

**COMMUNITY RELATIONS PLAN - REVISION 1
FOR THE
NAVAL INDUSTRIAL RESERVE ORDNANCE PLANT
FRIDLEY, MINNESOTA**

**U.S. DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
SOUTHERN DIVISION**

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Section 1
OVERVIEW OF COMMUNITY RELATIONS PLAN

This Community Relations Plan (CRP) was developed to identify community concerns and information needs that may arise during remedial activities at the Naval Industrial Reserve Ordnance Plant (NIROP) in Fridley, Minnesota. The Southern Division, Naval Facilities Engineering Command (NAVFAC), is managing the remedial activities at the site, with regulatory oversight by the Minnesota Pollution Control Agency (MPCA) and the U.S. Environmental Protection Agency (USEPA), Region V.

This plan describes the site's conditions and historical background, identifies key parties and issues of concern to the affected community, and recommends activities and a schedule to provide information and encourage public involvement in the remedial process at the NIROP. The CRP is presented in the following sections:

- Site Description and Remediation Progress
- Community Background
- Elements of Community Relations Plan
- Appendices -- RAB Mission Statement and Rules of Operation, Key Contacts, Repository Locations

This plan was developed in accordance with the requirements for community relations activities at this site contained in the Federal Facility Agreement Under CERCLA Section 120 between the United States Environmental Protection Agency—Region V and the United States Department of the Navy and the Minnesota Pollution Control Agency, dated March 1991. Community issues and recommended activities are based on interviews conducted by representatives of the U.S. Navy in the Minneapolis area in August 1990, and on additional topics of interest that have developed during implementation of the groundwater remedial action since that time. The original CRP, which was issued in May 1991, reflected information obtained from interviews in August 1990 with approximately 20 members of the community and representatives of groups and agencies with interest or involvement in the remedial process at the NIROP.

A final remedial action for groundwater has been selected, as specified in a Record of Decision for groundwater, which was signed by the MPCA, the USEPA, and the Navy in 1990. This remedial action is currently being implemented by the Navy, under an approved Remedial Action Workplan. As agreed by the MPCA and the USEPA, cleanup of soil at the site is being managed under two "operable units" that are separate from the groundwater operable unit. The Navy is currently performing a remedial investigation and feasibility study (RI/FS) that addresses contaminated soil at the site, including soil beneath the plant buildings. After completion of the RI/FS for soil, a final remedial action for soil will be selected in a separate Record of Decision. Public involvement and the Navy's public communication procedures in the remedial process for the soil operable units are expected to follow procedures similar to those used for the groundwater operable unit, in accordance with the requirements of the Federal Facility Agreement signed by the MPCA, the USEPA, and the Navy.

This revision of the CRP primarily addresses site background, historical information, and community relations information related to the groundwater operable unit. A subsequent revision of the CRP will be prepared and issued by the Navy to address public information needs and procedures for public participation specifically related to the soil operable units, as work on the soil remediation progresses.

Section 2
SITE DESCRIPTION AND REMEDIATION PROGRESS

2.1 Location, Facility Use, and Description

The Naval Industrial Reserve Ordnance Plant (NIROP) is located in the northern part of the Minneapolis/St. Paul Metropolitan Area within the city limits of Fridley, Minnesota (Figure 1). Advanced naval weapons systems are designed and manufactured at the NIROP. The northern portion of the facility is located on 80 acres of government-owned land, but is operated for the Navy by United Defense, L.P., Armament Systems Division (formerly the FMC Corporation, Naval Systems Division). The remainder of the facility is owned and operated independently by United Defense (Figure 2).

The naval ordnance manufacturing facility was constructed at its current location in 1940 and was initially operated by the Northern Pump Company. In 1964, the FMC Corporation purchased the southern portion of the property and ordnance facility. Groundwater contamination resulting from disposal practices at the FMC facility was detected in 1980. As a result, the FMC property was one of the original sites placed on the National Priorities List (NPL) by the USEPA. Remedial activities have been conducted separately by United Defense, L.P. on their property.

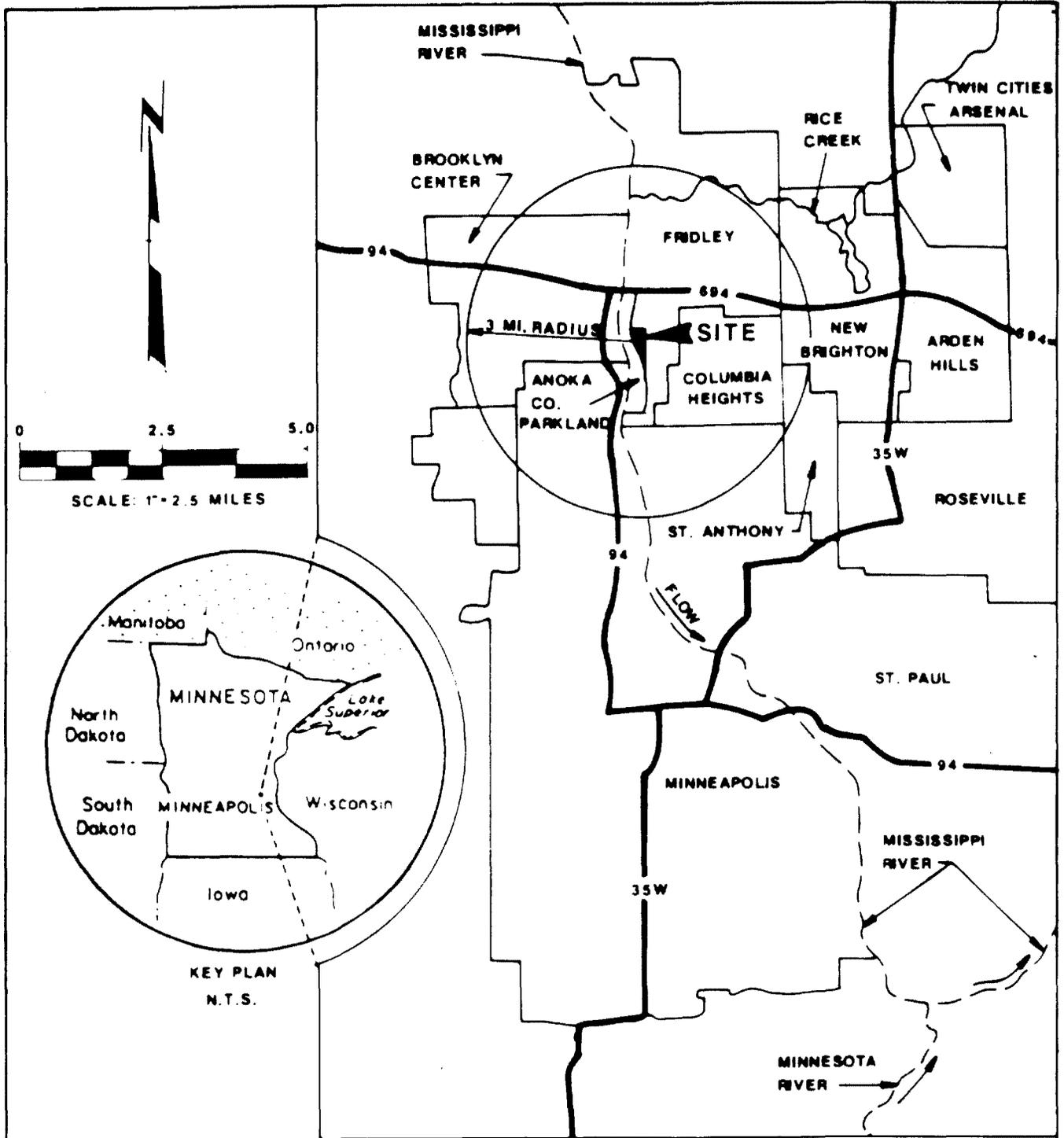
Contamination problems were also discovered at the government-owned northern portion of the facility, which was added to the NPL in 1989. Investigations were started in the early 1980s by the Navy, as described in a following subsection. The subject of this plan is the government-owned portion of the facility, which is referred to as the NIROP site.

