



STATE OF
COLORADO

Ebert - DNR, Jared <jared.ebert@state.co.us>

3rd Quarter GW Monitoring

Joshua Oliver <joliver@brannan1.com>

Mon, Oct 2, 2017 at 9:02 AM

To: "Jared.Ebert@state.co.us" <Jared.Ebert@state.co.us>

Cc: Fred Marvel <fmarvel@brannan1.com>, Alex Schatz <aschatz@brannan1.com>

Mr. Ebert,

For Brannan's Pit 29 (M-1980-183), please find attached the groundwater level monitoring for 3rd quarter 2017.

Thank you,

Joshua Oliver

Environmental Manager



joliver@brannan1.com

O: 303.853.5159 | M: 303.472.1736 | F: 303.853.5233



4 attachments



3rd Quarter GW Monitoring Cover Letter.pdf

45K



MW4 and Reservoir Chart Graph 3rd Quarter 2017.pdf

952K



Piezometer Graph 3rd Quarter 2017.pdf

38K



Piezometers Chart 9-11-17.pdf

31K



August 11, 2017
Colorado Division of Reclamation, Mining and Safety
1313 Sherman St. Room 215
Denver, CO 80203

Re: Pit 29 M-1980-183 Groundwater Level Monitoring

Mr. Jared Ebert:

Please find the attached reservoir, MW-1, MW-2 and MW-4 quarterly readings, in addition to Pit 29 South cell water levels.

MW-4 datalogger monitoring and manual depth to groundwater monitoring continues to verify the functionality of the French drain project, which was completed in 2015 along the southern boundary of the western half of the property.

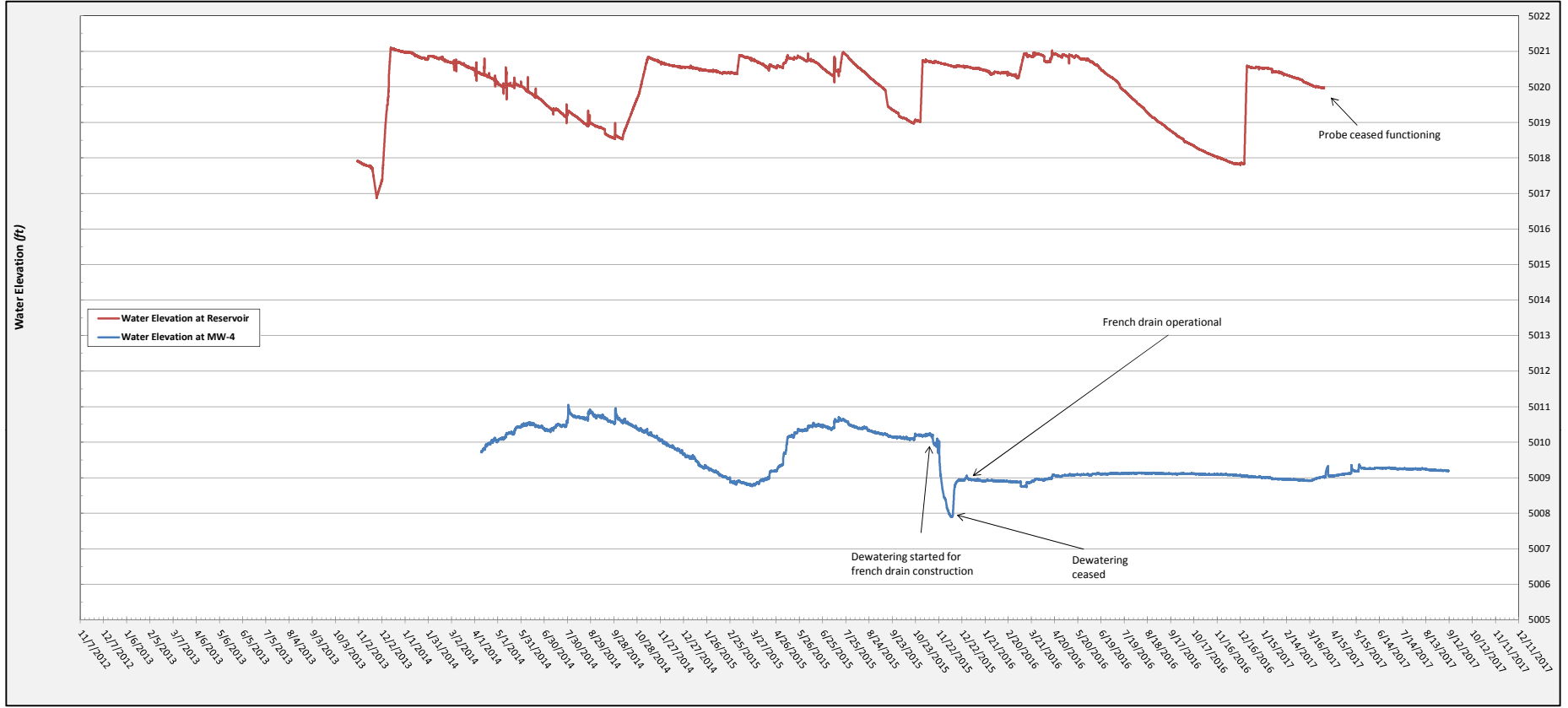
Groundwater level in MW-1 has not fluctuated much this quarter. The groundwater level in MW-2 measured about one foot lower than last quarter, yet appeared stable throughout the quarter. The groundwater level in MW-4 raised about 8 tenths of a foot, after a significant rain event, then dropped back down, further indicating that the French drain was working.

