

Action Memorandum
for
**Excavation of PAH Contaminated
Soil in Area A4 of the North 40**

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



**Southern Division
Naval Facilities Engineering Command**
Contract Number N62467-94-D-0888
Contract Task Order 0003

June 2002

**ACTION MEMORANDUM
FOR
EXCAVATION OF PAH CONTAMINATED SOIL
IN AREA A4 OF THE NORTH 40**

**NAVAL INDUSTRIAL RESERVE ORDNANCE PLANT (NIROP)
FRIDLEY, MINNESOTA**

**COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT**

**Submitted to:
Southern Division
Naval Facilities Engineering Command
2155 Eagle Drive
North Charleston, South Carolina 29406**

**Submitted by:
Tetra Tech NUS, Inc.
661 Andersen Drive
Foster Plaza 7
Pittsburgh, Pennsylvania 15220**

**CONTRACT NUMBER N62467-94-D-0888
CONTRACT TASK ORDER 0003**

JUNE 2002

PREPARED UNDER THE SUPERVISION OF:


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TASK ORDER MANAGER
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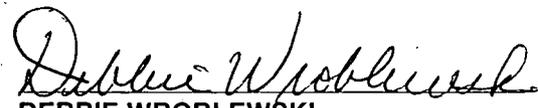

**DEBBIE WROBLEWSKI
PROGRAM MANAGER
TETRA TECH NUS, INC.
PITTSBURGH, PENNSYLVANIA**

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NUMBER

- 1 Potential Applicable or Relevant and Appropriate Requirements and To Be Considereds for the Proposed Removal Action

FIGURES

NUMBER

- 1 Property Boundaries
- 2 Location Map

1.0 PURPOSE

The purpose of this Action Memorandum is to provide documentation regarding the proposed time-critical removal action described herein for area A4 in the North 40 region of Naval Industrial Reserve Ordnance Plant (NIROP) Fridley located in Fridley Minnesota.

2.0 SITE CONDITIONS AND BACKGROUND

2.1 SITE DESCRIPTION

2.1.1 Removal Site Evaluation

The vacant area north of the main NIROP building, known as the North 40, is known to contain several trenches and borrow pits where drummed waste material was historically disposed. In the 1980s and 1990s, utilizing various geophysical and remote sensing techniques as well as historical plant knowledge to identify these areas, drums, drum carcasses, free liquids, and contaminated soil were excavated and properly disposed. Although no visible contamination is present, sampling and analysis performed as part of the Remedial Investigation indicates that soil contamination remains in this area. The Navy, EPA, and MPCA agreed to base future cleanup decisions on risk assessment results. The contamination identified in this Action Memorandum is located in Area A4 (see figure 1). Specifically, sampling has shown that contamination exceeding risk assessment values based on agreed upon exposure scenarios is limited to a 10-foot diameter around boring AB-032, as shown on Figure 2, to a depth of 3 feet. Contaminated groundwater is also present but is currently being addressed through a separate CERCLA remedy.

2.1.2 Physical Location

NIROP Fridley is located in Fridley Minnesota. The NIROP is completely enclosed by fence with restricted access via guard stations. The NIROP is bound to the North, South, and East by other industrial facilities. Anoka County Regional Riverfront Park is located across East River Road, to the west of NIROP. The Mississippi River is immediately to the west of Anoka County Regional Riverfront Park. No vulnerable or sensitive populations, habitats or natural resources are known to exist in adjacent areas.

2.1.3 Site Characteristics

Through the early 1980's the North 40 area had been an area where large out-of-service machinery and various scrap metal was stored. This debris was progressively removed until the area's current appearance of a flat, mostly grassy area, divided by a rail siding, resulted. In addition, area A4 of the North 40 region contains a few paved roadways, smaller buildings, and a parking lot. The target area for excavation does not encroach any of these features.

