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CONTAMINATION ASSESSMENT REPORT ADDENDUM FOR FACILITY 327 NSA PANAMA CITY FL

11/1/1995

ABB ENVIRONMENTAL SERVICES

CONTAMINATION ASSESSMENT REPORT ADDENDUM

FACILITY 327

COASTAL SYSTEMS STATION PANAMA CITY
PANAMA CITY, FLORIDA

Unit Identification Code: N65928

Contract No. N62467-89-D-0317/069

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November 1995

CERTIFICATION OF TECHNICAL
DATA CONFORMITY (MAY 1987)

The Contractor, ABB Environmental Services, Inc., hereby certifies that, to the best of its knowledge and belief, the technical data delivered herewith under Contract No. N62467-89-D-0317/069 are complete and accurate and comply with all requirements of this contract.

DATE: November 9, 1995

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Project Technical Lead

(DFAR 252.227-7036)

FOREWORD

To meet its mission objectives, the U.S. Navy performs a variety of operations, some requiring the use, handling, storage, or disposal of hazardous materials. Through accidental spills and leaks and conventional methods of past disposal, hazardous materials may have entered the environment in ways unacceptable by today's standards. With growing knowledge of the long-term effects of hazardous materials on the environment, the Department of Defense initiated various programs to investigate and remediate conditions related to suspected past releases of hazardous materials at their facilities.

One of these programs is the Comprehensive Long-Term Environmental Action, Navy underground storage tank (UST) program. This program complies with Subtitle I of the Resource Conservation and Recovery Act and the Hazardous and Solid Waste Amendments of 1984. In addition, the UST program complies with all appropriate State and local storage tank regulations as they pertain to each naval facility.

The UST program includes the following activities:

- registration and management of Navy and Marine Corps storage tank systems,
- contamination assessment planning,
- site field investigations,
- preparation of contamination assessment reports,
- remedial (corrective) action planning,
- implementation of the remedial action plans, and
- tank and pipeline closures.

The Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM) manages the UST program, and the U.S. Environmental Protection Agency (USEPA) and the Florida Department of Environmental Protection (formerly Florida Department of Environmental Regulation) oversee the Navy UST program at Coastal Systems Station (CSS) Panama City.

Questions regarding the UST program at CSS Panama City should be addressed to Mr. Gabriel Magwood, SOUTHNAVFACENGCOM, Code 1849, at (803) 743-0307.

EXECUTIVE SUMMARY

During an underground storage tank (UST) removal program, Facility 327 at the Coastal Systems Station (CSS), Panama City, Florida, was identified as having soil contamination exceeding State target levels for gasoline constituents. ABB Environmental Services, Inc., (ABB-ES) was contracted by Southern Division, Naval Facilities Engineering Command to perform a contamination assessment at the site.

Facility 327 is the former site of a 2,000-gallon fiberglass UST that contained gasoline for use at the base marina. An undetermined quantity of gasoline leaked from the UST piping in the driveway area of the marina. The Activity responded by removing the soil and pumping approximately 1,000 gallons of gasoline and contaminated groundwater from the excavation. The total amount of soil removed is unknown. To prevent future leaks, the Activity had the UST and piping removed in August 1991. Soil and groundwater contamination in the UST area was discovered at that time. The UST was replaced with one aboveground storage tank positioned next to the boat ramp.

ABB-ES performed a contamination assessment at Site 327 from February through May 1993. A contamination assessment report (CAR) was submitted to the Florida Department of Environmental Protection (FDEP) in July 1993. FDEP comments to the CAR required additional site investigation. A supplemental field investigation was conducted from October 1994 through October 1995. As part of the supplemental field investigation, 37 soil borings were advanced and seven monitoring wells were installed at the site. Groundwater samples were collected and analyzed for constituents of the gasoline analytical group. The findings, conclusions, and recommendations of the supplemental field investigation are summarized below.

Findings and Conclusions

- The water table beneath the site was encountered at depths of 1 to 3 feet below land surface (bls) and is classified as G-II.
- The groundwater at the site has been consistently flowing to the north and east as indicated by previous data (ABB-ES, 1993).
- A large area of excessively contaminated soil, as indicated by organic vapor analyzer (OVA) headspace analysis, was identified to the north and east of Building 327 (see Executive Summary figure). Nearly the entire area of excessive soil contamination is covered by asphalt or concrete.
- Significant concentrations of acetone and methylene chloride were detected in soil samples collected at the site. Acetone and methylene chloride concentrations were less than State soil cleanup goals; however, they may be contributing to high OVA readings across the site.
- Acetone and methylene chloride were not detected in groundwater samples.

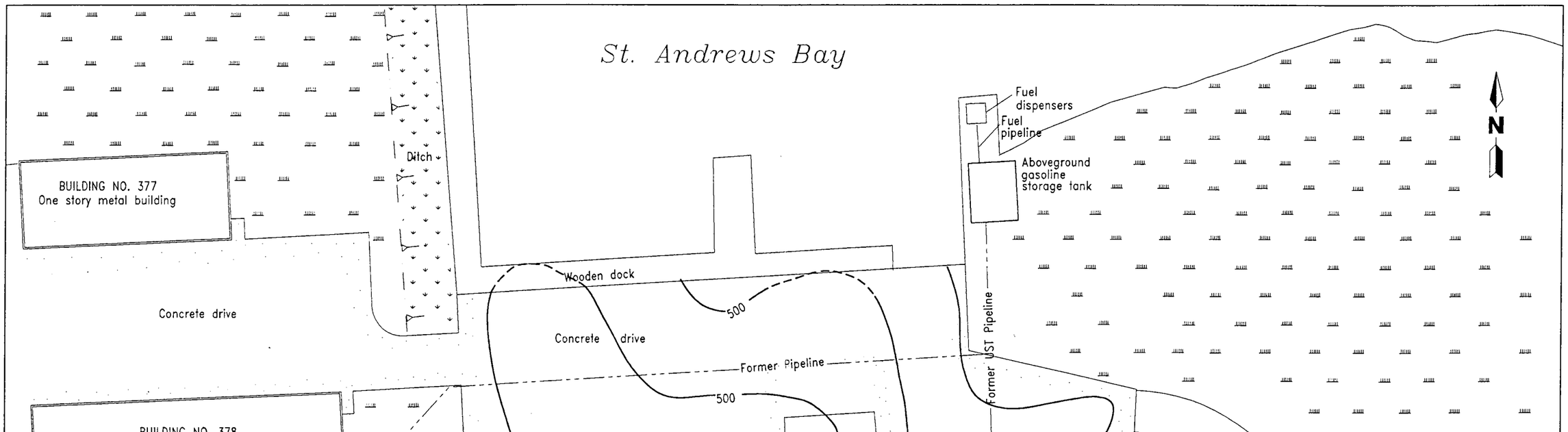
- Gasoline analytical group compounds detected in groundwater samples included benzene, ethylbenzene, toluene, xylenes, lead, and methyl tert-butyl ether (MTBE). No contaminant concentrations exceeded the State target levels required for no further action (NFA).

- Free product was not detected in any monitoring well at the site.

- The apparent sources of contamination, the 2,000-gallon gasoline UST and the former fuel pipeline, have been removed from the site or abandoned in place.

- No potable water sources were identified within a 0.25 mile radius of the site. There appears to be no risk of contamination to the CSS Panama City public water supply system from activities at the site.

Recommendations. Based on the findings and interpretations of the supplemental contamination assessment, ABB-ES recommends NFA for Facility 327 at CSS Panama City.


St. Andrews Bay
BUILDING NO. 377
One story metal building
Ditch
Concrete drive
Wooden dock
500
Concrete drive
Former Pipeline
500
Fuel dispensers
Fuel pipeline
Aboveground gasoline storage tank
Former UST Pipeline
N

ACKNOWLEDGMENTS

In preparing this report, the Underground Storage Tank Section of the Comprehensive Long-Term Environmental Action, Navy (CLEAN) Group at ABB Environmental Services, Inc. (ABB-ES), commends the support, assistance, and cooperation provided by the personnel at Coastal System Station (CSS), Panama City, Florida, and Southern Division, Naval Facilities Engineering Command.

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Panama City, Florida

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Panama City, Florida

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GLOSSARY

ABB-ES	ABB Environmental Services, Inc.
bls	below land surface
CA	contamination assessment
CAP	Contamination Assessment Plan
CAR	Contamination Assessment Report
CSS	Coastal Systems Station
EDB	ethylene dibromide
FAC	Florida Administrative Code
FDEP	Florida Department of Environmental Protection
FID	flame ionization detector
GC	gas chromatograph
ID	inside diameter
isocon	isoconcentration
MOP	Monitoring Only Plan
MTBE	methyl tert-butyl ether
msl	mean sea level
NFA	no further action
OVA	organic vapor analyzer
ppb	parts per billion
ppm	parts per million
PVC	polyvinyl chloride
SOUTHNAV-FACENGCOM	Southern Division, Naval Facilities Engineering Command
TOC	top of casing
TRPH	total recoverable petroleum hydrocarbons
USEPA	U.S. Environmental Protection Agency
UST	underground storage tank
VOA	volatile organic aromatic
VOC	volatile organic compounds

1.0 INTRODUCTION

Coastal Systems Station (CSS) Panama City, Florida, is one of seven major research, test, and evaluation laboratories of the Space and Naval Warfare Systems Command. CSS Panama City is located on St. Andrew Bay in Bay County, Florida (Figure 1-1). CSS Panama City is bounded by U.S. Highway 98 to the north, St. Andrew Bay to the east, State Road 392B (Magnolia Beach Road) to the south, and State Road 392 (Thomas Drive) to the west.

CSS Panama City consists of two operational areas, the laboratory and ordnance areas, that encompass about 660 acres (Figure 1-1). The laboratory area, situated north of Alligator Bayou (an inlet to St. Andrew Bay), covers about 360 acres and houses research facilities and various support activities and tenants. The ordnance area, south of Alligator Bayou, covers about 300 acres and is used primarily for ordnance storage and limited research.

CSS Panama City was first established in 1942 as a safe harbor for World War II convoy ships and as a liaison with a nearby shipyard. It later became an amphibious landing craft operations school. Research and development began in 1945 with the establishment of the U.S. Navy Mine Countermeasures Station. A research and development program for the use of helicopters for mine countermeasure operations was started at CSS Panama City in 1952. In November 1967, the laboratory became an activity of the Naval Ship Research and Development Center, based in Carderock, Maryland. The activity was redesignated as the Naval Coastal Systems Center in 1978.

In January 1992, the name of the activity was changed to Coastal Systems Station. Though its mission, activities, and name have changed over time, the center has continuously provided technology of mine and undersea countermeasures, special and amphibious warfare, diving, and other naval coastal missions. In order to meet its mission objectives, CSS Panama City performs a variety of operations, some requiring the use, handling, storage, or disposal of petroleum products.

During a tank removal program implemented by the U.S. Department of the Navy in 1989 and 1990, petroleum underground storage tanks (USTs) at various CSS site locations were removed. In many cases these tanks were replaced with new USTs. Tank contents were reportedly restricted to petroleum products including waste oil, diesel fuel, unleaded gasoline, and JP-5.

ABB Environmental Services, Inc. (ABB-ES), was contracted by the Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM) to perform a contamination assessment (CA) and submit a Contamination Assessment Report (CAR) for Facility 327 at CSS Panama City, Florida.

The contamination assessment at Site 327 was conducted from February through May, 1993. A CAR was submitted to Florida Department of Environmental Protection (FDEP) in July 1993. ABB-ES received two sets of comments to the CAR. The comments required additional site investigation. A copy of both sets of FDEP comments is attached in Appendix A. A supplemental field investigation was conducted from October 1994 through October 1995. This report is an addendum to the original CAR, in which the findings and conclusions of the supplemental field investigation are presented.

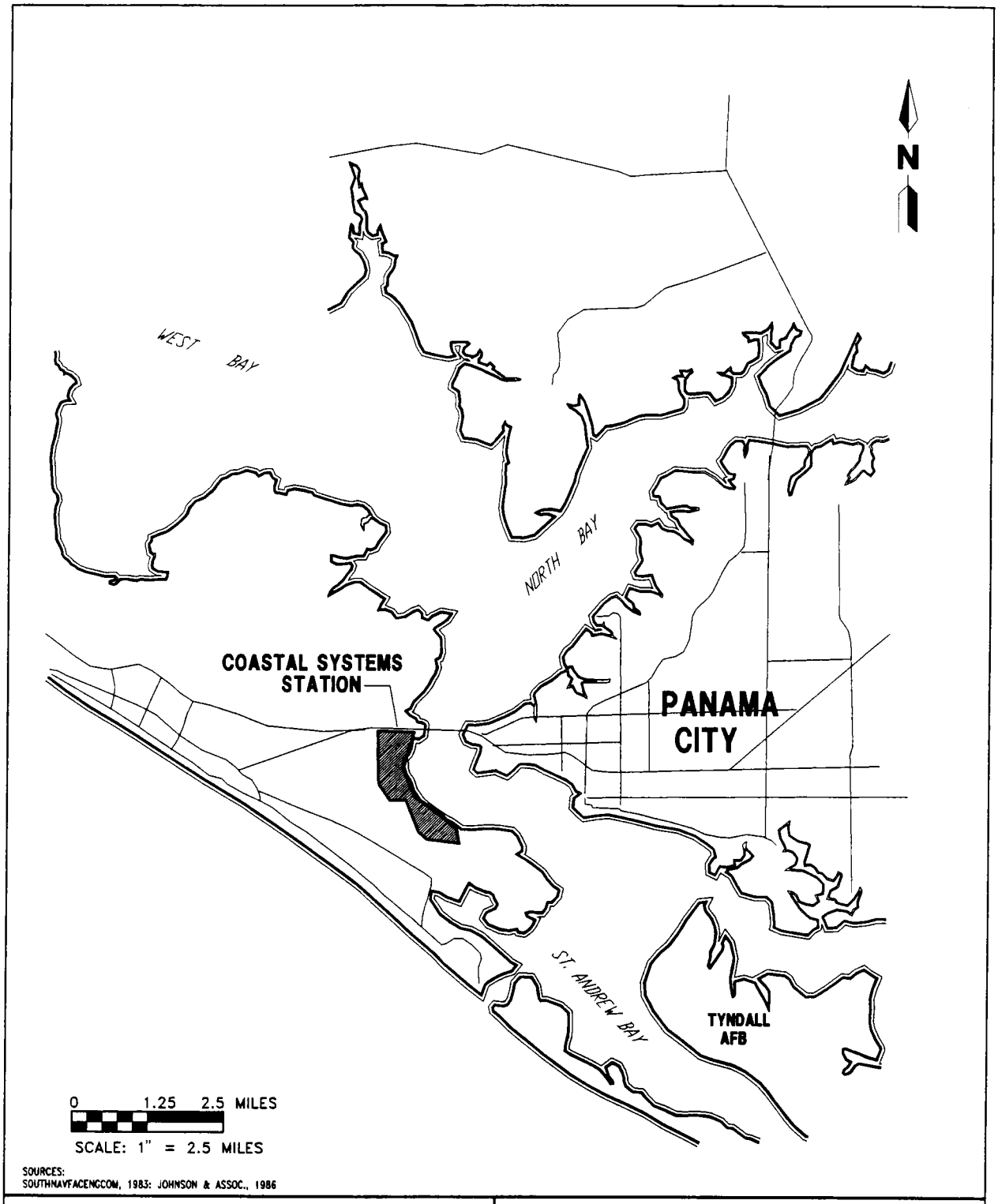

FIGURE 1-1
FACILITY LOCATION MAP

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CONTAMINATION ASSESSMENT REPORT ADDENDUM
FACILITY 327

COASTAL SYSTEMS STATION
PANAMA CITY, FLORIDA

The following sections of this report present the background information, data compilation, results from both field investigations, and CA conclusions and recommendations.

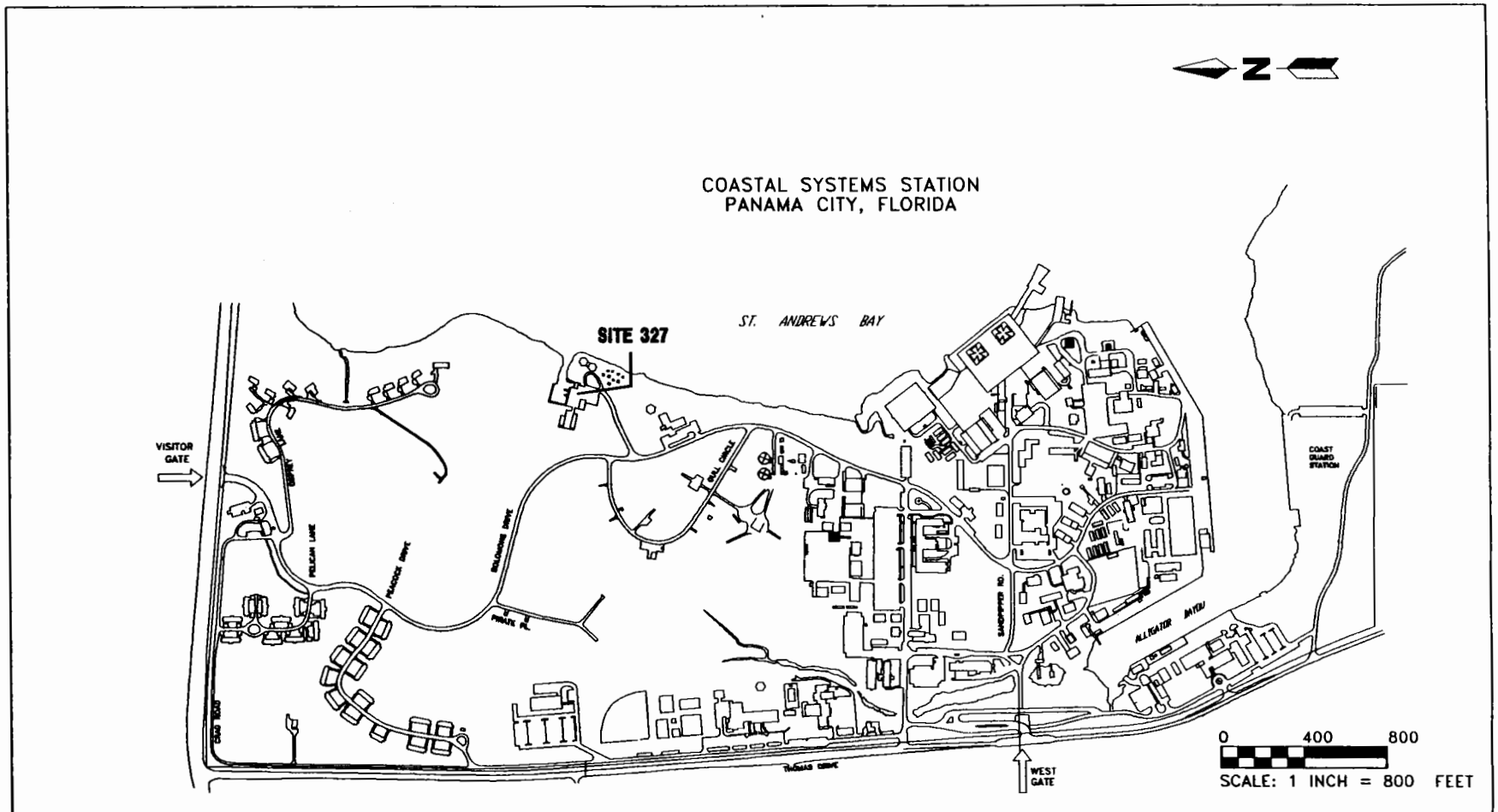
2.0 SITE BACKGROUND

2.1 SITE DESCRIPTION. Facility 327 is a pleasure-craft marina located on the east side of the base next to St. Andrew Bay (Figure 2-1 and Figure 2-2). The site is the former location of a 2,000-gallon fiberglass UST that contained gasoline to be used by boats at the marina. The UST and approximately 200 linear feet of associated piping that extended along the south side of Building 327 were removed in August 1991. The UST was replaced with one aboveground storage tank positioned next to the boat ramp. The UST had been buried in a grassy area on the south side of Building 378 approximately 10 feet from the side of the building. The pipeline extended east from the tank to the southwest corner of Building 327, along the south side of Building 327 to an elbow, then northeast to the boat ramp (see Figure 2-2). The pipeline was buried under a concrete and asphalt parking area from Building 327 to the boat ramp.

Utility lines did not have a significant impact on the placement of soil borings and monitoring wells. Overhead electrical lines extend southward from Building 327 and southward from a utility pole located in the grassy area east of the excavated soil area (see Figure 2-2). Underground electrical lines extend from Building 327 to Building 378 and Building 377. A 6-inch diameter underground water line extends to the south from the southwest corner of Building 327. Another 2-inch diameter water line extends to the north from the northwest corner of Building 327.

A large area of the site is covered by asphalt and concrete. Concrete extends approximately 130 feet east and 50 feet north of Building 327. An asphalt parking lot extends several hundred feet to the southeast of Building 327.

2.2 SITE HISTORY. Facility 327 has been in operation at CSS Panama City for approximately 11 years. A 2,000-gallon fiberglass UST that contained gasoline for use at the base marina was installed in 1985. The fuel was conveyed to a dispenser at the boat ramp by an underground pipeline. There are two abandoned pipelines that were associated with the tank at the site. One extends from the former tank location along the north side of Building 327 to the dispenser. The time of, and reason for, abandonment of this pipeline is unknown. It was replaced by a pipeline that extends from the tank location along the south side of Building 327, across the paved area, then turns north to the dispenser. This second pipeline was abandoned some time prior to mid-1990 following the discovery of a leak in the vicinity of the elbow at the edge of the pavement in the Marina driveway where the piping turns to the north. CSS Panama City personnel notified the local FDEP office of the release and were instructed to remove contaminated soil and groundwater from the site. At that time, base personnel contracted to have an undetermined amount of contaminated soil at the leak location removed and approximately 1,000 gallons of gasoline and contaminated groundwater pumped from the excavation and disposed. The contractor did not provide base personnel with manifests for transport or disposal of the contaminated soil and groundwater, nor was the activity provided with a report for the remedial action. The UST and pipeline were taken out of service after the release. Confirmation sampling was not performed following soil removal at the leak location. The UST was removed in August 1991, and soil and groundwater contamination in the UST area was discovered at that time.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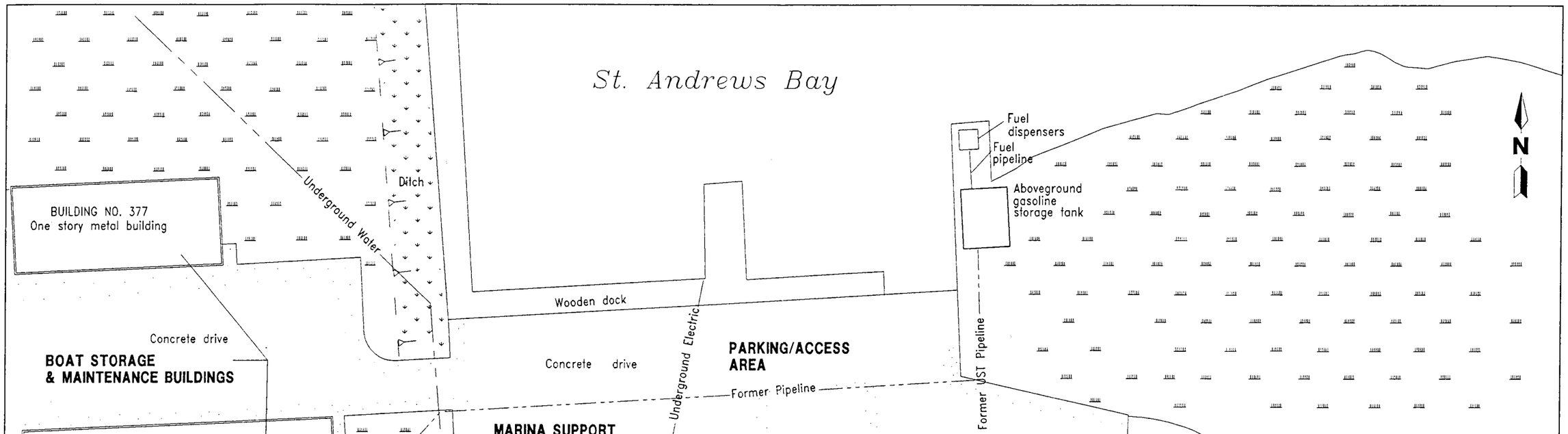
COASTAL SYSTEMS STATION
PANAMA CITY, FLORIDA
SITE 327
ST. ANDREWS BAY
VISITOR GATE
WEST GATE
COAST GUARD STATION
0 400 800
SCALE: 1 INCH = 800 FEET


St. Andrews Bay
Underground Water
Ditch
BUILDING NO. 377
One story metal building
Concrete drive
BOAT STORAGE
& MAINTENANCE BUILDINGS
Wooden dock
Concrete drive
Underground Electric
PARKING/ACCESS
AREA
Former Pipeline
MARINA SUPPORT
Former UST Pipeline
Fuel
dispensers
Fuel
pipeline
Aboveground
gasoline
storage tank
N

On June 8, 1992, Terra Resources collected soil samples from the area of the former UST. The samples were analyzed for total organic soil vapors with a flame ionization detector (FID). One temporary monitoring well was installed at the location of the former UST. A groundwater sample was collected from the temporary well and sent to a certified laboratory to be analyzed for volatile organic aromatics (VOAs), xylenes, and methyl tert-butyl ether (MTBE). In addition, six soil samples were collected along the area of the former fuel pipeline for analysis of soil vapor levels with an FID. Groundwater analytical results indicated 158 parts per billion (ppb) benzene and 1,320 ppb total VOA compounds in samples from the temporary well. Soil sample results indicated excessively contaminated soil (greater than 500 parts per million [ppm]) at two locations in the area of the former UST. A copy of the Terra Resources closure report is included in the CAR (ABB-ES, 1993).

There is no record that the 2,000-gallon gasoline UST at Facility 327 ever underwent tightness testing. The tank removal was conducted by Terra Resources.

ABB-ES conducted a CA at Site 327 from February through May, 1993. A CAR was submitted to FDEP in July 1993. ABB-ES received the two sets of comments to the CAR. FDEP requested a supplemental field investigation be performed at the site to assess the extent of soil contamination in the vicinity of soil boring SB-18. The supplemental field investigation was conducted from October 1994 through August 1995.

The scope of services required for the supplemental field investigation included the following:

- collecting soil samples to the north and east of Building 327 to more accurately assess the extent of petroleum contaminated soil,
- collecting groundwater samples from selected soil borings for field gas chromatograph (GC) screening. The screening results were used to aid in the placement of monitoring wells,
- installing and sampling groundwater monitoring wells to assess the horizontal and vertical extent of groundwater contamination,
- collecting water table elevations to assess the groundwater flow direction,

During the first site investigation, soil boring SB-18 was advanced next to an abandoned underground pipeline north of Building 327. The organic vapor analyzer (OVA) headspace reading from SB-18, 550 ppm, exceeded the State guidance concentration of 500 ppm for excessively contaminated soil. The supplemental field investigation required 37 additional soil borings, SB-30 through SB-66, to fully assess the extent of soil contamination. The soil borings were placed at 20-foot intervals extending outward from SB-18. OVA measurements greater than 1,000 ppm were detected in numerous soil borings. However, petroleum odors were only noted in one soil boring, SB-48, and gas chromatograph results indicated that only soil sample SB-48 contained petroleum constituents.

To determine the source of high OVA readings in the other soil samples, three soil samples were collected and sent to a laboratory to be analyzed for Total Recoverable Petroleum Hydrocarbons (TRPH) and Volatile Organics. The soil

samples were collected at 1 foot below land surface (bls) from soil borings SB-34, SB-43, and SB-50.

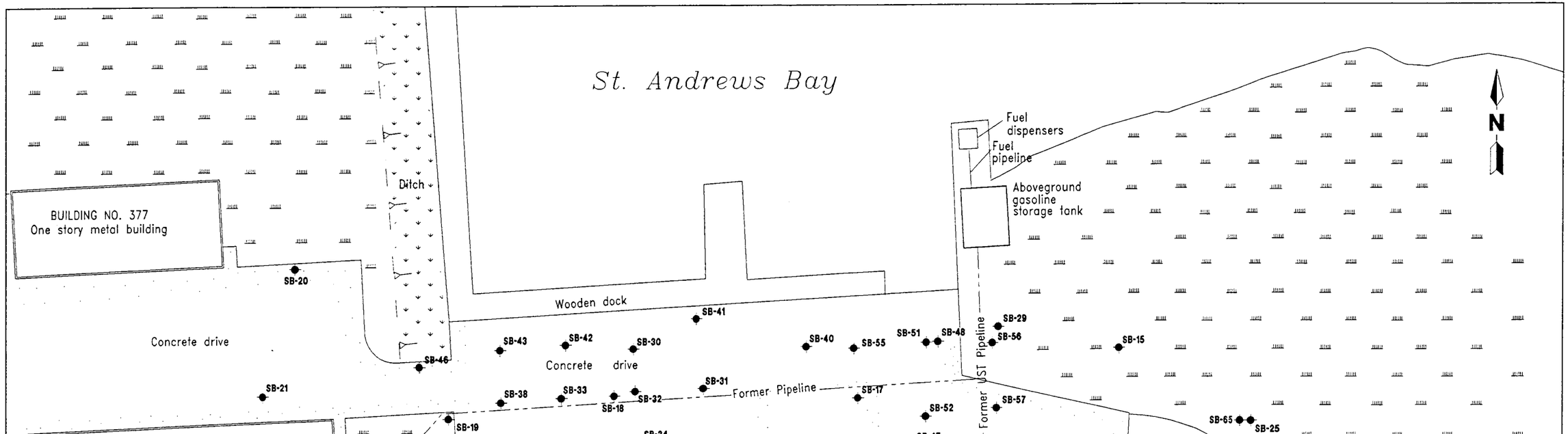
Eight additional monitoring wells were installed in the area of soil contamination to determine if the soil contamination was affecting the groundwater. Groundwater samples were collected from all site monitoring wells and analyzed for volatile organic compounds (VOCs) and lead. The results of the groundwater laboratory analyses and a detailed discussion of the soil assessment are presented in the following sections.

3.0 METHODOLOGIES AND EQUIPMENT

3.1 SOIL BORING AND SOIL SAMPLING PROGRAM. As part of the supplemental field investigation, 37 soil borings were advanced and three soil samples were collected for laboratory analysis. Soil boring locations are shown in Figure 3-1. Soil borings SB-30 through SB-62 were advanced to the north and east of Building 327 to assess the extent of soil contamination associated with soil boring SB-18. Each soil sample was analyzed for VOCs using an OVA equipped with an FID. Three soil samples were collected at 1 foot bls from soil borings SB-34, SB-43, and SB-50. The samples were shipped to Quanterra, Inc., an FDEP- and U.S. Environmental Protection Agency (USEPA)-approved laboratory, to be analyzed for volatile organic compounds by USEPA Method 8240 and TRPH by USEPA Method 418.1. All soil borings were advanced by hand auger. The results of the soil boring and soil sampling program are discussed in subsection 4.2.1.

