



DEPARTMENT OF THE NAVY  
BASE REALIGNMENT AND CLOSURE  
PROGRAM MANAGEMENT OFFICE, NORTHEAST  
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5090  
BPMO NE/LM  
Ser 08-041  
December 4, 2007

Mr. Michael J. Daly  
Remedial Project Manager  
Federal Facilities Superfund Section  
United States 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: RESPONSE TO ADDITIONAL REGULATOR COMMENTS FOR  
DRAFT FINAL SITES 1 AND 3 EASTERN PLUME ME 27,  
NAVAL AIR STATION (NAS) BRUNSWICK, MAINE

Enclosed you will find the Response to Additional Regulator Comments for Draft Final Sites 1 and 3 Eastern Plume ME 27. These responses to comments are provided for your review and concurrence.

If you have any questions, or comments, please contact the Navy's Remedial Project Manager, Lonnie Monaco at (215) 897-4911, or me at (215) 897-4915.

Sincerely,

A handwritten signature in cursive script that reads "Dawn C. Kincaid".

Dawn C. Kincaid, P.E.  
BRAC Environmental Coordinator  
By direction of BRAC PMO

Enclosure:

Response to Additional Regulator Comments for Draft Final Sites 1 and 3 Eastern  
Plume ME 27

Copy to:

MEDEP (C. Evans)

NASB (L. Joy, D. Mosher, M. Fagan)

Lepage Environmental (C. Lepage)

NAVFAC MIDLANT (L. Monaco, D. Barclift)

NAVFAC ATLANTIC (J. Wright, A. Van Dercook, B. Capito)

ECC (A. Easterday, G. Calderone, H. Cavanagh, N. Williams, M. Johanson,  
J. Kiker)

**Responses to Comments Provided by the United States Environmental Protection Agency  
New England – Region 1 on the  
Sites 1&3 Eastern Plume Monitoring Event 27 (September 2005) Report, March 2007  
Naval Air Station, Brunswick, Maine**

Reviewer: Ms. Christine Williams, EPA Project Manager  
Date: May 4, 2007 (Additional Comments, June 19, 2007 and October 4, 2007)  
Respondent: ECC  
Date: August 17, 2007 (Additional Responses, November 15, 2007)

Comment #	Location	Comment	Response
1	General	This monitoring event did not include samples from various wells. The wells to be sampled are listed in the LTMP (EA 2000). A LTMP is required by the ROD. Therefore, the Navy is out of compliance with the RODs for these sites. EPA cannot agree with the Navy's conclusion that the objectives of the LTMPs were met without all of the expected data. EPA cannot agree with the Navy's conclusion that the concentration trends at the landfill or the plume are stable without all of the expected data.	Please see response to MEDEP Comment#2.
2	General	Please provide the rationale for neglecting to sample existing wells in the agreed to finalized LTMP (EA 2000).	Please see response to MEDEP Comment#2.
3	General	<p>The Navy is not treating 1,4-dioxane even though the plume and/or the effluent is above EPA risk levels (6 ppb) and State ARARs (32 ppb). The Navy is not treating the groundwater for arsenic even though the plume is above MCLs (10ppb). The Navy is not treating the groundwater for manganese even though the plume is above EPA risk levels (300 ppb). How is the Navy's groundwater extraction and treatment system restoring the aquifer if the Navy is not treating the extracted groundwater for various contaminants above risk levels or ARARs? The Navy is also out of compliance with the ROD in this respect.</p> <p>Additional Comment: The original Comments note that the current remedy does not address exceedances for 1,4-dioxane, arsenic, or manganese. The Responses state that Navy will address 1,4-dioxane in a separate memo and that As and Mn will be addressed following the current basewide background study. It is recommended that the GWETS influent and effluent be sampled and analyzed for As, Mn, and Fe at the earliest opportunity in order to provide critical data to support discussion at a technical meeting of the inorganics issues. These data will indicate the concentrations of As and Mn that are being removed from the aquifer overall, and whether or not the treatment process is effective in lowering</p>	<p>The Navy will address the 1,4 dioxane issue separately. The GWET system, developed in conjunction with the MEDEP and EPA, was established primarily to remove chlorinated VOCs from the groundwater. The Navy will soon be implementing a base-wide background study. Once the background study has been completed, more information will be available to assess whether the arsenic and manganese levels in groundwater are attributed to background or not.</p> <p>Note that As, Mn, and Fe samples have been collected at the Eastern Plume in order to support the MNA study conducted at the Plume; these parameters were, however, never formally part of the LTMP for the Eastern Plume.</p> <p>As part of the GWETS reporting, arsenic is sampled for in the effluent and the results are provided in the routine reports. Currently, metals concentrations (As, Cr, Ni, Pb, and Zn) at the GWETs are analyzed and reported for the effluent.</p>

