



*Environmental Chemical Corporation  
33 Boston Post Road West, Suite 340  
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3 March 2010  
ECC Job No. 5564.001

**TO:** Mr. Todd Bober, RPM

**LOCATION:** BRAC PMO NE

**FROM:** Bob Phinney, Plant Operator

**LOCATION:** ECC–NAS Brunswick

**SUBJECT:** Monthly Operations Report for 1-31 January 2010  
Groundwater Extraction and Treatment System, Building 50  
Naval Air Station Brunswick, Maine  
Contract No.N40085-09-D-7035, Task Order No. 0002

The following is the January 2010 monthly operations report for the Groundwater Extraction and Treatment System (GWETS) located at Naval Air Station Brunswick, Maine. There was no overflow discharge to the Brunswick Sewer District collection system during this period.

Table 1 summarizes the GWETS process flow data and results of the daily in-plant water quality analysis. Table 2 provides a summary of daily individual extraction well pumping performance as well as monthly pumping efficiency during the reporting period. Table 3 provides the monthly laboratory analytical results for the Eastern Plume influent and GWETS effluent samples. Table 4 summarizes the quarterly laboratory analytical results for influent and emission air samples collected from the vapor-phase granular activated carbon (GAC) vessels.

The GWETS treatment plant was operational for 98.48 % of the available hours during January 2010. Well performance based on well system capacity (all 4 wells) was 87.40%. There were two operational interruptions or corrective actions necessary to restore plant operations during January 2010 due to power outages on 07 January 2010 (3.4 hrs.) and 13 January 2010 (0.1 hrs.). On 04 January 2010 the GWETS was down (7.8 hrs.) due to a mechanical problem with HiPOx unit.

All nine infiltration gallery sub-distribution cells were receiving GWETS effluent during January 2010.

The combined treatment plant influent flow from Eastern Plume groundwater extraction wells EW-01, EW-02A, EW-04, and EW-05B averaged approximately 35.9 gpm through 31 January 2010.

Activities performed during January 2010 included:

- Performed routine cleaning, calibration, and equipment maintenance activities;
- Prepared and submitted monthly operations report;
- Performed monthly safety inspections of fire extinguishers and building equipment;
- Conducted quarterly sampling;
- Completed HiPOx pilot study sampling;
- Completed Sites 1 & 3 water level gauging;
- Replaced battery UPS For VFD's; and
- Kept all exits clear of snow and ice.

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I certify by my signature affixed that I have personally examined the information contained herein, and based on my inquiry of those individuals immediately responsible for obtaining and providing the information, I further certify that the information contained herein is true, accurate, and complete.



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Robert Phinney  
MEDEP Wastewater Operator No. 626

3 March 2010

Date

cc: BRAC PMO NE (P. Burgio)  
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TtNUS (L. Klink, J. Orient)  
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**Table 1**  
**Summary of Treatment System**  
**Process Flow and In-Plant Water Quality**  
**Groundwater Extraction and Treatment System (Building 50)**  
**Naval Air Station Brunswick, Maine**

<b>Date</b>	<b>Turbidity</b>	<b>Daily Flow <sup>(c)</sup></b>	<b>pH</b>
January 2010	NTU	Gallons	Standard Units
1	(a)	46,065	(a)
2	(a)	46,065	(a)
3	(a)	46,065	(a)
4	0.2	35,024	6.59
5	0.1	38,410	6.61
6	0.12	53,829	6.64
7	0.21	54,647	6.61
8	0.22	50,898	6.63
9	(a)	50,898	6.66
10	(a)	54,252	6.62
11	0.01	52,913	6.65
12	0.12	53,576	6.66
13	0.07	53,543	6.64
14	0.01	53,480	6.62
15	0.13	53,358	6.62
16	(a)	53,042	6.63
17	(a)	52,312	6.62
18	(a)	52,255	6.66
19	0.7	56,940	6.62
20	0.23	52,574	6.63
21	0.13	52,085	6.62
22	0.1	52,121	6.62
23	(a)	51,690	6.57
24	(a)	51,953	6.57
25	0.19	51,990	6.56
26	0.21	51,030	6.58
27	(a)	50,942	6.54
28	0.41	51,788	6.52
29	0.32	51,465	6.56
30	(a)	51,253	6.54
31	(a)	50,195	6.52
Monthly Average pH (standard units) 6.60			
Monthly Process Flow Total (gallons) 1,576,658			
Monthly VOCs Removed (pounds) 2.95 lbs (b)			
<b>Notes:</b>			
(a) Weekend/Holiday/Operator not present.			
(b) Based in most recent (January 2010) quarterly composite influent VOC sample.			
(c) Daily flow estimated on pump run times and flow history.			

