

# BISON OIL & GAS

Location: COLORADO Slot: SLOT#04 CASTOR FED 8-59 19-24-6 (1476'FSL & 560'FEL SEC.19)

Field: WELD COUNTY (NAD83/TN) Well: CASTOR FED 8-59 19-24-6

Facility: SEC.19-T08N-R59W Wellbore: CASTOR FED 8-59 19-24-6 PWB

Plot reference wellpath is CASTOR FED 8-59 19-24-6 (REV-A.0) PWP

Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet

North Reference: True north

Scale: True distance

Reference wellpath measured depths are referenced to H&P 290 (4854'GL+25'RIG@4879'RKB) (RKB)

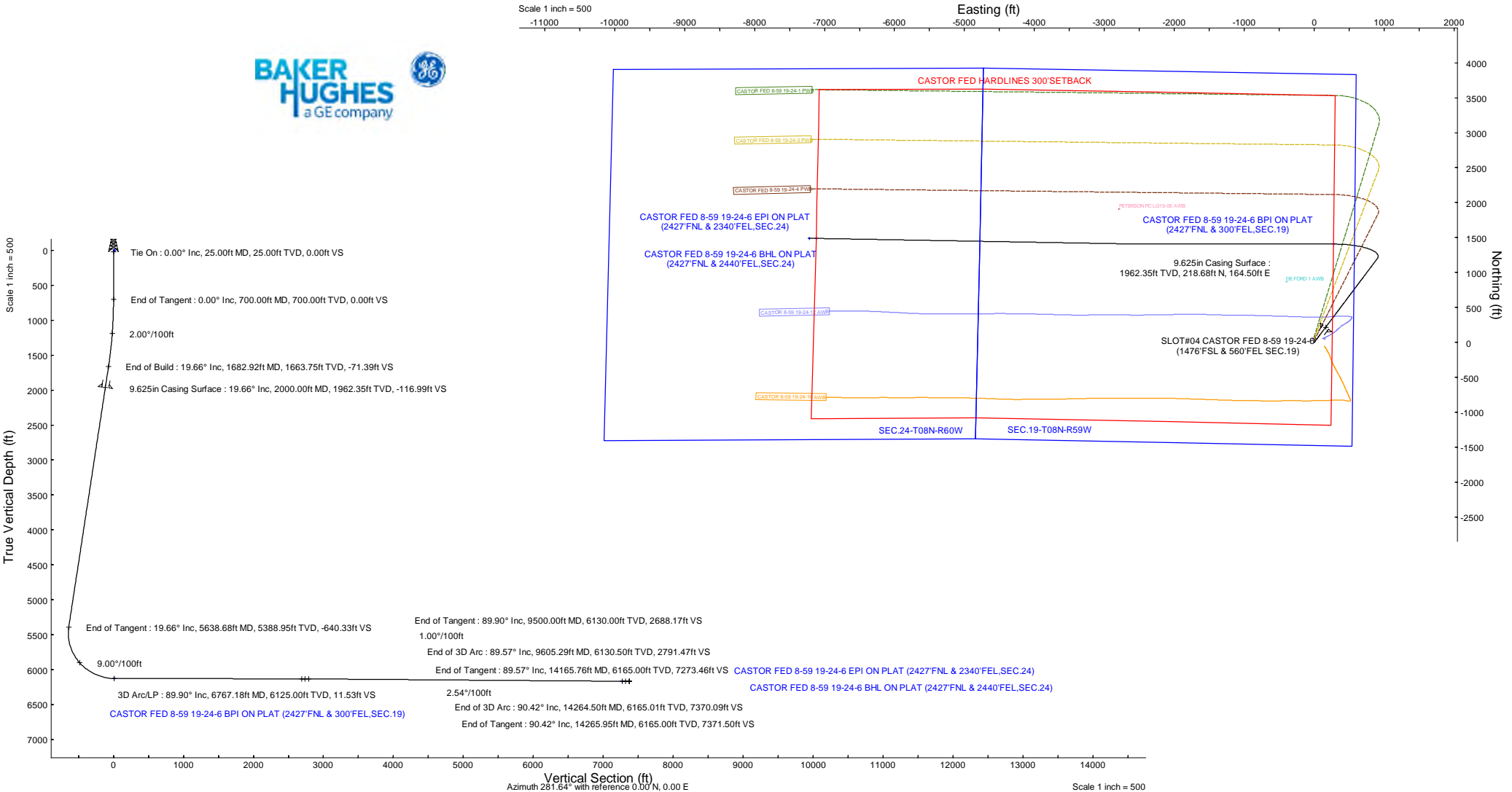
Coordinates are in feet referenced to Slot