Comment #	Location	Comment	Response
		them. Iron is of interest because the redox chemistry of iron often controls the fate of As and Mn.	**The GWETs effluent analyte reporting will be expanded to include manganese and iron, and these metals will also be reported when sampled in the GWETs.
4	General	The Navy has notified EPA that they are upgrading the equipment in the treatment plant to treat the 1,4-dioxane. Provide a schedule for completion of the upgrades and beginning of treatment for 1,4-dioxane within 30 days of this letter.	The Navy will address the 1,4 dioxane issue separately.
5	General	The Navy has not evaluated the plume for arsenic and manganese; these inorganics are only sampled for in conjunction with the MNA evaluation. Provide an evaluation of the nature and extent of arsenic and manganese contaminants throughout the eastern plume within 30 days of this letter.	Please see the response to General Comment #3, above, regarding arsenic and manganese.
6	General	<p>Results from available data in Event 27 are generally consistent with recent trends (see, e.g., Appendix C), particularly for VOCs. Notable exceptions include:</p> <ul style="list-style-type: none"> <li>• Metals at MW-217B: A large increase in concentrations of metals was observed in ME 27. This appears to be an anomaly associated with turbidity (120 NTU), although it is noted that ORP was recorded at -99 mV, indicating reducing conditions that lead to dissolution of hydrous ferric oxides within the overburden aquifer and release of sorbed trace metals. Iron was detected at 720 mg/L.</li> <li>• Metals at SEEP-04: Metals results at the seeps are erratic over the ten rounds of monitoring shown in the bar graphs. Concentrations were relatively high at SEEP-04 in ME 27, again associated with high turbidity (100 NTU).</li> <li>• TCE at MW-311: TCE has increased significantly over the past ten rounds at MW-311, in the key area approaching the confluence of Merriconeag Stream and Mere Brook. Results from ME 27 are consistent.</li> </ul>	<b>Noted.</b>
7	General	Appendix E Field Monitoring and Sampling Forms did not contain any information on when and how the field instruments (e.g., dissolved oxygen, ORP, etc.) were calibrated or if the field instrument data were reviewed. The report uses this information in determining if natural attenuation is occurring. This information needs to be added to the report.	<b>Concur.</b> All field calibrations have been added to Appendix E.
8	General	Appendix B Laboratory Analytical Data Summary Tables list acetone concentration results for the monitoring wells that used passive diffusion bags (PDBs). PDBs are not designed to collect samples for acetone analysis and therefore, the acetone data needs to be qualified as rejected	<b>Noted.</b> Acetone data will be qualified

