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LETTER REGARDING SOLID WASTE MANAGEMENT UNIT ASSESSMENT WORK PLAN  
FOR DRY CLEANING FLUID SPILL AREA BUILDING 191 NS MAYPORT FL  
4/25/1995  
ABB ENVIRONMENTAL SERVICES



April 25, 1995

Commanding Officer  
Southern Division  
Naval Facilities Engineering Command  
2155 Eagle Drive  
Charleston, S.C. 29418

Attention: Mr. David Driggers (Code 1582)

**SUBJECT: Solid Waste Management Unit Assessment Workplan  
Dry Cleaning Fluid Spill Area, Building 191  
RCRA Facility Investigation, U.S. Naval Station, Mayport, FL  
Contract No. N62467-87-D-0317 CTO#028**

Dear Mr. Driggers:

The following presents the plan for collection of environmental samples at a release of dry cleaning fluid (tetrachloroethylene) at Building 191 (Figure 1). The purpose of this sampling and analysis workplan is to describe methods that will be used to collect and analyze environmental samples to assess whether hazardous materials have been released to the environment at Building 191. The site of the release is not listed in U.S. Naval Station (NAVSTA) Mayport's Hazardous and Solid Waste Amendment (HSWA) permit as either an Area of Concern (AOC) or a Solid Waste Management Unit (SWMU).

Correspondence dated August 10, 1994, from Mr. Douglas P. Tomlinson, Lieutenant Commander, Staff Civil Engineer, Department of Navy to Mr. Ernest Frey, Northeast District, Florida Department of Environmental Protection (FDEP) indicated that a release of dry cleaning fluid had occurred at Building 191 on May 4, 1993. The correspondence stated that the release occurred while relocating drums at Building 191, Fleet Industrial Supply Center, Fleet Supply Center, Mayport and was immediately cleaned up. It was stated in the correspondence that analytical results from samples consisting of asphalt, limerock and soil, "show that the area is clean of contamination and requires no further action".

A contamination assessment report was prepared by Environmental Science and Engineering, Inc. (ESE, 1994) for the assessment of a potential release(s) of diesel fuel from leaking underground lines from an aboveground storage tank (300-gallon capacity) located on the southern side Building 191. The assessment by ESE consisted of installing three piezometers and four

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monitoring wells, collecting information on water levels in the vicinity of Building 191, determining groundwater flow directions, and collecting groundwater samples for chemical analysis from the monitoring wells.

The depth to groundwater at Building 191 was determined by ESE to range from 3 to 4 feet beneath the land surface (bls). The groundwater flow direction was determined by ESE, Inc., to be to the southwest. Based on the groundwater flow direction determined by ESE the four monitoring wells are located hydraulically downgradient from the covered shed (ESE, 1994) where 55 gallon drums are temporarily stored.

Tetrachloroethene ( $22 \mu\text{g}/\ell$ ) and trichloroethene ( $5 \mu\text{g}/\ell$ ) were detected in a groundwater sample collected by ESE from monitoring well MW-4, located along the northeastern edge of Building 191 (Figure 1) (ESE, 1994). Monitoring wells MW-1, MW-2 and MW-3, located south and southwest of Building 191 did not contain detectable concentrations of tetrachloroethene and trichloroethene (ESE, 1994).

A site visit was made by ABB-Environmental Services, Inc., (ABB-ES) personnel in March 1995 to assess proposed sampling locations at the site. The piezometers and monitoring wells installed by ESE were still located at Building 191. This sampling and analysis workplan was developed based upon the site visit and results of the assessment conducted by ESE. Except as noted, field activities will be conducted as described in the NAVSTA Mayport RFI Workplan (ABB-ES, 1991).

The findings of this investigation will be submitted as an SWMU assessment report to FDEP and the U.S. Environmental Protection Agency (USEPA). Available historical information and analytical data from this sampling event will be provided in the SWMU assessment report to allow the regulatory agencies to assess whether the release at Building 191 should be added to the HSWA permit as an SWMU requiring a Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI), or requires no further investigation. The RFI will be warranted if historical and/or analytical data suggest that a release of hazardous substances has occurred at this site and may pose a potential threat to human health or the environment.

The following paragraphs describe the approach and level of effort used to collect environmental samples to fulfill the SWMU assessment reporting requirements.

Groundwater Field Screening Program. A groundwater field screening program is proposed to collect groundwater samples in the vicinity of Building 191. Tetrachloroethene and trichloroethene were detected in a groundwater sample collected from monitoring well MW-4 located on the northern side of Building 191. The groundwater field screening program will be used to determine the location of one to three monitoring wells, which will be used to collect groundwater samples for laboratory analysis and to assess whether additional investigation is required.

