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Project Number 6966

Mr. David N. Douglas  
Minnesota Pollution Control Agency  
Division of Ground Water and Solid Waste  
520 Lafayette Road  
St. Paul, MN 55155-4194

Reference: CLEAN CONTRACT No. N62467-94-D-0888  
Contract Task Order No. 0003

Subject: OU-3 Remedial Investigation Report and  
Supplemental Remedial Investigation Information Report (OU2)  
Response to MPCA Comments  
NIROP Fridley, Fridley Minnesota

Dear Dave:

On behalf of the US Navy Southern Division NAVFACENGCOM, we provide the following responses to the MPCA's recent November 9, 2001 letter providing comments on the revised Remedial Investigation for Operable Unit 3 (OU3 RI) and the Supplemental Remedial Investigation Information Report (OU2 RA) both dated September 2001.

As a minor clarification, MPCA's letter identifies their review of the OU3 RI Report, Volume I of IV. In actuality, by correctly replacing the cover sheets (provided in the same mailing) on Volumes II, III, and IV then moving the replacement text for Appendix F from the rear of new Volume I to its correct place in existing Volume IV, the MPCA has now effectively received the entire four-volume revised OU3 RI. This is possible because with the exception of Appendix F, no other revisions were required in Volumes II, III, or IV per regulatory comments. We identify this clarification so that the ultimate document approval corresponds to the entire four-volume report, not just Volume I.

The EPA did not provide any additional comments to the previous OU3 RI revision or OU2 RA revision. Therefore, this revision of the OU3 RI and the OU2 RA constituted solely MPCA comments.

Per our team's agreement, components of the OU2 RA revision were provided for interim review by MPCA. The OU2 RA and supporting text were revised based on comments from the interim review, and resubmitted, in iteration, until MPCA provided no further comments. Yet we were surprised by the number of MPCA's comments focused on previously reviewed and previously agreed material in the OU2 RA. Please see Attachment II to this letter, corresponding to Attachment II of MPCA's November 9 letter for specific examples. We support the concept of the interim review. Bob Jupin finds Helen to be thorough, helpful and very responsive. The Navy Team now just needs to work with the MPCA to make interim reviews more effective.

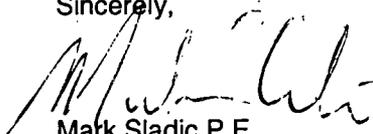
In other cases, in Attachment I and Attachment II, MPCA previously provided very specific language for inclusion in the OU3 RI and OU2 RA reports. The Navy incorporated MPCA's proposed language, but with the November 9 letter, MPCA has now sought multiple revisions to this language originally specified by MPCA. Please see Attachments I and II for instances where this occurs. Again, the Navy Team appreciates MPCA's providing specific language when they feel a point must be made very exactly; we would just expect to revisit that language less often once it is agreed.

We have also noted the recurrence of a potential issue that if not addressed will probably surface again during remedy selection, and could require EPA and MPCA to resolve among them. The MPCA has indicated at Partnering Team meetings and in the November 9 letter that it is possible to have a no-action remedy supported by institutional controls. The Navy Team believes, and we feel the EPA has specified, that institutional controls can not be a component of a no-action remedy according to EPA guidance. Per EPA, it is possible for a remedy to be solely institutional controls, but then this is not a no-action remedy. The distinction is important because a no-action remedy would not require a CERCLA five-year review, while an institutional control remedy would require a CERCLA five-year review. If MPCA (or MERLA) is in actual disagreement with EPA CERCLA guidance as described herein, then the Navy requests that MPCA fully identify the conflict and bring it to the Team's attention for resolution. The Navy has provided additional information and identified relevant EPA guidance (see Attachment I).

The Navy provides the attached responses to the MPCA's comments with the expectation that no conflicts will be created by concurrent address of both the MPCA comments and EPA comments (not yet available) in the next and final OU3 RI and OU2 RA revision. We believe that this revision can be accommodated through a relative few change pages.

As we have requested for prior submittals, the Navy will issue revisions to the OU3 RI and OU2 RA when MPCA approves the proposed revisions detailed in Attachment I and Attachment II of this letter. We can discuss these issues at MPCA's convenience, including the December 12 Team meeting.

