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BASE REALIGNMENT AND CLOSURE
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Ser 08-147
June 5, 2008

Mr. Michael J. Daly
Remedial Project Manager
Federal Facilities Superfund Section
U.S. Environmental Protection Agency (EPA)
1 Congress Street, Suite 1100 (HBT)
Boston, MA 02114-2023

Ms. Claudia Sait
Remedial Project Manager
Maine Department of Environmental Protection (MEDEP)
Bureau of Remediation and Waste Management
17 State House Station
Augusta, ME 04333-0017

Dear Mr. Daly and Ms. Sait:

**SUBJECT: RESPONSES TO COMMENTS ON DRAFT SITES 1 & 3,
EASTERN PLUME MONITORING EVENT 30 REPORT, APRIL
2007, NAVAL AIR STATION (NAS) BRUNSWICK, MAINE**

Enclosed you will find the Navy Responses to Comments (RTCs) on Sites 1 & 3, Eastern Plume Monitoring Event 30 Report, April 2007, Naval Air Station (NAS) Brunswick, Maine. These are provided for your review/concurrence.

If you have any questions or comments, please contact the Navy's Remedial Project Manager, Todd Bober at (215) 897-4911.

Sincerely,

A handwritten signature in cursive script that reads "Paul F. Burgio".

Paul F. Burgio
BRAC Environmental Coordinator
By direction of BRAC PMO

Enclosure:

Responses to Comments on Draft Sites 1 & 3, Eastern Plume Monitoring
Event 30 Report, April 2007, NAS Brunswick, Maine

Copy to:

MEDEP (C. Evans)

Gannet-Fleming (D. McTigue)

NASB (L. Joy, M. Fagan)

Lepage Environmental (C. Lepage)

BRAC PMO Northeast (P. Burgio)

NAVFAC MIDLANT (T. Bober)

NAVFAC ATLANTIC (A. Van Dercook, B. Capito, D. Barclift)

TiNUS (L. Klink, A. Ostrofsky)

ECC (A. Easterday, G. Calderone, C. Guido, J. Kiker)

Copy to: (w/o encl)

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RAB Brunswick Representative (S. Johnson)

RAB Harpswell Representative (D. Chipman)

MRRA (V. Boundy)

**Responses to Comments Provided by the State of Maine
Environmental Protection Agency on the
Sites 1&3 Eastern Plume Monitoring Event 30 (April 2007) Report, August 2007
Naval Air Station, Brunswick, Maine**

Reviewer: Ms. Claudia Sait, MEDEP Project Manager
Date: October 29, 2007
Respondent: Navy
Date: June 6, 2008

Comment #	Location	Comment	Response
1	General	The data for Monitoring Event (ME) 30 are generally consistent with previous rounds; notable exceptions are included in the specific comments below. The Spring 2007 monitoring event followed an stakeholder approved list of wells and test methods generally following the long term monitoring plan finalized in 2000, with modifications for recent trends in the data and for 1,4 dioxane. This review of ME-30 has been prepared concurrently with the ME29 review, so identical comments will not be repeated here in full.	Noted.
2	General	The most significant finding of this monitoring event is that for the second time bedrock MW-308 had VOC concentration above the Maine Maximum Exposure Guidelines (MEGs) and the Maximum Contaminant Levels (MCLs), which warrants changing it from annual monitoring to semi annual monitoring (twice yearly). MEDEP anticipates continued discussion on this topic at the December Technical Meeting.	Concur. Findings at bedrock MW-308 were discussed at the December technical meeting along with a special meeting held in Portland, Maine on 28 February 2008. The Navy is currently developing a workplan to address this area in conjunction with EPA and MEDEP on this topic.
3	General	In general, MEDEP found the new report format acceptable and an improvement over the previous reports. MEDEP suggests that the text description for well results would be more informative if it makes note of first detections, historic high detections, or other notable aspects of the results.	Agree. Future reports will include first detections and historic high detections.
4	General	Based on the Sites 1&3 Analytical Data Quality Review (ADQR) in Appendix D, all samples were qualified as needed and no systematic errors were apparent. The Eastern Plume ADQR also indicated generally acceptable quality control except that sediment data were qualified due to poor reproducibility of 15 of 23 field duplicate results. Were low percent solids a factor in the duplicate results?	The Field Duplicate (FD) precision in the sample collected from sediment location SED-11 did have numerous exceedances of the FD precision criteria for metals and one pesticide. As the detections of metals and the pesticide with FD precisions exceedances were mostly greater than the method reporting limit, adequate contaminant mass was introduced into the analytical instrumentation to produce a response. Therefore the poor FD precision is most likely attributed to sample heterogeneity.