A minimum of ten direct push technology (DPT) soundings are proposed to collect the groundwater field screening samples (Figure 1). Five DPT samples will be collected in the vicinity of monitoring well MW-4 and five DPT samples will be collected south of the Building 191. Groundwater samples from the existing piezometers and monitoring wells also will be collected for field screening analysis. The actual locations of the groundwater field screening DPT samples will be based on the field screening results and may vary from those shown. The locations will be optimized to assess whether tetrachloroethene is potentially present in shallow groundwater in the vicinity of the release.

Analyses of groundwater field screening samples will be performed using a portable field gas chromatograph (GC). The samples will be analyzed for benzene, toluene, ethylbenzene, xylenes, tetrachloroethene and trichloroethene. The GC will be calibrated using a sample which contains a mixture of these analytes. The data quality for the groundwater field screening results will be NEESA Level E.

Surface and Subsurface Soil Sampling Program. Four surface and subsurface soil sample pairs will be collected for this sampling event to assess whether additional investigation is required (Table 1). Three of the soil sample pairs will be collected in the area of the covered shed located north of Building 191 (Figure 1). One soil sample pair will be collected at the grass covered area near the location of monitoring well MW-4. Surface soil sampling locations will be biased to worst case location (e.g., stained areas, low areas where standing water occurs, potential source locations based on the groundwater field screening sample results, etc.).

The surface soil samples will be collected from land surface to a depth of 1-foot bls. At each surface soil sampling location, subsurface soil samples will be collected at 1 foot intervals to the water table and screened for organic vapors which may be emanating from the sample, with either a flame or photoionizing organic vapor analyzer (OVA). The subsurface soil sample with the highest OVA measurement will be selected for chemical analysis. As a default should organic compounds not be present in the samples at concentration that produce measurable organic vapors, the subsurface soil from the sampling interval 1-foot above the water table will be selected for laboratory analysis.

Groundwater Monitoring Wells Installation Program. The groundwater field screening results will be used to select the location of one to three shallow (screened across the water table) monitoring wells. The locations of the monitoring wells will be selected following review of the groundwater field screening results. A typical construction diagram for a shallow monitoring well is provided in Figure 2-2 of the RCRA Facility Investigation General Information Report (ABB-ES, 1995).

Groundwater Sampling Program. Depending on the number of monitoring wells installed, approximately eight to eleven groundwater samples will be collected (Table 2). Groundwater samples will be collected from each of the existing monitoring wells and piezometers and the

newly installed monitoring well(s). The groundwater samples collected during this sampling event will be used to assess whether additional investigation is required.

The groundwater sampling procedure will be low flow purging and sampling, which is in general conformance with the method utilized by USEPA (1994). Prior to collecting a groundwater sample, a monitoring well will be purged at a rate less than 1 liter a minute, using a peristaltic pump to remove stagnant water within the well casing, without causing the suspension of silts and clays that may be adhered to the well screen or riser and in the sand pack around the well screen. Turbidity, temperature, pH, and conductivity will be measured during purging to assess whether the stagnant water has been removed and that groundwater representative of the formation in which the well is screened is being produced.

The monitoring well will be purged until temperature, conductivity, and pH have stabilized within 10 percent between two consecutive measurements for each parameter and three to five volumes of water within the well casing have been removed. A monitoring well or piezometer that becomes dry during purging will be sampled after allowing sufficient time for the well to recharge.

Groundwater samples to be analyzed for inorganic target analytes will not be filtered unless turbidity measurements exceed 5 nephelometric turbidity units (NTUs). A filtered (45 micron) and non-filtered sample will be collected at each well that has turbidity greater than 5 NTU.

The groundwater samples analyzed for semivolatile organic compounds, pesticides, polychlorinated biphenyls (PCBs), metals and cyanide will be collected using a peristaltic pump and disposable Teflon™ tubing before the sample comes in contact with the pump. Groundwater samples analyzed for VOCs will be collected last using a Teflon™ bailer.

Environmental Sample Laboratory Analyses. Surface and subsurface soil samples and groundwater samples will be analyzed for target analytes (VOCs, SVOCS, pesticides, PCBs, metals and cyanide) selected from the Groundwater Monitoring List contained in 40 CFR 264, Appendix IX and the USEPA Contract Laboratory Program Target Compound and Target analyte list (See Tables 2-3 through 2-5 in the NAVSTA Mayport General Information Report, [ABB-ES, 1995]). The data reporting package for these samples will be NEESA Level C. The samples will be shipped by overnight delivery under chain of custody protocol to a NEESA approved laboratory.

