

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_REI 8-5 PAD

REI 27-5

REI 27-5

Plan: REI 27-5 (wp01)

Standard Planning Report

17 December, 2010



Project: COLORADO NORTHERN ZONE - 83
 Site: WELD_REI 8-5 PAD
 Well: REI 27-5
 Wellbore: REI 27-5
 Section:
 SHL:
 Design: REI 27-5 (wp01)
 Latitude: 40.256236
 Longitude: -104.679827
 GL: 4853.00
 KB: WELL @ 4853.00ft (Original Well Elev)



Azimuths to True North
 Magnetic North: 8.87°
 Magnetic Field
 Strength: 53117.1nT
 Dip Angle: 66.97°
 Date: 12/17/2010
 Model: IGRF2010



Weatherford

WELL DETAILS: REI 27-5

+N/-S	+E/-W	Northing	Ground Level: Easting	4853.00 Latitude	Longitude	Slot
0.00	0.00	1337247.00	3228907.81	40.256236	-104.679827	

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Point	Shape
REI 27-5 BHL	7813.00	1926.36	-730.35	40.261524	-104.682444		

FORMATION TOP DETAILS

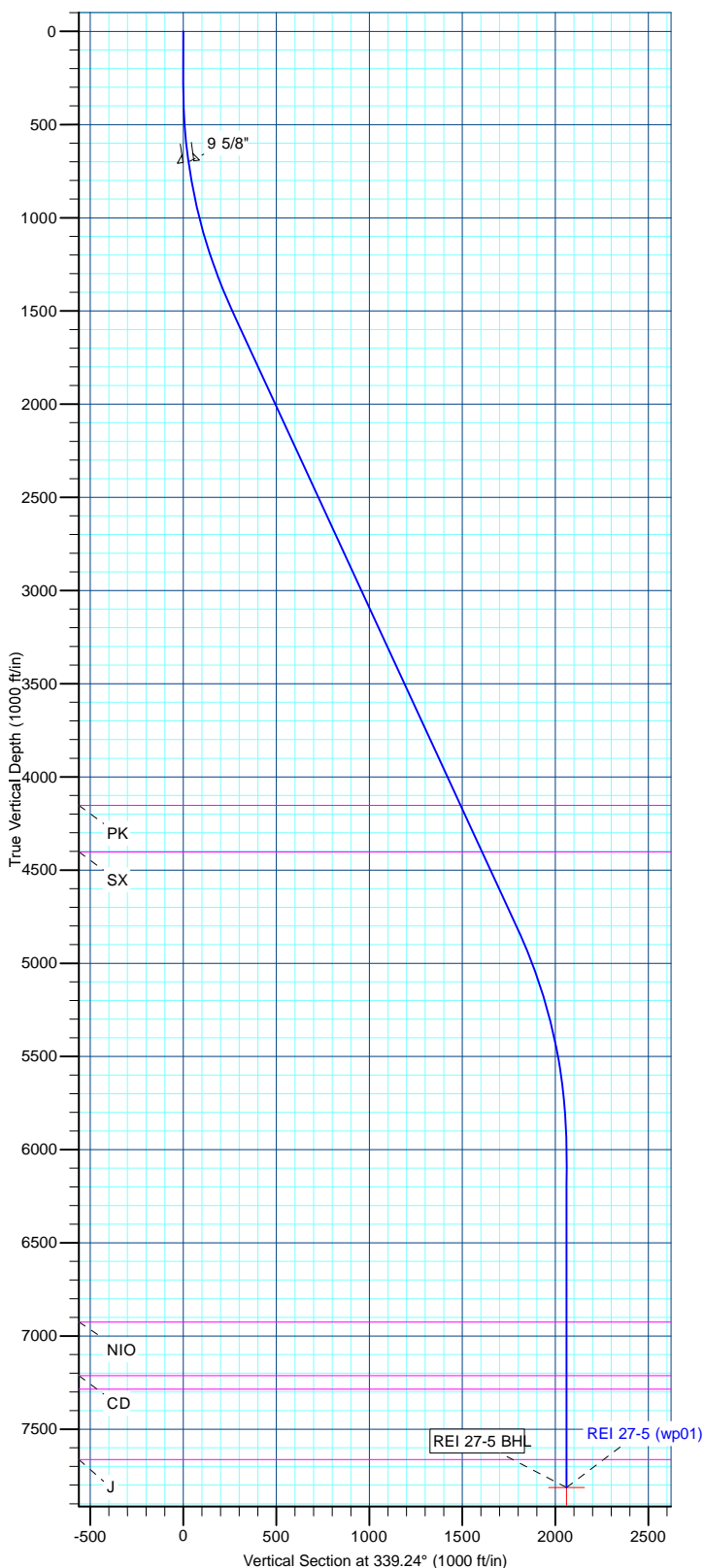
TVDPth	MDPath	Formation	
4153.00	4461.54	PK	0.00
4403.00	4737.02	SX	0.00
6925.00	7338.99	NIO	0.00
7213.00	7626.99	CD	0.00
7285.00	7698.99	GH	0.00
7663.00	8076.99	J	0.00

