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June 18, 1993

Commanding Officer
SOUTHNAVFACENCOM
Chris Bartku; Code 1862
P.O. Box 190010
North Charleston, SC 29419-9010

Re: Naval Industrial Reserve Ordnance Plant
Fridley, Minnesota
Contract No. N62472-90-C-1024
RMT Project No. 2313.28

Dear Chris:

Enclosed, for your use, are two copies of the final notes from Technical Review Committee meeting #17 held at the Naval Industrial Reserve Ordnance Plant on April 29, 1993. Other copies of these notes have been distributed according to the attached Distribution List.

Sincerely,

A handwritten signature in cursive script that reads "Eric Gredell".

Eric Gredell, P.E.
Project Manager

vld

Enclosure

**DISTRIBUTION LIST
MEETING NOTES
TRC MEETING #17**

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Omaha District
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Omaha, NE 68102-4973

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City of Fridley
Department of Public Works
Fridley Municipal Center
Attn: Mark Winson
6431 University Avenue, N.E
Fridley, MN 55432

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Northern Division
NAVFACENGCOM 1821 J/S
Attn: Jim Shafer
10 Industrial Highway; Mail Stop #82
Lester, PA 19113-2090

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Dick Hanson
NAVSEA Technical Representative
Naval Industrial Reserve Ordnance Plant; Code 55
5001 East River Road
Minneapolis, MN 55421-1406

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Naval Sea Systems Command
Attn: Steven Hoffman
CSEA 654-C
Washington, DC 20362-5101

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Minnesota Pollution Control Agency
Site Response Section
Ground Water and Solid Waste Division
Attn: Steven Giddings
520 Lafayette Road
St. Paul, MN 55155

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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

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TRC MEETING #17**

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Defense Plant Representative Office FMC-Minneapolis Attn: Commander Daniel Hogan 4800 East River Road Minneapolis, MN 55421-5094	1
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B&V Waste Science & Technology Corp. Attn: Margaret Casserly 230 West Monroe St.; Suite 2250 Chicago, IL 60606	1

**Minutes of Meeting
Technical Review Committee Meeting #17
April 29, 1993**

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

Technical Review Committee (TRC) meeting #17 was held at the Naval Industrial Reserve Ordnance Plant (NIROP) in Fridley, Minnesota, on April 29, 1993. A copy of the agenda distributed at the meeting and an attendance list are attached.

A. Introductions

1. Jim Shafer introduced Chris Bartku, from the Southern Division - Naval Facilities Engineering Command (SOUTHNAVFACENGCOM). Chris will replace Jim Shafer as the Navy's Project Manager, effective May 1, 1993. His address and phone number are as follows:

For Non-Post Office Deliveries

Commanding Officer
SOUTHNAVFACENGCOM
Chris Bartku; Code 1862
2155 Eagle Drive
Charleston, SC 29411-0068

Phone: 803-743-0611
FAX: 803-743-0563

For Post Office Deliveries

Commanding Officer
SOUTHNAVFACENGCOM
Chris Bartku; Code 1862
P.O. Box 190010
North Charleston, SC 29419-9010

All correspondence and telephone calls regarding environmental matters at the NIROP should be directed to Chris Bartku as of May 1, 1993. A letter was sent by the Navy to the USEPA, the MPCA, FMC Corp., and RMT announcing the project management transition. Jim Shafer will remain involved with the NIROP activities through a transition period over the next several months. He may also attend the next TRC meeting.

2. Paul Trapp was introduced as the MPCA on-site inspector for the NIROP.

B. Actions Since Last TRC Meeting

1. The U. S. Army Corps of Engineers' (USACE) contract with Morrison-Knudsen Company (M-K) will be closed out in the near future. A one-year warranty period on the equipment in the groundwater extraction and pretreatment systems will be provided by M-K, beginning on April 13, 1993.
2. FMC Corp. is responsible for operation, maintenance, and monitoring of the groundwater extraction and pretreatment systems as of April 13, 1993. FMC personnel received training and instructions from M-K for operation and maintenance

of the systems. The USACE is continuing to install some additional improvements to the equipment after April 13, including: pressure regulating valves on each groundwater extraction line; cycle counters on the extraction wells; and modified sampling ports on the extraction wells.