2.2 Environmental Setting

The NIROP comprises approximately 80 acres, most of which are covered with buildings or pavement. It is situated on a broad, flat plain next to the Mississippi River and approximately 30 feet in elevation above it. The NIROP lies approximately 700 feet east of the east bank of the Mississippi River.

Adjacent land uses consist of the following:

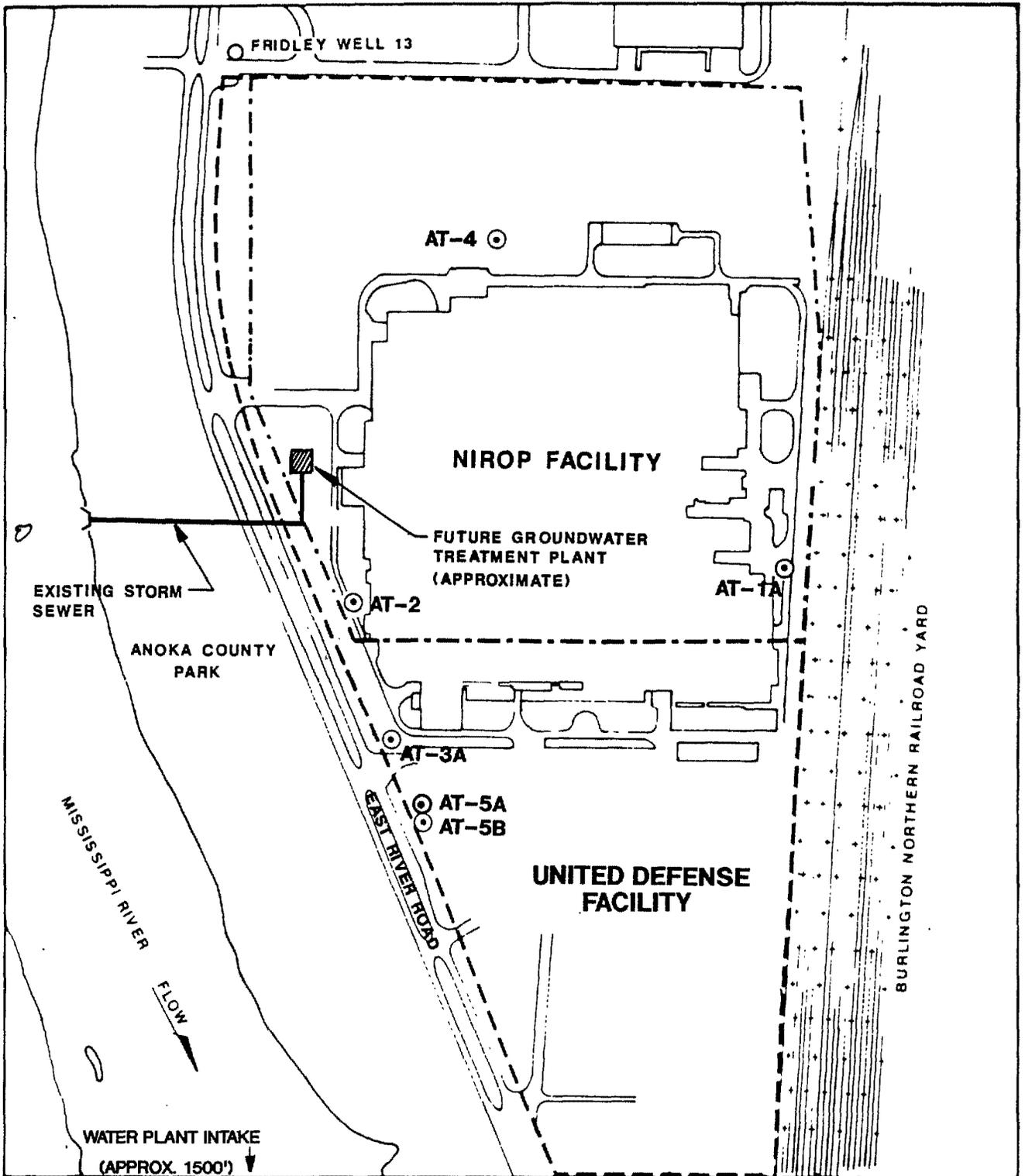
- To the north - commercial and light industrial
- To the south - industrial



LOCATION MAP

	DWN BY: MDD
	DATE: FEB. 1997
	PROJ # 3315.09

FIGURE 1



LEGEND

- NIROP PROPERTY BOUNDARY
- UNITED DEFENSE FACILITY BOUNDARY
- ⊙ GROUNDWATER CONTAINMENT AND EXTRACTION WELL

SITE PLAN

0 500'
1" = 500'

RMT INC.