3.2 MONITORING WELL INSTALLATION PROGRAM. Seven additional shallow monitoring wells and one double-cased deep well were installed to assess the horizontal and vertical extent of petroleum groundwater contamination. Monitoring well locations are shown in Figure 3-2. Shallow monitoring well MW-15 was installed October 19, 1994. The remaining monitoring wells, MW-16D through MW-22, were installed in July 1995. Shallow monitoring wells MW-17 through MW-22 were installed to depths of 11.5 to 12 feet below land surface (bls). Each shallow monitoring well was constructed of 2-inch inside diameter (ID) polyvinyl chloride (PVC) with 10 feet of 0.010-inch screen and 1.5 to 2 feet of riser. Deep monitoring well MW-16D was installed to a depth of 27 feet bls. The well was constructed of 2-inch ID PVC with 5 feet of 0.010-inch slot screen and 22 feet of riser. The well was installed inside 6-inch diameter PVC surface casing which extended to a depth of 22 feet bls. Lithologic logs for all monitoring wells are presented in Appendix B.

3.3 GROUNDWATER SAMPLING PROGRAM. Groundwater samples were collected from all existing site monitoring wells (MW-1 through MW-22) during the period July 31, 1995 through August 2, 1995. Before sampling, each monitoring well was purged using a low flow purging technique. Five well volumes were removed from each well. Lead samples were collected using teflon and silicon tubing. The remaining sample parameters were collected using an extruded Teflon™ bailer. The samples were placed into appropriate containers, properly preserved, placed on ice, and shipped to Quanterra, Inc., Tampa, Florida. Each sample was analyzed for VOCs by USEPA Method 601/602 and lead by USEPA Method 239.2. The samples were not analyzed for ethylene dibromide (EDB) because EDB was not detected in the groundwater samples collected during the first contamination assessment. Appropriate quality assurance/quality control samples were also collected and analyzed.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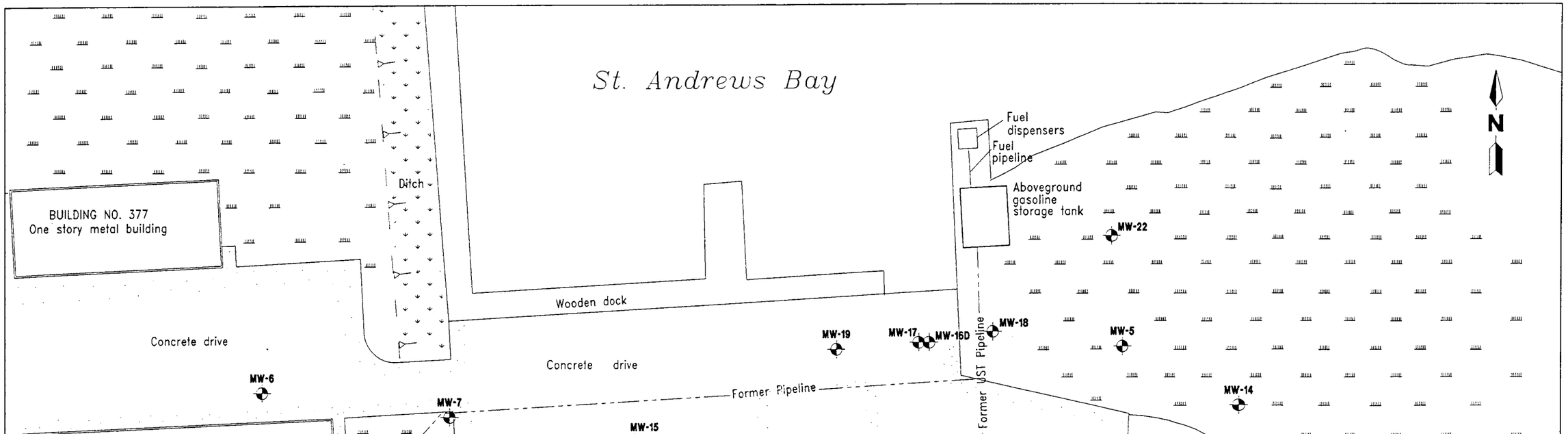
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MW-22
MW-18
MW-5
MW-19
MW-17
MW-16D
MW-6
MW-7
MW-15
MW-14
N

4.0 CONTAMINATION ASSESSMENT RESULTS

4.1 GROUNDWATER ELEVATION AND FLOW DIRECTION. The water-table aquifer is the primary water-bearing zone of concern at the site. The water-table aquifer is unconfined and was encountered at depths of 1 to 3 feet bls.

Water table elevations were recorded in monitoring wells MW-1 through MW-22 on July 31, 1995. These measurements are presented in Table 4-1 and were used to draw a piezometric surface map showing the general groundwater flow direction at the site (Figure 4-1). The groundwater at Site 327 has been consistently flowing northerly and easterly as indicated by previous data (ABB-ES, 1993). Water table elevations from deep monitoring wells MW-9D and MW-16D were not included in water table elevation contouring.

4.2 CONTAMINANT PLUME CHARACTERIZATION.

4.2.1 Soil Contamination Assessment Soil samples were collected from soil borings SB-30 through SB-50 in October 1994, SB-51 through SB-62 in July 1995, and SB-63 through SB-66 in October 1995. Soil samples were collected by hand auger at depths of 1 to 3 feet bls and analyzed using OVA headspace techniques. A summary of the OVA analyses is presented in Table 4-2. All OVA headspace readings have been corrected for methane. According to Chapter 62-770, Florida Administrative Code (FAC), soil containing constituents of the gasoline analytical group with OVA headspace readings exceeding 500 ppm are defined as "excessively contaminated" and must be remediated, except under extenuating circumstances. Soil with OVA headspace readings between 10 ppm and 500 ppm are considered to be petroleum contaminated and may or may not require remediation, depending on the impact of soil contamination on groundwater. Soil with OVA headspace readings of less than 10 ppm is not considered to be petroleum contaminated (Florida Department of Environmental Regulation, May 1992).

A large area of excessively contaminated soil was identified to the north and east of Building 327. This area is outlined by the 500 ppm isoconcentration (isocon) line on Figure 4-2. Nearly the entire area outlined by the 500 ppm isocon line is covered by concrete or asphalt. Although OVA measurements greater than 1,000 ppm were noted in numerous soil borings, petroleum odors were only noted in one soil boring, SB-48. To determine the source of high OVA readings in the other soil borings, three soil samples, from soil borings SB-34, SB-43, and SB-50, were collected and shipped to Quanterra, Inc., an FDEP- and USEPA-approved laboratory. The samples were analyzed for TRPH by USEPA Method 418.1 and volatile organics by USEPA Method 8240. Soil sample analytical results are summarized in Table 4-3.

TRPH concentrations above the clean soil standard of 10 ppm were detected in two soil samples. The highest concentration, 45.7 ppm, was detected in the soil sample from SB-43. A toluene concentration of 420 ppb was detected in the soil sample from SB-34. Although no other volatile organic aromatics were detected in the soil sample from SB-34, the sum total of the volatile organic aromatics was 420 ppb, which exceeds the 100 ppb standard for clean soil. Significant concentrations of acetone and methylene chloride were also detected in the soil samples. Acetone was detected in soil samples collected from all three borings: SB-34 (1,200 ppb), SB-43 (92ppb), and SB-50 (290 ppb). Methylene chloride was

Table 4-1
Top of Casing and Groundwater Elevations
July 31, 1995

Contamination Assessment Report Addendum
Site 327, Coastal Systems Station Panama City
Panama City, Florida

Monitoring Well Number	Total Well Depth (feet bls)	Top of Casing Elevation (feet above msl)	Depth to Groundwater (feet, from TOC)	Water Table Elevation (feet above msl)
MW-1	12.25	5.60	2.54	3.06
MW-2	11.96	3.99	1.76	2.23
MW-3	12.25	3.30	1.51	1.79
MW-4	11.90	4.20	2.00	2.20
MW-5	11.72	3.78	NM	--
MW-6	12.00	5.54	2.60	2.94
MW-7	11.94	4.86	1.91	2.95
MW-8	11.95	3.20	1.33	1.87
MW-9D	18.20	3.71	1.53	2.18
MW-10	13.17	3.52	1.60	1.92
MW-11	12.24	6.35	3.26	3.09
MW-12	destroyed	--	--	--
MW-13	11.67	3.49	NM	--
MW-14	11.50	3.58	1.80	1.78
MW-15	11.5	NM	2.51	--
MW-16D	27	2.68	0.17	2.51
MW-17	11.5	2.63	0.88	1.75
MW-18	11.5	3.36	1.69	1.67
MW-19	11.5	2.22	0.40	1.82
MW-20	12	5.34	3.22	2.12
MW-21	12	4.70	2.57	2.13
MW-22	11.5	3.53	1.98	1.55

Notes: All elevations referenced to National Geodetic Vertical Datum of 1929.
TOC = top of casing.
NM = not measured.
-- = no data.
msl = mean sea level.
bls = below land surface.

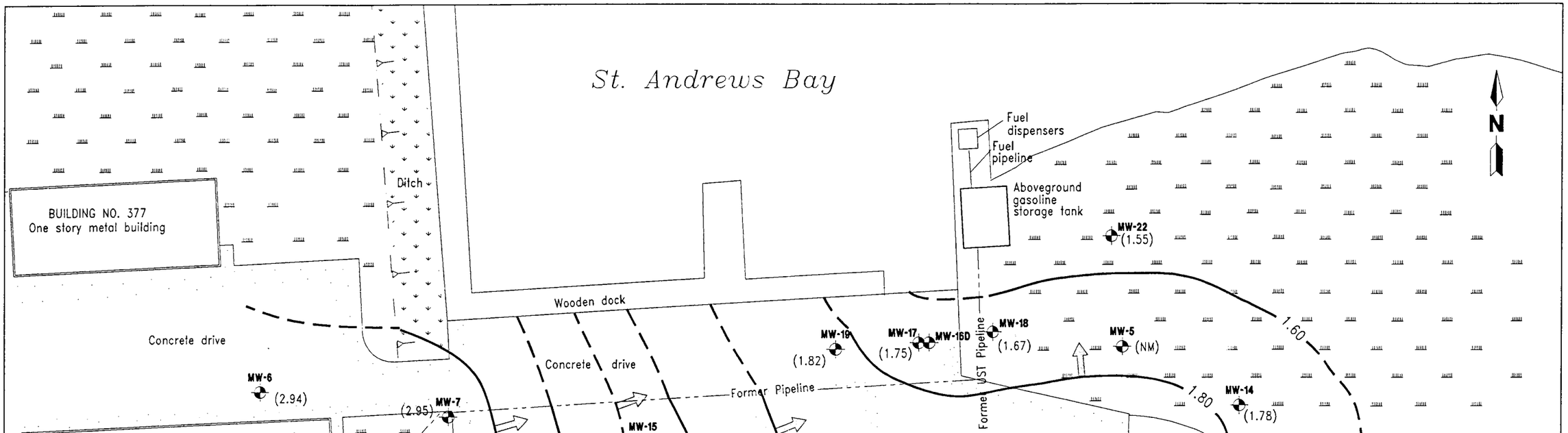

St. Andrews Bay
BUILDING NO. 377
One story metal building
Ditch
Concrete drive
Wooden dock
Concrete drive
Former Pipeline
Former UST Pipeline
Fuel dispensers
Fuel pipeline
Aboveground gasoline storage tank
MW-6 (2.94)
MW-7 (2.95)
MW-15
MW-19 (1.82)
MW-17 (1.75)
MW-16D
MW-18 (1.67)
MW-5 (NM)
MW-22 (1.55)
MW-14 (1.78)
1.60
1.80
N

Table 4-2
Summary of Soil Sample Organic Vapor Analyzer (OVA) Headspace Analyses
October 1994 through October 1995

Contamination Assessment Report Addendum
Site 327, Coastal System Station Panama City
Panama City, Florida

Boring Designation	Depth (feet bls)	Concentration[1] (ppm)	Comments
SB1	0 to 2	50	Slight odor
	2 to 4	2,000	Odor
SB2	0 to 2	0	Sulfide odor
	2 to 4	0	Wet
SB3	0 to 2	0	--
SB4	0 to 2	0	--
SB5	0 to 2	0	--
SB6	0 to 2	5	--
	2 to 4	300	Wet
SB7	0 to 2	500	--
	2 to 4	GC	Wet
SB8	0 to 2	5	--
	2 to 4	GC	Odor, wet
SB9	0 to 2	500	--
	2 to 4	GC	Wet
SB10	0 to 2	10	--
	2 to 4	GC	Wet
SB16	0 to 2	4,000	Odor
SB17	0 to 2	0	Odor
SB18	0 to 2	550	Odor
	2	GC	Odor, wet
SB19	0 to 2	0	No odor
	2	GC	No odor, wet
SB20	0 to 2	0	--
	2	GC	Wet
SB21	0 to 2	0	--
	2	GC	Wet
SB22	0 to 2	0	--
	2	0	Wet
MW9D	5 to 7	GC	No odor, wet
	9 to 11	GC	Slight odor, wet
	14 to 16	GC	Slight odor, wet
	17 to 19	GC	Wet
SB23	2	143	--
	4	420	Wet
SB24	2	GC	No odor
	4	GC	Slight organic

Table 4-2 (Continued)
Summary of Soil Sample Organic Vapor Analyzer (OVA) Headspace Analyses
October 1994 and July 1995

Contamination Assessment Report Addendum
Site 327, Coastal System Station Panama City
Panama City, Florida

Boring Designation	Depth (feet bls)	Concentration[1] (ppm)	Comments
SB30	0 to 1	4	No odor
SB31	0 to 1	130	No odor
	1 to 2	1,000	Wet, organics
SB32	0 to 1	100	No odor
	1 to 2	900	Wet, organics
SB33	0 to 1	1,050	Organic material
	1 to 2	350	Wet
SB34	0 to 1	2,500	Organic material
	1 to 2	2,500	Wet
SB35	0 to 1	1,500	Organic material
	1 to 2	1,900	Wet
SB36	0 to 1	1,500	Sulfide odor
	1 to 2	900	Wet, organics
SB37	0.5 to 1.5	2,200	Wet, sulfide odor
SB38	0 to 1	900	Wet, organics
SB39	0 to 1	0	--
	1 to 2	0	Wet
SB40	0 to 1	220	--
	1 to 1.5	550	Organic material
SB41	0 to 1	1,000	Organic material
	1 to 1.5	800	Wet
SB46	0 to 0.5	0	No odor
SB47	0 to 0.5	1,600	Organic material
	0.5 to 1.5	1,500	Wet
SB48	0 to 1	>5,000	Petroleum odor
	1 to 2	2,200	Wet
SB49	0.5	3	--
	1.5	900	Organic material
SB50	0.5	650	No odor
	1.5	2,300	Organic material
SB51	1.5	1,300	Petroleum odor
SB52	1	4,200	Pine odor
SB53	1	20	No odor
SB54	1	80	No odor
SB55	1	25	No odor
SB56	1	5	No odor
SB57	1	0	No odor

Table 4-2 (Continued)
Summary of Soil Sample Organic Vapor Analyzer (OVA) Headspace Analyses
October 1994 and July 1995

Contamination Assessment Report Addendum
Site 327, Coastal System Station Panama City
Panama City, Florida

Boring Designation	Depth (feet bls)	Concentration[1] (ppm)	Comments	Boring Designation	Depth (feet bls)	Concentration[1] (ppm)	Comments
SB62	1	30	Sulfide odor				
	2	0	--				
SB63	1	2	No odor				
	3	5	Sulfide odor, wet				
SB64	2	30	Sulfide odor, wet				
SB65	1.5	0	No odor				
SB66	1	0					
	3	130	Sulfide odor, wet				

[1] Corrected for methane.

Notes: bls = below land surface.
ppm = parts per million.
GC = analyzed on gas chromatograph.
– = no comments.

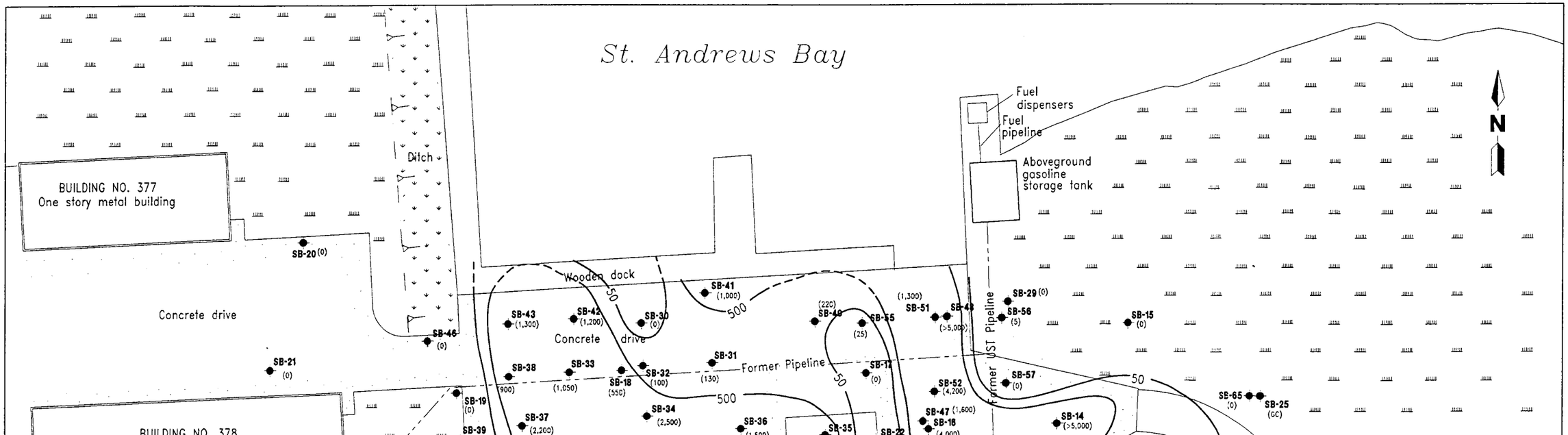

St. Andrews Bay
BUILDING NO. 377
One story metal building
BUILDING NO. 378
Ditch
Concrete drive
Wooden dock
Concrete drive
Former Pipeline
Former UST Pipeline
Fuel dispensers
Fuel pipeline
Aboveground gasoline storage tank
N
SB-20 (0)
SB-46 (0)
SB-21 (0)
SB-19 (0)
SB-39
SB-43 (1,300)
SB-42 (1,200)
SB-30 (0)
SB-41 (1,000)
SB-38 (900)
SB-33 (1,050)
SB-18 (550)
SB-32 (100)
SB-31 (130)
SB-37 (2,200)
SB-34 (2,500)
SB-36
SB-35
SB-22
SB-40 (220)
SB-55 (25)
SB-51 (1,300)
SB-48 (>5,000)
SB-12 (0)
SB-52 (4,200)
SB-47 (1,600)
SB-16
SB-29 (0)
SB-56 (5)
SB-15 (0)
SB-57 (0)
SB-65 (0)
SB-25 (CC)
SB-14 (>5,000)
50
500

Table 4-3
Summary of Soil Sample Analytical Data
October 1994

Contamination Assessment Report Addendum
Site 327, Coastal Systems Station Panama City
Panama City, Florida

Compound	Clean Soil Standard	SB-34	SB-43	SB-50
Acetone	[2]260,000	1,200	92	290
Methylene chloride	[2]16,000	100	12	15
Toluene		420	ND	ND
Total VOA	[1]100	420	ND	ND
TRPH	[1]10	ND	45.7	15.0

[1] Clean Soil Standard (Chapter 62-775, Florida Administrative Code [FAC]).
[2] Soil Cleanup Goals, FDEP memorandum, September 29, 1995.
Notes: Concentrations are in parts per billion except TRPH, which is reported in parts per million.
Total VOAs = total volatile organic aromatics (the sum of benzene, ethylbenzene, toluene, and xylenes).
TRPH = total recoverable petroleum hydrocarbons.
ND = not detected.

also detected in soil samples collected from all three borings: SB-34 (100 ppb), SB-43 (12 ppb), and SB-50 (15 ppb). The highest concentrations of acetone and methylene chloride, however, did not exceed the soil cleanup goals of 260 ppm and 16 ppm, respectively, for residential property (FDEP, 1995). The source of acetone and methylene chloride is unknown, but may be related to boat cleaning activities. Acetone and methylene chloride were not detected in groundwater samples collected from the site (see subsection 4.2.2).

Acetone and methylene chloride may be contributing to high OVA readings across the site. If this is the case, then the 500 ppm standard for excessively contaminated soil may not be applicable. A copy of the analytical laboratory results is presented in Appendix C.

4.2.2 Groundwater Contamination Assessment A groundwater sample was collected from monitoring well MW-15 on November 7, 1994, to determine if soil contamination in the vicinity of soil boring SB-34 was affecting the groundwater. The OVA headspace reading from SB-34 was 2,500 ppm. The sample was shipped to Quanterra, Inc., Tampa, Florida, to be analyzed for volatile organics by USEPA Method 624 and TRPH by USEPA Method 418.1. Results were received November 17, 1994. No compounds were detected by laboratory analyses. Apparently, the source of soil contamination in the vicinity of soil boring SB-34 is not affecting the groundwater.

Analytical laboratory results for groundwater samples collected from monitoring wells MW-1 through MW-22, during the period July 31 through August 2, 1995, are presented in Appendix D and summarized in Table 4-4. Benzene, ethylbenzene, toluene, xylenes, lead, MTBE, and chloroform were detected in groundwater samples. No contaminant concentrations exceeded the State target levels required for a no further action (NFA). Free product was not detected in any monitoring well at the site.

Table 4-4
Summary of Groundwater Sample Laboratory Analyses, July 31 through August 2, 1995

Contamination Assessment Report Addendum
Site 327, Coastal Systems Station Panama City
Panama City, Florida

Compound	Applied Standard	MW1	MW 1 DUP	MW 2	MW 3	MW 4	MW 5	MW 6	MW 7	MW 8	MW 8 DUP	MW 9
Benzene	[1]50	20	19	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene		9.9	13	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (total)		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total VOA[2]	[1]50	29.9	32	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead	[1]50	ND	ND	ND	ND	ND	ND	5.9	16.0	ND	ND	ND
MTBE	[1]50	6.1	5.7	2.5	ND	ND	ND	2.7	ND	ND	ND	ND
Chloroform		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

See notes at end of table.

Table 4-4 (Continued)
Summary of Groundwater Sample Laboratory Analyses,
July 31 through August 2, 1995

Contamination Assessment Report Addendum
Site 327, Coastal Systems Station Panama City
Panama City, Florida

Compound	Applied Standard	MW 10	MW 11	MW 13	MW 14	MW 15	MW 16D	MW 17	MW 17 DUP	MW 18	MW 19
Benzene	[1]50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene		ND	1.7	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (total)		ND	ND	ND	ND	ND	5.0	1.7	1.7	ND	ND
Total VOA[2]	[1]50	ND	1.7	ND	ND	ND	5.0	1.7	1.7	ND	ND
Lead	[1]50	ND	12.3	ND	ND	7.9	5.2	ND	ND	ND	ND
MTBE	[1]50	ND	ND	ND	ND	1.4	ND	ND	ND	ND	ND
Chloroform		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

See notes at end of table.

Table 4-4 (Continued)
Summary of Groundwater Sample Laboratory Analyses,
July 31 through August 2, 1995

Contamination Assessment Report Addendum
Site 327, Coastal Systems Station Panama City
Panama City, Florida

Compound	Applied Standard	MW 20	MW 21	MW 22
Benzene	[1]50	ND	ND	ND
Ethylbenzene		ND	ND	ND
Toluene		ND	ND	ND
Xylenes (total)		ND	ND	ND
Total VOA[2]	[1]50	ND	ND	ND
Lead	[1]50	ND	ND	ND
MTBE	[1]50	ND	8.7	1.2
Chloroform		1.2	ND	ND

[1] State target level (Florida Department of Environmental Protection [FDEP], Chapter 62-770, Florida Administrative Code [FAC]).
[2] Total VOA is the sum of all benzene, ethylbenzene, toluene, and xylenes.

Notes: Concentrations are in parts per billion.
Monitoring well MW-12 was destroyed.
DUP = duplicate sample.
ND = not detected.
VOA = volatile organic aromatics.
MTBE = methyl tert-butyl ether.

Benzene was detected in groundwater samples collected from only one onsite monitoring well (MW-1) at a concentration of 20 ppb. The benzene concentration is less than the State target level of 50 ppb required for NFA where groundwater is classified as G-II and no potable wells are located within a 0.25-mile radius of the site.

Total VOA concentrations ranging from less than 4 ppb to 32 ppb were detected in the groundwater samples. The highest total VOA concentration, 32 ppb, detected in the sample collected from monitoring well MW-1, is less than the State target level of 50 ppb required for NFA (see Figure 4-3).

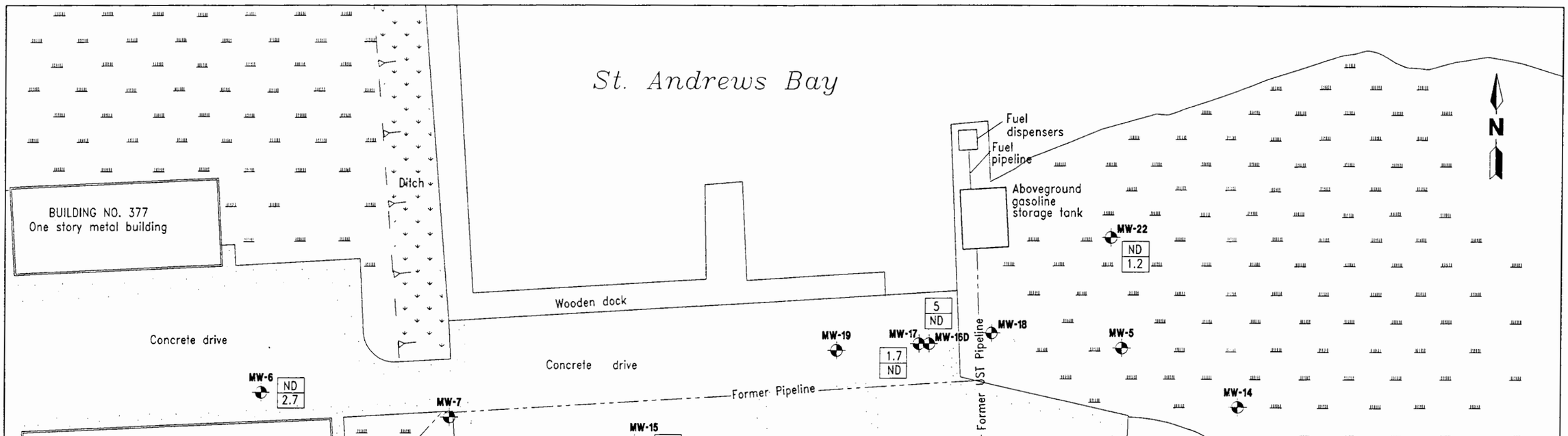
Methyl tert-butyl ether (MTBE) was detected in groundwater samples collected from six monitoring wells. The highest MTBE concentration, 8.7 ppb, detected in the sample from monitoring well MW-21, is less than the State target level of 50 ppb required for NFA.

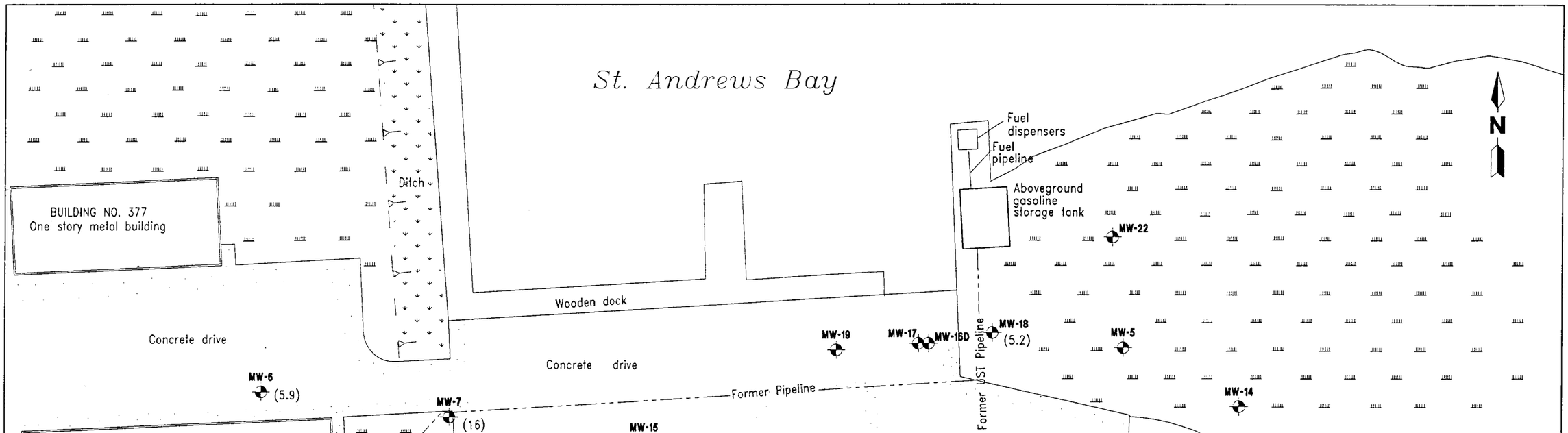
Lead concentrations ranging from less than 5 ppb to 16 ppb were detected in the groundwater samples. The highest lead concentration, 16 ppb, detected in the sample collected from monitoring well MW-7, is less than the State target level of 50 ppb required for NFA (see Figure 4-4).

Chloroform was detected in a groundwater sample collected from monitoring well MW-20 at a concentration of 1.2 ppb. The source of chloroform in this sample is not known at this time.

4.3 **WELL SURVEY**. A potable well survey was conducted to show the proximity of potable water sources to contamination associated with activities at Facility 327. There are four public water supply wells located at CSS Panama City (PWS 1, PWS 2, PWS 3, and PWS 4). Figure 4-5 shows the locations of these wells. Only the well located near Building 394 (PWS 1) is currently in use. This well is used for heating and air conditioning purposes only and draws water from approximately 400 feet bls (Table 4-5). The remaining production wells (PWS 2, PWS 3, and PWS 4) are inactive.

Well inventory data are presented in Table 4-5. The four public water supply wells are screened in the Floridan aquifer system at depths ranging from 350 to 400 feet bls. None of the wells are located within a 0.25-mile radius of the site (see Figure 4-5).


