



Project: Weld County, CO
Site: Sec 26-T10N-R58W
Well: Razor Federal #261-3546
Wellbore: Hz
Design: APD

JECT DETAILS: Weld County, CO
System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Northern Zone
System Datum: Mean Sea Level



Azimuths to True North
Magnetic North: 7.83°
Magnetic Field
Strength: 52807.6nT
Dip Angle: 67.35°
Date: 7/7/2016
Model: IGRF2015

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
1550.00	1566.35	Upper Pierre
3500.00	3552.33	Hygiene
3650.00	3705.10	Lower Pierre
5458.00	5550.45	P200 Marker
5478.00	5574.75	P300 Marker
5494.00	5594.69	P350 Marker
5508.00	5612.53	Sharon Springs
5512.00	5617.70	Niobrara
5529.00	5640.08	Top A Chalk
5559.00	5681.41	Top A Marl
5571.00	5698.72	A Marl
5579.00	5710.54	Top Upper B
5603.00	5747.57	Base Upper B
5619.00	5773.82	Top Lower B
5648.00	5825.64	Base Lower B
5661.00	5851.22	Top B Marl
5703.00	5951.03	Top C Chalk
5711.00	5975.19	Middle C Chalk
5725.00	6026.15	Middle C Marl
5743.00	6177.88	Lower C Chalk

WELL DETAILS: Razor Federal #261-3546

+N/-S	+E/-W	Northing	Ground Level:	4711.00	Longitude	Slot
0.00	0.00	1541940.58	Easting	3463535.86	40° 48' 32.380 N	103° 49' 31.650 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
3	846.14	10.92	351.93	842.84	51.39	-7.29	2.00	351.93	-51.33	
4	4431.92	10.92	351.93	4363.66	724.11	-102.71	0.00	0.00	-723.32	
5	4978.07	0.00	0.00	4906.50	775.50	-110.00	2.00	180.00	-774.65	
6	5178.07	0.00	0.00	5106.50	775.50	-110.00	0.00	0.00	-774.65	
7	6177.88	90.00	179.59	5743.00	139.02	-105.48	9.00	179.59	-138.22	
8	13453.03	90.00	179.59	5743.00	-7135.95	-53.84	0.00	0.00	7136.15	PBHL 261-3546

ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	VSect	Departure	Annotation
300.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	Build 2°/100'
842.84	846.14	10.92	351.93	51.39	-7.29	-51.33	51.90	Hold 10.92° Inc
4363.66	4431.92	10.92	351.93	724.11	-102.71	-723.32	731.36	Drop 2°/100'
4906.50	4978.07	0.00	0.00	775.50	-110.00	-774.65	783.26	Hold Vertical
5106.50	5178.07	0.00	0.00	775.50	-110.00	-774.65	783.26	KOP, Build 9°/100'
5743.00	6177.88	90.00	179.59	139.02	-105.48	-138.22	1419.76	LP @ 90° Inc, Hold
5743.00	13453.03	90.00	179.59	-7135.95	-53.84	7136.15	8694.91	TD at 13453.03

