



Minnesota Pollution Control Agency

HAND DELIVERED

May 20, 1997

Mr. Scott A. Glass, Code 18610
Commanding Officer
Southern Division
Naval Facilities Engineering Command
P.O. Box 190010
North Charleston, South Carolina 29419-9010

RE: Naval Industrial Reserve Ordnance Plant Superfund Site

Dear Mr. Glass:

The Minnesota Pollution Control Agency (MPCA) staff has reviewed the following documents, all dated April 30, 1997:

1. "Draft Final Work Plan for Operable Unit 3 Remedial Investigation/Feasibility Study;"
2. "Draft Final Field Sampling Plan for Operable Unit 3 Remedial Investigation/Feasibility Study;"
3. Draft Final Quality Assurance Project Plan for Operable Unit 3 Remedial Investigation/Feasibility Study;"
4. "Draft Final Site Security Plan and Health and Safety Plan for Operable Unit 3 Remedial Investigation/Feasibility Study;" and
5. "Remedial Investigation/Feasibility Study (RI/FS) Draft Work Plan Regulatory Comment Resolution Summary," dated April 11, 1997.

The documents are for the Naval Industrial Reserve Ordnance Plant (NIROP) Superfund Site and were submitted pursuant to the Federal Facility Agreement, dated March 27, 1991, between the MPCA, the U.S. Environmental Protection Agency (EPA), and the U.S. Navy (Navy).

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Draft Final Work Plan for Operable Unit 3 Remedial Investigation/Feasibility Study

The MPCA staff hereby approves this document as modified pursuant to Attachment I of this letter.

Draft Final Field Sampling Plan for Operable Unit 3 Remedial Investigation/Feasibility Study

The MPCA staff hereby approves this document to the degree it is consistent with the MPCA staff comments found in this letter.

It is the MPCA staff's understanding that the modifications made to the Administrative Order on Consent (AOC) list to be investigated during Phase I of the remedial investigation (RI) as agreed to by the parties during the NIROP walk-through on May 12, 1997, will be documented in updated tables and submitted as an addendum in the final document.

The sampling procedures in the Reconfiguration Plan submitted by Pat Mosites do not meet the requirements of this document; however, the results of sampling based on the Reconfiguration Plan may be referenced in the OU3 RI Report with careful documentation as to the source of the sampling results.

Draft Final Quality Assurance Project Plan for Operable Unit 3 Remedial Investigation/Feasibility Study

The MPCA staff hereby approves this document as modified pursuant to Attachment II of this letter.

The Quality Assurance Manual (QAM) entitled, "Laucks Testing Laboratories, Inc. Quality Assurance Plan," dated July 3, 1996, from Laucks Testing Laboratories, Inc. was submitted to the MPCA staff on May 12, 1997. In addition on May 15, 1997, the Navy submitted the Standard Operating Procedures (SOPs), under a cover letter, dated May 14, 1997, from Daneen Resnick of Brown & Root Environmental to Luke Charpentier of the MPCA staff. These documents are appended to and considered part of the Final Quality Assurance Project Plan.

Attachment II includes MPCA staff responses to the QAM and the SOPs. The MPCA staff hereby approves these documents as modified in Attachment II.

On April 29, 1997, the MPCA staff also received a copy of the On-Site Audit Evaluation of Laucks Testing Laboratories, Inc., dated March 1996. The MPCA staff has no response to this document.

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Draft Final Site Security Plan and Health and Safety Plan for Operable Unit 3 Remedial Investigation/Feasibility Study

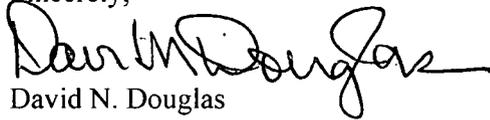
As a matter of MPCA staff policy, the MPCA staff neither approves nor disapproves this document.

“Remedial Investigation/Feasibility Study (RI/FS) Draft Work Plan Regulatory Comment Resolution Summary,” dated April 11, 1997

The MPCA staff approves this document as modified in other parts of this letter. The MPCA staff requests that the Navy make corrections and submit a corrected copy to the MPCA staff for the site file.

If you have any questions regarding this letter, please contact me at (612) 296-7818.