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			<p>Please note that the percent solids (%S) requirement would generally only impact non-detect values or very low-values for detections. The %S criteria in the data validation protocols is used to evaluate whether sufficient contaminant mass could be introduced into the analytical instrumentation to provoke an analytical signal. The analytical methods are developed based upon a detecting for contaminants within a given sample mass, and the method detection limits are set up to test for the lowest analytical signal from that sample mass. The %S criterion is a means of evaluating samples to ensure adequate sample mass for solids is provided such that an analytical signal representative of the contaminant found in the solids is achievable by the analytical method protocols. This ensures that samples with high moisture content do not result in a false negative for a sample that is considered a solid.</p> <p>Another consideration from a risk-assessment perspective is what %S correction does to the issue of media exposure. Receptors would be exposed to the media as is without any modifications to compensate for low %S, as required by the Sediment Sampling SOP of the NASB QAPP. Compensation for %S may show that receptor exposure is greater than it actually is from the uncompensated media.</p>
5	General	<p>During its review of locations in the northern lobe of the Eastern Plume, MEDEP was not able to locate a soil or well installation log for MW-NASB-212. During review of the data for Site 1&3, a soil or well log could not be located for MW-2101. If Navy has a reference for locating this information or has the information, MEDEP would appreciate it being included in the response to comment.</p>	<p>These two monitoring well boring logs are not in the Well Book, the attached information is what is available on these wells.</p>
6	General	<p>With the separating of the Sites 1 and 3 from the Eastern Plume, a conceptual model of the groundwater plume boundary will need to be developed for the monitoring reports.</p>	<p>The Navy included working copy plume boundary maps in the Final LTMP for Sites 1 and 3 (issued date February 2008) The "working-draft" Figures provided in the LTMP were provided for the distribution of metals (separately) and total VOCs. However, there is not much consistency in the contaminant distribution to generate a meaningful Plume boundary lines for each monitoring event report. The Navy suggests that this topic is further discussed to understand the meaning and need for a Plume boundary in upcoming Monitoring Event Reports.</p>

