

NM OIL CONSERVATION
ARTESIA DISTRICT

Schlumberger

Reservoir Development
Schlumberger Drilling and Measurements
9200 West Reno Avenue
Oklahoma City, Oklahoma 73127 USA
Phone: (405) 789-1515
Fax: (405) 789-1519

OCT 13 2017

RECEIVED

Well Reference:
35, 23S, 31E, Eddy NM
N 32.26750 W -103.75483

I, Kalu Uga certify that; I am employed by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I did on the day(s) of August 08, 2017 through August 15, 2017, conduct or supervise the taking of the SlimPulse surveys from a depth of 8950.00 feet to a depth of 14866.00 feet referenced to driller's depth; that the data is true, correct, complete and within the limitations of the tool as set forth by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I am authorized and qualified to make this report; that this survey was conducted at the request of OXY USA INCORPORATED for the CAL-MON 35 FEDERAL 41H ST1 Well (Side Track) API No. 30-015-43140 in New Mexico; and that I have reviewed this report and find that it conforms to the principals and procedures as set forth by Drilling & Measurements, a division of Schlumberger Technology Corporation

By
Kalu Uga
FS



Subscribed and Sworn to before me this 28th day of August (month) 2017 (yr)

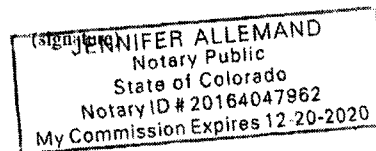
My Commission expires.

12-20-2020



Notary Public

Adams County, Colorado
(County State)



Oxy
Calmon 35 Fed 41H
30-015-43140

Final PVA: ST01 - Re-entry REV8

H&P 657 (RKB=26.5')

Schlumberger**OXY**

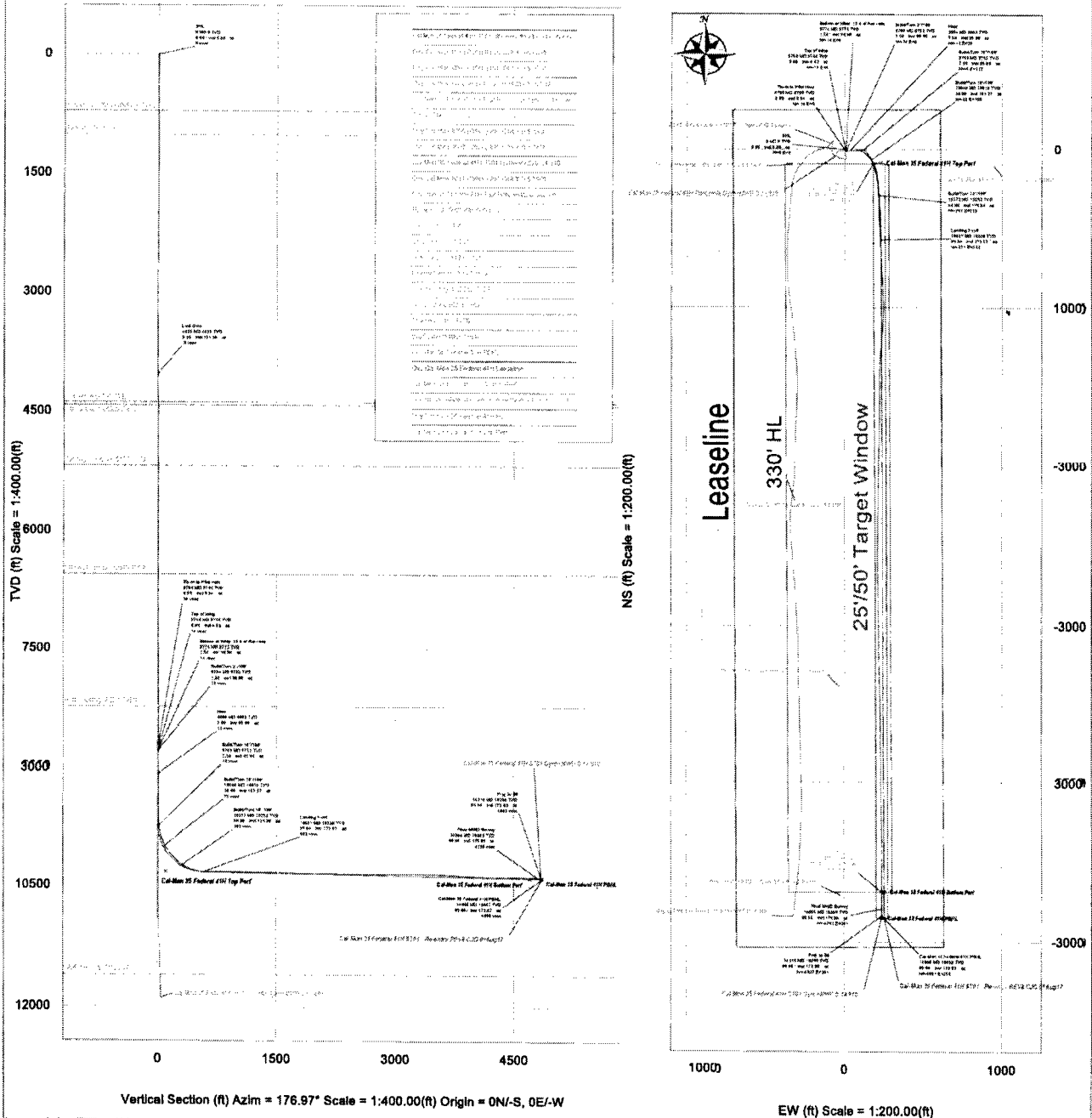
Borehole: **ST01 - Re-entry** Well: **Oxy Cal-Mon 35 Federal 41H** Field: **NM Eddy County (NAD 83)** Structure: **Oxy Cal-Mon 35 Federal 41H**