Sincerely,



Mark Sladic P.E.  
Task Order Manager

MS/kf

Enclosure

cc: Jeff Meyers, SOUTHDIV  
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Tom Bloom, USEPA  
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## ATTACHMENT I

### Modifications to "Remedial Investigation for Operable Unit 3, Volume I of IV Text," Dated September 2001

1. **Comment:** Executive Summary, Human Health Risk Assessment, page ES-15, last sentence of the second paragraph following the bulleted decision criteria

The MPCA staff requests that the Navy change the sentence as follows, "An evaluation of the need for and the feasibility of implementing appropriate remedies would not be necessary based on the results of the 0-4 feet bgs risk evaluation of the ~~major infrequent~~ minor frequent construction worker."

**Response:** The Navy agrees. The text will be revised as suggested.

2. **Comment:** Executive Summary, OU2 RI Conclusions, page ES-16

This text appears to be the same as the previous version (May 2000) of the Supplemental Remedial Investigation Information Report, i.e., before the OU2 re-evaluation was complete, and is therefore not consistent with ten sub areas described in the current Supplemental Remedial Investigation Information Report. The MPCA staff requests that the Navy delete this section on this page and add the narrative below:

The Supplemental Remedial Investigation Information Report, dated September 2001 evaluated unsaturated soils outside of the buildings and other structures in September of 2001. In this report, ten sub areas were evaluated; sub areas A1, A2, A3, and A4 located on the northern part of the property in the general vicinity of the North 40; sub areas B1 and B2 located in the northeast corner of the property; sub area D, a previously unidentified disposal trench and former storage area C located on the east side of the property, north of the tank farm; sub area E located on the east side of the property south of the tank farm; sub area F located near the southwest corner of the building; and an additional sub area designated as "Other" located west of sub area A4 and between sub areas A1 and A2 which includes all samples not located in any of the above listed sub areas. The locations of the ten sub areas are presented in Figure 2-1 of the Supplemental Remedial Investigation Information Report.

**Response:** The text that appears on page ES-16 summarizes the conclusions of the nature and extent section and ecological risk assessment that were presented in the OU2 RI report. Nature and extent of contamination and the ecological risk assessment for OU2 were not reevaluated as part of the Supplemental Remedial Investigation Information Report, therefore, no changes will be made to this text. A new section heading titled "Supplemental Remedial Investigation Information Report" will be added after the first bullet on page ES-17 followed by the MPCA's narrative.

3. **Comment:** Executive Summary, OU2 RI Conclusions, pages ES-17 and 18

The MPCA staff requests that the Navy delete the bullets and conclusions and re-write the bullets and conclusions to be consistent with the current version of the Supplemental Remedial Investigation Information Report as modified by the MPCA staff (see comments on Section 3 Summary/Conclusions in Attachment II.)

**Response:** The conclusions presented on pages ES-17 and ES-18 are the same conclusions presented in Section 3 of the latest Supplemental Remedial Investigation Information Report (September 2001). This text will be revised to incorporate the latest comments from MPCA

4. **Comment: Executive Summary, Initial Screening of Possible Alternative Response Actions**

In response to the MPCA staff comment, the Navy wrote "[t]he No-Action Alternative involves leaving the building floor in place, it is sufficient for addressing what appears to be a small area contaminated by chromium because chromium is not mobile there as long as the floor is in place."

As the NIROP partnering team discussed at our April 25, 2001 meeting, the floor is actually an engineering-control remedy that is in place, not a no-action alternative.

Also for further clarification, the purpose of the no-action alternative is as follows:

The no-action alternative provides a baseline for comparing other alternatives. Because no remedial activities would be implemented with the no-action alternative, long-term human health and environmental risks for the site essentially would be the same as those identified in the baseline risk assessment. (See "Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA," page F-4, EPA 540-G-89-004, October 1988.)

For example, a no-action alternative for the chromium contamination under the former East Plating Shop would be leaving the chromium in the soil in the absence of a floor and institutional controls in this area to protect workers who could be exposed to the chromium. Moreover, it is not appropriate to refer to the contaminated area as a "small area" because the full magnitude and extent of the chromium contamination in the soil has not been determined. It is acceptable to the MPCA staff to estimate the lateral extent of the contamination to be the boundaries of the former East Plating Shop; however, the vertical extent of the contamination is neither presently known nor can it be accurately estimated. Therefore, the magnitude and extent of the chromium contamination is not known. The MPCA staff requests that these important uncertainties be identified in this narrative.