3. FMC has been responsible for monitoring of the groundwater extraction system (GWES), according to the Remedial Action Workplan (RAWP), since January 1993. RMT is providing laboratory services for analysis of the groundwater samples during 1993, under arrangements with FMC. FMC has also made arrangements with two other companies: E. H. Renner & Sons, Inc., to provide maintenance service for the extraction wells and pumps; and Carbonair Services, Inc., for maintenance of the groundwater pretreatment system including carbon change-out.
4. It was reported that monitoring of the GWES performance has been performed according to the Remedial Action Monitoring Plan (RAMP) since startup of the system in 1992. Tom Bloom said that the sampling schedules defined in the RAMP can be considered somewhat flexible, i.e., sampling could be done in the range of one week before or one week after the week indicated by the RAMP schedule.
5. The in-plant piping that was installed by FMC to divert a portion of the extracted groundwater for use as non-contact cooling water within the plant was disconnected from the GWES piping on April 12, 1993, by use of blind flanges on the piping connection. This was done as a provision of the equipment warranty provided by M-K. Contaminated groundwater will not be used as cooling water for at least a one-year period beginning in April 1993. After one year, the possibility of using groundwater as cooling water will be re-evaluated.
6. Revised pages for Volume 2 of the O&M Plan have been completed by M-K and approved by the USACE. The Navy (RMT) will send the complete two-volume plan to the USEPA, the MPCA, FMC, NAVSEA, and the document repository.
7. Doug Hildre reported that the flowrate from extraction well AT-1A has continually decreased, and has ranged from 0 to 60 gpm. The cause of the problem is uncertain. Possible causes include flow meter inaccuracy, backpressure from AT-3A, or design deficiencies.
8. Doug Hildre said that FMC has made arrangements with the same contractor used by the USACE for continuing monitoring of the air emissions from the carbon unit. However, FMC wants to modify the lab method for analysis of the air samples. FMC will send Steve Giddings a request to modify the current lab method and sampling plan. The carbon unit currently provides 60 to 90 days of treatment capacity for each carbon load.
9. Jim Shafer said that the RAWP was approved by the USEPA and MPCA in September 1992. The O&M Plan is expected to be issued within two weeks.
10. Linda Hicken presented the status of the remedial investigation (RI) for the soil operable unit, and an overview of the preliminary findings from the risk assessment which is under preparation by RMT. The Draft RI Report and risk assessment are scheduled to be sent to the Navy for review on April 30, and to the USEPA and MPCA by May 21. The potential for leaching of contaminants from soil to groundwater will be addressed under the feasibility study (FS), according to the state's soil leaching

evaluation model; this evaluation is not included in the RI Report or risk assessment, as previously agreed. The ecological assessment indicates that there are no suitable habitats at the NIROP for potentially endangered species, and in addition, the facility is secured by double-row fencing. The preliminary remedial action objectives for the soil are as follows: 1) control migration of potentially hazardous VOCs via soil pore gas, and 2) control exposure via inhalation and ingestion of surface soil.

C. Actions for Next Quarter

1. Steve Giddings said that the MPCA needs information on the projected total flow rate of treated groundwater to the river from the upgraded GWES, to complete processing of the NPDES permit. Carolyn Voelkers is the engineer from the MPCA Water Quality Division assigned to the NIROP permit. Steve Giddings will ask her to call Eric Gredell to discuss the specific information needed by the MPCA.

After the flow information is provided, the MPCA will complete the draft permit and begin the public notice process. The Navy will meet with the City of Minneapolis representatives prior to the public notice period to discuss their concerns regarding the discharge to the river.

