9.052	348.900	4571.73	-522.62	522.35	-102.48	40°06'08.879"N	104°47'42.837"W	2.00	
4717.00†	7.052	348.900	4670.74	-536.37	536.09	-105.18	40°06'09.015"N	104°47'42.872"W	2.00	
4817.00†	5.052	348.900	4770.18	-546.72	546.44	-107.21	40°06'09.117"N	104°47'42.898"W	2.00	
4917.00†	3.052	348.900	4869.93	-553.66	553.37	-108.57	40°06'09.186"N	104°47'42.916"W	2.00	
5017.00†	1.052	348.900	4969.86	-557.18	556.88	-109.26	40°06'09.220"N	104°47'42.925"W	2.00	
5069.61	0.000	179.844	5022.47	-557.65	557.36	-109.35	40°06'09.225"N	104°47'42.926"W	2.00	END DROP
5117.00†	0.000	179.844	5069.85	-557.65	557.36	-109.35	40°06'09.225"N	104°47'42.926"W	0.00	
5217.00†	0.000	179.844	5169.85	-557.65	557.36	-109.35	40°06'09.225"N	104°47'42.926"W	0.00	
5317.00†	0.000	179.844	5269.85	-557.65	557.36	-109.35	40°06'09.225"N	104°47'42.926"W	0.00	
5417.00†	0.000	179.844	5369.85	-557.65	557.36	-109.35	40°06'09.225"N	104°47'42.926"W	0.00	
5517.00†	0.000	179.844	5469.85	-557.65	557.36	-109.35	40°06'09.225"N	104°47'42.926"W	0.00	
5617.00†	0.000	179.844	5569.85	-557.65	557.36	-109.35	40°06'09.225"N	104°47'42.926"W	0.00	
5717.00†	0.000	179.844	5669.85	-557.65	557.36	-109.35	40°06'09.225"N	104°47'42.926"W	0.00	
5817.00†	0.000	179.844	5769.85	-557.65	557.36	-109.35	40°06'09.225"N	104°47'42.926"W	0.00	
5917.00†	0.000	179.844	5869.85	-557.65	557.36	-109.35	40°06'09.225"N	104°47'42.926"W	0.00	
6017.00†	0.000	179.844	5969.85	-557.65	557.36	-109.35	40°06'09.225"N	104°47'42.926"W	0.00	
6117.00†	0.000	179.844	6069.85	-557.65	557.36	-109.35	40°06'09.225"N	104°47'42.926"W	0.00	
6217.00†	0.000	179.844	6169.85	-557.65	557.36	-109.35	40°06'09.225"N	104°47'42.926"W	0.00	
6317.00†	0.000	179.844	6269.85	-557.65	557.36	-109.35	40°06'09.225"N	104°47'42.926"W	0.00	
6417.00†	0.000	179.844	6369.85	-557.65	557.36	-109.35	40°06'09.225"N	104°47'42.926"W	0.00	
6517.00†	0.000	179.844	6469.85	-557.65	557.36	-109.35	40°06'09.225"N	104°47'42.926"W	0.00	
6617.00†	0.000	179.844	6569.85	-557.65	557.36	-109.35	40°06'09.225"N	104°47'42.926"W	0.00	
6717.00†	0.000	179.844	6669.85	-557.65	557.36	-109.35	40°06'09.225"N	104°47'42.926"W	0.00	
6817.00†	0.000	179.844	6769.85	-557.65	557.36	-109.35	40°06'09.225"N	104°47'42.926"W	0.00	
6917.00†	0.000	179.844	6869.85	-557.65	557.36	-109.35	40°06'09.225"N	104°47'42.926"W	0.00	
6972.19	0.000	179.844	6925.05	-557.65	557.36	-109.35	40°06'09.225"N	104°47'42.926"W	0.00	KOP, BUILD @ 10/100'
7017.00†	4.481	179.844	6969.81	-555.90	555.61	-109.34	40°06'09.208"N	104°47'42.926"W	10.00	
7117.00†	14.481	179.843	7068.32	-539.45	539.16	-109.30	40°06'09.045"N	104°47'42.925"W	10.00	
7164.75†	19.256	179.843	7114.00	-525.60	525.30	-109.26	40°06'08.908"N	104°47'42.925"W	10.00	Sharon Springs
7217.00†	24.481	179.844	7162.47	-506.14	505.85	-109.21	40°06'08.716"N	104°47'42.924"W	10.00	
7227.51†	25.532	179.843	7172.00	-501.70	501.40	-109.20	40°06'08.672"N	104°47'42.924"W	10.00	Niobrara A
7317.00†	34.481	179.844	7249.41	-456.99	456.70	-109.07	40°06'08.230"N	104°47'42.922"W	10.00	
7318.93†	34.673	179.844	7251.00	-455.90	455.61	-109.07	40°06'08.219"N	104°47'42.922"W	10.00	Niobrara B
7412.11†	43.992	179.844	7323.00	-396.90	396.61	-108.91	40°06'07.636"N	104°47'42.920"W	10.00	Niobrara C
7417.00†	44.481	179.844	7326.50	-393.49	393.20	-108.90	40°06'07.602"N	104°47'42.920"W	10.00	
7517.00†	54.481	179.844	7391.39	-317.57	317.27	-108.69	40°06'06.852"N	104°47'42.917"W	10.00	
7617.00†	64.481	179.844	7442.11	-231.53	231.24	-108.46	40°06'06.001"N	104°47'42.914"W	10.00	