The MPCA staff requests that the Navy modify the narrative to acknowledge that the floor is an engineering control-remedy; estimate the lateral extent of the chromium contamination (the boundaries of the former East Plating Shop is acceptable to the MPCA staff); and indicate that the magnitude and extent of the chromium contamination has not been determined.

Also this section does not discuss any initial screening of possible alternative response actions for Operable Unit 2. The MPCA staff requests that the Navy re-write this narrative to be consistent with Section 7.4 for Operable Units 2 and 3 as modified by the MPCA staff (see modifications to Section 7.4).

**Response:** The MPCA correctly states that in this document, the Navy wrote, "[t]he No-Action Alternative involves leaving the building floor in place, it is sufficient for addressing what appears to be a small area contaminated by chromium because chromium is not mobile there as long as the floor is in place." The Navy used this language because this is the language specified by MPCA, for this purpose, in their previous (August 17, 2000) comments letter. In the Navy's response to comments letter (December 28, 2000) we agreed to use the specific language provided by MPCA to address this issue. The Navy asked on numerous occasions (including our May 17, 2001 letter) for MPCA's agreement on the Navy's proposed responses prior to reissuing the document, which the MPCA was unwilling to do. However, the Navy will now revise the previously supplied MPCA language to be consistent with the current MPCA comment (as noted in our response to MPCA's comment on Section 7.4).

In actuality, the Navy continues to be in agreement with EPA that neither an institutional control or an engineering control is a no-action alternative, and can not be combined with a no-action alternative. A no-action alternative usually results when no contamination remains in place, and thus no Five Year

Review is required. When contamination remains in place, no-action is not usually appropriate although institutional controls or engineering controls may be appropriate, and Five Year Reviews are then required. If the MPCA is interested at this time, we elaborate on this point in the following paragraph:

The MPCA provides a basic discussion of the generic purpose of the no-action-alternative, supported by CERCLA guidance with which we are in obvious agreement. However, MPCA then errs by citing a site-specific example that we believe is in conflict with EPA Region V guidance and statements by the EPA RPM at our Team meetings. The MPCA suggests that a no-action alternative could be used for the chromium, and institutional controls to protect workers. It is our understanding (and we believe EPA's opinion) that a no-action remedy cannot be combined with institutional controls. They are mutually exclusive - by definition, once institutional controls (or engineering controls) are selected as a remedy component, the remedy can not be no-action. In addition to the EPA's RI/FS guidance identified by MPCA, we recommend EPA 540-R-98-031, July 1999 "A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents", as EPA has required use of this guidance at least throughout Region V. In any case, the Navy has always been aware of the generic purpose of the no-action remedy - the exact no-action language that MPCA now objects to was provided by MPCA, so MPCA is in effect objecting to their own prior language and not the Navy's understanding of a no-action remedy. Following finalization of this document, including its vetting possible alternative response actions, the Partnering Team will investigate actual response actions to support remedy selection, at which time no-action, institutional control, and engineering control remedies can be fully evaluated.

Further, the MPCA takes issue with the appropriateness of referring to the contaminated area as a 'small area'. The Navy reiterates again that MPCA provided exactly that language in its August 17, 2000 letter. The Navy will similarly qualify the discussion to address MPCA's objections to its own prior language.

In addition, the MPCA further errs by requesting that the Navy acknowledge that the floor is an engineering control remedy. The CERCLA remedy selection process has not been completed for OU2 and OU3. Therefore, it is inappropriate to identify that any remedy exists at this time. The Navy again suggests that MPCA review EPA 540-R-98-031. Also, MPCA's discussion about the engineering control seems to conflict with MPCA's example above where the remedy alternative constituted no-action for the chromium contamination and institutional controls to protect workers (i.e., the engineering controls component seems to have been forgotten in the MPCA's no action / institutional controls scenario). The Navy will qualify the MPCA's proposed language to state that a potential remedy could involve consideration of the concrete floor as an effective engineering control.

Per MPCA's suggestion, the Navy will state that the magnitude and extent of the chromium contamination is not known but is laterally bounded by the footprint of the former east plating shop.

Finally, the MPCA objects that the discussion of possible alternative response actions for OU2 is not included in the Executive Summary. The Navy will upgrade the discussion, but notes that is difficult to condense a four-volume report to all reviewers' satisfaction into the Executive Summary. It may be necessary to look elsewhere besides the Executive Summary to gain an adequate understanding of the site for the Team's purposes.