Geology & Magnetics Parameters: Model: **100M 2017** Dip: **60.84°** Date: **21-Aug-2017** Surface Location: **NAD83 New Mexico State Plane, Eastern Zone, US Feet** Grid Conv: **0.308°** Miscellaneous: **Oxy Cal-Mon 35**
 MagDec: **5.372°** PS: **48943 148-T** Drift/Fly PS: **288.648mgs (3.2865 Gauss)** Lat: **N 12 16 3.30** Northing: **48943.21mgs** Scale Fact: **0.99994571** Slot: **Federal 41H** TVD Ref: **RKB=26.5 (3462.76 above MSL)**
 Point: **Cal-Mon 35 Federal 41H ST01 - Re-entry REV8 CJS 91A.gpt**

Critical Point		INCL		AZIM		VEEC		N(°M)		E(°M)		DLE	
Rustler	708.02	0.38	190.77	708.00	-2.47	2.38	-2.19	0.18					
Salado	1013.03	0.56	176.99	1013.00	0.38	-0.48	-2.37	0.11					
Deleware	4381.20	1.05	145.80	4381.00	4.80	-4.41	3.89	1.02					
Ball Canyon	4420.20	0.85	147.96	4420.00	5.10	-4.80	4.00	1.02					
Cherry Canyon	5177.20	0.07	112.20	5177.00	5.98	-5.44	4.72	0.02					
Brushy Canyon	6545.20	0.04	105.48	6545.00	5.74	-5.49	4.60	0.01					
Bone Spring	8228.25	0.47	197.81	8228.00	13.86	-13.57	5.82	0.32					
Tie-in to Pilot Hole	8709.00	0.09	8.84	8708.74	13.98	-13.70	5.37						
Top of Whip	8780.00	0.09	4.43	8759.74	13.86	-13.62	5.38	0.01					
Bottoms of Whip, 10 ft of Rat Hole	8773.58	1.50	90.00	8773.32	13.86	-13.81	5.56	11.01					
Build/Turn 27/100'	9783.58	1.50	90.00	9783.32	13.80	-13.81	5.82	8.00					
Heil	9083.94	7.50	85.00	9082.81	13.43	-11.00	29.30	2.00					
Build/Turn 10/100'	9759.44	7.50	85.00	9752.34	10.39	-4.21	117.14	0.00					
Build/Turn 10/100'	10039.85	30.00	153.27	10017.89	75.20	-48.43	167.60	10.00					
Build/Turn 10/100'	10373.22	80.00	175.00	10282.39	302.37	-291.19	219.44	16.00					
Landing Point	10096.95	88.04	179.87	10330.00	562.33	-570.90	231.65	10.00					
Cal-Mon 35 Federal 41H PBHL	14948.04	89.04	179.87	10402.00	4858.09	-481.30	258.46	0.00					
Stream	NaN			13412.00									
Wellcamp	NaN			11805.00									

Grid
True
Mag

Grid North
Tot Corr (M→G 8.863°)
Mag Dec (8.972°)
Grid Conv (0.309°)



Cal-Mon 35 Federal 41H ST01 Gyro+MWD 0-14,910' Survey Geodetic Report

(Def Survey)



