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NIROP ABL ROCKET CENTER
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EMAIL AND U S NAVY RESPONSE TO U S EPA REGION III COMMENTS REGARDING
DRAFT LONG TERM MONITORING REPORT FOR SITES 1, 5 AND 10 ALLEGANY
BALLISTICS LABORATORY NIROP ROCKET CENTER WV
04/21/2011
CH2M HILL

Monica Marrow

From: Monica.Marrow@CH2M.com
Sent: Thursday, April 21, 2011 5:40 PM
To: Monica Marrow
Subject: FW: EPA Comments on the Draft LTM report (Oct 2010)
Attachments: RTC EPA on Draft Interim LTM Report.pdf

From: Glennie, Steven/WDC
Sent: Thursday, April 21, 2011 3:39:36 PM
To: Marrow, Monica/VBO
Cc: Brown, Cassandra/WDC
Subject: FW: EPA Comments on the Draft LTM report (Oct 2010)
Auto forwarded by a Rule
[For ABL AR](#)

From: Glennie, Steven/WDC
Sent: Thursday, April 21, 2011 5:39 PM
To: 'Yi.Ji-Sun@epamail.epa.gov'; william.g.fraser@navy.mil; jforan1@maine.rr.com; RWAJOHN81@aol.com; Thomas.L.Bass@wv.gov; Bruce Beach USEPA
Cc: Brown, Cassandra/WDC; Wenk, Tim/VBO
Subject: RE: EPA Comments on the Draft LTM report (Oct 2010)

Attached are the initial draft of the responses to the comments on the October 2010 LTM Report. I look forward to discussing these during our May meeting.

- Steve

From: Yi.Ji-Sun@epamail.epa.gov [<mailto:Yi.Ji-Sun@epamail.epa.gov>]
Sent: Wednesday, March 16, 2011 10:09 AM
To: william.g.fraser@navy.mil; jforan1@maine.rr.com; RWAJOHN81@aol.com; Glennie, Steven/WDC; Thomas.L.Bass@wv.gov; Waranoski, Victoria/WDC
Subject: EPA Comments on the Draft LTM report (Oct 2010)

Hi Bill,

We have finished our review of the *Draft Long-Term Monitoring Report, Sites 1, 5, and 10* dated October 2010. Our comments are attached for your consideration.

I apologize for the delay in submitting our comments. Thank you for the opportunity to review the document.

Regards,
Sun

Sun Yi
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USEPA Comments and Navy Responses to the
Interim Draft Long-Term Monitoring Report Sites 1, 5, and 10
Allegany Ballistics Laboratory, Rocket Center, West Virginia

USEPA's Comments were received in an email dated April 13, 2011 on the *Interim Draft Long-Term Monitoring Report Sites 1, 5, and 10, Allegany Ballistics Laboratory, Rocket Center, West Virginia, November 2010*. The Navy's responses are shown in **Bold** beneath each comment.

Comments submitted by Sun Yi, RPM:

1. Section 2.1, Groundwater Sampling, page 2-1. The web link <http://public.lantops-ir.org/sites/public/ABL/default.aspx> does not work.

Response – The files referenced on that page are located on the following website - <http://abl.lantops-ir.org/default.aspx>. The text will be revised with the corrected website.

2. The interim report on the long-term monitoring program was very informative and helpful in evaluating the groundwater remedies in place at Sites 1, 5 and 10. I agree with the recommendation that a long-term monitoring report be submitted after each sampling event.

Response – Comment noted.

Comments submitted by Kathy Patnode, Biological Technical Assistance Group (BTAG):

3. We have found that interim reporting on the data is an extremely valuable approach. The opportunity to review the data more frequently can inform decisions about sampling modifications that will fill data gaps efficiently.

Response – Comment noted. Please note that agreed upon changes to the sampling approach or strategies will be documented in a revision to the LTM Sampling UFP-SAP.

4. On page 2-4, porewater sampling locations were identified as locations with sufficient thickness of sediment to enable the PDBs to function effectively. It is unclear whether or not these are the original locations that were selected by the site team or if the PDBs are being installed in new locations due to sediment dynamics in the river. This point should be clarified in the LTM report.

Response – The samples were collected from the immediate vicinity of the location selected by the ABL team. The locations have had a sufficient amount of sediment during the sampling events to install them where the team identified the sampling locations. The text will be revised to clarify the sampling locations correspond to those selected by the ABL team.