**5. Comment: Executive Summary, Initial Screening of Possible Alternative Response Actions, second paragraph, page ES-19.**

The MPCA staff requests that the following sentence be added at the end of this paragraph, "The Navy, EPA, and MPCA will address issues related to the ground water contamination associated with Operable Units 2 and 3 during the development of data quality objectives for Operable Unit 1."

**Response:** Navy agrees

**6. Comment: Executive Summary, Table ES-4**

Since the calculated cancer risk presented for OU3 are the actual values calculated (e.g.,  $0.35 \times 10^{-5}$  not simply  $<1 \times 10^{-5}$ ), the MPCA staff requests that the calculated risks for OU2 be presented in the same way. This means that in the calculated cancer risk column (column number 3) under the "Refined Risk Evaluation for OU2 – Sub Areas A3, A4, and E (4)," the calculated risk for the typical industrial worker be changed from  $> 1 \times 10^{-5}$  to  $2 \times 10^{-5}$ ; and for the major infrequent construction worker, changed from  $> 1 \times 10^{-5}$  to  $2.5 \times 10^{-5}$  (A3) and  $2.5 \times 10^{-5}$  (A4). The MPCA staff requests that iron in sub area A4 for the major infrequent construction worker be deleted in the last column (see MPCA staff comments on iron in Attachment II.)

The MPCA staff requests that the depth for the major infrequent construction worker in OU2 be changed from 0-20 feet to 0-12 feet.

The MPCA staff requests that the Navy shade exceedances for the summary tables in OU2 for easy identification.

**Response:** The Navy agrees. The table will be revised as suggested.

**7. Comment: Section 7.1 Conclusions from the OU2 RI Report**

This section appears to be identical to the previous version (May 2000) of the Supplemental Remedial Investigation Information Report and was not revised to reflect the current Supplemental Remedial Investigation Information Report. The MPCA staff requests that the narrative be deleted and replaced with narrative consistent with the current Supplemental Remedial Investigation Information Report as modified by the MPCA staff (see MPCA staff modifications to the Executive Summary/OU2 RI Conclusions and on Section 3 Summary/Conclusions of the Supplemental Remedial Investigation Information Report contained in Attachment II).

**Response:** See response to comments on Executive Summary, OU2 RI Conclusions, pages ES-16, ES-17, and ES-18.

**8. Comment: 7.4 Initial Screening of Possible Alternative Response Actions**

The MPCA staff requests that Section 7.4 as written be deleted and re-written as follows:

**Operable Unit 3, Major Infrequent Construction Worker**

For OU3, unacceptable risks were identified in subsurface soil under the main NIROP building. For subsurface soil, only chromium was retained as a COC. Chromium at an unacceptable level was found under the former East Plating Shop of the main NIROP building and only for the major infrequent construction worker scenario. Chromium slightly exceeds the acceptable (target) risk, assuming that chromium is in the hexavalent form. This assumption was made because the chromium was not speciated.

A possible alternative response action for this risk scenario would be an engineering-control response action combined with an institutional control. The existing floor of the former East Plating Shop constitutes an engineering-control response action. Chromium likely is not mobile so long as the floor is in place. Implementation of this response action would consist of leaving the existing floor of the former East Plating Shop in place. This response action would be combined with an institutional control in the form of an environmental restrictive covenant under MERLA that calls for additional remedial actions if the floor is removed and an exposure route for chromium is established.

A second possible alternative response action would be the no-action response action consisting of the absence of the floor and institutional controls for this area.

### Operable Unit 2

The OU3 risk exposure scenarios for the main NIROP building were also applied to the OU2 areas to provide for consistency in remedy evaluation. OU2 areas where calculated risk slightly exceeds allowable levels include sub areas A3, A4, and E (see Figure 2-1 of the Supplemental Remedial Investigation Information Report).

### Operable Unit 2, Typical Industrial Worker

For the typical industrial worker exposure scenario (0-5 feet bgs) for OU2, the calculated cancer risk in sub areas A4 slightly exceeds allowable levels. Carcinogenic PAHs at sample location AB032A (1-3 feet bgs) was the primary driver of the calculated risk. Selected VOCs and metals at two subsurface sample locations in sub area A3, AT009D1 (8-10 ft. below ground surface (bgs) and AT007C (6-8 ft bgs,) could pose a potential risk if these soils were accessed.

