



Ursa Operating Company, LLC

Rockies Region

CSF E

CSF 44C-09-07-91

Wellbore #1

Design: Actual

End Of Well Report

18 July, 2014



Company:	Ursa Operating Company, LLC	Local Co-ordinate Reference:	Well CSF 44C-09-07-91
Project:	Rockies Region	TVD Reference:	CSF 44C-09-07-91 @ 6821.4usft (Extreme 15)
Site:	CSF E	MD Reference:	CSF 44C-09-07-91 @ 6821.4usft (Extreme 15)
Well:	CSF 44C-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
From:	Lat/Long	Easting:		2,418,195.90	usft
Position Uncertainty:	0.0	Slot Radius:		13-3/16	"
		Grid Convergence:		-1.30	°

Well		CSF 44C-09-07-91, SHL LAT: 39.458536 LONG: -107.558872				
Well Position	+N-S	0.0 usft	Northing:	1,598,488.08 usft	Latitude:	39° 27' 30.729 N
	+E-W	0.0 usft	Easting:	2,418,725.86 usft	Longitude:	107° 33' 31.939 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	6,821.4 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	114.66

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

Survey Program		Date 7/18/2014			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
271.4	1,045.4	Survey #1 (Wellbore #1)	IS-GYRO-WLINE	MEMS RATE GYRO	
1,128.0	1,254.0	Survey #2 (Wellbore #1)	CT_GYRO_MS	Continuous Gyro Multishot	
1,323.0	1,365.0	Survey #3 (Wellbore #1)	MWD	MWD - Standard	
1,425.0	1,553.0	Survey #4 (Wellbore #1)	CT_GYRO_MS	Continuous Gyro Multishot	
1,663.0	7,972.0	Survey #5 (Wellbore #1)	MWD	MWD - Standard	

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	0.32	216.40	271.4	-0.2	-0.6	-0.4	0.12	0.12	0.00	
371.4	0.07	2.83	371.4	-0.2	-0.8	-0.6	0.38	-0.25	146.43	
471.4	0.46	227.76	471.4	-0.4	-1.0	-0.9	0.51	0.39	-135.07	
571.4	0.58	258.56	571.4	-1.0	-1.4	-1.7	0.30	0.12	30.80	
671.4	0.75	251.39	671.4	-1.9	-1.7	-2.8	0.19	0.17	-7.17	
771.4	0.86	240.74	771.4	-2.8	-2.2	-4.1	0.19	0.11	-10.65	
871.4	0.85	241.05	871.4	-3.7	-3.0	-5.4	0.01	-0.01	0.31	
971.4	1.33	235.97	971.3	-4.7	-4.0	-7.0	0.49	0.48	-5.08	
1,045.4	1.13	236.53	1,045.3	-5.5	-4.9	-8.3	0.27	-0.27	0.76	
1,128.0	0.90	225.78	1,127.9	-6.2	-5.8	-9.5	0.36	-0.28	-13.01	
1,169.0	0.40	107.78	1,168.9	-6.2	-6.0	-9.6	2.79	-1.22	-287.80	
1,212.0	2.10	67.78	1,211.9	-5.5	-5.8	-8.7	4.21	3.95	-93.02	
1,254.0	3.20	68.28	1,253.9	-4.2	-5.0	-6.9	2.62	2.62	1.19	
1,323.0	5.10	89.41	1,322.7	-0.1	-4.3	-2.0	3.49	2.75	30.62	
1,365.0	6.59	103.38	1,364.5	4.0	-4.8	2.2	4.88	3.55	33.26	
1,425.0	8.50	124.78	1,424.0	11.7	-8.2	9.2	5.61	3.18	35.67	
1,467.0	9.50	133.48	1,465.4	18.1	-12.3	14.2	4.01	2.38	20.71	
1,553.0	11.56	149.36	1,550.0	31.9	-24.6	23.8	4.12	2.40	18.47	