2. The state's soil leaching model has been revised recently, and more changes are expected to be issued within two months. The current model is in guidance status. John Betcher will send a copy of the current model information to Linda Hicken.
3. The MPCA and USEPA will provide duplicate review of the draft risk assessment for the soil RI. However, the primary review will be provided by USEPA-Region V.
4. Jim Shafer said that a workplan for upgrading the GWES will be sent to the USEPA and MPCA. A meeting with the USEPA and MPCA is planned at RMT's office about two weeks after the workplan is sent, to discuss the workplan and agree on the approach for upgrading the system. Based on the current preliminary schedule, construction of the extraction well or wells and procurement of the pump(s) and other equipment will begin in about four months.
5. Jim Shafer said that the groundwater flow model calibration is expected to be completed within about two weeks. Simulations will then be run to determine the approach for upgrading the GWES. The simulations will consider options such as shutdown of wells AT-1A and/or AT-4, and other pumping options.

D. RCRA Status

1. The drums and debris excavated during the field work for the soil RI have been shipped in 6 truckloads to the licensed waste disposal site in Emelle, Alabama. Although the debris was classified as a non-regulated waste, it was also sent to Emelle because the local landfill would not accept it. A newspaper notice of the removal action was issued. No comments from the public were received. A copy of the notice has been placed in the information repository.
2. The status of the three soil piles in the north 40 is as follows:

- One pile (30 to 50 cy) was sent to a hazardous waste incinerator.
 - One pile was sent to a thermal treatment unit.
 - FMC has requested a variance from the MPCA to allow landspreading of the third pile in the north 40. The soil failed to meet percolation test requirements of the MPCA and Anoka County. FMC expects to have discussions with the county regarding the variance request. It is expected to require 1 to 2 years to complete the landspreading operation.
3. FMC has requested MPCA's approval of a time extension to begin construction of the soil vapor extraction system at Hazardous Waste Storage Area "C," due to funding problems. The contractor has been hired, and the work can proceed as soon as funding is arranged. The requested schedule is as follows:
- | | |
|----------|---------------------|
| 6-3-93: | Start construction |
| 9-3-93: | Finish construction |
| 9-13-93: | First air sampling |
4. Fred Jenness said that all RCRA-related permitting is on schedule.

E. Community Relations

No relevant topics were discussed.

F. General Topics

1. Jim Shafer said that the Navy is now questioning the value of AT-1A as part of the groundwater extraction well network. Factors under consideration include: the relatively low flowrate from the well; the operational problems with the well that have continued since startup; the relatively low VOC concentrations in the extracted groundwater; the ability of the other wells to provide equivalent plume capture without AT-1A; and the future soil remediation which is expected to address on-site contamination source areas. He said that the need for continued operation of AT-1A will be evaluated during design of improvements to upgrade the GWES, which will begin this summer.
2. Jim Shafer said that design of the on-site groundwater treatment facility is on hold, until the plan for upgrading the GWES has been resolved. It is expected that calibration of the groundwater flow model will be completed within approximately two weeks. At that time, the model can be used to perform simulations for upgrading the GWES.
3. Jim Shafer noted that a RI for soil was not done concurrently with the RI/FS for groundwater. However, the Navy now believes there is a benefit to the overall remediation effort to combine soil and groundwater remediation. For example, wells AT-1A and AT-4 were originally intended to function as "source control" wells, located in areas of known groundwater contamination. The Navy now wants to re-evaluate the need for source control wells, considering the demonstrated effectiveness of the wells and the pending source area remediation for soil.

4. Jim Shafer said that the Navy is pursuing the remedial action defined in the Record of Decision, which includes discharge of pretreated groundwater to the MWCC sanitary sewer on an interim basis, until a new on-site groundwater treatment facility is built. At that time, the groundwater will be discharged to the river after treatment, under a NPDES permit.

The Navy has made commitments to continue evaluating opportunities for re-use of groundwater as they are identified. Approximately 20% of the extracted groundwater flow is expected to eventually be used at the NIROP as cooling water, replacing water supplied from the city system.