In April 2001, the NIROP partnering team began evaluating response actions for areas of unacceptable risk in OU2. As documented in Decision 0401D04 at the April 25, 2001 NIROP team partnering meeting (Meeting 29), the team identified "...the following preliminary options to address the excess OU-2 in surface soil: (1) non-time-critical removal action (IRM); (2) engineering controls – covers, institutional controls; (3) institutional controls with MPCA policy waiver." Also as documented in Decision 0401D05 at the April 25, 2001 NIROP team partnering meeting (Meeting 29), the team decided that "...OU2 subsurface soil is already effectively capped where the risk assessment shows the surface soil is acceptable."

A possible alternative response action to be evaluated for this risk scenario would be the non-time-critical removal action. In order for this alternative response action to be implemented, surface soil (0-3 feet) contaminated by cPAHs would be removed from sub area A4 and disposed of off-site in an appropriate facility.

A second possible alternative response action would be an engineering-control response action such as a cover over the surface soil in sub area A4 contaminated by cPAHs and institutional controls to maintain the cover and limit exposure to industrial workers. The cover would be three feet of clean fill or equivalent, e.g. an appropriate depth of asphalt paving with a class 5 aggregate subbase.

A third possible alternative response action would be the no-action alternative consisting of leaving the surface contamination in place without institutional controls for sub area A4.

### Operable Unit 2, Minor Frequent Construction Worker

For the minor frequent construction worker exposure scenario (0 to 5 feet bgs), the calculated risk in sub areas A4 and E slightly exceeds allowable levels for carcinogenic PAHs. The risk is primarily driven by sample AB032A (1 to 3 ft bgs) in sub area A4 and sample EB004A (1 to 3 ft bgs) in sub area E. Selected VOCs and metals at two subsurface sample locations in sub area A3, AT009D1 (8 to 10 ft bgs) and AT007C (6 to 8 ft bgs) would pose a potential risk if these soils were accessed.

A possible alternative response action would be the non-time-critical removal action of cPAHs from sub area A4. In order for this alternative response action to be implemented, surface soil (0-3 feet) contaminated by cPAHs would be removed and disposed of off-site in an appropriate facility.

A second possible alternative response action would be an engineering-control response action such as a cover over the surface soil in sub area A4 contaminated by cPAHs . The cover would be three feet of clean fill or equivalent, e.g., an appropriate depth of asphalt paving with a class 5 aggregate subbase.

A third possible alternative response action would be the no-action alternative consisting of leaving the surface contamination in place without institutional controls for sub areas A4 and E.

A fourth possible alternative response action would be leaving the contamination in place with institutional controls for sub-area E.

#### Operable Unit 2, Major Infrequent Construction Worker

OU2 areas where calculated risk slightly exceeds allowable levels for the major infrequent construction worker exposure scenario (0-12 feet bgs) include sub areas A3 and A4. In sub area A3, 1,1,1-trichloroethane, 1,1-dichloroethane, 2-butanone, tetrachloroethene, toluene, trichloroethane, and xylenes contamination in the vicinity of sample location AT009 (8 – 10 feet bgs) and iron at AT007 (6 – 8 feet bgs) were the primary risk drivers. In sub area A4, cPAHs at sample location AB032A (1-3 feet bgs) were the primary risk driver. In addition, the concentrations of 1,1,1-trichloroethane, tetrachloroethene, and xylenes exceed the default soil saturation limit suggesting that free product may be present.

##### *Sub Area A3*

A possible alternative response action would consist of the leaving the contamination in place with institutional controls for this sub area.

A second possible alternative response action is the no-action alternative consisting of leaving the contamination in place without institutional controls for this sub area.

As noted above, high concentrations of the contaminants found in the barrel removal area exceed the default soil saturation limits suggesting that free product may be presents. This potential ground water problem should be addressed as a component of OU1.

##### *Sub area A4*

A possible alternative response action would be the non-time-critical removal action of cPAHs from sub area A4. In order for this alternative response action to be implemented, surface soil (0-3 feet) contaminated by cPAHs would be removed and disposed of off-site in an appropriate facility.