2.1.4 Release or Threatened Release into the Environment of a Hazardous Substance

Various volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs) and inorganic compounds have been detected in soils at area A4 from surface elevation down to about 20 feet below ground surface. The water table is approximately 20 feet below ground surface. The surface soil contamination in this area is primarily characterized by carcinogenic polyaromatic hydrocarbons (cPAH), which are CERCLA hazardous substances. The source of the contamination is not known, but is likely related to drum placement and subsequent excavation, asphalt remnants or residues, or the preservative-laden ties supporting the rail siding.

cPAHs are relatively persistent in the environment and are not easily mobilized through soil by precipitation. Although the area is level grade and runoff of precipitation is not significant, there is some potential for contaminants at this site to be spread by precipitation events, especially in spring after snow melts.

2.1.5 NPL Status

NIROP Fridley is listed on the National Priorities List (NPL). Groundwater remedial action is in progress. Soils remedial investigation has recently concluded with remedy selection imminent.

2.1.6 Maps

See Figure 1 - Property Boundaries and Figure 2 - Location Map.

2.2 OTHER ACTIONS TO DATE

2.2.1 Previous Actions

Drummed waste material was disposed of in several trenches and borrow pits in the North 40. As part of the OU2 Remedial Investigation, the North 40 was divided into the multiple areas to simplify data collection and assessment, with areas A3 and A4 each constituting a large portion of the North 40. Areas A3 and A4 are immediately adjacent to each other. See Figure 1.

The Navy excavated numerous areas in the North 40 that were determined to contain drummed waste material. The following summarizes these activities.

Through various geophysical and remote sensing techniques, nine areas were selected for excavation based on their likelihood for containing drummed wastes in the northern portion of the property. 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 volatile organic compounds (VOCs), polychlorinated biphenyls (PCBs), oil and grease, pesticides, and metal-bearing wastes. The drums and contaminated soil were disposed of at a USEPA-approved landfill.

Based on the results of a geophysical investigation conducted in 1995, a total of twenty-three 55-gallon drums and 12 smaller containers were found in the north 40 area. These drums were excavated during a removal action conducted in April through June 1996. Eleven drums were determined to be non-hazardous, 11 drums contained contaminated soil, 1 drum contained hazardous waste, 4 1-gallon containers were determined to be non-hazardous, and 8 quart-sized containers contained ingredients such as brake fluid and paint thinner. The non-hazardous containers were disposed of as scrap metal by the UDLP metal recycling program, and their soil contents were placed in roll-offs for disposal as Special Waste [materials containing volatiles but having Toxic Characteristic Leaching Procedure (TCLP) results below hazardous levels as mandated in 40 CFR 261]. The remaining 13 drums and 8 containers, with contents, were sampled for disposal and sent to Emelle, Alabama for disposition and subsequent incineration at Port Arthur, Texas. In addition, approximately 100 cubic yards of soil and debris consisting of trash, scrap metal, tires, construction and demolition rubble, metal casting waste, equipment parts, and cast concrete structures were removed and disposed of as non-hazardous waste.

During OU-2 sampling in 1996, in the vicinity of a previously unexcavated area near the North 40, free liquids were encountered which resulted in a removal action. A total of 31 drums were sampled and overpacked in addition to several other empty and crushed drums which were removed with other debris. Elevated VOC concentrations were reported at depth. Sampling following the excavation to remove buried drums adjacent to the decontamination pad indicated contaminant concentrations of 1,200,000 µg/kg of Tetrachloroethene; 2,600,000 µg/kg of 1,1,1-Trichloroethane; and 120,000 µg/kg of Trichloroethene.

2.2.2 Current Actions

There are no other current actions in planned or in progress.

2.3 STATE AND LOCAL AUTHORITIES' ROLE

The Navy, US EPA, and MPCA are all signatories to the 1991 Federal Facilities Agreement for NIROP Fridley. The FFA identifies that all three parties are to participate in the remedial process. Navy is required to proceed 'in consultation' with US EPA and MPCA. The Navy sponsors facilitated partnering at the NIROP site to further US EPA and MPCA participation.