DWN. BY: MDD

DATE: FEB. 1997

PROJ. #: 3315.09

FIGURE 2

- To the west - recreational
- To the east - railyards and commercial/light industrial

Natural resource use in the area is limited to recreational activities in the Anoka County Parkland, which is directly across East River Road from the NIROP, adjacent to the Mississippi River. Use of these resources does not result in access to the NIROP itself, which is highly restricted by the Department of Defense. No federal or state freshwater wetlands are located within 1 mile of the site; and no critical habitats, endangered species, or national wildlife refuges have been identified in the vicinity of the site.

An aquifer within unconsolidated sediment overlies the Prairie du Chien/Jordan (PCJ) aquifer system in the vicinity of the NIROP. The thickness of the unconsolidated aquifer ranges from 100 feet to 140 feet under the NIROP facility. Except for an area at the southern end of the NIROP, where the St. Peter Sandstone has been eroded, the unconsolidated aquifer is hydraulically separated from the PCJ by a silty to shaly layer of the St. Peter Sandstone, which acts as a partial barrier between these aquifers. The unconsolidated aquifer is in contact and hydraulically connected with the PCJ in the eroded area, at the southern portion of the NIROP. The natural groundwater flow in the unconsolidated sediments beneath the NIROP discharges into the Mississippi River, generally to the southwest of the plant.

Groundwater use in the vicinity of the NIROP consists primarily of high-capacity industrial production wells, which draw water from the PCJ system. The total population served by groundwater within a 3-mile radius is approximately 29,000 residents. There are no groundwater wells or users downgradient of the NIROP between the NIROP and the Mississippi River. The city of Fridley maintains a backup potable water supply well (Fridley Well 13 - shown on Figure 2), which also draws water from the PCJ immediately north of the NIROP. During peak demand periods, Fridley Well 13 is used to supplement the current water supply system.

The Navy has collected and analyzed a sample from Fridley Well 13 annually since 1991. One volatile organic compound, chloroform, was reported at 3.4 micrograms per liter ($\mu\text{g/L}$) in a sample collected from Fridley Well 13 in February 1991. Chloroform, along with bromodichloromethane, dibromodichloromethane, and bromoform, make up a group of compounds known as

trihalomethanes. Although there is no federal drinking water standard (Maximum Contaminant Level [MCL]) for chloroform, there is a standard for trihalomethanes. The MCL for trihalomethanes is 100 µg/L for the sum of the four compounds. No other volatile or semivolatile organic compounds have been observed in any samples from Fridley Well 13. The source of the one-time occurrence of chloroform in February 1991 has not been determined.

The city of Minneapolis Water Treatment Plant withdraws water from the Mississippi River less than 1 mile downstream from the NIROP. The population served by the water treatment plant is approximately 500,000 people.

2.3 Summary of Site Investigations and Selected Remedy for Groundwater

In December 1980, the MPCA discovered trichloroethene (TCE) in three NIROP supply wells drawing water from the PCJ. TCE is a common industrial solvent formerly used at the NIROP. Samples obtained at the same time from NIROP storm sewer outfalls at the Mississippi River also showed the presence of TCE and other volatile organic compounds (VOCs). Subsequent sampling at the city of Minneapolis Water Treatment Plant intake on the Mississippi River also revealed measurable, but very low, concentrations of TCE.

Investigations into potential problems in the vicinity of the NIROP were started in the early 1980s by FMC Corporation and the Navy. Two separate areas of concern were identified: the South Study Area and the North Study Area. The South Study Area consisted of property owned by FMC Corporation, which was identified by the MPCA and the USEPA as the FMC Site. The North Study Area consisted of property owned by the United States government, which was identified by the MPCA and the USEPA as the NIROP Site.

FMC pursued investigation of the FMC Site separately from the government-owned NIROP Site. A Response Order By Consent dated October 28, 1986, was signed by FMC Corporation and the MPCA, and a Record of Decision for groundwater remediation at the site was signed by the USEPA in September 1987.

An Initial Assessment Study (IAS) of the NIROP Site was completed by the Navy in June 1983. The IAS determined that drummed wastes had occasionally been buried in the northern portion of the NIROP, an accepted practice in the past, and that such wastes may be contributing to

groundwater contamination. As a result of IAS recommendations, the Navy contracted the U.S. Army Corps of Engineers (USACE) to continue investigations.

Through various geophysical and remote sensing techniques, nine areas were selected for excavation based on their likelihood for containing drummed wastes. These areas were excavated in the fall of 1983 and the spring of 1984. Forty-three excavated drums and 1,200 cubic yards of underlying soil were found to contain VOCs, PCBs, oil and grease, pesticides, and metal-bearing wastes. The drums and contaminated soil were disposed at a USEPA-approved landfill.

Several phases of groundwater monitoring well installation began in June 1983. A total of 64 monitoring wells have been installed. Of that total, 44 wells are currently used for monitoring groundwater quality across the site. Wells have been drilled into the shallow, intermediate, and deep portions of the unconsolidated aquifer, as well as the PCJ aquifer in the bedrock. The monitoring well network was, and continues to be, used to determine physical and chemical characteristics of the unconsolidated and PCJ aquifers underlying the NIROP and some adjacent areas.

An analysis of the information gathered during the RI was contained in a RI Report and RI Addendum submitted in June 1987 and July 1988, respectively. The data indicated the following:

- All use of TCE at the NIROP was discontinued by April 1, 1987. Plant operations that previously used TCE now use 1,1,1-trichloroethane. A solvent management program is in place at the NIROP, and the disposal of solvents is in accordance with state and federal regulations.
- Elevated concentrations of TCE and dichloroethene were found in soil pore gas samples near the former pit/trench disposal area, near a concrete pad in the north storage yard area, and at several locations near the north property boundary.
- Groundwater in the unconsolidated aquifer generally flows from the northeast to the southwest across the NIROP. The aquifer discharges to the Mississippi River.
- Groundwater in the unconsolidated aquifer beneath the NIROP is contaminated with VOCs, including the following: TCE, 1,1,1-trichloroethane, 1,2-dichloroethene, tetrachloroethene, 1,1-dichloroethane, toluene, xylene, and ethylbenzene. TCE was found more frequently and at higher concentrations than any other VOC, and is therefore the best indicator chemical.