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Site:	CSF E	MD Reference:	CSF 44C-09-07-91 @ 6821.4usft (Extreme 15)
Well:	CSF 44C-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)	
1,663.0	14.59	145.48	1,657.1	52.8	-45.5	37.3	2.87	2.75	-3.53	
1,706.0	14.85	139.51	1,698.7	62.5	-54.2	43.9	3.58	0.60	-13.88	
1,748.0	15.38	133.84	1,739.3	72.6	-62.1	51.4	3.74	1.26	-13.50	
1,791.0	16.57	128.83	1,780.6	84.0	-69.9	60.3	4.23	2.77	-11.65	
1,833.0	17.71	124.48	1,820.8	96.1	-77.3	70.2	4.08	2.71	-10.36	
1,876.0	18.59	121.97	1,861.6	109.3	-84.6	81.4	2.74	2.05	-5.84	
1,919.0	19.60	118.15	1,902.2	123.3	-91.7	93.6	3.74	2.35	-8.88	
1,961.0	20.87	113.58	1,941.7	137.8	-98.0	106.7	4.83	3.02	-10.88	
2,004.0	22.43	110.40	1,981.6	153.7	-103.9	121.4	4.54	3.63	-7.40	
2,046.0	24.17	110.72	2,020.2	170.2	-109.7	136.9	4.15	4.14	0.76	
2,089.0	25.71	110.55	2,059.2	188.3	-116.1	153.9	3.59	3.58	-0.40	
2,131.0	27.42	109.40	2,096.8	207.0	-122.5	171.6	4.25	4.07	-2.74	
2,174.0	29.22	109.40	2,134.6	227.4	-129.3	190.8	4.19	4.19	0.00	
2,216.0	30.89	109.45	2,171.0	248.3	-136.3	210.6	3.98	3.98	0.12	
2,259.0	32.52	109.76	2,207.5	270.8	-143.9	231.9	3.81	3.79	0.72	
2,301.0	33.88	110.81	2,242.7	293.7	-151.9	253.5	3.52	3.24	2.50	
2,344.0	35.73	111.38	2,278.0	318.2	-160.7	276.4	4.37	4.30	1.33	
2,386.0	37.49	111.69	2,311.7	343.3	-169.9	299.7	4.21	4.19	0.74	
2,471.0	39.42	111.69	2,378.3	396.0	-189.4	348.8	2.27	2.27	0.00	
2,556.0	39.16	112.48	2,444.0	449.8	-209.7	398.7	0.66	-0.31	0.93	
2,642.0	39.59	112.79	2,510.5	504.3	-230.7	449.0	0.55	0.50	0.36	
2,726.0	39.95	114.41	2,575.1	558.1	-252.2	498.3	1.31	0.43	1.93	
2,811.0	39.51	112.22	2,640.5	612.4	-273.7	548.2	1.73	-0.52	-2.58	
2,896.0	39.33	112.04	2,706.1	666.3	-294.0	598.2	0.25	-0.21	-0.21	
3,024.0	38.11	112.62	2,806.0	746.3	-324.4	672.2	0.99	-0.95	0.45	
3,152.0	38.72	112.30	2,906.3	825.8	-354.8	745.7	0.50	0.48	-0.25	
3,280.0	40.34	112.00	3,005.0	907.1	-385.5	821.2	1.27	1.27	-0.23	

