



Ursa Operating Company, LLC

Rockies Region

CSF E

CSF 44B-09-07-91

Wellbore #1

Design: Actual

End Of Well Report

09 July, 2014



Company:	Ursa Operating Company, LLC	Local Co-ordinate Reference:	Well CSF 44B-09-07-91
Project:	Rockies Region	TVD Reference:	CSF 44B-09-07-91
Site:	CSF E	MD Reference:	CSF 44B-09-07-91
Well:	CSF 44B-09-07-91	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	MasterDB

Project		Rockies Region	
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site	CSF E					
Site Position:			Northing:	1,600,196.55 usft	Latitude:	39° 27' 47.492 N
From:	Lat/Long		Easting:	2,418,195.90 usft	Longitude:	107° 33' 39.189 W
Position Uncertainty:	0.0 usft		Slot Radius:	13-3/16 "	Grid Convergence:	-1.30 °

Well		CSF 44B-09-07-91, SHL LAT: 39.458559 LONG: -107.558839				
Well Position	+N-S	0.0 usft	Northing:	1,598,496.25 usft	Latitude:	39° 27' 30.812 N
	+E-W	0.0 usft	Easting:	2,418,735.36 usft	Longitude:	107° 33' 31.820 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	6,821.0 usft	Ground Level:	6,806.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	1/17/2014	9.78	65.73	52,058

Design		Actual			
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:		Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
		0.0	0.0	0.0	106.28

Survey Program		Date	7/6/2014		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
271.4	7,720.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

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Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	MasterDB

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
271.4	0.31	300.59	271.4	-0.7	0.4	-0.6	0.11	0.11	0.00	
371.4	0.41	355.90	371.4	-1.1	0.9	-0.9	0.35	0.10	55.31	
471.4	0.35	316.50	471.4	-1.5	1.4	-1.1	0.26	-0.06	-39.40	
571.4	0.57	281.46	571.4	-2.2	1.8	-1.8	0.35	0.22	-35.04	
671.4	0.60	263.18	671.4	-3.2	1.8	-2.8	0.19	0.03	-18.28	
771.4	0.81	253.98	771.4	-4.3	1.5	-4.0	0.24	0.21	-9.20	
871.4	0.69	247.33	871.4	-5.4	1.1	-5.3	0.15	-0.12	-6.65	
971.4	0.98	245.00	971.4	-6.5	0.5	-6.6	0.29	0.29	-2.33	
1,062.4	0.95	254.11	1,062.3	-7.7	0.0	-8.0	0.17	-0.03	10.01	
1,150.0	1.39	217.99	1,149.9	-8.7	-1.0	-9.4	0.96	0.50	-41.23	
1,235.0	2.07	158.27	1,234.9	-8.1	-3.3	-9.4	2.14	0.80	-70.26	
1,321.0	5.40	138.71	1,320.7	-3.8	-7.8	-6.2	4.09	3.87	-22.74	
1,406.0	7.08	127.29	1,405.2	4.5	-13.9	0.6	2.45	1.98	-13.44	
1,533.0	11.87	114.81	1,530.4	24.7	-24.2	18.7	4.08	3.77	-9.83	
1,618.0	14.19	108.61	1,613.3	43.8	-31.2	36.5	3.18	2.73	-7.29	
1,704.0	18.33	106.24	1,695.8	67.9	-38.3	59.5	4.87	4.81	-2.76	
1,789.0	19.38	106.99	1,776.2	95.3	-46.2	85.8	1.27	1.24	0.88	
1,874.0	22.28	105.54	1,855.7	125.5	-54.6	114.8	3.47	3.41	-1.71	
1,959.0	25.22	103.78	1,933.5	159.8	-63.3	148.0	3.56	3.46	-2.07	
2,087.0	29.40	105.19	2,047.2	218.4	-78.0	204.8	3.30	3.27	1.10	
2,172.0	33.00	103.87	2,119.9	262.4	-89.0	247.4	4.31	4.24	-1.55	
2,257.0	34.32	104.44	2,190.6	309.5	-100.5	293.1	1.60	1.55	0.67	
2,342.0	35.51	104.75	2,260.3	358.1	-112.8	340.2	1.42	1.40	0.36	
2,427.0	35.46	104.92	2,329.5	407.5	-125.4	387.9	0.13	-0.06	0.20	
2,512.0	37.35	104.22	2,397.9	457.9	-138.1	436.7	2.28	2.22	-0.82	
2,597.0	39.20	103.03	2,464.7	510.5	-150.5	487.9	2.34	2.18	-1.40	