- TCE concentrations downgradient of the former pit/trench disposal area decreased substantially following the removal of drums and contaminated soil.
- Concentrations of TCE in groundwater reaching the Mississippi River were estimated to be on the order of 1 to 10 milligrams per liter (mg/L). This range of TCE concentrations was expected to continue until the groundwater remedial action was implemented, given the TCE levels detected at the southwestern corner of the NIROP. However, the concentrations of TCE in the groundwater are rapidly reduced as the groundwater flows into the river, due to dilution from the large volume of river flow compared to the groundwater flow. TCE was not detected in river water samples collected at the Water Treatment Plant intake over the previous 3 years.
- The investigations continued to show concentrations of VOCs in the Prairie du Chien bedrock aquifer, but the concentrations were within the limits set by the federal drinking water standards.
- One round of samples was collected in 1988 from storm sewers serving the NIROP. No VOCs were found.
- Because TCE is present in wells upgradient of known sources on the NIROP, the possibility existed of additional unidentified on-site sources as well as possible off-site sources of contamination.

On the basis of these findings, remedial alternatives were evaluated as part of a Feasibility Study (FS). A FS Report and FS Addendum were submitted to the MPCA and the USEPA in July and August 1988, respectively. The FS concluded that a groundwater extraction and treatment alternative was the most appropriate response to site conditions identified during the RI. The proposed system would consist of at least five extraction wells pumping groundwater from both the identified source areas and from downgradient locations. During Phase I of the pumping program, groundwater would be discharged to the local sanitary sewer system for treatment at the Pig's Eye Wastewater Treatment Plant, with pretreatment of the groundwater prior to discharge to the sanitary sewer, if determined to be necessary. Concurrently, an on-site treatment facility would be designed and constructed. During Phase II, groundwater would be treated in the newly completed on-site facility and then discharged through a state-permitted outfall to the Mississippi River.

After discussions with, and a review by, the USEPA and the MPCA, this alternative was presented to the public in a "Proposed Plan for Groundwater Remediation" in May 1990. After a 30-day public comment period and subsequent refinements, this remedial plan was accepted in a Record of Decision signed by the USEPA, the MPCA, and the Navy on September 28, 1990.

2.4 Current Remediation Status

Construction of the original groundwater extraction (and containment) system was completed in 1992. The work performed during construction of the groundwater extraction system included a pumping capacity test at each of four extraction wells. The results of these tests, which included groundwater sampling and analysis, indicated that groundwater pretreatment was required prior to discharge of the groundwater to the sanitary sewer owned by the Metropolitan Council Environmental Services (MCES), formerly called the Metropolitan Waste Control Commission (MWCC), to meet discharge limits set by the MCES. Therefore, pretreatment facilities were also constructed at the NIROP for use during the interim Phase I discharge to the sanitary sewer.

The groundwater extraction system and pretreatment facilities began operating in September 1992. Monitoring of these facilities and of the monitoring wells has been performed since startup according to the procedures defined in a Remedial Action Workplan for Groundwater Remediation, which has been approved by the MPCA and the USEPA. As required by the Record of Decision (ROD), a document presenting an evaluation of the effectiveness of the original groundwater extraction system in achieving hydraulic containment of contaminated groundwater from the site during the initial 90-day operating period was submitted to the USEPA and the MPCA in December 1992. In that document, it was concluded that one or more additional groundwater extraction wells were likely to be needed to achieve hydraulic containment of contaminated groundwater from the site. The ROD stated that, if the performance objective for groundwater containment (i.e., hydraulic containment of contaminated groundwater migration from the site) was not met by the original groundwater extraction system, then the Navy was to submit a written plan to the USEPA and the MPCA for upgrading the system to achieve hydraulic containment.

A draft Workplan for Improvement of Groundwater Containment System Effectiveness was submitted to the MPCA and the USEPA in July 1994, and a final Workplan was submitted in January 1995. That Workplan, which was approved by the MPCA and the USEPA, called for the

construction of two additional groundwater extraction wells approximately 300 feet southeast of well AT-3A in an employee parking lot owned by United Defense, L.P., to enhance the ability of the overall extraction system to capture the contaminant plume, especially at the plume's southern edge. Groundwater hydraulic data and pumping flowrate records were to be collected and used with a calibrated groundwater flow model for the site to evaluate the effectiveness of the upgraded extraction well system. A document presenting the results of the evaluation was to be sent to the USEPA and MPCA for review and approval within 90 days after the Navy accepts the construction of the upgraded system from its construction contractor and turns over operating responsibility to United Defense, L.P.

Construction of the two additional extraction wells has been completed. The wells were started up on June 29, 1995, and have remained in operation since that time.

After startup, groundwater levels and flowrate data were collected and used to evaluate the effectiveness of the upgraded extraction well system. The results of this evaluation were included in a draft report titled "Evaluation of Groundwater Containment System Effectiveness," submitted to the USEPA and the MPCA in October 1995. Review comments on this report were sent to the Navy by the MPCA on April 22, 1996, and by the USEPA on May 10, 1996.

Significant improvements in groundwater quality at the site have been observed since startup of the original groundwater extraction system in 1992. Through the end of 1995, a total of 16,770 pounds of volatile organic compounds (VOCs) have been removed with the extracted groundwater, resulting in significant reductions in concentrations at many site monitoring wells. In addition, with the startup of the two additional extraction wells in 1995, the combined groundwater extraction system now provides a wide zone of containment for contaminated groundwater as it flows beneath the NIROP. The VOC concentrations in the combined groundwater discharge to the sanitary sewer have also decreased to levels where pretreatment of the groundwater is not necessary to meet the MCES permit limits. As a result, the groundwater pretreatment facilities were shut down in March 1995; the groundwater is now discharged directly to the sanitary sewer without pretreatment.

