

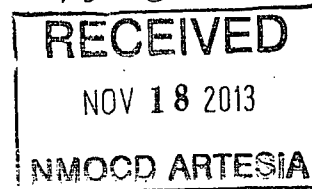


PO Box 261021
Corpus Christi, Texas 78426
(361) 767-0602 • (800) 606-GYRO • Fax (361) 767-0612

July 18, 2013

Concho Resources, Inc.
One Concho Center
600 W. Illinois Avenue
Midland, Texas 79701

15-40556



Attn: Kanicia Castillo

RE: **Electra Federal No. 062**

Please find enclosed a copy of the survey from 0.00' to 1269.00' ran on the above referenced well.

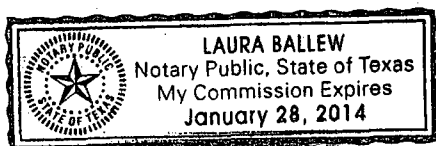
Sincerely,

Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 18th day of July, A.D., 2013, by Keith Havelka.

Laura Ballew
Notary Public, State of Texas





Company: COG Operating LLC (Concho)
Lease/Well: Electra Federal/No. 062
Location: 2 miles NW Dir from Loco Hills
Rig Name: Silveroak Rig 11
State/County: New Mexico/Eddy
Latitude: 32.86, Longitude: -103.95
GRID North is 0.21 Degrees East of True North
VS-Azi: 0.00 Degrees



Depth Reference : RKB = 17 Feet

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: ...federal #62-de_gyro survey.ut

Minimum Curvature Method

Report Date/Time: 7/18/2013 / 10:57

Vaughn Energy Services

Midland, Texas

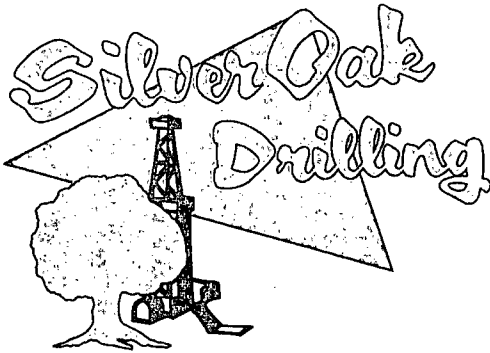
432-563-5444

Surveyor: Gene Heiss

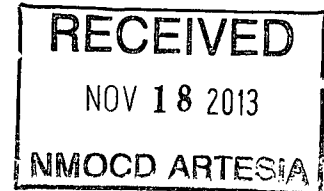
Electra Federal No. 062 / API 30-015-40556



Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
100.00	0.16	58.90	100.00	0.07	0.12	0.07	0.14	58.90	0.16
200.00	0.13	88.14	200.00	0.15	0.36	0.15	0.39	66.89	0.08
300.00	0.21	125.82	300.00	0.05	0.61	0.05	0.62	85.43	0.13
400.00	0.29	133.10	400.00	-0.23	0.95	-0.23	0.97	103.69	0.09
500.00	0.44	148.68	500.00	-0.73	1.33	-0.73	1.52	118.73	0.17
600.00	0.49	141.24	599.99	-1.39	1.79	-1.39	2.27	127.68	0.08
700.00	0.38	139.39	699.99	-1.97	2.28	-1.97	3.01	130.86	0.11
800.00	0.61	120.23	799.99	-2.49	2.95	-2.49	3.86	130.13	0.28
900.00	0.87	86.08	899.98	-2.71	4.17	-2.71	4.97	122.99	0.50
1000.00	1.10	63.42	999.96	-2.23	5.78	-2.23	6.19	111.06	0.45
1100.00	1.20	56.67	1099.94	-1.22	7.51	-1.22	7.61	99.21	0.17
1200.00	1.49	48.52	1199.92	0.22	9.37	0.22	9.37	88.64	0.35
1269.00	1.64	39.70	1268.89	1.58	10.68	1.58	10.79	81.58	0.41



PO Box 1370
Artesia, NM 88211-1370
(575) 748-1288



July 31, 2013

COG, LLC
One Concho Center
600 W. Illinois Ave.
Midland, TX 79701

RE: Electra Federal #62
115' FNL & 1259' FEL
Sec. 10, T17S, R30E
Eddy County, New Mexico

Dear Sir,

The attached is the Deviation Survey for the above captioned well.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Eddie LaRue".

