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U S NAVY RESPONSES TO U S EPA REGION III COMMENTS ON THE DRAFT TECHNICAL MEMORANDUM U S EPA REGION III ADDITIONAL CONCERNS REGARDING THE FORMER PENNIMAN SHELL LOADING PLANT AT CHEATHAM ANNEX FISC WILLIAMSBURG VA
9/10/2012
CH2M HILL

Response to EPA Comments
USEPA Region 3's Additional Concerns Regarding the Former Penniman Shell Loading Plant
Draft Technical Memorandum
Naval Weapons Station Yorktown Cheatham Annex
Williamsburg, VA
September 10, 2012

EPA RPM Comment 1: *Page 3: "In Ground Battery". EPA doesn't concur with the no further action determination for the in ground battery. Please try to reschedule the site visit with current team members. EPA generally prefers to make no further action determinations based on scientifically defensible data (sample data etc . . .).*

Response: The Navy does not agree with EPA's position regarding the so-called "In-Ground Battery." The comment that "EPA generally prefers to make no further action determinations based on scientifically defensible data (sample data etc…)" is based on an underlying premise that is false in this instance. The premise is that there is a known feature or location designated as a site, site screening area, or AOC by the Team where there is evidence that a potential CERCLA-regulated release may have occurred. In that situation, EPA may reasonably make a no further action determination based on analytical data or other scientific evidence. In this case, there is no known site, site screening area, or AOC designated by the Team and there is no compelling evidence associated with this feature to conclude that a CERCLA-related release has potentially occurred. Therefore, it is not necessary or applicable in this instance for EPA to make a "no further action" determination under CERCLA; the Team decision to be made is whether or not further attempts by the Navy to locate and examine this reported feature are warranted after an earlier, thorough attempt to find it indicated that it most likely no longer exists.

Here is a recap of what is known about this feature. In the first place, there is no clear evidence to indicate the "in-ground battery" is or was, in fact, a battery. It was discovered in 1998 along a roadside by a former Yorktown/CAX EPA RPM, Rob Thomson, as he was departing the former Department of the Interior (DOI) property. He observed it along the side of the road while driving past, stopped, and took pictures of it (Figure 2 of the TM). He subsequently asserted that it might represent an "in-ground battery." However, this was mere speculation. Based on its appearance, it is more likely to have been part of a former cathodic protection system or simply an access port to a defunct electrical system. In any case, there is no evidence or likelihood that it represents a CERCLA-related feature, or that it is related to the former Penniman Shell Loading Plant (PSLP).

Secondly, a thorough attempt to locate this feature in February 2009 proved fruitless. The Team spent several hours driving throughout the former DOI property in an attempt to locate this feature. Even though it was initially sighted with ease from a car passing by along the roadway, it could not be found during this site visit despite repeated passes along the DOI roadways and intensive searching. The day of the site visit, Rob Thomson conceded that the feature he had sighted earlier was likely gone eleven years later and said that if it happened to be found at a later date, the Navy should research or investigate it, but otherwise, no additional action was warranted. The following day at Partnering, he suggested making another attempt to look for it, but subsequently declined all requests to schedule another site visit.

Finally, it is important to note that this feature has never been designated by the Team as a unique site or AOC or as part of an existing site or AOC. It was not listed by the Team (which included Rob Thomson) in the 1999 SI of the former PSLP (Weston, 1999), nor was it used to score CAX for inclusion on the National Priorities List. The Team also did not designate this feature as part of the Penniman AOC (AOC 6) in the CAX FFA. In short, this feature has never been a concern of the Team as a potential CERCLA-regulated contaminant source. More recently, the Navy agreed to a Team site visit to look for it in February 2009 as a courtesy. As indicated earlier, after several hours driving the roads of the former DOI property and searching extensively, it could not be found. There is no reason to believe that a repeated attempt to locate this feature would be successful.

Since it is not appropriate to use the formal designation of "no further action" in the context of this feature, the text in the last sentence of the "In-Ground Battery" section will be revised from "…otherwise, no further action for the "in-ground battery" is necessary" to "…otherwise, no further attempts to locate the item are warranted."