2.5 Possibilities for Groundwater Reuse

In response to requests and interest expressed by several parties, the Navy performed a study of potential options for reuse of the extracted groundwater. The results of this study were included in a report issued by the Navy in December 1991. The groundwater reuse option that was identified as most feasible was to use the groundwater for once-through, non-contact cooling water for certain processes in the plant, replacing the use of potable water (from the Fridley water system) as the cooling water supply. Piping and equipment were installed in the plant to allow for the use of the groundwater for the cooling water supply after startup of the groundwater extraction well system in September 1992. However, because problems occurred with the piping system and the groundwater extraction system equipment, using groundwater for cooling water supply was not attempted, and the groundwater piping was physically disconnected from the plant cooling water system. New closed-loop cooling water facilities were subsequently installed at the plant in 1995. This closed-loop system has significantly reduced the volume of city water required for make-up to the cooling water system, thus making the option of future groundwater reuse as a source of cooling water impractical.

The city of Fridley and the Navy have also discussed and evaluated options for the possible use of the groundwater, after suitable treatment, as a supplemental drinking water supply for the city. Although the city and the Navy have been unable to develop a mutually agreeable plan for implementing this option, the possibility of reusing the NIROP groundwater as a supplemental potable water supply may be revisited in the future if there are changes in the key factors affecting the feasibility and practicality of this option.

Section 3
COMMUNITY BACKGROUND

3.1 Community Profile

The city of Fridley covers an area of approximately 15 square miles on the east bank of the Mississippi River in Anoka County, Minnesota. The city has an estimated population of 30,000, which has remained fairly stable since the 1970 census. Fridley is located approximately 8 miles north of downtown Minneapolis and is served by Interstate 694 and state highways 47 and 65.

Fridley's economic base is comprised largely of manufacturing and service industries, employing approximately 27,500 people. With employment exceeding its workforce, the city is a net importer of employees from the surrounding communities. The largest employer in Fridley is United Defense, L.P., Armament Systems Division (operator of both the United Defense facility and the NIROP), with approximately 2,800 employees. In 1991, other major employers included the following (in descending order): the Medtronics Corporation, manufacturing electro-medical equipment; Onan, a division of Hawker-Siddeley, manufacturing generators; Burlington Northern Railroad; Target Stores, Inc.; and the Unity Medical Center.

The city of Fridley has a council-manager form of government, with a mayor and four council members elected by city voters. The council sets city policy, which is implemented by an appointed city manager through the city's departmental structure. The city provides municipal services, including public works; police and fire protection; parks and recreation; and water supply, treatment, and distribution. Wastewater service is provided by the Metropolitan Council Environmental Services (MCES), electric power is supplied by the Northern States Power Company, and solid waste service is privately contracted.

3.2 Chronology of Community Involvement

In May 1989, newspaper announcements were placed for a public meeting presented by the U.S. Navy in Fridley to discuss the results of the NIROP RI/FS for groundwater. No one from the general public attended this meeting.

In mid-July 1989, several radio stations and one TV station made spot reports reflecting renewed USEPA interest in adding federal facilities with hazardous waste problems to the National

Priorities ("Superfund") List. The NIROP at Fridley was mentioned in these broadcasts. KMSP-TV broadcasted 20 seconds of footage of the plant, including the sign indicating the facility is owned by the Naval Sea Systems Command. No public inquiries were made as a result of this coverage. A Public Repository of site-related documents was established at an Anoka County Public Branch Library in Fridley on July 31, 1989. After the NIROP was added to the NPL in November 1989, several articles appeared in the local newspapers.

The Navy placed newspaper announcements and mailed fact sheets to announce the public comment period for the proposed NIROP groundwater remedy in May 1990. Approximately 15 community members and local officials attended the public meeting held on May 9, 1990. Several questions and comments were raised, relating to both the protectiveness of the proposed remedial action and to possible effects on the local and regional aquifer system. Two letters containing comments were also received during the public comment period. Verbal responses were provided at the public meeting, and written responses were provided in the Record of Decision. On May 16, 1990, a front-page article appeared in the *Fridley Focus*, in which a local Navy representative provided an overview of the site's status.

Local input to the selection of the preferred remedy was also provided through a Technical Review Committee (TRC), established by the U.S. Navy. TRC meetings, held approximately quarterly since early 1989, brought together local representatives of the water and wastewater utilities, local governments, and federal and state representatives. This involvement facilitated remedial planning by the U.S. Navy and alerted interested local groups to the proposed activities.

A chronology of selected milestone events is presented below.

February 8, 1989	Navy establishes the Technical Review Committee (TRC) for the project and convenes the first meeting.
May 22, 1989	Public meeting to present the RI/FS is held in Fridley, Minnesota.
July 14, 1989	NIROP is listed as a proposed site on the NPL by the USEPA.
July 31, 1989	Public Repository is established at Anoka County Branch Library, 410 N.E. Mississippi St., Fridley, MN.

November 21, 1989	NIROP is listed as a final site on the NPL by the USEPA.
May 1, 1990	Navy issues final Proposed Plan for groundwater remediation after review by the MPCA and the USEPA.
May 9, 1990	Public meeting to present the Proposed Plan is held in Fridley, Minnesota.
May 1, 1990 - May 30, 1990	Public comment period for the proposed groundwater remedial action is held.
September 28, 1990	Record of Decision for groundwater remedial action is signed by the Navy, the MPCA, and the USEPA.
March 28, 1991	Final Federal Facility Agreement is signed by the Navy, the MPCA, and the USEPA.
September 1992	Startup of original groundwater extraction well and pretreatment system (4 wells).
April 6, 1995	Navy establishes the Restoration Advisory Board (RAB) to replace the TRC.
June 29, 1995	Startup of 2 additional groundwater extraction wells.

3.3 Key Community Concerns

Community interviews were conducted in the Minneapolis area in August 1990 with 20 individuals, representing both public and private interests. Representation included the following:

- Community residents
- City of Fridley: elected officials and city staff
- City of Minneapolis: elected officials and city staff
- Anoka County staff
- State and regional agencies: MPCA; MCES; Department of Natural Resources
- Local news media

The following discussion of issues related to NIROP site activities is based on the interviews and on comments received during the May 1990 public comment period. The issues and concerns are grouped by general category. Although specific issues voiced during the interviews are not

attributed to individuals, the representative group or agency is referenced where appropriate. Additional issues related to the NIROP activities have not been raised by members of the general community since the interviews conducted in 1990.

