

# **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83**

**WELD\_Checketts 18-15 PAD**

**Checketts 32-15**

**Checketts 32-15**

**Plan: Checketts 32-15 (wp01)**

## **Standard Planning Report**

**02 August, 2011**



Project: COLORADO NORTHERN ZONE - 83  
 Site: WELD\_Checketts 18-15 PAD  
 Well: Checketts 32-15  
 Wellbore: Checketts 32-15  
 Section:  
 SHL:  
 Design: Checketts 32-15 (wp01)  
 Latitude: 40.312861  
 Longitude: -104.651155  
 GL: 4727.00  
 KB: 15' RKB + 4727' GL @ 4742.00ft

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
4281.00	4490.90	PK Depth
4291.00	4501.53	SX Depth
6790.00	7119.65	NIO Depth
7087.00	7416.69	CD Depth
7171.00	7500.69	GH Depth
7571.00	7900.69	J Depth



Azimuths to True North  
 Magnetic North: 8.78°

Magnetic Field  
 Strength: 53084.9snT  
 Dip Angle: 66.99°  
 Date: 8/2/2011  
 Model: IGRF2010

#### WELL DETAILS: Checketts 32-15

+N/-S	+E/-W	Northing	Ground Level: Easting	4727.00 Latitude	Longitude	Slot
0.00	0.00	1357949.13	3236712.38	40.312861	-104.651155	

#### CASING DETAILS

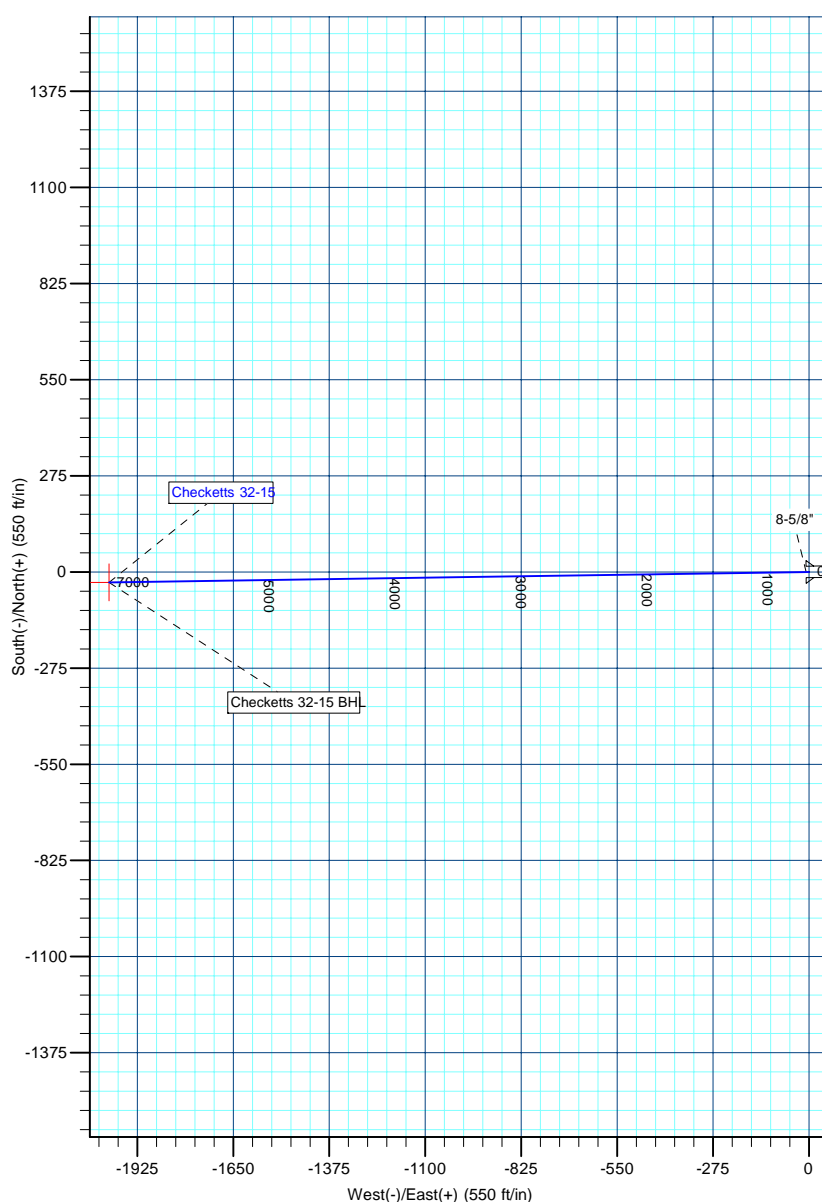
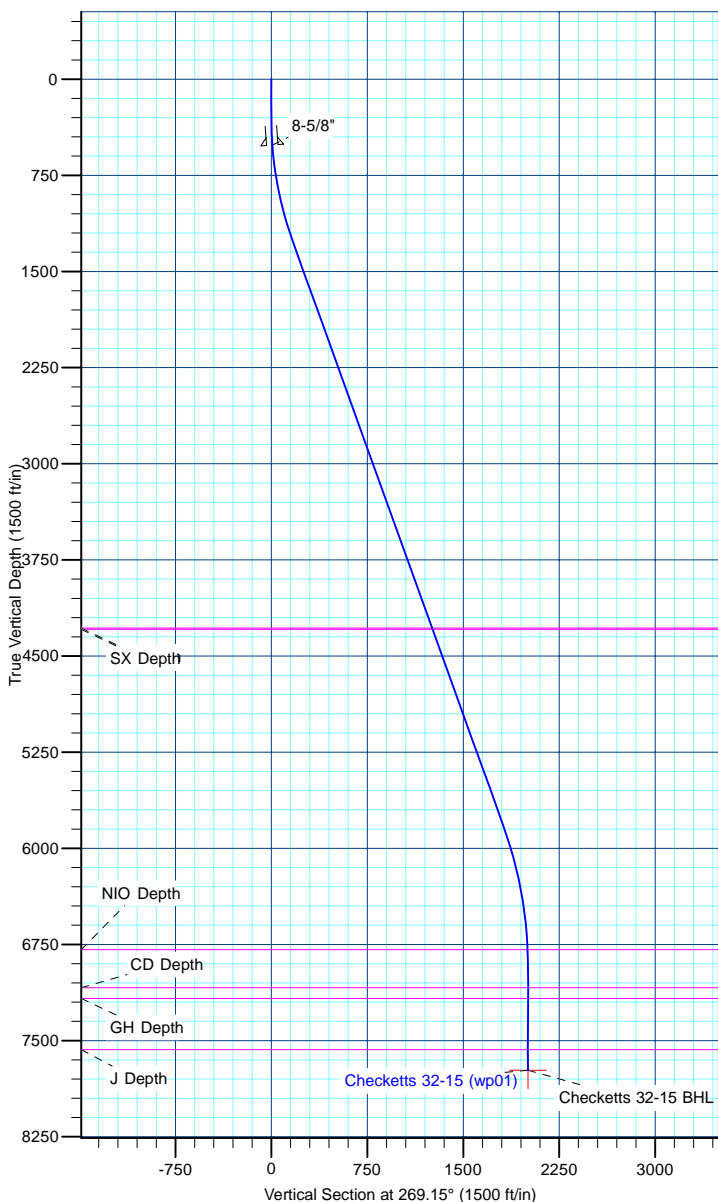
TVD	MD	Name	Size
515.00	515.20	8-5/8"	8-5/8

#### DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape Point
Checketts 32-15 BHL	7731.00	-29.72	-2006.46	1357900.20	3234706.30	40.312779	-104.658350	

#### SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
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
1292.84	19.86	269.15	1273.09	-2.52	-170.31	2.00	269.15	170.33
6126.02	19.86	269.15	5818.90	-26.84	-1811.82	0.00	0.00	1812.02
7260.69	0.00	0.00	6931.00	-29.72	-2006.46	1.75	180.00	2006.68
8060.69	0.00	0.00	7731.00	-29.72	-2006.46	0.00	0.00	2006.68



<b>Database:</b>	edm5000p	<b>Local Co-ordinate Reference:</b>	Well Checketts 32-15
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	15' RKB + 4727' GL @ 4742.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	15' RKB + 4727' GL @ 4742.00ft
<b>Site:</b>	WELD_Checketts 18-15 PAD	<b>North Reference:</b>	True
<b>Well:</b>	Checketts 32-15	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Checketts 32-15		
<b>Design:</b>	Checketts 32-15 (wp01)		

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

Site		WELD_Checketts 18-15 PAD			
Site Position:		Northing:	1,357,949.50 ft	Latitude:	40.312861
From:	Lat/Long	Easting:	3,236,744.45 ft	Longitude:	-104.651040
Position Uncertainty:	0.00 ft	Slot Radius:	0 "	Grid Convergence:	0.55 °

Well	Checketts 32-15					
Well Position	+N/-S	-0.07 ft	Northing:	1,357,949.13 ft	Latitude:	40.312861
	+E/-W	-32.07 ft	Easting:	3,236,712.38 ft	Longitude:	-104.651155
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,727.00 ft