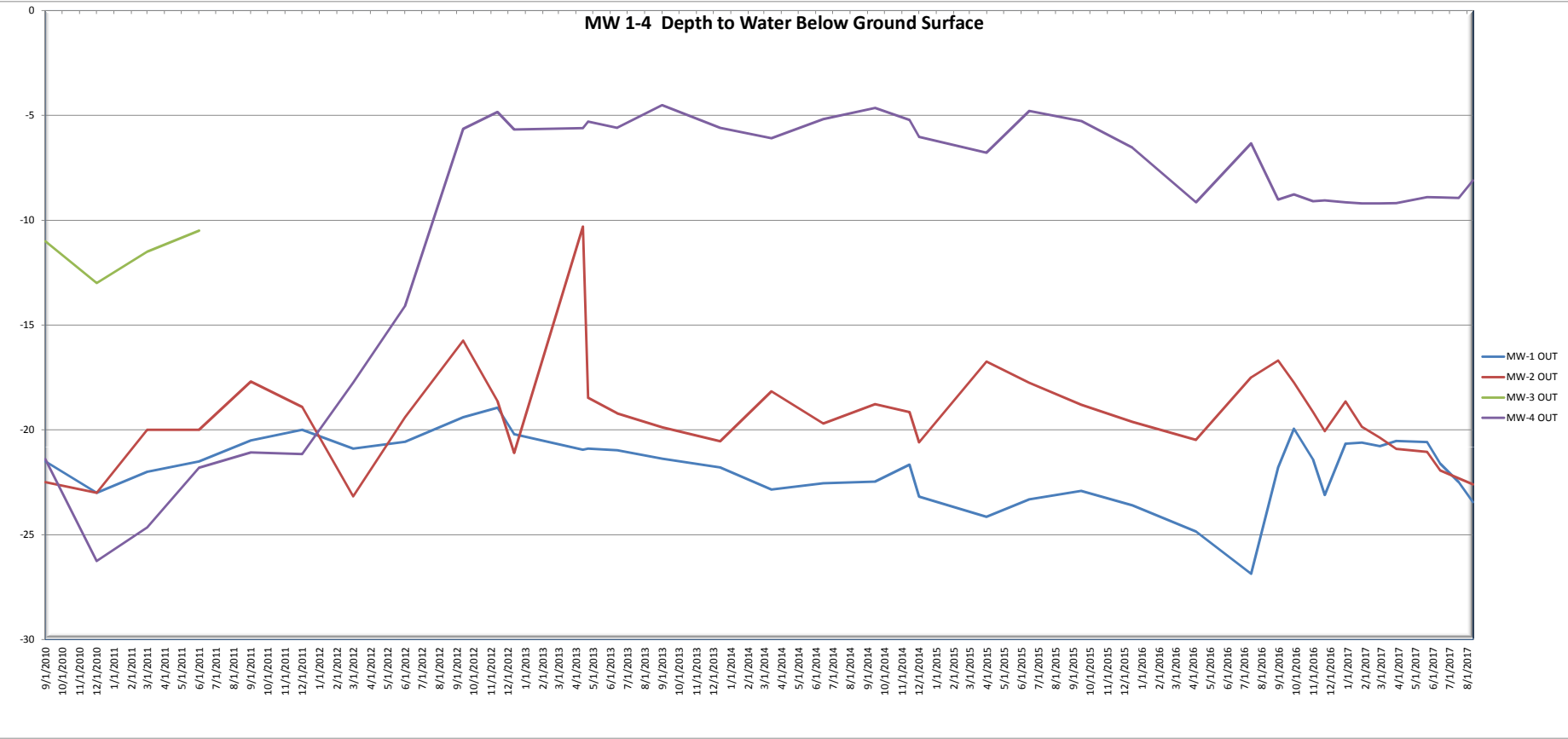
Brannan has not identified any issues during analysis of this data.