EPA RPM Comment 2: *Page 4: Please include the groundwater data as part of the AOC 6 Ammonia Settling Pit ESI.*

Response: The groundwater data collected near the privy tank has been included in the ESI SAP for the AOC 6 Ammonia Settling Pit subarea. However, per Team agreement during the January 2012 scoping session, since the metals groundwater data collected for the privy tank and the AOC 6 SI were collected from direct-push technology points, the metals concentrations may not be representative of current groundwater conditions. Therefore, permanent groundwater monitoring wells will be installed and groundwater samples will be collected for the AOC 6 ESI, and the new metals groundwater data will be evaluated in the ESI in place of the privy tank and SI groundwater data.

EPA RPM Comment 3: *Page 4: "Large Drum with Side Port". Three screening criteria used. 95% UCL or UTL of background should be used and not maximum (for screening purposes). Please rescreening [sic] accordingly. Please explain what "site specific RBC's" are.*

Response: The referenced sentence about "three screening criteria used" is directly from the historic report (Environmental Baseline Study [EBS]) cited in the TM (i.e., Baker, 2004). The three screening criteria used in the EBS were USEPA Region 3 residential soil RBCs, CAX background concentrations from Soil Association 2, and "site-specific RBCs developed for the Penniman Property based on the Cheatham Annex Background samples" (Baker, 2004). An examination of the site-specific RBCs utilized in the EBS indicates that they were calculated using site-specific rather than default exposure factors; it is assumed that the site-specific exposure factors would be those used had a baseline risk assessment been performed on the data. See Appendix G of the EBS (Baker, 2004).

A comparison of the 2004 EBS sample data to the current Background 95% UTLs is shown in attached RTC Table 1, along with a comparison to the maximum background numbers used in the EBS. Of the ten inorganic constituents above the maximum background value (aluminum, barium, beryllium, copper, cyanide, iron, lead, mercury, vanadium, and zinc), only four of these exceed the 95% UTL (copper, cyanide, lead, and zinc). In summary, using the 95% UTL does not result in any additional COPCs; in fact, there are fewer. During the September 2008 Partnering discussion (Attachment 1 of this TM), Rob Thomson (former Yorktown/CAX EPA RPM) agreed that no further investigation activities with respect to the drum are necessary. In addition, during the February 2009 site visit, Rob again agreed that no further investigation related to this drum was required; the site visit wrap-up is captured in the March 2009 Partnering Meeting minutes (Attachment 2 of this TM).

EPA RPM Comment 4: *Page 5: "Detonation Craters/Blast Holes". Page 5. See RPM Comment 3.*

Response: A comparison of the 2004 EBS sample data to the current Background 95% UTLs is shown in attached RTC Table 2, along with a comparison to the maximum background numbers used in the EBS. Three samples, plus one duplicate, were collected in this area during the EBS. For each sample, the number of inorganic constituents detected above the maximum background value is greater than or equal to the number of inorganic constituents detected above the 95% UTL. In summary, using the 95% UTL does not result in any additional COPCs; in fact, there are fewer.

EPA RPM Comment 5: *Page 5. Perchlorate should not have a background value. Please remove this discussion. Below the tap-water RSL is sufficient.*

Response: The background discussion has been removed. The sentence now reads:

"One explosive, perchlorate, was detected at a very low concentration (0.21 J µg/L); however, the detected concentration is lower than the adjusted tap water RSL (2.5 µg/L) and the ecological screening value (9,300 µg/L)."

EPA RPM Comment 6: *Page 6. Booster Test Pit. The geophysical survey was conducted to determine whether piping underground could be present. Potential linear anomalies were detected during the investigation. This should be investigated further Additionally, have we ever/can we, go in to [sic] the structure? The top of it appeared to be removable, possibly it could just be pulled off and we could look down in it? My concern is that explosives were stored/are stored in the building primarily due to its' structure. Outside of the building is a double wall and the top looks like it was made to blow off. Structures like this were typically used to store explosives.*

Response: It is not certain if the top can be removed or not. The Team will discuss the path forward for this item during September 2012 Partnering Meeting and the TM will be revised accordingly.

EPA RPM Comment 7: *Figure 6. Why is the soil sample location so far from the Privy tank location?*

Response: The soil sample location is actually much closer to the privy tank location than is shown on Figure 6 and will be adjusted. The soil sample was collected within five feet of the privy tank location.