Comment #	Location	Comment	Response
		(R) or not reported.	
9	Page 1-1, Section 1.0	The list of extraction wells provided is inconsistent, in that it describes some inactive wells, but not all active wells. Please add an entry for EW-1, which presumably was operative at the time of ME27. If EW-3 is to be discussed, then perhaps a separate list of inactive wells should be provided, so that the distinction is clear. For added clarity, it is suggested that the preceding sentence be modified to, "... and <i>at the present time</i> consists of the following wells:"	<b>Concur.</b> The list of extraction wells will be made current with a concise description of inactive extraction wells. The preceding sentence in Section 1.0 will be modified to read, "... and <i>at the present time</i> consists of the following wells:"
10	Page 1-4, Section 1.2, and Figures 1-4 and 1-5	The contouring of the shallow and deep piezometric surfaces is incorrect in the vicinity of the slurry wall around Sites 1 and 3. As drawn for the shallow groundwater, for example, the equipotentials indicate flow through the northern portion of the wall. Assuming that the slurry wall is indeed an impermeable barrier, and is keyed into the underlying clay, it is expected that the potential surface is discontinuous across the wall, with a "step" drop from outside on the upgradient side to inside. Equipotentials (both inside and outside) should approach the wall perpendicular to the wall, so that flow lines diverge around the wall on the outside. Please see attached sketches for more realistic interpretations of the water levels that account for the presence of the slurry wall.	<b>Concur.</b> The contouring in the vicinity of the slurry wall around Sites 1 and 3 will be re-drawn.
11	Page 1-6, Section 1.4	<p>The Section states "samples were collected in accordance with the general methodologies established in the current draft LTMP (EA 2005) with the exception of the collection, preservation, and analysis of sediment samples using EPA Method 5035". The Navy should be using the finalized LTMP (EA 2000). When will the Navy update the LTMP to be reflective of agreements made during the October 2004 technical meeting, and the April 2007 sampling round agreements?</p> <p>According to Appendix G Data Validation Memorandum (March 27, 2007) Monitoring Event 27 Sites 1 and 3 the sediment samples (metals) had less than 30 percent solids (data were qualified) and the Memorandum indicated that past samples had the same problem. There is no discussion of the low solids issue in the main body of the report. Will modifications be made to the existing sample collection procedure to increase the amount of solids in the sample for future sampling events? Note, the Memorandum did not indicate any solids problems with the VOC samples.</p> <p>In addition, EPA has requested a summarization of the Validation Memos concerning the site COCs in the body of the text. The Navy must determine if the data is usable and state that in the text with reference to the appropriate appendix.</p>	The Draft Final LTMP is currently in the process of being revised and is expected to be Final prior to the Fall 2007 monitoring event. The sample collection procedures were comparable to those used in past sampling events. If soil drying (not for VOC samples) is used, then there may be comparability issues with past data. High water content doesn't impact instrumental performance nor add to matrix interference. This criteria is evaluated according to EPA Region I data validation guidance. EPA Region I Tier II data validation criteria requires or not. A percent solid greater than 30% is the EPA Region I definition of a solid. This criteria is only in place because of any issues with elevated reporting limits due to high percentage moisture. Please note that other EPA regions do not have the percent solids criteria, and the data are evaluated against the elevated reporting limits. Data validation results are summarized in the Appendix G. A brief statement providing an overall assessment of the data quality for each matrix and analytical parameter will be added along with a reference to Appendix G for more specific details. This overall assessment will state whether or not the analytical method was in control and if there are any instrumental bias or matrix interferences that may bias the data. Explanations of

Comment #	Location	Comment	Response
		<p><b>Additional Comment:</b> Part of the Comment states the following: <i>"Will modifications be made to the existing sample collection procedures to increase the amount of solids in the sample for future sampling events?"</i>.</p> <p>The comment has not been addressed. This is a field issue not a laboratory issue. Can the existing sampling procedure be modified so that the sampler can remove as much as possible water from the sediment sample before the sediment sample is placed in the sample container? By having the sampler remove excess water in the sample, this will help in increasing the solids content of the sample. If the sampling procedure is modified, then the EPA will need to review the modified sampling procedure.</p>	<p>how qualifiers are assigned during data validation will be summarized in Appendix G for precision and accuracy and in the data validation memorandums.</p> <p>Concur. The sediment sampling SOP has been approved by stakeholders, and it is now part of the Basewide QAPP. The sediment sampling SOP prescribes methods for increasing the amount of solids provided to the laboratory in order to avoid false negatives. After the first round of implementation of this SOP (Fall 2007), its effectiveness will be evaluated and further recommendations provided to increase the amount of solids.</p> <p>Concur. See above response.</p>
12	Page 2-2, Section 2.2, and Table 1-3	Please consider providing the trigger elevations for water levels within the slurry wall for direct comparison to the elevations actually measured. A column could be added to Table 1-3 with this information.	<b>Concur.</b> A table will be added to Section 2.2 to include the trigger elevations.
13	Page 2-3, Section 2.4.1	It is agreed that the apparent spike in metals at MW-217B is likely due to the elevated turbidity (120 NTU), which, in turn, is difficult to avoid when the well purges dry. It is also noted, however, that the ORP measured in this round (-99 mV) is optimal to mobilize hydrous ferric oxides and associated trace metals. (Note that total Fe was analyzed at 720 mg/L.) Therefore, elevated metals might be expected, even without the turbidity.	<b>Noted.</b>
14	Page 2-3, Section 2.4.2	According to Table 1-11, SW-4 has a very low oxygen concentration (0.59 mg/L) compared to the down stream sampling locations (SW-7, SW-8, and SW-9; the oxygen concentrations at these locations were greater than 8 mg/L). Section 2.4.2 offers no explanation for the low oxygen concentration. How does the data compare to the past data? Please explain.	<b>Noted.</b> Section 2.4.2 has been updated to include a brief outline of oxygen concentrations in these surface water samples.
15	Page 2-4,	The ORP reported for SEEP-03 is +706 mV, which seems improbable.	See Appendix E that contains the calibration records.