5. Representatives of the City of Fridley have expressed an interest in receiving treated groundwater from the NIROP to supplement the city's municipal water supply system. The city has referenced the situation at the TCAAP and New Brighton sites as examples of reuse of treated groundwater for municipal supply. Jim Shafer noted that at TCAAP and New Brighton, the U.S. Army is providing potable-quality water in accordance with requirements of the Record of Decision for those sites. The Record of Decision for those sites required the Army to take this action because the Army was responsible for contamination of the city's municipal groundwater resource.

Jim Shafer pointed out that this is not the same situation as at the NIROP. The City of Fridley's groundwater supply has not been impacted by past activities at the NIROP. Several samples taken from Fridley Well No. 13 have consistently shown no detectable concentrations of NIROP contaminants. Groundwater contamination at the NIROP is found in a different aquifer than the aquifer which provides the city's drinking water. He said it is premature to make commitments to supply treated groundwater to the city. As stated in the groundwater reuse study report issued in 1992, the new on-site groundwater treatment facility should be started up with the final GWES and the effectiveness of the overall groundwater remediation system should be evaluated before the option of supplying treated groundwater to the city can be considered.

Jim Shafer said that the Navy is not in the business of supplying drinking water to cities. He pointed out that it would not be advisable for the city to consider reliance on water supplied from the NIROP remediation as a permanent solution to the city's potable water supply problems. He noted that at other Navy remediation sites where treated groundwater has been provided to municipalities, conflicts have developed between the municipalities and the Navy when the site remediation had progressed to the point where groundwater extraction could be cut back or completely stopped after remediation goals had been met. At the NIROP, the Navy intends to continue the overall site remediation efforts, so that the groundwater extraction can be scaled-back or stopped in the future. He said that the Navy will not pay the additional costs for chemical treatment, disinfection, etc., needed to provide potable-quality water to the city. The Navy' goal for the NIROP is to comply with the Record of Decision and the Federal Facility Agreement.

Gary Eddy said that at the TCAAP site, there have been disagreements regarding responsibility for payment of certain costs related to treating the contaminated groundwater to potable quality.

6. Jim Shafer said that the Navy is aware of concerns expressed by representatives of the City of Minneapolis regarding the planned discharge of treated groundwater to the river. The Navy intends to address these concerns during design of the groundwater

treatment facility. The Navy has also frequently stated a willingness to meet with the city representatives to discuss the specific technical details for the treatment facility design that the city would like to have incorporated into the design.

7. Gary Eddy noted that the City of Fridley was previously not in favor of an option for using groundwater from the NIROP remedial action as a supplement to the city's drinking water supply. He said that the city has now reversed their previous position. He also noted that the MPCA is aware of the concerns regarding the planned discharge to the river expressed by the City of Minneapolis. He suggested that if the Navy provides at least partial reuse of the groundwater for cooling water at the NIROP, this may help alleviate some of the resistance shown by the cities.
8. Steve Giddings said that the City of Fridley had previously noted two conditions to their acceptance of any plan to use treated groundwater for the city's water supply. These conditions were 1) no cost to the city, and 2) no detectable concentrations of any contaminants of concern that are attributable to the NIROP. He suggested that the city should consider its ability to provide funding for the additional costs involved in providing treated groundwater of drinking water quality, if the city is still interested in pursuing this approach.
9. Jim Shafer said that the printing company located immediately north of the NIROP may still want to use some of the treated groundwater in the future. There are also plans to use about 20% of the groundwater flow at the NIROP as non-contact cooling water. These measures will help decrease the demand on the city's water system and thereby provide additional water supply capacity for the city.
10. Doug Hildre said that the pumps in the GWES must be capable of providing groundwater at the required pressure and flowrate at the air compressors in the plant. Filtration equipment may be needed ahead of the compressors' cooling system if solids in the groundwater would cause unacceptable levels of fouling in the cooling system. It may be necessary to replace some of the extraction pumps to provide the required groundwater flowrate and pressure.
11. It was noted that some water quality parameters which are not required by the RAMP have been obtained from groundwater sampling done since startup, to provide data for design of the groundwater treatment facility. It was agreed that general regional groundwater quality data would not be appropriate for use as design criteria at the NIROP.
12. Jim Shafer said that at the public meeting held for the groundwater Record of Decision, Adam Kramer raised a concern regarding the effect of the groundwater extraction on the overall groundwater recharge to the river. He said that concerns such as this raise the question of the viability of alternate disposal options for the treated groundwater, such as reinjection. John Betcher said that reinjection is currently not allowed in the state. However, Gary Eddy said that variances have been granted by the state at 2 or 3 other remediation sites, to allow remedial technologies such as steam or hot water injection. He noted that these variances were controversial due to objections by some environmental groups. He said that gravity infiltration of treated groundwater is allowed. He suggested that if the Navy is going to reconsider the options for discharge or reuse of treated groundwater prior to beginning design of the treatment facility, the possibility of reinjection under a variance from the state should be considered.