St. Andrews Bay
Ditch
BUILDING NO. 377
One story metal building
Concrete drive
Wooden dock
Concrete drive
Former Pipeline
Former UST Pipeline
Fuel dispensers
Fuel pipeline
Aboveground gasoline storage tank
N
MW-6
ND
2.7
MW-7
MW-15
MW-19
MW-17
1.7
ND
MW-16D
5
ND
MW-18
MW-22
ND
1.2
MW-5
MW-14


St. Andrews Bay
BUILDING NO. 377
One story metal building
Ditch
Concrete drive
Wooden dock
Concrete drive
Fuel dispensers
Fuel pipeline
Aboveground gasoline storage tank
MW-22
MW-19
MW-17
MW-15D
MW-18
(5.2)
MW-5
MW-14
MW-6
(5.9)
MW-7
(16)
MW-15
Former Pipeline
Former UST Pipeline
N

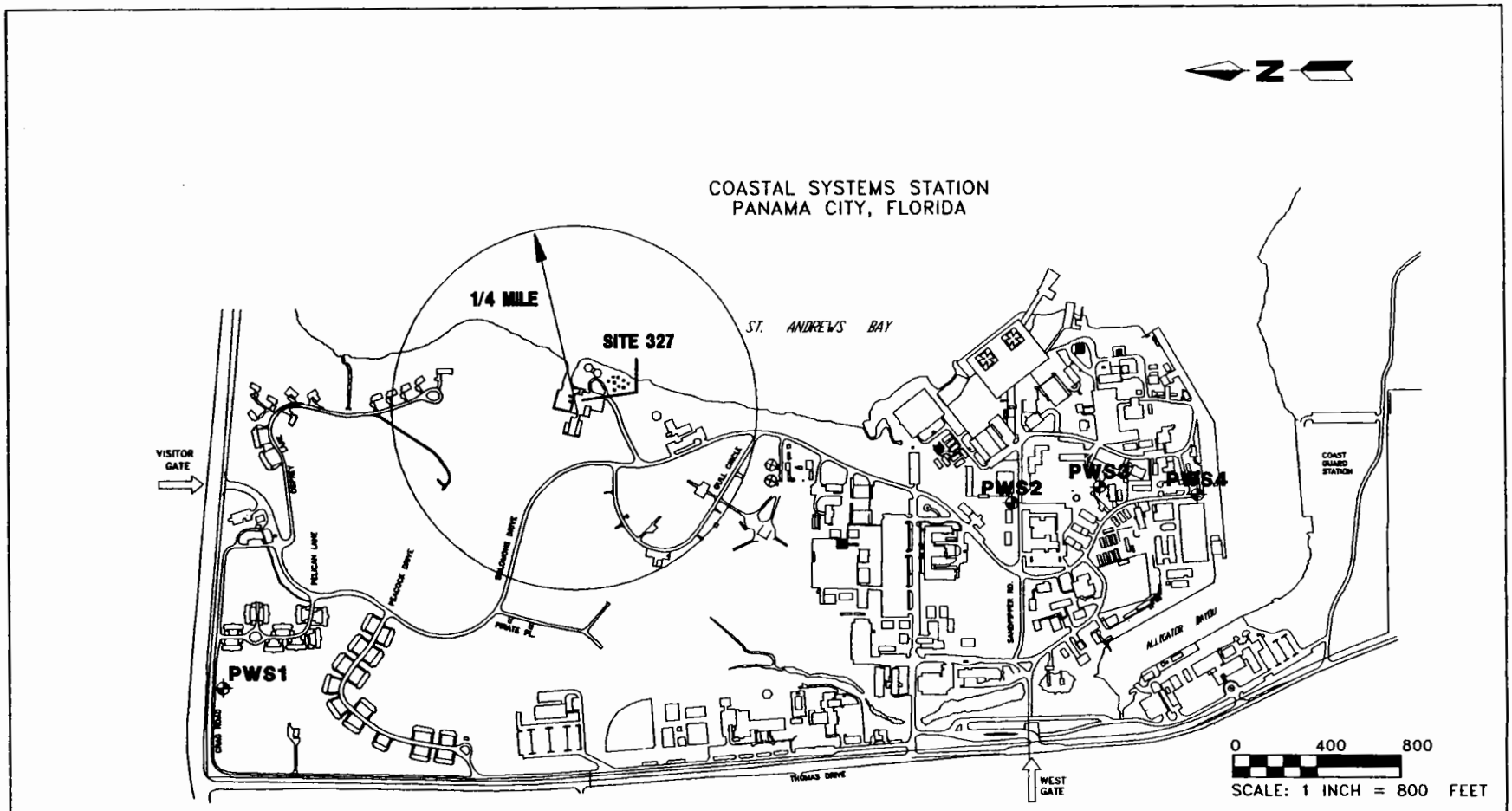

N
COASTAL SYSTEMS STATION
PANAMA CITY, FLORIDA
1/4 MILE
SITE 327
ST. ANDREWS BAY
VISITOR GATE
PWS1
PWS2
PWS3
PWS4
COAST GUARD STATION
PELICAN LANE
PLACIDE DRIVE
BALBOA DRIVE
PIRATE PL.
SANDPIPER RD.
ALLIGATOR BAYOU
OLD ROAD
THOMAS DRIVE
WEST GATE
0 400 800
SCALE: 1 INCH = 800 FEET

Table 4-5
Public Water Supply Wells Data,
Coastal Systems Station, Panama City, Florida

Contamination Assessment Report Addendum
Site 327, Coastal Systems Station Panama City
Panama City, Florida

Well Identification Number/Local Number	Location	Total Depth (feet bls)	Casing Diameter (inches)
Building 394, PWS 1	Building 394	400	12
Building 281, PWS 2	Building 281	350	12
Building 10, PWS 3	Building 10	350	12
Building 101, PWS 4	Building 101	350	12

Note: bls = below land surface.

5.0 SUMMARY, FINDINGS, AND CONCLUSIONS

5.1 SUMMARY. Based on the findings of the supplemental field investigation and laboratory analytical results, the following is a summary of existing conditions at the site.

5.2 FINDINGS AND CONCLUSIONS.

- The water table beneath the site was encountered at depths of 1 to 3 feet bls and is classified as G-II.

- The groundwater at the site has been consistently flowing to the north and east as indicated by previous data (ABB-ES, 1993).

- A large area of excessively contaminated soil, as indicated by OVA headspace analysis, was identified to the north and east of Building 327. Nearly the entire area of excessive soil contamination is covered by asphalt or concrete.

- Significant concentrations of acetone and methylene chloride were detected in soil samples collected at the site. Acetone and methylene chloride concentrations were less than State soil cleanup goals; however, they may be contributing to high OVA readings across the site.

- Acetone and methylene chloride were not detected in groundwater samples.

- Gasoline analytical group compounds detected in groundwater samples included benzene, ethylbenzene, toluene, xylenes, lead, and MTBE. No contaminant concentrations exceeded the State target levels required for NFA.

- Free product was not detected in any monitoring well at the site.

- The apparent sources of contamination, the 2,000-gallon gasoline UST and the former fuel pipelines, have been removed from the site or abandoned in place.

- No potable water sources were identified within a 0.25-mile radius of the site. There appears to be no risk of contamination of the CSS Panama City public water supply system from activities at the site.

6.0 RECOMMENDATIONS

Based on the findings and interpretations of the supplemental contamination assessment, ABB-ES recommends No Further Action for Facility 327 at CSS Panama City.

7.0 PROFESSIONAL REVIEW CERTIFICATION

This contamination assessment report was prepared using sound hydrogeologic principles and judgment. This assessment is based on the geologic investigation and associated information detailed in the text and appended to this report. If conditions are determined to exist that differ from those described, the undersigned geologist should be notified to evaluate the effects of any additional information on the assessment described in this report. This Contamination Assessment Report Addendum was developed for Facility 327 at the Coastal Systems Station in Panama City, Florida, and should not be construed to apply to any other site.

Joseph F. Fugitt

Joseph F. Fugitt
Professional Geologist
P.G. No. 1613

11/9/95

Date

REFERENCES

ABB Environmental Services, Inc., 1993, Contamination Assessment Report, Site 327, Coastal Systems Station, Panama City, Florida: Prepared for Southern Division, Naval Facilities Engineering Command, Charleston, South Carolina.

Florida Department of Environmental Protection (FDEP), September 29, 1995, Soil Cleanup Goals for Florida; Memorandum from John M. Ruddell, Director, Division of Waste Management.

FDEP, October 1990, No Further Action and Monitoring Only Guidelines for Petroleum Contaminated Sites, 6 p.

FDEP, May 1994, Guidelines for assessment and remediation of petroleum contaminated soils, revised: Division of Waste Management, 47 p.

APPENDIX A

FDEP CORRESPONDENCE

Florida Department of
Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

October 11, 1993

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Luis Vasquez
Department of The Navy
Southern Division
Naval Facilities Engineering Command
P O Box 190010
Charleston, South Carolina 29419-9010

Dear Mr. Vasquez:

Department personnel have completed the technical review of the Contamination Assessment Report, Site 327, NCSC Panama City. I have enclosed a memorandum addressed to me from Mr. David Clowes. It documents our comments on the referenced report.

If I can be of any further assistance with this matter, please contact me at (904) 488-0190.

Sincerely,

Eric S. Nuzie

Eric S. Nuzie
Federal Facilities Coordinator

ESN/ar

Enclosure

cc: David Clowes
Bill Kellenberger
John Mitchell
Arturo McDonald
Peter Dao

Printed on recycled paper.

Florida Department of

Memorandum — Environmental Protection

TO: Eric S. Nuzie, Federal Facilities Coordinator, Bureau of Waste Cleanup

THROUGH: James J. Crane, P.G./Administrator, Technical Review Section

Tim J. Bahr, Professional Geologist, Technical Review Section

FROM: David M. Clowes, Remedial Project Manager, Technical Review Section

DATE: September 27, 1993

SUBJECT: Contamination Assessment Report (CAR), Site 327, Coastal Systems Station Panama City, Panama City, Florida.

I have reviewed the above stated document, dated July 1993 (received August 3, 1993), submitted for this site. In order to meet the requirements of Chapter 17-770, Florida Administrative Code (F.A.C.), the following comments need to be addressed:

1. Supplemental soil assessment in accordance with Rule 17-770.200(2), F.A.C., and the Department's May 1992 "Guidelines for Assessment and Remediation of Petroleum Contaminated Soils" should be performed in the vicinity of SB-18 to establish the horizontal and vertical extent of soil contamination in the unsaturated zone. The OVA values should be summarized in a table, and the approximate extent of soil contamination should be represented in graphic form. Please note, performing the supplemental soil assessment in conjunction with a soil Initial Remedial Action (excavation/treatment/disposal) is acceptable, if planned. If additional soil analysis confirms excessively contaminated soils then a minimum of one (1) additional permanent water table monitoring well should be installed at the location with the highest OVA reading (source well). Note, representative OVA sample(s) over 500 ppm should be submitted for laboratory analysis (EPA Methods 8010, 8020 and 418.1) to confirm the necessity of installing an additional monitor well.

2. Since contaminated soils (including excessively contaminated soils) were detected during the auger boring program at SB-1, SB-14, SB-16 and SB-18, actions to abate these residual sources of contamination will be required. Please note, soil remediation can be performed under an Initial Remedial Action

(soil excavation/treatment/ disposal) or proposed in a formal Remedial Action Plan (any appropriate remediation method).

3. Documentation (field observations and measurements, volumes, shipping manifest, sampling/analysis results, etc.) regarding the soil Initial Remedial Action (IRA) completed during the UST and southern pipeline removal of August 1991 should be provided. This documentation should include a map showing the approximate limits of the excavation(s) and the locations of the soil samples, along with a table with the OVA readings used to determine the extent of contaminated soil. Depending on the available documentation, supplemental soil assessment in accordance with Rule 17-770.200(2), F.A.C., and the Department's May 1992 "Guidelines for Assessment and Remediation of Petroleum Contaminated Soils" may be required.

4. Why is there a contrast between the excessively contaminated soil and relatively uncontaminated groundwater? Were the OVA samples filtered?

5. In Table 5-2, why were the Gas Chromotographic concentration readings in soil samples denoted solely as GC? Are these samples considered contaminated? Were these samples collected in the saturated or vadose zone?

ASEA BROWN BOVERI

December 3, 1993

Florida Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Attention: Mr. David Clowes

Subject: Contamination Assessment Report Addendum
Coastal Systems Station Panama City, Site 327
Panama City, Florida

Dear Mr. Clowes:

This correspondence is in response to your review comments on the Contamination Assessment Report (CAR) submitted July 22, 1993 for the above referenced site. ABB Environmental Services, Inc. (ABB-ES) received your letter from Mr. Nick Ugolini, in the absence of Mr. Luis Vazquez, on October 22, 1993. Your comments to the CAR have been reprinted below for your convenience. A copy of your letter to Mr. Vazquez dated October 11, 1993 has been included as Attachment A.

1. **Comment**: Supplemental soil assessment in accordance with Rule 17-770.200(2), FAC, and the Department's May 1992 *Guidelines for Assessment and Remediation of Petroleum Contaminated Soils* should be performed in the vicinity of SB-18 to establish the horizontal and vertical extent of soil contamination in the unsaturated zone. The OVA values should be summarized in a table, and the approximate extent of soil contamination should be presented in graphic form. Please note, performing the supplemental soil assessment in conjunction with a soil Initial Remedial Action (excavation/-treatment/disposal) is acceptable, if planned. If additional soil analysis confirms excessively contaminated soils then a minimum of one additional permanent water table monitoring well should be installed at the location with the highest OVA reading (source well). Note, representative OVA sample(s) over 500 ppm should be submitted for laboratory analysis (USEPA Methods 8010, 8020, and 418.1) to confirm the necessity of installing an additional monitoring well.

   Response: The elevated OVA headspace reading of the soil sample collected at SB-18 is probably not the result of petroleum contamination. The soil sample contained a high percentage of organic matter which, in other locations, was shown to be the reason for elevated OVA headspace readings in those samples. In fact, so many samples contained organic matter that the methane filter being used at the time became saturated and could no longer be relied upon for accurate results. A replacement filter was not readily available, therefore all subsequent OVA headspace readings were considered to be "worst case" concentrations.

ABB Environmental Services, Inc.

2590 Executive Center Circle East
Berkeley Building
Tallahassee, FL 32301-5027

Telephone (904) 656-1293
Fax (904) 656-3386

The 550 ppm OVA reading at location SB-18 only slightly exceeded the State guidance concentration for excessively contaminated soil. Because the sample contained a large amount of organic matter and had no petroleum odor, it was decided that the high OVA reading was due to the organic matter in the sample and that additional soil borings were not necessary in this area.

Several other factors were considered at the time of the investigation which significantly affected the ABB-ES field crews' decision not to drill additional soil borings in the vicinity of location SB-18. These factors are:

- Background information indicated the pipeline located adjacent to SB-18 had been drained, flushed, backfilled with sand, and abandoned in place.
- There were no reported releases of petroleum from the pipeline or any other source in the vicinity of SB-18.
- The area is "capped" or covered with concrete which inhibits the vertical migration of rainwater into the soil and groundwater.
- The proximity of SB-18 to SB-17, SB-19/MW-7 and SB-22/MW-8, all of which had OVA readings of 0 ppm, was considered to be adequate to show there was limited horizontal extent (please refer to Figure 5-4 of the CAR and Figure 1 attached).

2. **Comment**: Since contaminated soils (including excessively contaminated soils) were detected during the auger boring program at SB-1, SB-14, SB-16, and SB-18, actions to abate these residual sources of contamination will be required. Please note, soil remediation can be performed under an Initial Remedial Action (soil excavation/treatment/disposal) or proposed in a formal Remedial Action Plan (any appropriate remediation method).

Response: Because of the proximity of the water table to the surface (approximately 1 to 2 feet bls) soil vapor extraction is not technologically feasible at this site. In addition, it is likely that excavation of the soil in this area will destroy MW-1. Therefore, SOUTHNAVFACENGCOM recommends a MOP as a practical and cost-effective alternative to soil excavation or remediation. Contaminated soil in the vicinity of MW-1 is limited to an area approximately 15 feet by 15 feet by 2 feet or approximately 17 cubic yards. The area of contaminated soil is small, MW-1 is located in the center of the contaminated area, MW-11 is located upgradient, and MW-12 is located downgradient. In the MOP, MW-1, MW-11, and MW-12 will be sampled to assess the groundwater quality in the vicinity of the excessively contaminated soil.

Soil borings SB-14, SB-16, and SB-18 were located in the vicinity of the abandoned gasoline pipeline and therefore, the source of contamination has been abated.

3. **Comment**: Documentation (field observations and measurements, volumes, shipping manifest, sampling/analysis results, etc.) regarding the soil Initial Remedial Action (IRA) completed during the UST and southern pipeline removal of August 1991 should be

provided. This documentation should include a map showing the approximate limits of the excavation(s) and the locations for the soil samples, along with a table with the OVA readings used to determine the extent of contaminated soil. Depending on the available documentation, supplemental soil assessment in accordance with Rule 17-770.200(2), FAC and the Department's May 1992 *Guidelines for Assessment and Remediation of Petroleum Contaminated Soils* may be required.

Response: Terra Resources performed the tank removal in 1991. A copy of this report is provided in Appendix A of the Site 327 CAR which includes a map of soil sample locations, OVA readings, and approximate area of excavation.

4. **Comment**: Why is there a contrast between the excessively contaminated soil and relatively uncontaminated groundwater? Were the OVA samples filtered?

Response: Although the unfiltered OVA headspace readings are not shown in Table 5-2 of the CAR, OVA measurements were corrected for methane (please see footnote 1, Table 5-2).

As noted in the response to comment No. 1, the methane filter became saturated about the time SB-18 was sampled and was not used for subsequent soil borings.

Concrete and asphalt cover most of the site and prohibit rainfall from transporting petroleum contamination in the soil to the groundwater. Analytical results of groundwater samples indicate that the concrete and asphalt are an effective barrier to petroleum contamination of groundwater at the site.

5. **Comment**: In Table 5-2, why were the Gas Chromatograph (GC) concentration readings in soil samples denoted solely as GC? Are these samples considered contaminated? Were these samples collected in the saturated or vadose zone?

The GC notation in Table 5-2 indicates only that the sample was screened, to aid in the placement of monitoring wells. All soil samples analyzed using the GC were collected from the zone below the water table and were not used to assess soil contamination in the unsaturated zone. In subsequent site assessments GC data will not be included in the summary of soil OVA headspace readings.

If you have any questions or comments, please call me at (904) 656-1293.

Sincerely,

ABB Environmental Services, Inc.

Jack Pittman
Task Order Manager

Celora Jackson
Project Engineer

Attachments

ATTACHMENT A

Florida Department of
Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

October 11, 1993

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Luis Vasquez
Department of The Navy
Southern Division
Naval Facilities Engineering Command
P O Box 190010
Charleston, South Carolina 29419-9010

Dear Mr. Vasquez:

Department personnel have completed the technical review of the Contamination Assessment Report, Site 327, NCSC Panama City. I have enclosed a memorandum addressed to me from Mr. David Clowes. It documents our comments on the referenced report.

If I can be of any further assistance with this matter, please contact me at (904) 488-0190.

Sincerely,

Eric S. Nuzie

Eric S. Nuzie
Federal Facilities Coordinator

ESN/sr

Enclosure

cc: David Clowes
Bill Kellenberger
John Mitchell
Arturo McDonald
Peter Dao

Printed on recycled paper.

Florida Department of

Memorandum — Environmental Protection

TO: Eric S. Nusie, Federal Facilities Coordinator, Bureau of Waste Cleanup

THROUGH: James J. Crane, P.G./Administrator, Technical Review Section JJC

Tim J. Bahr, Professional Geologist, Technical Review Section TB

FROM: David M. Clowes, Remedial Project Manager, Technical Review Section DMC

DATE: September 27, 1993

SUBJECT: Contamination Assessment Report (CAR), Site 327, Coastal Systems Station Panama City, Panama City, Florida.

I have reviewed the above stated document, dated July 1993 (received August 3, 1993), submitted for this site. In order to meet the requirements of Chapter 17-770, Florida Administrative Code (F.A.C.), the following comments need to be addressed:

1. Supplemental soil assessment in accordance with Rule 17-770.200(2), F.A.C., and the Department's May 1992 "Guidelines for Assessment and Remediation of Petroleum Contaminated Soils" should be performed in the vicinity of SB-18 to establish the horizontal and vertical extent of soil contamination in the unsaturated zone. The OVA values should be summarized in a table, and the approximate extent of soil contamination should be represented in graphic form. Please note, performing the supplemental soil assessment in conjunction with a soil Initial Remedial Action (excavation/ treatment/disposal) is acceptable, if planned. If additional soil analysis confirms excessively contaminated soils then a minimum of one (1) additional permanent water table monitoring well should be installed at the location with the highest OVA reading (source well). Note, representative OVA sample(s) over 500 ppm should be submitted for laboratory analysis (EPA Methods 8010, 8020 and 418.1) to confirm the necessity of installing an additional monitor well.

2. Since contaminated soils (including excessively contaminated soils) were detected during the auger boring program at SB-1, SB-14, SB-16 and SB-18, actions to abate these residual sources of contamination will be required. Please note, soil remediation can be performed under an Initial Remedial Action

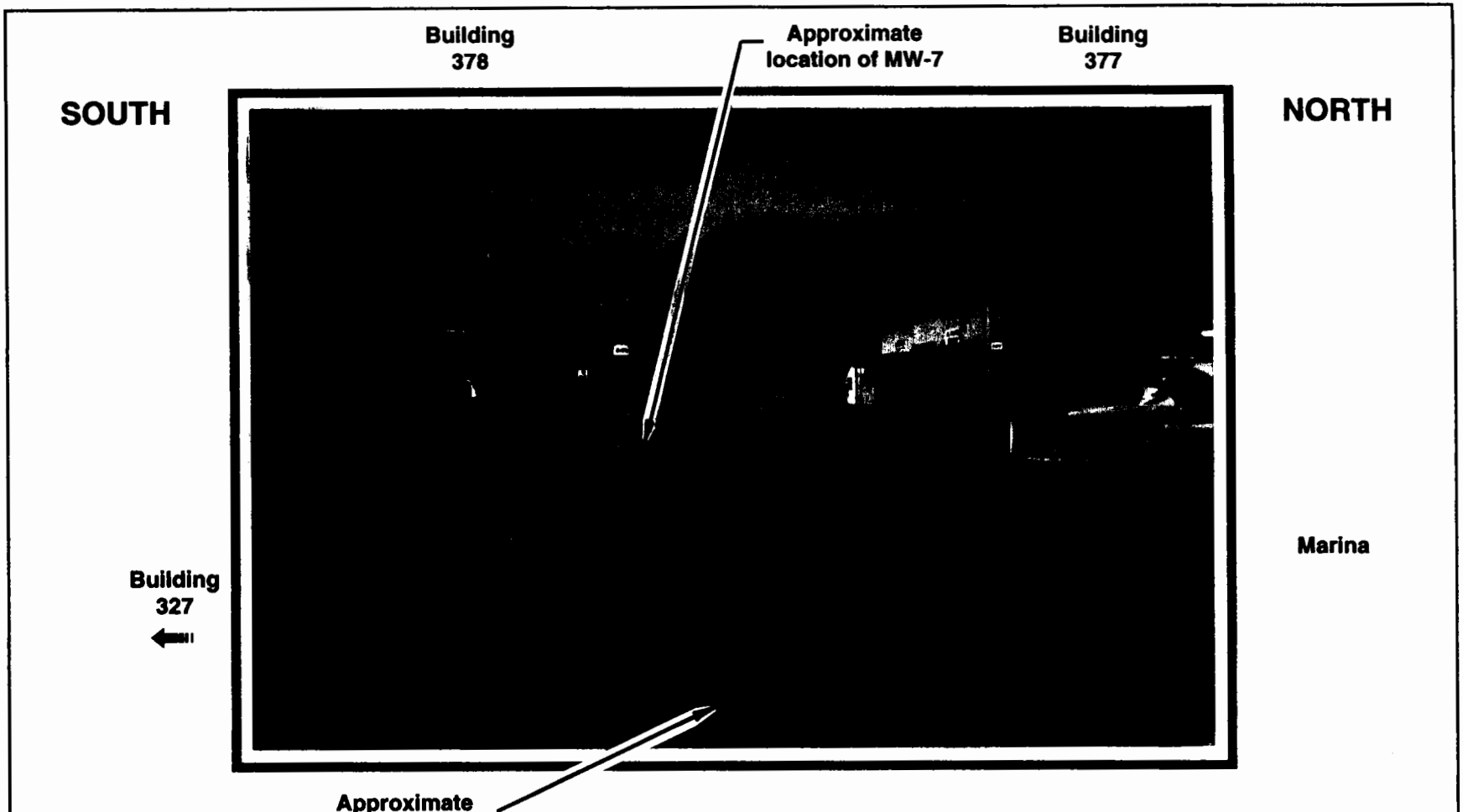
(soil excavation/treatment/ disposal) or proposed in a formal Remedial Action Plan (any appropriate remediation method).

3. Documentation (field observations and measurements, volumes, shipping manifest, sampling/analysis results, etc.) regarding the soil Initial Remedial Action (IRA) completed during the UST and southern pipeline removal of August 1991 should be provided. This documentation should include a map showing the approximate limits of the excavation(s) and the locations of the soil samples, along with a table with the OVA readings used to determine the extent of contaminated soil. Depending on the available documentation, supplemental soil assessment in accordance with Rule 17-770.200(2), F.A.C., and the Department's May 1992 "Guidelines for Assessment and Remediation of Petroleum Contaminated Soils" may be required.

4. Why is there a contrast between the excessively contaminated soil and relatively uncontaminated groundwater? Were the OVA samples filtered?

5. In Table 5-2, why were the Gas Chromotographic concentration readings in soil samples denoted solely as GC? Are these samples considered contaminated? Were these samples collected in the saturated or vadose zone?

ATTACHMENT B


Building
378
Approximate
location of MW-7
Building
377
SOUTH
NORTH
Marina
Building
327
Approximate

Florida Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

March 15, 1994

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Wayne Hansel
Code 18216
Department of the Navy
Southern Division
Naval Facilities Engineering Command
P.O. Box 10068
Charleston, SC 29411-0068

Dear Mr. Hansel:

Department personnel have completed the technical review of the Navy's responses to our comments on the Contamination Assessment Report, Site 327, NCSC Panama City. I have enclosed a memorandum addressed to me from Mr. Bruce A. Arnett. It documents our comments on the referenced report.

If I can be of any further assistance with this matter, please contact me at 904/488-0190.

Sincerely,

James J Rome for ESN

Eric S. Nuzie
Federal Facilities Coordinator

ESN/st

Enclosure

cc: Bruce Arnett
Arturo McDonald
Bill Kellenberger
John Mitchell

Post-it™ brand fax transmittal memo 7671 | # of pages ▸ 3
To J. Mitchell | From L. A. Urbanyi
Co. ABB | Co. South Div
Dept. | Phone # 803 743 0613
Fax # 904-264-5632 | Fax # 803 743 0563

Printed on Recycled Paper

Florida Department of

Memorandum — Environmental Protection

TO: Eric S. Nuzie, Federal Facilities Coordinator
Bureau of Waste Cleanup

THROUGH Dr. James J. Crane, P.G. Administrator
Technical Review Section

Tim Bahr, Technical Review Section
Bureau of Waste Cleanup

David Clowes, Technical Review Section
Bureau of Waste Cleanup

FROM: Bruce A. Arnett, Technical Review Section
Bureau of Waste Cleanup

DATE: March 4, 1994

SUBJECT: Comments to Responses concerning Departmental review of Contamination Assessment Report for Site 327, Coastal Systems Station Panama City, Panama City, Florida.

I have reviewed the Navy's Contractor (ABB) responses dated December 3, 1993 submitted in reply to a Departmental review of a Contamination Assessment Report (CAR) dated July, 1993 for the above-referanced facility. Below are my comments which need to be addressed in order to meet the requirements of chapter 17-770, Florida Administrative Code (F.A.C.):

Response 1:
The explanation for elevated OVA readings from SB-18 (presence of organic material) may be valid, however the text, figures and summary do not reflect this explanation; in fact Table 5-2 indicates that all data was corrected for methane. The response also implies that since the carbon filter was saturated and could not provide accurate results that all OVA data may be suspect. Which readings are accurate? -Why was a replacement filter not readily available?

Background information regarding the northern pipeline was not included in the CAR. This data should be provided.

The lack of reported releases in the vicinity of SB-18 is not in itself sufficient reason not to evaluate excessive soil contamination.

The presence of concrete can generally be presumed to inhibit the vertical migration of rainwater, however it does not eliminate the possibility of groundwater contamination from excessively contaminated soils.

Figure 5-4 indicates that SB-17 is approximately 51 feet and SB-19 approximately 69 feet away from SB-18. If it is determined that SB-18 actually represents the presence of excessively contaminated soil then the suggested sampling procedure presented in the Departments May 1992 *Guidelines for Assessment and Remediation of Petroleum Contaminated Soils* should be followed.

The reasons for not performing additional assessment in the vicinity of SB-18 are not acceptable; therefore please initiate a a soil assessment as originally requested.

Response 2:
Excessively contaminated soil according to F.A.C. 17-770.300 (2) is considered a contamination source requiring remediation. At this site, with OVA readings of over 5,000 ppm and a very shallow water table (1 to 2 feet bls), the contaminated soil acts as a continuous source of contamination to the groundwater and surface water. Only after this soil has been remediated and confirmatory samples prove all excessively contaminated soil has been removed, will this site be considered for a Monitoring Only Plan (MOP).

Response 3:
A review of the report provided in Appendix A indicates the following:

Terra Environmental Services, Inc. (not Terra Resources-make appropriate changes to text) was retained in June, 1992 (not 1991) to conduct a Closure Assessment of Tank and piping removal by B & K Construction which occurred in 1991. The text indicates that B & K did not collect any soil or groundwater samples.

There is no excavation map provided in the appendix. The map shows the area of soil sampling which indicates an area approximately 40' x 100' was evaluated by soil sampling and could be implied that the area of excavation was similar in size.

There is no discussion in the Appendix or text regarding the easternmost area of excavation. How were the two areas of excavation indicated on the Figures determined? Provide data regarding these areas as requested in Original Comment No. 4.

The maps provided in Appendix A indicate that soil and groundwater contamination was found west of the center of Bldg. 378. The Figures provided in the CAR indicate that MW-1 and the associated soil borings are located east of the center of Bldg. 378. Unless a satisfactory explanation of this discrepancy is provided; additional soil boring(s) and monitor well(s) will be required at the location of Terra

SB-1, SB-2 and TW-1 to determine if contamination is present.

Response 4:
As indicated in Response 1. the data in Table 2 is suspect based on the use of a "saturated methane filter".

The statement is made that the methane filter became saturated about the time SB-18 was sampled. What impact does a partially saturated filter have on OVA readings? It is strongly suggested that field sampling procedures and methods be evaluated so that questionable data is no longer presented.

Concrete and asphalt can prohibit rainfall from transporting soil contamination to the groundwater. Erroneous OVA data could also be the explanation for the contrast between excessively contaminated soil and relatively uncontaminated groundwater.

Response 5:
This response is satisfactory and acceptable.

The credibility of the soil contamination survey has been placed in question. At the present time the extent of the soil contamination is not known.

If you have any questions, please contact Bruce Arnett at (904) 488-0190.

/baa

May 11, 1994

Florida Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Attention: Mr. Bruce Arnett

Subject: Contamination Assessment Report
Coastal Systems Station (CSS) Panama City, Site 327
Panama City, Florida

Dear Mr. Arnett:

This correspondence addresses your second set of comments, written in a letter dated March 4, 1994, concerning the Contamination Assessment Report (CAR) for the above referenced site. The first and second sets of comments to the CAR, as well as ABB Environmental Services, Inc. (ABB-ES), responses to the first set, have been reprinted below for your convenience. Copies of both letters have been included as Attachments A and B.

1. **Comment**: Supplemental soil assessment in accordance with Rule 17-770.200(2), Florida Administrative Code (FAC), and the Department's May 1992 *Guidelines for Assessment and Remediation of Petroleum Contaminated Soils* should be performed in the vicinity of SB-18 to establish the horizontal and vertical extent of soil contamination in the unsaturated zone. The organic vapor analyzer (OVA) values should be summarized in a table, and the approximate extent of soil contamination should be presented in graphic form. Please note, performing the supplemental soil assessment in conjunction with a soil Initial Remedial Action (excavation/treatment/disposal) is acceptable, if planned. If additional soil analysis confirms excessively contaminated soils, then a minimum of one additional permanent water table monitoring well should be installed at the location with the highest OVA reading (source well). Note, representative OVA sample(s) over 500 parts per million (ppm) should be submitted for laboratory analysis (U.S. Environmental Protection Agency [USEPA] Methods 8010, 8020, and 418.1) to confirm the necessity of installing an additional monitoring well.

   Response: The elevated OVA headspace reading of the soil sample collected at SB-18 is probably not the result of petroleum contamination. The soil sample contained a high percentage of organic matter, which, in other locations, was shown to be the reason for elevated OVA headspace readings in those samples. In fact, so many samples contained organic matter that the methane filter being used at the time became saturated and could no longer be relied upon for accurate results. A replacement filter was not readily available; therefore, all subsequent OVA headspace readings were considered to be "worst case" concentrations.