The Navy also sponsors a Restoration Advisory Board (RAB) as a means of community participation in the NIROP Fridley remedial process.

State and local representatives also currently participate in, and are anticipated to continue to participate in, the facilitated partnering and/or RAB processes.

2.3.1 State and Local Actions to Date

There have been no independent state or local actions to date regarding soil contamination at NIROP Fridley.

2.3.2 Potential for Continued State/Local Response

The State is not providing funding for the removal and will not be leading the response. The Navy is both providing the funding and leading the response action.

3.0 THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

3.1 THREATS TO PUBLIC HEALTH OR WELFARE

The risk assessment recently completed as a part of the remedial investigation for the site identified three representative potential exposure scenarios. These include the typical industrial worker, minor frequent construction worker, and major infrequent construction worker. Per the risk assessment, there were no unacceptable risks from surface soils for the typical industrial worker or the minor frequent construction worker based on exposures such as inhalation or ingestion of soil. However, for the major infrequent construction worker scenario, calculated risk for surface soils around sampling location AB032 in area A4 exceed allowable maximum levels. The maximum contaminant concentration in this area is 60,700 µg/kg of combined semivolatile organic compounds (conventionally measured as BaP equivalents). This amount is six times the concentration of surface soils contaminants at the most impacted location that will remain following the removal action. Contaminated surface soil in this area is available for human contact.

Soil samples were taken in February 2002 (in addition to those taken as part of the RI) to delineate the size of the hotspot around boring AB032.

3.2 THREATS TO THE ENVIRONMENT

No vulnerable or sensitive populations, habitats or natural resources are known to exist at NIROP Fridley or in adjacent areas.

4.0 ENDANGERMENT DETERMINATION

Actual or threatened releases of hazardous substances from this site, if not addressed by implementing the response action selected in this Action Memorandum, may present an imminent and substantial endangerment to public health, or welfare, or the environment.

5.0 PROPOSED ACTIONS AND ESTIMATED COSTS

5.1 PROPOSED ACTIONS

5.1.1 Proposed Action Description

Excavation of the contaminated soil and disposal in a RCRA-permitted landfill will mitigate the health threat posed by direct human contact.

No further information is necessary to proceed with the removal. As previously noted, sampling has already been completed at the proposed limits of the excavation to verify the adequacy of the planned limits of excavation. These boundary samples were collected and validated by the MPCA. See Figure 2. The limits of excavation will be ten feet radius around boring AB032 to a depth of 3 feet. After soil excavation, clean fill will be inserted into the excavated area to the former ground surface. The risk assessment results from replacing the excavated soils with clean fill are at acceptable levels for all three exposure scenarios for surface soil in Area A4 of the North 40.

Following excavation, deed restrictions will be necessary to prevent incompatible future activities. The deed restrictions for Area A4 of the North 40 will be consistent with those across the remainder of the site (i.e., industrial or commercial uses only). These deed restrictions are not part of this Removal Action. They will be included as part of the forthcoming Proposed Plan as appropriate.

The excavation will produce approximately 35 cubic yards of soil for disposal at an approved offsite facility.

5.1.2 Contribution to Remedial Performance

The planned excavation will further site cleanup by removing a 'hot-spot' of contaminated surface soil. Accordingly, the contamination will be non-accessible to human contact under the future land use of industrial. Resultant LUCs will be less restrictive than if this removal action does not take place.

5.1.3 Description of Alternative Technologies

Based on the small quantity of soils to be excavated (35 yds.³) and schedule and budget constraints, alternative technologies were not evaluated. This is also appropriate because of the high likelihood of success of excavation.

5.1.4 EE/CA

An EE/CA is not required for a time-critical Removal Action.

5.1.5 ARARs

See Table 1.

