

551114

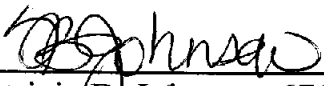
**Routine Calculations Report
In Support of Task 6 of AP-114**


**Potentiometric Surface, Adjusted to Equivalent Freshwater Heads, of the Culebra
Dolomite Member of the Rustler Formation near the WIPP Site, May 2007,
Revision 2**

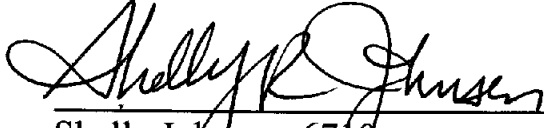
**(AP-114: Analysis Plan for Evaluation and Recalibration of Culebra Transmissivity
Fields, Revision 1, ERMS 548162)**

WBS 1.4.2.3

Report Date: April 23, 2009

Author:  4/23/09
Patricia B. Johnson, 6712 Date
Consulting Scientist

Technical Review:  4/23/09
Richard L. Beauheim, 6712 Date
Sandia National Laboratories

QA Review:  4-23-09
Shelly Johnson, 6710 Date
Carlsbad Programs Group

WIPP: 1.4.2.3 TD: QA-L: RECERT: 541153



Sandia National Laboratories

Operated for the U.S. Department of Energy by
Sandia Corporation

4100 National Parks Highway
Carlsbad, NM 88220

Phone: (575) 234-0088
Fax: (575) 234-0081
Internet: pbjohns@sandia.gov

date: April 23, 2009

to: SNL WIPP Records Center
Carlsbad Programs Group

from: Patricia B. Johnson, Intera Inc. (SNL Contractor)

subject: *Potentiometric Surface, Adjusted to Equivalent Freshwater Heads, of the Culebra Dolomite Member of the Rustler Formation near the WIPP Site, May 2007, Revision 2 dated April 23, 2009*

Addendum to:

Potentiometric Surface, Adjusted to Equivalent Freshwater Heads, of the Culebra Dolomite Member of the Rustler Formation near the WIPP Site, May 2007, Revision 1 dated April 22, 2008 (ERMS 548746)

The data included in this addendum is presented in the same format as Revision 1 of the Routine Calculation (ERMS 548746) and is intended to supplement Revision 1 and not replace it. The documentation and support for the data in Revision 1 are applicable to this addendum.

The following freshwater head data have been revised for the reasons included herein:

Well ID	Original Freshwater Head (m)	Revised Freshwater Head (m)	Reason for Change
ERDA-9	922.92	924.88	Troll was recently installed to mid-formation so revised calculated density is more representative
H-5b	938.58	939.12	Troll was recently installed to mid-formation so revised calculated density is more representative
H-6b	935.81	936.44	Troll was replaced in well resulting in more accurate pressure data so revised calculated density is more representative
H-10c	923.60	922.02	Troll was recently installed to mid-formation so revised calculated density is more representative
SNL-8	936.91	929.94	Density used in prior calculation was not consistent for the water level time period, revised density is from May 2007

Information Only

The following information is attached to document the above-mentioned revisions:

- 2007 Freshwater Head Data – Revision 2 – 4/23/09 (spreadsheet includes all of the 2007 freshwater head data with the revised wells highlighted)
- ERDA-9 – Calculated Density Spreadsheet (provides the supporting information for the revised calculated density)
- H-5b – Calculated Density Spreadsheet (provides the supporting information for the revised calculated density)
- H-6b – Calculated Density Spreadsheet (provides the supporting information for the revised calculated density)
- H-10c – Calculated Density Spreadsheet (provides the supporting information for the revised calculated density)
- SNL-8 – Calculated Density Spreadsheet (provides the supporting information for the revised calculated density)