Comment #	Location	Comment	Response
7	Section 2.4.1, Table B-1	<p>a.) MW-216A – The text should also note that this is the first sample since 1998, yet the contaminant distribution is very similar to 9 years ago. This suggests that dechlorination was significant prior to the installation of the cap, but that conditions have stabilized or stalled at vinyl chloride in this vicinity.</p> <p>b.) MW-217B – MEDEP agrees that the inorganic trends cannot be evaluated without consideration of the turbidities associated with each round of sampling.</p> <p>c.) MW-2101 – The data for this round were historic high concentrations for aluminum, cadmium and chromium at this well, and were exceedences of criteria for cadmium and chromium. Turbidities were less than 1 and groundwater elevations were within historic levels, so there is no obvious factor to point out as a cause for the increases. MW-2101 serves as the upgradient well for Sites 1&3, and these results are a significant spike from historic results. The addition of this well to the fall sampling round is warranted, rather than waiting for a year to confirm these results.</p> <p>d.) MW-1300 wells - The 3rd round of data from the 1300 series wells is consistent with the previous two, indicating that a few chlorinated VOCs and several inorganics are the main concerns in groundwater downgradient of the gap in the slurry wall. The VOCs are not typically found in the outlying wells closer to Mere Brook, suggesting that either the VOCs attenuate or some flowpaths are not monitored. Splitting the Eastern Plume and Sites 1&3 will allow greater focus on the extent of groundwater impacts at the landfills.</p>	<p>a) Noted. The text will note that this is the first sample since 1998 and that since installation of the cap, the conditions have stabilized or stalled at vinyl chloride in the vicinity of MW-216AA.</p> <p>b) Concur.</p> <p>c) Noted. In accordance with the Final LTMP (ECC February 2008), MW-2101 will be sampled twice a year in the spring and the fall. This MW was sampled in April 2008, and it will be sampled in Fall 2008.</p> <p>d) Concur. The splitting of the Eastern Plume and Sites 1&3 reports in April 2008 will allow for greater focus on the groundwater impacts at the landfills.</p>
8	Section 2.4	Surface water data indicates several inorganics exceed screening criteria, indicating leachate from the landfills is impacting Mere Brook to some extent. Stakeholders should consider whether the data indicate a need for any additional measures, this topic should be discussed at a technical meeting when the fish tissue study report is completed.	Surface water data will be discussed during the next technical meeting as well as the fist tissue study. EPA fish study results will be discussed at an upcoming technical meeting, once the results are available.
9	Section 2.4.3	Two seeps had notable detections this round. Seep-4 data had historic high detections of lead and nickel, and field sheets indicate turbidity was not a factor. Chromium, arsenic and vanadium were also elevated this round. Seep-9 had elevated levels of several of these same metals, after spiking to historic high concentrations in ME-29. The new monitoring wells have elevated concentrations of many of the same inorganics, but with only three rounds of data it is unclear whether the levels are unusually high. The remedy for Sites 1 & 3 has been in place since 1995. It is time to assess whether the remedy has been effective in reducing contamination from reaching Mere Brook. MEDEP suggests that the Navy be prepared to discuss this at the upcoming December Technical Meeting.	<p>Concur. The remedy for Sites 1 & 3 will be assessed to determine the effectiveness in reducing contamination from reaching Mere Brook.</p> <p>The remedy effectiveness for the Sites 1 and 3 landfill will be addressed during the upcoming third 5-year review.</p>