5.1.6 Project Schedule

The activity described in this Action Memorandum is expected to start the week of June 24, 2002, and is expected to be completed within 1 week of the start date.

5.2 ESTIMATED COSTS

The estimated cost to complete the activity described in this Action Memorandum is approximately \$39,000.

**6.0 EXPECTED CHANGE IN THE SITUATION SHOULD
ACTION BE DELAYED OR NOT TAKEN**

Delaying the proposed removal would increase health risks identified in the recently completed risk assessment for any major infrequent construction worker in this area. Delays in implementing a removal action to address the surface soil contamination at this site may result in the spread of contaminants.

7.0 OUTSTANDING POLICY ISSUES

None.

8.0 ENFORCEMENT

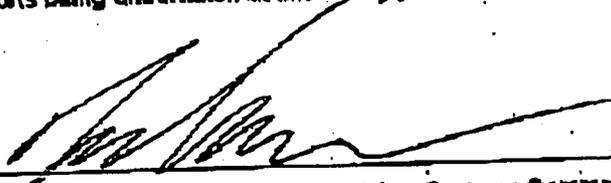
The Navy and/or their plant operations contractor are the PRP for this response. The Navy will perform the proposed response promptly and properly.

Jun-20-2002 08:21am From-

T-200 P.002/002 F-489

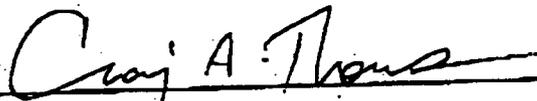
9.0 RECOMMENDATION

The Navy will be undertaking the proposed removal as a voluntary measure to help facilitate remedial efforts being undertaken at this facility pursuant to FFA requirements.



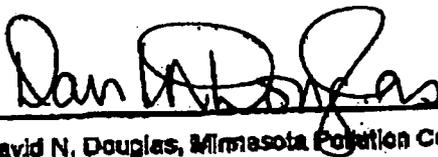
Mark J. Goodman, US Navy, Naval Sea Systems Command

20 JUNE 2002
Date



Craig Thomas, US EPA, Region V

6/20/02
Date



David N. Douglas, Minnesota Pollution Control Agency

6/20/02
Date

REFERENCES

Bay West, Inc., 1992. Emergency Removal Operation, Naval Industrial Reserve Ordnance Plant, Fridley, Minnesota, August.

Envirodyne Engineering, Inc., 1983. Initial assessment of Naval Industrial Reserve Ordnance Plant, Minneapolis, Minnesota. For Naval Energy and Environmental Support Activity, Port Hueneme, California. June.

Morrison Knudsen Corporation, 1996. Completion Report for Removal Action at North 40, Naval Industrial Reserve Ordnance Plant, Fridley, Minnesota, December.

RMT, Inc., 1993. Remedial Investigation Report for the Soils Operable Unit, Naval Industrial Reserve Ordnance Plant, Fridley, Minnesota, September.

Tetra Tech NUS, Inc. (TtNUS), 2002. Supplemental Remedial Investigation Information Report, Naval Industrial Reserve Ordnance Plant, Fridley, Minnesota, April.

TABLE 1

POTENTIAL APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS AND TO BE CONSIDEREDS
 FOR THE PROPOSED REMOVAL ACTION
 NIROP FRIDLEY, MINNESOTA
 PAGE 1 OF 9

I. State Requirements

Operable Unit	ARAR		Comment
Minnesota Pollution Control Agency			
AIR RELEASE REPORTING			
1	Minn. Stat. 116.061		-- Duty to notify and abate unusual or excessive releases to the air.
HAZARDOUS WASTE			
2, 3	Minn. R. 7045		-- Hazardous Waste Listing -- Generator Standards -- Transporter Standards -- Facility Standards -- Interim-status Standards -- Recycling Standards -- Ground Water Protection to Background, MCL's, ACL's
A. OFF-SITE DISPOSAL OF SOILS FAILING TCLP TEST			
1, 2, 3	Minn. R. 7045.0261		-- Manifest documents as per 40 CFR Part 262 and 49 CFR Part 172 (applicable)
1, 2, 3	Minn. R. 7045.0270		-- Pretransport requirements (applicable)
Minnesota Department of Health			
1989 GROUND WATER PROTECTION ACT			
1, 2, 3	Minn. Stat. 103H		-- Health Risk Limits for ground water pollutants