The 550 ppm OVA reading at location SB-18 only slightly exceeded the State guidance concentration for excessively contaminated soil. Because the sample contained a large amount of organic matter and had no petroleum odor, it was decided that the high OVA reading was due to the organic matter in the sample and that additional soil borings were not necessary in this area.

Several other factors were considered at the time of the investigation, which significantly affected the ABB-ES field crews' decision not to drill additional soil borings in the vicinity of location SB-18. These factors are as follows.

- Background information indicated the pipeline located adjacent to SB-18 had been drained, flushed, backfilled with sand, and abandoned in place.
- There were no reported releases of petroleum from the pipeline or any other source in the vicinity of SB-18.
- The area is "capped" or covered with concrete, which inhibits the vertical migration of rainwater into the soil and groundwater.
- The proximity of SB-18 to SB-17, SB-19/MW-7, and SB-22/MW-8, all of which had OVA readings of 0 ppm, was considered to be adequate to show there was limited horizontal extent (please refer to Figure 5-4 of the CAR and Figure 1 attached).

Comment: (a) The explanation for elevated OVA readings from SB-18 (the presence of organic material) may be valid; however, the text, figures, and summary do not reflect this explanation. In fact, Table 5-2 indicates that all data were corrected for methane. The response also implies that because the carbon filter was saturated and could not provide accurate results all OVA data may be suspect. Which readings are accurate? Why was a replacement filter not readily available?

(b) Background information regarding the northern pipeline was not included in the CAR. This data should be provided.

(c) The lack of reported releases in the vicinity of SB-18 is not in itself sufficient reason not to evaluate excessive soil contamination.

(d) The presence of concrete can generally be presumed to inhibit the vertical migration of rainwater; however, it does not eliminate the possibility of groundwater contamination from excessively contaminated soils.

(e) Figure 5-4 indicates that SB-17 is approximately 51 feet and SB-19 approximately 69 feet away from SB-18. If it is determined that SB-18 actually represents the presence of excessively contaminated soil, then the suggested sampling procedure presented in the Department's May 1992 *Guidelines for Assessment and Remediation of Petroleum Contaminated Soils* should be followed.

The reasons for not performing additional assessment in the vicinity of SB-18 are not acceptable; therefore please initiate a soil assessment as originally requested.

Response: (a) To verify the accuracy of OVA readings taken from soil boring samples collected along the northern pipeline, ABB-ES plans to reanalyze soil near SB-18, SB-11, SB-13, SB-16, and SB-23 for comparison.

ABB-ES team had been supplied two methane filters with the OVA for the soil investigation. For logistical reasons, the soil boring locations were not drilled in the same sequence as they were numbered on the site plan. Consequently, SB-18 was the last soil boring sampled at the site. Both filters became saturated with methane and a third filter was sent to the site from Tallahassee. The new filter arrived the next day and SB-18 was reanalyzed that day with the same result. Because the OVA reading from SB-18 was the same with the saturated methane filter as it was with the unsaturated methane filter, all OVA readings are assumed to be accurate. ABB-ES regrets that the sequence of events regarding the SB-18 OVA analysis was not explained adequately in the CAR or in ABB-ES' initial response.

(b) There is no written documentation regarding the northern pipeline. All background information about the pipeline was obtained during interviews with base personnel.

(c) and (d) Laboratory analytical results of groundwater samples collected from monitoring wells MW-1, MW-4, and MW-13, which are located in areas of excessively contaminated soil, indicate that contaminated soil is having little effect on groundwater contamination.

(e) ABB-ES plans to assess the extent of soil and groundwater contamination near SB-18 in accordance with the Florida Department of Protection's (FDEP) May 1992 *Guidelines for Assessment and Remediation of Petroleum Contaminated Soils*. ABB-ES recommends groundwater samples be collected from all site monitoring wells and analyzed using USEPA Method 602 for Purgable Aromatics to confirm contaminant levels. Groundwater sample collection will be performed during the supplemental soil and groundwater contamination assessment in the vicinity of soil boring SB-18. Based on the analytical results, ABB-ES will recommend the appropriate course of action for the site in accordance with Chapter 17-770, FAC, and FDEP guidelines.

2. **Comment**: Because contaminated soils (including excessively contaminated soils) were detected during the auger boring program at SB-1, SB-14, SB-16, and SB-18, actions to abate these residual sources of contamination will be required. Please note, soil remediation can be performed under an Initial Remedial Action (soil excavation/treatment/disposal) or proposed in a formal Remedial Action Plan (any appropriate remediation method).

Response: Because of the proximity of the water table to the surface (approximately 1 to 2 feet below land surface [bls]), soil vapor extraction is not technologically feasible at this site. In addition, it is likely that excavation of the soil in this area will destroy MW-1. Therefore, SOUTHNAVFACENGCOM recommends a Monitoring Only Plan (MOP) as a practical and cost-effective alternative to soil excavation or remediation. Contaminated soil in the vicinity of MW-1 is limited to an area approximately 15 feet by 15 feet by 2 feet or approximately 17 cubic yards. The area of contaminated soil is small, MW-1 is located in the center of the contaminated area, MW-11 is located

upgradient, and MW-12 is located downgradient. In the MOP, MW-1, MW-11, and MW-12 will be sampled to assess the groundwater quality in the vicinity of the excessively contaminated soil.

Soil borings SB-14, SB-16, and SB-18 were located in the vicinity of the abandoned gasoline pipeline and therefore, the source of contamination has been abated.

Comment: Excessively contaminated soil according to Chapter 17-770.300(2), FAC, is considered a contamination source requiring remediation. At this site, with OVA readings of over 5,000 ppm and a very shallow water table (1 to 2 feet bls), the contaminated soil acts as a continuous source of contamination to the groundwater and surface water. Only after this soil has been remediated and confirmatory samples prove all excessively contaminated soil has been removed will this site be considered for a MOP.

Response: Chapter 17-770.300(2) states, "Free product recovery which requires dewatering . . . as an alternative procedure pursuant to rule 17-770.890 F.A.C." ABB-ES assumes the intended reference was Chapter 17-770.300(7), which states, "If excessively contaminated soil exists at a site, . . . Excessively contaminated soils shall not be used as a replacement material." The wording in Chapter 17-770.300(7) indicates that the rule assumes that the contaminated soil is the source of petroleum contamination in the groundwater, and the purpose of excavating the soil is to remove the source of contamination. This rule would not seem to be applicable if the groundwater was the source of petroleum contamination in the soil.

When the release occurred at Site 327, it was reported to the local FDEP office, and an initial remedial action (IRA) was conducted by CSS Panama City. Contaminated soil was excavated, free product and contaminated groundwater were removed, and the excavation was backfilled with clean fill material with the approval of the local FDEP representative.

During the contamination assessment conducted by ABB-ES, soil samples were collected from the excavated area where the release occurred and analyzed using an OVA equipped with and flame ionization detector (FID). The data indicated that soil in the excavated area was "petroleum contaminated" as defined in Chapter 17-770.200. It is apparent from these data that the clean backfill material placed in the excavation was contaminated by groundwater that had not been removed during the IRA. The contaminated groundwater had come into contact with the fill material because of the shallow water table.

It is ABB-ES' contention that contaminated groundwater is the source of soil contamination at the site where soil borings SB-14, SB-16, and MW-13 are located. The soil in the vicinity of SB-14 and SB-16, which is approximately 50 feet away from the release and covered with concrete, was not affected by the pipeline release. The high OVA readings, therefore, are apparently associated with groundwater contamination detected in monitoring well MW-13.

There is no evidence to indicate that excessively contaminated soil is a continuing source of groundwater contamination at the site, and several indications that the reverse is actually true. It is our belief that the shallow water table is responsible for the presence of excessively contaminated and petroleum contaminated soil at the site, and

that soil remediation will not eliminate the source of contamination. Benzene and total volatile organic analytes (VOAs) concentrations in groundwater samples collected at the site only slightly exceed the respective State target levels of 1 part per billion (ppb) and 50 ppb, and concentrations were shown in the CAR to have declined in wells sampled on two separate occasions. For these reasons, ABB-ES recommends that a MOP be approved for Site 327 if:

- subsequent soil and groundwater sampling in the vicinity of SB-18 delineates the extent of soil contamination, and

- groundwater contamination, if any, in the vicinity of SB-18 is within the accepted MOP guidelines established by FDEP.

If groundwater contaminant levels continue to decrease in site monitoring wells, the data will support the theory that soil contamination is a result of groundwater contamination. If, however, groundwater contaminant levels begin to significantly increase, then a Remedial Action Plan will be recommended for the site.

The recommended MOP attempts to provide a means to address minimal groundwater contamination without disrupting an active site with considerable vehicular and pedestrian traffic. The MOP is also recommended as a practical approach where contaminated groundwater has no unforseen effects on potable water supplies.

3. **Comment**: Documentation (field observations and measurements, volumes, shipping manifest, sampling/analysis results, etc.) regarding the soil Initial Remedial Action (IRA) completed during the underground storage tank (UST) and southern pipeline removal of August 1991 should be provided. This documentation should include a map showing the approximate limits of the excavation(s) and the locations for the soil samples, along with a table with the OVA readings used to determine the extent of contaminated soil. Depending on the available documentation, supplemental soil assessment in accordance with Rule 17-770.200(2), FAC, and the Department's May 1992 *Guidelines for Assessment and Remediation of Petroleum Contaminated Soils* may be required.

Response: Terra Resources (SIC) performed the tank removal in 1991. A copy of this report is provided in Appendix A of the Site 327 CAR, which includes a map of soil sample locations, OVA readings, and approximate area of excavation.

Comment: A review of the report provided in Appendix A indicates the following.

Terra Environmental Services, Inc. (not Terra Resources-make appropriate changes to text), was retained in June, 1992 (not 1991) to conduct a Closure Assessment of Tank and piping removal by B & K Construction which occurred in 1991. The text indicates that B & K did not collect any soil or groundwater samples.

There is no excavation map provided in the appendix. The map shows the area of soil sampling, which indicates an area approximately 40 feet by 100 feet was evaluated by soil sampling and could be implied that the area of excavation was similar in size.

There is no discussion in the appendix or text regarding the easternmost area of excavation. How were the two areas of excavation indicated on the Figures determined? Provide data regarding these areas as requested in Original Comment No. 4.

The maps provided in Appendix A indicate that soil and groundwater contamination was found west of the center of Building 378. The figures provided in the CAR indicate that MW-1 and the associated soil borings are located east of the center of Building 378. Unless a satisfactory explanation of this discrepancy is provided, additional soil boring(s) and monitor well(s) will be required at the location of Terra SB-1, SB-2, and TW-1 to determine if contamination is present.

Response: A typical 2,000-gallon UST is approximately 5 feet in diameter by 12 feet in length; therefore, ABB-ES personnel assumed that the area shown as "Former Location of 2,000-gallon UST" in Figures 2 and 3 of the Terra Environmental Services, Inc. (TES), report represented the area of excavation. Site background information provided by Coastal System Station (CSS) personnel and closer inspection of Figures 2 and 3 submitted by TES, indicate several inconsistencies in the closure report.

The size of the excavated area of excavation shown in Figures 2 and 3 of the TES report is inaccurate. CSS personnel who observed the tank removal described the limit of excavated soil as being approximately 15 feet by 15 feet, not 40 feet by 100 feet. Building 378 is not 152 feet long as shown in the TES report. Site maps in the CAR submitted by ABB-ES are based on a site survey conducted by a licensed and professional surveyor registered in the State of Florida. According to the survey, Building 378 is 90 feet in length. The length of Building 378 shown in the TES report is incorrect; therefore, the locations of soil borings SB-1 through SB-6 and TMW-1 are also suspected to be inaccurate.

ABB-ES placed soil borings on each side of the excavated area and monitoring well MW-1 in the center of the excavated area described by CSS personnel. No written data is available regarding the easternmost area of excavation. ABB-ES obtained information by interviewing CSS personnel who observed the excavation.

4. **Comment**: Why is there a contrast between the excessively contaminated soil and relatively uncontaminated groundwater? Were the OVA samples filtered?

Response: Although the unfiltered OVA headspace readings are not shown in Table 5-2 of the CAR, OVA measurements were corrected for methane (please see footnote 1, Table 5-2).

As noted in the response to comment No. 1, the methane filter became saturated about the time SB-18 was sampled and was not used for subsequent soil borings.

Concrete and asphalt cover most of the site and prohibit rainfall from transporting petroleum contamination in the soil to the groundwater. Analytical results of groundwater samples indicate that the concrete and asphalt are an effective barrier to petroleum contamination of groundwater at the site.

Comment: As indicated in Response 1, the data in Table 2 is suspect based on the use of a "saturated methane filter".

The statement is made that the methane filter became saturated about the time SB-18 was sampled. What impact does a partially saturated filter have on OVA readings? It is strongly suggested that field sampling procedures and methods be evaluated so that questionable data is no longer presented.

Concrete and asphalt can prohibit rainfall from transporting soil contamination to the groundwater. Erroneous OVA data could also be the explanation for the contrast between excessively contaminated soil and relatively uncontaminated groundwater.

Response: Although the OVA readings would be inaccurate, a partially saturated methane filter would not preclude hydrocarbons in the soil to be measured by the OVA. The measurements, however, would be higher than the actual levels of hydrocarbons in the soil. The OVA used during the site assessment was equipped with two methane filters, the second filter being a spare. One methane filter is usually sufficient to perform a typical site assessment. Previous site investigations conducted at Sites 278, 325, and 363 at CSS Panama City did not encounter excessive amounts of methane in soil borings. Consequently, ABB-ES did not anticipate the need for more than two methane filters to conduct the site assessment at Site 327. The samples were measured with an unsaturated methane filter that arrived the next day. The results indicated that there was little difference between the OVA readings using the saturated and unsaturated filters. The OVA data included in the CAR were the readings taken with the unsaturated methane filters.

5. Previous response was acceptable.

If you have any questions or comments, please call me at (904) 656-1293.

Sincerely,

ABB Environmental Services, Inc.

John P. Kaiser
Task Order Manager

Michael J. Williams, P.G.

Attachments

CSS327.LTR
MVL.05.94

APPENDIX B

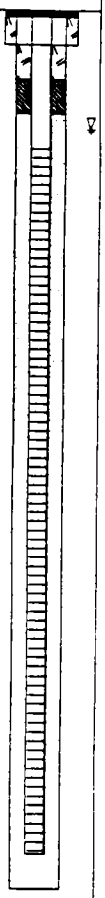
LITHOLOGIC LOGS

TITLE: CSS Panama City Site 327		LOG of WELL: CSS-327-1	BORING NO. SB-1
CLIENT: SOUTHNAVFACENGCOM			PROJECT NO: 7578-30
CONTRACTOR: Groundwater Protection		DATE STARTED: 2/23/93	COMPLTD: 2/23/93
METHOD: 4.25" HSA	CASE SIZE: 2 inch	SCREEN INT.: 2 - 12 FT.	PROTECTION LEVEL: D
TOC ELEV.: 5.60 FT.	MONITOR INST.: OVA	TOT DPTH: 12.25FT.	DPTH TO ▽ 1.52 FT.
LOGGED BY: C. Jackson	WELL DEVELOPMENT DATE: 2/23/93		SITE: Facility 327

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
				50	Sand, medium grained, fair sorting, slight odor.		SP		
				2000	Sand, dark gray,medium grained, fair sorting, odor, wet.				
5									
10									
15									
20									

TITLE: CSS Panama City Site 327	LOG of WELL: CSS-327-2	BORING NO. SB-2
CLIENT: SOUTHNAVFACENGCOM		PROJECT NO: 7578-30
CONTRACTOR: Groundwater Protection	DATE STARTED: 2/23/93	COMPLTD: 2/23/93
METHOD: 4.25" HSA / CASE SIZE: 2 inch	SCREEN INT.: 2 - 12 FT.	PROTECTION LEVEL: D
TOC ELEV.: 3.99 FT. / MONITOR INST.: OVA	TOT DPTH: 11.96FT.	DPTH TO ▽ 1.72 FT.
LOGGED BY: C. Jackson	WELL DEVELOPMENT DATE: 2/23/93	SITE: Facility 327

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
				50	Sand, medium grained, fair sorting, slight odor.		SP		
				2000	Sand, dark gray,medium grained, fair sorting, odor, wet.				
5									
10									
15									
20									



TITLE: CSS Panama City Site 327	LOG of WELL: CSS-327-3		BORING NO. SB-12
CLIENT: SOUTHNAVFACENGCOM			PROJECT NO: 7578-30
CONTRACTOR: Groundwater Protection		DATE STARTED: 2/23/93	COMPLTD: 2/23/93
METHOD: 4.25" HSA	CASE SIZE: 2 inch	SCREEN INT.: 2 - 12 FT.	PROTECTION LEVEL: D
TOC ELEV.: 3.30 FT.	MONITOR INST.: OVA	TOT DPTH: 12.25FT.	DPTH TO ▽ 1.98 FT.
LOGGED BY: C. Jackson	WELL DEVELOPMENT DATE:		SITE: Facility 327

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
				3	Sand, beige to tan, fine to medium grained, fair sorting, wet.		SP		
5									
10									
15									
20									

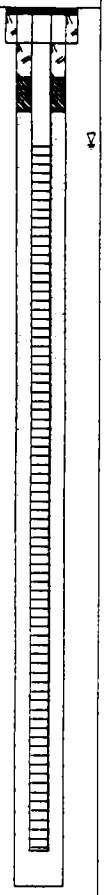


 ABB ENVIRONMENTAL SERVICES, INC.

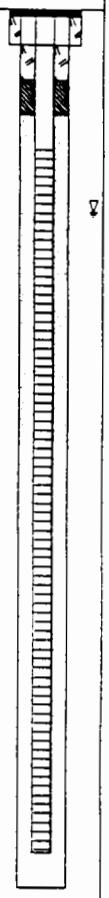
TITLE: CSS Panama City Site 327		LOG of WELL: CSS-327-4	BORING NO. SB-9
CLIENT: SOUTHNAVFACENGCOM			PROJECT NO: 7578-30
CONTRACTOR: Groundwater Protection		DATE STARTED: 2/23/93	COMPLTD: 2/23/93
METHOD: 4.25" HSA	CASE SIZE: 2 inch	SCREEN INT.: 2 - 12 FT.	PROTECTION LEVEL: D
TOC ELEV.: 4.20 FT.	MONITOR INST.: OVA	TOT DPTH: 11.90FT.	DPTH TO ▽ 1.92 FT.
LOGGED BY: C. Jackson	WELL DEVELOPMENT DATE:		SITE: Facility 327

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
				500	Sand, dark brown to gray, medium grained, fair sorting, highly organic, damp.		SP		
				GC	Sand, pale gray to dark brown, fine to medium grained, fair sorting, wet.				
5									
10									
15									
20									

 ABB ENVIRONMENTAL SERVICES, INC.

TITLE: CSS Panama City Site 327	LOG of WELL: CSS-327-5		BORING NO. SB-15
CLIENT: SOUTHNAVFACENGCOM			PROJECT NO: 7578-30
CONTRACTOR: Groundwater Protection		DATE STARTED: 2/24/93	COMPLTD: 2/24/93
METHOD: 4.25" HSA	CASE SIZE: 2 inch	SCREEN INT.: 2 - 12 FT.	PROTECTION LEVEL: D
TOC ELEV.: 3.78 FT.	MONITOR INST.: OVA	TOT DPTH: 11.72FT.	DPTH TO ▽ 2.90 FT.
LOGGED BY: C. Jackson	WELL DEVELOPMENT DATE: 2/24/93		SITE: Facility 327

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
				0	Sand, light brown, fine to medium grained, fair sorting, moist.		SP		
				GC	Sand, fine to medium grained.				
5									
10									
15									
20									



TITLE: CSS Panama City Site 327		LOG of WELL: CSS-327-6	BORING NO. SB-21
CLIENT: SOUTHNAVFACENGCOM			PROJECT NO: 7578-30
CONTRACTOR: Groundwater Protection		DATE STARTED: 2/24/93	COMPLTD: 2/24/93
METHOD: 4.25" HSA	CASE SIZE: 2 inch	SCREEN INT.: 2 - 12 FT.	PROTECTION LEVEL: D
TOC ELEV.: 5.54 FT.	MONITOR INST.: OVA	TOT DPTH: 12.00FT.	DPTH TO ▽ 1.66 FT.
LOGGED BY: C. Jackson	WELL DEVELOPMENT DATE: 2/24/93		SITE: Facility 327

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
				0	Sand, beige, fine to medium grained, moist.		SP		
				GC	Same as above, wet.				

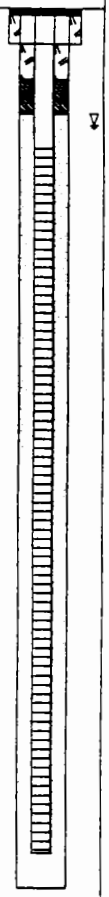


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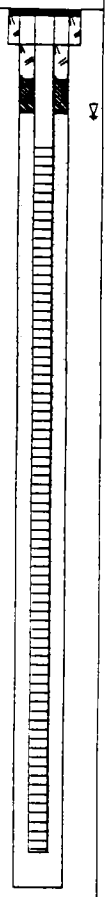
 ABB ENVIRONMENTAL SERVICES, INC.

TITLE: CSS Panama City Site 327		LOG of WELL: CSS-327-7	BORING NO. SB-19
CLIENT: SOUTHNAVFACENGCOM			PROJECT NO: 7578-30
CONTRACTOR: Groundwater Protection		DATE STARTED: 2/24/93	COMPLTD: 2/24/93
METHOD: 4.25" HSA	CASE SIZE: 2 inch	SCREEN INT.: 2 - 12 FT.	PROTECTION LEVEL: D
TOC ELEV.: 4.86 FT.	MONITOR INST.: OVA	TOT DPTH: 11.94FT.	DPTH TO ▽ 0.91 FT.
LOGGED BY: C. Jackson	WELL DEVELOPMENT DATE: 2/24/93		SITE: Facility 327

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
				0	Sand, beige to tan, fine to medium grained, no odor, wet.		SP		
		GC			Same as above.				
5									
10									
15									
20									

TITLE: CSS Panama City Site 327		LOG of WELL: CSS-327-8	BORING NO. SB-22
CLIENT: SOUTHNAVFACENGCOM			PROJECT NO: 7578-30
CONTRACTOR: Groundwater Protection		DATE STARTED: 2/24/93	COMPLTD: 2/24/93
METHOD: 4.25" HSA	CASE SIZE: 2 inch	SCREEN INT.: 2 - 12 FT.	PROTECTION LEVEL: D
TOC ELEV.: 3.20 FT.	MONITOR INST.: OVA	TOT DPTH: 11.95FT.	DPTH TO ▽ 1.53 FT.
LOGGED BY: C. Jackson	WELL DEVELOPMENT DATE: 2/24/93		SITE: Facility 327

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
0				0	Sand, dark brown, black, fine to medium grained, fair sorting, highly organic, wet.		SP		
				GC					
5									
10									
15									
20									



TITLE: CSS Panama City Site 327		LOG of WELL: CSS-327-9D	BORING NO.
CLIENT: SOUTHNAVFACENGCOM			PROJECT NO: 7578-30
CONTRACTOR: Groundwater Protection		DATE STARTED: 2/24/93	COMPLTD: 2/24/93
METHOD: 4.25" HSA	CASE SIZE: 2 inch	SCREEN INT.: 14 - 19 FT.	PROTECTION LEVEL: D
TOC ELEV.: 3.71 FT.	MONITOR INST.: OVA	TOT DPTH: 18.20FT.	DPTH TO ▽ 1.73 FT.
LOGGED BY: C. Jackson	WELL DEVELOPMENT DATE: 2/24/93		SITE: Facility 327

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
							SP		
5			24/24	GC	Sand, brown, tan, olive, fine to medium grained, fair sorting, no odor, saturated.				
10			24/24	GC	Sand, brown, tan, fine to medium grained, fair sorting, slight odor, saturated.				
15			24/24	GC	Sand, dark brown, olive, fine to medium grained, fair sorting, slight odor, saturated.				
					Sand, fine to medium grained.				
			24/24	GC	Clay, hard, gray, olive, white, saturated.		CL		
20									

 ABB ENVIRONMENTAL SERVICES, INC.

TITLE: CSS Panama City Site 327		LOG of WELL: CSS-327-10	BORING NO. SB-23
CLIENT: SOUTHNAVFACENGCOM			PROJECT NO: 7578-30
CONTRACTOR: Groundwater Protection		DATE STARTED: 5/17/93	COMPLTD: 5/17/93
METHOD: 4.25" HSA	CASE SIZE: 2 inch	SCREEN INT.: 3 - 13 FT.	PROTECTION LEVEL: D
TOC ELEV.: 3.52 FT.	MONITOR INST.: OVA	TOT DPTH: 13.17FT.	DPTH TO ▽ 2.18 FT.
LOGGED BY: C. Jackson	WELL DEVELOPMENT DATE: 5/17/93		SITE: Facility 327

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
				143	Sand, dark gray, fine to medium grained, very moist.		SP		
				420	Sand, dark brown, black, fine to medium grained, fair sorting, highly organic, wet.				
5									
10									
15									
20									

TITLE: CSS Panama City Site 327		LOG of WELL: CSS-327-11	BORING NO.
CLIENT: SOUTHNAVFACENGCOM			PROJECT NO: 7578-30
CONTRACTOR: Groundwater Protection		DATE STARTED: 5/18/93	COMPLTD: 5/18/93
METHOD: 4.25" HSA	CASE SIZE: 2 inch	SCREEN INT.: 2 - 12 FT.	PROTECTION LEVEL: D
TOC ELEV.: 6.53 FT.	MONITOR INST.: OVA	TOT DPTH: 12.24FT.	DPTH TO ▽ 3.72 FT.
LOGGED BY: C. Jackson	WELL DEVELOPMENT DATE: 5/18/93		SITE: Facility 327

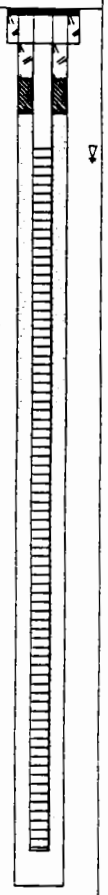
DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
				GC	Sand, gray to tan, fine to medium grained, fair sorting, tree roots and organic matter, no odor.		SP		
				GC	Sand, gray, tan, beige, fine to medium grained, fair sorting, tree roots and organic material, slight organic odor, wet.				
5									
10									
15									
20									

TITLE: CSS Panama City Site 327	LOG of WELL: CSS-327-12		BORING NO.
CLIENT: SOUTHNAVFACENGCOM			PROJECT NO: 7578-30
CONTRACTOR: Groundwater Protection		DATE STARTED: 5/18/93	COMPLTD: 5/18/93
METHOD: 4.25" HSA	CASE SIZE: 2 inch	SCREEN INT.: 2 - 12 FT.	PROTECTION LEVEL: D
TOC ELEV.: 5.44 FT.	MONITOR INST.: OVA	TOT DPTH: 12.39FT.	DPTH TO ▽ 3.08 FT.
LOGGED BY: C. Jackson	WELL DEVELOPMENT DATE: 5/18/93		SITE: Facility 327

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
				GC	Sand, gray, tan, beige, dark brown, fine to medium grained, fair sorting, shells, rocks, no odor.		SP		
				GC	Sand, tan, beige, fine to medium grained, wet.				
5									
10									
15									
20									

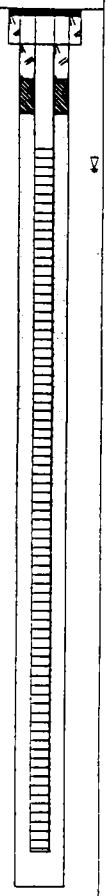
TITLE: CSS Panama City Site 327	LOG of WELL: CSS-327-13	BORING NO.
CLIENT: SOUTHNAVFACENGCOM		PROJECT NO: 7578-30
CONTRACTOR: Groundwater Protection	DATE STARTED: 5/18/93	COMPLTD: 5/18/93
METHOD: 4.25" HSA	CASE SIZE: 2 inch	SCREEN INT.: 2 - 12 FT.	PROTECTION LEVEL: D
TOC ELEV.: 3.49 FT.	MONITOR INST.: OVA	TOT DPTH: 11.67FT.	DPTH TO ▽ 2.14 FT.
LOGGED BY: C. Jackson	WELL DEVELOPMENT DATE: 5/18/93	SITE: Facility 327

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
				GC	Sand, dark brown, black, gray, fine to medium grained, fair sorting, fair amount of organics, strong odor.		SP		
				GC	Sand, dark brown, black, tan, fine to medium grained, fair sorting, fair amount of organics, strong odor, wet.				
5									
10									
15									
20									



TITLE: CSS Panama City Site 327		LOG of WELL: CSS-327-14	BORING NO. SB-25
CLIENT: SOUTHNAVFACENGCOM			PROJECT NO: 7578-30
CONTRACTOR: Groundwater Protection		DATE STARTED: 5/18/93	COMPLTD: 5/18/93
METHOD: 4.25" HSA	CASE SIZE: 2 inch	SCREEN INT.: 2 - 12 FT.	PROTECTION LEVEL: D
TOC ELEV.: 3.58 FT.	MONITOR INST.: OVA	TOT DPTH: 11.50FT.	DPTH TO ▽ 2.29 FT.
LOGGED BY: C. Jackson	WELL DEVELOPMENT DATE: 5/18/93		SITE: Facility 327

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
				GC	Sand, beige, dark brown, fine to medium grained, fair sorting, no odor.		SP		
				GC	Sand, beige, tan, fine to medium grained, fair sorting, no odor, saturated.				
5									
10									
15									
20									



TITLE: CSS PANAMA CITY		LOG of WELL: CSS-327-15	BORING NO. SB-34
CLIENT: SOUTHNAVFACENGCOM			PROJECT NO: 7578.31
CONTRACTOR: Ivey Drilling Co.		DATE STARTED: 10/19/94	COMPLTD: 10/19/94
METHOD: 4.25" I.D. HSA	CASE SIZE: 2"	SCREEN INT.: 1.5-11.5	PROTECTION LEVEL: D
TOC ELEV.: NA FT.	MONITOR INST.: OVA	TOT DPTH: 11.5FT.	DPTH TO ▽ 2.51 FT.
LOGGED BY: J. Koch	WELL DEVELOPMENT DATE: 10/19/94		SITE: 327

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
				2500	SILTY SAND: Mostly organics, some traces of meduim-grained sand, dark brown, sulfide odor.		SM		
5									
10									
15									

ABB ENVIRONMENTAL SERVICES, INC.

TITLE: CSS PANAMA CITY		LOG of WELL: CSS-327-16D	BORING NO. SB-48
CLIENT: SOUTHNAVFACENGCOM			PROJECT NO: 7578.31
CONTRACTOR: ATEC Associates, Inc.		DATE STARTED: 07/26/95	COMPLTD: 07/26/95
METHOD: 4.25" I.D. HSA	CASE SIZE: 2"; 6"	SCREEN INT.: 22-27	PROTECTION LEVEL: D
TOC ELEV.: 2.68 FT.	MONITOR INST.: OVA	TOT DPTH: 27FT.	DPTH TO ▽ 0.17 FT.
LOGGED BY: J. Koch	WELL DEVELOPMENT DATE: 07/26/95		SITE: 327

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
				>5000	SAND: Fine- to course-grained, dark brown, strong hydrocarbon odor, moist.		SW		
				2200	SAND: Fine- to course-grained, with organics, brown, strong hydrocarbon odor, wet.				
							SM		
5				2450	SILTY SAND: Black silty sand with wood, petrol odor.			1,1,1	
							SP		
10				120	SAND: Medium-grained, gray, no odor.			4,4,6,7	
15				10	SAND: Fine- to medium-grained, medium to dark brown, slight sulfide odor.			2,1,1,1	
20				23	As above, no odor.			8,14,16,20	
							SW		
25					SAND: Fine- to course-grained, light to medium brown, shell fragments, no odor.				
30									

ABB ENVIRONMENTAL SERVICES, INC.