Understanding of Site Identity and Responsible Entities

Relatively few Fridley residents have specific knowledge of the NIROP site. In many cases, people who have some knowledge of the site history and investigations associate the NIROP with the United Defense site (formerly the FMC site). The United Defense management expressed concern that community residents generally do not distinguish between the privately owned and operated United Defense portion, on which groundwater remediation has been under way since 1987, and the government-owned NIROP site.

The NIROP site is often linked with other federal facilities in the area, particularly the Twin Cities Army Ammunition Plant (TCAAP) site, which is located several miles northeast of the NIROP in the city of New Brighton. Anoka County and Fridley city officials expressed concern that some residents may confuse the problems at the TCAAP site, where extensive groundwater contamination has affected the New Brighton water supply, with the NIROP site, where the Fridley water supply is not threatened by groundwater contamination at the NIROP. The TCAAP site has received a great deal of media attention, in contrast to the NIROP.

Fate of Contaminants

Community members and public officials agree that groundwater supplies and the Mississippi River must be protected from groundwater contamination related to the NIROP site. The Fridley water supply draws upon the deeper Prairie du Chien aquifer, and no effects on the city's wells have been associated with contamination from the NIROP. Nonetheless, local officials and residents want to be assured that contaminants from the site are not affecting water quality at Fridley's Well 13, and that it will not affect their water supply in the future.

Although in 1990 no TCE had been found in samples collected annually by United Defense at the Minneapolis Water Treatment Plant intake for the previous 3 years, Minneapolis city officials questioned whether testing had been sufficient to detect the presence of TCE and similar contaminants. They asked how much TCE was entering the river from the NIROP site. The city representatives also voiced concern about Phase II of the remedial action plan, which proposes

treating the groundwater recovered from the site to meet standards contained in a state-approved permit and discharging it to the river. The City has concerns about discharging the treated groundwater to the river, even if the discharge complies with drinking water standards, and raised a question about the total amount, or mass loading, of TCE that may be discharged to the river.

At the public meeting held in May 1990, questions were raised about the fate of TCE under various proposed treatment and discharge scenarios. Concern was voiced about whether TCE could possibly leak from the sanitary sewer system and if it would be effectively removed at the Pig's Eye Wastewater Treatment Plant (under Phase I discharge of extracted groundwater to the sanitary sewer system) or would still be present in the wastewater treatment plant effluent that is discharged to the river. Although apparently not a major concern, questions were also raised about the use of air stripping or other treatment technologies to remove VOCs, and the resulting environmental effects.

Disposition of Extracted Groundwater

At the public meeting and during several of the interviews, community members and local officials raised various issues related to the ultimate disposition of the groundwater that will be extracted at the site. Because the estimated volume of extracted groundwater was as much as 1 million gallons per day, several people advocated further consideration of the alternatives for discharging the water, both before and after it is treated.

Concern was expressed about the effect on the capacity of the MCES sanitary sewer system if a large volume of groundwater is discharged during Phase I. Local officials questioned whether new development might be restricted if the groundwater volume reaches the maximum estimated levels during the Phase I period. Some people were concerned about discharging water that contains any residual contaminants into the river.

Fridley residents and officials requested the Navy to evaluate alternatives for the reuse of the groundwater that will be treated during Phase II. Instead of discharging the treated water to the river, as identified in the Record of Decision, they expressed a preference for reuse of the water on the site, possibly for plant processes or cooling, or for use in irrigating parkland or for some other purpose within Fridley. The Minnesota Department of Natural Resources and the MPCA also advocated beneficial reuse of the treated groundwater.

To address these concerns, the Navy completed a study of several options for reuse of the treated groundwater. The results of this study were presented in a report issued in December 1991, and included a recommendation for reuse of the water at the NIROP to supply the major nonpotable water uses at the facility. However, as described above, modifications to the plant's cooling water system that were made subsequent to this recommendation have made reuse of the groundwater within the plant impractical. Although feasible options for groundwater reuse do not currently exist, the Navy will continue to identify and assess any new options that may develop in the future.

The MPCA addressed the concern regarding the discharge of residual contaminants to the river during preparation of the permit for the discharge, under the National Pollutant Discharge Elimination System program. A final permit for the discharge has been issued by the MPCA. The discharge limits in the permit have been established by the MPCA to ensure that the discharge will be protective of human health and the environment.

Effect on Water Resources

City of Fridley officials expressed concern about the potential effect of pumping groundwater from the site on the aquifer system and nearby wells and on the moisture content of soil layers in the area. The question was whether the pumping would deplete the unconfined aquifer faster than it would recharge, and whether soil moisture content would decrease to a point where subsidence or instability could result. The city transmitted written comments and questions on these issues during the comment period on the proposed remedy, and responses were provided in the Record of Decision.

Other individuals expressed concern about the overall effect on water resources. Drought conditions in recent years have resulted in increased reliance on groundwater supplies, and some individuals were concerned about drawing down the supply. Although it was recognized that the groundwater beneath the NIROP was not used as a water supply, people asked whether pumping at the site would affect groundwater availability in other areas. Representatives of the city of Minneapolis raised the question of what potential effects the pumping from the unconfined aquifer would have on Mississippi River flow volume.

Institutional Issues Related to Remedial Action

The selected remedial action for groundwater requires the involvement of several governmental entities. Groundwater is being discharged to the sanitary sewer system during Phase I under a permit from the MCES, which also collects user fees based on the volume of discharge. Because the MCES provides service on a contract basis to the city of Fridley rather than to individual customers, the City is billed for the NIROP discharge. The City, in turn, collects the appropriate fees from the Navy. Prior to design of the extraction well system, the City was concerned about accurately measuring the volume of groundwater pumped into the sewer so that the Navy can be charged for its usage. Appropriate flow meters have been provided with the groundwater extraction system to record the total flow volume discharged to the sewer.

Other individuals requested information about the institutional relationships, permitting requirements, and regulatory responsibilities related to remedial site activities. Several people asked for clarification of the roles of the Navy, the MPCA, the USEPA, the MCES, and local entities, both in implementing the remedy and in monitoring compliance during ongoing cleanup activities.