Depths are in feet

Created by: hanisab on 2019-11-12; Database: WA\_DENVER

Location Information					
Facility Name			Grid East (US ft)	Grid North (US ft)	Latitude
SEC.19-T08N-R59W			3412761.859	1481203.932	40°38'41.2700"N
Slot			Grid East (US ft)	Grid North (US ft)	Latitude
SLOT#04 CASTOR FED 8-59 19-24-6 (1476'FSL & 560'FEL SEC.19)			3412761.873	1481120.411	40°38'40.4448"N
H&P 290 (4854'GL+25'RIG@4879'RKB) (RKB) to Mud line (N Slot: SLOT#04 CASTOR FED 8-59 19-24-6 (1476'FSL & 560'FEL SEC.19))			4879ft		
Mean Sea Level to Mud line (N Slot: SLOT#04 CASTOR FED 8-59 19-24-6 (1476'FSL & 560'FEL SEC.19))			0ft		
H&P 290 (4854'GL+25'RIG@4879'RKB) (RKB) to Mean Sea Level			4879ft		

Survey Program									
Start MD (ft)	End MD (ft)	Tool		Model		Log Name/Comment		Wellbore	
25.00	2000.00	OWSG MWD rev2		OWSG MWD rev2 + IFR1				CASTOR FED 8-59 19-24-6 PWB	
2000.00	14265.95	OWSG MWD rev2		OWSG MWD rev2 + IFR1 + Sag Correction				CASTOR FED 8-59 19-24-6 PWB	
Bottom Hole Location									
MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
14265.95	90.421	268.645	6165.00	1487.52	-7219.86	3405518.23	1482486.59	40°38'55.1328"N	104°02'18.7728"W
Well Profile Data									
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)	
Tie On	25.00	0.000	36.953	25.00	0.00	0.00	0.00	0.00	
End of Tangent	700.00	0.000	36.953	700.00	0.00	0.00	0.00	0.00	
End of Build	1682.92	19.658	36.953	1663.75	133.43	100.38	2.00	-71.39	
End of Tangent	5638.68	19.658	36.953	5388.95	1196.89	900.38	0.00	-640.33	
3D Arc/LP	6767.18	89.895	270.005	6125.00	1406.67	278.05	9.00	11.53	
End of Tangent	9500.00	89.895	270.005	6130.00	1406.91	-2454.76	0.00	2688.17	
End of 3D Arc	9605.29	89.567	271.005	6130.50	1407.84	-2560.04	1.00	2791.47	
End of Tangent	14165.76	89.567	271.005	6165.00	1487.85	-7119.68	0.00	7273.46	
End of 3D Arc	14264.50	90.421	268.645	6165.01	1487.55	-7218.41	2.54	7370.09	
End of Tangent	14265.95	90.421	268.645	6165.00	1487.52	-7219.86	0.00	7371.50	





# Planned Wellpath Report

CASTOR FED 8-59 19-24-6 (REV-A.0) PWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	BISON OIL & GAS	Well	CASTOR FED 8-59 19-24-6
Field	WELD COUNTY (NAD83/TN)	API/Legal	
Facility	SEC.19-T08N-R59W	Wellbore	CASTOR FED 8-59 19-24-6 PWB
Slot	SLOT#04 CASTOR FED 8-59 19-24-6 (1476'FSL & 560'FEL SEC.19)		

REPORT SETUP INFORMATION			
Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 6.0
North Reference	True	User	Hanisab
Scale	0.999980	Report Generated	11/12/2019 at 1:41:29 PM
Convergence at slot	0.96° East	Database	WA_DENVER

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-83.51	-1.39	3412761.87	1481120.41	40°38'40.4448"N	104°00'45.1080"W
Facility Reference Pt			3412761.86	1481203.93	40°38'41.2700"N	104°00'45.0900"W
Field Reference Pt			3376841.67	1496090.80	40°41'14.0500"N	104°08'28.0600"W

WELLPATH DATUM			
Calculation method	Minimum curvature	H&P 290 (4854'GL+25'RIG@4879'RKB) (RKB) to Facility Vertical Datum	4879.00ft
Horizontal Reference Pt	Slot	H&P 290 (4854'GL+25'RIG@4879'RKB) (RKB) to Mean Sea Level	4879.00ft
Vertical Reference Pt	H&P 290 (4854'GL+25'RIG@4879'RKB) (RKB)	H&P 290 (4854'GL+25'RIG@4879'RKB) (RKB) to Mud Line at Slot (SLOT#04 CASTOR FED 8-59 19-24-6 (1476'FSL & 560'FEL SEC.19))	4879.00ft
MD Reference Pt	H&P 290 (4854'GL+25'RIG@4879'RKB) (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	281.64°



# Planned Wellpath Report

CASTOR FED 8-59 19-24-6 (REV-A.0) PWP

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## REFERENCE WELLPATH IDENTIFICATION

Operator	BISON OIL & GAS	Well	CASTOR FED 8-59 19-24-6
Field	WELD COUNTY (NAD83/TN)	API/Legal	
Facility	SEC.19-T08N-R59W	Wellbore	CASTOR FED 8-59 19-24-6 PWB
Slot	SLOT#04 CASTOR FED 8-59 19-24-6 (1476'FSL & 560'FEL SEC.19)		

