

Jeff Milburn
1285 Derrick Dr.
Casper, WY 82604
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Extraction Oil & Gas LLC.

Waag 1

Weld County, CO

Prepared by: Jeff Milburn



A Schlumberger Company

1285 Derrick Dr.

Casper, WY 82604

(307) 265-3145

Directional Survey Certification Form

<u>Extraction Oil & Gas LLC.</u> Company	<u>Waag 1</u> Well Name	<u>January 30, 2015</u> Final Report Date
<u>15CAS0012</u> Job Number	<u>Weld County, CO</u> County, State	<u>05-123-40342</u> API Number
<u>N 40° 34' 4.935"</u> Surface Latitude	<u>W 104° 42' 34.213"</u> Surface Longitude	<u>Sec. 19-T07N-R65W</u> Sec. - TWP - Range
<u>NAD 83</u> Geodetic Datum	<u>XTREME 7</u> Rig Contractor / Name	<u>17'</u> RKB Height

Type of Surveys

Measurements While Drilling (MWD)

Survey Depths (Measured Depth)

7836' to 12230'

Survey Dates

01/07/15 to 01/09/15

Persons Performing Surveys

Bill Schmidt
Russell Thomason

The data and calculations for this survey have been checked by me and conform to the calibration standards and operational procedures set forth by Pathfinder Energy Services.

I am authorized and qualified to review the data, calculations and this report, and that the report represents a true and correct Directional Survey of this well based on the original data corrected to True North and obtained at the well site. Wellbore coordinates are calculated using the minimum curvature method.

Jeff Milburn
Engineer In Charge

January 30, 2015
Date

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BHL Report

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Tie-in Date: 01/07/2015
Date Completed: 01/09/2015

EXTRACTION OIL & GAS LLC.

WAAG 1

WELD COUNTY, CO

API#: 05-123-40342 Rig: EXTREME 7

PathFinder Office Supervisor: DAN HARWELL

PathFinder Field Engineers: BILL SCHMIDT
RUSS THOMASON

Survey Horiz. Reference: WELLHEAD

Ref Coordinates: LAT: 40.34.4.9349 N LON: 104.42.34.2140 W

GRID Reference: NAD83 colorado north Lambert

Ref GRID Coord: X: 3219612.7270 Y: 1450756.0136

North Aligned To: TRUE NORTH

Total Magnetic Correction: 8.38° EAST TO TRUE

Vertical Section Plane: 270.87

Survey Vert. Reference: 17.00' Rotary Table To Ground

Altitude: 4902.00' Ground To MSL

Measured Depth	12230.00	(feet)
Inclination	89.43	(deg)
Azimuth	270.56	(deg)
True Vertical Depth	7387.74	(feet)
Vertical Section	3961.30	(feet)
Survey X cord	3215651.60	(feet)
Survey Y cord	1450797.36	(feet)
Survey Lat	40.56824701 N	(deg)
Survey Lon	104.72375992 W	(deg)
Rectangular Corr. N/S	41.34 N	(feet)
Rectangular Corr. E/W	3961.13 W	(feet)
Closure Distance	3961.34	(feet)
Direction of Closure	270.60	(deg)
Dogleg Severity	0.00	(deg/100ft)

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Survey Report

EXTRACTION OIL & GAS LLC.
WAAG 1
WELD COUNTY, CO
API#: 05-123-40342 Rig: EXTREME 7
PathFinder Office Supervisor: DAN HARWELL
PathFinder Field Engineers: BILL SCHMIDT
RUSS THOMASON

Survey Horiz. Reference:WELLHEAD
Ref Coordinates: LAT:40.34.4.9349 N LON:104.42.34.2140 W
GRID Reference:NAD83 colorado north Lambert
Ref GRID Coord: X: 3219612.7270 Y: 1450756.0136
North Aligned To:TRUE NORTH
Total Magnetic Correction: 8.38° EAST TO TRUE
Vertical Section Plane: 270.87
Survey Vert. Reference: 17.00' Rotary Table To Ground
Altitude:4902.00' Ground To MSL

