

February 15, 1996

Commanding Officer
Southern Division
Naval Facilities Engineering Command
Attn: David Cabiness; Code 1869
P.O. Box 190010
North Charleston, SC 29419-9010

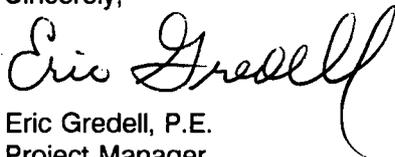
Re: Naval Industrial Reserve Ordnance Plant
Fridley, Minnesota

Dear David:

Enclosed, for your use, are two copies of the notes from Restoration Advisory Board meeting #4, held at the Fridley Municipal Center on January 11, 1996. These final notes address review comments on draft notes provided to RMT by the Navy and Mr. John Flora. Other copies of these notes have been distributed according to the attached Distribution List.

Persons receiving copies of these meeting notes are requested to note that the next Restoration Advisory Board meeting will be held at the **Fridley Municipal Center, 6431 University Avenue N.E., on Thursday, April 18, 1996, from 7:00 p.m. to 9:00 p.m.**

Sincerely,



Eric Gredell, P.E.
Project Manager



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RAB MEETING #4
January 11, 1996**

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Naval Sea Systems Command Attn: Steven Hoffman C-SEA 654-C Washington, SC 20362-5101	1
Minnesota Pollution Control Agency Site Response Section Ground Water and Solid Waste Division Attn: David Douglas 520 Lafayette Road St. Paul, MN 55155	1
U.S. Environmental Protection Agency Region V Remedial & Enforcement Response Branch OH/MN Section, Unit 1 (HSRM-6J) Attn: Tom Bloom 77 W. Jackson Blvd. Chicago, IL 60604-3590	1
United Defense LP Armament Systems Division Attn: Doug Hildre 4800 East River Road Minneapolis, MN 55421	1

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January 11, 1996**

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**Minutes of Meeting
Restoration Advisory Board Meeting #4
January 11, 1996**

**Naval Industrial Reserve Ordnance Plant
Fridley, Minnesota**

Restoration Advisory Board (RAB) meeting #4 was held at the Fridley Municipal Center in Fridley, Minnesota, on January 11, 1996. A copy of the agenda distributed at the meeting is attached.

A. Introductions

1. Kerry Morrow opened the meeting at approximately 7:00 p.m. All meeting participants introduced themselves.
2. After requesting comments on the meeting notes for RAB meeting #3 held on October 12, 1995, several attendees of the October 12 meeting indicated that they did not receive a copy of the notes. It was agreed that the notes for RAB meeting #3 would be redistributed during the week of January 15, and comments on these notes will be requested at the next RAB meeting.

B. Actions Since Last Meeting

1. David Cabiness reported that the final Remedial Action Workplan for Groundwater Remediation - Revision 3 was issued on November 21. The MPCA issued an approval of the workplan on December 28, with certain modifications. In addition, the MPCA did not take action on the Quality Assurance Project Plan (QAPP), which is part of the overall workplan, because the MPCA believed the QAPP to be submitted for Operable Unit (O.U.) #3 would include a QAPP for O.U.#1.
2. David Cabiness said a draft report titled "Evaluation of Groundwater Containment System Effectiveness" was issued on October 11, 1995. This report evaluates the effectiveness of the upgraded extraction well system in achieving hydraulic containment of contaminated groundwater, after startup of the two new extraction wells in June 1995. The MPCA and the USEPA are currently reviewing this report.
3. David Cabiness said responses to the USEPA comments on the Feasibility Study (FS) for O.U.#2 are being prepared. When issued, these responses will "close out" further separate actions on O.U.#2. Revisions to some pages of the FS for O.U.#2 will be prepared, and the revised pages will be distributed as replacement sheets to all persons who received the FS report. The USEPA and MPCA have agreed that O.U.#2 will be incorporated into the Remedial Investigation (RI) and FS for O.U.#3. The RI for O.U.#3 will proceed as a comprehensive investigation that addresses all potential contamination sources at the site, both beneath and outside the plant buildings.