## WELLPATH DATA (160 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	36.953	0.00	0.00	0.00	0.00	40°38'40.4448"N	104°00'45.1080"W	0.00	
25.00	0.000	36.953	25.00	0.00	0.00	0.00	40°38'40.4448"N	104°00'45.1080"W	0.00	Tie On
125.00†	0.000	36.953	125.00	0.00	0.00	0.00	40°38'40.4448"N	104°00'45.1080"W	0.00	
225.00†	0.000	36.953	225.00	0.00	0.00	0.00	40°38'40.4448"N	104°00'45.1080"W	0.00	
325.00†	0.000	36.953	325.00	0.00	0.00	0.00	40°38'40.4448"N	104°00'45.1080"W	0.00	
425.00†	0.000	36.953	425.00	0.00	0.00	0.00	40°38'40.4448"N	104°00'45.1080"W	0.00	
525.00†	0.000	36.953	525.00	0.00	0.00	0.00	40°38'40.4448"N	104°00'45.1080"W	0.00	
625.00†	0.000	36.953	625.00	0.00	0.00	0.00	40°38'40.4448"N	104°00'45.1080"W	0.00	
700.00	0.000	36.953	700.00	0.00	0.00	0.00	40°38'40.4448"N	104°00'45.1080"W	0.00	End of Tangent
725.00†	0.500	36.953	725.00	-0.05	0.09	0.07	40°38'40.4457"N	104°00'45.1071"W	2.00	
825.00†	2.500	36.953	824.96	-1.17	2.18	1.64	40°38'40.4663"N	104°00'45.0867"W	2.00	
925.00†	4.500	36.953	924.77	-3.78	7.06	5.31	40°38'40.5145"N	104°00'45.0391"W	2.00	
1025.00†	6.500	36.953	1024.30	-7.87	14.72	11.07	40°38'40.5902"N	104°00'44.9644"W	2.00	
1125.00†	8.500	36.953	1123.44	-13.45	25.15	18.92	40°38'40.6933"N	104°00'44.8626"W	2.00	
1225.00†	10.500	36.953	1222.07	-20.51	38.34	28.84	40°38'40.8236"N	104°00'44.7339"W	2.00	
1325.00†	12.500	36.953	1320.05	-29.03	54.27	40.82	40°38'40.9810"N	104°00'44.5784"W	2.00	
1425.00†	14.500	36.953	1417.29	-39.01	72.92	54.86	40°38'41.1653"N	104°00'44.3964"W	2.00	
1525.00†	16.500	36.953	1513.64	-50.44	94.28	70.92	40°38'41.3764"N	104°00'44.1880"W	2.00	
1625.00†	18.500	36.953	1609.01	-63.29	118.30	89.00	40°38'41.6138"N	104°00'43.9535"W	2.00	
1682.92	19.658	36.953	1663.75	-71.39	133.43	100.38	40°38'41.7633"N	104°00'43.8058"W	2.00	End of Build
1725.00†	19.658	36.953	1703.38	-77.44	144.75	108.89	40°38'41.8751"N	104°00'43.6954"W	0.00	
1825.00†	19.658	36.953	1797.55	-91.82	171.63	129.11	40°38'42.1407"N	104°00'43.4331"W	0.00	
1925.00†	19.658	36.953	1891.72	-106.20	198.51	149.34	40°38'42.4064"N	104°00'43.1707"W	0.00	
2025.00†	19.658	36.953	1985.89	-120.59	225.40	169.56	40°38'42.6720"N	104°00'42.9084"W	0.00	
2125.00†	19.658	36.953	2080.06	-134.97	252.28	189.78	40°38'42.9376"N	104°00'42.6460"W	0.00	
2225.00†	19.658	36.953	2174.23	-149.35	279.16	210.01	40°38'43.2033"N	104°00'42.3837"W	0.00	
2325.00†	19.658	36.953	2268.40	-163.74	306.05	230.23	40°38'43.4689"N	104°00'42.1213"W	0.00	
2425.00†	19.658	36.953	2362.58	-178.12	332.93	250.45	40°38'43.7346"N	104°00'41.8590"W	0.00	
2525.00†	19.658	36.953	2456.75	-192.50	359.82	270.68	40°38'44.0002"N	104°00'41.5966"W	0.00	
2625.00†	19.658	36.953	2550.92	-206.88	386.70	290.90	40°38'44.2658"N	104°00'41.3342"W	0.00	
2725.00†	19.658	36.953	2645.09	-221.27	413.58	311.13	40°38'44.5315"N	104°00'41.0719"W	0.00	
2825.00†	19.658	36.953	2739.26	-235.65	440.47	331.35	40°38'44.7971"N	104°00'40.8095"W	0.00	
2925.00†	19.658	36.953	2833.43	-250.03	467.35	351.57	40°38'45.0628"N	104°00'40.5472"W	0.00	
3025.00†	19.658	36.953	2927.61	-264.42	494.23	371.80	40°38'45.3284"N	104°00'40.2848"W	0.00	
3125.00†	19.658	36.953	3021.78	-278.80	521.12	392.02	40°38'45.5940"N	104°00'40.0224"W	0.00	