EPA RPM Comment 8: *Attachment 2. First Page. Final Paragraph. Was the checking for piping ever completed?*

Response: Yes, a geophysical survey was conducted in 2010 and replaced the initial suggestion to look for piping via excavation. The Team discussed and agreed on this approach during the March 2010 Partnering Meeting. The geophysical survey conclusions around the Booster Test Pit are presented in this TM, while the geophysical survey conclusions for the AOC 6 Ammonia Settling Pit and TNT Catch Box Ruins subareas is presented in the AOC 6 SI (CH2M HILL, 2012). See also the response to EPA RPM Comment 6.

EPA RPM Comment 9: *Attachment 4. Page A4-4. Human Health Risk Screening Conclusion. "extremely unlikely that is ever would used as a potable water supply." "is" is a typo and it should [sic] EPA's groundwater policy still applies as this would be considered a potentially potable source.*

Response: The typo has been corrected ("is" changed to "it"). Regarding EPA's groundwater policy, comment noted. As mentioned in the response to EPA RPM Comment 2, the groundwater in this area is being addressed as part of the ESI for the AOC 6 Ammonia Settling Pit subarea.

References:

Baker Environmental, Inc. (Baker). 2004. *Final Phase I (Modified) – Environmental Baseline Survey for Penniman Property, York County, Virginia.* January.

CH2M HILL, Inc. 2012. *Final Site Inspection Report, Areas of Concern 1, 2, 6, 7, and 8, Naval Weapons Station Yorktown Cheatham Annex, Williamsburg, Virginia*. May.

RTC Table 1. Maximum Background vs. 95% UTL Comparison

Inorganic Constituent[1]	DRUM-SS01-00 (0-4" bgs)			
	Surface Soil Max. Background - Soil Association 2 (mg/kg)[2]	Sample Results (mg/kg)[3]	Surface Soil Background 95% UTL (mg/kg)[4]	Sample Results (mg/kg)[3]
Alumium	4,570	**5,010**	12,200	5,010
Arsenic	4.10	3.6	6.36	3.6
Barium	29.4	**47.3 B**	52.9	47.3 B
Beryllium	ND	**0.48 B**	0.587	0.48 B
Calcium	3,320	3,100	2,290	**3,100**
Chromium	12.4	10.4	18.2	10.4
Cobalt	5.30	2.7 B	9.93	2.7 B
Copper	4.00	**5.3 B**	4.25	**5.3 B**
Cyanide	ND	**0.16 B**	NE	**0.16 B**
Iron	12,600	**13,600**	19,900	13,600
Lead	11.0	**64.7**	17.4	**64.7**
Magnesium	1,020	678 B	1,070	678 B
Manganese	257	168	324	168
Mercury	ND	**0.045 B**	0.111	0.045 B
Nickel	3.90	3.6 B	9.52	3.6 B
Potassium	1,210	738 B	708	**738 B**
Vanadium	15.2	**15.3**	27.9	15.3
Zinc	17.9	**46**	26.5	**46**

Notes:
ND = not detected
NE = not established
bgs = below ground surface

Result Qualifer:
B = Constituent was detected in a blank.

[1]Any constituent not listed above was a nondetect.
[2]Historic background number used in 2004 EBS (maximum detection for Soil Association 2) (Baker, 2004).
[3]Sample data from 2004 EBS (Baker, 2004).
[4]Current background UTL.
Shading represents exceedance of the background number.