Section 4
ELEMENTS OF COMMUNITY RELATIONS PLAN

4.1 Restoration Advisory Board

In April 1995, the Navy established a Restoration Advisory Board (RAB) for the NIROP. The purpose of the RAB is to establish and maintain a forum for the open exchange of information between federal and state agencies and the community concerning restoration activities at the NIROP, and to provide advice and comments on such activities. The RAB replaced the Technical Review Committee, which had served as the primary forum for community members, regulatory agencies, and other government groups to provide comments prior to creation of the RAB. The RAB provides an opportunity for direct input by members of the community into the environmental restoration plans for the site, through the Community Co-chair or community RAB member representing the affected stakeholder.

4.2 Highlights and Objectives

The NIROP community relations program outlined in this plan will be conducted during implementation of the groundwater remedial action. The signing of the ROD on September 28, 1990, initiated Phase I of the remedial process, including the construction of the groundwater extraction system and the discharge of groundwater to the sanitary sewer. In an effort to increase public awareness of ongoing investigative and cleanup activities, the NIROP program will focus on providing information and opportunities for comment by those parties who may be affected by, or who have demonstrated direct interest in, the remediation activities on the site.

The onset of construction activity associated with remedial action sometimes generates heightened public awareness or concern. However, no inquiries or concerns were expressed by persons from the community during construction of the remediation facilities that are currently in use at the NIROP. The Navy will continue to provide information about site activities to the general public, keying the type and frequency of information to the public interest. During the remedial action process, the Navy will monitor the level of awareness or concern, and make adjustments to the community relations program as necessary to address issues and information needs.

The NIROP program will focus on accomplishing the objectives listed below.

Continue to Provide for Community Input through the RAB

The RAB provides an appropriate forum for community members to give comments and raise concerns regarding ongoing or planned remediation activities at the NIROP site. Persons can provide this input through the Community Co-chair, through other RAB members from the general public, or by directly participating as a RAB member representing the community.

To encourage participation and attendance at RAB meetings, evening meetings were held at the Fridley Municipal Center on October 12, 1995, January 11, 1996, and April 25, 1996 (previous meetings were held at the NIROP during working hours). Public announcements for each meeting were made by the city of Fridley. However, attendance at these meetings by the general public was very limited. Due to the general lack of interest in the site expressed by the public, the RAB meetings are now held during regular working hours at the NIROP, to reduce the inconvenience and cost to the regular meeting participants. However, the RAB will continue to consider the need to schedule any individual meeting at the Municipal Center, if an agenda item for that meeting is expected to be of some particular interest or concern to the public.

Clarify Institutional Roles and Arrangements

To address the concern about accounting for the interim discharge of groundwater to the MCES sanitary sewer system, Fridley city officials will be kept informed about the status of ongoing maintenance and monitoring of the existing flow meters that are used to record the volume of groundwater pumped, and the sewer use charges that are paid by the Navy. This will provide assurance that the Navy is paying the appropriate costs. Information will also be provided about permitting and other regulatory requirements during implementation of the remedial action. In addition, to reduce public confusion among the NIROP and other sites in the area, the Navy's information program will continue to clarify site identity and institutional roles of the entities involved in the remedial process.

4.3 Techniques and Timing

Community relations techniques included in the NIROP program are intended to address public issues, meet information needs during the remediation process, and fulfill regulatory

requirements. The timing of community relations activities has been, and will continue to be, keyed to technical milestones (Figure 3). The following activities are required to comply with community relations provisions under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) that apply after a Record of Decision (ROD) has been signed:

1. Public Notice of ROD Availability

The Navy issued a news release announcing the signing of the ROD for groundwater by the Navy, the MPCA, and the USEPA and placed notices of ROD availability in local newspapers (*Fridley Focus*; *Columbia Heights Focus*; and *Northeast Minneapolis/St. Anthony Weekend Preview*, published October 3, 1990). The Navy also mailed copies of the news release describing the selected remedial action to all parties on the NIROP mailing list. All written communications announced the availability of the ROD and other background information in the local information repositories.

2. Explanation of Post-ROD Significant Changes

Although not anticipated, the Navy will provide an explanation if significant changes occur in any aspect of the planned remedial action after the ROD is adopted. The Navy, the MPCA, and the USEPA will determine whether modifications to the agreed-upon plan constitute a fundamental change. If that is the case, the Navy will publish a paid advertisement in the local newspapers explaining the proposed modifications to the remedial action. The Navy will also announce and hold a public comment period and public meeting. Any changes that do not constitute a fundamental change to the remedy can be described in the fact sheet on the remedial design (see below).

3. Fact Sheet and Notice on Remedial Engineering Design

Prior to the construction of the groundwater treatment facility at the NIROP, the Navy will issue a news release announcing the completion of the design and the planned start of construction, and will issue a fact sheet describing the remedial design. Drafts of news releases and fact sheets will be reviewed and approved by the assigned community relations staff of the MPCA and/or the USEPA before distribution. The Navy will also purchase advertisements in the local newspapers to announce the availability of design

FIGURE 3

TIMING OF NIROP COMMUNITY RELATIONS ACTIVITIES

REMEDIAL ACTION MILESTONES							
Community Relations Techniques	Record of Decision	Groundwater Extraction Wells - Startup	Results of Additional Investigations	Final Design of Groundwater Treatment Facilities	Startup of Groundwater Treatment Facilities	Monitoring Results - Groundwater Containment & Treatment	Monitoring of Remedy Effectiveness
Notice of availability (Paid Advertisement)	X			X			
News releases	X	X			X	X	X
Fact sheets		X	X	X			
Public meetings				X			
Contact with key local officials and RAB members	X	X	X	X	X	X	X
Annual monitoring reports						X	X
Restoration Advisory Board meetings	Quarterly						
Information repositories	Ongoing Maintenance						

information in the public repositories. The fact sheet will be distributed to all parties on the NIROP mailing list.