TITLE: CSS PANAMA CITY		LOG of WELL: CSS-327-17	BORING NO. SB-51
CLIENT: SOUTHNAVFACENGCOM			PROJECT NO: 7578.31
CONTRACTOR: ATEC Associates, Inc.		DATE STARTED: 07/25/95	COMPLTD: 07/25/95
METHOD: 4.25" I.D. HSA	CASE SIZE: 2"	SCREEN INT.: 1.5-11.5	PROTECTION LEVEL: D
TOC ELEV.: 2.63 FT.	MONITOR INST.: OVA	TOT DPTH: 11.5FT.	DPTH TO ▽ 0.88 FT.
LOGGED BY: J. Koch	WELL DEVELOPMENT DATE: 07/25/95		SITE: 327

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
				1300	SAND: Dark gray to black, chunks of concrete gravel, petrol odor.		SW		
5									
10									
15									

ABB ENVIRONMENTAL SERVICES, INC.

TITLE: CSS PANAMA CITY		LOG of WELL: CSS-327-18	BORING NO.
CLIENT: SOUTHNAVFACENGCOM			PROJECT NO: 7578.31
CONTRACTOR: ATEC Associates, Inc.		DATE STARTED: 07/25/95	COMPLTD: 07/25/95
METHOD: 4.25" I.D. HSA	CASE SIZE: 2"	SCREEN INT.: 1.5-11.5	PROTECTION LEVEL: D
TOC ELEV.: 3.36 FT.	MONITOR INST.: OVA	TOT DPTH: 11.5FT.	DPTH TO ▽ 1.69 FT.
LOGGED BY: J. Koch	WELL DEVELOPMENT DATE: 07/25/95		SITE: 327

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
					SILTY SAND: Black silty sand with organic material, rotten egg odor.		SM		
5									
10									
15									

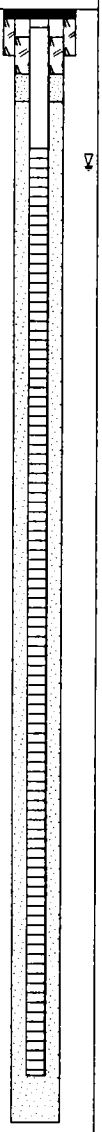


ABB ENVIRONMENTAL SERVICES, INC.

TITLE: CSS PANAMA CITY		**LOG of WELL:** CSS-327-19	**BORING NO.** SB-55
CLIENT: SOUTHNAVFACENGCOM			**PROJECT NO:** 7578.31
CONTRACTOR: ATEC Associates, Inc.		**DATE STARTED:** 07/25/95	**COMPLTD:** 07/25/95
METHOD: 4.25" I.D. HSA	**CASE SIZE:** 2"	**SCREEN INT.:** 1.5-11.5	**PROTECTION LEVEL:** D
TOC ELEV.: 2.22 FT.	**MONITOR INST.:** OVA	**TOT DPTH:** 11.5FT.	**DPTH TO ▽** 0.40 FT.
LOGGED BY: J. Koch	**WELL DEVELOPMENT DATE:** 07/25/95		**SITE:** 327

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
				25	SAND: Dark gray to black sand, "Pine-Sol" odor.		SP		
5									
10									
15									

ABB ENVIRONMENTAL SERVICES, INC.

TITLE: CSS PANAMA CITY		LOG of WELL: CSS-327-20	BORING NO.
CLIENT: SOUTHNAVFACENGCOM			PROJECT NO: 7578.31
CONTRACTOR: ATEC Associates, Inc.		DATE STARTED: 07/25/95	COMPLTD: 07/25/95
METHOD: 4.25" I.D. HSA	CASE SIZE: 2"	SCREEN INT.: 2-12	PROTECTION LEVEL: D
TOC ELEV.: 5.34 FT.	MONITOR INST.: OVA	TOT DPTH: 12FT.	DPTH TO ▽ 3.22 FT.
LOGGED BY: J. Koch	WELL DEVELOPMENT DATE: 07/26/95		SITE: 327

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
5									
10									
15									

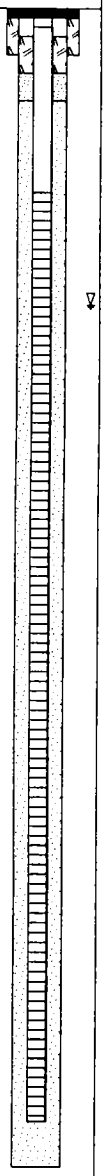


ABB ENVIRONMENTAL SERVICES, INC.

TITLE: CSS PANAMA CITY	LOG of WELL: CSS-327-21		BORING NO. SB-44
CLIENT: SOUTHNAVFACENGCOM			PROJECT NO: 7578.31
CONTRACTOR: ATEC Associates, Inc.		DATE STARTED: 07/26/95	COMPLTD: 07/26/95
METHOD: 4.25" I.D. HSA	CASE SIZE: 2"	SCREEN INT.: 2-12	PROTECTION LEVEL: D
TOC ELEV.: 4.70 FT.	MONITOR INST.: OVA	TOT DPTH: 12FT.	DPTH TO ▽ 2.57 FT.
LOGGED BY: J. Koch	WELL DEVELOPMENT DATE: 07/26/95		SITE: 327

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
				2100	SILTY CLAYEY SAND: Black, organic material (roots, wood), strong sulfur odor, dry.		SC		
				2500	As above.				
5									
10									
15									

ABB ENVIRONMENTAL SERVICES, INC.

TITLE: CSS PANAMA CITY		LOG of WELL: CSS-327-22	BORING NO.
CLIENT: SOUTHNAVFACENGCOM			PROJECT NO: 7578.31
CONTRACTOR: ATEC Associates, Inc.		DATE STARTED: 07/26/95	COMPLTD: 07/26/95
METHOD: 4.25" I.D. HSA	CASE SIZE: 2"	SCREEN INT.: 1.5-11.5	PROTECTION LEVEL: D
TOC ELEV.: 3.53 FT.	MONITOR INST.: OVA	TOT DPTH: 11.5FT.	DPTH TO ▽ 1.98 FT.
LOGGED BY: J. Koch	WELL DEVELOPMENT DATE: 07/26/95		SITE: 327

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA

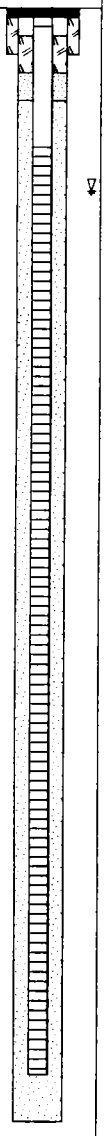


ABB ENVIRONMENTAL SERVICES, INC.

APPENDIX C

SOIL LABORATORY ANALYSES, OCTOBER, 1994

Quanterra Environmental Services

Quanterra Incorporated
5910 Breckenridge Parkway, Suite H
Tampa, Florida 33610

813 621-0784 Telephone
813 623-6021 Fax

ANALYTICAL REPORT

PROJECT NO. 7578-31

CSS PANAMA CITY-327

KAREN HARTNETT

ABB ENVIRONMENTAL SERVICES

QUANTERRA INCORPORATED
Certification Numbers: E84059,HRS84297
FDEP CompQAP: 870270G

Joanne Anderson

Joanne Anderson
Project Manager

October 28, 1994

Quanterra
Environmental Services

EXECUTIVE SUMMARY - Detection Highlights

B4J210091

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD
PCY-327-SB34				
Acetone	1,200	180	ug/kg	SW846 8240
Methylene chloride	100	18	ug/kg	SW846 8240
Toluene	420	18	ug/kg	SW846 8240
Solids, Total (TS)	28.1	1.0	%	MCAWW 160.3
PCY-327-SB43				
Acetone	92	74	ug/kg	SW846 8240
Methylene chloride	12	7.4	ug/kg	SW846 8240
Petroleum Hydrocarbons Total Recoverable	45.7	7.4	mg/kg	MCAWW 418.1
Solids, Total (TS)	67.3	1.0	%	MCAWW 160.3
PCY-327-SB50				
Acetone	290	78	ug/kg	SW846 8240
Methylene chloride	15	7.8	ug/kg	SW846 8240
Petroleum Hydrocarbons Total Recoverable	15.0	7.8	mg/kg	MCAWW 418.1
Solids, Total (TS)	64.4	1.0	%	MCAWW 160.3

Quanterra
Environmental Services

ANALYTICAL METHODS SUMMARY

Parameters	Methods
Volatile Organics	SW846 8240
Petroleum Hydrocarbons Total Recoverable	MCAWW 418.1 MODIFIED
Solids, Total (TS)	MCAWW 160.3 MODIFIED

References:

MCAWW Methods for Chemical Analysis of Water and Wastes, EMSL: Cincinnati, OH: March 1983 and subsequent revisions

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, September, 1986 and subsequent revisions

Quanterra
Environmental Services

SAMPLE SUMMARY

The analytical results of the samples listed below are presented on the following pages.

WO #	LABORATORY ID	SAMPLE IDENTIFICATION
A0XKW	B4J210091-001	PCY-327-SB34
A0XL0	B4J210091-002	PCY-327-SB43
A0XL1	B4J210091-003	PCY-327-SB50

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

PCY-327-SB34

WO #: A0XKW103
LAB #: B4J210091-001
MATRIX: SOLID

DATE SAMPLED: 10/19/94
DATE RECEIVED: 10/21/94

GC/MS Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Acetone	1,200	180	SW846 8240	10/25/94	4299078
Benzene	ND	18	SW846 8240	10/25/94	4299078
Dichlorobromomethane	ND	18	SW846 8240	10/25/94	4299078
Bromoform	ND	18	SW846 8240	10/25/94	4299078
Bromomethane	ND	18	SW846 8240	10/25/94	4299078
2-Butanone	ND	180	SW846 8240	10/25/94	4299078
Carbon disulfide	ND	18	SW846 8240	10/25/94	4299078
Carbon tetrachloride	ND	18	SW846 8240	10/25/94	4299078
Chlorobenzene	ND	18	SW846 8240	10/25/94	4299078
Dibromochloromethane	ND	18	SW846 8240	10/25/94	4299078
Chloroethane	ND	18	SW846 8240	10/25/94	4299078
Chloroform	ND	18	SW846 8240	10/25/94	4299078
Chloromethane	ND	18	SW846 8240	10/25/94	4299078
1,1-Dichloroethane	ND	18	SW846 8240	10/25/94	4299078
1,2-Dichloroethane	ND	18	SW846 8240	10/25/94	4299078
1,1-Dichloroethene	ND	18	SW846 8240	10/25/94	4299078
1,2-Dichloroethene, Total	ND	18	SW846 8240	10/25/94	4299078
1,2-Dichloropropane	ND	18	SW846 8240	10/25/94	4299078
cis-1,3-Dichloropropene	ND	18	SW846 8240	10/25/94	4299078
trans-1,3-Dichloropropene	ND	18	SW846 8240	10/25/94	4299078
Ethylbenzene	ND	18	SW846 8240	10/25/94	4299078
Methylene chloride	100	18	SW846 8240	10/25/94	4299078
4-Methyl-2-pentanone	ND	180	SW846 8240	10/25/94	4299078

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	106	(85 - 138)
Toluene-d8	96	(89 - 128)
Bromofluorobenzene	84	(83 - 128)

NOTE: DRY WEIGHT
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

PCY-327-SB34

WO #: A0XKW103 **DATE SAMPLED:** 10/19/94
LAB #: B4J210091-001 **DATE RECEIVED:** 10/21/94
MATRIX: SOLID

GC/MS Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Styrene	ND	18	SW846 8240	10/25/94	4299078
1,1,2,2-Tetrachloroethane	ND	18	SW846 8240	10/25/94	4299078
Tetrachloroethene	ND	18	SW846 8240	10/25/94	4299078
Toluene	**420**	**18**	**SW846 8240**	**10/25/94**	**4299078**
1,1,1-Trichloroethane	ND	18	SW846 8240	10/25/94	4299078
1,1,2-Trichloroethane	ND	18	SW846 8240	10/25/94	4299078
Trichloroethene	ND	18	SW846 8240	10/25/94	4299078
Vinyl chloride	ND	18	SW846 8240	10/25/94	4299078
2-Hexanone	ND	180	SW846 8240	10/25/94	4299078
Xylenes, Total	ND	18	SW846 8240	10/25/94	4299078

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	106	(85 - 138)
Toluene-d8	96	(89 - 128)
Bromofluorobenzene	84	(83 - 128)

NOTE: DRY WEIGHT
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

PCY-327-SB34

WO #: A0XKW
LAB #: B4J210091-001
MATRIX: SOLID

DATE SAMPLED: 10/19/94
DATE RECEIVED: 10/21/94

- - - - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Petroleum Hydrocarbons Total Recoverable	ND	17.8	mg/kg	MCAWW 418.1 M	10/25/94	4298059
Solids, Total (TS)	28.1	1.0	%	MCAWW 160.3 M	10/24-10/25/94	4297118

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

PCY-327-SB43

WO #: A0XL0103
LAB #: B4J210091-002
MATRIX: SOLID

DATE SAMPLED: 10/20/94
DATE RECEIVED: 10/21/94

GC/MS Volatiles

1 OF 2

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Acetone	**92**	**74**	**SW846 8240**	**10/25/94**	**4299078**
Benzene	ND	7.4	SW846 8240	10/25/94	4299078
Dichlorobromomethane	ND	7.4	SW846 8240	10/25/94	4299078
Bromoform	ND	7.4	SW846 8240	10/25/94	4299078
Bromomethane	ND	7.4	SW846 8240	10/25/94	4299078
2-Butanone	ND	74	SW846 8240	10/25/94	4299078
Carbon disulfide	ND	7.4	SW846 8240	10/25/94	4299078
Carbon tetrachloride	ND	7.4	SW846 8240	10/25/94	4299078
Chlorobenzene	ND	7.4	SW846 8240	10/25/94	4299078
Dibromochloromethane	ND	7.4	SW846 8240	10/25/94	4299078
Chloroethane	ND	7.4	SW846 8240	10/25/94	4299078
Chloroform	ND	7.4	SW846 8240	10/25/94	4299078
Chloromethane	ND	7.4	SW846 8240	10/25/94	4299078
1,1-Dichloroethane	ND	7.4	SW846 8240	10/25/94	4299078
1,2-Dichloroethane	ND	7.4	SW846 8240	10/25/94	4299078
1,1-Dichloroethene	ND	7.4	SW846 8240	10/25/94	4299078
1,2-Dichloroethene, Total	ND	7.4	SW846 8240	10/25/94	4299078
1,2-Dichloropropane	ND	7.4	SW846 8240	10/25/94	4299078
cis-1,3-Dichloropropene	ND	7.4	SW846 8240	10/25/94	4299078
trans-1,3-Dichloropropene	ND	7.4	SW846 8240	10/25/94	4299078
Ethylbenzene	ND	7.4	SW846 8240	10/25/94	4299078
Methylene chloride	**12**	**7.4**	**SW846 8240**	**10/25/94**	**4299078**
4-Methyl-2-pentanone	ND	74	SW846 8240	10/25/94	4299078

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	106	(85 - 138)
Toluene-d8	97	(89 - 128)
Bromofluorobenzene	92	(83 - 128)

NOTE: DRY WEIGHT
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra Environmental Services

ABB ENVIRONMENTAL SERVICES

PCY-327-SB43

WO #: A0XL0103 **DATE SAMPLED:** 10/20/94
LAB #: B4J210091-002 **DATE RECEIVED:** 10/21/94
MATRIX: SOLID

GC/MS Volatiles

2 OF 2

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Styrene	ND	7.4	SW846 8240	10/25/94	4299078
1,1,2,2-Tetrachloroethane	ND	7.4	SW846 8240	10/25/94	4299078
Tetrachloroethene	ND	7.4	SW846 8240	10/25/94	4299078
Toluene	ND	7.4	SW846 8240	10/25/94	4299078
1,1,1-Trichloroethane	ND	7.4	SW846 8240	10/25/94	4299078
1,1,2-Trichloroethane	ND	7.4	SW846 8240	10/25/94	4299078
Trichloroethene	ND	7.4	SW846 8240	10/25/94	4299078
Vinyl chloride	ND	7.4	SW846 8240	10/25/94	4299078
2-Hexanone	ND	74	SW846 8240	10/25/94	4299078
Xylenes, Total	ND	7.4	SW846 8240	10/25/94	4299078

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	106	(85 - 138)
Toluene-d8	97	(89 - 128)
Bromofluorobenzene	92	(83 - 128)

NOTE: DRY WEIGHT
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

PCY-327-SB43

WO #: A0XL0
LAB #: B4J210091-002
MATRIX: SOLID

DATE SAMPLED: 10/20/94
DATE RECEIVED: 10/21/94

- - - - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Petroleum Hydrocarbons Total Recoverable	45.7	7.4	mg/kg	MCAWW 418.1 M	10/25/94	4298059
Solids, Total (TS)	67.3	1.0	%	MCAWW 160.3 M	10/24-10/25/94	4297118

NOTE: AS RECEIVED

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

PCY-327-SB50

WO #: A0XL1103 **DATE SAMPLED:** 10/20/94
LAB #: B4J210091-003 **DATE RECEIVED:** 10/21/94
MATRIX: SOLID

GC/MS Volatiles

1 OF 2

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Acetone	**290**	**78**	**SW846 8240**	**10/25/94**	**4299078**
Benzene	ND	7.8	SW846 8240	10/25/94	4299078
Dichlorobromomethane	ND	7.8	SW846 8240	10/25/94	4299078
Bromoform	ND	7.8	SW846 8240	10/25/94	4299078
Bromomethane	ND	7.8	SW846 8240	10/25/94	4299078
2-Butanone	ND	78	SW846 8240	10/25/94	4299078
Carbon disulfide	ND	7.8	SW846 8240	10/25/94	4299078
Carbon tetrachloride	ND	7.8	SW846 8240	10/25/94	4299078
Chlorobenzene	ND	7.8	SW846 8240	10/25/94	4299078
Dibromochloromethane	ND	7.8	SW846 8240	10/25/94	4299078
Chloroethane	ND	7.8	SW846 8240	10/25/94	4299078
Chloroform	ND	7.8	SW846 8240	10/25/94	4299078
Chloromethane	ND	7.8	SW846 8240	10/25/94	4299078
1,1-Dichloroethane	ND	7.8	SW846 8240	10/25/94	4299078
1,2-Dichloroethane	ND	7.8	SW846 8240	10/25/94	4299078
1,1-Dichloroethene	ND	7.8	SW846 8240	10/25/94	4299078
1,2-Dichloroethene, Total	ND	7.8	SW846 8240	10/25/94	4299078
1,2-Dichloropropane	ND	7.8	SW846 8240	10/25/94	4299078
cis-1,3-Dichloropropene	ND	7.8	SW846 8240	10/25/94	4299078
trans-1,3-Dichloropropene	ND	7.8	SW846 8240	10/25/94	4299078
Ethylbenzene	ND	7.8	SW846 8240	10/25/94	4299078
Methylene chloride	**15**	**7.8**	**SW846 8240**	**10/25/94**	**4299078**
4-Methyl-2-pentanone	ND	78	SW846 8240	10/25/94	4299078

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	111	(85 - 138)
Toluene-d8	96	(89 - 128)
Bromofluorobenzene	96	(83 - 128)

NOTE: DRY WEIGHT
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

PCY-327-SB50

WO #: A0XL1103
LAB #: B4J210091-003
MATRIX: SOLID

DATE SAMPLED: 10/20/94
DATE RECEIVED: 10/21/94

GC/MS Volatiles

2 OF 2

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Styrene	ND	7.8	SW846 8240	10/25/94	4299078
1,1,2,2-Tetrachloroethane	ND	7.8	SW846 8240	10/25/94	4299078
Tetrachloroethene	ND	7.8	SW846 8240	10/25/94	4299078
Toluene	ND	7.8	SW846 8240	10/25/94	4299078
1,1,1-Trichloroethane	ND	7.8	SW846 8240	10/25/94	4299078
1,1,2-Trichloroethane	ND	7.8	SW846 8240	10/25/94	4299078
Trichloroethene	ND	7.8	SW846 8240	10/25/94	4299078
Vinyl chloride	ND	7.8	SW846 8240	10/25/94	4299078
2-Hexanone	ND	78	SW846 8240	10/25/94	4299078
Xylenes, Total	ND	7.8	SW846 8240	10/25/94	4299078

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	111	(85 - 138)
Toluene-d8	96	(89 - 128)
Bromofluorobenzene	96	(83 - 128)

NOTE: DRY WEIGHT
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

PCY-327-SB50

WO #: A0XL1
LAB #: B4J210091-003
MATRIX: SOLID

DATE SAMPLED: 10/20/94
DATE RECEIVED: 10/21/94

- - - - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Petroleum Hydrocarbons Total Recoverable	15.0	7.8	mg/kg	MCAWW 418.1 M	10/25/94	4298059
Solids, Total (TS)	64.4	1.0	%	MCAWW 160.3 M	10/24-10/25/94	4297118

NOTE: AS RECEIVED

Quanterra
Environmental
Services

QUALITY CONTROL SECTION

- Quality Control Summary
- Laboratory Blanks
- Laboratory Control Sample
- Matrix Spike/Matrix Spike Duplicate Results
- Sample Custody Documentation

Quanterra
Environmental
Services

QUALITY ASSURANCE / QUALITY CONTROL
PROGRAM SUMMARY

Quanterra Environmental Services considers continuous analytical method performance evaluations to be an integral portion of the data package, and routinely includes the pertinent QA/QC data associated with various analytical result reports. Brief discussions of the various QA/QC procedures utilized to measure acceptable method and matrix performance follow.

Surrogate Spike Recovery Evaluations

Known concentrations of designated surrogate spikes, consisting of a number of similar, non-method compounds or method compound analogues, are added, as appropriate, to routine GC and GC/MS sample fractions prior to extraction and analysis. The percent recovery determinations calculated from the subsequent analysis is an indication of the overall method efficiency for the individual sample. This surrogate spike recovery data is displayed alongside acceptable analytical method performance limits at the bottom of each applicable analytical result report sheet.

NOTE: Acceptable method performance for Base/Neutral Acid extractables is indicated by two (2) of three (3) surrogates for each fraction with a minimum recovery of ten (10) percent each. For Pesticides one (1) of two (2) surrogates meeting performance criteria is acceptable.

Laboratory Analytical Method Blank Evaluations

Laboratory analytical method blanks are systematically prepared and analyzed in order to continuously evaluate the system interferences and background contamination levels associated with each analytical method. These method blanks include all aspects of actual laboratory method analysis (chemical reagents, glassware, etc.), substituting laboratory reagent water or solid for actual sample. The method blank must not contain any analytes above the reported detection limit. The following common laboratory contaminants are exceptions to this rule provided they are not present at greater than five times the detection limit.

Volatiles	Semi-volatiles	Metals
Methylene chloride	Dimethyl phthalate	Calcium
Toluene	Diethly phthalate	Magnesium
2-Butanone	Di-n-butyl phthalate	Sodium
Acetone	Butyl benzyl phthalate	
	Bis (2-ethylhexyl) phthalate	

A minimum of five percent (5%) of all laboratory analyses are laboratory analytical method blanks.

Laboratory Analytical Method Check Sample Evaluations

Known concentrations of designated matrix spikes (actual analytical method compounds) are added to a laboratory reagent blank prior to extraction and analysis. Percent recovery determinations demonstrate the performance of the analytical method. Failure of a check sample to meet established laboratory recovery criteria is cause to stop the analysis until the problem is resolved.

QUALITY ASSURANCE / QUALITY CONTROL
PROGRAM SUMMARY
(cont'd)

At that time all associated samples must be re-analyzed. A minimum of five percent (5%) of all laboratory analyses are laboratory analytical method check samples.

Matrix Spike (MS)/Matrix Spike Duplicate (MSD) Recovery Evaluations

Known concentrations of designated matrix spikes (actual analytical method compounds) are added to two of three separate aliquots of a sequentially predetermined sample prior to extraction and analysis. Percent recovery determinations are calculated from both of the spiked samples by comparison to the actual values generated from the unspiked sample. These percent recovery determinations indicate the accuracy of the analysis at recovering actual analytical method compounds from the matrix. Relative percent difference determinations calculated from a comparison of the MS/MSD recoveries demonstrate the precision of the analytical method. Actual percent recovery and relative percent difference data is displayed alongside their respective acceptable analytical method performance limits in the QA/QC section of the report. The MS/MSD are considered in control when the precision is within established control limits and the associated check sample has been found to be acceptable. A minimum of ten percent (10%) of all analyses are MS/MSD quality control samples.

**********EXAMPLE**********

COMPOUND	SAMPLE CONC.	MS %REC	MSD %REC	RPD	QC LIMITS RPD	QC LIMITS RECOVERY
4,4'-DDT	0	95	112	16	22	66-119
Benzene	10	86	93	8	20	39-150

(cmpd. name)	sample result	1st% recov.	2nd% recov.	Rel.% diff.	accep. method perform range

Analytical Result Qualifiers

The following qualifiers, as defined below, may be appended to analytical results in order to allow proper interpretation of the results presented:

J - indicates an estimated concentration (typically used when a dilution, matrix interference or instrumental limitation prevents accurate quantitation of a particular analyte).

B - indicates the presence of a particular analyte in the laboratory blank analyzed concurrently with the samples. Results must be interpreted accordingly.

DIL - indicates that because of matrix interferences and/or high analyte concentrations, it was necessary to dilute the sample to a point where the surrogate or spike concentrations fell below a quantifiable amount and could not be reported.

Quanterra
Environmental Services

INTRA-LAB BLANK REPORT

LAB #: B4J260000-078

GC/MS VOLATILES

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	EXTRACTION-ANALYSIS DATE	QC BATCH
Acetone	ND	50	10/25/94	4299078
Benzene	ND	5.0	10/25/94	4299078
Dichlorobromomethane	ND	5.0	10/25/94	4299078
Bromoform	ND	5.0	10/25/94	4299078
Bromomethane	ND	5.0	10/25/94	4299078
2-Butanone	ND	50	10/25/94	4299078
Carbon disulfide	ND	5.0	10/25/94	4299078
Carbon tetrachloride	ND	5.0	10/25/94	4299078
Chlorobenzene	ND	5.0	10/25/94	4299078
Dibromochloromethane	ND	5.0	10/25/94	4299078
Chloroethane	ND	5.0	10/25/94	4299078
Chloroform	ND	5.0	10/25/94	4299078
Chloromethane	ND	5.0	10/25/94	4299078
1,1-Dichloroethane	ND	5.0	10/25/94	4299078
1,2-Dichloroethane	ND	5.0	10/25/94	4299078
1,1-Dichloroethene	ND	5.0	10/25/94	4299078
1,2-Dichloroethene, Total	ND	5.0	10/25/94	4299078
1,2-Dichloropropane	ND	5.0	10/25/94	4299078
cis-1,3-Dichloropropene	ND	5.0	10/25/94	4299078
trans-1,3-Dichloropropene	ND	5.0	10/25/94	4299078
Ethylbenzene	ND	5.0	10/25/94	4299078
2-Hexanone	ND	50	10/25/94	4299078
Methylene chloride	ND	5.0	10/25/94	4299078
4-Methyl-2-pentanone	ND	50	10/25/94	4299078

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	103	(85 - 138)
Toluene-d8	98	(89 - 128)
Bromofluorobenzene	105	(83 - 128)

NOTE:
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

INTRA-LAB BLANK REPORT

LAB #: B4J260000-078

GC/MS VOLATILES

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	EXTRACTION-ANALYSIS DATE	QC BATCH
Styrene	ND	5.0	10/25/94	4299078
1,1,2,2-Tetrachloroethane	ND	5.0	10/25/94	4299078
Tetrachloroethene	ND	5.0	10/25/94	4299078
Toluene	ND	5.0	10/25/94	4299078
1,1,1-Trichloroethane	ND	5.0	10/25/94	4299078
1,1,2-Trichloroethane	ND	5.0	10/25/94	4299078
Trichloroethene	ND	5.0	10/25/94	4299078
Vinyl chloride	ND	5.0	10/25/94	4299078
Xylenes, Total	ND	5.0	10/25/94	4299078

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	103	(85 - 138)
Toluene-d8	98	(89 - 128)
Bromofluorobenzene	105	(83 - 128)

NOTE:

ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

INTRA-LAB BLANK REPORT

LAB #: B4J250000-059

INORGANIC ANALYTICAL REPORT

PARAMETER	RESULT	REPORTING LIMIT	UNIT	PREPARATION - ANALYSIS DATE	QC BATCH
Petroleum Hydrocarbons	ND	5.0	mg/kg	10/25/94	4298059

NOTE:

ND (NONE DETECTED)

Quanterra
Environmental Services

CHECK SAMPLE REPORT

QC BATCH: 4299078
LAB #: B4J260000-078 C

PREPARATION DATE: 10/25/94
DATE ANALYZED: 10/25/94

GC/MS Volatiles

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
1,1-Dichloroethene	96	(67-120)
Benzene	101	(78-118)
Trichloroethene	108	(75-116)
Toluene	101	(77-118)
Chlorobenzene	105	(82-116)

Quanterra
Environmental Services

CHECK SAMPLE REPORT

LAB #: B4J210091

INORGANIC ANALYTICAL REPORT

COMPOUND	SPIKE PERCENT RECOVERY	LIMITS	PREPARATION - ANALYSIS DATE	Q/C BATCH
Petroleum Hydrocarbons Total Recoverable	99	(65-114)	10/25/94	4298059

Quanterra
Environmental Services

MATRIX SPIKE REPORT

QC BATCH: 4299078
LAB #: B4J210091-002 S
MATRIX: SOLID

WO #: A0XL0
PREPARATION DATE: 10/25/94
DATE ANALYZED: 10/25/94

GC/MS Volatiles

COMPOUND	SPIKE PERCENT RECOVERY	SPIKE/DUP PERCENT RECOVERY	Q/C LIMITS	RPD	RPD LIMIT
1,1-Dichloroethene	92	92	(60-145)	0.19	(0-28)
Benzene	106	106	(87-114)	0.39	(0-13)
Trichloroethene	156	189	(64-103)	19	(0-19)
Toluene	114	107	(85-109)	6.7	(0-12)
Chlorobenzene	105	107	(72-115)	1.8	(0-21)

Calculations are performed before rounding to avoid round-off errors in calculated results

ENSECO-WADSWORTH/ALERT LABORATORIES
SAMPLE SHIPPER EVALUATION AND RECEIPT FORM

Client: ABB-ES Project Name/Number: PANAMA CITY 7578-3

Samples Received By: Carol McNulty (Signature) Date Received: 10-21-94

Sample Evaluation Form By: Vince Jenero (Signature) LAB No: _____

Type of shipping container samples received in? WAL Cooler ✓

Client Cooler ____ WAL Shipper ____ Box ____ Other _____

Any "NO" responses or discrepancies should be explained in comments section.