Planned Wellpath Report

FEHRN 37C-32HZ PERMIT REV-1 PWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP_1	Slot	SLOT#01 FEHRN 37C-32HZ (304'FNL & 904'FEL, SEC.32)
Area	Compass Import	Well	FEHRN 37C-32HZ
Field	WELD COUNTY (UTM (ZONE 13)/NAD83/TRUE NORTH)	Wellbore	FEHRN 37C-32HZ PWB
Facility	SEC.32-T2N-R66W		

WELLPATH DATA (145 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7689.11†	71.692	179.844	7469.00	-164.68	164.38	-108.28	40°06'05.340"N	104°47'42.912"W	10.00	Fort Hays
7717.00†	74.481	179.843	7477.11	-137.99	137.70	-108.20	40°06'05.076"N	104°47'42.911"W	10.00	
7796.42†	82.423	179.844	7493.00	-60.25	59.95	-107.99	40°06'04.308"N	104°47'42.908"W	10.00	Codell
7817.00†	84.481	179.844	7495.35	-39.80	39.51	-107.93	40°06'04.106"N	104°47'42.908"W	10.00	
7872.19	90.000	179.844	7498.00	15.31	-15.60	-107.78	40°06'03.561"N	104°47'42.906"W	10.00	LANDING POINT
7917.00†	90.000	179.844	7498.00	60.12	-60.41	-107.66	40°06'03.118"N	104°47'42.904"W	0.00	
8017.00†	90.000	179.844	7498.00	160.12	-160.41	-107.39	40°06'02.129"N	104°47'42.900"W	0.00	
8117.00†	90.000	179.844	7498.00	260.12	-260.41	-107.12	40°06'01.141"N	104°47'42.897"W	0.00	
8217.00†	90.000	179.844	7498.00	360.12	-360.41	-106.84	40°06'00.152"N	104°47'42.893"W	0.00	
8317.00†	90.000	179.844	7498.00	460.12	-460.41	-106.57	40°05'59.163"N	104°47'42.890"W	0.00	
8417.00†	90.000	179.844	7498.00	560.12	-560.40	-106.30	40°05'58.175"N	104°47'42.886"W	0.00	
8517.00†	90.000	179.844	7498.00	660.12	-660.40	-106.02	40°05'57.186"N	104°47'42.883"W	0.00	
8617.00†	90.000	179.844	7498.00	760.12	-760.40	-105.75	40°05'56.198"N	104°47'42.879"W	0.00	
8717.00†	90.000	179.844	7498.00	860.12	-860.40	-105.48	40°05'55.209"N	104°47'42.876"W	0.00	
8817.00†	90.000	179.844	7498.00	960.12	-960.40	-105.21	40°05'54.220"N	104°47'42.872"W	0.00	
8917.00†	90.000	179.844	7498.00	1060.12	-1060.40	-104.93	40°05'53.232"N	104°47'42.869"W	0.00	
9017.00†	90.000	179.844	7498.00	1160.12	-1160.40	-104.66	40°05'52.243"N	104°47'42.865"W	0.00	
9117.00†	90.000	179.844	7498.00	1260.12	-1260.40	-104.39	40°05'51.255"N	104°47'42.862"W	0.00	
9217.00†	90.000	179.844	7498.00	1360.12	-1360.40	-104.11	40°05'50.266"N	104°47'42.858"W	0.00	
9317.00†	90.000	179.844	7498.00	1460.12	-1460.40	-103.84	40°05'49.277"N	104°47'42.855"W	0.00	
9417.00†	90.000	179.844	7498.00	1560.12	-1560.40	-103.57	40°05'48.289"N	104°47'42.851"W	0.00	
