

Directional Survey Report

Company Name: EXTRACTION
Well Name: WAAG 23
Rig ID: PATTERSON 346
API/UWI:
Field: DJ BASON
Location:
State/Prov: CO
County: WELD

Survey Company:
Job Number: 41818
Start Date: 07/18/2015
End Date:
Declination: 8.4
Proposed Azimuth: 273.29
North Reference: True

Svy	Depth	Inc	Azm	TVD	NS	EW	VS	DLS	Temp
Tiein	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	141.00	1.40	161.10	140.99	-1.63	0.56	-0.65	0.99	0.00
2	231.00	0.50	138.60	230.97	-2.96	1.17	-1.34	1.06	0.00
3	321.00	0.50	122.30	320.97	-3.47	1.77	-1.96	0.16	0.00
4	411.00	0.80	131.50	410.96	-4.10	2.57	-2.80	0.35	0.00
5	501.00	1.00	329.50	500.96	-3.83	2.64	-2.86	1.98	0.00
6	591.00	1.10	334.40	590.94	-2.38	1.87	-2.00	0.15	0.00
7	681.00	1.20	330.70	680.93	-0.78	1.03	-1.08	0.14	0.00
8	771.00	0.90	346.90	770.91	0.73	0.41	-0.37	0.47	0.00
9	859.00	0.40	352.10	858.91	1.71	0.21	-0.11	0.57	0.00
10	1,073.00	0.60	299.90	1,072.90	3.01	-0.86	1.03	0.22	0.00
11	1,162.00	1.50	79.90	1,161.89	3.44	-0.12	0.32	2.24	0.00
12	1,253.00	6.60	76.20	1,252.63	4.90	6.14	-5.85	5.61	0.00
13	1,342.00	8.40	77.00	1,340.87	7.58	17.44	-16.98	2.03	0.00
14	1,524.00	8.50	77.40	1,520.89	13.51	43.52	-42.67	0.06	0.00
15	1,613.00	8.50	76.30	1,608.91	16.50	56.33	-55.29	0.18	0.00
16	1,703.00	8.40	76.50	1,697.94	19.61	69.18	-67.94	0.12	0.00
17	1,794.00	8.00	75.40	1,788.01	22.76	81.77	-80.33	0.47	0.00
18	1,885.00	7.60	74.00	1,878.16	26.01	93.69	-92.04	0.49	0.00
19	1,975.00	7.10	73.00	1,967.42	29.28	104.73	-102.87	0.57	0.00
20	2,065.00	6.80	72.70	2,056.76	32.49	115.13	-113.08	0.34	0.00
21	2,156.00	6.70	71.00	2,147.13	35.82	125.30	-123.03	0.25	0.00
22	2,339.00	6.00	67.80	2,329.01	42.91	144.25	-141.54	0.43	0.00
23	2,428.00	5.70	66.90	2,417.55	46.40	152.62	-149.70	0.35	0.00
24	2,520.00	5.30	65.30	2,509.12	49.97	160.68	-157.55	0.47	0.00
25	2,611.00	4.90	65.40	2,599.76	53.35	168.03	-164.69	0.44	0.00
26	2,702.00	4.60	66.20	2,690.45	56.44	174.90	-171.38	0.34	0.00
27	2,792.00	4.30	64.60	2,780.18	59.34	181.25	-177.55	0.36	0.00
28	2,974.00	3.60	57.40	2,961.75	65.34	192.23	-188.17	0.47	0.00
29	3,064.00	3.60	57.40	3,051.57	68.39	196.99	-192.74	0.00	0.00
30	3,155.00	4.80	60.30	3,142.32	71.82	202.71	-198.25	1.34	0.00
31	3,249.00	5.00	74.50	3,235.98	74.86	210.07	-205.43	1.30	0.00
32	3,438.00	5.70	82.60	3,424.16	78.27	227.32	-222.45	0.54	0.00
33	3,532.00	4.70	83.30	3,517.77	79.32	235.77	-230.83	1.07	0.00
34	3,626.00	4.80	66.10	3,611.45	81.36	243.19	-238.12	1.51	0.00
35	3,719.00	3.80	60.60	3,704.19	84.45	249.43	-244.18	1.16	0.00
36	3,907.00	5.10	56.00	3,891.62	92.18	261.79	-256.07	0.72	0.00
37	4,001.00	4.60	56.60	3,985.28	96.59	268.40	-262.41	0.53	0.00
38	4,096.00	5.40	54.40	4,079.92	101.29	275.21	-268.95	0.87	0.00
39	4,190.00	5.50	51.90	4,173.50	106.65	282.36	-275.77	0.27	0.00
40	4,284.00	4.80	51.90	4,267.12	111.85	289.00	-282.10	0.74	0.00
41	4,378.00	4.50	52.70	4,360.81	116.52	295.02	-287.85	0.33	0.00
42	4,473.00	3.90	52.70	4,455.55	120.73	300.56	-293.13	0.63	0.00
43	4,567.00	4.60	51.60	4,549.29	125.01	306.06	-298.38	0.75	0.00
44	4,660.00	4.80	49.30	4,641.98	129.86	311.93	-303.96	0.30	0.00
45	4,754.00	4.60	45.20	4,735.66	135.08	317.58	-309.31	0.42	0.00
46	4,848.00	5.70	53.20	4,829.28	140.54	324.00	-315.40	1.39	0.00
47	4,943.00	5.80	53.00	4,923.81	146.25	331.61	-322.67	0.11	0.00
48	5,036.00	5.50	50.00	5,016.36	151.94	338.78	-329.50	0.45	0.00
49	5,130.00	5.00	51.00	5,109.96	157.42	345.41	-335.81	0.54	0.00