Comment #	Location	Comment	Response
	Section 2.4.3, and Table 1-11	Please check the field records and instrument calibration records to verify this value.	
16	Page 2-5, Section 2.4.3	The bar charts for the leachate seep samples show some rather erratic analytical results. A notable example is SEEP-04, which in ME27 shows some very high metals (e.g., Fe at 150 mg/L). This highlights the difficulty of obtaining quality water samples from the seeps; turbidity likely exerts a significant influence on these results. It is later stated (p. 3-2, sec. 3.1) that shallow piezometers were installed at the seeps in April 2005. Please add text to sec. 2.4.3 to explain the sampling method used, and when the change in method was implemented, in order to provide some perspective on the changes in analytical results over the last few sampling rounds.	<b>Noted.</b> Section 2.4.3 now contains a brief history of sampling procedures used at the SEEP locations.
17	Page 2-16, Section 2.6.3	The text states, "These four wells had the properties (limited methane production ...) ... ." It is suggested that this be expanded to read something like, "These four wells had properties <i>favorable for natural attenuation</i> (limited methane production ...) ... ."	<b>Concur.</b> The sentence will now read, "These four wells had properties <i>favorable for natural attenuation</i> (limited methane production ...)"
18	Page 2-16, Section 2.6.3	Please also include a discussion of the wells with higher than 300 ppb manganese and higher than 10 ppb arsenic. The EPA risk level for manganese is 300 ppb and the MCL for arsenic is 10 ppb.	<p>A brief discussion of arsenic and manganese sample collected as part of the MNA sampling will be discussed.</p> <p>The text discussion and figure will be based upon the MEGs for manganese (500 ppb) and MCL/MEG for arsenic (10 ppb).</p> <p>A figure showing arsenic and manganese detections in the Eastern Plume will be provided. A corresponding figure showing ORP, DO, methane, will be provided with a conclusion about each location being a reducing environment capable of mobilizing arsenic and manganese released from reduced ferric substrate.</p> <p>A conclusion will be provided based upon the evaluation of the arsenic and manganese discussion and presented in the conclusions section.</p>
19	Page 3-1, Section 3.1	The bullet regarding MNA mentions Bio-Trap sampling initiated in April 2005. This is not mentioned elsewhere in the ME27 report. Please explain the status of the Bio-Trap investigation at the time of ME27. Was the work still in progress in September 2005? How will results be reported?	<p>The results of the Bio-Trap investigation were provided as part of the MNA Summary Report issued in the MNA Summary Report (EA 2006 Oct)</p> <p>The Bio-Trap samplers were retrieved in August 2005.</p>
20	Page 3-2, Section 3.1	The first Recommendation on this page states, "... sampling will take place during Monitoring Event 27 (September 2005). ... This work is	<b>Concur.</b> The recommendation has been updated to be consistent. Sampling was performed in the Spring 2007.