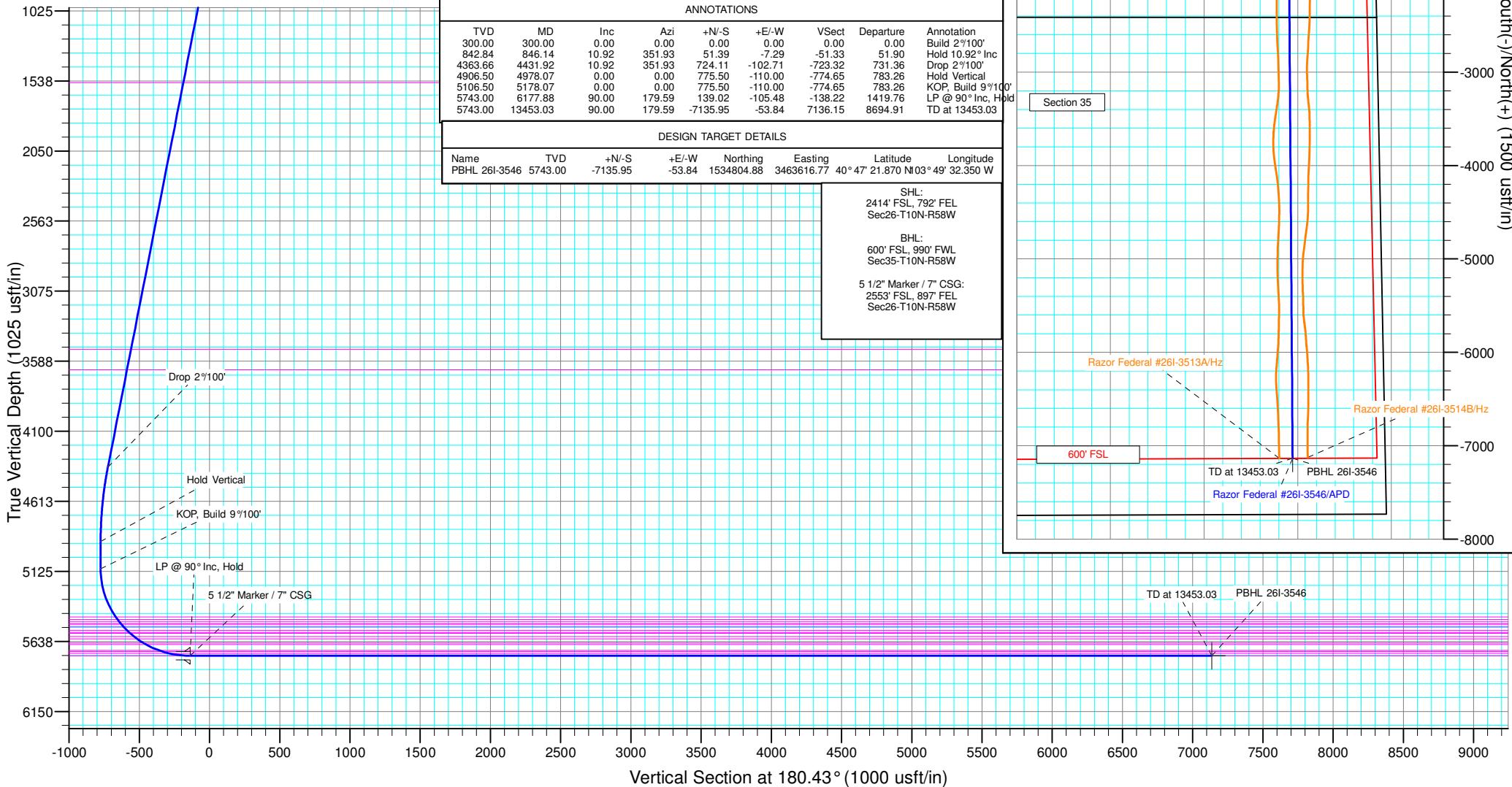
DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
PBHL 261-3546	5743.00	-7135.95	-53.84	1534804.88	3463616.77	40° 47' 21.870 N	103° 49' 32.350 W

SHL:
2414' FSL 792' FEL
Sec26-T10N-R58W

BHL:
600' FSL 990' FWL
Sec35-T10N-R58W

5 1/2" Marker / 7" CSG:
2553' FSL 897' FEL
Sec26-T10N-R58W





Whiting Petroleum Corp.

Weld County, CO

Sec 26-T10N-R58W

Razor Federal #26I-3546

Hz

Plan: APD

Standard Planning Report

08 July, 2016



WOG

Planning Report

Database:	LandmarkEDM	Local Co-ordinate Reference:	Well Razor Federal #26I-3546
Company:	Whiting Petroleum Corp.	TVD Reference:	KBE @ 4732.00usft
Project:	Weld County, CO	MD Reference:	KBE @ 4732.00usft
Site:	Sec 26-T10N-R58W	North Reference:	True
Well:	Razor Federal #26I-3546	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	APD		

Project	Weld County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		Sec 26-T10N-R58W			
Site Position:		Northing:	1,541,803.23 usft	Latitude:	40° 48' 31.490 N
From:	Lat/Long	Easting:	3,461,028.06 usft	Longitude:	103° 50' 4.290 W
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	1.08 °