Sincerely,



David N. Douglas
Project Manager
Response Unit I
Site Response Section
Ground Water and Solid Waste Division

DND:ch

Enclosures

cc: Thomas Bloom, U.S. Environmental Protection Agency

Attachment I

Modifications to the Report Entitled “Draft Final Work Plan for Operable Unit 3 Remedial Investigation/Feasibility Study”

1. **Section 2, page 16, paragraph 2.**

The statement, “the capture zone analysis results indicate that the existing contaminant system is effectively controlling off-site migration of contaminants in the groundwater” shall be stricken from the text. Resolution of this matter is ongoing.

2. **Section 3, page 3, paragraph 1.**

The text here and elsewhere (section 5, page 8, paragraph 2) that “[r]oof drains, catch basins, and floor drains discharge to the storm sewer.” Earlier discussions with the Navy have, at times, focused on this matter. The Navy committed to providing documentation to the Minnesota Pollution Control Agency staff verifying that floor drains within the building have been plugged and therefore no longer allow spills in the building to enter this system and thus reach the Mississippi River. The Navy shall provide documentation that the sewer lines under the main NIROP building have been plugged. The MPCA staff requests that this documentation include photographs of the plugs.

3. **Section 4, page 11, paragraph 3.**

The seismic imaging study is referred to as “planned.” The texts shall be changed to reflect that this study has been conducted and shall include a brief statement concerning the results of this study.

4. **Table 2-4, section 2, page 30.**

Column 3 specifies that 64 samples will be collected for the specified analysis; however, Table 2-2 indicates that 67 ground water samples will be collected. The Navy shall correct this discrepancy.

Attachment II

Modifications to the Report Entitled "Draft Final Quality Assurance Project Plan for Operable Unit 3 Remedial Investigation/Feasibility Study"

1. **Comment "MPCA III.2" of the "Remedial Investigation/Feasibility Study (RI/FS) Draft Work Plan Regulatory Comment Resolution Summary," (Summary) dated April 11, 1997, required information on data quality objectives (DQOs) in QAPjP Section 1.4.3.**

General information on how the sampling plan was constructed is present, but no formal DQO process is described. The Navy recommends leaving what is found in the Work Plan and add a brief discussion of how the Guidance for the Data Quality Objectives Process EPA QA/G-4, dated September 1994 was applied to this project in developing the level of data quality needed. The Navy shall follow the seven step process in the discussion as to how the final DQOs were obtained.

2. **Comment MPCA III.4 of the Summary requested that the Navy identify the method used to develop method detection limits (MDLs).**

The Navy's response is that SOP LTL-1011 states in Section 5.3.4 that the Quality Assurance Officer (QAO) signs off on all MDL studies. Is this one person? If the QAO is one person this would be near an impossible task. The Navy shall clarify this matter.

3. **Comments MPCA III.4 and III.5 of the Summary referenced the contract required quality limits (CRQLs).**

Tables 1-4, 1-5, and 1-6 indicate CRQLs for some compounds that are higher than Minnesota Department of Health Risk Limits (HRL) which means that the methods may not be able to detect concentrations below HRLs. The Navy shall adjust the CRQLs so that they are lower than HRLs so that the methods used may detect concentrations at least at the HRL concentration. Please see an attached copy of these tables where CRQLs are higher than HRLs are circled. The Minnesota Pollution Control Agency (MPCA) staff has provided the Navy with a copy of the HRLs and request the Navy recheck all the compounds in these tables and make corrections as indicated above. The Navy shall correct and resubmit these tables as indicated above.

4. **Comment MPCA III.9 of the Summary reference Table 3-1.**

The relative percent difference (RPD) limits in this table are too high. In general RPD limits greater than 30% are too high for water and greater than 50% is too high for soil (for fixed based laboratories). In Table 3-4 any recovery less than 30% for any compound is generally considered unacceptable and shall be flagged.

13. **Section 1.9.2.3 the Quality Assurance Manual**

The Navy shall clarify who approve deliverables. Do both the laboratory Quality Assurance Officer (QAO) and the Laboratory Technical Director (LTD) approve all deliverables? Additionally, a software QA plan was discussed as being worked on by the LTD in conjunction with the QAO, but no information on this plan was present in the description of the QAO's position. The Navy shall clarify this matter.

14. **Standard Operating Procedure (SOP) LTL 1008**

The Navy shall clarify exactly when corrective action documentation is done and not done in the SOP. For the NIROP project, any corrective action done above the analyst level that cannot be done immediately at the instrument, will be documented (such as re-extraction of samples).

15. **SOP LTL 3106**

Step 6.5.1.6 states that the extracts are delivered to "940." The Navy shall identify what this is.