Survey Calculations by RX5 V6.05B using Minimum Curvature

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Survey Latitude (deg)	Survey Longitude (deg)	Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
TIED-IN TO PHOENIX MWD SURVEYS AT 7836'MD.												
7836.00	86.00	280.30	7385.06	16.00	-423.16	50.76 S	422.44 E	40.56788781 N	104.70798501 W	425.48@	96.85	3.36
THE FOLLOWING ARE PATHFINDER MWD SURVEYS.												
7919.00	87.76	281.63	7389.58	83.00	-341.58	34.99 S	341.08 E	40.56793307 N	104.70827734 W	342.87@	95.86	2.66
8012.00	90.66	281.02	7390.86	93.00	-250.14	16.73 S	249.91 E	40.56798543 N	104.70860491 W	250.47@	93.83	3.19
8104.00	91.28	279.52	7389.30	92.00	-159.39	0.33 S	159.40 E	40.56803266 N	104.70893015 W	159.40@	90.12	1.76
8196.00	92.07	276.71	7386.61	92.00	-68.17	12.65 N	68.37 E	40.56807051 N	104.70925738 W	69.53@	79.52	3.17
8288.00	92.59	271.61	7382.87	92.00	23.57	19.31 N	23.28 W	40.56809105 N	104.70958705 W	30.25@	309.68	5.57
8380.00	91.10	269.50	7379.91	92.00	115.51	20.20 N	115.22 W	40.56809575 N	104.70991794 W	116.98@	279.95	2.81
8472.00	90.66	268.36	7378.50	92.00	207.45	18.48 N	207.19 W	40.56809328 N	104.71024903 W	208.01@	275.10	1.33
8564.00	90.84	267.83	7377.29	92.00	299.33	15.43 N	299.13 W	40.56808713 N	104.71058005 W	299.53@	272.95	0.61
8656.00	89.60	267.22	7376.94	92.00	391.17	11.45 N	391.04 W	40.56807847 N	104.71091100 W	391.21@	271.68	1.50
8749.00	89.87	267.04	7377.37	93.00	483.97	6.80 N	483.92 W	40.56806796 N	104.71124546 W	483.97@	270.80	0.35
8841.00	89.34	267.39	7378.00	92.00	575.78	2.33 N	575.81 W	40.56805793 N	104.71157634 W	575.82@	270.23	0.69
8933.00	88.81	266.87	7379.49	92.00	667.57	2.28 S	667.68 W	40.56804753 N	104.71190716 W	667.69@	269.80	0.81
9025.00	88.02	266.25	7382.03	92.00	759.28	7.80 S	759.48 W	40.56803463 N	104.71223775 W	759.52@	269.41	1.09
9117.00	88.72	268.01	7384.65	92.00	851.04	12.40 S	851.33 W	40.56802423 N	104.71256846 W	851.42@	269.17	2.06
9209.00	89.52	270.21	7386.06	92.00	942.98	13.83 S	943.30 W	40.56802255 N	104.71289954 W	943.40@	269.16	2.54
9301.00	90.57	271.17	7385.99	92.00	1034.98	12.72 S	1035.29 W	40.56802783 N	104.71323061 W	1035.37@	269.30	1.55
9394.00	89.69	271.61	7385.78	93.00	1127.97	10.47 S	1128.26 W	40.56803629 N	104.71356517 W	1128.31@	269.47	1.06
9486.00	90.92	271.96	7385.29	92.00	1219.96	7.60 S	1220.21 W	40.56804639 N	104.71389605 W	1220.24@	269.64	1.39
9578.00	91.01	272.14	7383.74	92.00	1311.92	4.31 S	1312.14 W	40.56805766 N	104.71422682 W	1312.15@	269.81	0.22
9670.00	90.48	271.88	7382.54	92.00	1403.90	1.08 S	1404.07 W	40.56806875 N	104.71455762 W	1404.08@	269.96	0.64
9762.00	92.15	271.61	7380.43	92.00	1495.86	1.72 N	1496.00 W	40.56807867 N	104.71488841 W	1496.01@	270.07	1.84
9854.00	91.63	271.44	7377.40	92.00	1587.80	4.17 N	1587.92 W	40.56808762 N	104.71521918 W	1587.93@	270.15	0.59
9946.00	90.48	270.73	7375.71	92.00	1679.78	5.91 N	1679.89 W	40.56809464 N	104.71555013 W	1679.90@	270.20	1.47