9517.00†	90.000	179.844	7498.00	1660.12	-1660.40	-103.30	40°05'47.300"N	104°47'42.848"W	0.00	
9617.00†	90.000	179.844	7498.00	1760.12	-1760.40	-103.02	40°05'46.312"N	104°47'42.844"W	0.00	
9717.00†	90.000	179.844	7498.00	1860.12	-1860.40	-102.75	40°05'45.323"N	104°47'42.841"W	0.00	
9817.00†	90.000	179.844	7498.00	1960.12	-1960.40	-102.48	40°05'44.334"N	104°47'42.837"W	0.00	
9917.00†	90.000	179.844	7498.00	2060.12	-2060.40	-102.21	40°05'43.346"N	104°47'42.834"W	0.00	
10017.00†	90.000	179.844	7498.00	2160.12	-2160.40	-101.94	40°05'42.357"N	104°47'42.830"W	0.00	
10117.00†	90.000	179.844	7498.00	2260.12	-2260.40	-101.66	40°05'41.369"N	104°47'42.827"W	0.00	
10217.00†	90.000	179.844	7498.00	2360.12	-2360.40	-101.39	40°05'40.380"N	104°47'42.823"W	0.00	
10317.00†	90.000	179.844	7498.00	2460.12	-2460.40	-101.12	40°05'39.391"N	104°47'42.820"W	0.00	
10417.00†	90.000	179.844	7498.00	2560.12	-2560.40	-100.85	40°05'38.403"N	104°47'42.816"W	0.00	
10517.00†	90.000	179.844	7498.00	2660.12	-2660.40	-100.57	40°05'37.414"N	104°47'42.813"W	0.00	
10617.00†	90.000	179.844	7498.00	2760.12	-2760.40	-100.30	40°05'36.426"N	104°47'42.809"W	0.00	
10717.00†	90.000	179.844	7498.00	2860.12	-2860.40	-100.03	40°05'35.437"N	104°47'42.806"W	0.00	
10817.00†	90.000	179.844	7498.00	2960.12	-2960.40	-99.76	40°05'34.448"N	104°47'42.802"W	0.00	
10917.00†	90.000	179.844	7498.00	3060.12	-3060.40	-99.49	40°05'33.460"N	104°47'42.799"W	0.00	
11017.00†	90.000	179.844	7498.00	3160.12	-3160.40	-99.22	40°05'32.471"N	104°47'42.795"W	0.00	
11117.00†	90.000	179.844	7498.00	3260.12	-3260.39	-98.94	40°05'31.482"N	104°47'42.792"W	0.00	
11217.00†	90.000	179.844	7498.00	3360.12	-3360.39	-98.67	40°05'30.494"N	104°47'42.788"W	0.00	
11317.00†	90.000	179.844	7498.00	3460.12	-3460.39	-98.40	40°05'29.505"N	104°47'42.785"W	0.00	
11417.00†	90.000	179.844	7498.00	3560.12	-3560.39	-98.13	40°05'28.517"N	104°47'42.781"W	0.00	
11517.00†	90.000	179.844	7498.00	3660.12	-3660.39	-97.86	40°05'27.528"N	104°47'42.778"W	0.00	
11617.00†	90.000	179.844	7498.00	3760.12	-3760.39	-97.59	40°05'26.539"N	104°47'42.774"W	0.00	
11717.00†	90.000	179.844	7498.00	3860.12	-3860.39	-97.31	40°05'25.551"N	104°47'42.771"W	0.00	
11817.00†	90.000	179.844	7498.00	3960.12	-3960.39	-97.04	40°05'24.562"N	104°47'42.767"W	0.00	