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Site:	CSF E	MD Reference:	CSF 44C-09-07-91 @ 6821.4usft (Extreme 15)
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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)	
3,365.0	39.29	109.89	3,070.3	961.5	-405.0	872.0	2.01	-1.24	-2.48	
3,493.0	38.63	111.16	3,169.8	1,041.7	-433.2	947.4	0.81	-0.52	0.99	
3,578.0	39.20	111.34	3,236.0	1,095.0	-452.6	997.1	0.68	0.67	0.21	
3,663.0	38.28	113.23	3,302.3	1,148.2	-472.7	1,046.4	1.76	-1.08	2.22	
3,748.0	37.71	113.97	3,369.3	1,200.5	-493.7	1,094.3	0.86	-0.67	0.87	
3,833.0	37.84	113.01	3,436.4	1,252.5	-514.4	1,142.1	0.71	0.15	-1.13	
3,918.0	40.34	111.29	3,502.4	1,306.1	-534.6	1,191.7	3.21	2.94	-2.02	
4,003.0	40.52	110.81	3,567.1	1,361.1	-554.4	1,243.1	0.42	0.21	-0.56	
4,088.0	39.95	112.30	3,632.0	1,415.9	-574.6	1,294.2	1.32	-0.67	1.75	
4,173.0	39.59	113.62	3,697.3	1,470.2	-595.8	1,344.3	1.08	-0.42	1.55	
4,258.0	39.81	114.28	3,762.7	1,524.5	-617.8	1,393.9	0.56	0.26	0.78	
4,344.0	39.68	113.89	3,828.9	1,579.5	-640.3	1,444.1	0.33	-0.15	-0.45	
4,429.0	39.86	113.18	3,894.2	1,633.9	-662.0	1,493.9	0.57	0.21	-0.84	
4,514.0	39.73	112.92	3,959.5	1,688.3	-683.3	1,544.0	0.25	-0.15	-0.31	
4,599.0	38.54	113.18	4,025.4	1,741.9	-704.3	1,593.4	1.41	-1.40	0.31	
4,684.0	38.19	112.35	4,092.1	1,794.6	-724.7	1,642.0	0.73	-0.41	-0.98	
4,769.0	37.97	111.25	4,159.0	1,847.0	-744.2	1,690.7	0.84	-0.26	-1.29	
4,854.0	36.08	112.13	4,226.8	1,898.1	-763.1	1,738.2	2.31	-2.22	1.04	
4,939.0	35.33	112.52	4,295.9	1,947.7	-781.9	1,784.1	0.92	-0.88	0.46	
4,982.0	34.45	113.23	4,331.1	1,972.2	-791.5	1,806.8	2.25	-2.05	1.65	
5,110.0	29.22	113.75	4,439.8	2,039.7	-818.3	1,868.7	4.09	-4.09	0.41	
5,237.0	24.52	115.51	4,553.1	2,097.1	-842.2	1,920.9	3.75	-3.70	1.39	
5,365.0	21.49	114.50	4,670.9	2,147.1	-863.4	1,966.2	2.39	-2.37	-0.79	
5,492.0	17.97	114.41	4,790.4	2,190.0	-881.1	2,005.2	2.77	-2.77	-0.07	
5,577.0	15.12	113.53	4,871.9	2,214.2	-891.0	2,027.3	3.37	-3.35	-1.04	
5,662.0	12.74	112.83	4,954.4	2,234.6	-899.0	2,046.1	2.81	-2.80	-0.82	
5,748.0	7.95	113.32	5,039.0	2,250.1	-905.1	2,060.3	5.57	-5.57	0.57	

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5,833.0	4.44	107.21	5,123.5	2,259.2	-908.4	2,068.9	4.20	-4.13	-7.19	
5,918.0	3.25	117.62	5,208.3	2,264.9	-910.5	2,074.2	1.62	-1.40	12.25	
6,003.0	1.98	100.18	5,293.2	2,268.7	-911.8	2,077.7	1.75	-1.49	-20.52	
6,036.4	2.00	100.86	5,326.6	2,269.8	-912.0	2,078.9	0.08	0.05	2.04	
CSF 44C-09-07-91 TGT										
6,088.0	2.02	101.89	5,378.1	2,271.6	-912.4	2,080.7	0.08	0.05	2.00	
6,173.0	1.67	147.77	5,463.1	2,274.1	-913.8	2,082.8	1.73	-0.41	53.98	
6,259.0	1.06	171.38	5,549.1	2,275.6	-915.6	2,083.6	0.95	-0.71	27.45	
6,344.0	0.70	268.22	5,634.1	2,275.5	-916.4	2,083.2	1.57	-0.42	113.93	
6,425.0	1.64	231.51	5,715.1	2,274.6	-917.1	2,081.8	1.43	1.16	-45.32	
6,510.0	0.48	16.37	5,800.0	2,274.0	-917.5	2,080.9	2.41	-1.36	170.42	
6,595.0	1.14	355.10	5,885.0	2,273.5	-916.4	2,080.9	0.84	0.78	-25.02	
6,681.0	0.53	288.39	5,971.0	2,272.7	-915.4	2,080.5	1.22	-0.71	-77.57	
6,766.0	1.44	58.95	6,056.0	2,272.9	-914.7	2,081.0	2.15	1.07	153.60	
6,851.0	0.31	86.73	6,141.0	2,273.7	-914.1	2,082.2	1.38	-1.33	32.68	
6,936.0	0.35	161.74	6,226.0	2,274.1	-914.4	2,082.5	0.47	0.05	88.25	
7,021.0	0.62	199.32	6,311.0	2,274.3	-915.1	2,082.4	0.47	0.32	44.21	
7,149.0	0.92	220.67	6,439.0	2,274.1	-916.5	2,081.5	0.32	0.23	16.68	
7,234.0	0.79	261.19	6,524.0	2,273.4	-917.1	2,080.5	0.71	-0.15	47.67	
7,319.0	0.92	264.14	6,609.0	2,272.3	-917.3	2,079.2	0.16	0.15	3.47	
7,404.0	1.23	228.76	6,694.0	2,271.4	-917.9	2,077.9	0.84	0.36	-41.62	
7,489.0	2.02	211.66	6,778.9	2,270.8	-919.8	2,076.4	1.08	0.93	-20.12	
7,574.0	3.12	215.93	6,863.8	2,270.2	-923.0	2,074.3	1.31	1.29	5.02	
7,659.0	4.04	221.03	6,948.7	2,268.9	-927.1	2,070.9	1.14	1.08	6.00	
7,744.0	5.36	223.09	7,033.4	2,266.8	-932.2	2,066.3	1.57	1.55	2.42	
7,829.0	5.76	224.01	7,118.0	2,264.1	-938.2	2,060.6	0.48	0.47	1.08	
7,915.0	5.71	224.28	7,203.6	2,261.2	-944.4	2,054.6	0.07	-0.06	0.31	