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Well:	CSF 44B-09-07-91	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	MasterDB

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	
2,682.0	39.55	102.90	2,530.4	564.3	-162.6	540.4	0.42	0.41	-0.15	
2,768.0	39.46	105.45	2,596.7	619.0	-176.0	593.4	1.89	-0.10	2.97	
2,853.0	39.38	106.24	2,662.4	673.0	-190.7	645.4	0.60	-0.09	0.93	
2,938.0	39.29	105.27	2,728.1	726.8	-205.4	697.2	0.73	-0.11	-1.14	
3,023.0	38.41	104.44	2,794.3	780.1	-219.0	748.7	1.20	-1.04	-0.98	
3,109.0	37.66	105.27	2,862.1	833.1	-232.6	800.0	1.06	-0.87	0.97	
3,194.0	36.12	109.84	2,930.1	884.1	-248.0	848.6	3.70	-1.81	5.38	
3,279.0	34.45	107.29	2,999.5	933.1	-263.6	895.1	2.62	-1.96	-3.00	
3,364.0	33.62	108.74	3,069.9	980.7	-278.3	940.4	1.37	-0.98	1.71	
3,449.0	31.59	107.30	3,141.5	1,026.4	-292.5	983.9	2.56	-2.39	-1.69	
3,534.0	32.39	106.56	3,213.6	1,071.5	-305.6	1,027.0	1.05	0.94	-0.87	
3,619.0	33.71	107.12	3,284.8	1,117.8	-319.0	1,071.4	1.59	1.55	0.66	
3,704.0	33.53	107.91	3,355.6	1,164.9	-333.2	1,116.2	0.56	-0.21	0.93	
3,790.0	33.53	108.70	3,427.3	1,212.4	-348.1	1,161.3	0.51	0.00	0.92	
3,875.0	34.10	105.58	3,497.9	1,259.6	-362.0	1,206.5	2.15	0.67	-3.67	
3,960.0	35.20	104.53	3,567.9	1,308.0	-374.6	1,253.2	1.47	1.29	-1.24	
4,045.0	33.93	104.61	3,637.8	1,356.2	-386.7	1,299.9	1.50	-1.49	0.09	
4,130.0	34.01	105.84	3,708.3	1,403.6	-399.2	1,345.7	0.81	0.09	1.45	
4,215.0	34.06	105.32	3,778.8	1,451.2	-412.0	1,391.5	0.35	0.06	-0.61	
4,299.0	34.72	104.97	3,848.1	1,498.6	-424.4	1,437.3	0.82	0.79	-0.42	
4,385.0	34.01	105.10	3,919.1	1,547.2	-437.0	1,484.2	0.83	-0.83	0.15	
4,470.0	34.06	105.80	3,989.5	1,594.7	-449.6	1,530.0	0.46	0.06	0.82	
4,555.0	35.60	106.06	4,059.3	1,643.3	-463.0	1,576.7	1.82	1.81	0.31	
4,640.0	33.77	106.56	4,129.2	1,691.7	-476.5	1,623.2	2.18	-2.15	0.59	
4,726.0	34.06	104.97	4,200.6	1,739.6	-489.6	1,669.3	1.09	0.34	-1.85	
4,811.0	34.85	103.91	4,270.6	1,787.7	-501.6	1,715.9	1.17	0.93	-1.25	
4,896.0	33.35	103.47	4,341.0	1,835.3	-512.8	1,762.2	1.79	-1.76	-0.52	

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Design:	Actual	Database:	MasterDB