Well		Razor Federal #26I-3546				
Well Position	+N/-S	90.22 usft	Northing:	1,541,940.58 usft	Latitude:	40° 48' 32.380 N
	+E/-W	2,509.93 usft	Easting:	3,463,535.85 usft	Longitude:	103° 49' 31.650 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	4,711.00 usft

Wellbore	Hz				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	7/7/2016	7.83	67.35	52,808

Design	APD			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	180.43

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
846.14	10.92	351.93	842.84	51.39	-7.29	2.00	2.00	0.00	351.93	
4,431.92	10.92	351.93	4,363.66	724.11	-102.71	0.00	0.00	0.00	0.00	
4,978.07	0.00	0.00	4,906.50	775.50	-110.00	2.00	-2.00	0.00	180.00	
5,178.07	0.00	0.00	5,106.50	775.50	-110.00	0.00	0.00	0.00	0.00	
6,177.88	90.00	179.59	5,743.00	139.02	-105.48	9.00	9.00	0.00	179.59	
13,453.03	90.00	179.59	5,743.00	-7,135.95	-53.84	0.00	0.00	0.00	0.00	PBHL 26I-3546



WOG Planning Report

Database:	LandmarkEDM	Local Co-ordinate Reference:	Well Razor Federal #26I-3546
Company:	Whiting Petroleum Corp.	TVD Reference:	KBE @ 4732.00usft
Project:	Weld County, CO	MD Reference:	KBE @ 4732.00usft
Site:	Sec 26-T10N-R58W	North Reference:	True
Well:	Razor Federal #26I-3546	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	APD		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
Build 2°/100'									
400.00	2.00	351.93	399.98	1.73	-0.25	-1.73	2.00	2.00	0.00
500.00	4.00	351.93	499.84	6.91	-0.98	-6.90	2.00	2.00	0.00
600.00	6.00	351.93	599.45	15.54	-2.20	-15.52	2.00	2.00	0.00
700.00	8.00	351.93	698.70	27.60	-3.92	-27.57	2.00	2.00	0.00
800.00	10.00	351.93	797.47	43.09	-6.11	-43.04	2.00	2.00	0.00
846.14	10.92	351.93	842.84	51.39	-7.29	-51.33	2.00	2.00	0.00
Hold 10.92° Inc									
900.00	10.92	351.93	895.72	61.49	-8.72	-61.42	0.00	0.00	0.00
1,000.00	10.92	351.93	993.91	80.25	-11.38	-80.16	0.00	0.00	0.00
1,100.00	10.92	351.93	1,092.10	99.01	-14.04	-98.90	0.00	0.00	0.00
1,200.00	10.92	351.93	1,190.29	117.77	-16.71	-117.64	0.00	0.00	0.00
1,300.00	10.92	351.93	1,288.48	136.53	-19.37	-136.38	0.00	0.00	0.00
1,400.00	10.92	351.93	1,386.66	155.30	-22.03	-155.12	0.00	0.00	0.00
1,500.00	10.92	351.93	1,484.85	174.06	-24.69	-173.87	0.00	0.00	0.00