TABLE 1-4

ANALYTICAL DETECTION LIMITS - TCL ORGANICS
 NIROP FRIDLEY, MINNESOTA
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Parameter	CRQL(1)		MDL(2)	
	AQ(3)	SO(4)	AQ	SO
Volatile Organic Compounds	µg/L	µg/kg	µg/L	µg/kg
Acetone	10	10	1.64	1.72
Benzene	10 10	10	0.37	0.14
Bromodichloromethane	10 6	10	0.19	0.09
Bromoform	10	10	0.27	0.13
Bromomethane	10 10	10	0.35	2.40
2-Butanone	10	10	0.54	1.26
Carbon disulfide	10	10	0.31	0.16
Carbon tetrachloride	10 3	10	0.57	0.07
Chlorobenzene	10	10	0.29	0.11
Chloroethane	10	10	0.32	2.24
Chloroform	10	10	0.38	2.08
Chloromethane	10 3	10	0.47	2.31
Dibromochloromethane	10 10	10	0.10	0.19
1,1-Dichloroethane	10	10	0.34	2.33
1,2-Dichloroethane	10 4	10	0.24	0.14
1,1-Dichloroethene	6 ⁽⁵⁾ 6	10	0.43	0.53
cis-1,2-Dichloroethene ⁽⁶⁾	10	10	0.27	2.04
trans-1,2-Dichloroethene ⁽⁶⁾	10	10	0.43	2.06
1,2-Dichloropropane	10 5	10	0.22	0.13
cis-1,3-Dichloropropene	10 2	10	0.34	0.19
trans-1,3-Dichloropropene	10 2	10	0.20	0.18
Ethylbenzene	10	10	0.31	0.10
2-Hexanone	10	10	0.38	0.85
4-Methyl-2-pentanone	10	10	0.28	0.62
Methylene chloride	10	10	0.23	7.92
Styrene	10	10	0.40	0.08
1,1,2,2-Tetrachloroethane	10 2	10	0.34	0.14
1,1,1-Trichloroethane	10	10	0.23	0.08
1,1,2-Trichloroethane	10 3	10	0.31	0.14
Trichloroethene	5 ⁽⁵⁾	10	0.55	0.09
Tetrachloroethene	5 ⁽⁵⁾	10	0.44	0.24
Toluene	10	10	0.33	0.18
Vinyl chloride	10 0.2	10	1.09	2.26
Xylenes (total)	10	10	0.94	0.16

2/1/97

TABLE 1-4
 ANALYTICAL DETECTION LIMITS - TCL ORGANICS
 NIROP FRIDLEY, MINNESOTA
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Parameter	CRQL(1)		MDL(2)	
	AQ(3)	SO(4)	AQ	SO
Semivolatile Organic Compounds	µg/L	µg/kg	µg/L	µg/kg
Acenaphthene	10	330	0.24	4.9
Acenaphthylene	10	330	0.24	4.4
Anthracene	10	330	0.42	6.6
Benzo(a)anthracene	(10) 0.5	330	0.16	7.2
Benzo(a)pyrene	(5)(6,7) 0.05	330	0.15	8.7
Benzo(b)fluoranthene	(10) 0.5	330	0.47	13.7
Benzo(g,h,i)perylene	10	330	0.49	10.8
Benzo(k)fluoranthene	(10) 5	330	0.31	8.6
Bis(2-chloroethoxy)methane	10	330	0.24	6.7
Bis(2-chloroethyl)ether	(10) 0.3	330	0.21	3.2
Bis(2-ethylhexyl)phthalate	10	330	0.87	10.3
4-Bromophenyl-phenylether	10	330	0.27	9.9
Butylbenzylphthalate	10	330	0.12	7.7
Carbazole	10	330	0.24	6.1
4-Chloro-3-methylphenol	10	330	0.33	11.1
4-Chloroaniline	10	330	1.06	34 ⁽⁸⁾
2-Chloronaphthalene	10	330	0.44	8.4
2-Chlorophenol	10	330	0.19	5.6
4-Chlorophenyl-phenylether	10	330	0.35	6.6
Chrysene	10	330	0.19	5.1
Dibenz(a,h)anthracene	(10) 0.05	330	0.12	7.6
Dibenzofuran	10	330	0.27	5.5
3,3'-Dichlorobenzidine	(10) 0.08	330	0.37 ⁽⁸⁾	49 ⁽⁸⁾
Diethylphthalate	10	330	0.17	8.2
Di-n-butylphthalate	10	330	0.18	7.0
Di-n-octylphthalate	10	330	0.40	6.7
4,6-Dinitro-2-methylphenol	25	830	0.16 ⁽⁸⁾	138 ⁽⁸⁾
2,4-Dinitrophenol	(25) 10	830	0.16 ⁽⁸⁾	6.0 ⁽⁸⁾
2,4-Dinitrotoluene	(10) 0.5	330	0.22	12.4
1,2-Dichlorobenzene	10	330	0.51	5.4
1,3-Dichlorobenzene	10	330	0.60	3.2
1,4-Dichlorobenzene	10	330	0.51	3.6
2,4-Dichlorophenol	10	330	0.26	10.5