Well ID	RTK - UTM NAD27 Y (m)	RTK - UTM NAD27 X (m)	RTK - Ground Surface Elevation NGVD29 (ft AMSL)	RTK - Reference Casing Elevation NGVD29 (ft AMSL)	Reference Casing Represents	May 2007 Depth to Water Data				Depth to Middle/Center of Culebra (ft) (ERMS 548032)	Center of Culebra Elevation (ft AMSL)	Head (ft)	Density (g/cm ³) (ERMS 548127)	Density Time Period	Density and Water Level Time Period Verification	Freshwater Head (ft AMSL)	Freshwater Head (m AMSL)
						Depth of H2O Below TOC (ft) w TOC adjust	Source of Water Level	Water-Level Elevation (ft AMSL)	Water-Level Elevation (m AMSL)								
C-2737	3581400.9	613598.0	3396.2	3400.8	Surface Casing	381.55	WRES	3019.21	920.26	686.5	2709.71	309.50	1.010	5-6/07	consistent	3022.41	921.23
ERDA-9	3581944.3	613696.1	3408.9	3410.2	Surface Casing	397.31	WRES	3012.86	918.32	715.9	2692.96	319.90	1.067	11/08 - 2/09	Troll was recently installed closer to mid-formation which made density more representative	3034.39	924.88
H-2b2	3581639.7	612662.5	3376.8	3378.4	Inner Casing	332.64	WRES	3045.72	928.34	634.0	2742.82	302.90	1.014	8-9/07	limited W/Ls during 4/5-2007, no changes in well btw time periods	3049.94	929.62
H-3b2	3580899.6	613693.6	3388.7	3389.9	Inner Casing	388.54	WRES	3001.37	914.82	686.5	2702.18	299.19	1.042	8-9/07	limited W/Ls during 4/5-2007, no changes in well btw time periods	3014.05	918.68
H-4b	3578478.5	612376.0	3332.5	3333.6	Surface Casing	329.81	WRES	3003.77	915.55	503.0	2829.47	174.30	1.015	4-5/07	consistent	3006.35	916.34
H-5b	3584807.0	616866.0	3505.0	3506.8	Surface Casing	467.64	WRES	3039.14	926.33	908.5	2596.50	442.63	1.095	12/08-1/09	Troll was recently installed closer to mid-formation which made density more representative	3081.10	939.12
H-6b	3584986.9	610598.6	3346.9	3347.7	Surface Casing	288.48	WRES	3059.21	932.45	615.5	2731.41	327.81	1.040	5/07 - 8/07	Troll was replaced resulting in more accurate pressure data so density was recalculated	3072.33	936.44
H-7b1	3574646.4	608122.8	3162.3	3163.7	Surface Casing	163.35	WRES	3000.37	914.51	268.5	2893.80	106.57	1.002	4-5/07	consistent	3000.60	914.58
H-9c	3568237.2	613971.1	3405.5	3407.0	Surface Casing	412.63	WRES	2994.42	912.70	662.0	2743.54	250.88	1.001	4-5/07	consistent	2994.77	912.80
H-10c	3572444.3	622976.3	3687.5	3688.4	Surface Casing	663.97	WRES	3024.43	921.85	1371.2	2316.33	708.10	1.001	11/08 - 2/09	Troll was recently installed closer to mid-formation which made density more representative	3025.00	922.02
H-11b4	3579123.5	615297.3	3409.2	3410.8	Inner Casing	423.93	WRES	2986.86	910.39	734.7	2674.57	312.29	1.070	4-5/07	consistent	3008.81	917.09
H-12	3575460.5	617022.0	3425.2	3427.3	Inner Casing	457.30	WRES	2970.03	905.26	836.4	2588.90	381.13	1.097	5-6/07	consistent	3007.00	916.53
H-15	3581855.2	615310.0	3479.8	3480.9	Surface Casing	482.25	WRES	2998.64	913.99	870.8	2609.02	389.63	1.053	4-5/07	consistent	3019.41	920.32
H-17	3577507.8	615717.0	3383.4	3385.2	Inner Casing	419.13	WRES	2966.11	904.07	718.6	2664.80	301.31	1.133	8-9/07	limited W/Ls during 4/5-2007, no changes in well btw time periods	3006.04	916.24
H-19b0	3580715.8	614515.0	3416.6	3418.3	Inner Casing	426.11	WRES	2992.22	912.03	752.3	2664.36	327.86	1.068	4-5/07	consistent	3014.57	918.84
IMC-461	3582246.4	606182.6	3281.1	3283.6	Inner Casing	236.58	WRES	3047.03	928.74	374.0	2907.11	139.92	1.005	4-5/07	consistent	3047.75	928.95
SNL-1	3594299.0	613781.4	3510.0	3512.8	Inner Casing	428.84	WRES	3084.00	940.00	610.0	2899.97	184.03	1.033	4-5/07	consistent	3090.09	941.86
SNL-2	3586529.1	609113.1	3320.8	3323.1	Inner Casing	249.39	WRES	3073.67	936.86	468.5	2852.32	221.35	1.012	8-9/07	Limited Troll data prior to August 2007	3076.28	937.65
SNL-3	3589046.9	616103.0	3487.9	3490.4	Inner Casing	415.19	WRES	3075.16	937.31	764.1	2723.83	351.33	1.023	4-5/07	consistent	3083.37	939.81