Tom Bloom said the FS for O.U.#2 is considered to be completed. A separate Record of Decision (ROD) for O.U.#2 will not be issued.

4. Scott Glass said an initial investigation of possible soil and groundwater contamination at the east end of the Plating Shop area has been completed. A follow-up study for the Plating Shop area has been proposed in a workplan that was sent to the USEPA and MPCA on December 27. The workplan is currently being reviewed by the USEPA/MPCA. After addressing USEPA/MPCA comments in a final workplan, the additional investigations will be performed, including soil and groundwater sampling.
5. Scott Glass said the Site Evaluation Report (SER) for O.U.#3 identified 64 potential areas-of-concern, i.e., areas that warrant some level of investigation as potential contamination sources. The SER formed the basis for preparation of a RI workplan for O.U.#3. The draft workplan was issued on December 22. Preliminary discussions were held among the Navy, USEPA, and MPCA concerning the approach for the RI workplan and the separate workplan for the focused Plating Shop study. Preliminary comments from the USEPA and MPCA on the draft RI workplan are expected in 2 to 3 weeks. Responses to the comments will be issued approximately 1 month after receipt of the comments.
6. John Flora said the issue of possible use of the treated groundwater by the City of Fridley has been decided, based on the MPCA's decision to proceed with issuing the final NPDES permit to allow the groundwater to be discharged to the river. He said the city still wants to review the design documents for the groundwater treatment facility when they are available. He said the final NPDES permit did not include numerical limits for iron or manganese.

Gary Eddy said the MPCA considered the city's comments regarding iron and manganese during the permit process, and the MPCA believed that numerical limits for these metals were not necessary. He said it will still be possible to monitor the effect of the discharge from the treatment facility on iron and manganese concentrations. He said the final permit will contain a requirement to monitor for iron and manganese in the discharge to the river.

David Douglas said the MPCA Citizens' Board considered the fact that iron and manganese that may be present in the treatment facility effluent are naturally occurring in the groundwater, and are not present in the groundwater due to the NIROP. He said the Board also considered the MPCA's determination that concentrations of iron and manganese in the discharge are expected to be much lower than the concentrations of these metals already present in the river water.

7. Tim Ruda reported that a full round of monitoring well sampling was done from November 14 to 16. This round included 17 existing monitoring wells that were recently added to the official network, beginning with the November sampling round. David Cabiness said the Burlington Northern Railroad did allow access to sample well 23-S on their property, although the Navy was unable to locate the written access agreement.

Tim Ruda said 78 million gallons of groundwater were pumped during the fourth quarter of 1995, compared to 77 million gallons in the third quarter. This indicates that operation of the overall extraction well system has been reliable and consistent over the last half of 1995. A total of 244 million gallons were pumped during 1995. Water level readings were taken at all site monitoring wells and the river on December 27.

Extraction wells AT-1A, AT-2, and AT-4 were acid-cleaned on October 12. The pump for AT-2 was also repaired; this pump only ran for 14 months between repairs. Future pump replacements or repairs will use butyl rubber for wetted parts, instead of Teflon as provided in the original pumps. Teflon parts are much more expensive than rubber parts, and Teflon-fitted pumps have a delivery time of several weeks. Rubber-fitted pumps are usually off-the-shelf. The longer-term performance of the rubber-fitted pumps will be compared to the performance of the Teflon pumps.

Monitoring data indicated that well AT-2 was not capable of yielding the groundwater flowrate that the well pump was capable of producing. This indicated that the well screen had become partially plugged. On December 1, the pump was pulled, and the well screen was carefully cleaned using a high-pressure (100 psi) water jet. The cleaning procedure was similar to procedures used to redevelop a well. Chlorine was also used during the cleaning. The well cleaning did not result in significantly increased flowrate from the well. However, after air-sparging and flushing the pipeline for the AT-2 system, the flowrate increased from 25 gpm prior to cleaning to 65 gpm after cleaning. The current flowrate is 80 gpm; the maximum potential flowrate from the AT-2 system (when operating only AT-2) is 120 to 130 gpm.