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
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	
1541.76	24.84	339.24	1503.24	247.73	-93.92	2.00	339.24	264.94	
5185.23	24.84	339.24	4809.76	1678.63	-636.43	0.00	0.00	1795.23	
6426.99	0.00	0.00	6013.00	1926.36	-730.35	2.00	180.00	2060.17	
8226.99	0.00	0.00	7813.00	1926.36	-730.35	0.00	0.00	2060.17	REI 27-5 BHL

CASING DETAILS

TVD	MD	Name	Size
700.00	701.31	9 5/8"	9-5/8



Database:	edm5000p	Local Co-ordinate Reference:	Well REI 27-5
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4853.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4853.00ft (Original Well Elev)
Site:	WELD_REI 8-5 PAD	North Reference:	True
Well:	REI 27-5	Survey Calculation Method:	Minimum Curvature
Wellbore:	REI 27-5		
Design:	REI 27-5 (wp01)		

Project	COLORADO NORTHERN ZONE - 83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		WELD_REI 8-5 PAD			
Site Position:		Northing:	1,337,247.00 ft	Latitude:	40.256236
From:	Lat/Long	Easting:	3,228,907.81 ft	Longitude:	-104.679827
Position Uncertainty:	0.00 ft	Slot Radius:	0 "	Grid Convergence:	0.53 °

Well	REI 27-5					
Well Position	+N-S	0.00 ft	Northing:	1,337,247.00 ft	Latitude:	40.256236
	+E-W	0.00 ft	Easting:	3,228,907.81 ft	Longitude:	-104.679827
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,853.00 ft

Wellbore	REI 27-5				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/17/2010	8.87	66.97	53,117

Design	REI 27-5 (wp01)			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N-S (ft)	+E-W (ft)	Direction (°)
	0.00	0.00	0.00	339.24

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	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	
1,541.76	24.84	339.24	1,503.24	247.73	-93.92	2.00	2.00	0.00	339.24	
5,185.23	24.84	339.24	4,809.76	1,678.63	-636.43	0.00	0.00	0.00	0.00	
6,426.99	0.00	0.00	6,013.00	1,926.36	-730.35	2.00	-2.00	0.00	180.00	
8,226.99	0.00	0.00	7,813.00	1,926.36	-730.35	0.00	0.00	0.00	0.00	REI 27-5 BHL