TABLE 1-4

ANALYTICAL DETECTION LIMITS - TCL ORGANICS
 NIROP FRIDLEY, MINNESOTA
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Parameter	CRQL(1)		MDL(2)	
	AQ(3)	SO(4)	AQ	SO
Semivolatile Organic Compounds	µg/L	µg/kg	µg/L	µg/kg
Dimethylphthalate	10	330	0.21	12.2
2,4-Dimethylphenol	10	330	1.18	91 ⁽⁸⁾
2,6-Dinitrotoluene	10 ^{0.5}	330	0.29	27.0
Fluoranthene	10	330	0.41	5.6
Fluorene	10	330	0.16	4.4
Hexachlorobenzene	10 ^{0.2}	330	0.26	9.5
Hexachlorobutadiene	10 ¹	330	0.54	4.0
Hexachlorocyclopentadiene	10	330	2.3 ⁽⁸⁾	6.7
Hexachloroethane	10 ¹	330	0.57	5.2
Indeno(1,2,3-cd)pyrene	10 ^{0.5}	330	0.06	7.0
Isophorone	10	330	0.18	8.2
2-Methylnaphthalene	10	330	0.41	6.4
2-Methylphenol	10	330	0.69	9.4
4-Methylphenol	10 ³	330	0.43	8.6
Naphthalene	10	330	0.38	5.7
2-Nitroaniline	25	830	0.26	10.3
3-Nitroaniline	25	830	1.16	17 ⁽⁸⁾
4-Nitroaniline	25	830	0.45 ⁽⁸⁾	48 ⁽⁸⁾
Nitrobenzene	10	330	0.55	9.2
2-Nitrophenol	10	330	0.34	10.9
4-Nitrophenol	25	830	0.89 ⁽⁸⁾	24 ⁽⁸⁾
N-nitroso-di-n-propylamine	10	330	0.30	8.0
N-nitrosodiphenylamine	10	330	0.29	12.5
2,2'-Oxybis(1-chloropropane)	10	330	0.26	9.8
Pentachlorophenol	25 ³	830	0.15 ⁽⁸⁾	6.3
Phenanthrene	10	330	0.24	6.4
Phenol	10	330	0.28	30.1
Pyrene	10	330	0.20	6.8
1,2,4-Trichlorobenzene	10	330	0.54	8.1
2,4,5-Trichlorophenol	25	830	0.28	9.3
2,4,6-Trichlorophenol	10	330	0.15	4.8
Pyridine ⁽⁹⁾	10	330	NA ⁽¹⁰⁾	NA

TABLE 1-4

ANALYTICAL DETECTION LIMITS - TCL ORGANICS
 NIROP FRIDLEY, MINNESOTA
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Parameter	CRQL(1)		MDL(2)	
	AQ(3)	SO(4)	AQ	SO
Polychlorinated biphenyls	µg/L	µg/kg	µg/L	µg/kg
Aroclor-1016	1.0	33	0.081	5.36 ⁽⁸⁾
Aroclor-1221	2.0	67	0.29 ⁽⁸⁾	9.58
Aroclor-1232	1.0	33	0.38 ⁽⁸⁾	4.34
Aroclor-1242	1.0	33	0.051 ⁽⁸⁾	6.65
Aroclor-1248	1.0	33	0.043 ⁽⁸⁾	4.06
Aroclor-1254	1.0	33	0.092 ⁽⁸⁾	7.58
Aroclor-1260	1.0	33	0.084	3.36 ⁽⁸⁾