WELLPATH DATA (160 stations) † = interpolated, ‡ = extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
3217.62†	19.658	36.953	3109.00	-292.12	546.02	410.75	40°38'45.8401"N	104°00'39.7794"W	0.00	Parkman
3225.00†	19.658	36.953	3115.95	-293.18	548.00	412.24	40°38'45.8597"N	104°00'39.7601"W	0.00	
3325.00†	19.658	36.953	3210.12	-307.56	574.88	432.47	40°38'46.1253"N	104°00'39.4977"W	0.00	
3425.00†	19.658	36.953	3304.29	-321.95	601.77	452.69	40°38'46.3910"N	104°00'39.2353"W	0.00	
3525.00†	19.658	36.953	3398.46	-336.33	628.65	472.92	40°38'46.6566"N	104°00'38.9730"W	0.00	
3625.00†	19.658	36.953	3492.63	-350.71	655.54	493.14	40°38'46.9222"N	104°00'38.7106"W	0.00	
3725.00†	19.658	36.953	3586.81	-365.09	682.42	513.36	40°38'47.1879"N	104°00'38.4483"W	0.00	
3825.00†	19.658	36.953	3680.98	-379.48	709.30	533.59	40°38'47.4535"N	104°00'38.1859"W	0.00	
3925.00†	19.658	36.953	3775.15	-393.86	736.19	553.81	40°38'47.7192"N	104°00'37.9235"W	0.00	
3982.18†	19.658	36.953	3829.00	-402.08	751.56	565.37	40°38'47.8711"N	104°00'37.7735"W	0.00	Sussex
4025.00†	19.658	36.953	3869.32	-408.24	763.07	574.03	40°38'47.9848"N	104°00'37.6612"W	0.00	
4125.00†	19.658	36.953	3963.49	-422.63	789.95	594.26	40°38'48.2504"N	104°00'37.3988"W	0.00	
4225.00†	19.658	36.953	4057.66	-437.01	816.84	614.48	40°38'48.5161"N	104°00'37.1364"W	0.00	
4325.00†	19.658	36.953	4151.83	-451.39	843.72	634.70	40°38'48.7817"N	104°00'36.8741"W	0.00	
4425.00†	19.658	36.953	4246.01	-465.77	870.60	654.93	40°38'49.0473"N	104°00'36.6117"W	0.00	
4525.00†	19.658	36.953	4340.18	-480.16	897.49	675.15	40°38'49.3130"N	104°00'36.3493"W	0.00	
4625.00†	19.658	36.953	4434.35	-494.54	924.37	695.38	40°38'49.5786"N	104°00'36.0869"W	0.00	
4725.00†	19.658	36.953	4528.52	-508.92	951.26	715.60	40°38'49.8443"N	104°00'35.8246"W	0.00	
4767.98†	19.658	36.953	4569.00	-515.10	962.81	724.29	40°38'49.9584"N	104°00'35.7118"W	0.00	Shannon
4825.00†	19.658	36.953	4622.69	-523.30	978.14	735.82	40°38'50.1099"N	104°00'35.5622"W	0.00	
4925.00†	19.658	36.953	4716.86	-537.69	1005.02	756.05	40°38'50.3755"N	104°00'35.2998"W	0.00	
5025.00†	19.658	36.953	4811.04	-552.07	1031.91	776.27	40°38'50.6412"N	104°00'35.0375"W	0.00	
5125.00†	19.658	36.953	4905.21	-566.45	1058.79	796.49	40°38'50.9068"N	104°00'34.7751"W	0.00	
5225.00†	19.658	36.953	4999.38	-580.84	1085.67	816.72	40°38'51.1724"N	104°00'34.5127"W	0.00	
5325.00†	19.658	36.953	5093.55	-595.22	1112.56	836.94	40°38'51.4381"N	104°00'34.2503"W	0.00	
5425.00†	19.658	36.953	5187.72	-609.60	1139.44	857.17	40°38'51.7037"N	104°00'33.9880"W	0.00	
5525.00†	19.658	36.953	5281.89	-623.98	1166.32	877.39	40°38'51.9693"N	104°00'33.7256"W	0.00	
5625.00†	19.658	36.953	5376.06	-638.37	1193.21	897.61	40°38'52.2350"N	104°00'33.4632"W	0.00	
5638.68	19.658	36.953	5388.95	-640.33	1196.89	900.38	40°38'52.2713"N	104°00'33.4273"W	0.00	End of Tangent
5725.00†	16.388	13.946	5471.12	-647.04	1220.34	912.06	40°38'52.5031"N	104°00'33.2758"W	9.00	
5825.00†	16.703	341.979	5567.18	-640.48	1247.76	911.01	40°38'52.7740"N	104°00'33.2893"W	9.00	
5925.00†	21.147	317.519	5661.90	-618.71	1274.78	894.35	40°38'53.0410"N	104°00'33.5055"W	9.00	
6025.00†	27.804	302.739	5752.95	-582.26	1300.75	862.49	40°38'53.2976"N	104°00'33.9189"W	9.00	
6125.00†	35.447	293.608	5838.08	-532.03	1325.02	816.20	40°38'53.5375"N	104°00'34.5193"W	9.00	
6206.99†	42.074	288.404	5902.00	-481.42	1343.24	768.28	40°38'53.7176"N	104°00'35.1410"W	9.00	Sharon Springs
6225.00†	43.556	287.441	5915.21	-469.26	1347.01	756.64	40°38'53.7548"N	104°00'35.2920"W	9.00	
6321.08†	51.580	283.058	5980.00	-398.56	1365.47	688.26	40°38'53.9372"N	104°00'36.1791"W	9.00	Sharon Springs Hot GR Marker
6325.00†	51.910	282.901	5982.43	-395.49	1366.16	685.26	40°38'53.9440"N	104°00'36.2180"W	9.00	
6361.22†	54.974	281.513	6004.00	-366.39	1372.30	656.83	40°38'54.0047"N	104°00'36.5869"W	9.00	Nio A Top
6425.00†	60.402	279.304	6038.08	-312.53	1382.01	603.83	40°38'54.1006"N	104°00'37.2744"W	9.00	
6525.00†	68.976	276.272	6080.80	-222.44	1394.16	514.35	40°38'54.2207"N	104°00'38.4352"W	9.00	
6582.19†	73.902	274.699	6099.00	-168.56	1399.33	460.41	40°38'54.2718"N	104°00'39.1351"W	9.00	Nio B Top
6625.00†	77.598	273.573	6109.54	-127.43	1402.32	419.03	40°38'54.3014"N	104°00'39.6719"W	9.00	
6725.00†	86.244	271.048	6123.58	-29.84	1406.28	320.20	40°38'54.3406"N	104°00'40.9540"W	9.00	
6767.18	89.895	270.005	6125.00 <sup>†</sup>	11.53	1406.67	278.05	40°38'54.3444"N	104°00'41.5008"W	9.00	3D Arc/LP
6825.00†	89.895	270.005	6125.11	68.15	1406.68	220.24	40°38'54.3445"N	104°00'42.2508"W	0.00	
6925.00†	89.895	270.005	6125.29	166.10	1406.68	120.24	40°38'54.3445"N	104°00'43.5482"W	0.00	
7025.00†	89.895	270.005	6125.47	264.04	1406.69	20.24	40°38'54.3446"N	104°00'44.8455"W	0.00	
7125.00†	89.895	270.005	6125.66	361.99	1406.70	-79.76	40°38'54.3447"N	104°00'46.1428"W	0.00	
7225.00†	89.895	270.005	6125.84	459.93	1406.71	-179.76	40°38'54.3448"N	104°00'47.4401"W	0.00	