Sincerely,

A handwritten signature in black ink that reads "Joshua" followed by a long, horizontal, slightly wavy line.

Joshua Oliver
Environmental Manager
(303) 472-1736
joliver@brannan1.com





Brannan Pit #29

Water Level Measurements

Date Month-Year	Depth to Water (ft)			
	MW-1 OUT	MW-2 OUT	MW-3 OUT	MW-4 OUT
12/1/2005	21.50	22.50	11	NA
1/1/2006	23.00	23.00	13	NA
3/1/2006	22.00	20.00	11.5	NA
5/1/2006	21.50	20.00	10.5	NA
6/1/2010	20.50	17.70	N/A	NA
9/1/2010	20.00	18.90	N/A	21.40
12/1/2010	20.90	23.17	N/A	26.25
3/1/2011	20.57	19.40	N/A	24.66
6/1/2011	19.40	15.74	N/A	21.80
9/1/2011	18.94	18.63	N/A	21.08
12/1/2011	20.20	21.10	N/A	21.15
3/1/2012	20.95	10.30	N/A	17.75
6/1/2012	20.89	18.47	N/A	14.09
9/12/2012	20.97	19.21	N/A	5.64
11/12/2012	-	-	N/A	4.84
12/12/2012	21.79	20.54	N/A	5.67
4/13/2013	22.84	18.16	N/A	5.61
4/22/2013	22.55	19.70	N/A	5.30
6/13/2013	22.48	18.78	N/A	5.60
9/1/2013	21.66	19.15	N/A	4.52
12/13/2013	23.19	20.60	N/A	5.60
3/14/2014	24.15	16.75	N/A	6.09
6/14/2014	23.32	17.76	N/A	5.18
9/14/2014	22.91	18.80	N/A	4.64
11/14/2014	23.60	19.62	N/A	5.22
12/1/2014	24.85	20.48	N/A	6.02
3/31/2015	26.87	17.50	N/A	6.78
6/15/2015	21.79	16.69	N/A	4.79
9/15/2015	19.94	17.75	N/A	5.27
12/15/2015	21.42	19.15	N/A	6.54
4/6/2016	23.11	20.06	N/A	9.15
7/13/2016	20.66	18.64	N/A	6.33
8/30/2016	20.61	19.86	N/A	9.01
9/27/2016	20.78	20.37	N/A	8.77
10/31/2016	20.53	20.91	N/A	9.09
11/21/2016	20.58	21.05	N/A	9.05
12/28/2016	21.61	21.93	N/A	9.15
1/26/2017	22.49	22.31	N/A	9.20
2/27/2017	23.44	22.60	N/A	9.20
3/28/2017	23.35	19.78	N/A	9.19
5/22/2017	21.12	19.25	N/A	8.90
6/14/2017	20.76	18.88	N/A	8.91
7/17/2017	19.68	18.60	N/A	8.94
8/11/2017	19.81	19.5	N/A	8.11
9/11/2017	19.97	19.60	N/A	8.96