A second possible alternative response action would be an engineering-control response action such as a cover over the surface soil in sub area A4 contaminated by cPAHs. The cover would be three feet of cleanfill or equivalent, e.g., an appropriate depth of asphalt paving with a class 5 aggregate subbase.

A third possible alternative response action would be the no-action alternative consisting of leaving the surface contamination in place without institutional controls.

### Other Characteristics Common to all Possible Alternative Response Actions

While the OU2 and OU3 investigations were adequate to determine if large-scale contamination sources were present, activities are continuing around the facility to support the sale of the plant and could result in the discovery of spatially localized sources of contamination. Responses to address these sources would be agreed by the Partnering Team, and then at each Five-Year Review. The adequacy of each of these responses can be revisited in the context of whether the selected institutional controls remain protective in light of any new found contamination.

A steel hurricane fence prevents trespass to the NIROP facility, and access is limited to those passing through staffed security gates.

**Response:** The previous version of Section 7.4 was written with the express purpose of supporting EPA in attaining management approval to move directly to a proposed plan for an institutional controls remedy for OU2 and OU3, as the Partnering Team has discussed on numerous occasions. EPA had previously agreed to provide the initial draft of this language, but because of other schedule commitments was unable to meet the Team's schedule. The Navy is willing to revise the language in this section to support the Team's goals, so long as technical correctness is maintained. With the exceptions noted below, MPCA's rewrite is fairly balanced, reasonably un-presumptive, and technically correct. EPA will need to indicate if it adequately supports the team's goal of supporting moving directly to the proposed plan. The proposed plan would contain the requisite evaluation versus the nine NCP criteria.

Operable Unit 3, Major Infrequent Construction Worker - The MPCA's second possible alternative response action is in conflict with EPA guidance. No-action remedies can not be combined with institutional controls. (Please see the previous discussion provided in response to MPCA's comments on the Initial Screening of Possible Remedies from the Executive Summary.) The Navy offers the following modification: A second possible alternative response action would be a combination of engineering controls (addressing the integrity of the floor) and institutional controls (limiting subsurface activity in the area).

We also suggest adding the following language: Additional alternative response actions are possible.

Operable Unit 2, Typical Industrial Worker - We suggest adding the following language: Additional alternative response actions are possible.

Operable Unit 2, Minor Frequent Construction Worker - We suggest adding the following language: Additional alternative response actions are possible.

Operable Unit 2, Major Infrequent Construction Worker - Sub Area A3 - We suggest adding the following language: Additional alternative response actions are possible.

Operable Unit 2, Major Infrequent Construction Worker - Sub Area A4 - We suggest adding the following language: Additional alternative response actions are possible.

## ATTACHMENT II

### Modification to "Supplemental Remedial Investigation Information Report," Dated September 2001

#### General Response to Comments on Supplemental Remedial Investigation Information Report

It should be noted that the latest version of the Supplemental Remedial Investigation Information Report (September, 2001) incorporated comments received from MPCA on April 10, 2001. MPCA's comments were discussed at the April 25, 2001 Partnering Meeting and responded to by letter on May 17, 2001. At the April Partnering Team Meeting, MPCA confirmed that the April 10 comments were their final comments (see meeting minutes); therefore the revisions are patterned in strict conformance with MPCA's April 10 comments. Please see the actual April 10 comments letter (via email). The revisions requested in the April 10 comments letter had all been addressed and previously agreed by MPCA via interim submittals; a process employed for this specific purpose. Therefore, there was no expectation that new regulatory comments would now be generated regarding this material. However, the only new items included in the latest report that MPCA had not previously reviewed (and previously agreed) were Tables 2-18 and 2-19 and the last four bulleted items in Section 3.0, while the remainder of MPCA's comments do revisit previously resolved issues.

#### 1. **Comment:** Section 2.2 Selection of COPCs, page 2-2, first paragraph

This paragraph could be interpreted that we only focused on the few chemicals that dominated the risk at this step. In fact the approach that was taken was much more conservative than this statement indicates. The COPC selection process identifies chemicals that *may* be of potential concern not just chemicals that dominate the risk. Therefore, the MPCA staff requests that the Navy rewrites the first sentence as follows, "The selection of COPCs is a semi-qualitative process which identifies chemicals which may be of concern and therefore warrant evaluation in a HHRA."

The MPCA staff requests that the phrase "residential SRVs" be changed to "Tier 1 SRVs."