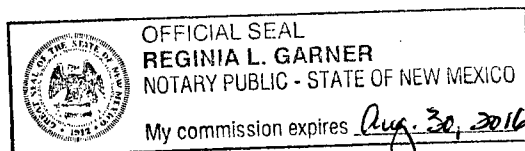
Eddie LaRue
Operations Manager

State of New Mexico }
County of Eddy }

The foregoing was acknowledged before me this 31st day of July, 2013.

A handwritten signature in cursive script, appearing to read "Regina L. Garner".

Notary Public



Electra Federal #62

Date	Depth	Deviation	Direction
7/8/2013	104	0.10	
7/8/2013	192	0.60	
7/11/2013	489	0.30	
7/11/2013	923	0.60	
7/11/2013	1112	1.10	
7/11/2013	1270	1.50	
7/12/2013	1346	1.30	65.00
7/13/2013	141	1.70	105.90
7/13/2013	1535	2.50	115.40
7/13/2013	1631	4.40	131.50
7/13/2013	1724	5.30	138.00
7/13/2013	1914	8.20	132.90
7/13/2013	2009	8.40	129.30
7/13/2013	2104	7.80	131.20
7/13/2013	2198	7.90	132.30
7/13/2013	2293	8.70	132.80
7/13/2013	2387	8.50	131.70
7/13/2013	2482	8.00	129.80
7/13/2013	2576	8.20	134.40
7/13/2013	2671	8.40	134.20
7/14/2013	2769	8.40	133.90
7/14/2013	2860	9.40	131.20
7/14/2013	2955	7.90	134.80
7/14/2013	3050	7.80	131.70
7/14/2013	3144	8.60	129.60
7/14/2013	3239	8.70	129.30
7/14/2013	3333	8.70	128.50
7/14/2013	3428	8.60	129.10
7/14/2013	3523	8.60	139.00
7/14/2013	3617	8.70	137.80
7/14/2013	3712	8.70	137.50
7/14/2013	3807	8.80	139.00
7/14/2013	3901	8.90	135.90
7/14/2013	3996	8.40	132.60
7/15/2013	4091	7.50	131.00
7/15/2013	4185	6.50	131.40
7/15/2013	4280	5.40	127.00
7/15/2013	4374	4.20	133.40
7/15/2013	4468	2.20	132.50
7/15/2013	4562	1.10	123.20
7/15/2013	4657	0.90	132.10
7/15/2013	4751	0.80	119.80
7/15/2013	4845	0.20	75.30

Date	Depth	Deviation	Direction
7/15/2013	4940	0.40	104.10
7/15/2013	5033	0.00	302.70
7/16/2013	5485	0.90	
7/16/2013	5977	1.50	

JUL 22 2013

Archer

Archer Directional Drilling Services.
12101 Cutten Road
Houston, Texas 77066
Tel: 281-301-2600
Fax: 281-301-2795

COG Operating, LLC
One Concho Center
600 W. Illinois Avenue
Midland, Texas 79701

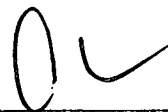
July 17, 2013

Re: COG Operating, LLC
Electra Federal #62
Field: Loco Hills
Rig: Silver Oak Drilling 11
Eddy County, New Mexico
API # 30-015-40556

Enclosed please find the original of the surveys performed on the referenced well by Archer Directional Drilling Services. Other information required by your office is as follows:

<u>Name & Title Of Surveyor</u>	<u>Wellhole Number</u>	<u>Survey Depths</u>	<u>Dates Performed</u>	<u>Type Survey</u>
Jon Harris Field Engineer	Original Hole	1346-5088	07/08/13-07/15/13	MWD

If additional information is required, please contact the undersigned at the letterhead address and phone number.