**Table 2**  
**Summary of Extraction Well Performance**  
**Groundwater Extraction and Treatment System (Building 50)**  
**Naval Air Station Brunswick, Maine**

DATE	EW-01			EW-02A			EW-04			EW-05B		
	Flow Rate GPM	Run Time Hours	Total Pumpage Gallons	Flow Rate GPM	Run Time Hours	Total Pumpage Gallons	Flow Rate GPM	Run Time Hours	Total Pumpage Gallons	Flow Rate GPM	Run Time Hours	Total Pumpage Gallons
January 1	10.0	24.0	14400.0	14.0	24.0	20160.0	15.0	24.0	21600.0	15.0	24.0	21600.0
2	10.0	24.0	14400.0	14.0	24.0	20160.0	15.0	24.0	21600.0	15.0	24.0	21600.0
3	10.0	24.0	14400.0	14.0	24.0	20160.0	15.0	24.0	21600.0	15.0	24.0	21600.0
4	10.0	16.2	9716.3	14.0	16.2	13602.9	16.0	16.2	15545.6	15.0	16.2	14573.0
5	10.0	24.0	14389.3	14.0	24.0	20145.1	16.0	24.0	23022.9	15.0	24.0	21584.0
6	10.0	24.0	14390.2	14.0	24.0	20146.2	16.0	24.0	23024.3	15.0	24.0	21585.3
7	10.0	20.6	12347.2	14.0	20.6	17286.0	16.0	20.6	19755.5	15.0	20.6	18520.8
8	10.0	24.0	14390.2	14.0	24.0	20146.2	17.0	24.0	24463.3	15.0	24.0	21585.3
9	10.0	24.0	14390.2	14.0	24.0	20146.0	16.0	24.0	23024.0	15.0	24.0	21585.0
10	10.0	24.0	14390.2	14.0	24.0	20146.2	16.0	24.0	23024.3	15.0	24.0	21585.3
11	10.0	24.0	14390.2	14.0	24.0	20146.2	16.0	24.0	23024.3	15.0	24.0	21585.3
12	10.0	24.0	14390.3	14.0	24.0	20146.5	15.0	24.0	21585.3	15.0	24.0	21585.3
13	10.0	23.9	14366.2	14.0	23.9	20112.6	16.0	23.9	22985.9	15.0	23.9	21549.3
14	10.0	24.0	14390.2	14.0	24.0	20146.2	16.0	24.0	23024.0	15.0	24.0	21585.0
15	10.0	24.0	14390.2	14.0	24.0	20146.2	16.0	24.0	23024.3	15.0	24.0	21585.3
16	10.0	24.0	14390.2	14.0	24.0	20146.2	15.0	24.0	21585.3	15.0	24.0	21585.3
17	10.0	24.0	14388.8	14.0	24.0	20144.4	16.0	24.0	23022.1	15.0	24.0	21583.3
18	10.0	24.0	14390.0	14.0	24.0	20146.0	15.0	24.0	21585.0	15.0	24.0	21585.0
19	10.0	24.0	14390.0	14.0	24.0	20146.0	16.0	24.0	23024.0	15.0	24.0	21585.0
20	10.0	24.0	14390.2	14.0	24.0	20146.2	16.0	24.0	23024.3	15.0	24.0	21585.3
21	10.0	24.0	14390.0	14.0	24.0	20146.2	16.0	24.0	23024.3	15.0	24.0	21585.3
22	10.0	24.0	14390.2	14.0	24.0	20146.2	15.0	24.0	21585.3	15.0	24.0	21585.3
23	10.0	24.0	14386.0	14.0	24.0	20140.4	15.0	24.0	21579.0	15.0	24.0	21579.0
24	10.0	24.0	14390.0	14.0	24.0	20146.0	15.0	24.0	21584.8	15.0	24.0	21584.8
25	10.0	24.0	14387.8	14.0	24.0	20143.0	15.0	24.0	21581.8	15.0	24.0	21581.8
26	10.0	24.0	14390.0	14.0	24.0	20146.0	15.0	24.0	21585.0	15.0	24.0	21584.8
27	10.0	24.0	14390.2	14.0	24.0	20146.2	15.0	24.0	21585.3	15.0	24.0	21585.3
28	10.0	24.0	14390.0	14.0	24.0	20146.0	15.0	24.0	21585.0	15.0	24.0	21585.0
29	10.0	24.0	14390.0	14.0	24.0	20146.0	15.0	24.0	21585.0	15.0	24.0	21585.0
30	10.0	24.0	14390.0	14.0	24.0	20146.0	15.0	24.0	21585.0	15.0	24.0	21585.0
31	10.0	24.0	14390.2	14.0	24.0	20146.2	15.0	24.0	21585.0	15.0	24.0	21585.3
TOTALS		732.29	439,374		732.29	615,124		732.29	681,409		732.29	659,059