Database:	edm5000p	Local Co-ordinate Reference:	Well REI 27-5
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4853.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4853.00ft (Original Well Elev)
Site:	WELD_REI 8-5 PAD	North Reference:	True
Well:	REI 27-5	Survey Calculation Method:	Minimum Curvature
Wellbore:	REI 27-5		
Design:	REI 27-5 (wp01)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	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
400.00	2.00	339.24	399.98	1.63	-0.62	1.75	2.00	2.00	0.00
500.00	4.00	339.24	499.84	6.53	-2.47	6.98	2.00	2.00	0.00
600.00	6.00	339.24	599.45	14.67	-5.56	15.69	2.00	2.00	0.00
700.00	8.00	339.24	698.70	26.07	-9.88	27.88	2.00	2.00	0.00
701.31	8.03	339.24	700.00	26.24	-9.95	28.06	2.00	2.00	0.00
9 5/8"									
800.00	10.00	339.24	797.47	40.70	-15.43	43.52	2.00	2.00	0.00
900.00	12.00	339.24	895.62	58.54	-22.19	62.60	2.00	2.00	0.00
1,000.00	14.00	339.24	993.06	79.57	-30.17	85.10	2.00	2.00	0.00
1,100.00	16.00	339.24	1,089.64	103.77	-39.34	110.98	2.00	2.00	0.00
1,200.00	18.00	339.24	1,185.27	131.11	-49.71	140.21	2.00	2.00	0.00
1,300.00	20.00	339.24	1,279.82	161.55	-61.25	172.77	2.00	2.00	0.00
1,400.00	22.00	339.24	1,373.17	195.05	-73.95	208.60	2.00	2.00	0.00
1,500.00	24.00	339.24	1,465.21	231.59	-87.80	247.67	2.00	2.00	0.00
1,541.76	24.84	339.24	1,503.24	247.73	-93.92	264.94	2.00	2.00	0.00
1,600.00	24.84	339.24	1,556.09	270.60	-102.59	289.40	0.00	0.00	0.00
1,700.00	24.84	339.24	1,646.85	309.88	-117.48	331.40	0.00	0.00	0.00
1,800.00	24.84	339.24	1,737.60	349.15	-132.37	373.40	0.00	0.00	0.00
1,900.00	24.84	339.24	1,828.35	388.42	-147.26	415.40	0.00	0.00	0.00
2,000.00	24.84	339.24	1,919.10	427.69	-162.15	457.40	0.00	0.00	0.00
2,100.00	24.84	339.24	2,009.85	466.97	-177.04	499.40	0.00	0.00	0.00
2,200.00	24.84	339.24	2,100.60	506.24	-191.93	541.40	0.00	0.00	0.00
2,300.00	24.84	339.24	2,191.36	545.51	-206.82	583.40	0.00	0.00	0.00
2,400.00	24.84	339.24	2,282.11	584.79	-221.71	625.41	0.00	0.00	0.00
2,500.00	24.84	339.24	2,372.86	624.06	-236.60	667.41	0.00	0.00	0.00
2,600.00	24.84	339.24	2,463.61	663.33	-251.49	709.41	0.00	0.00	0.00
2,700.00	24.84	339.24	2,554.36	702.61	-266.38	751.41	0.00	0.00	0.00
2,800.00	24.84	339.24	2,645.12	741.88	-281.27	793.41	0.00	0.00	0.00
2,900.00	24.84	339.24	2,735.87	781.15	-296.16	835.41	0.00	0.00	0.00
3,000.00	24.84	339.24	2,826.62	820.43	-311.05	877.41	0.00	0.00	0.00
3,100.00	24.84	339.24	2,917.37	859.70	-325.94	919.41	0.00	0.00	0.00
3,200.00	24.84	339.24	3,008.12	898.97	-340.83	961.41	0.00	0.00	0.00
3,300.00	24.84	339.24	3,098.88	938.24	-355.72	1,003.41	0.00	0.00	0.00
3,400.00	24.84	339.24	3,189.63	977.52	-370.61	1,045.42	0.00	0.00	0.00
3,500.00	24.84	339.24	3,280.38	1,016.79	-385.50	1,087.42	0.00	0.00	0.00
3,600.00	24.84	339.24	3,371.13	1,056.06	-400.39	1,129.42	0.00	0.00	0.00
3,700.00	24.84	339.24	3,461.88	1,095.34	-415.28	1,171.42	0.00	0.00	0.00
3,800.00	24.84	339.24	3,552.64	1,134.61	-430.17	1,213.42	0.00	0.00	0.00
3,900.00	24.84	339.24	3,643.39	1,173.88	-445.06	1,255.42	0.00	0.00	0.00
4,000.00	24.84	339.24	3,734.14	1,213.16	-459.95	1,297.42	0.00	0.00	0.00
4,100.00	24.84	339.24	3,824.89	1,252.43	-474.84	1,339.42	0.00	0.00	0.00
4,200.00	24.84	339.24	3,915.64	1,291.70	-489.73	1,381.42	0.00	0.00	0.00
4,300.00	24.84	339.24	4,006.40	1,330.98	-504.62	1,423.42	0.00	0.00	0.00
4,400.00	24.84	339.24	4,097.15	1,370.25	-519.51	1,465.43	0.00	0.00	0.00
4,461.54	24.84	339.24	4,153.00	1,394.42	-528.67	1,491.27	0.00	0.00	0.00
PK									
4,500.00	24.84	339.24	4,187.90	1,409.52	-534.40	1,507.43	0.00	0.00	0.00
4,600.00	24.84	339.24	4,278.65	1,448.80	-549.29	1,549.43	0.00	0.00	0.00
4,700.00	24.84	339.24	4,369.40	1,488.07	-564.18	1,591.43	0.00	0.00	0.00
4,737.02	24.84	339.24	4,403.00	1,502.61	-569.69	1,606.98	0.00	0.00	0.00