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)		TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)
4,981.0	33.57	104.26		4,411.9	1,882.1	-524.1	1,807.7	0.57	0.26	0.93
5,066.0	30.37	104.39		4,484.0	1,927.1	-535.2	1,851.3	3.77	-3.76	0.15
5,151.0	28.21	105.49		4,558.2	1,968.7	-545.9	1,891.5	2.62	-2.54	1.29
5,236.0	26.06	104.66		4,633.8	2,007.4	-556.0	1,928.9	2.57	-2.53	-0.98
5,321.0	23.61	104.32		4,710.9	2,043.1	-564.9	1,963.5	2.89	-2.88	-0.40
5,407.0	20.48	105.45		4,790.6	2,075.4	-573.2	1,994.7	3.67	-3.64	1.31
5,492.0	16.96	105.41		4,871.1	2,102.6	-580.5	2,021.0	4.14	-4.14	-0.05
5,577.0	14.72	101.93		4,952.9	2,125.8	-586.0	2,043.5	2.86	-2.64	-4.09
5,662.0	11.73	101.85		5,035.6	2,145.2	-590.0	2,062.5	3.52	-3.52	-0.09
5,747.0	8.00	104.31		5,119.4	2,159.7	-593.2	2,076.7	4.42	-4.39	2.89
5,832.0	4.66	106.28		5,203.8	2,169.1	-595.7	2,085.7	3.94	-3.93	2.32
5,902.9	2.30	97.59		5,274.6	2,173.4	-596.7	2,089.9	3.40	-3.32	-12.27
CSF 44B-09-07-91 TGT										
5,917.0	1.85	93.23		5,288.7	2,173.9	-596.7	2,090.4	3.40	-3.21	-30.80
6,002.0	1.58	100.53		5,373.7	2,176.4	-597.0	2,092.9	0.41	-0.32	8.59
6,087.0	1.10	134.19		5,458.6	2,178.3	-597.8	2,094.7	1.06	-0.56	39.60
6,173.0	1.27	172.82		5,544.6	2,179.4	-599.3	2,095.4	0.93	0.20	44.92
6,258.0	1.58	176.73		5,629.6	2,180.1	-601.4	2,095.6	0.38	0.36	4.60
6,343.0	1.63	149.26		5,714.6	2,181.4	-603.6	2,096.3	0.90	0.06	-32.32
6,428.0	2.42	133.13		5,799.5	2,183.9	-605.9	2,098.2	1.14	0.93	-18.98
6,513.0	1.93	141.44		5,884.4	2,186.7	-608.2	2,100.4	0.68	-0.58	9.78
6,598.0	0.66	174.71		5,969.4	2,188.0	-609.8	2,101.3	1.68	-1.49	39.14
6,683.0	1.49	260.22		6,054.4	2,187.2	-610.5	2,100.3	1.86	0.98	100.60
6,768.0	2.02	247.22		6,139.4	2,185.1	-611.3	2,097.8	0.78	0.62	-15.29
6,853.0	2.33	238.82		6,224.3	2,182.7	-612.8	2,095.0	0.52	0.36	-9.88
6,938.0	1.58	305.88		6,309.3	2,180.5	-613.0	2,092.5	2.64	-0.88	78.89
7,024.0	3.52	341.00		6,395.2	2,177.8	-609.8	2,090.7	2.80	2.26	40.84

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7,109.0	3.25	326.41	6,480.0	2,174.5	-605.3	2,088.5	1.06	-0.32	-17.16	
7,194.0	3.12	314.36	6,564.9	2,170.6	-601.7	2,085.5	0.80	-0.15	-14.18	
7,279.0	2.90	305.62	6,649.8	2,166.5	-598.8	2,082.1	0.60	-0.26	-10.28	
7,364.0	2.50	297.40	6,734.7	2,162.7	-596.7	2,078.7	0.65	-0.47	-9.67	
7,449.0	2.43	275.17	6,819.6	2,159.1	-595.7	2,075.3	1.12	-0.08	-26.15	
7,534.0	3.25	258.03	6,904.5	2,155.2	-596.0	2,071.2	1.38	0.96	-20.16	
7,619.0	4.35	249.81	6,989.3	2,150.5	-597.6	2,065.8	1.44	1.29	-9.67	
7,663.0	4.75	244.71	7,033.2	2,147.8	-599.0	2,062.6	1.29	0.91	-11.59	
7,720.0	4.75	244.71	7,090.0	2,144.2	-601.0	2,058.3	0.00	0.00	0.00	