Field quality assurance and quality control (QA/QC) samples (trip and equipment rinse blanks, environmental sample duplicates and matrix spike and matrix spike duplicate sample pairs) also will be collected during sampling activities and will be analyzed for the same parameters as the corresponding environmental samples. QA/QC requirements are presented in detail in the NAVSTA Mayport RFI workplan, Appendix A, Volume II (ABB-ES, 1991).

**Quality Assurance And Quality Control.** Quality assurance and quality control standards and procedures will comply with the approved QAPP and Site-Specific Quality Assurance Plan (QAP) contained in Appendices A and B, respectively, of the RFI Workplan, Volume II (ABB-ES, 1991). Quality control samples will be collected in accordance with Section 11.0 of the QAPP. Decontamination of field sampling equipment will be in accordance with Section 6.3 of the QAPP and the Technical Memorandum, *Decontamination Procedures*, located in Appendix B of the RFI Workplan (ABB-ES, 1991). Sample handling and project documentation will be in accordance with Section 3.1 of the RFI Workplan, Volume II, and the referenced sections of the QAPP (ABB-ES, 1991). Laboratory QA/QC will be in accordance with the laboratory QAPP (ABB-ES, 1991).

**Health And Safety.** Health and safety precautions will be followed in accordance with the general Health and Safety Plan located in Volume III of the RFI Workplan (ABB-ES, 1991).

**Report.** Where available, historical and analytical information obtained from this assessment will be used to evaluate the following:

- whether the site should be added to the HSWA permit as an SWMU or AOC;
- a general, physical description of the site including dimension, capacities, and structural description, if available or applicable.
- the materials that were released at the site; and
- analytical results from the sampling events.

Analytical data from this sampling event will be used to assess whether the site should be considered as an SWMU requiring a RCRA Facility Investigation (RFI) or no further investigation. The RFI will be warranted if historical and/or analytical data suggest that a release of hazardous substances has occurred at this site and may pose a potential threat to human health or the environment. Any contamination found in soils or groundwater will be further delineated during the RFI. During the RFI, environmental samples (soil and groundwater) will also be collected to assess contaminant fate and transport, human and ecological risk, and to provide fundamental engineering properties data to support development of potential corrective measures.

Bench mark comparison values for surface and subsurface soils will consist of background screening values computed from station wide surface and subsurface soil samples (ABB-ES, 1995), USEPA Region III Risk Based Concentration (RBC) (USEPA, November 1994) and the State of Florida Soil Cleanup Goals (FDEP, July 5, 1994). Bench mark comparison values for groundwater samples will consist of background screening values computed from station wide background groundwater samples (ABB-ES, 1995), Federal maximum contaminant levels (MCLs) (USEPA, 1994), and Florida Groundwater Guidance Concentrations (FDEP, 1994). The

groundwater field screening samples will be used only to locate a new monitoring well(s) and will not be compared to background or bench mark values.

Schedule. The environmental samples will be collected during the ongoing RFI field activities at the Group III SWMUs.

If you have any questions, please call us at your convenience.

Sincerely,

ABB ENVIRONMENTAL SERVICES INC.

  
Peggy Layne, P.E.  
Project Manager

  
Francis K. Lesesne, P.G.  
Consulting Geologist

cc: Cheryl Mitchell, NAVSTA Mayport

## REFERENCES

ABB-Environmental Services, Inc. (ABB-ES), 1991, Interim Final Workplan Volume I, II, and III, U.S. Naval Station (NAVSTA) Mayport, Mayport, Florida, prepared for Southern Division Naval Facilities Engineering Command (SOUTHNAVFACENGCOM), Charleston, South Carolina, October.

ABB-ES, 1994, Technical Memorandum Background Characterization Activities RCRA Facility Investigation, NAVSTA Mayport, Mayport, Florida prepared for SOUTHNAVFACENGCOM, Charleston, South Carolina, April.

ABB-ES, 1995, Resource Conservation and Recovery Act (RCRA) Facility Investigation General Information Report, U.S. Naval Station Mayport (Volumes I and II), (Draft), prepared for SOUTHNAVFACENGCOM, Charleston, S.C., February.

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USEPA, 1991, Environmental Compliance Branch Standard Operating Procedures and Quality Assurance Manual, USEPA Region IV, Environmental Services Branch, Athens, Georgia, February.