SNL-5	3587284.7	611970.2	3377.4	3380.0	Inner Casing	304.05	WRES	3075.93	937.54	646.4	2731.01	344.92	1.010	4-6/07	consistent	3079.38	938.59
SNL-6 ¹	3595390.0	621244.6	3643.1	3646.1	Inner Casing	936.43	WRES	2709.68	825.91	1335.3	2307.87	401.82	1.246	4-5/07	consistent	2808.38	856.00
SNL-8	3583783.3	618522.8	3552.0	3555.7	Inner Casing	527.51	WRES	3028.22	923.00	966.0	2586.03	442.18	1.052	2/07 - 5/07	consistent	3050.99	929.94
SNL-9	3582237.7	608704.8	3358.2	3361.0	Inner Casing	309.33	WRES	3051.63	930.14	564.4	2793.76	257.87	1.024	4-6/07	consistent	3057.89	932.05
SNL-10	3581764.8	611229.3	3374.1	3377.6	Inner Casing	324.43	WRES	3053.16	930.60	610.0	2764.13	289.03	1.011	5-6/07	consistent	3056.22	931.54
SNL-12	3572727.4	613223.4	3337.1	3339.5	Inner Casing	337.88	WRES	3001.57	914.88	568.5	2768.61	232.97	1.005	4-5/07	consistent	3002.74	915.24
SNL-13	3577599.8	610394.3	3291.1	3294.2	Inner Casing	284.90	WRES	3009.32	917.24	398.0	2893.06	116.26	1.027	4-8/07	consistent	3012.42	918.19
SNL-14	3577652.0	614989.7	3365.0	3368.4	Inner Casing	376.05	SNL - 11/07	2992.35	912.07	666.2	2698.90	293.46	1.048	11/07	consistent	3006.32	916.33
SNL-15 ¹	3580336.4	618353.2	3477.3	3479.9	Inner Casing	692.36	WRES	2787.57	849.65	920.2	2557.10	230.47	1.228	4-5/07	consistent	2840.05	865.65
SNL-16	3578999.7	605191.8	3131.7	3134.7	Inner Casing	121.50	WRES - 9/07	3013.16	918.41	205.0	2926.74	86.42	1.010	8-10/07	consistent	3014.06	918.68
SNL-17	3576016.1	609863.2	3235.5	3238.1	Inner Casing	230.98	WRES	3007.08	916.56	347.0	2888.50	118.58	1.006	4-6/07	consistent	3007.80	916.78
SNL-18	3591528.6	613605.8	3371.7	3375.4	Inner Casing	298.83	WRES	3076.61	937.75	547.5	2824.25	252.36	1.028	4-5/07	consistent	3083.55	939.87
SNL-19	3588947.4	607813.5	3219.1	3222.7	Inner Casing	147.23	WRES	3075.42	937.39	351.5	2867.57	207.85	1.003	4-5/07	consistent	3076.06	937.58
USGS-4 ^{2,4}	3569887.0	605841.0	3413.5	3415.9	Surface Casing	426.72	SNL - 4/07	2989.19	911.11	495.5	2917.98	71.21	1.000	3-8/07	consistent	2989.19	911.11
WIPP-11	3586474.0	613788.2	3425.5	3427.8	Surface Casing	360.54	WRES	3067.24	934.89	855.5	2569.99	497.24	1.038	4-5/07	consistent	3086.13	940.65
WIPP-13	3584241.7	612645.0	3404.8	3405.7	Surface Casing	342.00	WRES	3063.67	933.81	714.5	2690.35	373.32	1.053	10/07	Limited Troll data prior to October 2007	3083.27	939.78
WIPP-19	3582773.5	613738.8	3432.4	3435.1	Inner Casing	388.60	WRES	3046.51	928.58	767.4	2664.96	381.55	1.044	4-6/07	consistent	3063.18	933.66
WIPP-25 ³	3584022.8	606385.7	3211.8	3214.2	Surface Casing	141.99	Troll - 5/9/07 12:00	3072.25	936.42	459.5	2752.32	320.16	1.011	12/07	12/19/2007 only WL avail in logbook, no noted changes in well in 2007	3076.00	937.57
WIPP-30 ⁵	3589705.4	613716.5	3426.7	3429.2	Inner Casing	347.32	WRES	3081.91	939.37	642.0	2784.67	297.24	1.000	4-5/07	consistent	3081.91	939.37
WQSP-1 ⁶	3583430.3	612559.4	3416.1	3419.2	Surface Casing	356.95	WRES	3062.30	933.39	710.5	2705.55	356.75	1.045	Round 22-23	April-Oct 2006	3078.35	938.28
WQSP-2 ⁶	3583972.2	613770.4	3460.8	3463.9	Surface Casing	396.38	WRES	3067.49	934.97	822.0	2638.85	428.64	1.038	Round 22-23	April-Oct 2006	3083.56	939.87
WQSP-3 ⁶	3583506.8	614685.5	3477.5	3480.1	Surface Casing	464.25	WRES	3015.89	919.24	857.2	2620.27	395.62	1.143	Round 22-23	April-Oct 2006	3072.27	936.43
WQSP-4 ⁶	3580762.8	614724.5	3430.4	3433.1	Surface Casing	443.35	WRES	2989.74	911.27	778.2	2652.19	337.55	1.080	Round 22-23	April-Oct 2006	3016.74	919.50
WQSP-5 ⁶	3580353.6	613666.5	3381.7	3384.4	Surface Casing	378.98	WRES	3005.40	916.05	656.0	2725.67	279.73	1.025	Round 22-23	April-Oct 2006	3012.39	918.18
WQSP-6 ⁶	3580737.9	612602.3	3361.6	3364.7	Surface Casing	343.73	WRES	3020.99	920.80	594.0	2767.61	253.38	1.015	Round 22-23	April-Oct 2006	3024.79	921.96