EXPECTED WELL GPM	10.0	15.0	25.0	15.0
EFFECTIVENESS OF WELL	<b>98.4%</b>	<b>91.9%</b>	<b>61.1%</b>	<b>98.4%</b>
MONTH AVERAGE GPM	10.0	14.0	15.5	15.0

**PERFORMANCE BASED ON WELL SYSTEM CAPACITY (all four wells): 87.4%**

**Table 3**  
**Summary of Analytical Results**  
**Treatment System Influent and Effluent**  
**Samples Collected on 5 January 2010**  
**Groundwater Extraction and Treatment System (Building 50)**  
**Naval Air Station Brunswick, Maine**

Parameter <sup>(a)</sup>	Method	Result	Treatment Plant Duplicate	Discharge Limit <sup>(b)</sup>	MEG (ppb)	MCL (ppb)
<b>EASTERN PLUME INFLUENT</b>						
1,1,1-Trichloroethane	EPA8260B	74.4	NR	NA	200	200
1,1-Dichloroethane	EPA8260B	17.3	NR	NA	70	NA
1,1-Dichloroethene	EPA8260B	39.2	NR	NA	0.6	7
<i>cis</i> -1,2-Dichloroethene	EPA8260B	8.3	NR	NA	70	70
<i>trans</i> -1,2-Dichloroethene	EPA8260B	(<1.0 U)	NR	NA	140	100
Methylene chloride	EPA8260B	(<2.0 U)	NR	NA	47	5
Tetrachloroethene	EPA8260B	4.0	NR	NA	7	5
Trichloroethene	EPA8260B	79.7	NR	NA	32	5
Vinyl chloride	EPA8260B	(<1.0 U)	NR	NA	0.2	2
1,4-Dioxane	EPA8260B/SIM	25.7	NR	NA	32	NA
Arsenic, Total	EPA6010B	2.0 J	NR	NA	10	10
Iron, Total	EPA6010B	542	NR	NA	NA	NA
Manganese, Total	EPA6010B	48.9	NR	NA	500	*300
<b>TREATMENT PLANT EFFLUENT</b>						
Arsenic, Total	EPA6010B	(<10.0 U)	(<10.0 U)	50	10	10
Chromium, Total	EPA6010B	(<10.0 U)	(<10.0 U)	10	40	100
Cyanide, Total	EPA9010	(<10.0 U)	(<10.0 U)	34	140	200
Nickel, Total	EPA6010B	(<40.0 U)	(<40.0 U)	78	140	*100
Lead, Total	EPA6010B	(<5.0 U)	(<5.0 U)	15	10	15
Zinc, Total	EPA6010B	1.5 J	(<200 U)	200	2000	*2000
Iron, Total	EPA6010B	(<100 U)	(<100 U)	NA	NA	NA
Manganese, Total	EPA6010B	(<15.0 U)	(<15.0 U)	NA	500	*300
1,1,1-Trichloroethane	EPA8260B	0.93 J	1.0	750	200	200
1,1-Dichloroethane	EPA8260B	(<1.0 U)	(<1.0 U)	94	70	NA
1,1-Dichloroethene	EPA8260B	(<1.0 U)	(<1.0 U)	7	0.6	7
<i>cis</i> -1,2-Dichloroethene	EPA8260B	(<1.0 U)	(<1.0 U)	70 <sup>(c)</sup>	70	70
<i>trans</i> -1,2-Dichloroethene	EPA8260B	(<1.0 U)	(<1.0 U)	--	140	100
Methylene chloride	EPA8260B	(<2.0 U)	(<2.0 U)	5	47	5
Tetrachloroethene	EPA8260B	(<1.0 U)	(<1.0 U)	5	7	5
Trichloroethene	EPA8260B	(<1.0 U)	(<1.0 U)	5	32	5
Vinyl chloride	EPA8260B	(<1.0 U)	(<1.0 U)	2	0.2	2
1,4-Dioxane	EPA8260B/SIM	(<1.0 U)	(<1.0 U)	NA	32	NA