Report Date: August 15, 2017 - 09:50 AM
 Client: OXY
 Field: NM Eddy County (NAD 83)
 Structure / Slot: Oxy Cal-Mon 35 Federal 41H / Oxy Cal-Mon 35 Federal 41H
 Well: Oxy Cal-Mon 35 Federal 41H
 Borehole: ST01 - Re-entry
 UTM / APIA: Unknown / Unknown
 Survey Name: Cal Mon 35 Federal 41H ST01 Gyro+MWD 0-14,910'
 Survey Date: August 02, 2017
 Tort / AHD / DDI / ERD Ratio: 193 748 ' / 5008 570 ft / 6 144 / 0.482
 Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
 Location Lat / Long: N 32° 16' 3.00320", W 103° 45' 17.37339"
 Location Grid N/E Y/X: N 461531.810 NUS, E 720146.800 NUS
 CRS Grid Convergence Angle: 0.3089°
 Grid Scale Factor: 0.99994571
 Version / Patch: 2.10.544.0

Survey / DLS Computation: Minimum Curvature / Lubinski
 Vertical Section Azimuth: 176.974° (Grid North)
 Vertical Section Origin: 0.000 ft, 0.000 ft
 TVD Reference Datum: RKB+26' S
 Seabed / Ground Elevation: 3462.700 ft above MSL
 Magnetic Declination: 6.972°
 Total Gravity Field Strength: 988.4457 mgn (9.80685 Based)
 Gravity Model: GARM
 Total Magnetic Field Strength: 48142.832 nT
 Magnetic Dip Angle: 60.044°
 Declination Date: August 02, 2017
 Magnetic Declination Model: HDGM 2017
 North Reference: Grid North
 Grid Convergence Used: 0.3089°
 Total Corr Mag North->Grid North: 6.6830°
 Local Coord Referenced To: Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (ft/100ft)	Northing (NUS)	Easting (EUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
SHL RKB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	461531.81	720146.80	N 32° 16' 3.00 W 103° 45' 17.37	
	26.50	0.00	0.00	26.50	0.00	0.00	0.00	0.00	461531.81	720146.80	N 32° 16' 3.00 W 103° 45' 17.37	
	82.50	0.57	353.33	92.50	-0.33	0.33	0.04	0.06	461532.14	720146.56	N 32° 16' 3.01 W 103° 45' 17.37	
	121.60	0.58	350.78	121.60	-0.62	0.62	0.08	0.09	461532.43	720146.52	N 32° 16' 3.01 W 103° 45' 17.37	
	211.20	0.51	342.63	211.19	-1.46	1.44	-0.27	0.12	461533.25	720146.33	N 32° 16' 3.02 W 103° 45' 17.38	
	301.70	0.48	327.12	301.69	-2.16	2.13	-0.59	0.15	461533.84	720146.01	N 32° 16' 3.02 W 103° 45' 17.38	
	392.10	0.44	309.25	392.09	-2.71	2.66	-1.05	0.16	461534.47	720145.55	N 32° 16' 3.03 W 103° 45' 17.39	
	482.60	0.33	289.45	482.59	-3.04	2.98	-1.57	0.19	461534.77	720145.03	N 32° 16' 3.03 W 103° 45' 17.39	
	573.10	0.21	225.15	573.08	-3.03	2.93	-1.93	0.34	461534.74	720144.67	N 32° 16' 3.03 W 103° 45' 17.40	
	663.60	0.26	198.89	663.58	-2.71	2.60	-2.12	0.15	461534.41	720144.48	N 32° 16' 3.03 W 103° 45' 17.40	
	754.10	0.43	185.09	754.08	-2.16	2.05	-2.23	0.18	461533.86	720144.37	N 32° 16' 3.02 W 103° 45' 17.40	
	844.50	0.57	186.05	844.48	-1.38	1.26	-2.31	0.16	461533.07	720144.29	N 32° 16' 3.02 W 103° 45' 17.40	
	939.00	0.62	182.34	938.97	-0.41	0.28	-2.38	0.07	461532.09	720144.22	N 32° 16' 3.01 W 103° 45' 17.40	
	1033.50	0.55	175.33	1033.47	0.56	0.68	-2.36	0.11	461531.13	720144.24	N 32° 16' 3.00 W 103° 45' 17.40	
	1128.00	0.32	142.77	1127.97	1.23	-1.34	-2.16	0.35	461530.47	720144.44	N 32° 16' 2.99 W 103° 45' 17.40	
	1222.40	0.28	92.75	1222.38	1.47	-1.56	-1.77	0.27	461530.25	720144.83	N 32° 16' 2.99 W 103° 45' 17.39	