The flowrates from the two wells added in June 1995 are 155 gpm from AT-5A, and 72 gpm from AT-5B. These wells have produced very consistent flowrates with no operating problems since their startup in June.

8. Michael Flaherty said the Metropolitan Council Environmental Services (MCES) sampled the discharge to the sewer on January 30, 1995. Their analysis for oil and grease indicated 2.8 mg/L, which is within the MCES permit requirements.

C. Actions for Next Quarter

1. David Cabiness said that design of the groundwater treatment facility will begin shortly after the USEPA and MPCA approve the effectiveness of the groundwater extraction system, as presented in the draft report that is currently under review by the USEPA/MPCA. The final design documents for the treatment facility, approved by the USEPA/MPCA, are required to be completed within 1 year after the USEPA/MPCA approve the capture effectiveness, according to the ROD. The design documents will be issued for review and comments 3 times at various stages during their preparation.
2. David Cabiness said that as follow-up to further investigations for potential buried drums in the north 40 that occurred in 1995, a Navy contractor will mobilize to the site on April 15, 1996 to dig backhoe pits in 10 areas in the north 40 that indicated anomalies during the 1995 geophysical investigation. The anomalies may be drums or other metal objects of similar size and shape. The buried objects that created the anomalies will be identified by the backhoe pits inspection. A removal contractor will also be on standby during the backhoe pit work, to remove any materials that cannot be replaced into the pits. This work will be entirely funded through contracts issued by SOUTHDIV.

Doug Hildre said that all emergency removal notification requirements must be followed for this work, including public notice procedures. He said that United Defense representatives would sign the waste manifests, provided United Defense can

decide where the wastes are to be taken for final disposal. Kerry Morrow said that due to the logistics involved in the manifest process, it would be more efficient if the work was performed by the operating contractor, United Defense. The Navy will review the contracting plan to determine the appropriate contracting approach.

3. Tom Bloom said a "pre-QAPP" (pre-Quality Assurance Project Plan) meeting must be held for preparation of the Remedial Investigation/Feasibility Study (RI/FS) workplan for O.U.#3. Scott Glass said the Navy also wants to resolve all QAPP-related issues and questions at this meeting.
4. Scott Glass said a seismic imaging study of the geology beneath the NIROP is planned to be done as part of the RI for O.U.#3. The study is intended to identify geologic zones where concentrated TCE (trichloroethene, which is a dense non-aqueous phase liquid or "DNAPL") may be present. During the week of January 22, a representative of the U.S. Geologic Survey who is an expert on geophysical investigation techniques will meet with the Navy, USEPA, and MPCA at the NIROP to discuss methods appropriate for investigating the NIROP site.
5. Doug Hildre said he provided some comments on the draft workplan for the Plating Shop investigation to the Navy. His comments noted that there would be several conflicts between proposed drilling and work locations and plant production operations. Scott Glass said some interferences are expected; the RI work will be adjusted as necessary to accommodate plant operations. Doug Hildre said the area south of the Plating Shop may particularly have conflicts. It was noted that the actual number of soil borings required for soil pore gas screening will depend partly on the type of soil encountered, and other factors. Proposed soil boring locations have been selected after observation of the specific work locations on the plant floor. Some preferred boring locations have already been moved or eliminated due to actual or potential interferences with plant equipment or operations.

John Betcher said the MPCA must be kept informed of any changes to proposed investigation locations due to interferences. Kerry Morrow said that the CLEAN contractor has requested that multiple decontamination points be provided throughout the plant to minimize equipment movement in plant aisles.

6. The preliminary draft of the Community Relations Plan - Revision 1 will be sent to Kerry Morrow and David Cabiness for review.
7. The Annual Monitoring Report for 1995 is to be issued by April 30, 1996.
8. Scott Glass noted a correction to the meeting agenda. Comments on the draft RI/FS workplan for O.U.#3 are to be received from the USEPA and MPCA by January 31, 1996, pending resolution of QAPP-related issues. The workplan is not expected to be approved by the USEPA/MPCA by January 31, as noted in the agenda.
9. The next round of water levels from all monitoring wells will be done on March 20. The next full sampling round will occur in April. Michael Flaherty said he had requested sampling of the discharge to the sanitary sewer to be done at the same time as sampling of the monitoring wells. Tim Ruda confirmed that this was done for the sampling round in November 1995, and will be done for future sampling rounds. In addition, samples of the combined discharge to the sewer will be analyzed for mercury, beginning with the November 1995 sample, as required by the MCES permit.