		YES	NO
1.	Were custody seals on shipping container(s) intact?		✓
2.	Were custody papers properly included with samples?	✓	
3.	Were custody papers properly filled out (ink, signed, match labels)?	✓	
4.	Did all bottles arrive in good condition (unbroken)?	✓	
5.	Were all bottle labels complete (Sample No., date, signed, analysis preservatives)?	✓	
6.	Were correct bottles used for the tests indicated?	✓	
7.	Were proper sample preservation techniques indicated?	✓	
8.	Were samples received within adequate holding time?	✓	
9.	Were all VOA bottles checked for the presence of air bubbles? (If air bubbles were found indicate in comment section)	✓	
10.	Were samples in direct contact with wet ice? (NOTE TEMPERATURE BELOW)	✓	
11.	Were samples accepted into the laboratory? (If no see comments)	✓	

Cooler # _____ Temp 6 °C Cooler # _____ Temp _____ °C

Cooler # _____ Temp _____ °C Cooler # _____ Temp _____ °C

Comments: NO CUSTODY SEALS

JSWORTH/ALERT LABORATORIES
Sampling, testing, mobile labs

5910 Breckenridge Pkwy.
Suite H
Tampa, FL 33610

(813) 621-0784
Fax (813) 623-6021

Chain of Custody Record

Record 1 of 1

5546

Client: ABB-ES

Project Name / Location: CSS PANAMA CITY - 327

Sampler(s): Jay Koch

Project #: 7578-31

Item #	Date	Time	MATRIX	Sample Location	No. Of CON-TAINERS	Parameter: VOC	PAH	METALS	TRPH	EDB						Remarks
1	10/19/14	1450	SOIL	PCY-327-SB24	1				1							
2	10/20/14	1130	↓	PCY-327-SB43	1				1							
3	10/20/14	1300	↓	PCY-327-SB50	1				1							
4																
5																
6																
7																
8																
9																
10																
11																

Total Containers: 03

Number of Coolers in Shipment: 01

Bailers: 0

Report To: Jay Koch ABB ES

Transfer Number	Item Number(s)	Relinquished By / Company	Accepted By / Company	Date	Time

Additional Comments:

APPENDIX D

GROUNDWATER LABORATORY ANALYSES, OCTOBER 1994 THROUGH AUGUST 1995

Quanterra Environmental Services

Quanterra Incorporated
5910 Breckenridge Parkway, Suite H
Tampa, Florida 33610

813 621-0784 Telephone
813 623-6021 Fax

ANALYTICAL REPORT

PROJECT NO. 7578-31

PANAMA CITY

KAREN HARTNETT

ABB ENVIRONMENTAL SERVICES

QUANTERRA INCORPORATED
Certification Numbers: E84059,HRS84297
FDEP CompQAP: 870270G

Joanne Anderson
Project Manager

November 15, 1994

Quanterra
Environmental Services

EXECUTIVE SUMMARY - Detection Highlights

B4K080026

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD

NO DETECTABLE PARAMETERS CONTAINED IN THIS REPORT

Quanterra
Environmental Services

ANALYTICAL METHODS SUMMARY

Parameters	Methods
Volatile Organics, GC/MS	USEPA 624
Petroleum Hydrocarbons Total Recoverable	MCAWW 418.1

References:

MCAWW Methods for Chemical Analysis of Water and Wastes, EMSL: Cincinnati, OH: March 1983 and subsequent revisions

USEPA Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, 40CFR, Part 136, Appendix A, October 26,1984 and subsequent revisions

Quanterra
Environmental Services

SAMPLE SUMMARY

The analytical results of the samples listed below are presented on the following pages.

WO #	LABORATORY ID	SAMPLE IDENTIFICATION
A16VT	B4K080026-001	PCY-327-15
A16VU	B4K080026-002	TRIP BLANK

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

PCY-327-15

WO #: A16VT102
LAB #: B4K080026-001
MATRIX: WATER

DATE SAMPLED: 11/07/94
DATE RECEIVED: 11/08/94

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Acetone	ND	10	USEPA 624	11/10/94	4314102
Acetonitrile	ND	10	USEPA 624	11/10/94	4314102
Acrolein	ND	10	USEPA 624	11/10/94	4314102
Acrylonitrile	ND	10	USEPA 624	11/10/94	4314102
Benzene	ND	1.0	USEPA 624	11/10/94	4314102
Bromoform	ND	1.0	USEPA 624	11/10/94	4314102
Bromomethane	ND	1.0	USEPA 624	11/10/94	4314102
Carbon tetrachloride	ND	1.0	USEPA 624	11/10/94	4314102
Chlorobenzene	ND	1.0	USEPA 624	11/10/94	4314102
Dibromochloromethane	ND	1.0	USEPA 624	11/10/94	4314102
Chloroethane	ND	1.0	USEPA 624	11/10/94	4314102
2-Chloroethyl vinyl ether	ND	1.0	USEPA 624	11/10/94	4314102
Chloroform	ND	1.0	USEPA 624	11/10/94	4314102
Chloromethane	ND	1.0	USEPA 624	11/10/94	4314102
1,2-Dichlorobenzene	ND	1.0	USEPA 624	11/10/94	4314102
1,3-Dichlorobenzene	ND	1.0	USEPA 624	11/10/94	4314102
1,4-Dichlorobenzene	ND	1.0	USEPA 624	11/10/94	4314102
1,1-Dichloroethane	ND	1.0	USEPA 624	11/10/94	4314102
1,2-Dichloroethane	ND	1.0	USEPA 624	11/10/94	4314102
1,1-Dichloroethene	ND	1.0	USEPA 624	11/10/94	4314102
cis-1,2-Dichloroethylene	ND	1.0	USEPA 624	11/10/94	4314102
trans-1,2-Dichloro-ethylene	ND	1.0	USEPA 624	11/10/94	4314102
1,2-Dichloropropane	ND	1.0	USEPA 624	11/10/94	4314102

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane	113	(78 - 130)
Toluene-d8	103	(90 - 109)
Bromofluorobenzene	96	(81 - 117)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra

ABB ENVIRONMENTAL SERVICES

PCY-327-15

WO #: A16VT102
LAB #: B4K080026-001
MATRIX: WATER

DATE SAMPLED: 11/07/94
DATE RECEIVED: 11/08/94

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
cis-1,3-Dichloropropene	ND	1.0	USEPA 624	11/10/94	4314102
trans-1,3-Dichloropropene	ND	1.0	USEPA 624	11/10/94	4314102
Ethylbenzene	ND	1.0	USEPA 624	11/10/94	4314102
Trichlorofluoromethane	ND	1.0	USEPA 624	11/10/94	4314102
Methylene chloride	ND	1.0	USEPA 624	11/10/94	4314102
1,1,2,2-Tetrachloroethane	ND	1.0	USEPA 624	11/10/94	4314102
Tetrachlorethylene	ND	1.0	USEPA 624	11/10/94	4314102
Toluene	ND	1.0	USEPA 624	11/10/94	4314102
1,1,1-Trichloroethane	ND	1.0	USEPA 624	11/10/94	4314102
1,1,2-Trichloroethane	ND	1.0	USEPA 624	11/10/94	4314102
Trichloroethene	ND	1.0	USEPA 624	11/10/94	4314102
Vinyl chloride	ND	1.0	USEPA 624	11/10/94	4314102
Xylenes, Total	ND	1.0	USEPA 624	11/10/94	4314102

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane	113	(78 - 130)
Toluene-d8	103	(90 - 109)
Bromofluorobenzene	96	(81 - 117)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

PCY-327-15

WO #: A16VT
LAB #: B4K080026-001
MATRIX: WATER

DATE SAMPLED: 11/07/94
DATE RECEIVED: 11/08/94

INORGANIC ANALYTICAL REPORT

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Petroleum Hydrocarbons Total Recoverable	ND	1.0	mg/L	MCAWW 418.1	11/11/94	4315096

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra

ABB ENVIRONMENTAL SERVICES

TRIP BLANK

WO #: A16VU101
LAB #: B4K080026-002
MATRIX: WATER

DATE SAMPLED: 11/07/94
DATE RECEIVED: 11/08/94

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Acetone	ND	10	USEPA 624	11/10/94	4314102
Acetonitrile	ND	10	USEPA 624	11/10/94	4314102
Acrolein	ND	10	USEPA 624	11/10/94	4314102
Acrylonitrile	ND	10	USEPA 624	11/10/94	4314102
Benzene	ND	1.0	USEPA 624	11/10/94	4314102
Bromoform	ND	1.0	USEPA 624	11/10/94	4314102
Bromomethane	ND	1.0	USEPA 624	11/10/94	4314102
Carbon tetrachloride	ND	1.0	USEPA 624	11/10/94	4314102
Chlorobenzene	ND	1.0	USEPA 624	11/10/94	4314102
Dibromochloromethane	ND	1.0	USEPA 624	11/10/94	4314102
Chloroethane	ND	1.0	USEPA 624	11/10/94	4314102
2-Chloroethyl vinyl ether	ND	1.0	USEPA 624	11/10/94	4314102
Chloroform	ND	1.0	USEPA 624	11/10/94	4314102
Chloromethane	ND	1.0	USEPA 624	11/10/94	4314102
1,2-Dichlorobenzene	ND	1.0	USEPA 624	11/10/94	4314102
1,3-Dichlorobenzene	ND	1.0	USEPA 624	11/10/94	4314102
1,4-Dichlorobenzene	ND	1.0	USEPA 624	11/10/94	4314102
1,1-Dichloroethane	ND	1.0	USEPA 624	11/10/94	4314102
1,2-Dichloroethane	ND	1.0	USEPA 624	11/10/94	4314102
1,1-Dichloroethene	ND	1.0	USEPA 624	11/10/94	4314102
cis-1,2-Dichloroethylene	ND	1.0	USEPA 624	11/10/94	4314102
trans-1,2-Dichloroethylene	ND	1.0	USEPA 624	11/10/94	4314102
1,2-Dichloropropane	ND	1.0	USEPA 624	11/10/94	4314102

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane	115	(78 - 130)
Toluene-d8	102	(90 - 109)
Bromofluorobenzene	95	(81 - 117)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra Environmental Services

ABB ENVIRONMENTAL SERVICES

TRIP BLANK

WO #: A16VU101 **DATE SAMPLED:** 11/07/94
LAB #: B4K080026-002 **DATE RECEIVED:** 11/08/94
MATRIX: WATER

GC/MS Volatiles

2 OF 2

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
cis-1,3-Dichloropropene	ND	1.0	USEPA 624	11/10/94	4314102
trans-1,3-Dichloropropene	ND	1.0	USEPA 624	11/10/94	4314102
Ethylbenzene	ND	1.0	USEPA 624	11/10/94	4314102
Trichlorofluoromethane	ND	1.0	USEPA 624	11/10/94	4314102
Methylene chloride	ND	1.0	USEPA 624	11/10/94	4314102
1,1,2,2-Tetrachloroethane	ND	1.0	USEPA 624	11/10/94	4314102
Tetrachlorethylene	ND	1.0	USEPA 624	11/10/94	4314102
Toluene	ND	1.0	USEPA 624	11/10/94	4314102
1,1,1-Trichloroethane	ND	1.0	USEPA 624	11/10/94	4314102
1,1,2-Trichloroethane	ND	1.0	USEPA 624	11/10/94	4314102
Trichloroethene	ND	1.0	USEPA 624	11/10/94	4314102
Vinyl chloride	ND	1.0	USEPA 624	11/10/94	4314102
Xylenes, Total	ND	1.0	USEPA 624	11/10/94	4314102

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane	115	(78 - 130)
Toluene-d8	102	(90 - 109)
Bromofluorobenzene	95	(81 - 117)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

QUALITY CONTROL SECTION

- Quality Control Summary
- Laboratory Blanks
- Laboratory Control Sample
- Matrix Spike/Matrix Spike Duplicate Results
- Sample Custody Documentation

Quanterra
Environmental
Services

QUALITY ASSURANCE / QUALITY CONTROL
PROGRAM SUMMARY

Quanterra Environmental Services considers continuous analytical method performance evaluations to be an integral portion of the data package, and routinely includes the pertinent QA/QC data associated with various analytical result reports. Brief discussions of the various QA/QC procedures utilized to measure acceptable method and matrix performance follow.

Surrogate Spike Recovery Evaluations

Known concentrations of designated surrogate spikes, consisting of a number of similar, non-method compounds or method compound analogues, are added, as appropriate, to routine GC and GC/MS sample fractions prior to extraction and analysis. The percent recovery determinations calculated from the subsequent analysis is an indication of the overall method efficiency for the individual sample. This surrogate spike recovery data is displayed alongside acceptable analytical method performance limits at the bottom of each applicable analytical result report sheet.

NOTE: Acceptable method performance for Base/Neutral Acid extractables is indicated by two (2) of three (3) surrogates for each fraction with a minimum recovery of ten (10) percent each. For Pesticides one (1) of two (2) surrogates meeting performance criteria is acceptable.

Laboratory Analytical Method Blank Evaluations

Laboratory analytical method blanks are systematically prepared and analyzed in order to continuously evaluate the system interferences and background contamination levels associated with each analytical method. These method blanks include all aspects of actual laboratory method analysis (chemical reagents, glassware, etc.), substituting laboratory reagent water or solid for actual sample. The method blank must not contain any analytes above the reported detection limit. The following common laboratory contaminants are exceptions to this rule provided they are not present at greater than five times the detection limit.

Volatiles	Semi-volatiles	Metals
Methylene chloride	Dimethyl phthalate	Calcium
Toluene	Diethly phthalate	Magnesium
2-Butanone	Di-n-butyl phthalate	Sodium
Acetone	Butyl benzyl phthalate	
	Bis (2-ethylhexyl) phthalate	

A minimum of five percent (5%) of all laboratory analyses are laboratory analytical method blanks.

Laboratory Analytical Method Check Sample Evaluations

Known concentrations of designated matrix spikes (actual analytical method compounds) are added to a laboratory reagent blank prior to extraction and analysis. Percent recovery determinations demonstrate the performance of the analytical method. Failure of a check sample to meet established laboratory recovery criteria is cause to stop the analysis until the problem is resolved.

QUALITY ASSURANCE / QUALITY CONTROL
PROGRAM SUMMARY
(cont'd)

At that time all associated samples must be re-analyzed. A minimum of five percent (5%) of all laboratory analyses are laboratory analytical method check samples.

Matrix Spike (MS)/Matrix Spike Duplicate (MSD) Recovery Evaluations

Known concentrations of designated matrix spikes (actual analytical method compounds) are added to two of three separate aliquots of a sequentially predetermined sample prior to extraction and analysis. Percent recovery determinations are calculated from both of the spiked samples by comparison to the actual values generated from the unspiked sample. These percent recovery determinations indicate the accuracy of the analysis at recovering actual analytical method compounds from the matrix. Relative percent difference determinations calculated from a comparison of the MS/MSD recoveries demonstrate the precision of the analytical method. Actual percent recovery and relative percent difference data is displayed alongside their respective acceptable analytical method performance limits in the QA/QC section of the report. The MS/MSD are considered in control when the precision is within established control limits and the associated check sample has been found to be acceptable. A minimum of ten percent (10%) of all analyses are MS/MSD quality control samples.

**********EXAMPLE**********

COMPOUND	SAMPLE CONC.	MS %REC	MSD %REC	RPD	QC LIMITS RPD	QC LIMITS RECOVERY
4,4'-DDT	0	95	112	16	22	66-119
Benzene	10	86	93	8	20	39-150
(cmpd. name)	sample result	1st% recov.	2nd% recov.	Rel.% diff.	accep. method perform range	

Analytical Result Qualifiers

The following qualifiers, as defined below, may be appended to analytical results in order to allow proper interpretation of the results presented:

J - indicates an estimated concentration (typically used when a dilution, matrix interference or instrumental limitation prevents accurate quantitation of a particular analyte).

B - indicates the presence of a particular analyte in the laboratory blank analyzed concurrently with the samples. Results must be interpreted accordingly.

DIL - indicates that because of matrix interferences and/or high analyte concentrations, it was necessary to dilute the sample to a point where the surrogate or spike concentrations fell below a quantifiable amount and could not be reported.

Quanterra
Environmental Services

INTRA-LAB BLANK REPORT

LAB #: B4K100000-102

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
Acetone	ND	10	11/10/94	4314102
Acetonitrile	ND	10	11/10/94	4314102
Acrolein	ND	10	11/10/94	4314102
Acrylonitrile	ND	10	11/10/94	4314102
Benzene	ND	1.0	11/10/94	4314102
Bromoform	ND	1.0	11/10/94	4314102
Bromomethane	ND	1.0	11/10/94	4314102
Carbon tetrachloride	ND	1.0	11/10/94	4314102
Chlorobenzene	ND	1.0	11/10/94	4314102
Dibromochloromethane	ND	1.0	11/10/94	4314102
Chloroethane	ND	1.0	11/10/94	4314102
2-Chloroethyl vinyl ether	ND	1.0	11/10/94	4314102
Chloroform	ND	1.0	11/10/94	4314102
Chloromethane	ND	1.0	11/10/94	4314102
1,2-Dichlorobenzene	ND	1.0	11/10/94	4314102
1,3-Dichlorobenzene	ND	1.0	11/10/94	4314102
1,4-Dichlorobenzene	ND	1.0	11/10/94	4314102
1,1-Dichloroethane	ND	1.0	11/10/94	4314102
1,2-Dichloroethane	ND	1.0	11/10/94	4314102
1,1-Dichloroethene	ND	1.0	11/10/94	4314102
cis-1,2-Dichloroethylene	ND	1.0	11/10/94	4314102
trans-1,2-Dichloro-ethylene	ND	1.0	11/10/94	4314102
1,2-Dichloropropane	ND	1.0	11/10/94	4314102
cis-1,3-Dichloropropene	ND	1.0	11/10/94	4314102

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane	112	(78 - 130)
Toluene-d8	99	(90 - 109)
Bromofluorobenzene	95	(81 - 117)

NOTE:

ND (NONE DETECTED)

Quanterra

INTRA-LAB BLANK REPORT

LAB #: B4K100000-102

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
trans-1,3-Dichloropropene	ND	1.0	11/10/94	4314102
Ethylbenzene	ND	1.0	11/10/94	4314102
Trichlorofluoromethane	ND	1.0	11/10/94	4314102
Methylene chloride	ND	1.0	11/10/94	4314102
1,1,2,2-Tetrachloroethane	ND	1.0	11/10/94	4314102
Tetrachlorethylene	ND	1.0	11/10/94	4314102
Toluene	ND	1.0	11/10/94	4314102
1,1,1-Trichloroethane	ND	1.0	11/10/94	4314102
1,1,2-Trichloroethane	ND	1.0	11/10/94	4314102
Trichloroethene	ND	1.0	11/10/94	4314102
Vinyl chloride	ND	1.0	11/10/94	4314102
Xylenes, Total	ND	1.0	11/10/94	4314102

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane	112	(78 - 130)
Toluene-d8	99	(90 - 109)
Bromofluorobenzene	95	(81 - 117)

NOTE:

ND (NONE DETECTED)

Quanterra
Environmental Services

INTRA-LAB BLANK REPORT

LAB #: B4K110000-096

INORGANIC ANALYTICAL REPORT

PARAMETER	RESULT	REPORTING LIMIT	UNIT	PREPARATION - ANALYSIS DATE	QC BATCH
Petroleum Hydrocarbons	ND	1.0	mg/L	11/11/94	4315096

NOTE:

ND (NONE DETECTED)

Quanterra

LCS - DCS REPORT

QC BATCH: 4314102
LAB #: B4K100000-102 C

WO #:
PREPARATION DATE: 11/10/94
DATE ANALYZED: 11/10/94

GC/MS Volatiles

COMPOUND	LCS PERCENT RECOVERY	DCS PERCENT RECOVERY	Q/C LIMITS	RPD	RPD LIMITS
1,1-Dichloroethene	98	96	(66-120)	1.9	41
Benzene	97	98	(76-119)	0.70	19
Trichloroethene	97	101	(75-119)	4.5	18
Toluene	97	99	(76-119)	1.4	18
Chlorobenzene	101	101	(80-121)	0.54	19

Calculations are performed before rounding to avoid round-off errors in calculated results

Quanterra
Environmental Services

CHECK SAMPLE REPORT

LAB #: B4K080026

- - - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - - -

COMPOUND	SPIKE PERCENT RECOVERY	LIMITS	PREPARATION - ANALYSIS DATE	Q/C BATCH
Petroleum Hydrocarbons Total Recoverable	93	(73-122)	11/11/94	4315096

Quanterra Environmental Services, Tampa
Sample Shipper Evaluation and Receipt Form

Client: ABB Project Name/Number: 7578-31

Samples Received by: [signature] Date Received: 11/8/94
Signature

Sample Evaluation Form by: Carol McNulty
Signature

Type of shipping containers samples received in:

Quanterra cooler: X Client cooler: ____

Quanterra shipper ____ Box ____ Other ____

Any "NO" responses or discrepancies should be explained in the "Comments" section.

		Yes	No
1)	Were custody seals on shipping container(s) intact?	X	
2)	Were custody papers properly included with samples?	X	
3)	Were custody papers properly filled out (ink, signed, match labels)?	X	
4)	Did all bottles arrive in good condition (unbroken)?	X	
5)	Were all bottle labels complete (sample no., date, signed, analysis preservatives)?	X	
6)	Were correct bottles used for the tests indicated?	X	
7)	Were proper sample preservativion techniques indicated?	X	
8)	Were samples received within adequate holding times?	X	
9)	Were all VOA bottles checked for the presence of air bubbles? (If air bubbles were found, indicate in comment section)	X	
10)	Were samples in direct contact with wet ice? NOTE TEMPERATURE BELOW	X	
11)	Were samples accepted into the laboratory? (If "No", see comments)	X	

Cooler # ____ Temp 3 C Cooler # ____ Temp. ____ C

Comments: ____

Quanterra *Environmental Services* No. 66224

CLIENT CODE _____
QUOTE / SAR NUMBER 4545
Chain-of Custody Record

☐ 1) **QUANTERRA, INC.**
4101 SHUFFLE DR. N.W.
NORTH CANTON, OHIO 44720
PHONE (216) 497-9396 FAX (216) 497-0772

☐ 2) **QUANTERRA, INC.**
450 WILLIAM PITT WAY
PITTSBURGH, PA 15238
PHONE (412) 826-5477 FAX (412) 826-5571

☒ 3) **QUANTERRA, INC.**
5910 BRECKENRIDGE PKWY., STE. H
TAMPA, FL 33610
PHONE (813) 621-0784 FAX (813) 623-6021

PROJ. NO.	PROJECT NAME/LOCATION
7578-31	CSS PANAMA CITY SITE 327

SAMPLERS: *(Signature)* Jay Koch

STA. NO.	DATE	TIME	COMP.	GRAB.	STATION LOCATION	NO. OF CONTAINERS	PARAMETER: TRPH w/HCl	PARAMETER: 624 w/HCl	REMARKS
	1/7/14	1330		X	PCY-327-15	4	1	3	
	~~1/7/14~~	~~13-9~~							
					TRIP BLANK	3		3	

While the general engineering design needed for construction of the selected remediation system prepared as part of the RAP process will provide some of the information, the document will be not biddable. The RAP will also include additional design details required by the Navy, which exceed the typical requirements for FDEP.

Quanterra Environmental Services

Quanterra Incorporated
5910 Breckenridge Parkway, Suite H
Tampa, Florida 33610

813 621-0784 Telephone
813 623-6021 Fax

ANALYTICAL REPORT

PROJECT NO. 7578-31

CSS PANAMA CITY SITE 327

Karen Hartnett

ABB ENVIRONMENTAL SERVICES

QUANTERRA INCORPORATED
Certification Numbers: E84059,HRS84297
FDEP CompQAP: 870270G

Steve Tafuni
Project Manager

August 18, 1995

EXECUTIVE SUMMARY - Detection Highlights

Quanterra Environmental Services

B5H040102

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD
18G00203 07/31/95 17:15				
Methyl tert-butyl ether	2.5	1.0	ug/L	CFR136A 602
18G02203 07/31/95 18:35				
Methyl tert-butyl ether	1.2	1.0	ug/L	CFR136A 602
18GEB103 07/31/95 18:30				
Chloromethane	2.2	1.0	ug/L	CFR136A 601
18G01703 08/01/95 08:20				
Xylenes (total)	1.7	1.0	ug/L	CFR136A 602
18DP1003 08/01/95 08:30				
Xylenes (total)	1.7	1.0	ug/L	CFR136A 602
18G01603 08/01/95 09:45				
Xylenes (total)	5.0	1.0	ug/L	CFR136A 602
Lead	5.2	5.0	ug/L	MCAWW 239.2
18G02003 08/01/95 11:30				
Chloroform	1.2	1.0	ug/L	CFR136A 601
18G00103 08/01/95 12:35				
Benzene	20	5.0	ug/L	CFR136A 602
Ethylbenzene	9.9	5.0	ug/L	CFR136A 602
Methyl tert-butyl ether	6.1	5.0	ug/L	CFR136A 602
18GDP303 08/01/95 12:45				
Benzene	19	5.0	ug/L	CFR136A 602
Ethylbenzene	13	5.0	ug/L	CFR136A 602
Methyl tert-butyl ether	5.7	5.0	ug/L	CFR136A 602
18G01103 08/01/95 15:35				
Toluene	1.7	1.0	ug/L	CFR136A 602
Lead	12.3	5.0	ug/L	MCAWW 239.2
18G02103 08/01/95 16:00				

EXECUTIVE SUMMARY - Detection Highlights

Quanterra Environmental Services

B5H040102

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD
18G02103 08/01/95 16:00				
Methyl tert-butyl ether	8.7	1.0	ug/L	CFR136A 602
18G01503 08/02/95 08:20				
Methyl tert-butyl ether	1.4	1.0	ug/L	CFR136A 602
Lead	7.9	5.0	ug/L	MCAWW 239.2
18G00703 08/02/95 08:30				
Lead	16.0	5.0	ug/L	MCAWW 239.2
18G00603 08/02/95 09:00				
Methyl tert-butyl ether	2.7	1.0	ug/L	CFR136A 602
Lead	5.9	5.0	ug/L	MCAWW 239.2

ANALYTICAL METHODS SUMMARY

Quanterra Environmental Services

Parameters	Methods
Purgeable Halocarbons	CFR136A 601
Purgeable Aromatics	CFR136A 602
Lead (AA, Furnace Technique)	MCAWW 239.2

References:

CFR136A "Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SAMPLE SUMMARY

Quanterra Environmental Services

The analytical results of the samples listed below are presented on the following pages.

WO #	LABORATORY ID	SAMPLE IDENTIFICATION	DATE/TIME SAMPLED
C0H4T	B5H040102-001	18G00303	7/31/95 17:00
C0H4V	B5H040102-002	18G01003	7/31/95 16:35
C0H4W	B5H040102-003	18G00203	7/31/95 17:15
C0H50	B5H040102-004	18G00903	7/31/95 18:00
C0H51	B5H040102-005	18G00403	7/31/95 17:40
C0H52	B5H040102-006	18G02203	7/31/95 18:35
C0H53	B5H040102-007	18GEB103	7/31/95 18:30
C0H54	B5H040102-008	18G01303	7/31/95 18:20
C0H55	B5H040102-009	18G01703	8/01/95 8:20
C0H56	B5H040102-010	18DP1003	8/01/95 8:30
C0H58	B5H040102-011	18G00503	8/01/95 8:30
C0H5D	B5H040102-012	18G01603	8/01/95 9:45
C0H5E	B5H040102-013	18G01903	8/01/95 10:35
C0H5F	B5H040102-014	18G01803	8/01/95 10:15
C0H5G	B5H040102-015	18G02003	8/01/95 11:30
C0H5H	B5H040102-016	18G00803	8/01/95 11:30
C0H5J	B5H040102-017	18G00103	8/01/95 12:35
C0H5K	B5H040102-018	18GDP303	8/01/95 12:45
C0H5L	B5H040102-019	18G01403	8/01/95 12:[illegible]
C0H5M	B5H040102-020	18G01103	8/01/95 15:
C0H5N	B5H040102-021	18GDP203	8/01/95
C0H5P	B5H040102-022	18GEB203	8/01/95 15:30
C0H5Q	B5H040102-023	18G02103	8/01/95 16:00
C0H5R	B5H040102-024	TRIP BLANK 1	8/01/95
C0H5T	B5H040102-025	18G01503	8/02/95 8:20
C0H5V	B5H040102-026	18G00703	8/02/95 8:30
C0H5W	B5H040102-027	18G00603	8/02/95 9:00
C0H5X	B5H040102-028	TRIP BLANK 2	8/02/95

Quanterra Environmental Services

ABB ENVIRONMENTAL SERVICES

18G00303

WO #: C0H4T102
LAB #: B5H040102-001
MATRIX: WATER

DATE SAMPLED: 7/31/95
TIME SAMPLED: 17:00
DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromodichloromethane	ND	1.0	CFR136A 601	08/12/95	5226069
Bromoform	ND	1.0	CFR136A 601	08/12/95	5226069
Bromomethane	ND	1.0	CFR136A 601	08/12/95	5226069
Carbon tetrachloride	ND	1.0	CFR136A 601	08/12/95	5226069
Chlorobenzene	ND	1.0	CFR136A 601	08/12/95	5226069
Chloroethane	ND	1.0	CFR136A 601	08/12/95	5226069
2-Chloroethyl vinyl ether	ND	1.0	CFR136A 601	08/12/95	5226069
Chloroform	ND	1.0	CFR136A 601	08/12/95	5226069
Chloromethane	ND	1.0	CFR136A 601	08/12/95	5226069
Dibromochloromethane	ND	1.0	CFR136A 601	08/12/95	5226069
1,2-Dichlorobenzene	ND	1.0	CFR136A 601	08/12/95	5226069
1,3-Dichlorobenzene	ND	1.0	CFR136A 601	08/12/95	5226069
1,4-Dichlorobenzene	ND	1.0	CFR136A 601	08/12/95	5226069
Dichlorodifluoromethane	ND	1.0	CFR136A 601	08/12/95	5226069
1,1-Dichloroethane	ND	1.0	CFR136A 601	08/12/95	5226069
1,2-Dichloroethane	ND	1.0	CFR136A 601	08/12/95	5226069
1,1-Dichloroethene	ND	1.0	CFR136A 601	08/12/95	5226069
trans-1,2-Dichloroethene	ND	1.0	CFR136A 601	08/12/95	5226069
1,2-Dichloropropane	ND	1.0	CFR136A 601	08/12/95	5226069
cis-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/12/95	5226069
trans-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/12/95	5226069
Methylene chloride	ND	1.0	CFR136A 601	08/12/95	5226069
1,1,2,2-Tetrachloroethane	ND	1.0	CFR136A 601	08/12/95	5226069

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	101	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G00303

WO #: C0H4T102
LAB #: B5H040102-001
MATRIX: WATER

DATE SAMPLED: 7/31/95
TIME SAMPLED: 17:00
DATE RECEIVED: 8/03/95

GC Volatiles

2 OF 2

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Tetrachloroethene	ND	1.0	CFR136A 601	08/12/95	5226069
1,1,1-Trichloroethane	ND	1.0	CFR136A 601	08/12/95	5226069
1,1,2-Trichloroethane	ND	1.0	CFR136A 601	08/12/95	5226069
Trichloroethene	ND	1.0	CFR136A 601	08/12/95	5226069
Trichlorofluoromethane	ND	1.0	CFR136A 601	08/12/95	5226069
Vinyl chloride	ND	1.0	CFR136A 601	08/12/95	5226069

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	101	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G00303