5. The conductivity, pH, ORP, and April temperature data demonstrate that PW-1 has a consistently different signature from other three sampling locations. The analytical data indicate that groundwater was discharging at this location in September 2009 and April 2010, while the water elevation data indicate loss of capture at Site 1 in July 2009 and April 2010. Collectively, this information demonstrates that capture was not achieved

from at least July through September 2009. As the pore water samplers are deployed for 14 days, capture loss in the vicinity of PW-1, PW-2, and PW-3 likely occurred for at least two weeks in April. The duration and timing of these releases indicate that loss of capture has occurred over extended periods and under a range of river flow and precipitation conditions. While routine maintenance is necessary and does improve the treatment facility efficacy, the duration and frequency of loss of capture indicates that it may not be sufficient. Capture was achieved again in August after maintenance work was completed, but additional rounds of data are necessary to determine if the loss of capture has been corrected or if conditions in August were not conducive for groundwater migration.

Response – It is acknowledged that there have been periodic losses of capture of the groundwater at Site 1. The Navy has undertaken multiple maintenance activities to address issues that affect system operation and effectiveness.

The intent of the groundwater extraction system is reverse the direction of groundwater flow and achieve hydraulic containment of the groundwater at Site 1. The Remedial Action Objective in the Site 1 groundwater ROD is to “prevent or minimize migration of contamination from Site 1.” Although several COCs have been detected in the sediment and surface water since the LTM sampling began 13 years ago at Site 1, the detections are sporadic and the concentrations are typically relatively low. The Navy contends that the system continues to be protective and is meeting the RAOs of the Site 1 Groundwater ROD. However, maintaining the protectiveness of the system is increasingly challenging and costly, as it is now 13 years old and has pumped over 2.8 billion gallons of water from the aquifers at ABL. The Navy continues to work closely with USEPA and WVDEP to evaluate the system and consider optimization efforts to enhance the system’s ability to meet the RAOs for the Site 1 ROD.

6. Our evaluation of the sediment and porewater data indicates that additional porewater sampling locations and relocations are warranted. During the April sampling event, TCE was detected in sediment at SD-2, SD-3, SD04, and SD-9. At pore water location PW-2 in April, vinyl chloride, TCE, and cis-1,2-DCE were detected. Vinyl chloride was also detected at 1PW-1 and 1PW-3. We concur that these three pore water samples clearly confirm the area of loss of capture and source of sediment contamination at SD-9. Similar pairings are needed to document sources of sediment contamination at SD-2, SD-3, and SD-4. For SD-3, we recommend that PW-4 location be aligned between SD-3 and GW-34. Additional pore water monitoring locations need to be established between SD-2 and SD-4 and GW-39 and GW-37, respectively. The new and modified locations should demonstrate whether or not loss of capture is the source of sediment contamination. If groundwater releases are confirmed as the sources of sediment contamination from SD-2 to SD-9, then loss of capture is not localized, but extends along the entire reach of the disposal area and manifests wherever conditions are conducive to migration.

Response – The Navy agrees to consider inclusion of additional porewater samples identified in this comment. The specific approach will be developed in collaboration with the ABL Partnering Team and documented in an amendment to the UFP SAP for Long-term monitoring. The method for interpreting the data will be presented in the UFP SAP.

7. Our evaluation of the data indicates that duration, frequency, and spatial extent of contaminated groundwater releases are greater than previously documented. These data indicate that the presence of VOCs in porewater and sediment may be sufficient to affect biota. Evaluation of benthic invertebrate sampling following a period of groundwater releases (e.g., September 2009) would be necessary to confirm toxic effects. If porewater and sediment contamination are evident in subsequent rounds of sampling, additional sampling of the benthic community at the time should be considered.

Response – Comment noted. The concentrations of COCs in subsequent pore water and sediment samples will continue to be monitored and reported to the ABL Partnering Team. Modifications to the LTM approach, including modifications to the biota sampling approach, will be considered and documented in the LTM UFP-SAP, as appropriate.

Comments submitted by Mindi Snoparsky and Mark Leipert, Hydrogeologists:

8. Section 2.1.1, Site 1 Groundwater Sampling; and Section 2.1.3 Site 10 Groundwater Sampling. Capture zone analysis, not just monitoring, is used to determine whether the extraction system is working. Monitoring is only one line of evidence. The capture analysis should be updated and reported with the monitoring results. This is true for both Sites 1 and 10 since it has been reported in the past that Site 10 contamination is captured by the Site 1 extraction system. The trend analysis presented is not sufficient and I believe I have pointed this out in my discussions with respect to capture zone analysis. The discussion under Section 3.7, Pore Water indicates the concentrations may be due to temporary loss of capture corroborated by Figure 3.10, but Figure 3.10 indicates water levels only.

Response – As agreed upon by the ABL Partnering team, the objective of the Interim LTM Report was to provide data in a streamlined report after each LTM sampling event. A more comprehensive analysis will be provided in the LTM report that contains a more robust sampling data results and will be issued prior to each 5-year ROD review. That report will include more comprehensive analysis of the groundwater extraction system and capture zone.