1,566.35	10.92	351.93	1,550.00	186.50	-26.45	-186.30	0.00	0.00	0.00
Upper Pierre									
1,600.00	10.92	351.93	1,583.04	192.82	-27.35	-192.61	0.00	0.00	0.00
1,700.00	10.92	351.93	1,681.23	211.58	-30.01	-211.35	0.00	0.00	0.00
1,800.00	10.92	351.93	1,779.42	230.34	-32.67	-230.09	0.00	0.00	0.00
1,900.00	10.92	351.93	1,877.61	249.10	-35.33	-248.83	0.00	0.00	0.00
2,000.00	10.92	351.93	1,975.79	267.86	-37.99	-267.57	0.00	0.00	0.00
2,100.00	10.92	351.93	2,073.98	286.62	-40.66	-286.31	0.00	0.00	0.00
2,200.00	10.92	351.93	2,172.17	305.38	-43.32	-305.05	0.00	0.00	0.00
2,300.00	10.92	351.93	2,270.36	324.14	-45.98	-323.79	0.00	0.00	0.00
2,400.00	10.92	351.93	2,368.55	342.91	-48.64	-342.53	0.00	0.00	0.00
2,500.00	10.92	351.93	2,466.74	361.67	-51.30	-361.27	0.00	0.00	0.00
2,600.00	10.92	351.93	2,564.92	380.43	-53.96	-380.01	0.00	0.00	0.00
2,700.00	10.92	351.93	2,663.11	399.19	-56.62	-398.75	0.00	0.00	0.00
2,800.00	10.92	351.93	2,761.30	417.95	-59.28	-417.49	0.00	0.00	0.00
2,900.00	10.92	351.93	2,859.49	436.71	-61.94	-436.23	0.00	0.00	0.00
3,000.00	10.92	351.93	2,957.68	455.47	-64.61	-454.97	0.00	0.00	0.00
3,100.00	10.92	351.93	3,055.87	474.23	-67.27	-473.71	0.00	0.00	0.00
3,200.00	10.92	351.93	3,154.05	492.99	-69.93	-492.45	0.00	0.00	0.00
3,300.00	10.92	351.93	3,252.24	511.75	-72.59	-511.19	0.00	0.00	0.00
3,400.00	10.92	351.93	3,350.43	530.51	-75.25	-529.93	0.00	0.00	0.00
3,500.00	10.92	351.93	3,448.62	549.28	-77.91	-548.67	0.00	0.00	0.00
3,552.33	10.92	351.93	3,500.00	559.09	-79.30	-558.48	0.00	0.00	0.00
Hygiene									
3,600.00	10.92	351.93	3,546.81	568.04	-80.57	-567.41	0.00	0.00	0.00
3,700.00	10.92	351.93	3,645.00	586.80	-83.23	-586.15	0.00	0.00	0.00
3,705.10	10.92	351.93	3,650.00	587.75	-83.37	-587.11	0.00	0.00	0.00
Lower Pierre									
3,800.00	10.92	351.93	3,743.18	605.56	-85.89	-604.89	0.00	0.00	0.00
3,900.00	10.92	351.93	3,841.37	624.32	-88.56	-623.63	0.00	0.00	0.00
4,000.00	10.92	351.93	3,939.56	643.08	-91.22	-642.37	0.00	0.00	0.00
4,100.00	10.92	351.93	4,037.75	661.84	-93.88	-661.11	0.00	0.00	0.00
4,200.00	10.92	351.93	4,135.94	680.60	-96.54	-679.85	0.00	0.00	0.00
4,300.00	10.92	351.93	4,234.12	699.36	-99.20	-698.59	0.00	0.00	0.00
4,400.00	10.92	351.93	4,332.31	718.12	-101.86	-717.34	0.00	0.00	0.00