Comment #	Location	Comment	Response
10	Table 1-1, Table 1-3, and Figures 1-2, 1-3, 1-4, and 1-5	Based on the tables, water levels and analytical samples were collected for the "1300" series wells this round, please add those locations and elevations to the figures.	Concur. The "1300" series wells will be added to the tables and figures.
11	Section 2.5.1 Figure 1-4	A synoptic round of water levels including any of the wells available near the infiltration gallery would improve the definition of the potentiometric surface, currently based on only three locations east of the GWETS. The Navy should complete this during the spring 2008 monitoring event, or confirm whether there are or are not any additional locations that could be added for a single event. The data would provide assurance that MW-1104 is sufficient for monitoring water quality downgradient of the GWETS.	<p>Noted. In the Fall 2008 LTMP sampling event synoptic gauging of MW-1101A (in the center of the GWETS infiltration gallery), MW-403 (Southwest of the GWETS infiltration gallery), MW-1104 (South of the GWETS), and MW-NASB-90 (East of the GWETS) will be gauged. Alternatively back up gauging locations are the following: MW-401 and MW-405, which are South of the GWETS.</p> <p>In addition, monitoring wells, MW-403, MW-NASB-90, MW-401, and MW-405 have not been previously gauged as part of the LTMP. In Fall 2008 these wells, will be located, accessed, and determined if usable for additional gauging points.</p>
12	Section 2.5.2	<p>a.) MW-205 – Please update the text, this well was sampled in ME30, and again exceeded the MEG for TCE (12.8 µg/L). Concentrations here have remained steady since 2004.</p> <p>b.) MW-224 – Please move the discussion for this well to the previous section for shallow wells.</p> <p>c.) MW-225A and MW-306 – These two wells at the trailing edge of the plume have both rebounded in this event after declining to historically low or non-detect levels in 2005 and 2006. The cause of the fluctuations is unclear, but at a minimum indicates there is still a residual VOC mass flushing out of the lower sand on the western edge of the plume.</p> <p>d.) MW-308 – The detections here are significant and were discussed during the October 2007 Technical Meeting. It was important that the report noted that this is a bedrock location. Please also note that the ME-28 round also exceeded the MCL/MEG for 1,1 DCE in addition to TCE and that MW-308 is sampled annually therefore was not sampled during ME-29. MEDEP appreciates that the Navy collected a low flow sample from this well in October 2007 and MEDEP will be interested in the analytical results, when they are available. MEDEP disagrees that the data for ME-30 are conclusive as a concentration decline, as the ME-28 data are for low-flow samples, and ME-30 was a passive diffusion bag (PDB) sample. Navy must demonstrate that the two methods provide equivalent values at this well before MEDEP will concur with any trend evaluation. The placement of the pump intake and of the PDB will be particularly important considerations here.</p>	<p>a) Concur. The text will be updated to state that the MW-205 was sampled in ME30 and that concentrations have remained steady since 2004.</p> <p>b) Concur. MW-224 will be moved to the previous section for shallow wells.</p> <p>c) Noted. The data from these wells will be continued to monitor to determine levels of VOCs.</p> <p>d) Noted. See table below for the MW-308 VOC sample detections (including 1,4 Dioxane) for ME-28 through ME-32. During ME-31 low-flow sampling was once again used to sample MW-308. Comparing the ME-31 VOC detections to the ME-28 VOC detections shows there is a decline in CVOC levels.</p> <p>Please note during low-flow sampling the pump is place mid-screen (5 feet mark well-screen), but during PDB sampling at MW-308 the PDB bag is placed in the deep interval (8-10 feet mark on well-screen). During the April 2008 LTM, MW-308 was sampled per the LTMP, which requires PDB at the deep interval and low-flow sampling for 1,4 dioxane.</p>

Comment #	Location	Comment	Response
		<p>e.) MW-313 – Concentrations rebounded here this round, the Mere Brook investigation data will improve our understanding of VOC migration in this portion of the plume.</p> <p>f.) MW-334 – The data at this location represent the first significant detection of VOCs at this well, further evidence that plume migration continues south and east. 1,4 Dioxane was also detected in ME30 at 12 µg/L. Depiction of the plume boundary on Figures 1-2, 1-3, and 2-2 must be revised to extend to MW-334 based on the data for ME-30. Future monitoring of this well twice per year as proposed in the latest LTMP is clearly warranted.</p>	<p>As additional groundwater data is collected at MW-308, the low-flow sampling results will be graphed separately from the PDB results for trend evaluation. MW-308 is currently sampled twice a year for VOCs using PDB (deep) and 1,4-Dioxane using low-flow sampling techniques.</p> <p>e) Noted. The Mere Brook investigations will add to the understanding of VOC migration in this portion of the plume.</p> <p>f) Noted. The plume boundary will be revised to extend to MW-334 based on the data for ME30.</p>
13	MW-339 Table B-6	The value for methylene chloride should not be included in the TVOC calculation for this location, please revise.	Concur. Table B-6 will be updated to not include methylene chloride.
14	Appendix F	MEDEP is pleased to see that the repairs were completed to GV-14 and that the surface drains were cleared of debris reported in ME-29.	Noted.
15	Section 3.1	<p>a.) Bullet 1, last sentence: MEDEP suggests revising the text addressing MW-308 to read “... <i>indicates VOC movement into bedrock at the eastern boundary of the plume.</i>” MEDEP agrees this data warrants discussion at the technical meeting, as it represents a change to the conceptual model for the plume. As noted in ME-29, MEDEP generally supports the approach proposed in the Recommendation.</p> <p>b.) Bullet 2: MEDEP looks forward to discussion of the data for the Mere Brook locations when it is available.</p> <p>c.) Bullets 3 & 4: Please see MEDEP’s comments from ME-29. Also, please clarify what impact Navy anticipates the Background Study will have on evaluation of the GWETS.</p>	<p>a) Concur. Text will be revised to read, “...indicates VOC movement into the bedrock at the eastern boundary of the plume.”</p> <p>b) Noted.</p> <p>c) Noted. Bullet three pertains to the effectiveness of the Sites 1&3 RA. This was discussed in brief during the December 2007 Technical Meeting and the MEDEP mentioned the concern for potential data gaps downgradient of Landfill 1 and 3. It is recommended that the Technical Evaluation Group further discuss this topic.</p> <p>Bullet four pertains to the effectiveness of the hydraulic control over the Eastern Plume. The pending groundwater model and improvements to the monitoring of the plume’s leading edge will improve stakeholders’ understanding of the hydraulic</p>