Planned Wellpath Report

FEHRN 37C-32HZ PERMIT REV-1 PWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP_1	Slot	SLOT#01 FEHRN 37C-32HZ (304'FNL & 904'FEL, SEC.32)
Area	Compass Import	Well	FEHRN 37C-32HZ
Field	WELD COUNTY (UTM (ZONE 13)/NAD83/TRUE NORTH)	Wellbore	FEHRN 37C-32HZ PWB
Facility	SEC.32-T2N-R66W		

WELLPATH DATA (145 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11917.00†	90.000	179.844	7498.00	4060.12	-4060.39	-96.77	40°05'23.574"N	104°47'42.764"W	0.00	
12017.00†	90.000	179.844	7498.00	4160.12	-4160.39	-96.50	40°05'22.585"N	104°47'42.760"W	0.00	
12117.00†	90.000	179.845	7498.00	4260.12	-4260.39	-96.23	40°05'21.596"N	104°47'42.757"W	0.00	
12217.00†	90.000	179.845	7498.00	4360.12	-4360.39	-95.96	40°05'20.608"N	104°47'42.753"W	0.00	
12317.00†	90.000	179.845	7498.00	4460.12	-4460.39	-95.69	40°05'19.619"N	104°47'42.750"W	0.00	
12417.00†	90.000	179.845	7498.00	4560.12	-4560.39	-95.41	40°05'18.631"N	104°47'42.746"W	0.00	
12517.00†	90.000	179.845	7498.00	4660.12	-4660.39	-95.14	40°05'17.642"N	104°47'42.743"W	0.00	
12617.00†	90.000	179.845	7498.00	4760.12	-4760.39	-94.87	40°05'16.653"N	104°47'42.739"W	0.00	
12717.00†	90.000	179.845	7498.00	4860.12	-4860.39	-94.60	40°05'15.665"N	104°47'42.736"W	0.00	
12783.52	90.000	179.845	7498.00 ¹	4926.63	-4926.91	-94.42	40°05'15.007"N	104°47'42.733"W	0.00	TOTAL DEPTH

HOLE & CASING SECTIONS - Ref Wellbore: FEHRN 37C-32HZ PWB Ref Wellpath: FEHRN 37C-32HZ 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	1078.00	1061.00	17.00	1078.00	0.00	0.00	0.00	0.00
9.625in Casing Surface	17.00	1078.00	1061.00	17.00	1078.00	0.00	0.00	0.00	0.00
8.75in Open Hole	1078.00	7872.19	6794.19	1078.00	7498.00	0.00	0.00	-15.60	-107.78
7in Casing Intermediate	17.00	7872.19	7855.19	17.00	7498.00	0.00	0.00	-15.60	-107.78
6.125in Open Hole	7872.19	12783.52	4911.33	7498.00	7498.00	-15.60	-107.78	-4926.91	-94.42
4.5in Casing Intermediate	17.00	12783.52	12766.52	17.00	7498.00	0.00	0.00	-4926.91	-94.42

REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP_1	Slot	SLOT#01 FEHRN 37C-32HZ (304'FNL & 904'FEL, SEC.32)
Area	Compass Import	Well	FEHRN 37C-32HZ
Field	WELD COUNTY (UTM (ZONE 13)/NAD83/TRUE NORTH)	Wellbore	FEHRN 37C-32HZ PWB
Facility	SEC.32-T2N-R66W		

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SEC.29-T2N-R66W SECTION LINES		4.00	0.00	0.00	1697779.87	14563589.76	40°06'03.715"N	104°47'41.518"W	polygon
SEC.32-T2N-R66W SECTION LINES		4.00	0.00	0.00	1697779.87	14563589.76	40°06'03.715"N	104°47'41.518"W	polygon
1) FEHERN 37C-32HZ BHL (50'FSL & 1012'FEL, SEC.32) REV-2	12783.52	7498.00	-4926.91	-94.42	1697696.81	14558662.65	40°05'15.007"N	104°47'42.733"W	point
FEHERN 37C-32HZ BHL (50'FSL & 1089'FEL, SEC.32) REV-1		7498.00	-4926.91	-171.42	1697619.81	14558662.48	40°05'15.007"N	104°47'43.724"W	point

SURVEY PROGRAM - Ref Wellbore: FEHRN 37C-32HZ PWB Ref Wellpath: FEHRN 37C-32HZ PERMIT REV-1 PWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
17.00	1000.00	ISCWSA MWD, Rev. 2, axial magnetic correction (Standard) (MagVAR IFR Wattenberg)		FEHRN 37C-32HZ PWB
1000.00	7872.19	ISCWSA MWD, Rev. 2, axial magnetic correction (Standard) (MagVAR IFR Wattenberg)		FEHRN 37C-32HZ PWB
7872.19	12783.52	ISCWSA MWD, Rev. 2, axial magnetic correction (Standard) (MagVAR IFR Wattenberg)		FEHRN 37C-32HZ PWB

Planned Wellpath Report

FEHRN 37C-32HZ PERMIT REV-1 PWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP_1	Slot	SLOT#01 FEHRN 37C-32HZ (304'FNL & 904'FEL, SEC.32)
Area	Compass Import	Well	FEHRN 37C-32HZ
Field	WELD COUNTY (UTM (ZONE 13)/NAD83/TRUE NORTH)	Wellbore	FEHRN 37C-32HZ PWB
Facility	SEC.32-T2N-R66W		

WELLPATH COMMENTS

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
1028.00	0.000	348.900	1028.00	Fox Hills Base
3990.82	10.000	348.900	3955.00	Parkman
4571.64	9.959	348.900	4527.00	Sussex
7164.75	19.256	179.843	7114.00	Sharon Springs
7227.51	25.532	179.843	7172.00	Niobrara A
7318.93	34.673	179.844	7251.00	Niobrara B
7412.11	43.992	179.844	7323.00	Niobrara C
7689.11	71.692	179.844	7469.00	Fort Hays
7796.42	82.423	179.844	7493.00	Codell

DESIGN COMMENTS

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
17.00	0.000	348.900	17.00	TIE-ON
1300.00	0.000	348.900	1300.00	BEGIN NUDGE
1800.00	10.000	348.900	1797.47	END NUDGE
4569.61	10.000	348.900	4525.00	BEGIN DROP
5069.61	0.000	179.844	5022.47	END DROP
6972.19	0.000	179.844	6925.05	KOP, BUILD @ 10/100'
7872.19	90.000	179.844	7498.00	LANDING POINT
12783.52	90.000	179.845	7498.00	TOTAL DEPTH