WOG Planning Report

Database:	LandmarkEDM	Local Co-ordinate Reference:	Well Razor Federal #26I-3546
Company:	Whiting Petroleum Corp.	TVD Reference:	KBE @ 4732.00usft
Project:	Weld County, CO	MD Reference:	KBE @ 4732.00usft
Site:	Sec 26-T10N-R58W	North Reference:	True
Well:	Razor Federal #26I-3546	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	APD		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
4,431.92	10.92	351.93	4,363.66	724.11	-102.71	-723.32	0.00	0.00	0.00	
Drop 2°/100'										
4,500.00	9.56	351.93	4,430.65	736.10	-104.41	-735.29	2.00	-2.00	0.00	
4,600.00	7.56	351.93	4,529.53	750.84	-106.50	-750.01	2.00	-2.00	0.00	
4,700.00	5.56	351.93	4,628.87	762.15	-108.11	-761.31	2.00	-2.00	0.00	
4,800.00	3.56	351.93	4,728.55	770.02	-109.22	-769.18	2.00	-2.00	0.00	
4,900.00	1.56	351.93	4,828.44	774.45	-109.85	-773.60	2.00	-2.00	0.00	
4,978.07	0.00	0.00	4,906.50	775.50	-110.00	-774.65	2.00	-2.00	0.00	
Hold Vertical										
5,000.00	0.00	0.00	4,928.43	775.50	-110.00	-774.65	0.00	0.00	0.00	
5,100.00	0.00	0.00	5,028.43	775.50	-110.00	-774.65	0.00	0.00	0.00	
5,178.07	0.00	0.00	5,106.50	775.50	-110.00	-774.65	0.00	0.00	0.00	
KOP, Build 9°/100'										
5,200.00	1.97	179.59	5,128.43	775.12	-110.00	-774.27	9.00	9.00	0.00	
5,300.00	10.98	179.59	5,227.69	763.86	-109.92	-763.01	9.00	9.00	0.00	
5,400.00	19.98	179.59	5,323.96	737.20	-109.73	-736.35	9.00	9.00	0.00	
5,500.00	28.98	179.59	5,414.88	695.81	-109.43	-694.96	9.00	9.00	0.00	
5,550.45	33.52	179.59	5,458.00	669.64	-109.25	-668.80	9.00	9.00	0.00	
P200 Marker										
5,574.75	35.71	179.59	5,478.00	655.84	-109.15	-655.00	9.00	9.00	0.00	
P300 Marker										
5,594.69	37.50	179.59	5,494.00	643.95	-109.07	-643.11	9.00	9.00	0.00	
P350 Marker										
5,600.00	37.98	179.59	5,498.20	640.70	-109.04	-639.86	9.00	9.00	0.00	
5,612.53	39.11	179.59	5,508.00	632.90	-108.99	-632.06	9.00	9.00	0.00	
Sharon Springs										
5,617.70	39.57	179.59	5,512.00	629.62	-108.96	-628.78	9.00	9.00	0.00	
Niobrara										
5,640.08	41.59	179.59	5,529.00	615.06	-108.86	-614.22	9.00	9.00	0.00	
Top A Chalk										
5,681.41	45.31	179.59	5,559.00	586.64	-108.66	-585.80	9.00	9.00	0.00	
Top A Marl										
5,698.72	46.87	179.59	5,571.00	574.17	-108.57	-573.34	9.00	9.00	0.00	
A Marl										
5,700.00	46.98	179.59	5,571.88	573.24	-108.56	-572.40	9.00	9.00	0.00	
5,710.54	47.93	179.59	5,579.00	565.47	-108.51	-564.64	9.00	9.00	0.00	
Top Upper B										
5,747.57	51.26	179.59	5,603.00	537.28	-108.31	-536.44	9.00	9.00	0.00	
Base Upper B										
5,773.82	53.63	179.59	5,619.00	516.47	-108.16	-515.64	9.00	9.00	0.00	
Top Lower B										
5,800.00	55.98	179.59	5,634.09	495.08	-108.01	-494.25	9.00	9.00	0.00	
5,825.64	58.29	179.59	5,648.00	473.54	-107.86	-472.71	9.00	9.00	0.00	
Base Lower B										
5,851.22	60.59	179.59	5,661.00	451.52	-107.70	-450.69	9.00	9.00	0.00	
Top B Marl										
5,900.00	64.99	179.59	5,683.30	408.15	-107.39	-407.32	9.00	9.00	0.00	
5,951.03	69.58	179.59	5,703.00	361.09	-107.06	-360.27	9.00	9.00	0.00	
Top C Chalk										
5,975.19	71.75	179.59	5,711.00	338.29	-106.90	-337.47	9.00	9.00	0.00	
Middle C Chalk										
6,000.00	73.99	179.59	5,718.31	314.58	-106.73	-313.77	9.00	9.00	0.00	