Svy	Depth	Inc	Azm	TVD	NS	EW	VS	DLS	Temp
50	5,224.00	6.30	62.10	5,203.50	162.41	353.15	-343.25	1.80	0.00
51	5,318.00	5.60	63.40	5,297.00	166.88	361.81	-351.64	0.76	0.00
52	5,413.00	5.00	60.60	5,391.59	170.98	369.56	-359.14	0.69	0.00
53	5,506.00	4.20	58.20	5,484.29	174.77	375.99	-365.34	0.88	0.00
54	5,600.00	3.50	57.40	5,578.08	178.13	381.33	-370.48	0.75	0.00
55	5,789.00	4.00	79.20	5,766.68	182.47	392.67	-381.55	0.79	0.00
56	5,884.00	3.60	74.00	5,861.47	183.92	398.79	-387.58	0.56	0.00
57	5,979.00	4.50	69.80	5,956.24	186.02	405.15	-393.81	1.00	0.00
58	6,073.00	3.90	69.60	6,049.98	188.41	411.61	-400.12	0.64	0.00
59	6,261.00	3.10	81.00	6,237.63	191.44	422.62	-410.94	0.56	0.00
60	6,355.00	2.80	78.10	6,331.51	192.31	427.38	-415.64	0.36	0.00
61	6,449.00	2.60	71.90	6,425.40	193.44	431.65	-419.84	0.38	0.00
62	6,543.00	1.80	32.70	6,519.34	195.35	434.48	-422.55	1.76	0.00
63	6,638.00	4.10	288.70	6,614.25	197.69	432.07	-420.01	5.12	0.00
64	6,732.00	10.60	299.00	6,707.43	202.97	421.31	-408.97	7.03	0.00
65	6,825.00	15.20	296.90	6,798.06	212.64	402.95	-390.08	4.97	0.00
66	6,855.00	15.90	286.00	6,826.97	215.55	395.49	-382.46	10.00	0.00
67	6,949.00	24.30	279.40	6,915.18	222.27	363.97	-350.61	9.24	0.00
68	7,042.00	39.90	274.50	6,993.73	227.77	315.04	-301.45	16.99	0.00
69	7,136.00	48.40	268.50	7,061.14	229.22	249.70	-236.14	10.07	0.00
70	7,231.00	58.30	265.40	7,117.79	225.04	173.71	-160.51	10.74	0.00
71	7,325.00	69.70	266.00	7,158.93	218.73	89.60	-76.90	12.14	0.00
72	7,420.00	82.60	268.00	7,181.62	213.96	-2.31	14.59	13.73	0.00
73	7,520.00	86.80	269.30	7,190.86	211.62	-101.83	113.81	4.39	0.00
74	7,596.00	90.20	271.20	7,192.85	211.95	-177.79	189.66	5.12	0.00
75	7,691.00	90.00	269.10	7,192.68	212.20	-272.79	284.52	2.22	0.00
76	7,786.00	90.30	267.30	7,192.43	209.22	-367.74	379.14	1.92	0.00
77	7,881.00	90.00	265.90	7,192.18	203.58	-462.57	473.49	1.51	0.00
78	7,975.00	90.80	267.50	7,191.53	198.17	-556.40	566.86	1.90	0.00
79	8,069.00	91.70	268.20	7,189.48	194.65	-650.31	660.41	1.21	0.00
80	8,164.00	92.00	268.00	7,186.41	191.50	-745.21	754.97	0.38	0.00
81	8,258.00	90.40	268.70	7,184.44	188.79	-839.15	848.60	1.86	0.00
82	8,354.00	91.20	270.80	7,183.10	188.37	-935.13	944.40	2.34	0.00
83	8,447.00	92.30	270.10	7,180.26	189.10	-1,028.08	1,037.24	1.40	0.00
84	8,542.00	92.20	271.90	7,176.53	190.76	-1,122.99	1,132.09	1.90	0.00
85	8,637.00	91.10	272.80	7,173.80	194.66	-1,217.87	1,227.03	1.50	0.00
86	8,731.00	91.40	272.80	7,171.75	199.25	-1,311.74	1,321.01	0.32	0.00
87	8,825.00	93.00	273.00	7,168.14	204.00	-1,405.54	1,414.93	1.72	0.00
88	8,920.00	91.80	272.40	7,164.16	208.47	-1,500.35	1,509.84	1.41	0.00
89	9,013.00	90.50	272.10	7,162.29	212.12	-1,593.26	1,602.81	1.43	0.00
90	9,108.00	88.70	273.50	7,162.96	216.76	-1,688.14	1,697.80	2.40	0.00
91	9,202.00	89.80	274.90	7,164.19	223.64	-1,781.87	1,791.77	1.89	0.00
92	9,296.00	90.10	274.20	7,164.27	231.10	-1,875.58	1,885.75	0.81	0.00
93	9,391.00	89.30	273.80	7,164.77	237.73	-1,970.34	1,980.74	0.94	0.00
94	9,484.00	91.50	275.10	7,164.12	244.94	-2,063.05	2,073.71	2.75	0.00
95	9,578.00	91.20	274.00	7,161.90	252.40	-2,156.73	2,167.66	1.21	0.00
96	9,671.00	90.30	271.70	7,160.68	257.02	-2,249.60	2,260.64	2.66	0.00
97	9,765.00	89.90	271.00	7,160.52	259.23	-2,343.57	2,354.59	0.86	0.00
98	9,859.00	87.80	270.50	7,162.41	260.46	-2,437.54	2,448.47	2.30	0.00
99	9,954.00	86.40	268.90	7,167.21	259.97	-2,532.41	2,543.16	2.24	0.00
100	10,048.00	86.50	267.00	7,173.03	256.61	-2,626.17	2,636.56	2.02	0.00
101	10,142.00	86.40	267.90	7,178.86	252.44	-2,719.89	2,729.90	0.96	0.00
102	10,237.00	88.10	267.20	7,183.41	248.38	-2,814.69	2,824.31	1.93	0.00
103	10,331.00	93.90	267.90	7,181.77	244.36	-2,908.55	2,917.78	6.21	0.00
104	10,424.00	93.80	268.60	7,175.53	241.53	-3,001.30	3,010.21	0.76	0.00
105	10,518.00	91.70	269.60	7,171.02	240.06	-3,095.17	3,103.85	2.47	0.00
106	10,613.00	92.20	270.00	7,167.79	239.73	-3,190.11	3,198.61	0.67	0.00
107	10,707.00	88.50	270.30	7,167.21	239.97	-3,284.10	3,292.46	3.95	0.00
108	10,801.00	87.70	269.10	7,170.33	239.48	-3,378.04	3,386.22	1.53	0.00
109	10,895.00	90.20	269.80	7,172.05	238.58	-3,472.01	3,479.98	2.76	0.00