4. Mailing List

The Navy has developed a mailing list consisting of approximately 200 individuals in the Minneapolis area. The list includes RAB members, elected officials and local government staff, local residents interested in NIROP site activities, print and broadcast news media, and other interest groups or parties that wish to be kept informed of environmental issues. Portions of the list were provided by the MPCA and the cities of Minneapolis and Fridley. The Navy will maintain the mailing list at the NAVFAC Southern Division office (refer to Appendix B for list of contacts). The mailing list will be periodically updated throughout the remedial activities at the NIROP. Anyone who would like to be added to the NIROP mailing list should contact Mr. Kerry Morrow, NAVSEA Technical Representative, Naval Industrial Reserve Ordnance Plant, 5001 East River Road, Minneapolis, MN 55421-1406, 612/572-6360.

Additional community relations activities planned by the Navy include the following:

5. Maintenance of Information Repositories and Administrative Record

The Navy has established information repositories at the NIROP Fridley, and at the MPCA office in St. Paul (see Appendix B for locations and telephone numbers). Documents and reports of interest to the public, such as the ROD and this CRP, and fact sheets prepared during the course of the remedial process, will be placed in the repositories. Availability of this information will be announced in all public notices and news releases issued by the Navy. The Navy will also maintain and announce access to the Administrative Record for the site, which contains all data and documentation supporting site decisions.

6. Restoration Advisory Board (RAB)

The Navy will continue holding quarterly meetings of the RAB. Representation on the RAB includes local, state, and federal officials, and other groups representing the public interest (see Appendix A).

7. Direct Contact With Key Local Officials and RAB Members

The Navy will contact local representatives on the RAB prior to releasing information to the media concerning site decisions, major findings, or technical milestones. Follow-up briefings or meetings may be held if appropriate.

8. Fact Sheets and News Releases

In addition to the required notices, the Navy will prepare fact sheets and news releases periodically to keep the public informed of site activities and progress. These will be keyed to technical milestones, such as completion of the groundwater treatment facility design. Fact sheets and/or copies of the news releases will be sent to the parties on the full NIRDP mailing list and placed in the information repositories for public availability.

9. Additional Informal Public Meetings

Although not required, and in addition to the quarterly RAB meetings, the Navy may hold an informal public meeting if local interest appears to be sufficient. The timing would depend on the level of interest, but could be planned to present topics such as the recommended design of the groundwater treatment facilities.

10. Local Information Contact

The Navy has designated a local contact person (Mr. Kerry Morrow, 612/572-6360) to respond to public inquiries about site activities. Mr. Morrow will be informed about the general background and technical aspects of the work, but may refer highly technical questions to a technical expert on the project.

11. Review and Update Community Relations Plan

The Navy will review/modify this Community Relations Plan whenever necessary to ensure its effectiveness in keeping both local officials and the general public informed about the NIROP site.

APPENDIX A
RAB MEMBERS

RESTORATION ADVISORY BOARD MEMBERS

City of Fridley
Department of Public Works
Fridley Municipal Center
6431 University Avenue NE
Fridley, MN 55432

Community Co-chair
Director of Public Works
Mr. John Flora
612/572-3550

NAVSEA Technical Representative
Naval Industrial Reserve Ordnance Plant
5001 East River Road
Minneapolis, MN 55421-1406

Navy Co-chair
Mr. Kerry Morrow
612/572-6360

Minnesota Pollution Control Agency
Site Response Section
Groundwater and Solid Waste Division
520 Lafayette Road
St. Paul, MN 55155

Mr. David Douglas
612/295-7818

U.S. Environmental Protection Agency
Region V
Remedial & Enforcement Response Branch
OH/MN Section, Unit 1 (HSRM-6J)
77 W. Jackson Blvd.
Chicago, IL 60604-3590

Mr. Thomas Bloom
312/886-1967

Southern Division
Naval Facilities Engineering Command
Attn: Code 1865
P.O. Box 190010
North Charleston, SC 29419-9010

Mr. Joel G. Murphy
803/820-5587

Minnesota Pollution Control Agency
Site Response Section
Groundwater and Solid Waste Division
520 Lafayette Road
St. Paul, MN 55155

Mr. John Betcher
612/295-7821

Department of the Navy
Naval Sea Systems Command
Code 0713, Bldg. CP-5, Rm. 606
2231 Jefferson Davis Highway
Arlington, VA 22242

Mr. Stephen Hoffman
703/602-4364, x370

**RESTORATION ADVISORY BOARD MEMBERS
(CONTINUED)**

Minnesota Pollution Control Agency
Site Response Section
Groundwater and Solid Waste Division
520 Lafayette Road
St. Paul, MN 55155

Mr. Mark Farrey
612/296-7777

Engineering Field Activity Midwest
Naval Facilities Engineering Command
Resident Engineer in Charge of Construction
5001 East River Road
Minneapolis, MN 55421-1406

Mr. Patrick Mosites
612/572-6438

Metropolitan Council Environmental Services
Mears Park Centre
230 East 5th Street
St. Paul, MN 55101

Mr. Michael Flaherty
612/772-7015

1400 73rd Ave. NE
Fridley, MN 55432

Mr. Norwood G. "Woody" Nelson
612/753-4128

P.O. Box 32622
Fridley, MN 55432

Mr. Craig S. Gordon
612/574-9807

6200 Riverview Ter.
Fridley, MN 55432

Mr. Richard Harris
612/571-4097

Minnesota Pollution Control Agency
Site Response Section
Groundwater and Solid Waste Division
520 Lafayette Road
ST. Paul, MN 55155

Mr. Paul Estuesta

APPENDIX B

**LOCATIONS OF INFORMATION REPOSITORIES AND
ADMINISTRATIVE RECORD**

INFORMATION REPOSITORY LOCATIONS AND CONTACTS

Naval Industrial Reserve Ordnance Plant
5001 East River Road
Minneapolis, MN 55421-1406
Contact: Kerry Morrow
612/572-6360

Minnesota Pollution Control Agency
520 Lafayette Road
St. Paul, MN 55155
Contact: David Douglas
612/296-7818

ADMINISTRATIVE RECORD LOCATIONS AND CONTACTS

USEPA Region V
Docket Room
230 S. Dearborn Street
Chicago, IL 60604
Contact: Tom Bloom
312/886-1967

Naval Facilities Engineering Command
Southern Division
2155 Eagle Drive
North Charleston, SC 29419-9010
Contact: Joel G. Murphy
803/820-5587