	1318.90	0.27	86.86	1318.86	1.42	-1.49	-1.34	0.13	461530.32	720145.26	N 32° 16' 2.99 W 103° 45' 17.39	
	1411.20	0.18	30.12	1411.18	1.21	-1.27	-1.06	0.18	461530.54	720145.54	N 32° 16' 2.98 W 103° 45' 17.39	
	1505.50	0.18	347.63	1505.46	0.96	-1.02	-1.01	0.13	461530.79	720145.59	N 32° 16' 2.99 W 103° 45' 17.39	
	1600.00	0.16	338.59	1599.96	0.70	-0.76	-1.09	0.02	461531.05	720145.51	N 32° 16' 3.00 W 103° 45' 17.39	
	1694.50	0.15	336.74	1694.46	0.46	-0.53	-1.18	0.01	461531.28	720145.42	N 32° 16' 3.00 W 103° 45' 17.39	
	1789.90	0.14	353.77	1789.96	0.23	0.30	-1.24	0.05	461531.51	720145.36	N 32° 16' 3.00 W 103° 45' 17.39	
	1883.40	0.10	15.72	1883.36	0.04	-0.10	-1.23	0.06	461531.71	720145.37	N 32° 16' 3.00 W 103° 45' 17.39	
	1978.00	0.09	32.34	1977.96	-0.10	0.04	-1.17	0.03	461531.85	720145.43	N 32° 16' 3.00 W 103° 45' 17.39	
	2072.30	0.15	357.41	2072.26	-0.28	0.22	-1.14	0.10	461532.03	720145.46	N 32° 16' 3.01 W 103° 45' 17.39	
	2166.80	0.19	345.88	2166.76	-0.56	0.50	-1.18	0.06	461532.31	720145.42	N 32° 16' 3.01 W 103° 45' 17.38	
	2261.40	0.21	338.26	2261.36	-0.88	0.81	-1.28	0.04	461532.62	720145.32	N 32° 16' 3.01 W 103° 45' 17.39	
	2355.90	0.19	330.24	2355.86	-1.18	1.11	-1.43	0.04	461532.92	720145.17	N 32° 16' 3.01 W 103° 45' 17.39	
	2450.40	0.16	327.92	2450.36	-1.44	1.36	-1.57	0.03	461533.17	720145.03	N 32° 16' 3.02 W 103° 45' 17.39	
	2544.90	0.15	325.81	2544.86	-1.88	1.87	-1.71	0.01	461533.35	720144.89	N 32° 16' 3.02 W 103° 45' 17.38	
	2639.30	0.17	333.33	2639.26	-1.69	1.80	-1.85	0.03	461533.51	720144.75	N 32° 16' 3.02 W 103° 45' 17.38	
	2733.90	0.21	335.10	2733.85	-2.18	2.08	-1.98	0.04	461533.69	720144.62	N 32° 16' 3.03 W 103° 45' 17.40	
	2828.30	0.27	328.43	2828.26	-2.54	2.43	-2.17	0.07	461534.24	720144.43	N 32° 16' 3.03 W 103° 45' 17.40	
	2922.80	0.38	340.26	2922.76	-3.02	2.90	-2.39	0.12	461534.71	720144.21	N 32° 16' 3.03 W 103° 45' 17.40	
	3017.20	0.42	339.58	3017.15	-3.63	3.50	-2.61	0.06	461535.31	720143.99	N 32° 16' 3.04 W 103° 45' 17.40	
	3111.60	0.40	338.23	3111.55	-4.28	4.13	-2.85	0.02	461535.94	720143.75	N 32° 16' 3.04 W 103° 45' 17.41	
	3206.20	0.37	339.16	3206.15	-4.88	4.72	-3.08	0.03	461536.53	720143.52	N 32° 16' 3.05 W 103° 45' 17.41	
	3300.50	0.36	325.63	3300.45	-5.42	5.25	-3.36	0.09	461537.06	720143.24	N 32° 16' 3.06 W 103° 45' 17.41	
	3394.80	0.37	323.89	3394.74	-5.93	5.74	-3.70	0.02	461537.55	720142.90	N 32° 16' 3.06 W 103° 45' 17.42	
	3489.20	0.38	328.33	3489.14	-6.46	6.26	-4.05	0.03	461538.07	720142.55	N 32° 16' 3.07 W 103° 45' 17.42	
	3583.40	0.18	21.14	3583.34	-8.87	8.66	-4.18	0.04	461538.34	720142.44	N 32° 16' 3.07 W 103° 45' 17.42	
	3677.80	0.53	127.58	3677.74	-6.72	6.53	-3.78	0.04	461538.34	720142.84	N 32° 16' 3.07 W 103° 45' 17.42	
	3772.30	0.80	137.83	3772.23	-5.93	5.78	-2.97	0.31	461537.59	720143.63	N 32° 16' 3.06 W 103° 45' 17.41	
	3866.70	0.74	145.17	3866.63	-4.90	4.79	-2.18	0.12	461536.60	720144.42	N 32° 16' 3.05 W 103° 45' 17.40	
	3961.10	0.87	150.64	3961.02	-3.74	3.66	-1.48	0.16	461535.47	720145.12	N 32° 16' 3.04 W 103° 45' 17.39	