WOG

Planning Report

Database:	LandmarkEDM	Local Co-ordinate Reference:	Well Razor Federal #26I-3546
Company:	Whiting Petroleum Corp.	TVD Reference:	KBE @ 4732.00usft
Project:	Weld County, CO	MD Reference:	KBE @ 4732.00usft
Site:	Sec 26-T10N-R58W	North Reference:	True
Well:	Razor Federal #26I-3546	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	APD		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
6,026.15	76.34	179.59	5,725.00	289.31	-106.55	-288.50	9.00	9.00	0.00	
Middle C Marl										
6,100.00	82.99	179.59	5,738.24	216.70	-106.03	-215.89	9.00	9.00	0.00	
6,177.88	90.00	179.59	5,743.00	139.02	-105.48	-138.22	9.00	9.00	0.00	
LP @ 90° Inc, Hold - Lower C Chalk - 5 1/2" Marker / 7" CSG										
6,200.00	90.00	179.59	5,743.00	116.90	-105.33	-116.10	0.00	0.00	0.00	
6,300.00	90.00	179.59	5,743.00	16.90	-104.62	-16.11	0.00	0.00	0.00	
6,400.00	90.00	179.59	5,743.00	-83.10	-103.91	83.88	0.00	0.00	0.00	
6,500.00	90.00	179.59	5,743.00	-183.10	-103.20	183.87	0.00	0.00	0.00	
6,600.00	90.00	179.59	5,743.00	-283.09	-102.49	283.86	0.00	0.00	0.00	
6,700.00	90.00	179.59	5,743.00	-383.09	-101.78	383.85	0.00	0.00	0.00	
6,800.00	90.00	179.59	5,743.00	-483.09	-101.07	483.84	0.00	0.00	0.00	
6,900.00	90.00	179.59	5,743.00	-583.09	-100.36	583.83	0.00	0.00	0.00	
7,000.00	90.00	179.59	5,743.00	-683.08	-99.65	683.82	0.00	0.00	0.00	
7,100.00	90.00	179.59	5,743.00	-783.08	-98.94	783.81	0.00	0.00	0.00	
7,200.00	90.00	179.59	5,743.00	-883.08	-98.23	883.79	0.00	0.00	0.00	
7,300.00	90.00	179.59	5,743.00	-983.08	-97.52	983.78	0.00	0.00	0.00	
7,400.00	90.00	179.59	5,743.00	-1,083.07	-96.81	1,083.77	0.00	0.00	0.00	
7,500.00	90.00	179.59	5,743.00	-1,183.07	-96.10	1,183.76	0.00	0.00	0.00	
7,600.00	90.00	179.59	5,743.00	-1,283.07	-95.39	1,283.75	0.00	0.00	0.00	
7,700.00	90.00	179.59	5,743.00	-1,383.07	-94.68	1,383.74	0.00	0.00	0.00	
7,800.00	90.00	179.59	5,743.00	-1,483.06	-93.97	1,483.73	0.00	0.00	0.00	
7,900.00	90.00	179.59	5,743.00	-1,583.06	-93.26	1,583.72	0.00	0.00	0.00	
8,000.00	90.00	179.59	5,743.00	-1,683.06	-92.55	1,683.71	0.00	0.00	0.00	
8,100.00	90.00	179.59	5,743.00	-1,783.06	-91.84	1,783.70	0.00	0.00	0.00	