TABLE 1

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 FOR THE PROPOSED REMOVAL ACTION
 NIROP FRIDLEY, MINNESOTA
 PAGE 2 OF 9

Operable Unit	ARAR	Comment	
HEALTH RISK LIMITS AND 10-5 RISK LEVEL			
1, 2, 3	Minn. R. 4717.7100-.7800		-- Health Risk Limits for ground water pollutants
CERTIFICATION OF ENVIRONMENTAL LABORATORIES			
1, 2, 3	Minn. Stat. 144.98		-- Authority to certify laboratories
LABORATORIES; ACCREDITATION REQUIREMENTS			
1, 2, 3	Minn. R. 4740		-- Certification procedures and standards for laboratories -- Prohibition of at or below grade wells -- Licensure and registration requirements -- Establishment of Well Advisory Areas -- Permit requirements for wells (inc. mon. wells)
Minnesota Department of Labor and Industry			
HEALTH AND SAFETY			
1, 2, 3	Minn. R. 5205		-- Standards for worker health and safety -- Standards for worker training
Minnesota Department of Public Service			
ONE CALL EXCAVATION NOTICE SYSTEM			
1, 2, 3	Minn. Stat. 216D		-- Establishment of Notification Center -- Notice of excavation -- Damage to facilities

TABLE 1

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 FOR THE PROPOSED REMOVAL ACTION
 NIROP FRIDLEY, MINNESOTA
 PAGE 3 OF 9

Operable Unit	ARAR	Comment
Minnesota Department of Transportation		
MOTOR VEHICLE CARRIERS, PIPELINE CARRIERS, FOR HIRE, REGULATION		
1, 2, 3	Minn. Stat. 221	-- License requirements for transporters -- Accident/Incident reporting -- Reference to Federal Statutes/Rules
LICENSING OF HAZARDOUS WASTE TRANSPORTERS		
1, 2, 3	Minn. R. 8870	-- License requirements -- Identification Decals -- Training requirements -- Reporting requirements -- Insurance requirements
Minnesota Historical Society		
HISTORIC SITES, FIELD ARCHAEOLOGY		
2, 3	Minn. Stat. 138.40	-- Review of construction or development plans at sites on public lands that have known or potential historic or archaeological significance -- State agencies should cooperate in preserving archaeologically or historically significant sites
Minnesota Pollution Control Agency		
AIR RELEASE REPORTING		
1	Minn. Stat. 116.061	-- Duty to notify and abate unusual or excessive releases to the air.

