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EMAIL REGARDING U S EPA REGION I REVIEW AND COMMENTS ON FEASIBILITY STUDY RESIDUAL RISK CALCULATIONS NETC NEWPORT RI
3/22/2012
U S EPA REGION I

## Ropp, Jim

**From:** Ginny Lombardo <Lombardo.Ginny@epamail.epa.gov>
**Sent:** Thursday, March 22, 2012 10:04 AM
**To:** Maritza Montegross (maritza.montegross@navy.mil); Ropp, Jim
**Cc:** Jupin, Bob; Chau Vu; Barclift, David J CIV NAVFAC LANT, EV (david.barclift@navy.mil); Straker, Donna; Corack, Jennifer (CIV) (Jennifer.Corack@med.navy.mil); Pamela Crump; Parker, Stephen
**Subject:** RE: Newport NUSC Site 8 FS - Residual Risk Calc based on PRGs

**Categories:** Newport

Maritza and Jim-

We have reviewed the information on residual risk calculations.

EPA concurs with the Soil PRG Tables, Tables 1 and 2.

We have the following questions/comments on the Groundwater PRG Table, Table 3:

- For the risk-based PRG values, please explain the basis for the PRG selected. It is unclear whether the risk-based PRGs listed in the third column were developed site specifically with site-specific assumptions or not. We compared the values against EPA's RSL tables, which are based on standard default exposure assumptions for the residential scenario[http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/index.htm] and the remedial goal option values in both the RI (January 2010) and the SRI (October 2011). However, many of the PRG values differ from the values presented in these tables. The risk-based PRGs in Table 3 are mostly more stringent than the RSLs. So, we do not anticipate that the PRG values presented will be an issue, we just want to better understand how the values were determined/selected. We expect that some of the differences may be due to the combined target organ effects, as noted in Footnotes 5 and 9, but clarification is needed.

- With respect to the PRG for nickel and vanadium, please clarify which form of these compounds was considered to determine the PRGs.

- The column for cancer risks at PRGs were not all filled in. We assumed this was because, for those compounds, the selected PRGs are orders of magnitude lower than 10E-6 and therefore would not make any difference in the cumulative risk. However, the columns still should still be filled in.

- Footnote 6 for chromium should also clarify that the MCL listed is for total chromium, not hexavalent chromium. Footnote 5 should be included at 1,1-DCA and Footnote 9 should be included at both 1,1-DCA and 1,4-Dioxane.

EPA is OK with dropping 1,3,5-trymethylbenzene as a COC in groundwater based on the information discussed in the Navy's email.

If Navy can respond to these comments/questions prior to the RPM meeting next week, that would be great. I will be calling in to the meeting for the 10-11am agenda items. Chau Vu is also available at that time to discuss these comments, if needed. We expect that these can be easily resolved. We can discuss language for the FS on the residual risk data at the RPM meeting next week.

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"Ropp, Jim" ---03/19/2012 06:50:16 PM---Hi Ginny The attached file shows our draft calculation of residual risk levels (based on the PRGs) b

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To: Ginny Lombardo/R1/USEPA/US@EPA
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Date: 03/19/2012 06:50 PM
Subject: RE: Newport NUSC Site 8 FS - Residual Risk Calc based on PRGs

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Hi Ginny

The attached file shows our draft calculation of residual risk levels (based on the PRGs) being developed for the draft final FS. Risks are calculated for the risk-based COCs identified during the HHRA. As discussed during recent technical meetings, the FS will also address other contaminants in accordance with RIDEM's Remediation Regulations criteria. The attached tables show residual risks for soil (both residential and industrial scenarios) and groundwater. As expected, background levels of arsenic in soil and groundwater MCLs are associated with some elevated risk. As you mentioned, the actual risks are expected to be lower given that the FS will also prevent exposure through mechanisms such as the soil cover and LUCs.

Note that the Navy also plans to drop the compound 1,3,5-trimethylbenzene as a COC in groundwater. During the draft FS, 1,3,5-trimethylbenzene was identified as a COC because it was a contributor to a target organ HI greater than 1. However, the toxicity criteria for 1,3,5-trimethylbenzene have changed since the HHRA was prepared for NUSC. The HHRA had used an EPA's provisional peer reviewed (PPRTV) oral reference dose. The current oral reference dose is still a PPRTV value but it was developed only for screening purposes. The Navy's policy is not to evaluate risks using this type of toxicity criteria and such chemicals should not be retained as COCs. There is no extensive plume of 1,3,5-trimethylbenzene at NUSC. The PRG in the draft FS of 200 ug/L was exceeded in only 1 well (MW100B contained 290 ug/L during the RI). The next highest detection was 0.66 J ug/L (MW07A) and the rest of the samples were non-detect (<1 ug/L). MW100B is the same well were LNAPL was removed during the RI. No measureable LNAPL was detected in MW100B when we checked it again during the March 2011 sampling event. Removing 1,3,5-trimethylbenzene as a COC will not change the current remedial alternatives.

Thanks
Jim

-----Original Message-----
From: Ginny Lombardo [mailto:Lombardo.Ginny@epamail.epa.gov]
Sent: Tuesday, March 06, 2012 3:43 PM
To: maritza.montegross@navy.mil; Ropp, Jim
Cc: Pamela Crump; Chau Vu
Subject: Re: Newport NUSC Site 8 FS - Responses to RIDEM Comments

Maritza and Jim-

The purpose of this email is to provide follow-up information in response to Navy's 12/8/11 response on EPA General Comment 6 (of EPA's 10/18/10 comments). During the 12/14/11 conference call, Chau indicated that she believed there was standard language related to residual risk based on proposed PRGs.