<b>Wellbore</b>	Checketts 32-15				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	8/2/2011	8.78	66.99	53,085

<b>Design</b>	Checketts 32-15 (wp01)			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	269.15

<b>Plan Sections</b>										
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	
1,292.84	19.86	269.15	1,273.09	-2.52	-170.31	2.00	2.00	0.00	269.15	
6,126.02	19.86	269.15	5,818.90	-26.84	-1,811.82	0.00	0.00	0.00	0.00	
7,260.69	0.00	0.00	6,931.00	-29.72	-2,006.46	1.75	-1.75	0.00	180.00	
8,060.69	0.00	0.00	7,731.00	-29.72	-2,006.46	0.00	0.00	0.00	0.00	Checketts 32-15 BHL

<b>Database:</b>	edm5000p	<b>Local Co-ordinate Reference:</b>	Well Checketts 32-15
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	15' RKB + 4727' GL @ 4742.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	15' RKB + 4727' GL @ 4742.00ft
<b>Site:</b>	WELD_Checketts 18-15 PAD	<b>North Reference:</b>	True
<b>Well:</b>	Checketts 32-15	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Checketts 32-15		
<b>Design:</b>	Checketts 32-15 (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	269.15	399.98	-0.03	-1.74	1.75	2.00	2.00	0.00
500.00	4.00	269.15	499.84	-0.10	-6.98	6.98	2.00	2.00	0.00
515.20	4.30	269.15	515.00	-0.12	-8.08	8.08	2.00	2.00	0.00
8-5/8"									
600.00	6.00	269.15	599.45	-0.23	-15.69	15.69	2.00	2.00	0.00
700.00	8.00	269.15	698.70	-0.41	-27.88	27.88	2.00	2.00	0.00
800.00	10.00	269.15	797.47	-0.64	-43.52	43.52	2.00	2.00	0.00
900.00	12.00	269.15	895.62	-0.93	-62.60	62.60	2.00	2.00	0.00
1,000.00	14.00	269.15	993.06	-1.26	-85.09	85.10	2.00	2.00	0.00
1,100.00	16.00	269.15	1,089.64	-1.64	-110.96	110.98	2.00	2.00	0.00
1,200.00	18.00	269.15	1,185.27	-2.08	-140.20	140.21	2.00	2.00	0.00
1,292.84	19.86	269.15	1,273.09	-2.52	-170.31	170.33	2.00	2.00	0.00
1,300.00	19.86	269.15	1,279.82	-2.56	-172.74	172.76	0.00	0.00	0.00
1,400.00	19.86	269.15	1,373.87	-3.06	-206.70	206.73	0.00	0.00	0.00
1,500.00	19.86	269.15	1,467.93	-3.56	-240.67	240.69	0.00	0.00	0.00
1,600.00	19.86	269.15	1,561.98	-4.07	-274.63	274.66	0.00	0.00	0.00
1,700.00	19.86	269.15	1,656.04	-4.57	-308.59	308.63	0.00	0.00	0.00
1,800.00	19.86	269.15	1,750.09	-5.07	-342.56	342.60	0.00	0.00	0.00
1,900.00	19.86	269.15	1,844.15	-5.58	-376.52	376.56	0.00	0.00	0.00
2,000.00	19.86	269.15	1,938.20	-6.08	-410.48	410.53	0.00	0.00	0.00
2,100.00	19.86	269.15	2,032.25	-6.58	-444.45	444.50	0.00	0.00	0.00
2,200.00	19.86	269.15	2,126.31	-7.09	-478.41	478.46	0.00	0.00	0.00
2,300.00	19.86	269.15	2,220.36	-7.59	-512.37	512.43	0.00	0.00	0.00
2,400.00	19.86	269.15	2,314.42	-8.09	-546.34	546.40	0.00	0.00	0.00
2,500.00	19.86	269.15	2,408.47	-8.60	-580.30	580.37	0.00	0.00	0.00
2,600.00	19.86	269.15	2,502.53	-9.10	-614.26	614.33	0.00	0.00	0.00
2,700.00	19.86	269.15	2,596.58	-9.60	-648.23	648.30	0.00	0.00	0.00
2,800.00	19.86	269.15	2,690.63	-10.10	-682.19	682.27	0.00	0.00	0.00
2,900.00	19.86	269.15	2,784.69	-10.61	-716.16	716.23	0.00	0.00	0.00
3,000.00	19.86	269.15	2,878.74	-11.11	-750.12	750.20	0.00	0.00	0.00
3,100.00	19.86	269.15	2,972.80	-11.61	-784.08	784.17	0.00	0.00	0.00
3,200.00	19.86	269.15	3,066.85	-12.12	-818.05	818.14	0.00	0.00	0.00
3,300.00	19.86	269.15	3,160.91	-12.62	-852.01	852.10	0.00	0.00	0.00
3,400.00	19.86	269.15	3,254.96	-13.12	-885.97	886.07	0.00	0.00	0.00
3,500.00	19.86	269.15	3,349.02	-13.63	-919.94	920.04	0.00	0.00	0.00
3,600.00	19.86	269.15	3,443.07	-14.13	-953.90	954.00	0.00	0.00	0.00
3,700.00	19.86	269.15	3,537.12	-14.63	-987.86	987.97	0.00	0.00	0.00
3,800.00	19.86	269.15	3,631.18	-15.14	-1,021.83	1,021.94	0.00	0.00	0.00
3,900.00	19.86	269.15	3,725.23	-15.64	-1,055.79	1,055.91	0.00	0.00	0.00
4,000.00	19.86	269.15	3,819.29	-16.14	-1,089.75	1,089.87	0.00	0.00	0.00
4,100.00	19.86	269.15	3,913.34	-16.64	-1,123.72	1,123.84	0.00	0.00	0.00
4,200.00	19.86	269.15	4,007.40	-17.15	-1,157.68	1,157.81	0.00	0.00	0.00
4,300.00	19.86	269.15	4,101.45	-17.65	-1,191.64	1,191.77	0.00	0.00	0.00
4,400.00	19.86	269.15	4,195.51	-18.15	-1,225.61	1,225.74	0.00	0.00	0.00
4,490.90	19.86	269.15	4,281.00	-18.61	-1,259.57	1,259.71	0.00	0.00	0.00
PK Depth									
4,500.00	19.86	269.15	4,289.56	-18.66	-1,259.57	1,259.71	0.00	0.00	0.00
4,501.53	19.86	269.15	4,291.00	-18.66	-1,260.09	1,260.23	0.00	0.00	0.00
SX Depth									