Comment #	Location	Comment	Response
		<p>d.) Bullet 5: As previously stated MEDEP supports the optimization of the EW-1 location, and suggests that Navy propose a timetable to evaluate this option.</p> <p>e.) Bullet 6: Please see previous comments on MW-308, MEDEP agrees the data are very significant. Please note the ME-28 1,1 DCE detection in the text. MEDEP believes this location must be sampled twice per year until concentrations are stable. MEDEP also suggests evaluating shallow, mid and deep intervals to determine the optimum PDB placement, and possibly using low- flow and PDB methods concurrently to see if they correlate.</p>	<p>control currently exerted by the system.</p> <p>The background study will resolve the issue of the source of metals in the Eastern Plume and at Sites 1 and 3. The RI and the ROD did not recognize metals as constituents of concern at the Eastern Plume. The MNA study showed that regions of the plume have reducing conditions, which correlate to the occurrences of metals in the Eastern Plume. The Background Study will demonstrate whether or not geological formations at NAS Brunswick when subjected to naturally occurring reducing conditions will lead to dissolution of formation minerals to release metals such as manganese and arsenic.</p> <p>Please note that the January 2008 GWETs testing of the influent and effluent metal levels did show a reduction in metal levels. See table below.</p> <p>d) Noted. It is recommended that the stakeholders further discuss this topic, before a time-table is proposed.</p> <p>e) Noted. ME-28 detection for 1,1 DCE will be added to Bullet 6.</p> <p>Per the Final Eastern Plume LTMP (ECC 2008), MW-308 is to be sampled twice per year (spring and fall). VOCs will be sampled by PDB from the deep interval, and 1,4 Dioxane will be sampled for using the low-flow method. Another option would be to collect the VOC samples using low. However, the addition of more samples to MW-308 or changing the LTMP sampling protocols should be discussed by the stakeholders.</p>
16	Section 3.2	Please see comments from ME29	Noted.
END OF COMMENTS			

Table for Comment Response 12 (D):

MW-308				
All detections (ug/L)				
Analytes	MW-308 Spring 2006 (Low-flow) ME-28	MW-308 Spring 2007 (Diffusion Bag –Deep) ME-30	MW-308 Fall 2007 (Low-Flow) ME-31	MW-308 Spring 2008 (Diffusion Bag- Deep Interval) ME-32
Acetone	ND	6.6	ND	4.0
1,1 DCA	15	3.1	6.8	ND
1,1 DCE	29	7.5	12.1	0.44
1,2 DCE (Total)	1.3	ND	ND	ND
1,1,1 TCA	1.9	ND	ND	ND
TCE	49	13.7	26.7	0.84
1,4 Dioxane	NS	NS	9.1	ND (by low-flow)
NS = not sampled, ND = non-detect				