8,200.00	90.00	179.59	5,743.00	-1,883.05	-91.13	1,883.69	0.00	0.00	0.00	
8,300.00	90.00	179.59	5,743.00	-1,983.05	-90.42	1,983.68	0.00	0.00	0.00	
8,400.00	90.00	179.59	5,743.00	-2,083.05	-89.71	2,083.67	0.00	0.00	0.00	
8,500.00	90.00	179.59	5,743.00	-2,183.05	-89.00	2,183.66	0.00	0.00	0.00	
8,600.00	90.00	179.59	5,743.00	-2,283.04	-88.29	2,283.64	0.00	0.00	0.00	
8,700.00	90.00	179.59	5,743.00	-2,383.04	-87.58	2,383.63	0.00	0.00	0.00	
8,800.00	90.00	179.59	5,743.00	-2,483.04	-86.87	2,483.62	0.00	0.00	0.00	
8,900.00	90.00	179.59	5,743.00	-2,583.04	-86.16	2,583.61	0.00	0.00	0.00	
9,000.00	90.00	179.59	5,743.00	-2,683.03	-85.45	2,683.60	0.00	0.00	0.00	
9,100.00	90.00	179.59	5,743.00	-2,783.03	-84.74	2,783.59	0.00	0.00	0.00	
9,200.00	90.00	179.59	5,743.00	-2,883.03	-84.03	2,883.58	0.00	0.00	0.00	
9,300.00	90.00	179.59	5,743.00	-2,983.03	-83.32	2,983.57	0.00	0.00	0.00	
9,400.00	90.00	179.59	5,743.00	-3,083.02	-82.61	3,083.56	0.00	0.00	0.00	
9,500.00	90.00	179.59	5,743.00	-3,183.02	-81.90	3,183.55	0.00	0.00	0.00	
9,600.00	90.00	179.59	5,743.00	-3,283.02	-81.19	3,283.54	0.00	0.00	0.00	
9,700.00	90.00	179.59	5,743.00	-3,383.02	-80.48	3,383.53	0.00	0.00	0.00	
9,800.00	90.00	179.59	5,743.00	-3,483.01	-79.77	3,483.52	0.00	0.00	0.00	
9,900.00	90.00	179.59	5,743.00	-3,583.01	-79.06	3,583.51	0.00	0.00	0.00	
10,000.00	90.00	179.59	5,743.00	-3,683.01	-78.35	3,683.49	0.00	0.00	0.00	
10,100.00	90.00	179.59	5,743.00	-3,783.01	-77.64	3,783.48	0.00	0.00	0.00	
10,200.00	90.00	179.59	5,743.00	-3,883.00	-76.93	3,883.47	0.00	0.00	0.00	
10,300.00	90.00	179.59	5,743.00	-3,983.00	-76.22	3,983.46	0.00	0.00	0.00	
10,400.00	90.00	179.59	5,743.00	-4,083.00	-75.51	4,083.45	0.00	0.00	0.00	
10,500.00	90.00	179.59	5,743.00	-4,183.00	-74.80	4,183.44	0.00	0.00	0.00	
10,600.00	90.00	179.59	5,743.00	-4,282.99	-74.09	4,283.43	0.00	0.00	0.00	
10,700.00	90.00	179.59	5,743.00	-4,382.99	-73.38	4,383.42	0.00	0.00	0.00	
10,800.00	90.00	179.59	5,743.00	-4,482.99	-72.67	4,483.41	0.00	0.00	0.00	
10,900.00	90.00	179.59	5,743.00	-4,582.99	-71.96	4,583.40	0.00	0.00	0.00	
11,000.00	90.00	179.59	5,743.00	-4,682.98	-71.26	4,683.39	0.00	0.00	0.00	