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 FOR THE PROPOSED REMOVAL ACTION
 NIROP FRIDLEY, MINNESOTA
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Operable Unit	ARAR		Comment
HAZARDOUS WASTE			
2, 3	Minn. R. 7045		-- Hazardous Waste Listing -- Generator Standards -- Transporter Standards -- Facility Standards -- Interim-status Standards -- Recycling Standards -- Ground Water Protection to Background, MCL's, ACL's
A. OFF-SITE DISPOSAL OF SOILS FAILING TCLP TEST			
1, 2, 3	Minn. R. 7045.0261		-- Manifest documents as per 40 CFR Part 262 and 49 CFR Part 172 (applicable)
1, 2, 3	Minn. R. 7045.0270		-- Pretransport requirements (applicable)
Minnesota Department of Health			
1989 GROUND WATER PROTECTION ACT			
1, 2, 3	Minn. Stat. 103H		-- Health Risk Limits for ground water pollutants
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Operable Unit	ARAR		Comment
LABORATORIES; ACCREDITATION REQUIREMENTS			
1, 2, 3	Minn. R. 4740		-- Certification procedures and standards for laboratories -- Prohibition of at or below grade wells -- Licensure and registration requirements -- Establishment of Well Advisory Areas -- Permit requirements for wells (inc. mon. wells)
Minnesota Department of Labor and Industry			
HEALTH AND SAFETY			
1, 2, 3	Minn. R. 5205		-- Standards for worker health and safety -- Standards for worker training
Minnesota Department of Public Service			
ONE CALL EXCAVATION NOTICE SYSTEM			
1, 2, 3	Minn. Stat. 216D		-- Establishment of Notification Center -- Notice of excavation -- Damage to facilities
Minnesota Department of Transportation			
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Operable Unit	ARAR	Comment	
LICENSING OF HAZARDOUS WASTE TRANSPORTERS			
1, 2, 3	Minn. R. 8870		-- License requirements -- Identification Decals -- Training requirements -- Reporting requirements -- Insurance requirements
Minnesota Historical Society			
HISTORIC SITES, FIELD ARCHAEOLOGY			
2, 3	Minn. Stat. 138.40		-- Review of construction or development plans at sites on public lands that have known or potential historic or archaeological significance -- State agencies should cooperate in preserving archaeologically or historically significant sites
Minnesota Pollution Control Agency			
AIR RELEASE REPORTING			
1	Minn. Stat. 116.061		-- Duty to notify and abate unusual or excessive releases to the air.