Amador Baggerly
MWD Coordinator



Archer Directional Drilling Services.
12101 Cutten Road
Houston, Texas 77066
Tel: 281-301-2600
Fax: 281-301-2795

MWD Survey Certification

State of New Mexico
County of Eddy

I, Amador Baggerly, certify that; I am employed by Archer Directional Drilling Services; that I did on the day(s) of 07/08/13 through 07/15/13, conduct or supervise the taking of MWD surveys from a depth of 1346 feet to a depth of 5088 feet; that the data is true, correct, complete and within the limitations of the tool as set forth by Archer Directional Drilling Services; that I am authorized and qualified to make this report; that these surveys were conducted at the request of COG Operating, LLC for the Electra Federal #62 (API # 30-015-40556), Well located in Eddy County, New Mexico; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by Archer Directional Drilling Services

Amador Baggerly
MWD Coordinator

State of Texas
County of Harris

Before me, a notary public, on this day personally appeared Amador Baggerly, on this 18th day of July, 2013, known to me to be the person whose name is subscribed to the foregoing document and, being by me first duly sworn, declared that the statement therein contained are true and correct.

Notary Public's Signature



Company: COG Operating, LLC

Job Number: 04356-433-22

Calculation Method

Minimum Curvature

Well: Electra Federal #62

Mag Decl.: 7.47

Proposed Azimuth

130.5

Location: Eddy County, New Mexico

Dir Driller: Marty Schmidt

Depth Reference

KGB

Rig: Silver Oak Drilling 11

MWD Eng: Steve Doggett

Tie Into: Gyro Survey

Job Date: 07/08/13 - 07/15/13

Survey Number	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates		Closure		Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')
							N/S (ft)	E/W (ft)	Distance (ft)	Direction Azimuth			
Tie In	1269.00	1.64	39.7	0	1268.89	0	1.56 N	10.68 E					
1	1346	1.3	65.0	77	1345.87	7.45	2.78 N	12.18 E	12.49	77.15	0.94	-0.44	32.86
2	1441	1.7	105.9	95	1440.84	9.18	2.85 N	14.51 E	14.78	78.90	1.17	0.42	43.05
3	1535	2.5	115.4	94	1534.77	12.43	1.58 N	17.70 E	17.77	84.88	0.93	0.85	10.11
4	1630	4.4	131.5	95	1629.60	18.07	1.72 S	22.30 E	22.37	94.41	2.23	2.00	16.95
5	1725	5.3	133.8	95	1724.26	26.10	7.17 S	28.20 E	29.10	104.27	0.97	0.95	2.42
6	1819	7.3	131.4	94	1817.68	36.41	14.13 S	35.81 E	38.50	111.53	2.15	2.13	-2.55
7	1914	8.2	132.9	95	1911.82	49.21	22.73 S	45.30 E	50.68	116.64	0.97	0.95	1.58
8	2009	8.4	129.3	95	2005.82	62.92	31.74 S	55.64 E	64.05	119.70	0.59	0.21	-3.79
9	2104	7.8	131.2	95	2099.87	76.30	40.38 S	65.86 E	77.25	121.51	0.69	-0.63	2.00