Last Gyro	4028.90	0.89	154.58	4028.81	-2.73	2.68	-0.98	0.20	461534.49	720145.62	N 32° 16' 3.03 W 103° 45' 17.38	
	4149.00	1.43	145.38	4139.88	-0.86	0.88	0.22	0.43	461532.49	720146.82	N 32° 16' 3.01 W 103° 45' 17.37	
	4329.00	1.58	145.85	4328.82	3.57	-3.42	3.03	0.08	461528.39	720149.63	N 32° 16' 2.97 W 103° 45' 17.34	
	4462.00	0.22	154.94	4461.90	5.38	-5.17	4.16	1.02	461526.84	720150.78	N 32° 16' 2.95 W 103° 45' 17.33	
	4651.00	0.04	344.27	4650.80	5.85	-5.43	4.30	0.04	461526.38	720150.80	N 32° 16' 2.95 W 103° 45' 17.32	
	4839.00	0.04	103.16	4838.80	5.61	-5.39	4.34	0.04	461526.42	720150.94	N 32° 16' 2.95 W 103° 45' 17.32	
	4934.00	0.07	95.58	4933.80	5.83	-5.40	4.44	0.03	461526.41	720151.03	N 32° 16' 2.95 W 103° 45' 17.32	
	5028.00	0.07	90.19	5027.80	5.64	-5.40	4.55	0.01	461526.41	720151.15	N 32° 16' 2.95 W 103° 45' 17.32	
	5217.00	0.07	117.94	5216.80	5.70	-5.45	4.77	0.02	461526.35	720151.37	N 32° 16' 2.95 W 103° 45' 17.32	
	5312.00	0.04	112.03	5311.80	5.75	-5.50	4.85	0.03	461526.31	720151.45	N 32° 16' 2.95 W 103° 45' 17.32	
	5509.00	0.04	327.87	5499.80	5.72	-5.47	4.87	0.04	461526.34	720151.47	N 32° 16' 2.95 W 103° 45' 17.32	
	5689.00	0.04	203.38	5688.80	5.72	-5.47	4.87	0.04	461526.34	720151.47	N 32° 16' 2.95 W 103° 45' 17.32	
	5878.00	0.07	98.61	5877.80	5.80	-5.55	4.90	0.05	461526.26	720151.50	N 32° 16' 2.95 W 103° 45' 17.32	
	5972.00	0.07	238.98	5971.80	5.84	-5.59	4.91	0.14	461526.22	720151.51	N 32° 16' 2.95 W 103° 45' 17.32	
	6162.00	0.04	97.66	6161.80	5.91	-5.66	4.88	0.05	461526.15	720151.48	N 32° 16' 2.95 W 103° 45' 17.32	
	6350.00	0.07	327.15	6349.80	5.82	-5.57	4.88	0.05	461526.24	720151.48	N 32° 16' 2.95 W 103° 45' 17.32	
	6539.00	0.04	101.05	6538.80	5.74	-5.49	4.88	0.05	461526.32	720151.48	N 32° 16' 2.95 W 103° 45' 17.32	
	6728.00	0.04	83.43	6727.80	5.75	-5.50	5.01	0.01	461526.31	720151.61	N 32° 16' 2.95 W 103° 45' 17.32	
	6917.00	0.09	43.71	6916.80	5.65	-5.38	5.18	0.03	461526.43	720151.78	N 32° 16' 2.95 W 103° 45' 17.31	
	7011.00	0.04	126.47	7010.80	5.62	-5.35	5.26	0.10	461526.46	720151.86	N 32° 16' 2.94 W 103° 45' 17.31	
	7106.00	1.01	175.27	7105.79	6.47	-6.20	5.36	1.04	461525.81	720151.95	N 32° 16' 2.94 W 103° 45' 17.31	
	7294.00	0.07	170.47	7293.76	9.71	-9.42	5.76	0.05	461522.38	720152.35	N 32° 16' 2.91 W 103° 45' 17.31	
	7389.00	0.11	95.17	7388.76	10.52	-10.22	5.98	1.00	461521.58	720152.58	N 32° 16' 2.90 W 103° 45' 17.30	
	7483.00	0.35	134.41	7482.76	10.75	-10.43	6.27	0.29	461521.38	720152.87	N 32° 16' 2.90 W 103° 45' 17.30	
	7577.00	0.11	169.50	7576.76	11.05	-10.72	6.50	0.28	461521.09	720153.10	N 32° 16' 2.90 W 103° 45' 17.30	
	7672.00	0.07	178.21	7671.76	11.20	-10.87	6.51	0.04	461520.94	720153.11	N 32° 16' 2.90 W 103° 45' 17.30	
	7861.00	0.07	177.97	7860.76	11.43	-11.10	6.52	0.00	461520.71	720153.12	N 32° 16' 2.89 W 103° 45' 17.30	
	8050.00	0.40	203.25	8049.75	12.14	-11.82	6.27	0.18	461519.99	720152.87	N 32° 16' 2.89 W 103° 45' 17.30	
	8144.00	0.44	196.73	8143.75	13.01	-12.71	6.02	0.37	461519.10	720152.82	N 32° 16' 2.88 W 103° 45' 17.30	
	8239.00	0.40	188.53	8238.75	13.84	-13.54	5.79	0.32	461518.16	720152.39	N 32° 16' 2.87 W 103° 45' 17.31	