WELLPATH DATA (160 stations) † = interpolated, ‡ = extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7325.00†	89.895	270.005	6126.02	557.87	1406.72	-279.76	40°38'54.3449"N	104°00'48.7374"W	0.00	
7425.00†	89.895	270.005	6126.20	655.82	1406.73	-379.76	40°38'54.3450"N	104°00'50.0347"W	0.00	
7525.00†	89.895	270.005	6126.39	753.76	1406.74	-479.76	40°38'54.3450"N	104°00'51.3321"W	0.00	
7625.00†	89.895	270.005	6126.57	851.71	1406.75	-579.76	40°38'54.3451"N	104°00'52.6294"W	0.00	
7725.00†	89.895	270.005	6126.75	949.65	1406.75	-679.76	40°38'54.3451"N	104°00'53.9267"W	0.00	
7825.00†	89.895	270.005	6126.94	1047.60	1406.76	-779.76	40°38'54.3452"N	104°00'55.2240"W	0.00	
7925.00†	89.895	270.005	6127.12	1145.54	1406.77	-879.76	40°38'54.3453"N	104°00'56.5213"W	0.00	
8025.00†	89.895	270.005	6127.30	1243.49	1406.78	-979.76	40°38'54.3453"N	104°00'57.8186"W	0.00	
8125.00†	89.895	270.005	6127.49	1341.43	1406.79	-1079.76	40°38'54.3454"N	104°00'59.1159"W	0.00	
8225.00†	89.895	270.005	6127.67	1439.37	1406.80	-1179.76	40°38'54.3454"N	104°01'0.4133"W	0.00	
8325.00†	89.895	270.005	6127.85	1537.32	1406.81	-1279.76	40°38'54.3454"N	104°01'1.7106"W	0.00	
8425.00†	89.895	270.005	6128.04	1635.26	1406.82	-1379.76	40°38'54.3455"N	104°01'3.0079"W	0.00	
8525.00†	89.895	270.005	6128.22	1733.21	1406.82	-1479.76	40°38'54.3455"N	104°01'4.3052"W	0.00	
8625.00†	89.895	270.005	6128.40	1831.15	1406.83	-1579.76	40°38'54.3455"N	104°01'5.6025"W	0.00	
8725.00†	89.895	270.005	6128.58	1929.10	1406.84	-1679.76	40°38'54.3455"N	104°01'6.8998"W	0.00	
8825.00†	89.895	270.005	6128.77	2027.04	1406.85	-1779.76	40°38'54.3456"N	104°01'8.1972"W	0.00	
8925.00†	89.895	270.005	6128.95	2124.99	1406.86	-1879.76	40°38'54.3456"N	104°01'9.4945"W	0.00	
9025.00†	89.895	270.005	6129.13	2222.93	1406.87	-1979.76	40°38'54.3456"N	104°01'10.7918"W	0.00	
9125.00†	89.895	270.005	6129.32	2320.87	1406.88	-2079.76	40°38'54.3456"N	104°01'12.0891"W	0.00	
9225.00†	89.895	270.005	6129.50	2418.82	1406.89	-2179.76	40°38'54.3456"N	104°01'13.3864"W	0.00	
9325.00†	89.895	270.005	6129.68	2516.76	1406.89	-2279.76	40°38'54.3456"N	104°01'14.6837"W	0.00	
9425.00†	89.895	270.005	6129.87	2614.71	1406.90	-2379.76	40°38'54.3456"N	104°01'15.9810"W	0.00	
9500.00	89.895	270.005	6130.00	2688.17	1406.91	-2454.76	40°38'54.3456"N	104°01'16.9540"W	0.00	End of Tangent
9525.00†	89.817	270.243	6130.07	2712.66	1406.96	-2479.76	40°38'54.3461"N	104°01'17.2784"W	1.00	
9605.29	89.567	271.005	6130.50	2791.47	1407.84	-2560.04	40°38'54.3546"N	104°01'18.3199"W	1.00	End of 3D Arc