Notes:

1. Heads are many years away from stabilizing; values of 1000m were used for modeling.
2. USGS-4 coordinates are from Gonzales (1989, SAND88-1065)
3. WIPP-25 water level calculated using psi, therefore H2O above Troll not corrected for density, H2O below Troll corrected for density
4. The calculated density for USGS-4 was 0.97; a value of 1.0 was used for freshwater head calculation
5. The calculated density for WIPP-30 was 0.994; a value of 1.0 was used for freshwater head calculation
6. The densities for WQSP-1 through WQSP-6 are averages of Round 22 (sample and duplicate) and Round 23 (sample and duplicate)

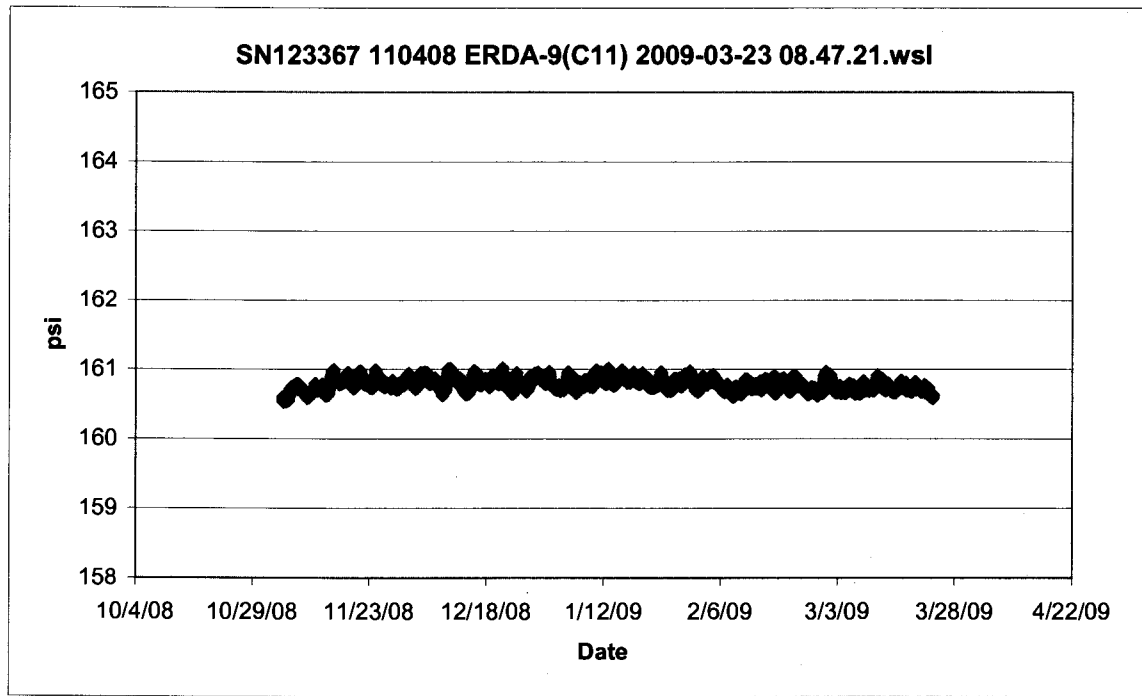
Information Only

ERDA-9

ERDA-9 Culebra Troll Install Z (ft BTOC) = 717.2
 Troll file -SN123367 110408 ERDA-9(C11) 2009-03-23 08.47.21.wsl

Date/Time	WL (psi)	DTW (ft BTOC)
11/4/2008 11:00	160.604	
11/4/2008 12:00	160.549	
11/4/2008 13:00	160.577	
11/4/2008 14:00	160.528	
11/4/2008 15:00	160.537	
11/4/2008 16:00	160.526	
11/4/2008 17:00	160.529	
11/4/2008 18:00	160.549	
11/4/2008 19:00	160.562	
11/4/2008 20:00	160.559	
11/4/2008 21:00	160.566	
11/4/2008 22:00	160.61	
11/4/2008 23:00	160.564	
11/5/2008 0:00	160.593	
11/5/2008 1:00	160.552	
11/5/2008 2:00	160.553	
11/5/2008 3:00	160.555	
11/5/2008 4:00	160.535	
11/5/2008 5:00	160.564	
11/5/2008 6:00	160.562	
11/5/2008 7:00	160.562	
11/5/2008 8:00	160.588	
11/5/2008 9:00	160.591	
11/5/2008 10:00	160.58	
11/5/2008 11:00	160.579	
11/5/2008 12:00	160.577	
11/5/2008 13:00	160.568	
11/5/2008 14:00	160.549	
11/5/2008 15:00	160.607	
11/5/2008 16:00	160.592	
11/5/2008 17:00	160.594	
11/5/2008 18:00	160.611	
11/5/2008 19:00	160.635	
11/5/2008 20:00	160.662	
11/5/2008 21:00	160.684	
11/5/2008 22:00	160.684	
11/5/2008 23:00	160.697	
11/6/2008 0:00	160.693	
11/6/2008 1:00	160.699	
11/6/2008 2:00	160.713	
11/6/2008 3:00	160.729	

Date/Time	PSI	DTW	DTW Source	Troll Depth	Baro psi	Calc Dens	Average
11/7/2008 6:30	160.782	397.65	W	717.2	13.094	1.0661	
11/24/2008 7:15	160.992	397.78	S	717.2	13.221	1.0672	
12/3/2008 9:40	160.844	397.73	W	717.2	13.014	1.0674	
12/16/2008 9:38	160.851	397.70	S	717.2	13.037	1.0672	
1/20/2009 11:15	160.903	398.00	W	717.2	13.2	1.0674	1.0673
1/27/2009 9:23	160.87	397.75	S	717.2	13.084	1.0672	
2/12/2009 12:00	160.755	397.88	W	717.2	13.013	1.0673	
2/17/2009 9:50	160.914	397.85	S	717.2	12.966	1.0687	