9. The boundary of Site 5 ends at the groundwater plume. It would be helpful to delineate the plume on a figure - or perhaps add it to a figure like Figure 3-9 in the future. This will help determine the effectiveness of the PRB.

Response – Please see the response to the previous comment. Plume maps will be drawn following comprehensive sampling events at the site that include a larger number of wells being sampled.

10. Table 2-1, the following wells are listed in the table but not labeled on Figure 2-2 for Site 5: 5GW9, 5GW19 and 5GW22.

Response – The seven wells listed in Table 2-1 are the wells that are used for developing the groundwater contours at Site 5. Figure 2-2 shows the four wells that are sampled at Site 5 as part of the LTM monitoring and the three wells not shown on Figure 2-2 are not included in the sampling effort. These wells will be added to the figure and shown as a different color to indicate they are not included in the sampling.

11. Table 2-2, dates in the table heading do not match the headings in the table.

Response – The dates in the table heading will be corrected.

12. Table 2-2, Monitoring wells, 1GW35 and 1GW36, have blanks in the field-measured parameters. Please add a footnote as to what the situation was with each of these wells.

Response – A footnote will be added describing why these measurements were not collected.

13. Table 2-3, dates in the table heading do not match the headings in the table.

Response – The dates in the table heading will be corrected.

14. Table 2-4, dates in the table heading do not match the headings in the table.

Response – The dates in the table heading will be corrected.

15. Table 2-9, dates in the table heading do not match the headings in the table.

Response – The dates in the table heading will be corrected.

16. Table 2-10, dates in the table heading do not match the headings in the table.

Response – The dates in the table heading will be corrected.

17. Figure 2-1, the box for Site 5 needs a reference arrow to indicate the site's location relative to Site 1.

Response – A reference arrow or location map insert will be added to the figure to clarify the location of Site 5 with respect to Site 1.

18. In Chart 3-1, the TCE concentrations do appear to be steadily decreasing in 1GW34 but the fluctuating concentrations at 1GW38 and 1GW39 indicate the presence of multiple source areas.

Response – Although a multiple sources could be one of or the contributing factor(s) to the fluctuating concentrations in the chart, the chart is not definitive evidence of multiple sources. There are a variety of factors that could have led to these

fluctuations, including, but not limited to, varying precipitation amounts, fluctuating water levels, and the lack of uniform distribution of constituents in groundwater.

19. In Charts 3-4 & 3-5, the concentrations of Perchlorate, RDX and HMX, in the alluvial groundwater at the Active Burning Grounds does appear to be influenced by nearby burning activities. What occurred between October 2008 and April 2010 that would cause an increase in Perchlorate, RDX and HMX concentrations? Could this indicate the presence of multiple source areas?

Response: The RCRA permit holder will provide a response to Comment 19.

20. In Chart 3-7, Perchlorate concentrations in bedrock groundwater at 1GW05 are indicative of residual materials found at the Former Inert Burn Disposal Area (FIBA). IGW05 is immediately adjacent to or in the footprint of the FIBA area. Further delineation of source area and removal action should be implemented to reduce risk. IGW04 is also adjacent to a number of Former Burn Pits which would also explain the higher concentrations of Perchlorate in bedrock groundwater.

Response –The Navy is working with USEPA and WVDEP to complete a Feasibility Study to address contamination in the soil at Site 1. The remedial alternatives for Site 1 Soil are being considered in the FS and the remedial action will be selected in a forthcoming ROD.

21. In Chart 3-8, the RDX concentrations in bedrock groundwater at 1GW05 are also indicative of residual materials found at the FIBA. IGW05 is immediately adjacent to or in the footprint of the FIBA area. Further delineation of source area and removal action should be implemented to reduce risk.

Response –The Navy is working with USEPA and WVDEP to complete a Feasibility Study to address contamination in the soil at Site 1. The remedial alternatives for Site 1 Soil are being considered in the FS and the remedial action will be selected in a forthcoming ROD.

22. In Chart 3-9, the TCE concentrations in the alluvial groundwater do appear to be decreasing immediately downgradient of the PRB.

Response – Comment noted.

23. In Charts 3-10 and 3-11, for the Site 10 alluvial and bedrock groundwater the concentrations for TCE indicate that the plume appears to be decreasing or stable, although concentrations remain above MCLs.

Response – Comment noted.

24. Section 3.7, Pore water, the samples collected immediately off shore of the FIBA area

indicate residual concentrations of cis-1,2-DCE, TCE and vinyl chloride are continually migrating to the north Branch of the Potomac River. Further delineation of source area and removal action should be implemented to reduce risk.

Response –The Navy is working with USEPA and WVDEP to complete a Feasibility Study to address contamination in the soil at Site 1. The remedial alternatives for Site 1 Soil are being considered in the FS and the remedial action will be selected in a forthcoming ROD.