USEPA, 1994, Memorandum from Roy L. Smith to RBC Table Mailing List, Subject: Risk-Based Concentration Table, Fourth Quarter 1994; USEPA Region III, Philadelphia, Pennsylvania, November.

**ATTACHMENT A**  
**TABLES**

**Table 1**  
**Summary of Soil Samples by Analytical Parameters**  
**SWMU Assessment Workplan**

U.S. Naval Station  
 Mayport, Florida

Sample Number	Sample Type	Number of Samples	Sample Depth (Feet, bls)	USEPA Method Number			
				8240	8270	8080	6010 7420 7470 9010
MPT-TC-SS01	Surface Soil	1	0 to 1	1	1	1	1
MPT-TC-SS02	Surface Soil	1	0 to 1	1	1	1	1
MPT-TC-SS03	Surface Soil	1	0 to 1	1	1	1	1
MPT-TC-SS04	Surface Soil	1	0 to 1	1	1	1	1
TBD	Surface Soil	1	0 to 1	1	1	1	1
MPT-TC-BS01	Subsurface Soil	1	2 to 3	1	1	1	1
MPT-TC-BS02	Subsurface Soil	1	2 to 3	1	1	1	1
MPT-TC-BS03	Subsurface Soil	1	2 to 3	1	1	1	1
MPT-TC-BS04	Subsurface Soil	1	2 to 3	1	1	1	1
TBD	Subsurface Soil	1	2 to 3	1	1	1	1
MS/MSD	Subsurface Soil	1	2 to 3	1	1	1	1
MPT-TC-R001	Equipment Rinsate	1	Not Applicable	1	1	1	1
MPT-TC-T001	Trip Blank	1	Not Applicable	1			

**Notes:** TBD = Duplicate sample, the collocated associated sample will be selected in the field  
 MS/MSD = Matrix spike/matrix spike duplicate pair..  
 bls = beneath land surface.  
 8240 = USEPA method for analysis of volatile organic compounds.  
 8270 = USEPA method for analysis of semivolatile organic compounds.  
 8080 = USEPA method for analysis of chlorinated pesticides and polychlorinated biphenyls.  
 6010, 7420 or 7470 = USEPA Methods for metals analysis (inductively coupled plasma (ICP), graphite furnace atomic absorption (GFAA) and cold vapor atomic absorption (CVAA), as appropriate).  
 9010 = USEPA methods for analysis of cyanide

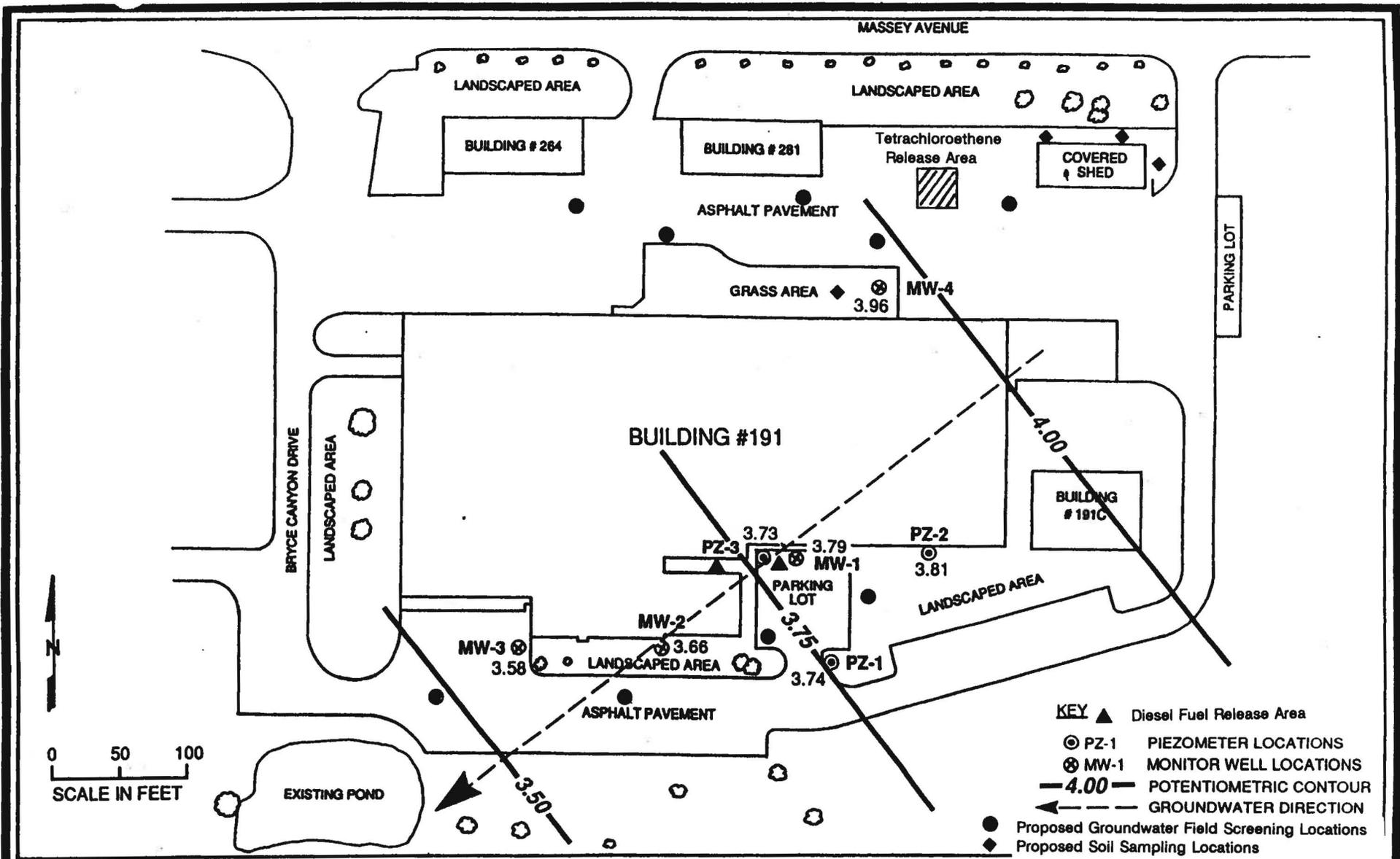
**Table 2**  
**Summary of Groundwater Samples by Analytical Parameters**  
**SWMU Assessment Workplan**