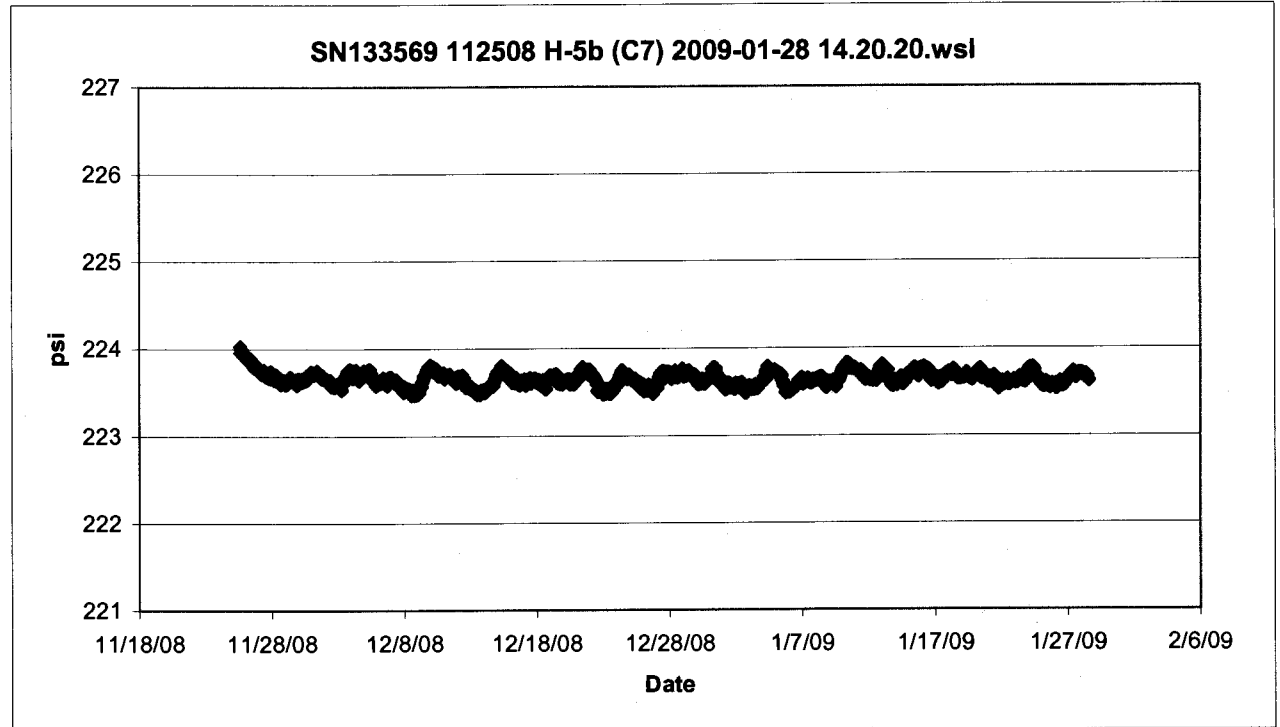


Information Only

H-5b Culebra Troll Install Z (ft BTOC) = 910.3
 Troll file - SN133569 112508 H-5b (C7) 2009-01-28 14.20.20.wsl

Date/Time	WL (psi)	DTW (ft BTOC)
11/25/2008 14:20	224.026	466.55
11/25/2008 15:20	223.958	
11/25/2008 16:20	223.983	
11/25/2008 17:20	223.986	
11/25/2008 18:20	223.977	
11/25/2008 19:20	223.969	
11/25/2008 20:20	223.96	
11/25/2008 21:20	223.953	
11/25/2008 22:20	223.924	
11/25/2008 23:20	223.916	
11/26/2008 0:20	223.922	
11/26/2008 1:20	223.897	
11/26/2008 2:20	223.884	
11/26/2008 3:20	223.878	
11/26/2008 4:20	223.881	
11/26/2008 5:20	223.872	
11/26/2008 6:20	223.869	
11/26/2008 7:20	223.884	
11/26/2008 8:20	223.89	
11/26/2008 9:20	223.882	
11/26/2008 10:20	223.876	
11/26/2008 11:20	223.853	
11/26/2008 12:20	223.828	
11/26/2008 13:20	223.826	
11/26/2008 14:20	223.809	
11/26/2008 15:20	223.788	
11/26/2008 16:20	223.809	
11/26/2008 17:20	223.797	
11/26/2008 18:20	223.797	
11/26/2008 19:20	223.801	
11/26/2008 20:20	223.785	
11/26/2008 21:20	223.797	
11/26/2008 22:20	223.794	
11/26/2008 23:20	223.783	
11/27/2008 0:20	223.757	
11/27/2008 1:20	223.752	
11/27/2008 2:20	223.747	
11/27/2008 3:20	223.732	
11/27/2008 4:20	223.719	
11/27/2008 5:20	223.719	
11/27/2008 6:20	223.735	
11/27/2008 7:20	223.751	

Date/Time	PSI	DTW	DTW Source	Troll Depth	Baro psi	Calc Dens	Average
12/1/2008 8:45	223.735	466.57	WRES	910.3	13.127	1.0949	1.0948
12/17/2008 14:11	223.635	466.40	SNL	910.3	13.008	1.0946	
1/13/2009 10:05	223.744	466.71	WRES	910.3	13.189	1.0950	
1/28/2009 14:19	223.621	466.46	SNL	910.3	13.006	1.0946	