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Site:	CSF E	MD Reference:	CSF 44C-09-07-91 @ 6821.4usft (Extreme 15)
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7,972.0	5.71	224.28	7,260.3	2,259.3	-948.4	2,050.6	0.00	0.00	0.00

Checked By: _____	Approved By: _____	Date: _____
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Ursa OPERATING
COMPANY

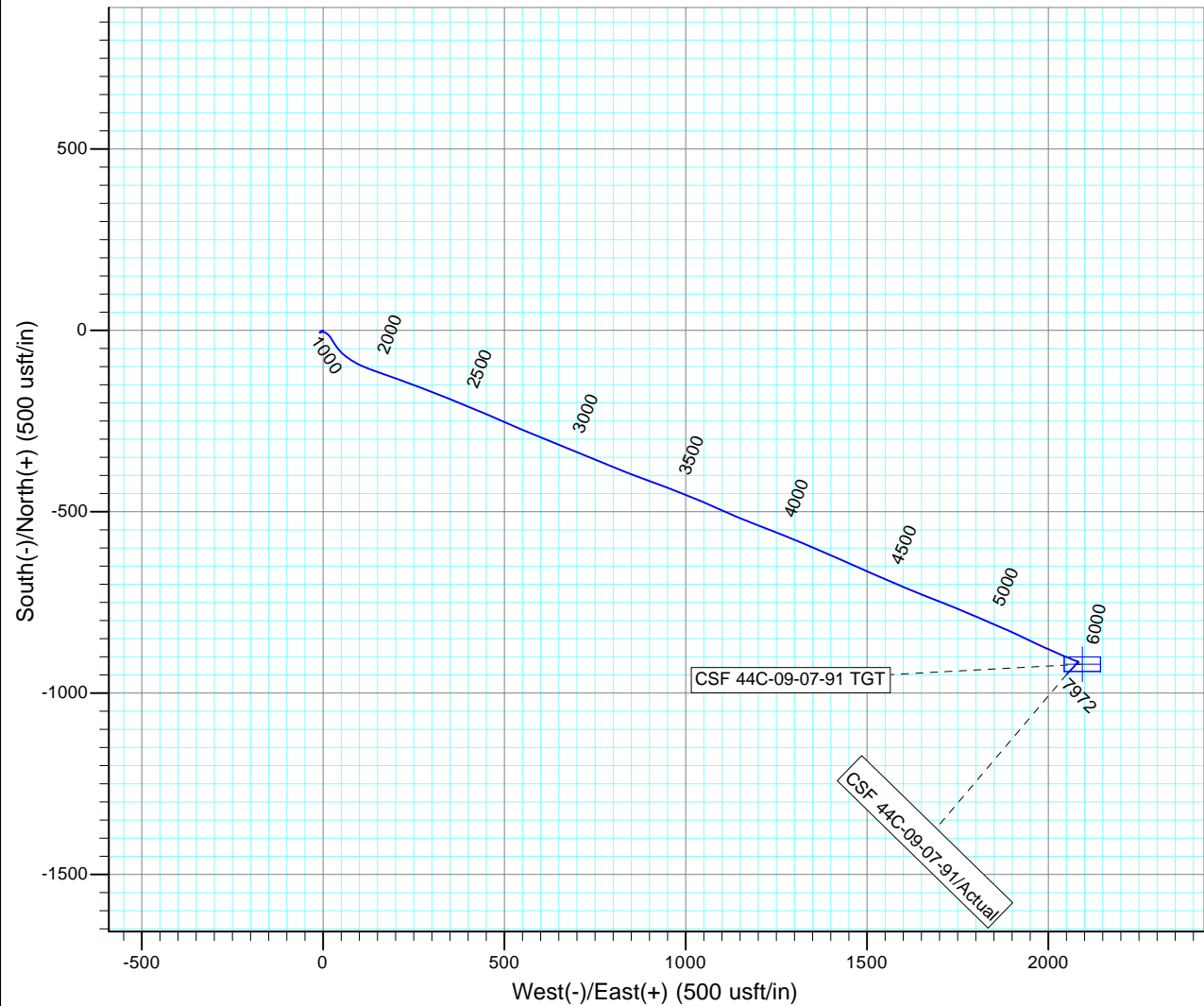
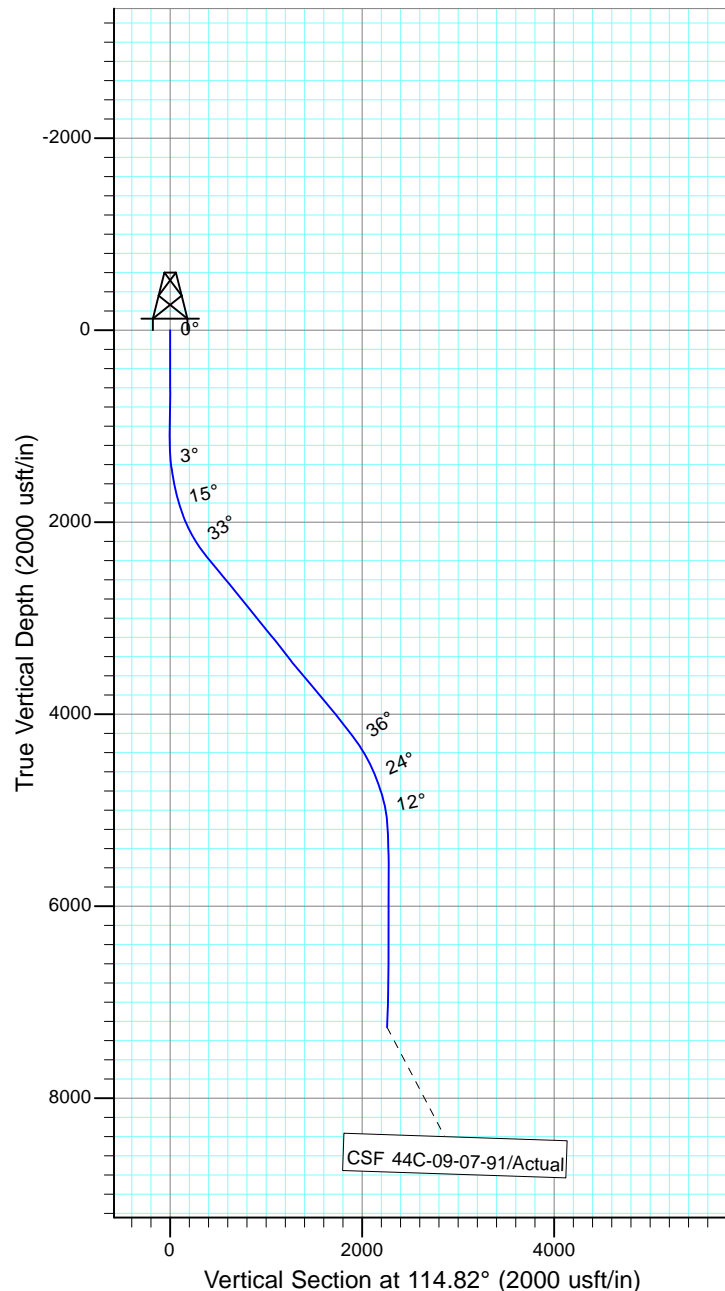
Project: Rockies Region
Site: CSF E
Well: CSF 44C-09-07-91
Wellbore: Wellbore #
SURVEY: Actual

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 44C-09-07-91/Wellbore #1)

Created By: Sarah Webb-Hudson Date: 10:49, July 18 2014
*THIS SURVEY IS CORRECT TO THE BEST OF MY KNOWLEDGE AND IS
SUPPORTED BY ACTUAL FIELD DATA.*