U.S. Naval Station  
 Mayport, Florida

Sample Number	Sample Type	Number of Samples	Type of Well	USEPA Method Number			
				8240	8270	8080	6010 7420 7470 9010
MPT-TC-MW01	Groundwater	1	Shallow	1	1	1	1
MPT-TC-MW02	Groundwater	1	Shallow	1	1	1	1
MPT-TC-MW03	Groundwater	1	Shallow	1	1	1	1
MPT-TC-MW04	Groundwater	1	Shallow	1	1	1	1
MPT-TC-MW05	Groundwater	1	Shallow	1	1	1	1
MPT-TC-MW06	Groundwater	1	Shallow	1	1	1	1
MPT-TC-MW07	Groundwater	1	Shallow	1	1	1	1
MPT-TC-PZ01	Groundwater	1	Shallow	1	1	1	1
MPT-TC-PZ02	Groundwater	1	Shallow	1	1	1	1
MPT-TC-PZ03	Groundwater	1	Shallow	1	1	1	1
TBD	Groundwater	1	Shallow	1	1	1	1
MS/MSD	Groundwater	1	Shallow	1	1	1	1
MPT-TC-R001	Equipment Rinsate	1	Not Applicable	1	1	1	1
MPT-TC-T001	Trip Blank	1	Not Applicable	1			

**Notes:** The locations of monitoring wells MPT-TC-MW05 through MPT-TC-MW07 to be determined from field groundwater field screening results.  
 TBD = Duplicate sample, the collocated associated sample will be selected in the field.  
 MS/MSD = Matrix spike/matrix spike duplicate pair.  
 8240 = USEPA method for analysis of volatile organic compounds.  
 8270 = USEPA method for analysis of semivolatile organic compounds.  
 8080 = USEPA methods for analysis of chlorinated pesticides and polychlorinated biphenyls.  
 6010, 7420 or 7470 = USEPA Methods for metals analysis inductively coupled plasma (ICP), graphite furnace atomic absorption (GFAA) and cold vapor atomic absorption (CVAA), as appropriate.  
 9010 = USEPA methods for analysis of cyanide.

**ATTACHMENT B**  
**FIGURES**



**FIGURE 1**  
**POTENTIOMETRIC SURFACE – MAY 26, 1994**  
**NAVAL STATION MAYPORT, BUILDING 191**

Source: From Figure 4-5, Contamination Assessment Report for Naval Station Mayport, Building 191, Jacksonville Florida, Prepared for the Navy Public Works Center, Jacksonville, Florida by Environmental Science and Engineering, Inc., Gainesville, Florida, August, 1994.

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