WO #: C0H4T103
LAB #: B5H040102-001
MATRIX: WATER

DATE SAMPLED: 7/31/95
TIME SAMPLED: 17:00
DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Benzene	ND	1.0	CFR136A 602	08/12/95	5226070
Chlorobenzene	ND	1.0	CFR136A 602	08/12/95	5226070
1,2-Dichlorobenzene	ND	1.0	CFR136A 602	08/12/95	5226070
1,3-Dichlorobenzene	ND	1.0	CFR136A 602	08/12/95	5226070
1,4-Dichlorobenzene	ND	1.0	CFR136A 602	08/12/95	5226070
Ethylbenzene	ND	1.0	CFR136A 602	08/12/95	5226070
Toluene	ND	1.0	CFR136A 602	08/12/95	5226070
Xylenes (total)	ND	1.0	CFR136A 602	08/12/95	5226070
Methyl tert-butyl ether	ND	1.0	CFR136A 602	08/12/95	5226070

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Trifluorotoluene	101	(73 - 131)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental
Services

ABB ENVIRONMENTAL SERVICES

18G00303

WO #: C0H4T
LAB #: B5H040102-001
MATRIX: WATER

DATE SAMPLED: 7/31/95
TIME SAMPLED: 17:00
DATE RECEIVED: 8/03/95

- - - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Lead	ND	5.0	ug/L	MCAWW 239.2	8/07/95	5216109

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G01003

WO #: C0H4V102 — DATE SAMPLED: 7/31/95
LAB #: B5H040102-002 — TIME SAMPLED: 16:35
MATRIX: WATER — DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromodichloromethane	ND	1.0	CFR136A 601	08/12/95	5226069
Bromoform	ND	1.0	CFR136A 601	08/12/95	5226069
Bromomethane	ND	1.0	CFR136A 601	08/12/95	5226069
Carbon tetrachloride	ND	1.0	CFR136A 601	08/12/95	5226069
Chlorobenzene	ND	1.0	CFR136A 601	08/12/95	5226069
Chloroethane	ND	1.0	CFR136A 601	08/12/95	5226069
2-Chloroethyl vinyl ether	ND	1.0	CFR136A 601	08/12/95	5226069
Chloroform	ND	1.0	CFR136A 601	08/12/95	5226069
Chloromethane	ND	1.0	CFR136A 601	08/12/95	5226069
Dibromochloromethane	ND	1.0	CFR136A 601	08/12/95	5226069
1,2-Dichlorobenzene	ND	1.0	CFR136A 601	08/12/95	5226069
1,3-Dichlorobenzene	ND	1.0	CFR136A 601	08/12/95	5226069
1,4-Dichlorobenzene	ND	1.0	CFR136A 601	08/12/95	5226069
Dichlorodifluoromethane	ND	1.0	CFR136A 601	08/12/95	5226069
1,1-Dichloroethane	ND	1.0	CFR136A 601	08/12/95	5226069
1,2-Dichloroethane	ND	1.0	CFR136A 601	08/12/95	5226069
1,1-Dichloroethene	ND	1.0	CFR136A 601	08/12/95	5226069
trans-1,2-Dichloroethene	ND	1.0	CFR136A 601	08/12/95	5226069
1,2-Dichloropropane	ND	1.0	CFR136A 601	08/12/95	5226069
cis-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/12/95	5226069
trans-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/12/95	5226069
Methylene chloride	ND	1.0	CFR136A 601	08/12/95	5226069
1,1,2,2-Tetrachloroethane	ND	1.0	CFR136A 601	08/12/95	5226069

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	96	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G01003

WO #: C0H4V102
LAB #: B5H040102-002
MATRIX: WATER

DATE SAMPLED: 7/31/95
TIME SAMPLED: 16:35
DATE RECEIVED: 8/03/95

GC Volatiles

2 OF 2

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Tetrachloroethene	ND	1.0	CFR136A 601	08/12/95	5226069
1,1,1-Trichloroethane	ND	1.0	CFR136A 601	08/12/95	5226069
1,1,2-Trichloroethane	ND	1.0	CFR136A 601	08/12/95	5226069
Trichloroethene	ND	1.0	CFR136A 601	08/12/95	5226069
Trichlorofluoromethane	ND	1.0	CFR136A 601	08/12/95	5226069
Vinyl chloride	ND	1.0	CFR136A 601	08/12/95	5226069

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	96	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra Environmental Services

ABB ENVIRONMENTAL SERVICES

18G01003

WO #: C0H4V103
LAB #: B5H040102-002
MATRIX: WATER

DATE SAMPLED: 7/31/95
TIME SAMPLED: 16:35
DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Benzene	ND	1.0	CFR136A 602	08/12/95	5226070
Chlorobenzene	ND	1.0	CFR136A 602	08/12/95	5226070
1,2-Dichlorobenzene	ND	1.0	CFR136A 602	08/12/95	5226070
1,3-Dichlorobenzene	ND	1.0	CFR136A 602	08/12/95	5226070
1,4-Dichlorobenzene	ND	1.0	CFR136A 602	08/12/95	5226070
Ethylbenzene	ND	1.0	CFR136A 602	08/12/95	5226070
Toluene	ND	1.0	CFR136A 602	08/12/95	5226070
Xylenes (total)	ND	1.0	CFR136A 602	08/12/95	5226070
Methyl tert-butyl ether	ND	1.0	CFR136A 602	08/12/95	5226070

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Trifluorotoluene	97	(73 - 131)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G01003

WO #: C0H4V
LAB #: B5H040102-002
MATRIX: WATER

DATE SAMPLED: 7/31/95
TIME SAMPLED: 16:35
DATE RECEIVED: 8/03/95

- - - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Lead	ND	5.0	ug/L	MCAWW 239.2	8/07/95	5216109

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G00203

WO #: C0H4W102 — DATE SAMPLED: 7/31/95
LAB #: B5H040102-003 — TIME SAMPLED: 17:15
MATRIX: WATER — DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromodichloromethane	ND	1.0	CFR136A 601	08/12/95	5226069
Bromoform	ND	1.0	CFR136A 601	08/12/95	5226069
Bromomethane	ND	1.0	CFR136A 601	08/12/95	5226069
Carbon tetrachloride	ND	1.0	CFR136A 601	08/12/95	5226069
Chlorobenzene	ND	1.0	CFR136A 601	08/12/95	5226069
Chloroethane	ND	1.0	CFR136A 601	08/12/95	5226069
2-Chloroethyl vinyl ether	ND	1.0	CFR136A 601	08/12/95	5226069
Chloroform	ND	1.0	CFR136A 601	08/12/95	5226069
Chloromethane	ND	1.0	CFR136A 601	08/12/95	5226069
Dibromochloromethane	ND	1.0	CFR136A 601	08/12/95	5226069
1,2-Dichlorobenzene	ND	1.0	CFR136A 601	08/12/95	5226069
1,3-Dichlorobenzene	ND	1.0	CFR136A 601	08/12/95	5226069
1,4-Dichlorobenzene	ND	1.0	CFR136A 601	08/12/95	5226069
Dichlorodifluoromethane	ND	1.0	CFR136A 601	08/12/95	5226069
1,1-Dichloroethane	ND	1.0	CFR136A 601	08/12/95	5226069
1,2-Dichloroethane	ND	1.0	CFR136A 601	08/12/95	5226069
1,1-Dichloroethene	ND	1.0	CFR136A 601	08/12/95	5226069
trans-1,2-Dichloroethene	ND	1.0	CFR136A 601	08/12/95	5226069
1,2-Dichloropropane	ND	1.0	CFR136A 601	08/12/95	5226069
cis-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/12/95	5226069
trans-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/12/95	5226069
Methylene chloride	ND	1.0	CFR136A 601	08/12/95	5226069
1,1,2,2-Tetrachloroethane	ND	1.0	CFR136A 601	08/12/95	5226069

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	97	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G00203

WO #: C0H4W102
LAB #: B5H040102-003
MATRIX: WATER

DATE SAMPLED: 7/31/95
TIME SAMPLED: 17:15
DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Tetrachloroethene	ND	1.0	CFR136A 601	08/12/95	5226069
1,1,1-Trichloroethane	ND	1.0	CFR136A 601	08/12/95	5226069
1,1,2-Trichloroethane	ND	1.0	CFR136A 601	08/12/95	5226069
Trichloroethene	ND	1.0	CFR136A 601	08/12/95	5226069
Trichlorofluoromethane	ND	1.0	CFR136A 601	08/12/95	5226069
Vinyl chloride	ND	1.0	CFR136A 601	08/12/95	5226069

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	97	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G00203

WO #: C0H4W103 — DATE SAMPLED: 7/31/95
LAB #: B5H040102-003 — TIME SAMPLED: 17:15
MATRIX: WATER — DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Benzene	ND	1.0	CFR136A 602	08/12/95	5226070
Chlorobenzene	ND	1.0	CFR136A 602	08/12/95	5226070
1,2-Dichlorobenzene	ND	1.0	CFR136A 602	08/12/95	5226070
1,3-Dichlorobenzene	ND	1.0	CFR136A 602	08/12/95	5226070
1,4-Dichlorobenzene	ND	1.0	CFR136A 602	08/12/95	5226070
Ethylbenzene	ND	1.0	CFR136A 602	08/12/95	5226070
Toluene	ND	1.0	CFR136A 602	08/12/95	5226070
Xylenes (total)	ND	1.0	CFR136A 602	08/12/95	5226070
Methyl tert-butyl ether	**2.5**	**1.0**	**CFR136A 602**	**08/12/95**	**5226070**

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Trifluorotoluene	104	(73 - 131)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental
Services

ABB ENVIRONMENTAL SERVICES

18G00203

WO #: C0H4W
LAB #: B5H040102-003
MATRIX: WATER

DATE SAMPLED: 7/31/95
TIME SAMPLED: 17:15
DATE RECEIVED: 8/03/95

- - - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Lead	ND	5.0	ug/L	MCAWW 239.2	8/07/95	5216109

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G00903

WO #: C0H50102
LAB #: B5H040102-004
MATRIX: WATER

DATE SAMPLED: 7/31/95
TIME SAMPLED: 18:00
DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromodichloromethane	ND	1.0	CFR136A 601	08/12/95	5226069
Bromoform	ND	1.0	CFR136A 601	08/12/95	5226069
Bromomethane	ND	1.0	CFR136A 601	08/12/95	5226069
Carbon tetrachloride	ND	1.0	CFR136A 601	08/12/95	5226069
Chlorobenzene	ND	1.0	CFR136A 601	08/12/95	5226069
Chloroethane	ND	1.0	CFR136A 601	08/12/95	5226069
2-Chloroethyl vinyl ether	ND	1.0	CFR136A 601	08/12/95	5226069
Chloroform	ND	1.0	CFR136A 601	08/12/95	5226069
Chloromethane	ND	1.0	CFR136A 601	08/12/95	5226069
Dibromochloromethane	ND	1.0	CFR136A 601	08/12/95	5226069
1,2-Dichlorobenzene	ND	1.0	CFR136A 601	08/12/95	5226069
1,3-Dichlorobenzene	ND	1.0	CFR136A 601	08/12/95	5226069
1,4-Dichlorobenzene	ND	1.0	CFR136A 601	08/12/95	5226069
Dichlorodifluoromethane	ND	1.0	CFR136A 601	08/12/95	5226069
1,1-Dichloroethane	ND	1.0	CFR136A 601	08/12/95	5226069
1,2-Dichloroethane	ND	1.0	CFR136A 601	08/12/95	5226069
1,1-Dichloroethene	ND	1.0	CFR136A 601	08/12/95	5226069
trans-1,2-Dichloroethene	ND	1.0	CFR136A 601	08/12/95	5226069
1,2-Dichloropropane	ND	1.0	CFR136A 601	08/12/95	5226069
cis-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/12/95	5226069
trans-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/12/95	5226069
Methylene chloride	ND	1.0	CFR136A 601	08/12/95	5226069
1,1,2,2-Tetrachloroethane	ND	1.0	CFR136A 601	08/12/95	5226069

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	95	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G00903

WO #: C0H50102 — DATE SAMPLED: 7/31/95
LAB #: B5H040102-004 — TIME SAMPLED: 18:00
MATRIX: WATER — DATE RECEIVED: 8/03/95

GC Volatiles

2 OF 2

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Tetrachloroethene	ND	1.0	CFR136A 601	08/12/95	5226069
1,1,1-Trichloroethane	ND	1.0	CFR136A 601	08/12/95	5226069
1,1,2-Trichloroethane	ND	1.0	CFR136A 601	08/12/95	5226069
Trichloroethene	ND	1.0	CFR136A 601	08/12/95	5226069
Trichlorofluoromethane	ND	1.0	CFR136A 601	08/12/95	5226069
Vinyl chloride	ND	1.0	CFR136A 601	08/12/95	5226069

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	95	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G00903

WO #: C0H50103
LAB #: B5H040102-004
MATRIX: WATER

DATE SAMPLED: 7/31/95
TIME SAMPLED: 18:00
DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Benzene	ND	1.0	CFR136A 602	08/12/95	5226070
Chlorobenzene	ND	1.0	CFR136A 602	08/12/95	5226070
1,2-Dichlorobenzene	ND	1.0	CFR136A 602	08/12/95	5226070
1,3-Dichlorobenzene	ND	1.0	CFR136A 602	08/12/95	5226070
1,4-Dichlorobenzene	ND	1.0	CFR136A 602	08/12/95	5226070
Ethylbenzene	ND	1.0	CFR136A 602	08/12/95	5226070
Toluene	ND	1.0	CFR136A 602	08/12/95	5226070
Xylenes (total)	ND	1.0	CFR136A 602	08/12/95	5226070
Methyl tert-butyl ether	ND	1.0	CFR136A 602	08/12/95	5226070

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Trifluorotoluene	97	(73 - 131)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental
Services

ABB ENVIRONMENTAL SERVICES

18G00903

WO #: C0H50
LAB #: B5H040102-004
MATRIX: WATER

DATE SAMPLED: 7/31/95
TIME SAMPLED: 18:00
DATE RECEIVED: 8/03/95

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PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Lead	ND	5.0	ug/L	MCAWW 239.2	8/07/95	5216109

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G00403

WO #: C0H51102
LAB #: B5H040102-005
MATRIX: WATER

DATE SAMPLED: 7/31/95
TIME SAMPLED: 17:40
DATE RECEIVED: 8/03/95

GC Volatiles

1 OF 2

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromodichloromethane	ND	1.0	CFR136A 601	08/12/95	5226069
Bromoform	ND	1.0	CFR136A 601	08/12/95	5226069
Bromomethane	ND	1.0	CFR136A 601	08/12/95	5226069
Carbon tetrachloride	ND	1.0	CFR136A 601	08/12/95	5226069
Chlorobenzene	ND	1.0	CFR136A 601	08/12/95	5226069
Chloroethane	ND	1.0	CFR136A 601	08/12/95	5226069
2-Chloroethyl vinyl ether	ND	1.0	CFR136A 601	08/12/95	5226069
Chloroform	ND	1.0	CFR136A 601	08/12/95	5226069
Chloromethane	ND	1.0	CFR136A 601	08/12/95	5226069
Dibromochloromethane	ND	1.0	CFR136A 601	08/12/95	5226069
1,2-Dichlorobenzene	ND	1.0	CFR136A 601	08/12/95	5226069
1,3-Dichlorobenzene	ND	1.0	CFR136A 601	08/12/95	5226069
1,4-Dichlorobenzene	ND	1.0	CFR136A 601	08/12/95	5226069
Dichlorodifluoromethane	ND	1.0	CFR136A 601	08/12/95	5226069
1,1-Dichloroethane	ND	1.0	CFR136A 601	08/12/95	5226069
1,2-Dichloroethane	ND	1.0	CFR136A 601	08/12/95	5226069
1,1-Dichloroethene	ND	1.0	CFR136A 601	08/12/95	5226069
trans-1,2-Dichloroethene	ND	1.0	CFR136A 601	08/12/95	5226069
1,2-Dichloropropane	ND	1.0	CFR136A 601	08/12/95	5226069
cis-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/12/95	5226069
trans-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/12/95	5226069
Methylene chloride	ND	1.0	CFR136A 601	08/12/95	5226069
1,1,2,2-Tetrachloroethane	ND	1.0	CFR136A 601	08/12/95	5226069

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	103	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G00403

WO #: C0H51102 — DATE SAMPLED: 7/31/95
LAB #: B5H040102-005 — TIME SAMPLED: 17:40
MATRIX: WATER — DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Tetrachloroethene	ND	1.0	CFR136A 601	08/12/95	5226069
1,1,1-Trichloroethane	ND	1.0	CFR136A 601	08/12/95	5226069
1,1,2-Trichloroethane	ND	1.0	CFR136A 601	08/12/95	5226069
Trichloroethene	ND	1.0	CFR136A 601	08/12/95	5226069
Trichlorofluoromethane	ND	1.0	CFR136A 601	08/12/95	5226069
Vinyl chloride	ND	1.0	CFR136A 601	08/12/95	5226069

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	103	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra Environmental Services

ABB ENVIRONMENTAL SERVICES

18G00403

WO #: C0H51103
LAB #: B5H040102-005
MATRIX: WATER

DATE SAMPLED: 7/31/95
TIME SAMPLED: 17:40
DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Benzene	ND	1.0	CFR136A 602	08/12/95	5226070
Chlorobenzene	ND	1.0	CFR136A 602	08/12/95	5226070
1,2-Dichlorobenzene	ND	1.0	CFR136A 602	08/12/95	5226070
1,3-Dichlorobenzene	ND	1.0	CFR136A 602	08/12/95	5226070
1,4-Dichlorobenzene	ND	1.0	CFR136A 602	08/12/95	5226070
Ethylbenzene	ND	1.0	CFR136A 602	08/12/95	5226070
Toluene	ND	1.0	CFR136A 602	08/12/95	5226070
Xylenes (total)	ND	1.0	CFR136A 602	08/12/95	5226070
Methyl tert-butyl ether	ND	1.0	CFR136A 602	08/12/95	5226070

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Trifluorotoluene	104	(73 - 131)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental
Services

ABB ENVIRONMENTAL SERVICES

18G00403

WO #: C0H51
LAB #: B5H040102-005
MATRIX: WATER

DATE SAMPLED: 7/31/95
TIME SAMPLED: 17:40
DATE RECEIVED: 8/03/95

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PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Lead	ND	5.0	ug/L	MCAWW 239.2	8/07/95	5216109

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G02203

WO #: C0H52102 — DATE SAMPLED: 7/31/95
LAB #: B5H040102-006 — TIME SAMPLED: 18:35
MATRIX: WATER — DATE RECEIVED: 8/03/95

GC Volatiles

1 OF 2

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromodichloromethane	ND	1.0	CFR136A 601	08/12-08/13/95	5226069
Bromoform	ND	1.0	CFR136A 601	08/12-08/13/95	5226069
Bromomethane	ND	1.0	CFR136A 601	08/12-08/13/95	5226069
Carbon tetrachloride	ND	1.0	CFR136A 601	08/12-08/13/95	5226069
Chlorobenzene	ND	1.0	CFR136A 601	08/12-08/13/95	5226069
Chloroethane	ND	1.0	CFR136A 601	08/12-08/13/95	5226069
2-Chloroethyl vinyl ether	ND	1.0	CFR136A 601	08/12-08/13/95	5226069
Chloroform	ND	1.0	CFR136A 601	08/12-08/13/95	5226069
Chloromethane	ND	1.0	CFR136A 601	08/12-08/13/95	5226069
Dibromochloromethane	ND	1.0	CFR136A 601	08/12-08/13/95	5226069
1,2-Dichlorobenzene	ND	1.0	CFR136A 601	08/12-08/13/95	5226069
1,3-Dichlorobenzene	ND	1.0	CFR136A 601	08/12-08/13/95	5226069
1,4-Dichlorobenzene	ND	1.0	CFR136A 601	08/12-08/13/95	5226069
Dichlorodifluoromethane	ND	1.0	CFR136A 601	08/12-08/13/95	5226069
1,1-Dichloroethane	ND	1.0	CFR136A 601	08/12-08/13/95	5226069
1,2-Dichloroethane	ND	1.0	CFR136A 601	08/12-08/13/95	5226069
1,1-Dichloroethene	ND	1.0	CFR136A 601	08/12-08/13/95	5226069
trans-1,2-Dichloroethene	ND	1.0	CFR136A 601	08/12-08/13/95	5226069
1,2-Dichloropropane	ND	1.0	CFR136A 601	08/12-08/13/95	5226069
cis-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/12-08/13/95	5226069
trans-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/12-08/13/95	5226069
Methylene chloride	ND	1.0	CFR136A 601	08/12-08/13/95	5226069
1,1,2,2-Tetrachloroethane	ND	1.0	CFR136A 601	08/12-08/13/95	5226069

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	97	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G02203

WO #: C0H52102 — DATE SAMPLED: 7/31/95
LAB #: B5H040102-006 — TIME SAMPLED: 18:35
MATRIX: WATER — DATE RECEIVED: 8/03/95

GC Volatiles

2 OF 2

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Tetrachloroethene	ND	1.0	CFR136A 601	08/12-08/13/95	5226069
1,1,1-Trichloroethane	ND	1.0	CFR136A 601	08/12-08/13/95	5226069
1,1,2-Trichloroethane	ND	1.0	CFR136A 601	08/12-08/13/95	5226069
Trichloroethene	ND	1.0	CFR136A 601	08/12-08/13/95	5226069
Trichlorofluoromethane	ND	1.0	CFR136A 601	08/12-08/13/95	5226069
Vinyl chloride	ND	1.0	CFR136A 601	08/12-08/13/95	5226069

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	97	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G02203

WO #: C0H52103 — DATE SAMPLED: 7/31/95
LAB #: B5H040102-006 — TIME SAMPLED: 18:35
MATRIX: WATER — DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Benzene	ND	1.0	CFR136A 602	08/12-08/13/95	5226070
Chlorobenzene	ND	1.0	CFR136A 602	08/12-08/13/95	5226070
1,2-Dichlorobenzene	ND	1.0	CFR136A 602	08/12-08/13/95	5226070
1,3-Dichlorobenzene	ND	1.0	CFR136A 602	08/12-08/13/95	5226070
1,4-Dichlorobenzene	ND	1.0	CFR136A 602	08/12-08/13/95	5226070
Ethylbenzene	ND	1.0	CFR136A 602	08/12-08/13/95	5226070
Toluene	ND	1.0	CFR136A 602	08/12-08/13/95	5226070
Xylenes (total)	ND	1.0	CFR136A 602	08/12-08/13/95	5226070
Methyl tert-butyl ether	**1.2**	**1.0**	**CFR136A 602**	**08/12-08/13/95**	**5226070**

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Trifluorotoluene	101	(73 - 131)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental
Services

ABB ENVIRONMENTAL SERVICES

18G02203

WO #: C0H52
LAB #: B5H040102-006
MATRIX: WATER

DATE SAMPLED: 7/31/95
TIME SAMPLED: 18:35
DATE RECEIVED: 8/03/95

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PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Lead	ND	5.0	ug/L	MCAWW 239.2	8/07/95	5216109

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra Environmental Services

ABB ENVIRONMENTAL SERVICES

18GEB103

WO #: C0H53102
LAB #: B5H040102-007
MATRIX: WATER

DATE SAMPLED: 7/31/95
TIME SAMPLED: 18:30
DATE RECEIVED: 8/03/95

GC Volatiles

1 OF 2

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromodichloromethane	ND	1.0	CFR136A 601	08/13/95	5226069
Bromoform	ND	1.0	CFR136A 601	08/13/95	5226069
Bromomethane	ND	1.0	CFR136A 601	08/13/95	5226069
Carbon tetrachloride	ND	1.0	CFR136A 601	08/13/95	5226069
Chlorobenzene	ND	1.0	CFR136A 601	08/13/95	5226069
Chloroethane	ND	1.0	CFR136A 601	08/13/95	5226069
2-Chloroethyl vinyl ether	ND	1.0	CFR136A 601	08/13/95	5226069
Chloroform	ND	1.0	CFR136A 601	08/13/95	5226069
Chloromethane	**2.2**	**1.0**	**CFR136A 601**	**08/13/95**	**5226069**
Dibromochloromethane	ND	1.0	CFR136A 601	08/13/95	5226069
1,2-Dichlorobenzene	ND	1.0	CFR136A 601	08/13/95	5226069
1,3-Dichlorobenzene	ND	1.0	CFR136A 601	08/13/95	5226069
1,4-Dichlorobenzene	ND	1.0	CFR136A 601	08/13/95	5226069
Dichlorodifluoromethane	ND	1.0	CFR136A 601	08/13/95	5226069
1,1-Dichloroethane	ND	1.0	CFR136A 601	08/13/95	5226069
1,2-Dichloroethane	ND	1.0	CFR136A 601	08/13/95	5226069
1,1-Dichloroethene	ND	1.0	CFR136A 601	08/13/95	5226069
trans-1,2-Dichloroethene	ND	1.0	CFR136A 601	08/13/95	5226069
1,2-Dichloropropane	ND	1.0	CFR136A 601	08/13/95	5226069
cis-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/13/95	5226069
trans-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/13/95	5226069
Methylene chloride	ND	1.0	CFR136A 601	08/13/95	5226069
1,1,2,2-Tetrachloroethane	ND	1.0	CFR136A 601	08/13/95	5226069

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	99	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18GEB103

WO #: C0H53102
LAB #: B5H040102-007
MATRIX: WATER

DATE SAMPLED: 7/31/95
TIME SAMPLED: 18:30
DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Tetrachloroethene	ND	1.0	CFR136A 601	08/13/95	5226069
1,1,1-Trichloroethane	ND	1.0	CFR136A 601	08/13/95	5226069
1,1,2-Trichloroethane	ND	1.0	CFR136A 601	08/13/95	5226069
Trichloroethene	ND	1.0	CFR136A 601	08/13/95	5226069
Trichlorofluoromethane	ND	1.0	CFR136A 601	08/13/95	5226069
Vinyl chloride	ND	1.0	CFR136A 601	08/13/95	5226069

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	99	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18GEB103

WO #: C0H53103
LAB #: B5H040102-007
MATRIX: WATER

DATE SAMPLED: 7/31/95
TIME SAMPLED: 18:30
DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Benzene	ND	1.0	CFR136A 602	08/13/95	5226070
Chlorobenzene	ND	1.0	CFR136A 602	08/13/95	5226070
1,2-Dichlorobenzene	ND	1.0	CFR136A 602	08/13/95	5226070
1,3-Dichlorobenzene	ND	1.0	CFR136A 602	08/13/95	5226070
1,4-Dichlorobenzene	ND	1.0	CFR136A 602	08/13/95	5226070
Ethylbenzene	ND	1.0	CFR136A 602	08/13/95	5226070
Toluene	ND	1.0	CFR136A 602	08/13/95	5226070
Xylenes (total)	ND	1.0	CFR136A 602	08/13/95	5226070
Methyl tert-butyl ether	ND	1.0	CFR136A 602	08/13/95	5226070

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Trifluorotoluene	102	(73 - 131)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental
Services

ABB ENVIRONMENTAL SERVICES

18GEB103

WO #: C0H53
LAB #: B5H040102-007
MATRIX: WATER

DATE SAMPLED: 7/31/95
TIME SAMPLED: 18:30
DATE RECEIVED: 8/03/95

- - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Lead	ND	5.0	ug/L	MCAWW 239.2	8/07/95	5216109

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra Environmental Services

ABB ENVIRONMENTAL SERVICES

18G01303

WO #: C0H54102
LAB #: B5H040102-008
MATRIX: WATER

DATE SAMPLED: 7/31/95
TIME SAMPLED: 18:20
DATE RECEIVED: 8/03/95

GC Volatiles

1 OF 2

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromodichloromethane	ND	1.0	CFR136A 601	08/13/95	5226069
Bromoform	ND	1.0	CFR136A 601	08/13/95	5226069
Bromomethane	ND	1.0	CFR136A 601	08/13/95	5226069
Carbon tetrachloride	ND	1.0	CFR136A 601	08/13/95	5226069
Chlorobenzene	ND	1.0	CFR136A 601	08/13/95	5226069
Chloroethane	ND	1.0	CFR136A 601	08/13/95	5226069
2-Chloroethyl vinyl ether	ND	1.0	CFR136A 601	08/13/95	5226069
Chloroform	ND	1.0	CFR136A 601	08/13/95	5226069
Chloromethane	ND	1.0	CFR136A 601	08/13/95	5226069
Dibromochloromethane	ND	1.0	CFR136A 601	08/13/95	5226069
1,2-Dichlorobenzene	ND	1.0	CFR136A 601	08/13/95	5226069
1,3-Dichlorobenzene	ND	1.0	CFR136A 601	08/13/95	5226069
1,4-Dichlorobenzene	ND	1.0	CFR136A 601	08/13/95	5226069
Dichlorodifluoromethane	ND	1.0	CFR136A 601	08/13/95	5226069
1,1-Dichloroethane	ND	1.0	CFR136A 601	08/13/95	5226069
1,2-Dichloroethane	ND	1.0	CFR136A 601	08/13/95	5226069
1,1-Dichloroethene	ND	1.0	CFR136A 601	08/13/95	5226069
trans-1,2-Dichloroethene	ND	1.0	CFR136A 601	08/13/95	5226069
1,2-Dichloropropane	ND	1.0	CFR136A 601	08/13/95	5226069
cis-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/13/95	5226069
trans-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/13/95	5226069
Methylene chloride	ND	1.0	CFR136A 601	08/13/95	5226069
1,1,2,2-Tetrachloroethane	ND	1.0	CFR136A 601	08/13/95	5226069

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	102	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G01303

WO #: C0H54102 **DATE SAMPLED:** 7/31/95
LAB #: B5H040102-008 **TIME SAMPLED:** 18:20
MATRIX: WATER **DATE RECEIVED:** 8/03/95

GC Volatiles

2 OF 2

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Tetrachloroethene	ND	1.0	CFR136A 601	08/13/95	5226069
1,1,1-Trichloroethane	ND	1.0	CFR136A 601	08/13/95	5226069
1,1,2-Trichloroethane	ND	1.0	CFR136A 601	08/13/95	5226069
Trichloroethene	ND	1.0	CFR136A 601	08/13/95	5226069
Trichlorofluoromethane	ND	1.0	CFR136A 601	08/13/95	5226069
Vinyl chloride	ND	1.0	CFR136A 601	08/13/95	5226069

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	102	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G01303

WO #: C0H54103
LAB #: B5H040102-008
MATRIX: WATER

DATE SAMPLED: 7/31/95
TIME SAMPLED: 18:20
DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Benzene	ND	1.0	CFR136A 602	08/13/95	5226070
Chlorobenzene	ND	1.0	CFR136A 602	08/13/95	5226070
1,2-Dichlorobenzene	ND	1.0	CFR136A 602	08/13/95	5226070
1,3-Dichlorobenzene	ND	1.0	CFR136A 602	08/13/95	5226070
1,4-Dichlorobenzene	ND	1.0	CFR136A 602	08/13/95	5226070
Ethylbenzene	ND	1.0	CFR136A 602	08/13/95	5226070
Toluene	ND	1.0	CFR136A 602	08/13/95	5226070
Xylenes (total)	ND	1.0	CFR136A 602	08/13/95	5226070
Methyl tert-butyl ether	ND	1.0	CFR136A 602	08/13/95	5226070

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Trifluorotoluene	102	(73 - 131)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G01303

WO #: C0H54
LAB #: B5H040102-008
MATRIX: WATER

DATE SAMPLED: 7/31/95
TIME SAMPLED: 18:20
DATE RECEIVED: 8/03/95

- - - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Lead	ND	5.0	ug/L	MCAWW 239.2	8/07/95	5216109