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HAZARDOUS WASTE			
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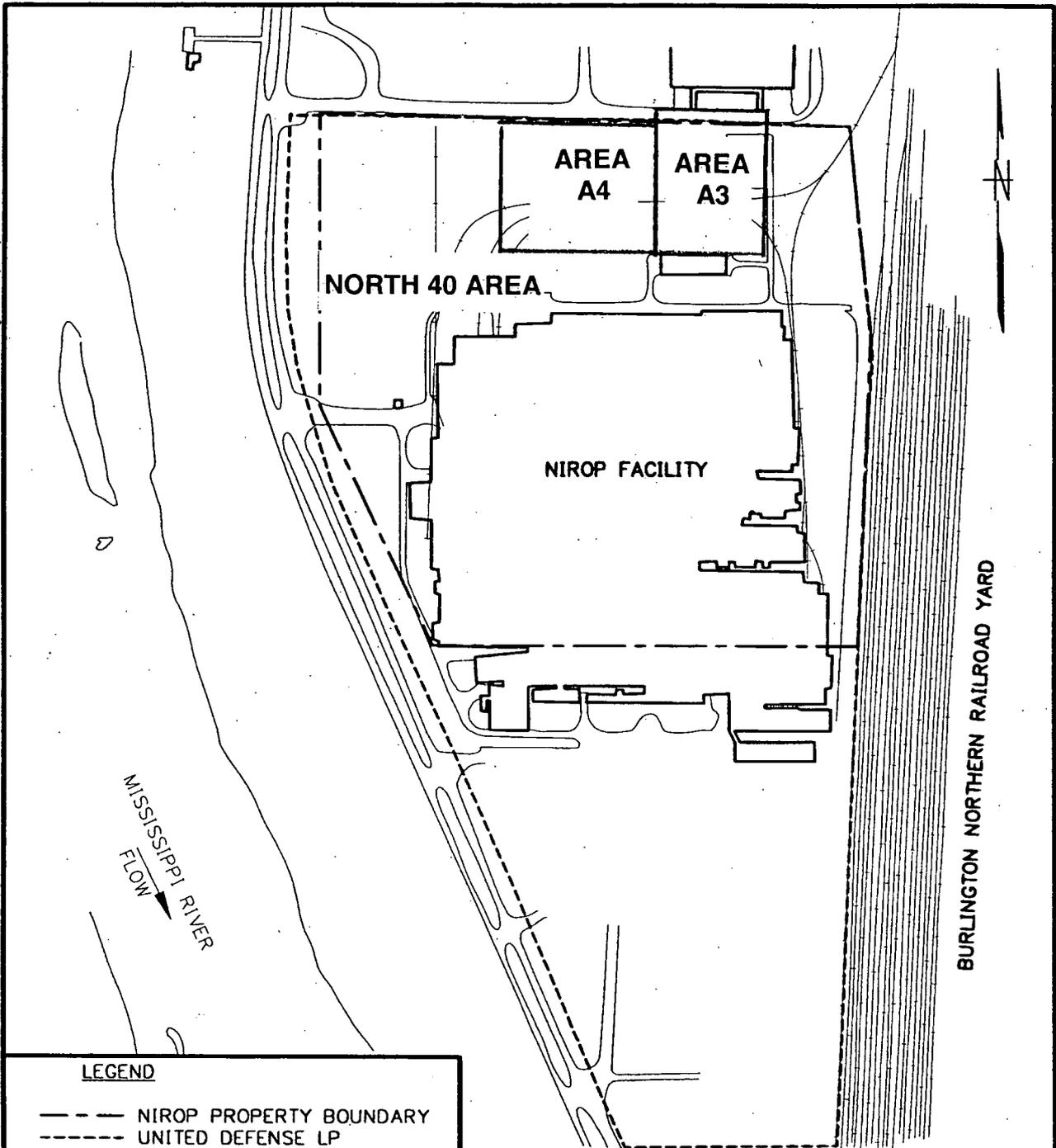
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LABORATORIES; ACCREDITATION REQUIREMENTS			
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HEALTH AND SAFETY			
1, 2, 3	Minn. R. 5205	-- Standards for worker health and safety -- Standards for worker training	
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ONE CALL EXCAVATION NOTICE SYSTEM			
1, 2, 3	Minn. Stat. 216D	-- Establishment of Notification Center -- Notice of excavation -- Damage to facilities	
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Operable Unit	ARAR	Comment	
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Minnesota Historical Society			
HISTORIC SITES, FIELD ARCHAEOLOGY			
2, 3	Minn. Stat. 138.40		-- Review of construction or development plans at sites on public lands that have known or potential historic or archaeological significance -- State agencies should cooperate in preserving archaeologically or historically significant sites