(a) Results reported in µg/L.

(b) Maximum effluent discharge limit established by Brunswick Sewer District Draft Permit (Dec. 1994).

(c) Combined 1, 2-dichloroethane (*cis* and *trans*) not to exceed 70 µg/L.

\* - EPA Health Advisory

NOTE: EPA = U.S. Environmental Protection Agency.

D = Analysis conducted at a secondary dilution factor.

NR = Analysis not required.

NA = Discharge limit applicable to treatment plant effluent only.

B = Compound also detected in associated method blank.

NS = Not Sampled

SIM = Selective Ion Monitoring

U = Not detected. Sample quantitation limits are shown as (<\_\_U).

Trip blank (TP-173-QT1) results for EPA Method 8260B/SIM and EPA Method 8260B were non-detect.

**Table 4**  
**Summary of Analytical Results for Vapor-Phase Granular Activated Carbon**  
**Air Samples Collected on 04 January 2010**  
**Groundwater Extraction and Treatment System (Building 50)**  
**Naval Air Station, Brunswick, Maine**

Parameter	Method <sup>(a)</sup>	Result <sup>(b)</sup>	Detection Limit
<b>ACTIVATED CHARCOAL FILTER INFLUENT</b>			
1,1,1-Trichloroethane	EPA TO-15	39.7	0.20
1,1-Dichloroethane	EPA TO-15	5.0	0.20
1,1-Dichloroethene	EPA TO-15	1.5	0.20
<i>cis</i> -1,2-Dichloroethene	EPA TO-15	0.24	0.20
<i>Trans</i> -1,2-Dichloroethene	EPA TO-15	(< 0.2 U)	0.20
Tetrachloroethene	EPA TO-15	0.17 J	0.20
Trichloroethene	EPA TO-15	1.4	0.20
Vinyl chloride	EPA TO-15	(< 0.2 U)	0.20
<b>ACTIVATED CHARCOAL FILTER EMISSION</b>			
1,1,1-Trichloroethane	EPA TO-15	(< 0.2 U)	0.20
1,1-Dichloroethane	EPA TO-15	(< 0.2 U)	0.20
1,1-Dichloroethene	EPA TO-15	(< 0.2 U)	0.20
<i>cis</i> -1,2-Dichloroethene	EPA TO-15	(< 0.2 U)	0.20
<i>Trans</i> -1,2-Dichloroethene	EPA TO-15	(< 0.2 U)	0.20
Tetrachloroethene	EPA TO-15	(< 0.2 U)	0.20
Trichloroethene	EPA TO-15	(< 0.2 U)	0.20
Vinyl chloride	EPA TO-15	(< 0.2 U)	0.20
<p>(a) Analysis of air is by EPA Method Total Organics (TO)-15, a gas chromatograph/mass spectrometry full scan analysis.</p> <p>(b) Results reported in parts per billion by volume (ppb<sub>v</sub>).</p> <p>NOTE: EPA= U.S. Environmental Protection Agency.  ND = Not detected.  Influent air sample collected just prior to influent entering the vapor phase activated charcoal filters.  Emission air sample collected after filtration by both vapor-phase granular activated carbon vessels.  Laboratory blank sample results for EPA Method TO-15 were non-detect.</p>			