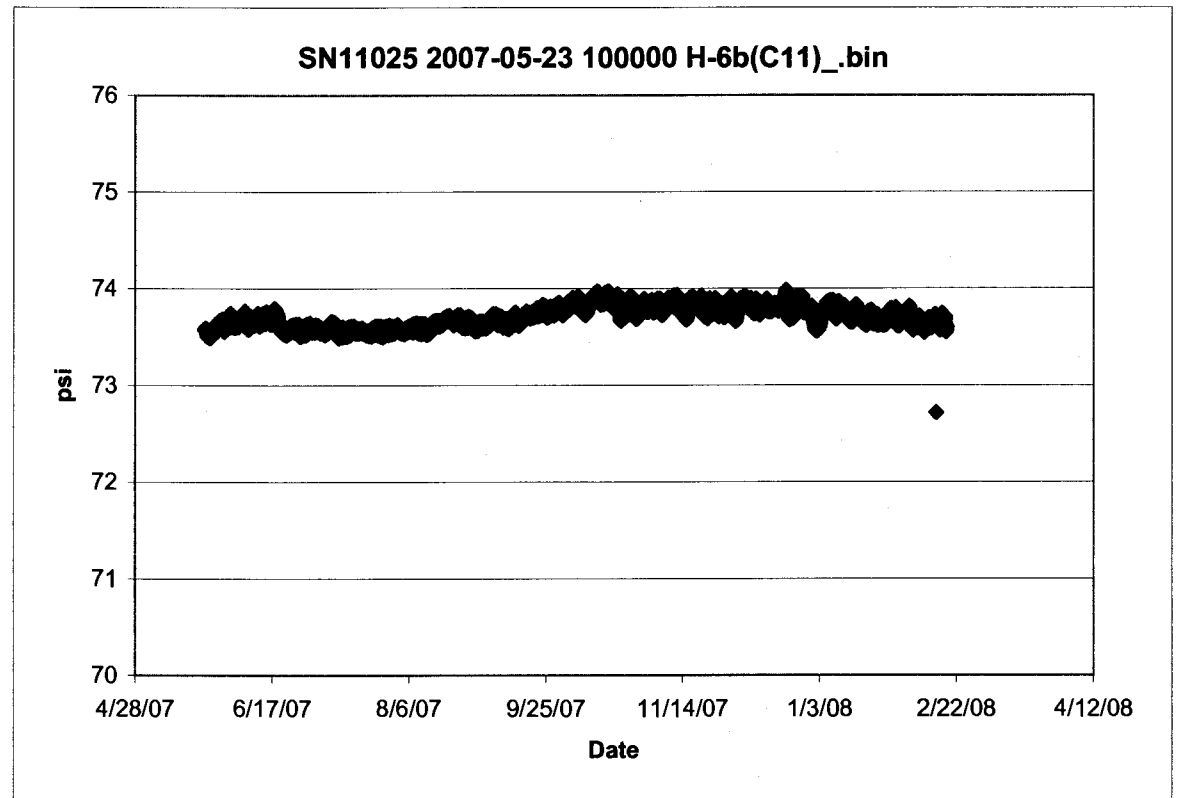


Information Only

H-6b Culebra Troll Install Z (ft BTOC) = 450.8
 Troll file - SN11025 2007-05-23 100000 H-6b(C11)_.bin

Date/Time	WL (psi)	DTW (ft BTOC)
5/23/2007 10:00	73.57	287.58
5/23/2007 11:00	73.578	
5/23/2007 12:00	73.586	
5/23/2007 13:00	73.586	
5/23/2007 14:00	73.595	
5/23/2007 15:00	73.595	
5/23/2007 16:00	73.586	
5/23/2007 17:00	73.595	
5/23/2007 18:00	73.586	
5/23/2007 19:00	73.578	
5/23/2007 20:00	73.578	
5/23/2007 21:00	73.578	
5/23/2007 22:00	73.586	
5/23/2007 23:00	73.578	
5/24/2007 0:00	73.578	
5/24/2007 1:00	73.586	
5/24/2007 2:00	73.578	
5/24/2007 3:00	73.561	
5/24/2007 4:00	73.553	
5/24/2007 5:00	73.545	
5/24/2007 6:00	73.528	
5/24/2007 7:00	73.511	
5/24/2007 8:00	73.503	
5/24/2007 9:00	73.503	
5/24/2007 10:00	73.503	
5/24/2007 11:00	73.511	
5/24/2007 12:00	73.519	
5/24/2007 13:00	73.528	
5/24/2007 14:00	73.535	
5/24/2007 15:00	73.545	
5/24/2007 16:00	73.545	
5/24/2007 17:00	73.536	
5/24/2007 18:00	73.528	
5/24/2007 19:00	73.528	
5/24/2007 20:00	73.519	
5/24/2007 21:00	73.519	
5/24/2007 22:00	73.528	
5/24/2007 23:00	73.536	
5/25/2007 0:00	73.545	
5/25/2007 1:00	73.536	

Date/Time	PSI	DTW	DTW Source	Troll Depth	Calc Dens	Average
5/23/2007 8:50	73.57	287.58	S	450.8	1.0398	
6/13/2007 12:32	73.663	287.45	W	450.8	1.0403	
6/19/2007 10:27	73.655	287.43	S	450.8	1.0400	
7/16/2007 12:10	73.547	287.63	W	450.8	1.0398	1.0400
8/7/2007 8:36	73.557	287.65	S	450.8	1.0400	
8/14/2007 8:45	73.607	287.50	W	450.8	1.0398	
8/28/2007 11:20	73.615	287.52	S	450.8	1.0400	