Comment #	Location	Comment	Response
		tentatively scheduled for Spring 2007." Please edit for consistency.	
21	Page 3-3, Section 3.1	The last Recommendation discusses replacement of MW-1104 as a background well for the MNA assessment. This seems to be somewhat at odds with the conclusion that MNA is not promising as a means of achieving cleanup goals (p. 2-16, sec. 2.6.3). Having reached this conclusion, and completed a Summary Report (EA, 2006), is the replacement background well still under consideration?	The replacement MNA background well is no longer under consideration due to the conclusions in the MNA Summary Report. The summary report was produced after this report so for consistency the report still contains the recommendation.
22	Page 3-4, Section 3.2	Please include a discussion on the RAO of aquifer restoration. The Navy is not treating 1,4-dioxane even though the effluent is above EPA risk levels and State ARARs. The Navy is not treating the groundwater for arsenic even though the plume is above MCLs. The Navy is not treating the groundwater for manganese even though the plume is above EPA risk levels. How is the Navy's groundwater extraction and treatment system meeting the RAO if the Navy is not treating the extracted groundwater for various contaminants above risk levels or ARARs?	The Navy will address the 1,4 dioxane issue separately. Please see the response to General Comment #3, above, regarding arsenic and manganese.
23		EPA offered a number of comments to the effect that the remedy does not address arsenic and manganese, which are found above their respective water-quality standards in the Eastern Plume. The Navy's Response states that an evaluation of this issue must await the completion of a base-wide background study. This is reasonable as it has not been established that elevated As and Mn are a consequence of the organic contamination. Nonetheless, the Navy may be treating for As and Mn, even if not by design. Specifically, the current treatment process entails an air stripper and granular activated carbon polish. These processes may well oxidize the iron and manganese in the influent, and, in the process, remove arsenic through sorption. The metals are likely ending up in the carbon filter. If this possibility is to be investigated further, EPA recommends that the first step should be to analyze the treatment plant influent and effluent for at least As, Fe, and Mn, and to collect field parameters (especially pH, DO, ORP, and turbidity) for these samples. This would support an assessment of whether or not As and Mn concentrations in influent are of concern, and whether or not the present treatment process is effective in removing them.	<p><b>Noted.</b> Most likely As and Mn are mobilized by naturally occurring conditions, as occurrences of these metals is associated with regions of the plume identified as having potential for reductive-dechlorination (i.e. reducing environments).</p> <p>The GWETs effluent analyte reporting will be expanded to include manganese and iron, and these metals will be reported when sampled in the GWETs reports.</p> <p>In-plant turbidity and pH are currently reported in the GWETs reports.</p> <p>**To determine if there is incidental treatment of metals in the GWETs DO, ORP, turbidity, and pH will be determined for influent and effluent samples during the next GWETs sampling event, and an influent metal sample will be collected.</p>
<b>END OF COMMENTS</b>			

**Responses to Comments Provided by the State of Maine  
Environmental Protection Agency on the  
Sites 1&3 Eastern Plume Monitoring Event 27 (September 2005) Report, March 2007  
Naval Air Station, Brunswick, Maine**

Reviewer: Ms. Claudia Sait, MEDEP Project Manager  
Date: May 31, 2007 (Additional Comments, October 31, 2007)  
Respondent: ECC  
Date: August 17, 2007 (Additional Responses, November 30, 2007)

Comment #	Location	Comment	Response
1	General	MEDEP agrees with EPA's comments and attempted not to repeat them except to emphasis a point.	<b>Noted.</b>
2	General	<p>The Navy is out of compliance with the Federal Facility Agreement (FFA) by not following the final Long Term Monitoring Plan (LTMP) (EA 2000) as required by the Record of Decision. The reduction in sampling prevents the Navy from making any conclusions on meeting the objectives of the Long Term Monitoring Plan or findings or conclusions on the plume or protectiveness of the remedies.</p> <p>MEDEP anticipates handling this unauthorized reduction of the LTMP with EPA and the Navy through dispute resolution for failure to comply with the FFA, therefore it will not be noted except where the omissions affect specific conclusions in the report.</p>	<p>Please see the Navy's letter dated July 2, 2007 to the EPA for a full explanation of how we determined which wells to sample and at what frequency. In short, the Navy conducted the sampling at Sites 1&amp;3 and Eastern Plume for Monitoring Event 27 according to the October 2004 revised optimization proposal agreed to by the stakeholders. The final Sites 1&amp;3 and Eastern Plume LTMP should have included this revised November proposal. This oversight will be corrected in the revised Sites 1&amp;3 and Eastern Plume LTMP, which is scheduled to be finalized prior to the Fall 2007 monitoring event.</p> <p>Based on trend graphs that the Navy has developed using monitoring data from before and after the missing data, it is with reasonable certainty that similar contaminant concentrations would have been detected.</p>
3	General	The figure number references in the data summary tables do not appear to match the page numbers in the appendix CD pdf files. Please revise as necessary.	<b>Concur.</b> Figure numbers will be updated to match the page numbers in the appendix.
4	General	The report must clearly state that the LTMP (EA 2000) was not followed and list the wells not included in the monitoring program for Sites 1 and 3 and for the Eastern Plume.	Please see response to Comment #2.
5	General	MEDEP has two suggestions for future reports to improve the ability of the reader to access information more readily. The first is to include a cover sheet with a table of contents for the appendices that include multiple parts, such as Appendix B, so that it is easier to determine where	A cover sheet listing out the contents of the Appendices section parts will be included in the Table of Contents and also as the last page of the report, before the CD, to assist in the accessibility of information.