Doug Hildre said that injection is required for several currently developing remedial technologies, such as air sparging or steam sparging for use at sites with dense non-aqueous phase liquids (DNAPLs). Gary Eddy said that a variance was granted for use of steam injection at one site with creosote contamination. He said that the state will be more willing to consider variances for such remediation methods as they are developed.

13. The subject of future land use scenarios was discussed. Gary Eddy said that residential land use is the scenario used by the USEPA and MPCA for evaluation of risk and selection of soil cleanup targets. He said there is currently much general interest and debate on this topic. He said that for the NIROP soil cleanup, the MPCA will dictate cleanup levels; these levels are not negotiable.

Chris Bartku said that at other Navy sites in other USEPA regions, deed restrictions were incorporated into the future land use scenarios by the regulatory agency. Tom Bloom said that Region V is not likely to accept deed restrictions as part of a future land use plan.

Jim Shafer said that under the general category of institutional controls, there are many options that still need to be defined for the NIROP. These options and the appropriate cleanup levels will be addressed in the FS.

14. Scott Erickson asked about the current procedures for billing and payment of sewer use fees. Jim Shafer said that the fees are calculated based on flow meter readings. Bills are issued by the City of Fridley and the MWCC.
15. The next TRC meeting was scheduled for Thursday, July 22, 1993, at 1:00 p.m. in the Defense Plant Representative Office at the NIROP Fridley. This meeting date was selected in part to coincide with the Navy's receipt of review comments on the Draft RI Report and risk assessment from the USEPA and MPCA.

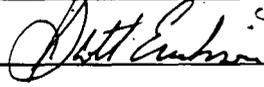
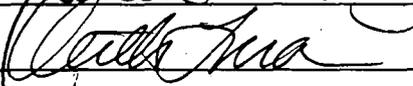
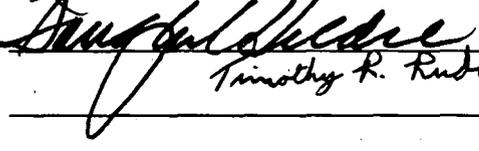
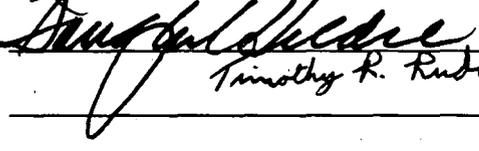
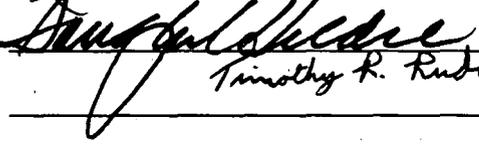
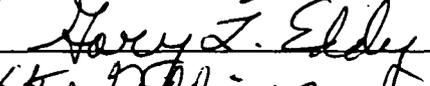
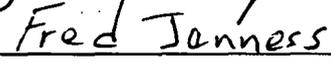
TECHNICAL REVIEW COMMITTEE (TRC) MEETING #17
29 APRIL 1993
NIROP FRIDLEY, MINNESOTA