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Well:	REI 27-5	Survey Calculation Method:	Minimum Curvature
Wellbore:	REI 27-5		
Design:	REI 27-5 (wp01)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
SX									
4,800.00	24.84	339.24	4,460.16	1,527.34	-579.07	1,633.43	0.00	0.00	0.00
4,900.00	24.84	339.24	4,550.91	1,566.61	-593.96	1,675.43	0.00	0.00	0.00
5,000.00	24.84	339.24	4,641.66	1,605.89	-608.85	1,717.43	0.00	0.00	0.00
5,100.00	24.84	339.24	4,732.41	1,645.16	-623.74	1,759.43	0.00	0.00	0.00
5,185.23	24.84	339.24	4,809.76	1,678.63	-636.43	1,795.23	0.00	0.00	0.00
5,200.00	24.54	339.24	4,823.18	1,684.40	-638.61	1,801.40	2.00	-2.00	0.00
5,300.00	22.54	339.24	4,914.85	1,721.74	-652.77	1,841.33	2.00	-2.00	0.00
5,400.00	20.54	339.24	5,007.86	1,756.07	-665.79	1,878.05	2.00	-2.00	0.00
5,500.00	18.54	339.24	5,102.10	1,787.35	-677.64	1,911.49	2.00	-2.00	0.00
5,600.00	16.54	339.24	5,197.45	1,815.52	-688.33	1,941.63	2.00	-2.00	0.00
5,700.00	14.54	339.24	5,293.79	1,840.57	-697.82	1,968.42	2.00	-2.00	0.00
5,800.00	12.54	339.24	5,391.00	1,862.46	-706.12	1,991.83	2.00	-2.00	0.00
5,900.00	10.54	339.24	5,488.98	1,881.17	-713.22	2,011.83	2.00	-2.00	0.00
6,000.00	8.54	339.24	5,587.59	1,896.66	-719.09	2,028.40	2.00	-2.00	0.00
6,100.00	6.54	339.24	5,686.72	1,908.93	-723.74	2,041.53	2.00	-2.00	0.00
6,200.00	4.54	339.24	5,786.25	1,917.96	-727.16	2,051.18	2.00	-2.00	0.00
6,300.00	2.54	339.24	5,886.05	1,923.73	-729.35	2,057.35	2.00	-2.00	0.00
6,400.00	0.54	339.24	5,986.01	1,926.24	-730.31	2,060.04	2.00	-2.00	0.00
6,426.99	0.00	0.00	6,013.00	1,926.36	-730.35	2,060.17	2.00	-2.00	0.00
6,500.00	0.00	0.00	6,086.01	1,926.36	-730.35	2,060.17	0.00	0.00	0.00
6,600.00	0.00	0.00	6,186.01	1,926.36	-730.35	2,060.17	0.00	0.00	0.00
6,700.00	0.00	0.00	6,286.01	1,926.36	-730.35	2,060.17	0.00	0.00	0.00
6,800.00	0.00	0.00	6,386.01	1,926.36	-730.35	2,060.17	0.00	0.00	0.00
6,900.00	0.00	0.00	6,486.01	1,926.36	-730.35	2,060.17	0.00	0.00	0.00
7,000.00	0.00	0.00	6,586.01	1,926.36	-730.35	2,060.17	0.00	0.00	0.00
7,100.00	0.00	0.00	6,686.01	1,926.36	-730.35	2,060.17	0.00	0.00	0.00