0.04 Total PCBs

- 1 CRQL Contract Required Quantitation Limit; as specified in OLM03.1.
- 2 MDL Method Detection Limit; as provided by Laucks Testing Laboratories, Inc.
- 3 AQ Aqueous (groundwater) samples.
- 4 SO Solid (soil) samples.
- 5 Revised CRQL based on health-based decision rules outlined in Section 4.0 of the Work Plan. A standard at 5 µg/L will be included in the initial calibration for this compound.
- 6 1,2-Dichloroethene is typically reported as total 1,2-dichloroethene based on CLP requirements. The cis- and trans-isomers of 1,2-dichloroethene will be individually reported for the OU3 RI.
- 7 Results for benzo(a)pyrene between 2 µg/L (the maximum contaminant level) and 5 µg/L will be reported as estimated values.
- 8 Laucks Testing Laboratories, Inc., is currently in the process of updating this MDL.
- 9 Pyridine is not part of the CLP TCL list but will be included in the semivolatile analysis of the OU3 RI samples since this compound was an ingredient in products used at the NIROP Fridley.
- 10 NA Not Available; MDL study for this parameter is in progress.

TABLE 1-5

ANALYTICAL DETECTION LIMITS - TAL INORGANICS
 NIROP FRIDLEY, MINNESOTA

Parameter	CRDL(1) ^(SRU)		IDL(2)	
	AQ(3) ^(MDL)	SO(4)	AQ	SO
Target Analyte List Metals	µg/L	mg/kg	µg/L	mg/kg
Aluminum	200 50	40 2000	68	13.6
Antimony	60 6	12 14	12	2.4
Arsenic	10 50	2 12	1.9	0.38
Barium	200 200	40 2300	0.5	0.1
Beryllium	5 0.08	1 4	0.3	0.06
Cadmium	5 4	1 16	3	0.6
Calcium	5000	1000	54	10.8
Chromium	10 100	2 126	5	1
Cobalt	50 30	10 200	2	0.4
Copper	25 100	5 1300	2	0.4
Cyanide	10 100	10 100	2.686 ⁽⁵⁾	0.0238 ⁽⁵⁾
Iron	100	20	22	4.4
Lead	3	0.6 400	0.79	0.16
Magnesium	5000	1000	55	11
Manganese	15 100	3 1100	1	0.2
Mercury	0.2 2	0.1 0.1	0.025	0.025
Nickel	40 100	8 500	3	0.6
Potassium	5000	1000	96	19.2
Selenium	5 30	1 174	1	0.2
Silver	10 30	2 174	3	0.6
Sodium	5000	1000	20	4
Thallium	10 0.6	2 3	0.78	0.16
Vanadium	50 50	10 210	3	0.6
Zinc	20 2000	4 10,000	2	0.4

- 1 CRDL Contract Required Detection Limit; as specified in ILM04.0.
- 2 IDL Instrument Detection Limit, unless otherwise noted; as provided by Laucks Testing Laboratories, Inc.
- 3 AQ Aqueous (groundwater) samples.
- 4 SO Solid (soil) samples.
- 5 MDL Method Detection Limit; as specified by Laucks Testing Laboratories, Inc.

TABLE 1-6

ANALYTICAL DETECTION LIMITS
 BIOLOGICAL/ENGINEERING/MISCELLANEOUS PARAMETERS
 NIROP FRIDLEY, MINNESOTA

Parameter	Aqueous Samples (mg/L)	
	PQL ⁽¹⁾	MDL ⁽²⁾
Total Suspended Solids	2	NA ⁽³⁾
Alkalinity (as CaCO ₃)	2.0	NA
Hardness (as CaCO ₃)	1	NA
Sulfate	1	0.057
Nitrate	0.2	0.01
Nitrite	0.1	0.025
Dissolved Chloride	1	0.1
Dissolved Bromide	1	0.012
Dissolved Phosphate	1	0.12
Dissolved Methane (ng/L)	15	5.03
	Solid Samples (mg/Kg) ⁽⁴⁾	
Total Organic Carbon	200	24
Hexavalent Chromium (Limit) 100 ug/L	— ⁽⁵⁾	— ⁽⁵⁾
pH (pH units)	±0.1 ⁽⁶⁾	NA
Ferrous Iron	estimated at 0.03 ⁽⁶⁾	NA
Sulfide	±10 mV ⁽⁶⁾	NA
Oxidation Reduction Potential (mV)	estimated at 1 ⁽⁶⁾	NA

- 1 PQL Practical Quantitation Limit; as provided by Laucks Testing Laboratories, Inc.
- 2 MDL Method Detection limit; as provided by Laucks Testing Laboratories, Inc.
- 3 NA MDL determination not applicable to this method.
- 4 Units for solid sample results are mg/kg unless otherwise noted.
- 5 PQL/MDL not available. Studies will be performed prior to start of the OU3 RI.
- 6 PQL not applicable. Values shown represent sensitivity for the parameter.