PBELAB

SUMMARY REPORT

Cimarex	Project: Assault SWD
600 N. Marinfeld, Ste. 600	Project Number: [none]
Midland TX, 79701	Project Manager: Christine Alderman
SAMPLED: 08/11/17	**REPORTED:** 08/14/17 12:54
RECEIVED: 08-11-201	

LAB #		7H12001-01	7H12001-02	7H12001-03	7H12001-04	7H12001-05	7H12001-06
MATRIX	Minimum	Water	Water	Water	Water	Water	Water
SAMPLE ID	Reporting Limit	9	10	8	7A	7B	7C

General Chemistry Parameters by EPA / Standard Methods (Water)

Total Alkalinity	10.0 mg/L	62.0	65.0	80.0	70.0	62.0	65.0
Carbonate Alkalinity	10.0 mg/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Bicarbonate Alkalinity	10.0 mg/L	62.0	65.0	80.0	70.0	62.0	65.0
Hydroxide Alkalinity	10.0 mg/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Bromide	0.0500 mg/L	0.798	0.757	0.389	0.254	0.205	0.426
Chloride	0.500 mg/L	1620	1480	53.6	49.0	46.6	73.4
Specific Conductance (EC)	5.00 umhos/cm	7750	7580	2410	2390	2350	2390
Dissolved Oxygen	mg/L	6.00 [2]	6.00 [2]	6.00 [2]	6.00 [2]	6.00 [2]	6.00 [2]
pH	pH Units	8.10	8.14	7.82	7.61	7.88	7.92
Temperature	pH Units	21.10	21.10	21.20	21.10	21.40	21.20
Total Dissolved Solids	20.0 mg/L	6290	5480	2330	2190	2170	2190
Sulfate	1.00 mg/L	1720	1640	1180	1110	1120	1130

Total Metals by EPA / Standard Methods (Water)

Calcium	0.0810 mg/L	483 [3]	459 [3]	461 [3]	688 [3]	515 [3]	583 [3]
Magnesium	0.0360 mg/L	187 [3]	168 [3]	26.7 [3]	29.6 [3]	23.9 [3]	30.3 [3]
Potassium	0.0600 mg/L	19.0 [3]	17.6 [3]	6.10 [3]	8.19 [3]	6.03 [3]	7.37 [3]
Sodium	0.0430 mg/L	936 [3]	847 [3]	61.5 [3]	62.4 [3]	47.7 [3]	74.7 [3]
Hardness	10.0 mg/L	1980 [3]	1840 [3]	1260 [3]	1840 [3]	1380 [3]	1580 [3]

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DATA SUBJECT TO CHANGE

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Permian Basin Environmental Lab.

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Cimarex		Project:	Assault SWD
600 N. Marinfeld, Ste. 600		Project Number:	[none]
Midland TX, 79701		Project Manager:	Christine Alderman
SAMPLED: 08/11/17		**REPORTED:**	08/14/17 12:54
RECEIVED: 08-11-201			

LAB #			7H12001-07	7H12001-08	7H12001-09	7H12001-10	7H12001-11	-
MATRIX	Minimum		Water	Water	Water	Water	Water	-
SAMPLE ID	Reporting Limit		7D	12	11	DUP-8	7	-

General Chemistry Parameters by EPA / Standard Methods (Water)

Total Alkalinity	10.0	mg/L	70.0	65.0	75.0	75.0	90.0	-
Carbonate Alkalinity	10.0	mg/L	<10.0	<10.0	<10.0	<10.0	<10.0	-
Bicarbonate Alkalinity	10.0	mg/L	70.0	65.0	75.0	75.0	90.0	-
Hydroxide Alkalinity	10.0	mg/L	<10.0	<10.0	<10.0	<10.0	<10.0	-
Bromide	0.0500	mg/L	0.466	0.849	3.71	0.438	0.268	-
Chloride	0.500	mg/L	82.7	1790	2570	92.7	78.2	-
Specific Conductance (EC)	5.00	umhos/cm	2410	8260	9050	2400	2750	-
Dissolved Oxygen		mg/L	6.00 [2]	6.00 [2]	6.00 [2]	6.00 [2]	6.00 [2]	-
pH		pH Units	7.88	8.08	7.84	7.89	7.91	-
Temperature		pH Units	21.20	21.20	21.20	21.40	21.50	-
Total Dissolved Solids	20.0	mg/L	2200	5970	6930	2260	2510	-
Sulfate	1.00	mg/L	1130	1890	1780	1120	1320	-

Total Metals by EPA / Standard Methods (Water)

Calcium	0.0810	mg/L	569 [3]	575 [3]	597 [3]	560 [3]	683 [3]	-
Magnesium	0.0360	mg/L	31.4 [3]	232 [3]	147 [3]	29.7 [3]	41.2 [3]	-
Potassium	0.0600	mg/L	7.45 [3]	23.6 [3]	23.5 [3]	7.38 [3]	7.86 [3]	-
Sodium	0.0430	mg/L	77.5 [3]	1120 [3]	1580 [3]	73.7 [3]	78.6 [3]	-
Hardness	10.0	mg/L	1550 [3]	2390 [3]	2100 [3]	1520 [3]	1880 [3]	-

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SUMMARY REPORT

1400 Rankin Hwy
Midland, Tx 79701
Phone: 432-686-7235

Cimarex	Project: Assault SWD
600 N. Marinfeld, Ste. 600	Project Number: [none]
Midland TX, 79701	Project Manager: Christine Alderman
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Special Notes

1 = Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).

2 = The Laboratory is not NELAC Certified for this analyte or analysis.

3 = Certification in process for this analyte.

4 = The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

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