D. RCRA Status

No topics were discussed.

E. Community Relations

1. John Flora said the city sent several letters to various community representatives requesting them to join the RAB. Only 3 responses were received. Kerry Morrow said that notices of the RAB formation and opportunity to participate were sent by the Navy to several local organizations in an attempt to generate community interest in the site environmental activities. Only 1 person responded. The Navy will continue to publish public notices.
2. Gary Eddy said there has been significant public interest in the RAB that was formed by the U.S. Army for the TCAAP site. The first RAB meeting was recently held for the TCAAP site. The plan for future use of the affected property is a hot issue at that site.

F. General Topics

1. John Flora's name will be shown on the master mailing list as the point of contact for the City of Fridley; Mark Winson's name will be deleted.
2. John Flora will be added to the distribution list for all draft and final documents. This includes a draft of RAB meeting notes.
3. Eric Gredell said that based on a review of RMT's files, written responses to the USEPA's review comments on the original Determination Document issued in December 1992 were never prepared. This was based on an agreement at that time between Tom Bloom and Jim Shafer, the Navy's project manager, from various telephone discussions. It was agreed that the requirement for preparation of written responses to these USEPA comments is officially "closed out," as documented by these meeting notes.
4. John Flora requested to receive a copy of any construction cost estimates for the planned groundwater treatment facility when they are available. David Cabiness said cost estimates are not planned to be prepared until the 100%-complete design documents submittal.
5. John Flora asked if the groundwater flow model for the site was used to evaluate whether the extraction well system would stop the flow of contaminated groundwater to the southeast, away from the NIROP property. He also asked if the groundwater extraction system provides adequate capture on the north end of the site. He said in another part of the city, it is believed that pumping from city wells is drawing-in contaminated groundwater from a location that is some distance from the city's well. He asked if there is any chance that contaminated groundwater in the bedrock at the NIROP site could be flowing backward to any of the city's wells, and might be detected at some future time.

Eric Gredell said this situation is very unlikely or even impossible to occur, based on our knowledge of the groundwater flow system in the area of the site. Eric Gredell will review these questions with RMT's hydrogeologist, and will send a response to John Flora via David Cabiness. The matter will be discussed again at the next RAB meeting.

6. John Flora asked if the opportunity to do some drilling and sampling inside the plant in advance of the full O.U.#3 RI effort was gone. David Cabiness said the opportunity to sample inside the East Plating Shop is gone. Additional sampling outside the East Plating Shop and inside and outside the West Plating Shop will be conducted prior to the start of the O.U.#3 investigation.
7. John Flora said that remediation at most sites that have contamination problems similar to the NIROP involves installation of some type of surface barrier. Because the NIROP plant buildings basically serve as this type of barrier, he asked why it is now necessary to go look for contamination under the plant.

John Betcher said it is suspected that some concentrated TCE has sunk through the soil to confining layers in the soil beneath the plant. The TCE could be hung-up as concentrated solvent on clay lenses. He said it is necessary to investigate under the buildings to provide information that may lead to cleanup methods that can accelerate the overall rate of the site cleanup, other than relying only on the groundwater pump-and-treat approach.

Tom Bloom said the amount of contamination under the plant buildings may dwarf the amount outside the plant. Doug Hildre asked why this is believed to be the case. Tom Bloom said this is based on results from the investigations done at the East Plating Shop area, where TCE concentrations were found in groundwater at high part-per-million levels. Mark Ferrey said that in the O.U.#2 RI/FS, the Navy had determined that the bulk of the groundwater contamination was coming from sources under the plant buildings.