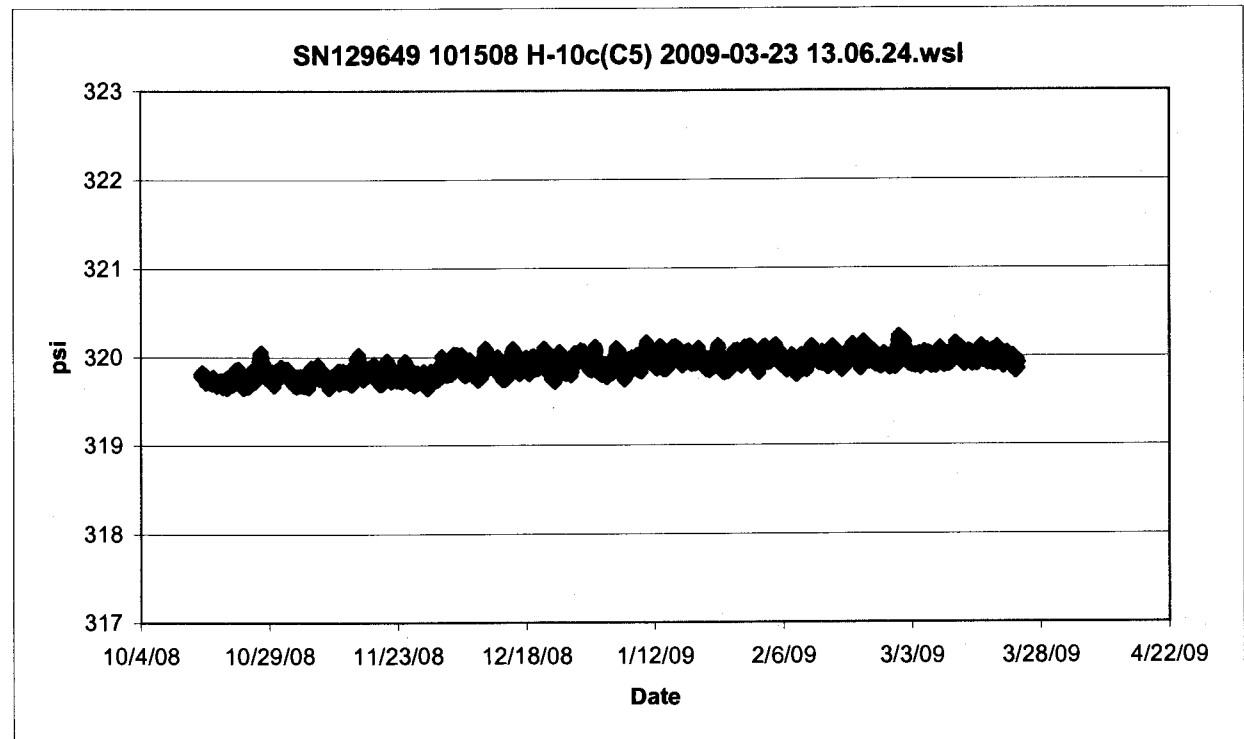


Information Only

H-10c Culebra Troll Install Z (ft BTOC) = 1372.10
 Troll file - SN129649 101508 H-10c(C5) 2009-03-23 13.06.24.wsl

Date/Time	WL (psi)	DTW (ft BTOC)
10/15/2008 14:00	319.812	
10/15/2008 15:00	319.793	
10/15/2008 16:00	319.783	
10/15/2008 17:00	319.796	
10/15/2008 18:00	319.809	
10/15/2008 19:00	319.774	
10/15/2008 20:00	319.796	
10/15/2008 21:00	319.838	
10/15/2008 22:00	319.815	
10/15/2008 23:00	319.823	
10/16/2008 0:00	319.811	
10/16/2008 1:00	319.785	
10/16/2008 2:00	319.786	
10/16/2008 3:00	319.807	
10/16/2008 4:00	319.789	
10/16/2008 5:00	319.774	
10/16/2008 6:00	319.79	
10/16/2008 7:00	319.79	
10/16/2008 8:00	319.788	
10/16/2008 9:00	319.813	
10/16/2008 10:00	319.809	
10/16/2008 11:00	319.812	
10/16/2008 12:00	319.786	
10/16/2008 13:00	319.783	
10/16/2008 14:00	319.777	
10/16/2008 15:00	319.755	
10/16/2008 16:00	319.701	
10/16/2008 17:00	319.754	
10/16/2008 18:00	319.75	
10/16/2008 19:00	319.76	
10/16/2008 20:00	319.753	
10/16/2008 21:00	319.78	
10/16/2008 22:00	319.748	
10/16/2008 23:00	319.753	
10/17/2008 0:00	319.734	
10/17/2008 1:00	319.714	
10/17/2008 2:00	319.716	
10/17/2008 3:00	319.721	
10/17/2008 4:00	319.711	
10/17/2008 5:00	319.727	
10/17/2008 6:00	319.738	

Date/Time	PSI	DTW	DTW Source	Troll Depth	Baro PSI	Calc Dens	Average
11/5/2008 6:50	319.738	664.65	W	1372.1	12.928	1.0004	1.0008
11/24/2008 12:20	319.909	664.71	S	1372.1	13.2	1.0002	
12/1/2008 10:05	319.917	664.82	W	1372.1	13.135	1.0006	
12/16/2008 13:46	319.905	664.61	S	1372.1	12.975	1.0008	
1/13/2009 13:50	319.997	664.97	W	1372.1	13.101	1.0012	
1/27/2009 13:40	320.027	664.61	S	1372.1	13.029	1.0010	
2/9/2009 10:20	320.024	664.71	W	1372.1	12.981	1.0013	
2/17/2009 13:19	319.911	664.62	S	1372.1	12.925	1.0010	