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (ft/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' '')	Longitude (E/W ° ' '')
	8550.00	5.39	80.00	8949.31	13.61	-12.67	18.11	1.76	461519.14	720184.71	N 32 16 2.88 W 103 45 17.16	
	9045.00	6.07	81.97	9043.84	12.63	-11.20	27.48	0.78	461520.82	720174.08	N 32 16 2.89 W 103 45 17.05	
	9138.00	6.68	86.85	9137.26	12.17	-10.18	37.88	0.85	461521.53	720184.48	N 32 16 2.90 W 103 45 16.93	
	9234.00	5.74	91.76	9231.70	12.53	-10.00	48.12	1.15	461521.81	720184.72	N 32 16 2.90 W 103 45 16.91	
	9329.00	5.43	99.56	9326.25	13.91	-10.90	57.31	0.86	461520.91	720203.90	N 32 16 2.89 W 103 45 16.71	
	9421.00	7.33	91.49	9417.68	15.32	-11.77	67.47	2.28	461520.04	720214.06	N 32 16 2.88 W 103 45 16.59	
	9516.00	6.22	85.46	9512.01	15.68	-11.52	78.65	1.39	461520.29	720225.25	N 32 16 2.88 W 103 45 16.46	
	9611.00	5.17	87.94	9606.54	15.80	-10.96	88.06	1.13	461520.85	720234.86	N 32 16 2.89 W 103 45 16.35	
	9708.00	9.29	100.22	9700.77	17.43	-12.17	99.89	4.61	461519.84	720246.49	N 32 16 2.88 W 103 45 16.21	
	9801.00	16.00	121.45	9793.46	26.61	-20.38	118.84	8.48	461511.43	720285.23	N 32 16 2.80 W 103 45 15.99	
	9896.00	21.89	138.08	9883.38	47.32	-39.86	142.02	7.74	461491.93	720288.61	N 32 16 2.80 W 103 45 15.72	
	9991.00	26.30	142.84	9969.48	79.27	-70.51	167.83	7.57	461481.30	720314.42	N 32 16 2.30 W 103 45 15.42	
	10086.00	37.06	158.11	10049.47	125.17	-115.19	192.19	12.60	461418.63	720338.78	N 32 16 1.85 W 103 45 15.14	
	10181.00	41.89	173.88	10122.97	184.11	-173.46	206.29	11.69	461358.36	720352.88	N 32 16 1.28 W 103 45 14.98	
	10276.00	49.84	177.26	10189.08	252.20	-241.38	211.42	8.75	461290.44	720358.00	N 32 16 0.80 W 103 45 14.93	
	10371.00	56.37	177.08	10246.08	328.14	-317.22	215.17	6.88	461214.61	720361.78	N 32 15 59.65 W 103 45 14.89	
	10465.00	68.85	177.04	10289.23	411.44	-400.41	219.44	13.29	461131.42	720366.03	N 32 15 59.03 W 103 45 14.84	
	10560.00	78.89	177.25	10315.59	502.58	-471.74	223.98	10.56	461040.39	720370.57	N 32 15 58.13 W 103 45 14.80	
	10641.00	87.97	177.27	10324.84	582.87	-571.74	227.82	11.21	460960.11	720374.41	N 32 15 57.33 W 103 45 14.76	
	10689.45	91.78	177.86	10323.39	659.83	-644.64	231.14	13.35	460931.69	720375.70	N 32 15 57.05 W 103 45 14.74	
	10718.00	91.82	177.86	10327.48	707.90	-698.57	233.16	0.37	460883.21	720377.73	N 32 15 56.87 W 103 45 14.72	
	10766.00	92.00	177.49	10321.79	757.90	-751.38	238.66	0.56	460835.28	720379.75	N 32 15 56.10 W 103 45 14.70	
	10861.00	90.14	175.87	10320.02	802.88	-844.78	241.76	2.80	460740.47	720385.25	N 32 15 55.16 W 103 45 14.64	
	10956.00	88.32	176.33	10321.30	897.85	-896.15	245.12	1.98	460645.71	720391.71	N 32 15 54.22 W 103 45 14.57	
	11051.00	87.01	179.10	10325.17	982.76	-980.88	248.91	3.22	460550.88	720395.49	N 32 15 53.28 W 103 45 14.54	