There appears to be a typo with the parenthesis of sentence 4.

**Response:** The Navy agrees. The text will be revised as requested. This SRVs change will be made throughout the text and tables where appropriate.

#### 2. **Comment:** Section 2.3 Screening Risk Evaluation, first paragraph, fifth sentence

Restrictions beyond limiting land use are included. The MPCA staff requests that the sentence be changed to the following, "This information will be used to determine if and what level of institutional controls are required."

**Response:** The Navy agrees. The text will be revised as requested.

#### 3. **Comment:** Section 2.4 Refined Risk Evaluation, Major Infrequent Construction Worker, last paragraph, page 2-6

A calculated HQ of 1.2 for iron would not be considered to exceed a HQ of 1. The MPCA staff requests that the Navy change the text accordingly.

**Response:** The Navy agrees. The text will be revised as requested.

4. **Comment: Tables 2-12 through 2-14**

The reader may misinterpret whether carcinogenic PAHs were retained. The "Retained for Further Evaluation" column indicates that the individual carcinogenic PAHs and the total cPAHs were not retained. These chemicals were incorporated into a BaP equivalent and in effect were retained in the evaluation – the "No" in the "Retained for Further Evaluation" column should be changed to reflect this. The MPCA staff also suggests the following alternative; replace "No" with "see BaP equiv" or include footnote states that this contaminant was included in the BaP equivalent concentration.

**Response:** The Navy agrees. The tables will be revised as requested. In addition, Tables 2-2 through 2-11 will also be revised.

5. **Comment: Table 2-18 Major Contributors to Cancer Risk and Hazard Indices for the Typical Industrial Worker**

It is the MPCA staff's understanding that Table 2-18 was to be a "companion" table to Table 2-17, i.e., it would identify the key contributors for the risks identified in Table 2-17. The author may be trying to present the results of the subsurface screening results as well; however, the presentation does not work since these results were not presented in Table 2-17. The MPCA staff requests only presenting sub area A4 here since it was the only area identified in Table 2-17. The staff also requests that the major contributors in sub area A3 somehow also be identified (e.g., flagged with footnote explanation) in Table 2-21. Simply flagging the chemicals and a footnote explaining that these chemicals and locations would also be of concern should these soils be accessed by the industrial worker is sufficient, i.e., the industrial worker-based ICR and HQs are not necessary.

**Response:** The table will be revised as requested. It should be noted that Table 2-18 supplements the information presented in Table 2-17 and in the text in Section 2.4. Although it is true that risks resulting from potential exposures to subsurface soil are not presented in Table 2-17, the results of potential exposures to subsurface soil are discussed in the text on pages 2-4 and 2-5.

6. **Comment: Table 2-19 Major Contributors to Cancer Risk and Hazard Indices for the Minor Frequent Construction Worker**

As with Table 2-18, it was the MPCA staff's understanding that Table 2-19 was to be a "companion" table to Table 2-17, i.e., it would identify the key contributors for the risks identified in Table 2-17. The MPCA staff requests that the Navy present sub area A4 and Sub area E here since they are the areas identified in Table 2-17 and somehow identify (e.g., flagged with footnote explanation) the sub area A3 major contributors in Table 2-21. Simply flagging the chemicals and a footnote explaining that these chemicals and locations would also be of concern should these soils be accessed by the minor frequent construction worker is sufficient, i.e., the minor frequent construction worker-based ICR and HQs are not necessary.

**Response:** The table will be revised as requested. It should be noted that Table 2-19 supplements the information presented in Table 2-17 and in the text in Section 2.4. Although it is true that risks resulting from potential exposures to subsurface soil are not presented in Table 2-17, the results of potential exposures to subsurface soil are discussed in the text on page 2-5.

7. **Comment:** Table 2-20 Summary of Refined Risk Analysis Major Infrequent Construction Worker

The MPCA staff requests that the Navy remove the shading of the HQ>1 iron as Helen Goeden previously commented to Bob Jupin that a HQ of 1.2 for iron would not be considered an exceedence. The MPCA staff requests that the wording in the text on page 2-6 be modified to reflect this.

**Response:** The Navy agrees. The table will be revised as requested.

8. **Comment:** Section 3 Summary/Conclusions

First sentence should read: "The following items summarize the results of the HHRA for OU2."