Information Only

SNL-8 Rev

SNL-8 Culebra

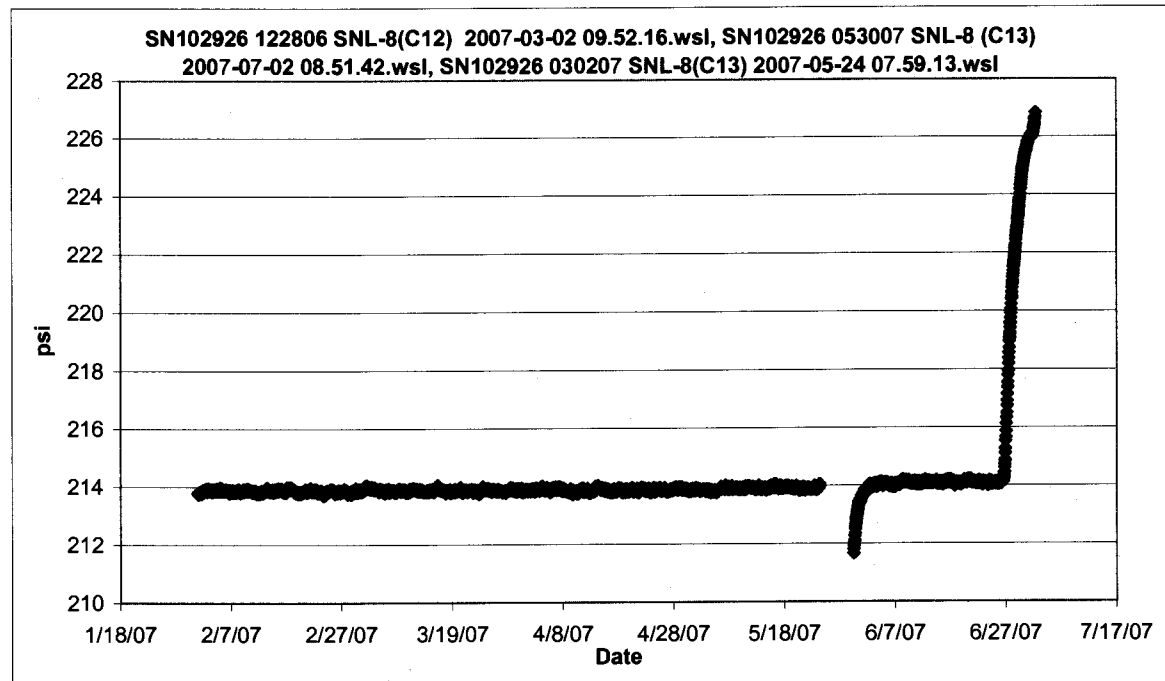
TROLL install. Z (ft BTOC) = 968.3

Troll Files -

SN102926 122806 SNL-8(C12) 2007-03-02 09.52.16.wsl, SN102926 053007 SNL-8 (C13) 2007-07-02 08.51.42.wsl, SN102926 030207 SNL-8(C13) 2007-05-24 07.59.13.wsl

Date/Time	WL (psi)	DTW (ft BTOT)
2/1/2007 0:01	213.8	
2/1/2007 1:01	213.776	
2/1/2007 2:01	213.751	
2/1/2007 3:01	213.802	
2/1/2007 4:01	213.746	
2/1/2007 5:01	213.821	
2/1/2007 6:01	213.809	
2/1/2007 7:01	213.842	
2/1/2007 8:01	213.831	
2/1/2007 9:01	213.778	
2/1/2007 10:01	213.831	
2/1/2007 11:01	213.826	
2/1/2007 12:01	213.809	
2/1/2007 13:01	213.837	
2/1/2007 14:01	213.765	
2/1/2007 15:01	213.777	
2/1/2007 16:01	213.788	
2/1/2007 16:41	213.84	
2/1/2007 17:01	213.815	
2/1/2007 18:01	213.813	
2/1/2007 18:11	213.88	
2/1/2007 19:01	213.804	
2/1/2007 20:01	213.862	
2/1/2007 21:01	213.817	
2/1/2007 22:01	213.808	
2/1/2007 23:01	213.899	
2/2/2007 0:01	213.859	
2/2/2007 1:01	213.865	
2/2/2007 2:01	213.867	
2/2/2007 3:01	213.867	
2/2/2007 4:01	213.867	
2/2/2007 5:01	213.899	
2/2/2007 6:01	213.854	
2/2/2007 7:01	213.883	
2/2/2007 8:01	213.927	
2/2/2007 9:01	213.929	
2/2/2007 10:01	213.935	

Date/Time	PSI	DTW (ft BTOC)	DTW Source	Troll Depth (ft BTOC)	Baro psi	Calc Dens	Average
2/12/2007 12:30	213.837	527.62	W	968.3	12.94	1.0516	1.0515
3/2/2007 9:48	213.91	527.52	S	968.3	13	1.0515	
3/12/2007 7:45	213.915	527.77	W	968.3	13.105	1.0515	
3/28/2007 8:56	213.84	527.48	S	968.3	12.922	1.0514	
4/9/2007 8:05	213.911	527.60	W	968.3	12.991	1.0517	
4/18/2007 10:38	213.858	527.54	S	968.3	12.996	1.0513	
5/7/2007 6:20	213.965	527.51	W	968.3	13.055	1.0514	
5/24/2007 7:59	214.056	527.45	S	968.3	13.073	1.0517	



Information Only