	11146.00	88.07	183.47	10329.25	1087.38	-1075.85	246.78	4.73	460456.02	720393.36	N 32 15 52.34 W 103 45 14.57	
	11240.00	88.66	184.83	10331.11	1180.62	-1169.58	239.98	2.23	460362.30	720386.56	N 32 15 51.42 W 103 45 14.65	
	11335.00	89.17	185.16	10332.08	1278.48	-1264.21	231.71	0.82	460267.87	720378.29	N 32 15 50.48 W 103 45 14.75	
	11430.00	89.17	183.59	10333.46	1368.88	-1358.92	224.48	1.65	460172.96	720371.05	N 32 15 49.54 W 103 45 14.84	
	11525.00	88.62	179.78	10335.29	1463.52	-1453.85	221.87	4.85	460078.05	720368.25	N 32 15 48.81 W 103 45 14.88	
	11620.00	88.76	179.92	10337.48	1558.38	-1548.82	221.92	0.21	459983.08	720368.50	N 32 15 47.87 W 103 45 14.88	
	11715.00	88.58	180.27	10339.68	1653.21	-1643.78	221.76	0.42	459888.11	720368.35	N 32 15 46.73 W 103 45 14.89	
	11809.00	89.04	180.85	10341.65	1747.00	-1737.77	220.84	0.80	459794.14	720367.43	N 32 15 45.80 W 103 45 14.91	
	11904.00	89.14	180.93	10343.16	1841.77	-1832.74	219.36	0.13	459698.17	720365.95	N 32 15 44.86 W 103 45 14.93	
	11998.00	89.00	180.72	10344.68	1935.54	-1926.72	218.01	0.27	459605.20	720364.80	N 32 15 43.93 W 103 45 14.96	
	12093.00	89.52	181.19	10345.91	2030.31	-2021.70	216.43	0.74	459510.22	720363.02	N 32 15 42.99 W 103 45 14.98	
	12188.00	89.79	180.86	10346.48	2125.07	-2116.68	214.73	0.45	459415.25	720361.32	N 32 15 42.05 W 103 45 15.01	
	12283.00	89.66	180.59	10348.77	2219.86	-2211.88	213.53	0.29	459320.26	720360.11	N 32 15 41.11 W 103 45 15.03	
	12378.00	89.45	180.29	10347.35	2314.69	-2306.87	212.80	0.53	459225.27	720359.38	N 32 15 40.17 W 103 45 15.04	
	12473.00	88.59	180.94	10348.97	2409.48	-2401.85	211.78	1.13	459130.30	720358.37	N 32 15 39.23 W 103 45 15.06	
	12568.00	91.48	181.34	10348.61	2504.22	-2496.82	209.89	3.07	459035.33	720356.17	N 32 15 37.35 W 103 45 15.10	
	12663.00	88.62	179.03	10348.00	2599.06	-2591.61	209.58	3.12	458940.35	720355.17	N 32 15 36.41 W 103 45 15.12	
	12758.00	90.07	178.37	10348.26	2694.01	-2686.58	211.74	0.84	458845.38	720354.32	N 32 15 35.47 W 103 45 15.14	
	12853.00	89.76	179.03	10348.40	2788.97	-2781.55	213.89	0.77	458750.41	720350.48	N 32 15 34.54 W 103 45 15.16	
	12947.00	89.72	178.86	10348.83	2882.91	-2875.54	215.62	0.19	458656.43	720362.21	N 32 15 34.54 W 103 45 15.04	
	13042.00	89.48	179.02	10349.49	2977.85	-2970.52	217.38	0.30	458561.46	720363.97	N 32 15 33.60 W 103 45 15.03	
	13137.00	89.35	179.00	10350.46	3072.79	-3065.50	219.02	0.14	458466.48	720365.61	N 32 15 32.66 W 103 45 15.02	
	13232.00	91.96	179.93	10349.37	3167.68	-3160.48	219.91	2.92	458371.51	720366.50	N 32 15 31.72 W 103 45 15.01	
	13326.00	89.35	178.46	10348.30	3261.80	-3254.45	221.23	3.19	458277.54	720367.82	N 32 15 30.79 W 103 45 15.00	