RTC Table 2. Maximum Background vs. 95% UTL Comparison

Inorganic Constituent[1]	TC-SB01-01 (12-16" bgs)				TC-SB02-01 (12-16" bgs)				TC-SB03-01 (12-16" bgs)				TC-SB03-01D (12-16" bgs) (Duplicate Sample)			
	Shallow Subsurface Soil Background - Soil Association 2 (mg/kg)[2]	Sample Results (mg/kg)[3]	Subsurface Soil Background 95% UTL (mg/kg)[4]	Sample Results (mg/kg)[3]	Shallow Subsurface Soil Background - Soil Association 2 (mg/kg)[2]	Sample Results (mg/kg)[3]	Subsurface Soil Background 95% UTL (mg/kg)[4]	Sample Results (mg/kg)[3]	Shallow Subsurface Soil Background - Soil Association 2 (mg/kg)[2]	Sample Results (mg/kg)[3]	Subsurface Soil Background 95% UTL (mg/kg)[4]	Sample Results (mg/kg)[3]	Shallow Subsurface Soil Background - Soil Association 2 (mg/kg)[2]	Sample Results (mg/kg)[3]	Subsurface Soil Background 95% UTL (mg/kg)[4]	Sample Results (mg/kg)[3]
Alumium	12,600	6,270	13,000	6,270	12,600	12,400	13,000	12,400	12,600	**14,800**	13,000	**14,800**	12,600	**14,300**	13,000	**14,300**
Arsenic	15.9	2.9	5.54	2.9	15.9	11.5	5.54	11.5	15.9	13.3	5.54	**13.3**	15.9	11.9	5.54	**11.9**
Barium	48.5	**50.4**	84.5	50.4	48.5	**59.6**	84.5	59.6	48.5	30.3 B	84.5	30.3 B	48.5	29.6 B	84.5	29.6 B
Beryllium	ND	**0.57 B**	NE	**0.57 B**	ND	**0.88 B**	NE	**0.88 B**	ND	**1.5**	NE	**1.5**	ND	**1.5**	NE	**1.5**
Cadmium	ND	(Nondetect)	NE	(Nondetect)	ND	**0.15 B**	NE	**0.15 B**	ND	**0.30 B**	NE	**0.30 B**	ND	**0.34 B**	NE	**0.34 B**
Calcium	162,000	535 B	2,380	535 B	162,000	1,820	2,380	1,820	162,000	2,530	2,380	**2,530**	162,000	2,550	2,380	**2,550**
Chromium	26.4	11.0	33.7	11.0	26.4	25.1	33.7	25.1	26.4	**47.2**	33.7	**47.2**	26.4	**46.7**	33.7	**46.7**
Cobalt	7.30	2.6 B	5.18	2.6 B	7.30	5.0 B	5.18	5.0 B	7.30	5.0 B	5.18	5.0 B	7.30	4.7 B	5.18	4.7 B
Copper	5.00	1.4 B	3.17	1.4 B	5.00	**6.6**	3.17	**6.6**	5.00	**6.0**	3.17	**6.0**	5.00	**6.6**	3.17	**6.6**
Cyanide	ND	**0.086 B**	NE	**0.086 B**	ND	**0.18 B**	NE	**0.18 B**	ND	(Nondetect)	NE	(Nondetect)	ND	**0.12 B**	NE	**0.12 B**
Iron	30,000	9,920	32,000	9,920	30,000	**32,400**	32,000	**32,400**	30,000	**41,200**	32,000	**41,200**	30,000	**40,000**	32,000	**40,000**
Lead	8.30	5.2	8.79	5.2	8.30	**10.5**	8.79	**10.5**	8.30	**10.5**	8.79	**10.5**	8.30	**9.9**	8.79	**9.9**
Magnesium	3,340	757 B	1,120	757 B	3,340	1,480	1,120	1,480	3,340	**4,380**	1,120	**4,380**	3,340	**4,360**	1,120	**4,360**
Manganese	135	89.0	176	89.0	135	110	176	110	135	87.6	176	87.6	135	77.0	176	77.0
Mercury	ND	(Nondetect)	NE	(Nondetect)	ND	**0.067**	NE	**0.067**	ND	(Nondetect)	NE	(Nondetect)	ND	(Nondetect)	NE	(Nondetect)
Nickel	9.10	3.4 B	17.6	3.4 B	9.10	6.5 B	17.6	6.5 B	9.10	**10.8**	17.6	10.8	9.10	**9.7**	17.6	9.7
Potassium	2,100	639 B	901	639 B	2,100	1,450	901	**1,450**	2,100	**6,400**	901	**6,400**	2,100	**6,400**	901	**6,400**
Vanadium	33.2	14.6	48.3	14.6	33.2	**33.8**	48.3	33.8	33.2	**46.2**	48.3	46.2	33.2	**44.6**	48.3	44.6
Zinc	30.8	11.8	28	11.8	30.8	20.6	28	20.6	30.8	**42.7**	28	**42.7**	30.8	**40.9**	28	**40.9**

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