WOG

Planning Report

Database:	LandmarkEDM	Local Co-ordinate Reference:	Well Razor Federal #26I-3546
Company:	Whiting Petroleum Corp.	TVD Reference:	KBE @ 4732.00usft
Project:	Weld County, CO	MD Reference:	KBE @ 4732.00usft
Site:	Sec 26-T10N-R58W	North Reference:	True
Well:	Razor Federal #26I-3546	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	APD		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
11,100.00	90.00	179.59	5,743.00	-4,782.98	-70.55	4,783.38	0.00	0.00	0.00
11,200.00	90.00	179.59	5,743.00	-4,882.98	-69.84	4,883.37	0.00	0.00	0.00
11,300.00	90.00	179.59	5,743.00	-4,982.98	-69.13	4,983.36	0.00	0.00	0.00
11,400.00	90.00	179.59	5,743.00	-5,082.97	-68.42	5,083.34	0.00	0.00	0.00
11,500.00	90.00	179.59	5,743.00	-5,182.97	-67.71	5,183.33	0.00	0.00	0.00
11,600.00	90.00	179.59	5,743.00	-5,282.97	-67.00	5,283.32	0.00	0.00	0.00
11,700.00	90.00	179.59	5,743.00	-5,382.97	-66.29	5,383.31	0.00	0.00	0.00
11,800.00	90.00	179.59	5,743.00	-5,482.96	-65.58	5,483.30	0.00	0.00	0.00
11,900.00	90.00	179.59	5,743.00	-5,582.96	-64.87	5,583.29	0.00	0.00	0.00
12,000.00	90.00	179.59	5,743.00	-5,682.96	-64.16	5,683.28	0.00	0.00	0.00
12,100.00	90.00	179.59	5,743.00	-5,782.96	-63.45	5,783.27	0.00	0.00	0.00
12,200.00	90.00	179.59	5,743.00	-5,882.95	-62.74	5,883.26	0.00	0.00	0.00
12,300.00	90.00	179.59	5,743.00	-5,982.95	-62.03	5,983.25	0.00	0.00	0.00
12,400.00	90.00	179.59	5,743.00	-6,082.95	-61.32	6,083.24	0.00	0.00	0.00
12,500.00	90.00	179.59	5,743.00	-6,182.95	-60.61	6,183.23	0.00	0.00	0.00
12,600.00	90.00	179.59	5,743.00	-6,282.94	-59.90	6,283.22	0.00	0.00	0.00
12,700.00	90.00	179.59	5,743.00	-6,382.94	-59.19	6,383.21	0.00	0.00	0.00
12,800.00	90.00	179.59	5,743.00	-6,482.94	-58.48	6,483.19	0.00	0.00	0.00
12,900.00	90.00	179.59	5,743.00	-6,582.94	-57.77	6,583.18	0.00	0.00	0.00
13,000.00	90.00	179.59	5,743.00	-6,682.93	-57.06	6,683.17	0.00	0.00	0.00
13,100.00	90.00	179.59	5,743.00	-6,782.93	-56.35	6,783.16	0.00	0.00	0.00
13,200.00	90.00	179.59	5,743.00	-6,882.93	-55.64	6,883.15	0.00	0.00	0.00
13,300.00	90.00	179.59	5,743.00	-6,982.93	-54.93	6,983.14	0.00	0.00	0.00
13,400.00	90.00	179.59	5,743.00	-7,082.92	-54.22	7,083.13	0.00	0.00	0.00
13,453.03	90.00	179.59	5,743.00	-7,135.95	-53.84	7,136.15	0.00	0.00	0.00
TD at 13453.03									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
PBHL 26I-3546	0.00	0.00	5,743.00	-7,135.95	-53.84	1,534,804.89	3,463,616.77	40° 47' 21.870 N	103° 49' 32.350 W
- plan hits target center									
- Point									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
6,177.88	5,743.00	5 1/2" Marker / 7" CSG	7.000	8.750	



WOG Planning Report

Database:	LandmarkEDM	Local Co-ordinate Reference:	Well Razor Federal #26I-3546
Company:	Whiting Petroleum Corp.	TVD Reference:	KBE @ 4732.00usft
Project:	Weld County, CO	MD Reference:	KBE @ 4732.00usft
Site:	Sec 26-T10N-R58W	North Reference:	True
Well:	Razor Federal #26I-3546	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	APD		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,566.35	1,550.00	Upper Pierre				
3,552.33	3,500.00	Hygiene				
3,705.10	3,650.00	Lower Pierre				
5,550.45	5,458.00	P200 Marker				
5,574.75	5,478.00	P300 Marker				
5,594.69	5,494.00	P350 Marker				
5,612.53	5,508.00	Sharon Springs				
5,617.70	5,512.00	Niobrara				
5,640.08	5,529.00	Top A Chalk				
5,681.41	5,559.00	Top A Marl				
5,698.72	5,571.00	A Marl				
5,710.54	5,579.00	Top Upper B				
5,747.57	5,603.00	Base Upper B				
5,773.82	5,619.00	Top Lower B				
5,825.64	5,648.00	Base Lower B				
5,851.22	5,661.00	Top B Marl				
5,951.03	5,703.00	Top C Chalk				
5,975.19	5,711.00	Middle C Chalk				
6,026.15	5,725.00	Middle C Marl				
6,177.88	5,743.00	Lower C Chalk				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
300.00	300.00	0.00	0.00	Build 2°/100'	
846.14	842.84	51.39	-7.29	Hold 10.92° Inc	
4,431.92	4,363.66	724.11	-102.71	Drop 2°/100'	
4,978.07	4,906.50	775.50	-110.00	Hold Vertical	
5,178.07	5,106.50	775.50	-110.00	KOP, Build 9°/100'	
6,177.88	5,743.00	139.02	-105.48	LP @ 90° Inc, Hold	
13,453.03	5,743.00	-7,135.95	-53.84	TD at 13453.03	