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<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	15' RKB + 4727' GL @ 4742.00ft
<b>Site:</b>	WELD_Checketts 18-15 PAD	<b>North Reference:</b>	True
<b>Well:</b>	Checketts 32-15	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Checketts 32-15		
<b>Design:</b>	Checketts 32-15 (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)
4,600.00	19.86	269.15	4,383.61	-19.16	-1,293.53	1,293.68	0.00	0.00	0.00
4,700.00	19.86	269.15	4,477.67	-19.66	-1,327.50	1,327.64	0.00	0.00	0.00
4,800.00	19.86	269.15	4,571.72	-20.17	-1,361.46	1,361.61	0.00	0.00	0.00
4,900.00	19.86	269.15	4,665.78	-20.67	-1,395.42	1,395.58	0.00	0.00	0.00
5,000.00	19.86	269.15	4,759.83	-21.17	-1,429.39	1,429.54	0.00	0.00	0.00
5,100.00	19.86	269.15	4,853.89	-21.68	-1,463.35	1,463.51	0.00	0.00	0.00
5,200.00	19.86	269.15	4,947.94	-22.18	-1,497.31	1,497.48	0.00	0.00	0.00
5,300.00	19.86	269.15	5,042.00	-22.68	-1,531.28	1,531.44	0.00	0.00	0.00
5,400.00	19.86	269.15	5,136.05	-23.18	-1,565.24	1,565.41	0.00	0.00	0.00
5,500.00	19.86	269.15	5,230.10	-23.69	-1,599.20	1,599.38	0.00	0.00	0.00
5,600.00	19.86	269.15	5,324.16	-24.19	-1,633.17	1,633.35	0.00	0.00	0.00
5,700.00	19.86	269.15	5,418.21	-24.69	-1,667.13	1,667.31	0.00	0.00	0.00
5,800.00	19.86	269.15	5,512.27	-25.20	-1,701.09	1,701.28	0.00	0.00	0.00
5,900.00	19.86	269.15	5,606.32	-25.70	-1,735.06	1,735.25	0.00	0.00	0.00
6,000.00	19.86	269.15	5,700.38	-26.20	-1,769.02	1,769.21	0.00	0.00	0.00
6,100.00	19.86	269.15	5,794.43	-26.71	-1,802.98	1,803.18	0.00	0.00	0.00
6,126.02	19.86	269.15	5,818.90	-26.84	-1,811.82	1,812.02	0.00	0.00	0.00
6,200.00	18.56	269.15	5,888.76	-27.20	-1,836.16	1,836.36	1.75	-1.75	0.00
6,300.00	16.81	269.15	5,984.03	-27.65	-1,866.54	1,866.74	1.75	-1.75	0.00
6,400.00	15.06	269.15	6,080.19	-28.05	-1,893.99	1,894.20	1.75	-1.75	0.00
6,500.00	13.31	269.15	6,177.13	-28.42	-1,918.50	1,918.71	1.75	-1.75	0.00
6,600.00	11.56	269.15	6,274.78	-28.74	-1,940.03	1,940.24	1.75	-1.75	0.00
6,700.00	9.81	269.15	6,373.04	-29.01	-1,958.57	1,958.79	1.75	-1.75	0.00
6,800.00	8.06	269.15	6,471.82	-29.24	-1,974.10	1,974.32	1.75	-1.75	0.00
6,900.00	6.31	269.15	6,571.03	-29.43	-1,986.61	1,986.83	1.75	-1.75	0.00
7,000.00	4.56	269.15	6,670.58	-29.57	-1,996.09	1,996.31	1.75	-1.75	0.00
7,100.00	2.81	269.15	6,770.37	-29.66	-2,002.52	2,002.74	1.75	-1.75	0.00
7,119.65	2.47	269.15	6,790.00	-29.68	-2,003.42	2,003.64	1.75	-1.75	0.00
<b>NIO Depth</b>									
7,200.00	1.06	269.15	6,870.31	-29.71	-2,005.90	2,006.12	1.75	-1.75	0.00
7,260.69	0.00	0.00	6,931.00	-29.72	-2,006.46	2,006.68	1.75	-1.75	0.00
7,300.00	0.00	0.00	6,970.31	-29.72	-2,006.46	2,006.68	0.00	0.00	0.00
7,400.00	0.00	0.00	7,070.31	-29.72	-2,006.46	2,006.68	0.00	0.00	0.00
7,416.69	0.00	0.00	7,087.00	-29.72	-2,006.46	2,006.68	0.00	0.00	0.00
<b>CD Depth</b>									
7,500.00	0.00	0.00	7,170.31	-29.72	-2,006.46	2,006.68	0.00	0.00	0.00
7,500.69	0.00	0.00	7,171.00	-29.72	-2,006.46	2,006.68	0.00	0.00	0.00
<b>GH Depth</b>									
7,600.00	0.00	0.00	7,270.31	-29.72	-2,006.46	2,006.68	0.00	0.00	0.00
7,700.00	0.00	0.00	7,370.31	-29.72	-2,006.46	2,006.68	0.00	0.00	0.00
7,800.00	0.00	0.00	7,470.31	-29.72	-2,006.46	2,006.68	0.00	0.00	0.00
7,900.00	0.00	0.00	7,570.31	-29.72	-2,006.46	2,006.68	0.00	0.00	0.00
7,900.69	0.00	0.00	7,571.00	-29.72	-2,006.46	2,006.68	0.00	0.00	0.00
<b>J Depth</b>									
8,000.00	0.00	0.00	7,670.31	-29.72	-2,006.46	2,006.68	0.00	0.00	0.00
8,060.69	0.00	0.00	7,731.00	-29.72	-2,006.46	2,006.68	0.00	0.00	0.00
<b>Checketts 32-15 BHL</b>									

<b>Database:</b>	edm5000p	<b>Local Co-ordinate Reference:</b>	Well Checketts 32-15
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	15' RKB + 4727' GL @ 4742.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	15' RKB + 4727' GL @ 4742.00ft
<b>Site:</b>	WELD_Checketts 18-15 PAD	<b>North Reference:</b>	True
<b>Well:</b>	Checketts 32-15	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Checketts 32-15		
<b>Design:</b>	Checketts 32-15 (wp01)		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
Checketts 32-15 BHL	0.00	0.00	7,731.00	-29.72	-2,006.46	1,357,900.20	3,234,706.30	40.312779	-104.658350
- plan hits target center									
- Point									

Casing Points					
Measured Depth	Vertical Depth	Name		Casing Diameter	Hole Diameter
(ft)	(ft)			(")	(")
515.20	515.00	8-5/8"		8-5/8	11

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(ft)	(ft)			(°)	(°)	
4,490.90	4,281.00	PK Depth				
4,501.53	4,291.00	SX Depth				
7,119.65	6,790.00	NIO Depth				
7,416.69	7,087.00	CD Depth				
7,500.69	7,171.00	GH Depth				
7,900.69	7,571.00	J Depth				