Bullet 2: The MPCA staff requests that the last two sentences be changed as follows, "The ICRs for minor frequent construction workers exposed to surface soil at sub areas A4 and E slightly exceed the MPCA acceptable risk level, although the ICRs at ~~sub area E~~ ~~was~~ ~~were~~ with EPA's target risk range. Carcinogenic PAHs at sampling location AB032A (1-3 feet bgs) in sub area A34 and EB004A (1-3 feet bgs) in sub area E where the major contributors to the ICR."

Bullet 3: As indicated in earlier discussions iron needed not be identified as a contaminant whose HQ exceeds our target risk levels.

The first four bullets are consistent with those submitted in the past. In my previous comments, Helen Goeden requested that a discussion be added that presents the overall conclusions based on the bulleted results. Apparently four additional bullets were added in response to the request for a discussion. This discussion does not include a complete discussion of the overall conclusions. In Helen's comments to Bob Jupin in April 2001, Helen requested the following discussion which the MPCA again requests. The approach of "stepping-back" and identifying the driving contaminants and locations is consistent with the methods utilized in OU3.

Based on the bulleted results above residual contamination in sub areas A1, A2, B1, B2, D, F and "Other" are not of concern if the land use is limited to industrial/restricted commercial use. In the remaining sub areas (i.e., A3, A4 and E) localized areas of contamination (i.e., hot spots) result in potential risk levels that exceed levels of concern.

In sub area A3, VOC contamination in the vicinity of sample locations AT009 and AB043 at depths of 8-10 feet bgs and iron at AT007 at depths of 6-8 feet bgs are largely responsible for the risk exceedances. These sampling locations are located in and near the area where drum removal occurred and where a decontamination pad exists. Examination of these samples indicates a localized area with significantly elevated levels of contamination. For example, at AT009 the concentrations of 1,1,1-trichloroethane, 1,1-dichloroethane, 2-butanone, tetrachloroethene, toluene, trichloroethene, and xylenes correspond to ICR 15 times higher than the acceptable target risk level and hazard indices from approximately 3-14 times the target risk level. The concentrations of these contaminants at this location are also significantly (11-360 times) higher than the next highest concentrations of 1,1,1-trichloroethane, tetrachloroethene, and xylenes exceed the default soil saturation limit suggesting that free product may be present. Removal of these sampling data points and recalculation of the 95 percent UCL mean exposure concentration produces risks within target risk levels.

In sub area A4, cPAH contamination at AB032 at a depth of 1-3 feet bgs is largely responsible for the risk exceedence. Examination of this location indicates a localized are with significantly elevated levels. The concentration of cPAHs (as BaP equivalents) at this location corresponds

to risk levels 10-20 times higher than the acceptable target risk level. The concentration is six times higher than the next highest concentration in sub area A4. Removal of this sampling data point and recalculation of the 95 percent UCL mean exposure concentration produces risks within target risk levels.

In sub area E the number of sampling data points was insufficient to calculate a 95 percent UCL of the mean and therefore maximum concentrations were utilized as exposure concentrations in the refined risk assessment. Carcinogenic PAHs (as BaP equivalents) at sample location EB004 at a depth of 1-3 feet bgs is largely responsible for the risk exceedence. The concentration of cPAHs ( as BaP equivalents) corresponds to approximately 1.5 times the target risk and is approximately two times higher than the next highest concentration in sub area E. Based on the limited data available EB004 does not appear to be a hot spot and risk level associated with this specific location slightly exceeds the target risk.

**Response:** The text will be revised as requested. The MPCA's comment that MPCA 'requested the following discussion, which the MPCA again requests' is misleading. It should be noted that MPCA's comments on the conclusions were discussed at the April 25, 2001 Partnering Meeting and responded to by letter on May 17, 2001. At the April Partnering Team Meeting, MPCA confirmed that the April 10 comments were their final comments (see meeting minutes); therefore the revisions are patterned in strict conformance with MPCA's specific April 10 language. Please see the actual April 10 comments letter (via email). The discussion presented in the text of the report very closely mirrors the MPCA's suggestions. However, the discussion presented now in the current MPCA comment letter is much broader than the previous recommendation that was presented in MPCA's comment letter of April 10, 2001. Then MPCA is again correcting their own prior language versus original language drafted by the Navy. However, the Navy will again accommodate MPCA's corrections.