Unfortunately, there is no standard language on residual risk related to PRGs in any of the FF decision documents that I have reviewed. However, the basis for this comment requesting the determination of the residual risk based on the proposed PRGs is supported in the RAGS D Guidance, Chapter 4:

http://www.epa.gov/oswer/riskassessment/ragsd/pdf/chapt4_2001.pdf

See also, example Table 3 of RAGS D, Exhibit 4-1:

http://www.epa.gov/oswer/riskassessment/ragsd/pdf/exhibit4_1.pdf

It is also discussed in RAGS B, Chapter 2, RAGS C, Chapter 2, and the NCP Section 300.430(e)(2)(i)(D).

So, Table 2-4 and 2-5 of the Revised Draft FS (July 2011) should conform to this guidance and example table to present the total residual risk for the PRGs that are based on HH cancer and non-cancer risks.

If the cumulative residual cancer risk exceeds 10-4 or RIDEM's value of 10-5 (e.g., due to background or MCLs) or non-cancer risks for the same target endpoint exceed an HI of 1, the PRGs may need to be adjusted to ensure that the cumulative residual risk would be below 10-4 or 10-5 or adequate reasoning supporting that the PRGs are acceptable will have to be clearly discussed in the FS. EPA would not expect that PRGs based on ARARs (e.g., MCLs, RIDEM DECs) or accepted background values would need to be changed.

If the residual risk criteria are exceeded, EPA will work with Navy and RIDEM to evaluate whether revisions to the PRGs are needed and, if no changes are appropriate, EPA will work with Navy and RIDEM on the language for the FS to address the findings. Proposed language, for example, for soils, would support that residual risk will be lower than that represented by the PRGs, since the remedial alternatives being considered will all eliminate the exposure pathway via a 2 foot cap of clean material. For groundwater, the remedial alternatives will likely achieve lower ultimate cleanup levels for some constituents in order to reach the PRGs for all COC. So, therefore, it is reasonable to believe that the residual risk upon completion of the groundwater cleanup remedial action will be lower than the residual risk criteria. Language similar to these examples can be considered and discussed once the revisions to Tables 2-4 and 2-5 are provided by the Navy.

Also, please note that the following Navy 12/7/11 partial responses to RIDEM comments (dated 9/19/11) - see comment and response 5 and 6 below - imply that some PRGs will be revised by the Navy using a 10-6 criteria. If this is the case for the PRGs derived from risk-based values, EPA believes that no other revisions to the PRGs would be needed related to cumulative residual risk.

Comment 5 – Page 2-7, Section 2.2.2, Derivation of Preliminary Remediation Goals, Human Health PRGs;
whole section.
This section slates that the cumulative target goal for PRGs is 10 -5. A review of the information provided in Table 2-4 and 2-5 indicates that this goal will not be achieved if more than one contaminant is present at the target PRG concentration. To avoid this problem and in order to meet regulatory requirements, please set the PRGs to the 10-6 criteria. Please ensure that any compound which exceeds RIDEM's risk based criteria was carried forth in the PRG process.

Response: Tables 2-4 and 2-5 will be revised to show Preliminary Remediation Goals (PRGs) developed using 10-6 risk-based levels, chemical-specific ARARs, and background levels.

A response to the last sentence of this comment (regarding RIDEM's risk-based criteria) will be provided following resolution of RIDEM's formal dispute letter dated October 5, 2011.

Comment 6 – Page 2-7, Section 2.2.2, Derivation of Preliminary Remediation Goals, Human Health PRGs;
Table 2-4.
The selected industrial PRG for total carcinogenic PAHs (expressed as benzo(a)pyrene equivalents) is 2.1 mg/kg, which is based on a 10-5 target cancer risk level. This exceeds the RIDEM Direct Exposure Criteria of 0.8 mg/kg for the industrial scenario. Please revise this table to include the RIDEM DEC of 0.8 mg/kg as the PRG for total carcinogenic PAHs
Also, please develop PRGs for each individual PAH as listed in Table 6-6 of the NUSC SRI and in Comment 1 above, which are based on a 10-6 target cancer risk level.

Response: The soil PRGs will be revised to address the individual polycyclic aromatic hydrocarbon (PAH) COCs [i.e., benzo(a)anthracene, benzo(a)pyrene, benzo (b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene], based on the lower of 10-6 risk levels and RIDEM's Method 1 soil objectives. RIDEM's Direct Exposure Criterion (DEC) of 0.8 mg/kg is applied to benzo(a)pyrene, not to total carcinogenic PAHs.

It would be very useful if the Navy could quickly complete the revisions to Tables 2-4 and 2-5 to address RIDEM's comments 5 and 6 and EPA's comment on residual risk and submit the revised PRG Tables to EPA and RIDEM prior to the Draft Final FS. In this way, we could all consider the PRGs and reach consensus on PRGs and/or appropriate residual risk language for the Draft Final FS prior to the planned submission (currently scheduled for 4/15/12).

Thanks.

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Date: 12/07/2011 06:28 PM
Subject: Newport NUSC Site 8 FS - Responses to RIDEM Comments

All:
Here are the responses to RIDEM comments on the revised draft FS (attached).
Hardcopies will be sent via U.S. mail.
Responses to EPA comments will be provided soon.
thanks

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[attachment "2011-12-07_Newport NUSC FS RIDEM RTC.PDF" deleted by Ginny Lombardo/R1/USEPA/US]
[attachment "NAVSTA Newport Site 8 FS - Residual Risk Tables (draft).pdf" deleted by Ginny Lombardo/R1/USEPA/US]