Comment #	Location	Comment	Response
		<p>information is located. This information could alternatively be included as an expanded list in the main Table of Contents in the report.</p> <p>The second is to provide a brief discussion in the text of any issues from the Data Validation report, with reference to appropriate sections. This would help particularly if there are systematic errors that result in a large number of qualified values for a particular analysis.</p>	<p><b>Noted.</b> A brief discussion of any data validation issues will be added to the text.</p>
6	General	<p>The term stable and steady are used in the trend tables presented in Section 2.4 and 2.5. The same term should be used or define the terms if they mean different things.</p>	<p><b>Concur.</b> The term “stable” will be used.</p>
7	General	<p>The trend assessment seems very subjective. MEDEP suggests discussing the value of the trend tables as presented. In the mean time, the criteria for determining the trend assessment should be defined in the text.</p>	<p><b>Concur.</b> A brief discussion will be provided to explain the terms used in the trend assessments.</p>
8	General	<p>It should be noted in the text and on the appropriate tables that the seep water is being collected from shallow piezometers and the date or note the first monitoring event round that the new technique was implemented.</p>	<p>Text will be added indicating that seep water is collected from shallow piezometers and the date of the first monitoring event round that this sampling began for the seep water using this technique.</p>
9	Section 1.0, Paragraph 2	<p>“The current version of the LTMP, issued in draft before this monitoring event (EA 2005) establishes the monitoring and sampling requirements for Sites 1 and 3 and Eastern Plume.”</p> <p>MEDEP is unfamiliar with this draft LTMP, however as part of the remedy a draft LTMP cannot be implemented for monitoring or sampling without review and approval of the regulatory agencies. See comment 1 above. If this is an accurate statement please qualify it or if it is inaccurate please delete it and state what document(s) were followed and that the documents were not approved by MEDEP or EPA.</p>	<p>The ME 27 was conducted in accordance with Final LTMP dated 2000 with modifications from the Revised Optimization Proposal dated October 2004. The statement in paragraph 2 Section 2 will be revised as stated above.</p>
10	Section 1.1	<p>In the last paragraph of this section, please state what document(s) were followed and that the change was not approved by MEDEP and EPA.</p>	<p>Please see response to Comment #2.</p>
11	Section 1.3	<p>“At Sites 1 and 3, a groundwater sample was collected from one monitoring wells via low-flow sampling techniques specified in the current draft LTMP (EA 2005). At the Eastern Plume groundwater samples were collected from 21 monitoring wells...”</p> <p>Please correct the grammar in the first sentence and qualify these statements and include any departure from the 2000 LTMP. See comment 1 above.</p>	<p>“At Sites 1 and 3 landfill, a groundwater sample was collected from one monitoring well, via low-flow sampling techniques. At the Eastern Plume groundwater samples were collected from 21 monitoring wells...”</p> <p>The reference to following the 2000 LTMP will be removed from this sentence as it is incorrect.</p>

Comment #	Location	Comment	Response
12	Section 1.4	Please qualify the 1 <sup>st</sup> sentence and include any departure from the 2000 LTMP.	See response number 11.
13	Section 1.5	Please qualify the 1 <sup>st</sup> sentence and include any departure from the 2000 LTMP	See response number 11.
14	Section 1.6	Please qualify the first sentence and include any departure from the 2000 LTMP	See response number 11.
15	Section 2.4.1, MW-217B	MEDEP agrees with the USEPA comments related to turbidity and measured ORP. MEDEP also notes that based on data for past MEs where turbidity has been elevated, the trend plots indicate that only aluminum has a strong correlation with turbidity, while the other metals show less of a relationship. This also suggests that turbidity is not the only factor causing the spike in metals concentrations. The new wells downgradient of the slurry wall opening will help assess whether the concentrations measured at MW-217B are strongly affected by turbidity or are indicative of dissolved constituents migrating in the groundwater.	<b>Noted.</b>
16		The trend table for iron indicates the April 2005 concentration was 1,700 µg/L and September 2005 was 720,000 (J) µg/L, yet the trend assessment is spike, decreasing; nor is this spike shown in the trend graph. Please correct.	This spike will be added to the trend graphs in the Final Report for iron and the trend assessment in the report text will be corrected.
17	LT-04, Appendix C, Figures 8, 9, 73, & 74, Sections 2.4.3 and 2.4.4	<p>The concentrations of several metals in seep water and sediment samples at LT-04 increased dramatically in the Fall 2005 round, with Lead, Nickel, and Vanadium in sediment at historic highs. The seep samples were also elevated over previous rounds. These increases suggest a shift in discharge conditions and if they are sustained in subsequent rounds, Navy should explain the increases. Based on the low percent solids reported in Appendix G, there may be an extraction or analysis issue with the sediment data, although the seep water also shows a spike this round. The seep water was also sampled from a shallow piezometer this round, though additional rounds are needed to evaluate whether shifts in the data are related to the new collection method</p> <p><b>Additional Comment:</b> It appears that the Navy is suggesting to drop the percent solids criteria from validation. MEDEP cannot agree that percent solids should be eliminated from the Base-Wide QAPP. Percent solids is very important for determining analytical concentrations of the solids,</p>	<p>Please note that a sediment with low percent solid is neither an extraction nor analysis issue. The sediment matrix, as sampled, has naturally low percent solids. EPA Region I data validation criteria has a unique requirement to qualify solid samples containing less than 30% solids. This data validation requirement is based upon the potential for elevated method reporting limits (due to percent moisture adjustment) greater than project action levels. The project data has been validated per the EPA Region I criteria. In order to ensure comparability between current and past sampling event, which were not validated to EPA Region I data validation criteria for percent solids, sample results with low percent solids has only been qualified J for detects and UJ for non-detects.</p> <p>The Basewide QAPP has percent solids validation incorporated into it by reference. Recommend revising the Basewide QAPP to remove from data validation the percent solids evaluation criteria.</p> <p><b>Noted.</b> The recommendation to remove percent solids evaluation criteria from data validation will not be incorporated in the Basewide QAPP.</p>