AGENDA

1. INTRODUCTIONS
2. ACTIONS SINCE LAST TRC MEETING
 - * PHASE I GROUNDWATER EXTRACTION AND PRETREATMENT SYSTEMS
 - MWCC SAMPLING/REPORTING
 - RAMP SAMPLING/REPORTING
 - O&M RESPONSIBILITY HANDOFF TO FMC
 - OPERATIONAL STATUS (REPORT BY FMC/USACE)
 - PUMPING/WATER LEVEL RESPONSE ASSESSMENT (REPORT BY RMT)
 - * PHASE II TREATMENT PLANT DESIGN
 - * GROUNDWATER REUSE
 - NIROP PLANT
 - CITY OF FRIDLEY
 - * STATUS OF PERMITS
 - NPDES
 - * STATUS OF PHASE I DOCUMENTS
 - REMEDIAL ACTION WORKPLAN - (SEPTEMBER 1992)
 - PHASE I OPERATION & MAINTENANCE PLAN
 - * SOILS OPERABLE UNIT
 - PRELIMINARY FINDINGS
 - SCHEDULE UPDATE
 - * STATUS OF REMOVAL ACTION - DISPOSAL OF SOIL AND DEBRIS
 - * GROUNDWATER FLOW MODEL CALIBRATION
3. ACTIONS SCHEDULED FOR NEXT QUARTER
 - * GROUNDWATER EXTRACTION SYSTEM UPGRADE
 - WORKPLAN
 - MEETING WITH USEPA/MPCA
 - * LONG-TERM MONITORING PER REMEDIAL ACTION WORKPLAN
 - * AREA C RCRA SITE
 - * MEETING WITH CITY OF MINNEAPOLIS OFFICIALS
4. OTHER ISSUES/COMMENTS
5. NEXT TRC MEETING

TECHNICAL REVIEW COMMITTEE (TRC) MEETING #17
 29 APRIL 1993
 NIROP FRIDLEY, MINNESOTA

LIST OF ATTENDEES:

<u>NAME</u>	<u>ORGANIZATION</u>	
Margaret Casserly	Black and Veatch	
Scott Erickson	City of Fridley	
Sam Bass	COE	
Janet Ehresmann	COE	
Mark Koenig	COE	
Eugene Liu	COE	
Robert Hutchinson	County of Anoka	
Evan Drivas	DNR	
John Dresch	DPRO FMC Minneapolis	
CDR Hogan	DPRO FMC Minneapolis	
Keith Lura	DPRO FMC Minneapolis	
Sue Oetterer	DPRO FMC Minneapolis	
Doug Hildre	FMC/NSD	
Tim Ruda	FMC/NSD	
Darlene Weber	FMC/NSD	
Larry Cole	Minneapolis Water Works	
Adam Kramer	Minneapolis Water Works	
John Betcher	MPCA	
Paul Trapp Dawn Duncanson	MPCA	
Gary Eddy	MPCA	
Steve Giddings	MPCA	
Fred Jenness	MPCA	
Michael Flaherty	MWCC	

<u>NAME</u>	<u>ORGANIZATION</u>
Jeff Allison	NAVSEA
Richard Hanson	NAVSEA
Steve Hoffman	NAVSEA
Kerry Morrow	NAVSEA
James Shafer	NORTHDIVNAVFAC
Eric Gredell	RMT, Inc.
Linda Hicken	RMT, Inc.
Tom Koch	RMT, Inc.
Chris Bartku	SOUTHDIVNAVFAC
David Criswell	SOUTHDIVNAVFAC
Thomas Bloom	USEPA

Richard Hanson

Steve Hoffman

James Shafer

Eric Gredell

Linda Hicken

Chris Bartku

Thomas Bloom