Table for Comment Response 15 (C):

GWETS Influent	Parameter	GWETS Influent Result	Units	GWETS Effluent	GWETS Effluent Result	Units	%Reduction between Influent and Effluent	Interpretation	MCL (ppb)	MEG (ppb)
TP-152-TPI	Aluminum	14 U	ug/l	TP-152-TPE	14 U	ug/l	NC	NTR	NA	1,430
TP-152-TPI	Antimony	0.5	ug/l	TP-152-TPE	0.44	ug/l	12.0%	TI	6	3
TP-152-TPI	Arsenic	4.2	ug/l	TP-152-TPE	2.4	ug/l	42.9%	TREATED	10	10
TP-152-TPI	Barium	4	ug/l	TP-152-TPE	3.1	ug/l	22.5%	TI	2,000	2,000
TP-152-TPI	Beryllium	0.15 U	ug/l	TP-152-TPE	0.15 U	ug/l	NC	NTR	4	NA
TP-152-TPI	Cadmium	0.3	ug/l	TP-152-TPE	0.2	ug/l	33.3%	TI	5	3.5
TP-152-TPI	Calcium	11900	ug/l	TP-152-TPE	12100	ug/l	-1.7%	NT	NA	NA
TP-152-TPI	Chromium	0.30 U	ug/l	TP-152-TPE	0.30 U	ug/l	NC	NTR	100	40
TP-152-TPI	Cobalt	3.4	ug/l	TP-152-TPE	3.6	ug/l	-5.9%	NT	NA	NA
TP-152-TPI	Copper	0.59 U	ug/l	TP-152-TPE	0.59 U	ug/l	NC	NTR	1,300	1,300
TP-152-TPI	Iron	297	ug/l	TP-152-	1.2 U	ug/l	100.0%	TREATED	NA	NA

				TPE						
TP-152-TPI	Lead	0.19	ug/l	TP-152-TPE	0.027	ug/l	85.8%	TREATED	15	10
TP-152-TPI	Magnesium	4490	ug/l	TP-152-TPE	4510	ug/l	-0.4%	NT	NA	NA
TP-152-TPI	Manganese	33.9	ug/l	TP-152-TPE	0.12 U	ug/l	100.0%	TREATED	NA	500
TP-152-TPI	Mercury	0.018 U	ug/l	TP-152-TPE	0.018 U	ug/l	NC	NTR	2	2
TP-152-TPI	Nickel	0.28 U	ug/l	TP-152-TPE	0.28 U	ug/l	NC	NTR	NA	140
TP-152-TPI	Potassium	1710	ug/l	TP-152-TPE	1720	ug/l	-0.6%	NT	NA	NA
TP-152-TPI	Selenium	1.9 U	ug/l	TP-152-TPE	1.9 U	ug/l	NC	NTR	50	35
TP-152-TPI	Silver	0.30 U	ug/l	TP-152-TPE	0.30 U	ug/l	NC	NTR	NA	35
TP-152-TPI	Sodium	16400	ug/l	TP-152-TPE	16800	ug/l	-2.4%	NT	NA	20,000
TP-152-TPI	Thallium	0.24 U	ug/l	TP-152-TPE	0.24 U	ug/l	NC	NTR	2	0.5
TP-152-TPI	Vanadium	0.35 U	ug/l	TP-152-TPE	0.35 U	ug/l	NC	NTR	NA	NA
TP-152-TPI	Zinc	6.1	ug/l	TP-152-TPE	5.7	ug/l	6.6%	TI	NA	2,000

January 2008 GWETS Data

Postive %Reduction indicates effluent less than influent.

NC = not calculated

NTR = No Treatment Required (influent non-detect and below MCL/MEG)

TI = Treatment Inconclusive (no appreciable difference between effluent and influent)

NT = Not Treated - (no appreciable difference between effluent and influent or results within analytical variation)

Note: All influent and effluent metals are below MCL/MEGs