7,200.00	0.00	0.00	6,786.01	1,926.36	-730.35	2,060.17	0.00	0.00	0.00
7,300.00	0.00	0.00	6,886.01	1,926.36	-730.35	2,060.17	0.00	0.00	0.00
7,338.99	0.00	0.00	6,925.00	1,926.36	-730.35	2,060.17	0.00	0.00	0.00
NIO									
7,400.00	0.00	0.00	6,986.01	1,926.36	-730.35	2,060.17	0.00	0.00	0.00
7,500.00	0.00	0.00	7,086.01	1,926.36	-730.35	2,060.17	0.00	0.00	0.00
7,600.00	0.00	0.00	7,186.01	1,926.36	-730.35	2,060.17	0.00	0.00	0.00
7,626.99	0.00	0.00	7,213.00	1,926.36	-730.35	2,060.17	0.00	0.00	0.00
CD									
7,698.99	0.00	0.00	7,285.00	1,926.36	-730.35	2,060.17	0.00	0.00	0.00
GH									
7,700.00	0.00	0.00	7,286.01	1,926.36	-730.35	2,060.17	0.00	0.00	0.00
7,800.00	0.00	0.00	7,386.01	1,926.36	-730.35	2,060.17	0.00	0.00	0.00
7,900.00	0.00	0.00	7,486.01	1,926.36	-730.35	2,060.17	0.00	0.00	0.00
8,000.00	0.00	0.00	7,586.01	1,926.36	-730.35	2,060.17	0.00	0.00	0.00
8,076.99	0.00	0.00	7,663.00	1,926.36	-730.35	2,060.17	0.00	0.00	0.00
J									
8,100.00	0.00	0.00	7,686.01	1,926.36	-730.35	2,060.17	0.00	0.00	0.00
8,200.00	0.00	0.00	7,786.01	1,926.36	-730.35	2,060.17	0.00	0.00	0.00
8,226.99	0.00	0.00	7,813.00	1,926.36	-730.35	2,060.17	0.00	0.00	0.00
REI 27-5 BHL									

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Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4853.00ft (Original Well Elev)
Site:	WELD_REI 8-5 PAD	North Reference:	True
Well:	REI 27-5	Survey Calculation Method:	Minimum Curvature
Wellbore:	REI 27-5		
Design:	REI 27-5 (wp01)		

Design Targets

Target Name

- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- Shape									
REI 27-5 BHL	0.00	0.00	7,813.00	1,926.36	-730.35	1,339,166.52	3,228,159.68	40.261524	-104.682444
- plan hits target center									
- Point									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
701.31	700.00	9 5/8"	9-5/8	12-1/4

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,461.54	4,153.00	PK		0.00	
4,737.02	4,403.00	SX		0.00	
7,338.99	6,925.00	NIO		0.00	
7,626.99	7,213.00	CD		0.00	
7,698.99	7,285.00	GH		0.00	
8,076.99	7,663.00	J		0.00	