	13421.00	88.11	178.90	10350.40	3356.53	-3349.40	225.57	1.38	458182.59	720370.00	N 32 15 29.85 W 103 45 14.98	
	13516.00	90.24	178.50	10351.77	3451.47	-3444.36	227.42	2.28	458087.54	720372.16	N 32 15 28.91 W 103 45 14.96	
	13611.00	87.58	178.60	10353.59	3546.41	-3539.31	227.98	2.82	457992.70	720374.56	N 32 15 27.87 W 103 45 14.94	
	13706.00	88.35	179.59	10356.98	3641.26	-3634.23	229.47	1.33	457897.78	720376.06	N 32 15 27.03 W 103 45 14.93	
	13801.00	86.52	178.88	10361.24	3736.11	-3729.12	230.74	2.07	457802.90	720377.33	N 32 15 26.09 W 103 45 14.92	
	13896.00	86.80	179.29	10366.69	3830.86	-3823.86	232.26	0.59	457708.07	720378.84	N 32 15 25.15 W 103 45 14.91	
	13990.00	86.49	180.05	10372.11	3924.82	-3917.80	232.80	0.92	457614.23	720379.38	N 32 15 24.22 W 103 45 14.91	
	14085.00	86.52	179.88	10377.90	4019.32	-4012.82	232.87	0.20	457519.42	720379.48	N 32 15 23.29 W 103 45 14.91	
	14180.00	89.07	178.95	10381.55	4114.15	-4107.54	233.86	2.85	457424.51	720380.44	N 32 15 22.35 W 103 45 14.91	
	14275.00	87.94	178.17	10384.03	4209.08	-4202.47	236.24	1.45	457328.58	720382.83	N 32 15 21.41 W 103 45 14.89	
	14370.00	91.48	179.00	10384.51	4304.03	-4297.43	238.59	3.83	457234.83	720385.18	N 32 15 20.47 W 103 45 14.88	
	14465.00	91.24	179.53	10382.26	4398.92	-4392.39	239.81	0.81	457139.67	720386.39	N 32 15 19.53 W 103 45 14.86	
	14559.00	89.11	179.17	10381.97	4492.84	-4486.38	240.87	2.30	457045.58	720387.46	N 32 15 18.60 W 103 45 14.85	
	14654.00	89.72	181.46	10382.94	4587.66	-4581.36	240.35	2.49	456950.70	720388.94	N 32 15 17.66 W 103 45 14.85	
	14749.00	87.83	179.38	10384.97	4682.46	-4676.33	239.65	2.96	456855.74	720389.24	N 32 15 16.72 W 103 45 14.85	
	14844.00	86.52	179.48	10388.00	4777.33	-4771.28	240.80	0.73	456760.80	720387.19	N 32 15 15.78 W 103 45 14.87	
Final MWD Survey	14866.00	88.66	179.85	10388.54	4799.29	-4793.27	240.73	1.80	456738.81	720387.31	N 32 15 15.56 W 103 45 14.87	
Proj. to Bit	14910.00	88.66	179.85	10389.57	4843.23	-4837.26	240.84	0.00	456694.82	720387.43	N 32 15 15.13 W 103 45 14.87	

Survey Type: Def Survey

Survey Error Model: ISOWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma

Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	1	0.000	26.500	1/98.425	30.000	NAL_NSG+MSHOT-Depth Only	Pilot Hole / Cal-Mon 35 Federal 41H Pilot Hole MWD 0-Update
	1	26.500	26.500	Act Stns	30.000	NAL_NSG+MSHOT-Depth Only	Pilot Hole / Cal-Mon 35 Federal 41H Pilot Hole MWD 0-Update
	1	26.500	4028.900	Act Stns	30.000	NAL_NSG+MSHOT	Pilot Hole / Cal-Mon 35 Federal 41H Pilot Hole MWD 0-Update
	1	4028.900	8708.000	Act Stns	30.000	NAL_MWD_PLUS_0.5_DEG	Pilot Hole / Cal-Mon 35 Federal 41H Pilot Hole MWD 0-Update
	1	8709.000	14910.000	Act Stns	30.000	NAL_MWD_PLUS_0.5_DEG	ST01 - Re-entry / Cal-Mon 35 Federal 41H ST01 Gyro+MWD 0-