Comment #	Location	Comment	Response
		even if it results in all the sediment data being qualified. It just needs to be clear how the qualifiers are applied, and the percent solids/percent moisture data provided somewhere in the appendices for reference.	<p>Samples with low percent solids below the validation criteria will be qualified as "UJ" for non-detects, and "J" for detects, as documented in the data validation reports in order to continue data comparability with past sample results.</p> <p>The Basewide QAPP was updated with a sediment sampling SOP based upon EPA Region 1 sediment sampling guidance. Implementation of this SOP will address the low percent solids.</p> <p>The percent solids is recorded on the Form I's and in the data spreadsheets.</p>
18		The plots in Appendix C do not match the data summaries in Section 2.4.3 and 2.4.4 for all compounds. The seep plots appear to have April 2005 non-detect data plotted as mg/L rather than ug/L concentrations for Antimony, Beryllium, and Chromium. The September 2005 detection of Nickel is plotted as 170 mg/kg but listed in Section 2.4.4 at 120 mg/kg (Appendix B Table B-15 lists the value as 170). MEDEP did not check all plots/tables for these types of errors but is concerned they may lead to incorrect interpretation of trends. Please correct these errors and check the plots for consistency with the data.	<b>Concur.</b> Appendix C plots and the data summary trend assessments will be reviewed to ensure consistency.
19	Table 1-4, MW-207AR and MW-331	Why has the bottom depth of MW-207AR not been measured in the time since installation? MW-331 has the highest total VOC concentration of any well in the Eastern Plume, and is one of the few gauging points in the central portion of the plume. Navy must correct the obstruction so gauging can be completed, or evaluate alternate water level meters with a smaller diameter probe so that this data point can be collected in future events. Has this obstruction been removed and if not, please provide the schedule to have it removed.	The bottom record of the bottom depth of this well during time of installation is not available, but will be researched. Regarding MW-331 – there is an obstruction in the well, but is still gauge and sampled. MW331 was sampled and gauged in our April 2007 event. The well is artesian so water is continuously flowing out when the cap is removed. The obstruction is due to the flow of water getting in between the riser and casing then freezing during the winter and early spring months. ECC has been pumping that water out to prevent this from occurring, as documented on our low-flow field sampling forms.
20	Table B-3, Appendix C	MW-230A, MW-311, MW-313, MW-224 and possibly other locations did not have trend plots updated through September 2005. Please update the plots to include the latest data.	<b>Noted.</b> Trend plots will be updated throughout Appendix C.
21	Table B-3, Appendix B	The total VOC is listed as 4.2 ug/l, but there are no detections listed, please correct.	<b>Concur.</b> Total VOC will be corrected.
22	Table B-3, Appendix B,	Overall VOCs have exhibited an increasing trend at this location, including for 1,4 Dioxane, further evidence for migration of the plume	<b>Noted.</b> Trend plots will be updated throughout Appendix C.