Checked By: _____	Approved By: _____	Date: _____
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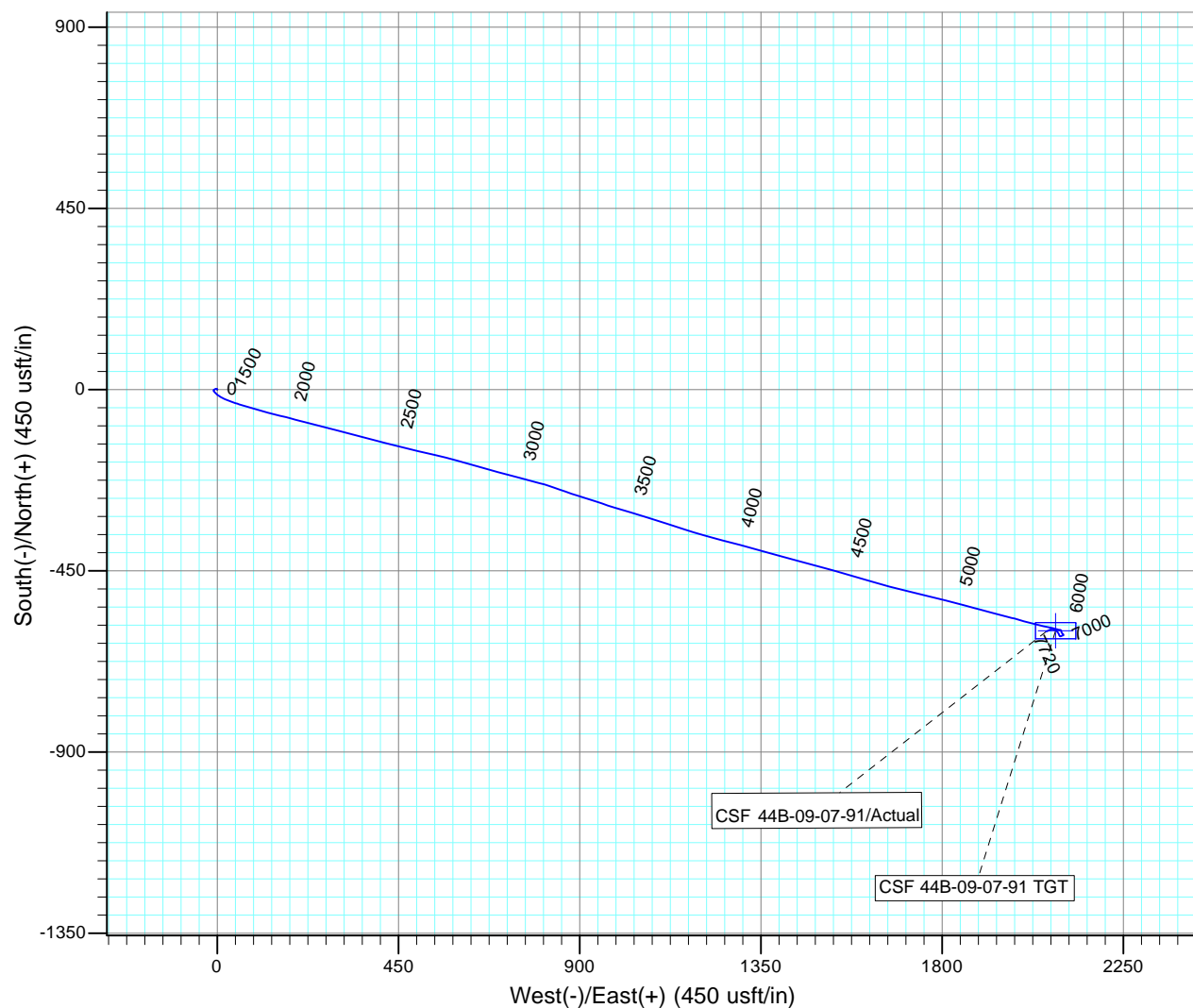
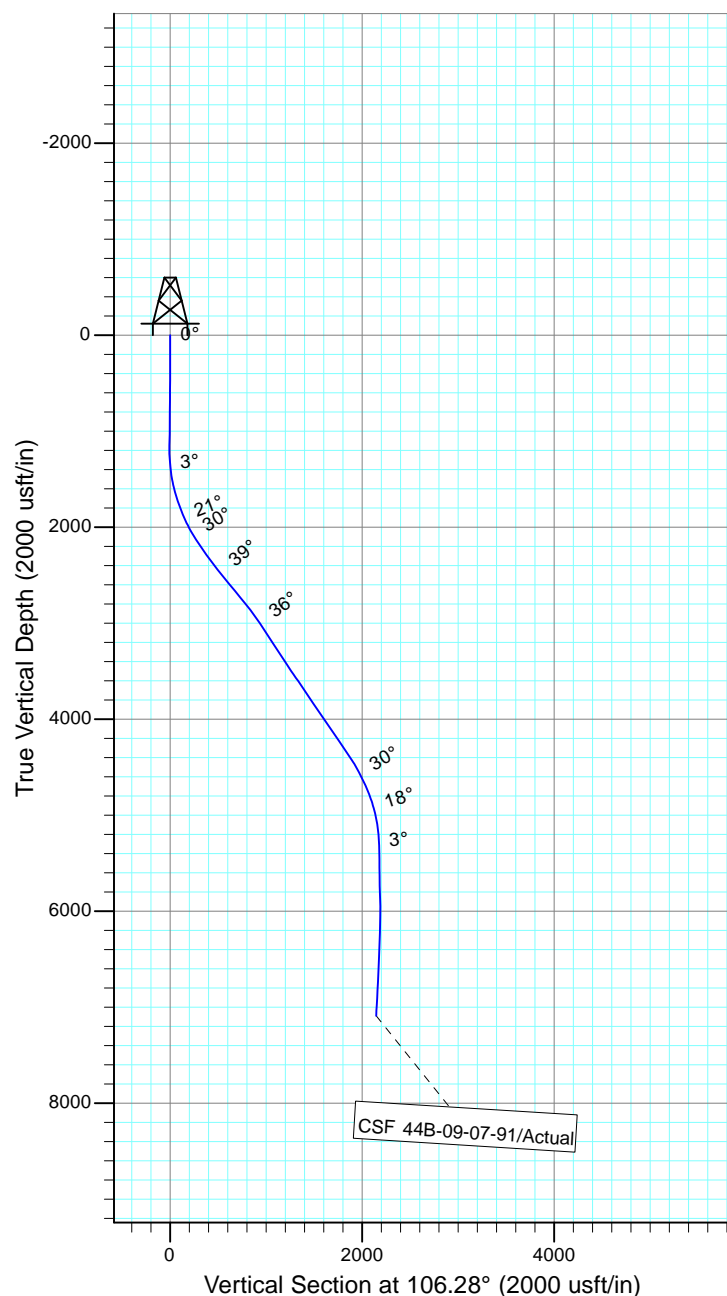
Project: Rockies Region
 Site: CSF E
 Well: CSF 44B-09-07-91
 Wellbore: Wellbore #
 SURVEY: Actual

FINAL SURVEY REPORT



Azimuths to True North
 Magnetic North: 9.78°

Magnetic Field
 Strength: 52058.2snT
 Dip Angle: 65.73°
 Date: 1/17/2014
 Model: IGRF200510



Design: Actual (CSF 44B-09-07-91/Wellbore #1)

Created By: Sarah Webb-Hudson Date: 13:20, July 09 2014
 THIS SURVEY IS CORRECT TO THE BEST OF MY KNOWLEDGE AND IS
 SUPPORTED BY ACTUAL FIELD DATA.