Svy	Depth	Inc	Azm	TVD	NS	EW	VS	DLS	Temp
110	10,989.00	89.60	269.80	7,172.22	238.25	-3,566.01	3,573.81	0.64	0.00
111	11,083.00	89.80	268.90	7,172.71	237.18	-3,660.00	3,667.58	0.98	0.00
112	11,177.00	89.70	265.90	7,173.12	232.92	-3,753.89	3,761.07	3.19	0.00
113	11,272.00	89.10	267.20	7,174.11	227.20	-3,848.71	3,855.41	1.51	0.00
114	11,366.00	89.30	270.00	7,175.43	224.91	-3,942.67	3,949.08	2.99	0.00
115	11,459.00	89.40	270.70	7,176.48	225.48	-4,035.66	4,041.95	0.76	0.00
116	11,554.00	89.70	270.50	7,177.23	226.47	-4,130.65	4,136.84	0.38	0.00
117	11,648.00	89.80	270.30	7,177.64	227.13	-4,224.65	4,230.72	0.24	0.00
118	11,743.00	89.80	270.10	7,177.97	227.46	-4,319.65	4,325.58	0.21	0.00
119	11,838.00	92.20	269.60	7,176.31	227.21	-4,414.63	4,420.39	2.58	0.00
120	11,876.00	93.30	270.00	7,174.49	227.08	-4,452.58	4,458.27	3.08	0.00
PRJ	11,939.00	93.30	270.00	7,170.86	227.08	-4,515.48	4,521.07	0.00	0.00