Comment #	Location	Comment	Response
	ME-333	into the area below the confluence of Mere Brook and Mericonneag Stream. The trend plots for this well also need to be updated.	
23	Section 2.6.1 and 2.6.3	MEDEP agrees that the MNA assessment did not indicate a high potential for biodegradation within the plume. If this process is re-evaluated in the future MEDEP supports the identification of a new background well for comparison, however based on the 2006 report conclusions, the need for a new location appears to be overtaken by events.	<b>Noted.</b>
24	Section 3.1	<ul style="list-style-type: none"> <li>• Bullet 1 – If the central portion of the plume is targeted for the next extraction well, MEDEP would support completion of a geophysical survey to extend the mapping of the clay surface south of where the previous Hager-Richter data was collected. This approach will depend upon the data collected from the upcoming extraction well to the north and the ongoing Mere Brook investigation.</li> <li>• Bullet 2 – When the data from the Bio-Trap™ study is evaluated it should be included in the next draft monitoring report.</li> <li>• Bullet 3 – “Surface water sample SW-12 noted decreasing...” Please revise the text to reflect that the 2003 detection was the first (and only) detection of chlorinated VOCs at that location. Also please confirm that the total VOC detections in the NASB database on April 2005, May 2003, April 2002, May 2001 and November 1998 were not chlorinated VOCs, or were rejected data. Based on the spreadsheet supplied by ECC for the 2005 and 2006 data, there were two 1 ppb detections qualified as rejected in the April 2005 round.</li> <li>• Bullet 4 – MEDEP cannot concur with the conclusions on the groundwater due to the reduction in the LTMP sampling. Please revise the conclusion to reflect the limited groundwater monitoring.</li> <li>• Bullet 5 – MEDEP does not agree that the extraction system has “nearly complete hydraulic control” based upon the evidence for plume migration into the area south of the Mere Brook confluence. MEDEP does agree the system has been effective at reducing concentrations in targeted areas of the plume. Please revise.</li> <li>• Bullet 6 – MEDEP supports evaluating installation of a new well with a shorter screen at the EW-1 location.</li> <li>• Bullet 7 – <i>see previous comment on this well</i></li> </ul> <p><b>Additional Comment:</b> By not responding to the individual items within this comment the Navy risks MEDEP not accepting the document as final.</p>	<p><b>Noted.</b></p> <p><b>Concur.</b></p> <p><b>Noted.</b> The suggested text will be revised as noted in comment.</p> <p><b>Concur.</b> The conclusion will be revised to reflect the limited groundwater monitoring.</p> <p><b>Noted.</b> This bullet will be qualified to state that there is evidence of plume migration into the area south of the Mere Brook confluence.</p> <p><b>Noted.</b></p> <p><b>Noted.</b></p>
25	Section 3.2	<ul style="list-style-type: none"> <li>• Bullet 1 – Limitations on drawing conclusions this round, particularly at Landfills 1 &amp; 3, have been noted elsewhere. In general, the data for</li> </ul>	<b>Noted.</b> The suggested text will be revised as noted in comment.

Comment #	Location	Comment	Response
		<p>ME27 were consistent with the previous round other than where noted above. The suggestion to focus on the SW-12 vicinity is ongoing and supported by MEDEP.</p> <ul style="list-style-type: none"> <li>• Bullets 2 &amp; 3 – Each well provides specific information needed for the Long Term Monitoring Program. Eliminating certain wells diminishes the effectiveness of the LTMP. Please delete the 2<sup>nd</sup> paragraphs or heavily qualify them.</li> <li>• Bullet 4 – The chemical data indicate some degree of hydraulic control on the plume, and the revised groundwater model will also improve the assessment of the system's effectiveness. A detailed assessment of the effective capture zone would require more data than is collected in a typical monitoring event.</li> </ul>	
26	Tables 1-1 and 1-2	Please revise the tables to reflect which wells were sampled and which were not based on the 2000 LTMP. Add whatever footnotes are necessary. (Please correct the spelling of table on table 1-1.	<b>Concur.</b> Tables will be updated to reflect which wells were samples and which were not based on the 2000 LTMP
27	Figures 2-1 and 2-2	Please define in the notes or legend what the two concentration values are that are listed beside each well.	<b>Noted.</b> Definitions will be provided in the notes section of the figures.
28	Appendix F	This appendix is referenced as the Engineering Inspection Report in the Table of Contents, but the information is missing. Please revise and add it to the appendix	<b>Concur.</b> Appendix F will be provided.
<b>END OF COMMENTS</b>			