9625.00†	89.567	271.005	6130.65	2810.84	1408.18	-2579.75	40°38'54.3580"N	104°01'18.5755"W	0.00	
9725.00†	89.567	271.005	6131.40	2909.12	1409.94	-2679.73	40°38'54.3753"N	104°01'19.8726"W	0.00	
9825.00†	89.567	271.005	6132.16	3007.40	1411.69	-2779.71	40°38'54.3925"N	104°01'21.1697"W	0.00	
9925.00†	89.567	271.005	6132.92	3105.68	1413.45	-2879.69	40°38'54.4097"N	104°01'22.4668"W	0.00	
10025.00†	89.567	271.005	6133.67	3203.96	1415.20	-2979.68	40°38'54.4269"N	104°01'23.7639"W	0.00	
10125.00†	89.567	271.005	6134.43	3302.24	1416.96	-3079.66	40°38'54.4441"N	104°01'25.0610"W	0.00	
10225.00†	89.567	271.005	6135.19	3400.51	1418.71	-3179.64	40°38'54.4614"N	104°01'26.3580"W	0.00	
10325.00†	89.567	271.005	6135.94	3498.79	1420.47	-3279.62	40°38'54.4786"N	104°01'27.6551"W	0.00	
10425.00†	89.567	271.005	6136.70	3597.07	1422.22	-3379.60	40°38'54.4958"N	104°01'28.9522"W	0.00	
10525.00†	89.567	271.005	6137.46	3695.35	1423.97	-3479.59	40°38'54.5130"N	104°01'30.2493"W	0.00	
10625.00†	89.567	271.005	6138.21	3793.63	1425.73	-3579.57	40°38'54.5302"N	104°01'31.5464"W	0.00	
10725.00†	89.567	271.005	6138.97	3891.91	1427.48	-3679.55	40°38'54.5473"N	104°01'32.8435"W	0.00	
10825.00†	89.567	271.005	6139.73	3990.19	1429.24	-3779.53	40°38'54.5645"N	104°01'34.1406"W	0.00	
10925.00†	89.567	271.005	6140.48	4088.47	1430.99	-3879.51	40°38'54.5817"N	104°01'35.4376"W	0.00	
11025.00†	89.567	271.005	6141.24	4186.75	1432.75	-3979.49	40°38'54.5989"N	104°01'36.7347"W	0.00	
11125.00†	89.567	271.005	6142.00	4285.03	1434.50	-4079.48	40°38'54.6161"N	104°01'38.0318"W	0.00	
11225.00†	89.567	271.005	6142.75	4383.30	1436.26	-4179.46	40°38'54.6332"N	104°01'39.3289"W	0.00	
11325.00†	89.567	271.005	6143.51	4481.58	1438.01	-4279.44	40°38'54.6504"N	104°01'40.6260"W	0.00	
11425.00†	89.567	271.005	6144.26	4579.86	1439.76	-4379.42	40°38'54.6676"N	104°01'41.9231"W	0.00	
11525.00†	89.567	271.005	6145.02	4678.14	1441.52	-4479.40	40°38'54.6847"N	104°01'43.2202"W	0.00	
11625.00†	89.567	271.005	6145.78	4776.42	1443.27	-4579.38	40°38'54.7019"N	104°01'44.5172"W	0.00	
11725.00†	89.567	271.005	6146.53	4874.70	1445.03	-4679.37	40°38'54.7190"N	104°01'45.8143"W	0.00	
11825.00†	89.567	271.005	6147.29	4972.98	1446.78	-4779.35	40°38'54.7362"N	104°01'47.1114"W	0.00	
11925.00†	89.567	271.005	6148.05	5071.26	1448.54	-4879.33	40°38'54.7533"N	104°01'48.4085"W	0.00	
12025.00†	89.567	271.005	6148.80	5169.54	1450.29	-4979.31	40°38'54.7705"N	104°01'49.7056"W	0.00	