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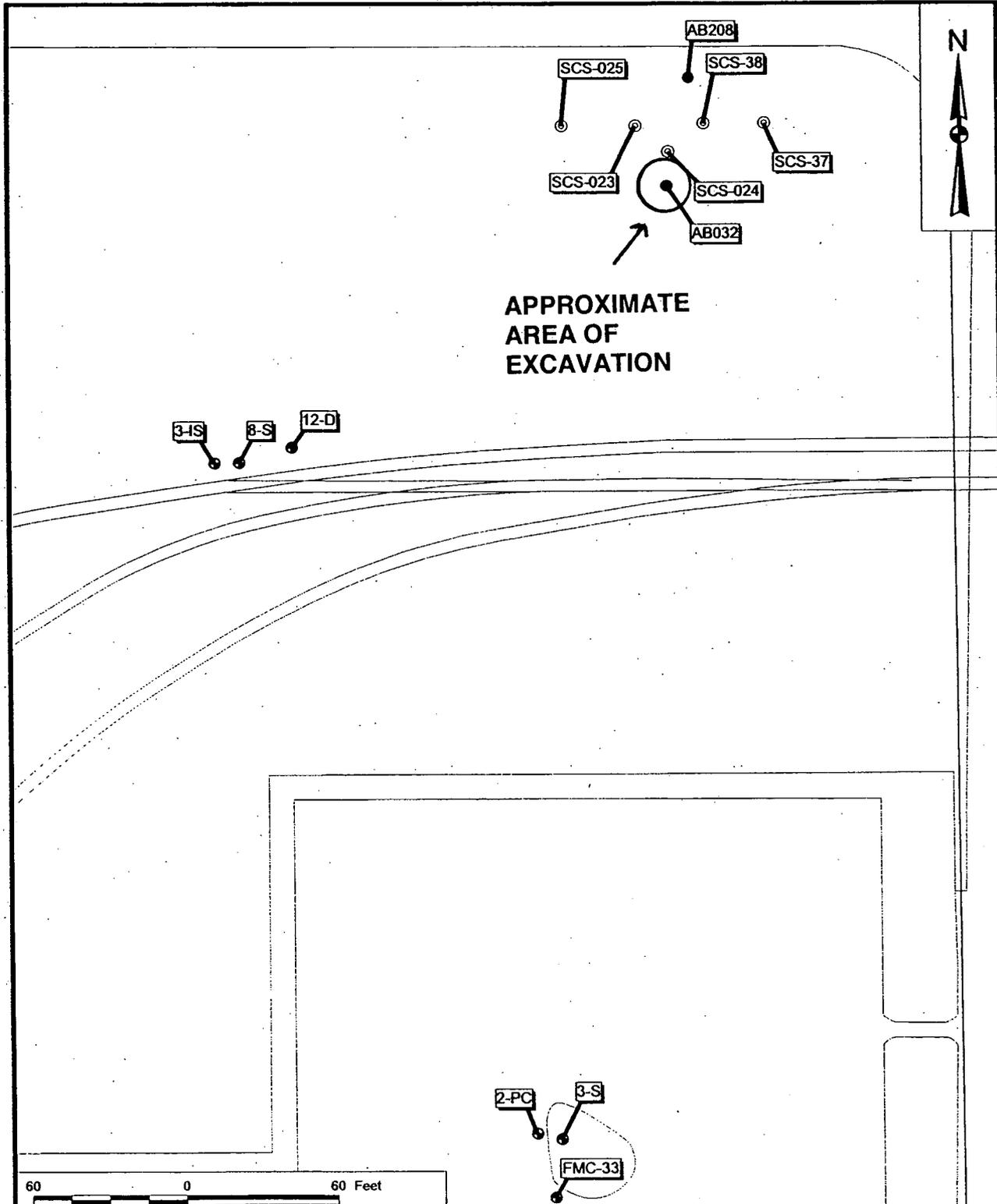


LEGEND

- NIROP PROPERTY BOUNDARY
- - - UNITED DEFENSE LP FACILITY BOUNDARY
- RAILROAD

0 600 1200
SCALE IN FEET

DRAWN BY HJP 8/17/98	 Tetra Tech NUS, Inc.	CONTRACT NO. 6966	OWNER NO. ---
CHECKED BY DATE	PROPERTY BOUNDARIES NAVAL INDUSTRIAL RESERVE ORDNANCE PLANT FRIDLEY, MINNESOTA	APPROVED BY	DATE
COST/SCHED-AREA		APPROVED BY <i>[Signature]</i>	DATE 8/12/99
SCALE AS NOTED		DRAWING NO. FIGURE 1	REV. 0



APPROXIMATE
AREA OF
EXCAVATION

DRAWN BY K. PELA DATE 1/28/02	Tetra Tech NUS, Inc.	CONTRACT NUMBER 6966	OWNER NO.
CHECKED BY DATE 	LOCATION MAP AB032 U.S. NORTH 40 REMOVAL AREAS PLOTTED FROM ACTUAL SURVEY DATA (1993/1996) NIROP FIRDELY	APPROVED BY DATE 	APPROVED BY DATE
COST/SCHEDULE-AREA 		APPROVED BY DATE 	APPROVED BY DATE
SCALE AS NOTED		DRAWING NO. FIGURE 2	REV 0