10	2198	7.9	132.3	94	2192.99	89.13	48.93 S	75.43 E	89.91	122.97	0.19	0.11	1.17
11	2293	8.7	132.8	95	2287.00	102.84	58.20 S	85.53 E	103.46	124.23	0.85	0.84	0.53
12	2387	8.5	131.7	94	2379.94	116.89	67.65 S	95.94 E	117.39	125.19	0.28	-0.21	-1.17
13	2482	8.0	129.8	95	2473.96	130.52	76.56 S	106.26 E	130.96	125.77	0.60	-0.53	-2.00
14	2576	8.2	134.4	94	2567.02	143.75	85.43 S	116.07 E	144.12	126.35	0.72	0.21	4.89
15	2671	8.4	134.2	95	2661.02	157.43	95.01 S	125.89 E	157.72	127.04	0.21	0.21	-0.21
16	2765	8.4	133.9	94	2754.02	171.14	104.56 S	135.76 E	171.35	127.60	0.05	0.00	-0.32
17	2860	9.4	131.2	95	2847.87	185.82	114.48 S	146.59 E	186.00	127.99	1.14	1.05	-2.84
18	2955	7.9	134.8	95	2941.79	200.09	124.19 S	157.07 E	200.23	128.33	1.68	-1.58	3.79
19	3050	7.8	131.7	95	3035.90	213.04	133.08 S	166.51 E	213.16	128.63	0.46	-0.11	-3.26
20	3144	8.6	129.6	94	3128.94	226.45	141.80 S	176.69 E	226.55	128.75	0.91	0.85	-2.23
21	3239	8.7	129.3	95	3222.86	240.73	150.88 S	187.72 E	240.84	128.79	0.12	0.11	-0.32
22	3333	8.7	128.5	94	3315.77	254.95	159.81 S	198.79 E	255.06	128.80	0.13	0.00	-0.85
23	3428	8.6	129.1	95	3409.69	269.23	168.76 S	209.92 E	269.35	128.80	0.14	-0.11	0.63
24	3523	8.6	139.0	95	3503.63	283.35	178.60 S	220.09 E	283.44	129.06	1.56	0.00	10.42
25	3617	8.7	137.8	94	3596.56	297.36	189.17 S	229.48 E	297.40	129.50	0.22	0.11	-1.28
26	3712	8.7	137.5	95	3690.47	311.62	199.79 S	239.16 E	311.63	129.88	0.05	0.00	-0.32
27	3807	8.8	139.0	95	3784.36	325.93	210.58 S	248.78 E	325.94	130.25	0.26	0.11	1.58
28	3901	8.9	135.9	94	3877.24	340.28	221.22 S	258.56 E	340.28	130.55	0.52	0.11	-3.30
29	3996	8.4	132.6	95	3971.16	354.54	231.20 S	268.78 E	354.54	130.70	0.74	-0.53	-3.47
30	4091	7.5	131.0	95	4065.25	367.67	239.96 S	278.57 E	367.67	130.74	0.98	-0.95	-1.68
31	4185	6.5	131.4	94	4158.55	379.12	247.51 S	287.19 E	379.13	130.76	1.07	-1.06	0.43
32	4279	5.4	127.0	94	4252.04	388.86	253.69 S	294.71 E	388.86	130.72	1.27	-1.17	-4.68
33	4373	4.2	133.4	94	4345.71	396.71	258.71 S	300.75 E	396.71	130.70	1.40	-1.28	6.81
34	4468	2.2	132.5	95	4440.56	402.01	262.34 S	304.62 E	402.01	130.73	2.11	-2.11	-0.95
35	4562	1.1	123.2	94	4534.52	404.71	264.05 S	306.71 E	404.71	130.73	1.20	-1.17	-9.89
36	4657	0.9	132.1	95	4629.50	406.36	265.05 S	308.02 E	406.36	130.71	0.27	-0.21	9.37

Archer

Company: COG Operating, LLC

Job Number:

04356-433-22

Calculation Method

Minimum Curvature

Well: Electra Federal #62

Mag Decl.:

7.47

Proposed Azimuth

130.5

Location: Eddy County, New Mexico

Dir Driller:

Marty Schmidt

Depth Reference

KBG

Rig: Silver Oak Drilling 11

MWD Eng:

Steve Doggett

Tie Into: Gyro Survey

Job Date: 07/08/13 - 07/15/13

Survey Number	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates		Closure		Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')
							N/S (ft)	E/W (ft)	Distance (ft)	Direction Azimuth			
37	4751	0.8	119.8	94	4723.49	407.74	265.87 S	309.14 E	407.74	130.70	0.22	-0.11	-13.09
38	4845	0.2	75.3	94	4817.49	408.48	266.15 S	309.87 E	408.48	130.66	0.72	-0.64	-47.34
39	4940	0.4	104.1	95	4912.49	408.87	266.19 S	310.35 E	408.87	130.62	0.26	0.21	30.32
40	5033	0.0	302.7	93	5005.49	409.16	266.27 S	310.66 E	409.16	130.60	0.43	-0.43	213.55
Proj.	5088	0.0	302.7	55	5060.49	409.16	266.27 S	310.66 E	409.16	130.60	0.00	0.00	0.00



COG Operating, LLC

Eddy County(NM27E)

Sec.10-T17S-R30E

Electra Federal #62

RECEIVED

NOV 18 2013

NMOCD ARTESIA

Wellbore #1

Survey: Survey #2-Archer MWD

Standard Survey Report

16 July, 2013

Archer

Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well Electra Federal #62
Project:	Eddy County (NM27E)	TVD Reference:	WELL @ 3745.00usft
Site:	Sec. 10-T17S-R30E	MD Reference:	WELL @ 3745.00usft
Well:	Electra Federal #62	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM: 5000.1 Single User Db

Project	Eddy County(NM27E)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site: Sec. 10-T17S-R30E					
Site Position:		Northing:	675,273.000 usft	Latitude:	32° 51' 21.012 N
From:	Map	Easting:	616,251.900 usft	Longitude:	103° 57' 17.149 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16"	Grid Convergence:	0.21 °

Well	Electra Federal #62					
Well Position	+N/-S	0.00 usft	Northing:	675,273.061 usft	Latitude:	32° 51' 21.012 N
	+E/-W	0.00 usft	Easting:	616,261.677 usft	Longitude:	103° 57' 17.034 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,728.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	07/01/13	7.56	60.65	-48,747

Design		Wellbore #1			
Audit Notes:					
Version:		1.0	Phase:	ACTUAL	Tie On Depth: 0.00
Vertical Section:		Depth From (TVD)	+N/-S	+E/-W	Direction
		(usft)	(usft)	(usft)	(°)
		0.00	0.00	0.00	130.46

Survey Program		Date	07/16/13		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.00	1,269.00	Survey #1-VES Gyro (Wellbore #1)	GYD_DP_MS	Gyrodatta gyro-compassing and drop	
1,346.00	5,088.00	Survey #2-Archer MWD (Wellbore #1)	MWD	MWD - Standard	

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
Tie-In / VES Gyro									
1,269.00	1.64	39.70	1,268.89	1.56	10.68	7.11	0.00	0.00	0.00
First Archer Survey									
1,346.00	1.30	65.00	1,345.87	2.77	12.17	7.46	0.94	-0.44	32.86
1,441.00	1.70	105.90	1,440.84	2.84	14.50	9.19	1.17	0.42	43.05
1,535.00	2.50	115.40	1,534.77	1.58	17.70	12.44	0.93	0.85	10.11
1,630.00	4.40	131.50	1,629.60	-1.72	22.30	18.08	2.23	2.00	16.95
1,725.00	5.30	133.80	1,724.26	-7.17	28.20	26.11	0.97	0.95	2.42
1,819.00	7.30	131.40	1,817.68	-14.13	35.81	36.41	2.15	2.13	-2.55
1,914.00	8.20	132.90	1,911.82	-22.73	45.30	49.22	0.97	0.95	1.58
2,009.00	8.40	129.30	2,005.82	-31.74	55.63	62.92	0.59	0.21	-3.79
2,104.00	7.80	131.20	2,099.87	-40.38	65.85	76.31	0.69	-0.63	2.00

Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well Electra Federal #62
Project:	Eddy County (NM27E)	TVD Reference:	WELL @ 3745'00usft
Site:	Sec 10-T17S-R30E	MD Reference:	WELL @ 3745'00usft
Well:	Electra Federal #62	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM, 5000:1 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
2,198.00	7.90	132.30	2,192.99	-48.93	75.43	89.14	0.19	0.11	1.17
2,293.00	8.70	132.80	2,287.00	-58.20	85.53	102.85	0.85	0.84	0.53
2,387.00	8.50	131.70	2,379.94	-67.66	95.93	116.89	0.28	-0.21	-1.17
2,482.00	8.00	129.80	2,473.96	-76.56	106.25	130.52	0.60	-0.53	-2.00
2,576.00	8.20	134.40	2,567.02	-85.44	116.07	143.75	0.72	0.21	4.89
2,671.00	8.40	134.20	2,661.02	-95.01	125.88	157.44	0.21	0.21	-0.21
2,765.00	8.40	133.90	2,754.02	-104.56	135.75	171.14	0.05	0.00	-0.32
2,860.00	9.40	131.20	2,847.87	-114.48	146.59	185.83	1.14	1.05	-2.84
2,955.00	7.90	134.80	2,941.79	-124.19	157.06	200.09	1.68	-1.58	3.79
3,050.00	7.80	131.70	3,035.90	-133.08	166.51	213.05	0.46	-0.11	-3.26
3,144.00	8.60	129.60	3,128.94	-141.81	176.69	226.45	0.91	0.85	-2.23
3,239.00	8.70	129.30	3,222.86	-150.88	187.72	240.74	0.12	0.11	-0.32
3,333.00	8.70	128.50	3,315.78	-159.81	198.78	254.95	0.13	0.00	-0.85
3,428.00	8.60	129.10	3,409.69	-168.77	209.92	269.23	0.14	-0.11	0.63
3,523.00	8.60	139.00	3,503.63	-178.61	220.09	283.36	1.56	0.00	10.42
3,617.00	8.70	137.80	3,596.56	-189.18	229.48	297.36	0.22	0.11	-1.28
3,712.00	8.70	137.50	3,690.47	-199.80	239.16	311.62	0.05	0.00	-0.32
3,807.00	8.80	139.00	3,784.36	-210.58	248.78	325.93	0.26	0.11	1.58
3,901.00	8.90	135.90	3,877.25	-221.23	258.56	340.28	0.52	0.11	-3.30
3,996.00	8.40	132.60	3,971.17	-231.20	268.78	354.53	0.74	-0.53	-3.47
4,091.00	7.50	131.00	4,065.25	-239.97	278.57	367.67	0.98	-0.95	-1.68
4,185.00	6.50	131.40	4,158.55	-247.51	287.19	379.12	1.07	-1.06	0.43
4,279.00	5.40	127.00	4,252.04	-253.69	294.71	388.86	1.27	-1.17	-4.68
4,373.00	4.20	133.40	4,345.71	-258.72	300.75	396.71	1.40	-1.28	6.81
4,468.00	2.20	132.50	4,440.56	-262.34	304.62	402.01	2.11	-2.11	-0.95
4,562.00	1.10	123.20	4,534.52	-264.05	306.70	404.71	1.20	-1.17	-9.89
4,657.00	0.90	132.10	4,629.50	-265.05	308.02	406.36	0.27	-0.21	9.37
4,751.00	0.80	119.80	4,723.49	-265.87	309.14	407.74	0.22	-0.11	-13.09
4,845.00	0.20	75.30	4,817.49	-266.16	309.86	408.48	0.72	-0.64	-47.34
4,940.00	0.40	104.10	4,912.49	-266.20	310.35	408.87	0.26	0.21	30.32
Last Archer Survey									
5,033.00	0.00	302.70	5,005.49	-266.28	310.66	409.16	0.43	-0.43	0.00
PTB									
5,088.00	0.00	302.70	5,060.49	-266.28	310.66	409.16	0.00	0.00	0.00

Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,269.00	1,268.89	1.56	10.68	Tie-In / VES Gyro
1,346.00	1,345.87	2.77	12.17	First Archer Survey
5,033.00	5,005.49	-266.28	310.66	Last Archer Survey
5,088.00	5,060.49	-266.28	310.66	PTB

Checked By: _____ Approved By: _____ Date: _____