WELLPATH DATA (160 stations) † = interpolated, ‡ = extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
12125.00†	89.567	271.005	6149.56	5267.82	1452.05	-5079.29	40°38'54.7876"N	104°01'51.0027"W	0.00	
12225.00†	89.567	271.005	6150.32	5366.09	1453.80	-5179.28	40°38'54.8047"N	104°01'52.2998"W	0.00	
12325.00†	89.567	271.005	6151.07	5464.37	1455.56	-5279.26	40°38'54.8219"N	104°01'53.5969"W	0.00	
12425.00†	89.567	271.005	6151.83	5562.65	1457.31	-5379.24	40°38'54.8390"N	104°01'54.8939"W	0.00	
12525.00†	89.567	271.005	6152.59	5660.93	1459.06	-5479.22	40°38'54.8561"N	104°01'56.1910"W	0.00	
12625.00†	89.567	271.005	6153.34	5759.21	1460.82	-5579.20	40°38'54.8732"N	104°01'57.4881"W	0.00	
12725.00†	89.567	271.005	6154.10	5857.49	1462.57	-5679.18	40°38'54.8903"N	104°01'58.7852"W	0.00	
12825.00†	89.567	271.005	6154.86	5955.77	1464.33	-5779.17	40°38'54.9074"N	104°02'0.0823"W	0.00	
12925.00†	89.567	271.005	6155.61	6054.05	1466.08	-5879.15	40°38'54.9245"N	104°02'1.3794"W	0.00	
13025.00†	89.567	271.005	6156.37	6152.33	1467.84	-5979.13	40°38'54.9416"N	104°02'2.6765"W	0.00	
13125.00†	89.567	271.005	6157.13	6250.61	1469.59	-6079.11	40°38'54.9587"N	104°02'3.9736"W	0.00	
13225.00†	89.567	271.005	6157.88	6348.88	1471.35	-6179.09	40°38'54.9758"N	104°02'5.2706"W	0.00	
13325.00†	89.567	271.005	6158.64	6447.16	1473.10	-6279.07	40°38'54.9929"N	104°02'6.5677"W	0.00	
13425.00†	89.567	271.005	6159.40	6545.44	1474.85	-6379.06	40°38'55.0100"N	104°02'7.8648"W	0.00	
13525.00†	89.567	271.005	6160.15	6643.72	1476.61	-6479.04	40°38'55.0271"N	104°02'9.1619"W	0.00	
13625.00†	89.567	271.005	6160.91	6742.00	1478.36	-6579.02	40°38'55.0441"N	104°02'10.4590"W	0.00	
13725.00†	89.567	271.005	6161.67	6840.28	1480.12	-6679.00	40°38'55.0612"N	104°02'11.7561"W	0.00	
13825.00†	89.567	271.005	6162.42	6938.56	1481.87	-6778.98	40°38'55.0783"N	104°02'13.0532"W	0.00	
13925.00†	89.567	271.005	6163.18	7036.84	1483.63	-6878.96	40°38'55.0953"N	104°02'14.3503"W	0.00	
14025.00†	89.567	271.005	6163.94	7135.12	1485.38	-6978.95	40°38'55.1124"N	104°02'15.6474"W	0.00	
14125.00†	89.567	271.005	6164.69	7233.40	1487.14	-7078.93	40°38'55.1294"N	104°02'16.9445"W	0.00	
14165.76	89.567	271.005	6165.00 <sup>2</sup>	7273.46	1487.85	-7119.68	40°38'55.1364"N	104°02'17.4732"W	0.00	End of Tangent
14225.00†	90.079	269.590	6165.18	7331.53	1488.16	-7178.92	40°38'55.1393"N	104°02'18.2417"W	2.54	
14264.50	90.421	268.645	6165.01	7370.09	1487.55	-7218.41	40°38'55.1331"N	104°02'18.7540"W	2.54	End of 3D Arc
14265.95	90.421	268.645	6165.00 <sup>3</sup>	7371.50	1487.52	-7219.86	40°38'55.1328"N	104°02'18.7728"W	0.00	End of Tangent