8. John Flora asked if there was any action planned to investigate the condition of the sewers under the plant as a possible continuing source of water that might percolate through contaminated soil due to leaks in the sewer pipes. Tim Ruda said some sewers have been televised over time, and portions of some sewer laterals have been checked. However, there are no current projects planned to rebuild sewers. David Douglas said that based on the Initial Assessment Study (IAS) done in 1984 or 1985, up to 25,000 gallons per month of solvents were dumped into the sewers in the past. After some discussion, it was estimated that the average historical solvent usage was only about 2,146 gallons per month, or approximately 25,000 gallons per year. However, only a few incidents of solvent spills that may have entered the sewers have been reported in the past, totalling only a few hundred gallons spilled. John Flora said that due to their age, the plant sewers are probably not very tight, and are probably leaking. He said relining of the sewers should be considered.
9. David Cabiness said the RI/FS for O.U.#3 is currently planned to address only the portion of the plant owned by the Navy. The plant areas owned by United Defense are not included in the work. David Douglas said the Federal Facility Agreement indicates that the United Defense property is not considered to be part of the NIROP site. However, the MPCA wants the O.U.#3 RI/FS to address all areas, including both Navy and United Defense property. The MPCA has requested the Navy to address

the United Defense property in the RI/FS. He said the MPCA will take actions as necessary to require that appropriate remedial measures are taken for the United Defense property.

10. John Flora said the Navy seems to require everything to be in writing before they will take any action. He said he believes that Minneapolis citizens will be drinking some additional TCE in their water as a result of the Navy's inaction. He also believes that problems related to color of the river water will occur after startup of the groundwater treatment facility.
11. John Flora said he is concerned that identification of the site started in 1980, but a groundwater treatment facility will not be operational until 1998 or later. He said he believes that the cleanup process is taking too long. Gary Eddy said the remedial process is proceeding at a reasonable rate, considering the size and complexity of the site and the problems. David Cabiness said that significant progress toward cleanup has been accomplished over the years since the problems were identified. He said there are also no immediate threats to public health caused by the site, as indicated by non-detect levels of TCE in the intake water at the Minneapolis Water Works over the last several years.
12. David Cabiness said the Navy has allocated sufficient funds for the sewer bills through FY 1996.
13. The option of returning to daytime RAB meetings was raised. After discussion, it was agreed that at least one more RAB meeting will be held in the evening, at the Municipal Center. Gary Eddy said that lack of significant community interest in the site is not necessarily negative. The next RAB meeting will be held on Thursday, April 18, 1996, from 7:00 p.m. to 9:00 p.m. at the Fridley Municipal Center, 6431 University Avenue NE, Fridley, Minnesota.

NIROP FRIDLEY RESTORATION ADVISORY BOARD MEETING #4
@ FRIDLEY MUNICIPAL CENTER
JANUARY 11, 1996
AGENDA

1. INTRODUCTION

2. Corrections to Minutes of RAB #3

3. RAB Formation

- General discussion for new public attendees

4. Actions since last meeting

NAVY/RMT

Operable Unit #1 - Groundwater

- Status on design of new treatment facility
- RAWP Revision #3
- Capture Evaluation Report Approval by agencies

Operable Unit #2 - Soils outside plant

- Feasibility study(FS) status
- NORTH 40 Drum Investigation/ Remediation contractor mobilization in Spring 96.

Operable Unit #3 - Soils under NIROP Plant

- Additional Soil Sampling in Plating area
- Site Evaluation Report for OU#3
- Update on Draft Remedial Investigation(RI) Workplan
- Status of Seismic Imaging Survey of Navy Property at Nirop Fridley.

Miscellaneous

- Community Relations Plan(CRP) update

CITY OF FRIDLEY

- General comments

UNITED DEFENSE

- Maintenance and Monitoring Activities

MINNESOTA POLLUTION CONTROL AGENCY

- NPDES Permit Status

5. Actions Scheduled/DUE for Next Six Months

OU#1 - Annual Monitoring Report DUE:30 APR 96

OU#3: - Approval of Remediation Investigation
Workplan by Agencies DUE:31 Jan 96

6. Other issues/Comments