PathFinder – a Schlumberger company

Survey Report

EXTRACTION OIL & GAS LLC.
WAAG 1
WELD COUNTY, CO
API#: 05-123-40342 Rig: EXTREME 7

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Survey Latitude (deg)	Survey Longitude (deg)	Closure Dist Dir (ft) (deg)	DLS (dg/100ft)
10038.00	89.52	270.56	7375.71	92.00	1771.78	6.94 N	1771.88 W	40.56809971 N	104.71588121 W	1771.89@ 270.22	1.06
10123.00	89.08	269.77	7376.74	85.00	1856.77	7.19 N	1856.87 W	40.56810245 N	104.71618712 W	1856.89@ 270.22	1.06
10207.00	88.29	269.15	7378.67	84.00	1940.72	6.40 N	1940.85 W	40.56810231 N	104.71648939 W	1940.86@ 270.19	1.20
10292.00	90.40	270.47	7379.64	85.00	2025.69	6.11 N	2025.83 W	40.56810360 N	104.71679529 W	2025.84@ 270.17	2.93
10377.00	90.31	270.29	7379.12	85.00	2110.69	6.68 N	2110.83 W	40.56810721 N	104.71710121 W	2110.84@ 270.18	0.24
10461.00	89.96	270.03	7378.92	84.00	2194.68	6.91 N	2194.83 W	40.56810989 N	104.71740354 W	2194.84@ 270.18	0.52
10546.00	90.48	269.94	7378.59	85.00	2279.67	6.89 N	2279.83 W	40.56811188 N	104.71770948 W	2279.84@ 270.17	0.62
10630.00	91.19	269.42	7377.37	84.00	2363.64	6.42 N	2363.82 W	40.56811263 N	104.71801179 W	2363.83@ 270.16	1.05
10715.00	91.28	268.71	7375.54	85.00	2448.58	5.03 N	2448.78 W	40.56811088 N	104.71831767 W	2448.79@ 270.12	0.84
10800.00	91.54	268.80	7373.44	85.00	2533.50	3.19 N	2533.74 W	40.56810787 N	104.71862350 W	2533.74@ 270.07	0.32
10884.00	89.69	268.36	7372.54	84.00	2617.42	1.11 N	2617.70 W	40.56810418 N	104.71892579 W	2617.70@ 270.02	2.26
10969.00	87.67	268.71	7374.50	85.00	2702.32	1.07 S	2702.65 W	40.56810028 N	104.71923160 W	2702.65@ 269.98	2.41
11053.00	85.03	269.68	7379.85	84.00	2786.11	2.24 S	2786.46 W	40.56809906 N	104.71953331 W	2786.46@ 269.95	3.35
11138.00	86.00	271.96	7386.50	85.00	2870.84	1.03 S	2871.19 W	40.56810444 N	104.71983822 W	2871.19@ 269.98	2.91
11222.00	87.05	274.69	7391.59	84.00	2954.60	3.83 N	2954.88 W	40.56811981 N	104.72013931 W	2954.89@ 270.07	3.48
11307.00	87.67	274.78	7395.50	85.00	3039.32	10.84 N	3039.50 W	40.56814109 N	104.72044366 W	3039.52@ 270.20	0.74
11392.00	89.08	273.99	7397.91	85.00	3124.12	17.34 N	3124.22 W	40.56816097 N	104.72074837 W	3124.26@ 270.32	1.90
11476.00	91.63	274.95	7397.39	84.00	3207.94	23.88 N	3207.95 W	40.56818095 N	104.72104955 W	3208.04@ 270.43	3.24
11561.00	92.68	274.34	7394.20	85.00	3292.70	30.76 N	3292.61 W	40.56820188 N	104.72135405 W	3292.75@ 270.54	1.43
11645.00	92.33	273.11	7390.53	84.00	3376.51	36.21 N	3376.35 W	40.56821886 N	104.72165529 W	3376.55@ 270.61	1.52
11730.00	92.15	271.70	7387.20	85.00	3461.41	39.78 N	3461.21 W	40.56823068 N	104.72196061 W	3461.44@ 270.66	1.67
11814.00	90.92	270.73	7384.95	84.00	3545.38	41.56 N	3545.16 W	40.56823759 N	104.72226271 W	3545.40@ 270.67	1.87
11899.00	89.16	269.15	7384.89	85.00	3630.36	41.47 N	3630.15 W	40.56823939 N	104.72256863 W	3630.39@ 270.65	2.78
11983.00	89.87	269.50	7385.60	84.00	3714.33	40.48 N	3714.14 W	40.56823870 N	104.72287097 W	3714.36@ 270.62	0.94
12068.00	89.43	270.03	7386.12	85.00	3799.31	40.13 N	3799.14 W	40.56823979 N	104.72317692 W	3799.35@ 270.61	0.81
12148.00	89.43	270.56	7386.92	80.00	3879.30	40.54 N	3879.13 W	40.56824284 N	104.72346483 W	3879.35@ 270.60	0.66
STRAIGHT LINE PROJECTION TO BIT DEPTH AT 12230'MD.											
12230.00	89.43	270.56	7387.74	82.00	3961.30	41.34 N	3961.13 W	40.56824701 N	104.72375992 W	3961.34@ 270.60	0.00