HOLE & CASING SECTIONS - Ref Wellbore: CASTOR FED 8-59 19-24-6 PWB      Ref Wellpath: CASTOR FED 8-59 19-24-6 (REV-A.0) 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	25.00	2000.00	1975.00	25.00	1962.35	0.00	0.00	218.68	164.50	
9.625in Casing Surface	25.00	2000.00	1975.00	25.00	1962.35	0.00	0.00	218.68	164.50	
8.5in Open Hole	2000.00	14265.95	12265.95	1962.35	6165.00	218.68	164.50	1487.52	-7219.86	

TARGETS										
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape	
CASTOR FED HARDLINES 300'SETBACK	N/A	0.00	56.19	0.62	3412761.55	1481176.60	40°38'41.0000"N	104°00'45.1000"W	polygon	
	2D Polygon: dimensions not calculated									
SEC.19-T08N-R59W	N/A	0.00	56.19	0.62	3412761.55	1481176.60	40°38'41.0000"N	104°00'45.1000"W	polygon	
	2D Polygon: dimensions not calculated									
SEC.24-T08N-R60W	N/A	0.00	56.19	0.62	3412761.55	1481176.60	40°38'41.0000"N	104°00'45.1000"W	polygon	
	2D Polygon: dimensions not calculated									
1) CASTOR FED 8-59 19-24-6 BPI ON PLAT (2427'FNL & 300'FEL,SEC.19)	6767.18	6125.00	1406.67	278.05	3413016.28	1482531.52	40°38'54.3444"N	104°00'41.5008"W	point	
3) CASTOR FED 8-59 19-24-6 BHL ON PLAT (2427'FNL & 2440'FEL,SEC.24)	14265.95	6165.00	1487.52	-7219.86	3405518.23	1482486.59	40°38'55.1328"N	104°02'18.7728"W	point	

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
2) CASTOR FED 8-59 19-24-6 EPI ON PLAT (2427'FNL & 2340'FEL,SEC.24)	14165.76	6165.00	1487.85	-7119.68	3405618.39	1482488.60	40°38'55.1364"N	104°02'17.4732"W	point

SURVEY PROGRAM - Ref Wellbore: CASTOR FED 8-59 19-24-6 PWB					Ref Wellpath: CASTOR FED 8-59 19-24-6 (REV-A.0) PWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model				Log Name/Comment		Wellbore	
25.00	2000.00	OWSG MWD rev2 + IFR1						CASTOR FED 8-59 19-24-6 PWB	
2000.00	14265.95	OWSG MWD rev2 + IFR1 + Sag Correction						CASTOR FED 8-59 19-24-6 PWB	



# Planned Wellpath Report

CASTOR FED 8-59 19-24-6 (REV-A.0) PWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	BISON OIL & GAS	Well	CASTOR FED 8-59 19-24-6
Field	WELD COUNTY (NAD83/TN)	API/Legal	
Facility	SEC.19-T08N-R59W	Wellbore	CASTOR FED 8-59 19-24-6 PWB
Slot	SLOT#04 CASTOR FED 8-59 19-24-6 (1476'FSL & 560'FEL SEC.19)		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
3217.62	19.658	36.953	3109.00	Parkman
3982.18	19.658	36.953	3829.00	Sussex
4767.98	19.658	36.953	4569.00	Shannon
6206.99	42.074	288.404	5902.00	Sharon Springs
6321.08	51.580	283.058	5980.00	Sharon Springs Hot GR Marker
6361.22	54.974	281.513	6004.00	Nio A Top
6582.19	73.902	274.699	6099.00	Nio B Top

DESIGN COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
25.00		0.000	36.953	25.00 Tie On
700.00		0.000	36.953	700.00 End of Tangent
1682.92		19.658	36.953	1663.75 End of Build
5638.68		19.658	36.953	5388.95 End of Tangent
6767.18		89.895	270.005	6125.00 3D Arc/LP
9500.00		89.895	270.005	6130.00 End of Tangent
9605.29		89.567	271.005	6130.50 End of 3D Arc
14165.76		89.567	271.005	6165.00 End of Tangent
14264.50		90.421	268.645	6165.01 End of 3D Arc
14265.95		90.421	268.645	6165.00 End of Tangent