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra Environmental Services

ABB ENVIRONMENTAL SERVICES

18G01703

WO #: C0H55102 — DATE SAMPLED: 8/01/95
LAB #: B5H040102-009 — TIME SAMPLED: 8:20
MATRIX: WATER — DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromodichloromethane	ND	1.0	CFR136A 601	08/13/95	5226069
Bromoform	ND	1.0	CFR136A 601	08/13/95	5226069
Bromomethane	ND	1.0	CFR136A 601	08/13/95	5226069
Carbon tetrachloride	ND	1.0	CFR136A 601	08/13/95	5226069
Chlorobenzene	ND	1.0	CFR136A 601	08/13/95	5226069
Chloroethane	ND	1.0	CFR136A 601	08/13/95	5226069
2-Chloroethyl vinyl ether	ND	1.0	CFR136A 601	08/13/95	5226069
Chloroform	ND	1.0	CFR136A 601	08/13/95	5226069
Chloromethane	ND	1.0	CFR136A 601	08/13/95	5226069
Dibromochloromethane	ND	1.0	CFR136A 601	08/13/95	5226069
1,2-Dichlorobenzene	ND	1.0	CFR136A 601	08/13/95	5226069
1,3-Dichlorobenzene	ND	1.0	CFR136A 601	08/13/95	5226069
1,4-Dichlorobenzene	ND	1.0	CFR136A 601	08/13/95	5226069
Dichlorodifluoromethane	ND	1.0	CFR136A 601	08/13/95	5226069
1,1-Dichloroethane	ND	1.0	CFR136A 601	08/13/95	5226069
1,2-Dichloroethane	ND	1.0	CFR136A 601	08/13/95	5226069
1,1-Dichloroethene	ND	1.0	CFR136A 601	08/13/95	5226069
trans-1,2-Dichloroethene	ND	1.0	CFR136A 601	08/13/95	5226069
1,2-Dichloropropane	ND	1.0	CFR136A 601	08/13/95	5226069
cis-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/13/95	5226069
trans-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/13/95	5226069
Methylene chloride	ND	1.0	CFR136A 601	08/13/95	5226069
1,1,2,2-Tetrachloroethane	ND	1.0	CFR136A 601	08/13/95	5226069

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	96	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G01703

WO #: C0H55102
LAB #: B5H040102-009
MATRIX: WATER

DATE SAMPLED: 8/01/95
TIME SAMPLED: 8:20
DATE RECEIVED: 8/03/95

GC Volatiles

2 OF 2

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Tetrachloroethene	ND	1.0	CFR136A 601	08/13/95	5226069
1,1,1-Trichloroethane	ND	1.0	CFR136A 601	08/13/95	5226069
1,1,2-Trichloroethane	ND	1.0	CFR136A 601	08/13/95	5226069
Trichloroethene	ND	1.0	CFR136A 601	08/13/95	5226069
Trichlorofluoromethane	ND	1.0	CFR136A 601	08/13/95	5226069
Vinyl chloride	ND	1.0	CFR136A 601	08/13/95	5226069

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	96	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G01703

WO #: C0H55103
LAB #: B5H040102-009
MATRIX: WATER

DATE SAMPLED: 8/01/95
TIME SAMPLED: 8:20
DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Benzene	ND	1.0	CFR136A 602	08/13/95	5226070
Chlorobenzene	ND	1.0	CFR136A 602	08/13/95	5226070
1,2-Dichlorobenzene	ND	1.0	CFR136A 602	08/13/95	5226070
1,3-Dichlorobenzene	ND	1.0	CFR136A 602	08/13/95	5226070
1,4-Dichlorobenzene	ND	1.0	CFR136A 602	08/13/95	5226070
Ethylbenzene	ND	1.0	CFR136A 602	08/13/95	5226070
Toluene	ND	1.0	CFR136A 602	08/13/95	5226070
Xylenes (total)	1.7	1.0	CFR136A 602	08/13/95	5226070
Methyl tert-butyl ether	ND	1.0	CFR136A 602	08/13/95	5226070

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Trifluorotoluene	100	(73 - 131)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G01703

WO #: C0H55
LAB #: B5H040102-009
MATRIX: WATER

DATE SAMPLED: 8/01/95
TIME SAMPLED: 8:20
DATE RECEIVED: 8/03/95

- - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Lead	ND	5.0	ug/L	MCAWW 239.2	8/07/95	5216109

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra Environmental Services

ABB ENVIRONMENTAL SERVICES

18DP1003

WO #: C0H56102
LAB #: B5H040102-010
MATRIX: WATER

DATE SAMPLED: 8/01/95
TIME SAMPLED: 8:30
DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromodichloromethane	ND	1.0	CFR136A 601	08/13/95	5226082
Bromoform	ND	1.0	CFR136A 601	08/13/95	5226082
Bromomethane	ND	1.0	CFR136A 601	08/13/95	5226082
Carbon tetrachloride	ND	1.0	CFR136A 601	08/13/95	5226082
Chlorobenzene	ND	1.0	CFR136A 601	08/13/95	5226082
Chloroethane	ND	1.0	CFR136A 601	08/13/95	5226082
2-Chloroethyl vinyl ether	ND	1.0	CFR136A 601	08/13/95	5226082
Chloroform	ND	1.0	CFR136A 601	08/13/95	5226082
Chloromethane	ND	1.0	CFR136A 601	08/13/95	5226082
Dibromochloromethane	ND	1.0	CFR136A 601	08/13/95	5226082
1,2-Dichlorobenzene	ND	1.0	CFR136A 601	08/13/95	5226082
1,3-Dichlorobenzene	ND	1.0	CFR136A 601	08/13/95	5226082
1,4-Dichlorobenzene	ND	1.0	CFR136A 601	08/13/95	5226082
Dichlorodifluoromethane	ND	1.0	CFR136A 601	08/13/95	5226082
1,1-Dichloroethane	ND	1.0	CFR136A 601	08/13/95	5226082
1,2-Dichloroethane	ND	1.0	CFR136A 601	08/13/95	5226082
1,1-Dichloroethene	ND	1.0	CFR136A 601	08/13/95	5226082
trans-1,2-Dichloroethene	ND	1.0	CFR136A 601	08/13/95	5226082
1,2-Dichloropropane	ND	1.0	CFR136A 601	08/13/95	5226082
cis-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/13/95	5226082
trans-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/13/95	5226082
Methylene chloride	ND	1.0	CFR136A 601	08/13/95	5226082
1,1,2,2-Tetrachloroethane	ND	1.0	CFR136A 601	08/13/95	5226082

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	93	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18DP1003

WO #: C0H56102
LAB #: B5H040102-010
MATRIX: WATER

DATE SAMPLED: 8/01/95
TIME SAMPLED: 8:30
DATE RECEIVED: 8/03/95

GC Volatiles

2 OF 2

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Tetrachloroethene	ND	1.0	CFR136A 601	08/13/95	5226082
1,1,1-Trichloroethane	ND	1.0	CFR136A 601	08/13/95	5226082
1,1,2-Trichloroethane	ND	1.0	CFR136A 601	08/13/95	5226082
Trichloroethene	ND	1.0	CFR136A 601	08/13/95	5226082
Trichlorofluoromethane	ND	1.0	CFR136A 601	08/13/95	5226082
Vinyl chloride	ND	1.0	CFR136A 601	08/13/95	5226082

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	93	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18DP1003

WO #: C0H56103
LAB #: B5H040102-010
MATRIX: WATER

DATE SAMPLED: 8/01/95
TIME SAMPLED: 8:30
DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Benzene	ND	1.0	CFR136A 602	08/13/95	5226083
Chlorobenzene	ND	1.0	CFR136A 602	08/13/95	5226083
1,2-Dichlorobenzene	ND	1.0	CFR136A 602	08/13/95	5226083
1,3-Dichlorobenzene	ND	1.0	CFR136A 602	08/13/95	5226083
1,4-Dichlorobenzene	ND	1.0	CFR136A 602	08/13/95	5226083
Ethylbenzene	ND	1.0	CFR136A 602	08/13/95	5226083
Toluene	ND	1.0	CFR136A 602	08/13/95	5226083
Xylenes (total)	1.7	1.0	CFR136A 602	08/13/95	5226083
Methyl tert-butyl ether	ND	1.0	CFR136A 602	08/13/95	5226083

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Trifluorotoluene	101	(73 - 131)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental
Services

ABB ENVIRONMENTAL SERVICES

18DP1003

WO #: C0H56
LAB #: B5H040102-010
MATRIX: WATER

DATE SAMPLED: 8/01/95
TIME SAMPLED: 8:30
DATE RECEIVED: 8/03/95

- - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Lead	ND	5.0	ug/L	MCAWW 239.2	8/07/95	5216109

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra Environmental Services

ABB ENVIRONMENTAL SERVICES

18G00503

WO #: C0H58102
LAB #: B5H040102-011
MATRIX: WATER

DATE SAMPLED: 8/01/95
TIME SAMPLED: 8:30
DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromodichloromethane	ND	1.0	CFR136A 601	08/13/95	5226082
Bromoform	ND	1.0	CFR136A 601	08/13/95	5226082
Bromomethane	ND	1.0	CFR136A 601	08/13/95	5226082
Carbon tetrachloride	ND	1.0	CFR136A 601	08/13/95	5226082
Chlorobenzene	ND	1.0	CFR136A 601	08/13/95	5226082
Chloroethane	ND	1.0	CFR136A 601	08/13/95	5226082
2-Chloroethyl vinyl ether	ND	1.0	CFR136A 601	08/13/95	5226082
Chloroform	ND	1.0	CFR136A 601	08/13/95	5226082
Chloromethane	ND	1.0	CFR136A 601	08/13/95	5226082
Dibromochloromethane	ND	1.0	CFR136A 601	08/13/95	5226082
1,2-Dichlorobenzene	ND	1.0	CFR136A 601	08/13/95	5226082
1,3-Dichlorobenzene	ND	1.0	CFR136A 601	08/13/95	5226082
1,4-Dichlorobenzene	ND	1.0	CFR136A 601	08/13/95	5226082
Dichlorodifluoromethane	ND	1.0	CFR136A 601	08/13/95	5226082
1,1-Dichloroethane	ND	1.0	CFR136A 601	08/13/95	5226082
1,2-Dichloroethane	ND	1.0	CFR136A 601	08/13/95	5226082
1,1-Dichloroethene	ND	1.0	CFR136A 601	08/13/95	5226082
trans-1,2-Dichloroethene	ND	1.0	CFR136A 601	08/13/95	5226082
1,2-Dichloropropane	ND	1.0	CFR136A 601	08/13/95	5226082
cis-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/13/95	5226082
trans-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/13/95	5226082
Methylene chloride	ND	1.0	CFR136A 601	08/13/95	5226082
1,1,2,2-Tetrachloroethane	ND	1.0	CFR136A 601	08/13/95	5226082

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	101	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra Environmental Services

ABB ENVIRONMENTAL SERVICES

18G00503

WO #: C0H58102
LAB #: B5H040102-011
MATRIX: WATER

DATE SAMPLED: 8/01/95
TIME SAMPLED: 8:30
DATE RECEIVED: 8/03/95

GC Volatiles

2 OF 2

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Tetrachloroethene	ND	1.0	CFR136A 601	08/13/95	5226082
1,1,1-Trichloroethane	ND	1.0	CFR136A 601	08/13/95	5226082
1,1,2-Trichloroethane	ND	1.0	CFR136A 601	08/13/95	5226082
Trichloroethene	ND	1.0	CFR136A 601	08/13/95	5226082
Trichlorofluoromethane	ND	1.0	CFR136A 601	08/13/95	5226082
Vinyl chloride	ND	1.0	CFR136A 601	08/13/95	5226082

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	101	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G00503

WO #: C0H58103
LAB #: B5H040102-011
MATRIX: WATER

DATE SAMPLED: 8/01/95
TIME SAMPLED: 8:30
DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Benzene	ND	1.0	CFR136A 602	08/13/95	5226083
Chlorobenzene	ND	1.0	CFR136A 602	08/13/95	5226083
1,2-Dichlorobenzene	ND	1.0	CFR136A 602	08/13/95	5226083
1,3-Dichlorobenzene	ND	1.0	CFR136A 602	08/13/95	5226083
1,4-Dichlorobenzene	ND	1.0	CFR136A 602	08/13/95	5226083
Ethylbenzene	ND	1.0	CFR136A 602	08/13/95	5226083
Toluene	ND	1.0	CFR136A 602	08/13/95	5226083
Xylenes (total)	ND	1.0	CFR136A 602	08/13/95	5226083
Methyl tert-butyl ether	ND	1.0	CFR136A 602	08/13/95	5226083

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Trifluorotoluene	105	(73 - 131)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G00503

WO #: C0H58
LAB #: B5H040102-011
MATRIX: WATER

DATE SAMPLED: 8/01/95
TIME SAMPLED: 8:30
DATE RECEIVED: 8/03/95

- - - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Lead	ND	5.0	ug/L	MCAWW 239.2	8/07/95	5216109

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G01603

WO #: C0H5D102 — DATE SAMPLED: 8/01/95
LAB #: B5H040102-012 — TIME SAMPLED: 9:45
MATRIX: WATER — DATE RECEIVED: 8/03/95

GC Volatiles

1 OF 2

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromodichloromethane	ND	1.0	CFR136A 601	08/13/95	5226082
Bromoform	ND	1.0	CFR136A 601	08/13/95	5226082
Bromomethane	ND	1.0	CFR136A 601	08/13/95	5226082
Carbon tetrachloride	ND	1.0	CFR136A 601	08/13/95	5226082
Chlorobenzene	ND	1.0	CFR136A 601	08/13/95	5226082
Chloroethane	ND	1.0	CFR136A 601	08/13/95	5226082
2-Chloroethyl vinyl ether	ND	1.0	CFR136A 601	08/13/95	5226082
Chloroform	ND	1.0	CFR136A 601	08/13/95	5226082
Chloromethane	ND	1.0	CFR136A 601	08/13/95	5226082
Dibromochloromethane	ND	1.0	CFR136A 601	08/13/95	5226082
1,2-Dichlorobenzene	ND	1.0	CFR136A 601	08/13/95	5226082
1,3-Dichlorobenzene	ND	1.0	CFR136A 601	08/13/95	5226082
1,4-Dichlorobenzene	ND	1.0	CFR136A 601	08/13/95	5226082
Dichlorodifluoromethane	ND	1.0	CFR136A 601	08/13/95	5226082
1,1-Dichloroethane	ND	1.0	CFR136A 601	08/13/95	5226082
1,2-Dichloroethane	ND	1.0	CFR136A 601	08/13/95	5226082
1,1-Dichloroethene	ND	1.0	CFR136A 601	08/13/95	5226082
trans-1,2-Dichloroethene	ND	1.0	CFR136A 601	08/13/95	5226082
1,2-Dichloropropane	ND	1.0	CFR136A 601	08/13/95	5226082
cis-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/13/95	5226082
trans-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/13/95	5226082
Methylene chloride	ND	1.0	CFR136A 601	08/13/95	5226082
1,1,2,2-Tetrachloroethane	ND	1.0	CFR136A 601	08/13/95	5226082

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	99	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G01603

WO #: C0H5D102
LAB #: B5H040102-012
MATRIX: WATER

DATE SAMPLED: 8/01/95
TIME SAMPLED: 9:45
DATE RECEIVED: 8/03/95

GC Volatiles

2 OF 2

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Tetrachloroethene	ND	1.0	CFR136A 601	08/13/95	5226082
1,1,1-Trichloroethane	ND	1.0	CFR136A 601	08/13/95	5226082
1,1,2-Trichloroethane	ND	1.0	CFR136A 601	08/13/95	5226082
Trichloroethene	ND	1.0	CFR136A 601	08/13/95	5226082
Trichlorofluoromethane	ND	1.0	CFR136A 601	08/13/95	5226082
Vinyl chloride	ND	1.0	CFR136A 601	08/13/95	5226082

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	99	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G01603

WO #: C0H5D103 — DATE SAMPLED: 8/01/95
LAB #: B5H040102-012 — TIME SAMPLED: 9:45
MATRIX: WATER — DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Benzene	ND	1.0	CFR136A 602	08/13/95	5226083
Chlorobenzene	ND	1.0	CFR136A 602	08/13/95	5226083
1,2-Dichlorobenzene	ND	1.0	CFR136A 602	08/13/95	5226083
1,3-Dichlorobenzene	ND	1.0	CFR136A 602	08/13/95	5226083
1,4-Dichlorobenzene	ND	1.0	CFR136A 602	08/13/95	5226083
Ethylbenzene	ND	1.0	CFR136A 602	08/13/95	5226083
Toluene	ND	1.0	CFR136A 602	08/13/95	5226083
Xylenes (total)	5.0	1.0	CFR136A 602	08/13/95	5226083
Methyl tert-butyl ether	ND	1.0	CFR136A 602	08/13/95	5226083

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Trifluorotoluene	100	(73 - 131)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G01603

WO #: C0H5D
LAB #: B5H040102-012
MATRIX: WATER

DATE SAMPLED: 8/01/95
TIME SAMPLED: 9:45
DATE RECEIVED: 8/03/95

REQUESTED METALS

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Lead	5.2	5.0	ug/L	MCAWW 239.2	8/07/95	5216109

NOTE: AS RECEIVED

Quanterra Environmental Services

ABB ENVIRONMENTAL SERVICES

18G01903

WO #: C0H5E102 | DATE SAMPLED: 8/01/95
LAB #: B5H040102-013 | TIME SAMPLED: 10:35
MATRIX: WATER | DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromodichloromethane	ND	1.0	CFR136A 601	08/13/95	5226082
Bromoform	ND	1.0	CFR136A 601	08/13/95	5226082
Bromomethane	ND	1.0	CFR136A 601	08/13/95	5226082
Carbon tetrachloride	ND	1.0	CFR136A 601	08/13/95	5226082
Chlorobenzene	ND	1.0	CFR136A 601	08/13/95	5226082
Chloroethane	ND	1.0	CFR136A 601	08/13/95	5226082
2-Chloroethyl vinyl ether	ND	1.0	CFR136A 601	08/13/95	5226082
Chloroform	ND	1.0	CFR136A 601	08/13/95	5226082
Chloromethane	ND	1.0	CFR136A 601	08/13/95	5226082
Dibromochloromethane	ND	1.0	CFR136A 601	08/13/95	5226082
1,2-Dichlorobenzene	ND	1.0	CFR136A 601	08/13/95	5226082
1,3-Dichlorobenzene	ND	1.0	CFR136A 601	08/13/95	5226082
1,4-Dichlorobenzene	ND	1.0	CFR136A 601	08/13/95	5226082
Dichlorodifluoromethane	ND	1.0	CFR136A 601	08/13/95	5226082
1,1-Dichloroethane	ND	1.0	CFR136A 601	08/13/95	5226082
1,2-Dichloroethane	ND	1.0	CFR136A 601	08/13/95	5226082
1,1-Dichloroethene	ND	1.0	CFR136A 601	08/13/95	5226082
trans-1,2-Dichloroethene	ND	1.0	CFR136A 601	08/13/95	5226082
1,2-Dichloropropane	ND	1.0	CFR136A 601	08/13/95	5226082
cis-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/13/95	5226082
trans-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/13/95	5226082
Methylene chloride	ND	1.0	CFR136A 601	08/13/95	5226082
1,1,2,2-Tetrachloroethane	ND	1.0	CFR136A 601	08/13/95	5226082

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	95	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G01903

WO #: C0H5E102 — DATE SAMPLED: 8/01/95
LAB #: B5H040102-013 — TIME SAMPLED: 10:35
MATRIX: WATER — DATE RECEIVED: 8/03/95

GC Volatiles

2 OF 2

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Tetrachloroethene	ND	1.0	CFR136A 601	08/13/95	5226082
1,1,1-Trichloroethane	ND	1.0	CFR136A 601	08/13/95	5226082
1,1,2-Trichloroethane	ND	1.0	CFR136A 601	08/13/95	5226082
Trichloroethene	ND	1.0	CFR136A 601	08/13/95	5226082
Trichlorofluoromethane	ND	1.0	CFR136A 601	08/13/95	5226082
Vinyl chloride	ND	1.0	CFR136A 601	08/13/95	5226082

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	95	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G01903

WO #: C0H5E103
LAB #: B5H040102-013
MATRIX: WATER

DATE SAMPLED: 8/01/95
TIME SAMPLED: 10:35
DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Benzene	ND	1.0	CFR136A 602	08/13/95	5226083
Chlorobenzene	ND	1.0	CFR136A 602	08/13/95	5226083
1,2-Dichlorobenzene	ND	1.0	CFR136A 602	08/13/95	5226083
1,3-Dichlorobenzene	ND	1.0	CFR136A 602	08/13/95	5226083
1,4-Dichlorobenzene	ND	1.0	CFR136A 602	08/13/95	5226083
Ethylbenzene	ND	1.0	CFR136A 602	08/13/95	5226083
Toluene	ND	1.0	CFR136A 602	08/13/95	5226083
Xylenes (total)	ND	1.0	CFR136A 602	08/13/95	5226083
Methyl tert-butyl ether	ND	1.0	CFR136A 602	08/13/95	5226083

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Trifluorotoluene	98	(73 - 131)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G01903

WO #: C0H5E
LAB #: B5H040102-013
MATRIX: WATER

DATE SAMPLED: 8/01/95
TIME SAMPLED: 10:35
DATE RECEIVED: 8/03/95

- - - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Lead	ND	5.0	ug/L	MCAWW 239.2	8/07/95	5216109

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G01803

WO #: C0H5F102
LAB #: B5H040102-014
MATRIX: WATER

DATE SAMPLED: 8/01/95
TIME SAMPLED: 10:15
DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromodichloromethane	ND	1.0	CFR136A 601	08/13/95	5226082
Bromoform	ND	1.0	CFR136A 601	08/13/95	5226082
Bromomethane	ND	1.0	CFR136A 601	08/13/95	5226082
Carbon tetrachloride	ND	1.0	CFR136A 601	08/13/95	5226082
Chlorobenzene	ND	1.0	CFR136A 601	08/13/95	5226082
Chloroethane	ND	1.0	CFR136A 601	08/13/95	5226082
2-Chloroethyl vinyl ether	ND	1.0	CFR136A 601	08/13/95	5226082
Chloroform	ND	1.0	CFR136A 601	08/13/95	5226082
Chloromethane	ND	1.0	CFR136A 601	08/13/95	5226082
Dibromochloromethane	ND	1.0	CFR136A 601	08/13/95	5226082
1,2-Dichlorobenzene	ND	1.0	CFR136A 601	08/13/95	5226082
1,3-Dichlorobenzene	ND	1.0	CFR136A 601	08/13/95	5226082
1,4-Dichlorobenzene	ND	1.0	CFR136A 601	08/13/95	5226082
Dichlorodifluoromethane	ND	1.0	CFR136A 601	08/13/95	5226082
1,1-Dichloroethane	ND	1.0	CFR136A 601	08/13/95	5226082
1,2-Dichloroethane	ND	1.0	CFR136A 601	08/13/95	5226082
1,1-Dichloroethene	ND	1.0	CFR136A 601	08/13/95	5226082
trans-1,2-Dichloroethene	ND	1.0	CFR136A 601	08/13/95	5226082
1,2-Dichloropropane	ND	1.0	CFR136A 601	08/13/95	5226082
cis-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/13/95	5226082
trans-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/13/95	5226082
Methylene chloride	ND	1.0	CFR136A 601	08/13/95	5226082
1,1,2,2-Tetrachloroethane	ND	1.0	CFR136A 601	08/13/95	5226082

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	93	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G01803

WO #: C0H5F102 — DATE SAMPLED: 8/01/95
LAB #: B5H040102-014 — TIME SAMPLED: 10:15
MATRIX: WATER — DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Tetrachloroethene	ND	1.0	CFR136A 601	08/13/95	5226082
1,1,1-Trichloroethane	ND	1.0	CFR136A 601	08/13/95	5226082
1,1,2-Trichloroethane	ND	1.0	CFR136A 601	08/13/95	5226082
Trichloroethene	ND	1.0	CFR136A 601	08/13/95	5226082
Trichlorofluoromethane	ND	1.0	CFR136A 601	08/13/95	5226082
Vinyl chloride	ND	1.0	CFR136A 601	08/13/95	5226082

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	93	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra Environmental Services

ABB ENVIRONMENTAL SERVICES

18G01803

WO #: C0H5F103
LAB #: B5H040102-014
MATRIX: WATER

DATE SAMPLED: 8/01/95
TIME SAMPLED: 10:15
DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Benzene	ND	1.0	CFR136A 602	08/13/95	5226083
Chlorobenzene	ND	1.0	CFR136A 602	08/13/95	5226083
1,2-Dichlorobenzene	ND	1.0	CFR136A 602	08/13/95	5226083
1,3-Dichlorobenzene	ND	1.0	CFR136A 602	08/13/95	5226083
1,4-Dichlorobenzene	ND	1.0	CFR136A 602	08/13/95	5226083
Ethylbenzene	ND	1.0	CFR136A 602	08/13/95	5226083
Toluene	ND	1.0	CFR136A 602	08/13/95	5226083
Xylenes (total)	ND	1.0	CFR136A 602	08/13/95	5226083
Methyl tert-butyl ether	ND	1.0	CFR136A 602	08/13/95	5226083

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Trifluorotoluene	94	(73 - 131)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental
Services

ABB ENVIRONMENTAL SERVICES

18G01803

WO #: C0H5F
LAB #: B5H040102-014
MATRIX: WATER

DATE SAMPLED: 8/01/95
TIME SAMPLED: 10:15
DATE RECEIVED: 8/03/95

- - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Lead	ND	5.0	ug/L	MCAWW 239.2	8/07/95	5216109

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra Environmental Services

ABB ENVIRONMENTAL SERVICES

18G02003

WO #: C0H5G102 | DATE SAMPLED: 8/01/95
LAB #: B5H040102-015 | TIME SAMPLED: 11:30
MATRIX: WATER | DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromodichloromethane	ND	1.0	CFR136A 601	08/13/95	5226082
Bromoform	ND	1.0	CFR136A 601	08/13/95	5226082
Bromomethane	ND	1.0	CFR136A 601	08/13/95	5226082
Carbon tetrachloride	ND	1.0	CFR136A 601	08/13/95	5226082
Chlorobenzene	ND	1.0	CFR136A 601	08/13/95	5226082
Chloroethane	ND	1.0	CFR136A 601	08/13/95	5226082
2-Chloroethyl vinyl ether	ND	1.0	CFR136A 601	08/13/95	5226082
Chloroform	1.2	1.0	CFR136A 601	08/13/95	5226082
Chloromethane	ND	1.0	CFR136A 601	08/13/95	5226082
Dibromochloromethane	ND	1.0	CFR136A 601	08/13/95	5226082
1,2-Dichlorobenzene	ND	1.0	CFR136A 601	08/13/95	5226082
1,3-Dichlorobenzene	ND	1.0	CFR136A 601	08/13/95	5226082
1,4-Dichlorobenzene	ND	1.0	CFR136A 601	08/13/95	5226082
Dichlorodifluoromethane	ND	1.0	CFR136A 601	08/13/95	5226082
1,1-Dichloroethane	ND	1.0	CFR136A 601	08/13/95	5226082
1,2-Dichloroethane	ND	1.0	CFR136A 601	08/13/95	5226082
1,1-Dichloroethene	ND	1.0	CFR136A 601	08/13/95	5226082
trans-1,2-Dichloroethene	ND	1.0	CFR136A 601	08/13/95	5226082
1,2-Dichloropropane	ND	1.0	CFR136A 601	08/13/95	5226082
cis-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/13/95	5226082
trans-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/13/95	5226082
Methylene chloride	ND	1.0	CFR136A 601	08/13/95	5226082
1,1,2,2-Tetrachloroethane	ND	1.0	CFR136A 601	08/13/95	5226082

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	103	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G02003

WO #: C0H5G102 **DATE SAMPLED:** 8/01/95
LAB #: B5H040102-015 **TIME SAMPLED:** 11:30
MATRIX: WATER **DATE RECEIVED:** 8/03/95

GC Volatiles

2 OF 2

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Tetrachloroethene	ND	1.0	CFR136A 601	08/13/95	5226082
1,1,1-Trichloroethane	ND	1.0	CFR136A 601	08/13/95	5226082
1,1,2-Trichloroethane	ND	1.0	CFR136A 601	08/13/95	5226082
Trichloroethene	ND	1.0	CFR136A 601	08/13/95	5226082
Trichlorofluoromethane	ND	1.0	CFR136A 601	08/13/95	5226082
Vinyl chloride	ND	1.0	CFR136A 601	08/13/95	5226082

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	103	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G02003

WO #: C0H5G103
LAB #: B5H040102-015
MATRIX: WATER

DATE SAMPLED: 8/01/95
TIME SAMPLED: 11:30
DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Benzene	ND	1.0	CFR136A 602	08/13/95	5226083
Chlorobenzene	ND	1.0	CFR136A 602	08/13/95	5226083
1,2-Dichlorobenzene	ND	1.0	CFR136A 602	08/13/95	5226083
1,3-Dichlorobenzene	ND	1.0	CFR136A 602	08/13/95	5226083
1,4-Dichlorobenzene	ND	1.0	CFR136A 602	08/13/95	5226083
Ethylbenzene	ND	1.0	CFR136A 602	08/13/95	5226083
Toluene	ND	1.0	CFR136A 602	08/13/95	5226083
Xylenes (total)	ND	1.0	CFR136A 602	08/13/95	5226083
Methyl tert-butyl ether	ND	1.0	CFR136A 602	08/13/95	5226083

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Trifluorotoluene	100	(73 - 131)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G02003

WO #: C0H5G
LAB #: B5H040102-015
MATRIX: WATER

DATE SAMPLED: 8/01/95
TIME SAMPLED: 11:30
DATE RECEIVED: 8/03/95

REQUESTED METALS

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Lead	ND	5.0	ug/L	MCAWW 239.2	8/07/95	5216109

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G00803

WO #: C0H5H102 — DATE SAMPLED: 8/01/95
LAB #: B5H040102-016 — TIME SAMPLED: 11:30
MATRIX: WATER — DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromodichloromethane	ND	1.0	CFR136A 601	08/13/95	5226082
Bromoform	ND	1.0	CFR136A 601	08/13/95	5226082
Bromomethane	ND	1.0	CFR136A 601	08/13/95	5226082
Carbon tetrachloride	ND	1.0	CFR136A 601	08/13/95	5226082
Chlorobenzene	ND	1.0	CFR136A 601	08/13/95	5226082
Chloroethane	ND	1.0	CFR136A 601	08/13/95	5226082
2-Chloroethyl vinyl ether	ND	1.0	CFR136A 601	08/13/95	5226082
Chloroform	ND	1.0	CFR136A 601	08/13/95	5226082
Chloromethane	ND	1.0	CFR136A 601	08/13/95	5226082
Dibromochloromethane	ND	1.0	CFR136A 601	08/13/95	5226082
1,2-Dichlorobenzene	ND	1.0	CFR136A 601	08/13/95	5226082
1,3-Dichlorobenzene	ND	1.0	CFR136A 601	08/13/95	5226082
1,4-Dichlorobenzene	ND	1.0	CFR136A 601	08/13/95	5226082
Dichlorodifluoromethane	ND	1.0	CFR136A 601	08/13/95	5226082
1,1-Dichloroethane	ND	1.0	CFR136A 601	08/13/95	5226082
1,2-Dichloroethane	ND	1.0	CFR136A 601	08/13/95	5226082
1,1-Dichloroethene	ND	1.0	CFR136A 601	08/13/95	5226082
trans-1,2-Dichloroethene	ND	1.0	CFR136A 601	08/13/95	5226082
1,2-Dichloropropane	ND	1.0	CFR136A 601	08/13/95	5226082
cis-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/13/95	5226082
trans-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/13/95	5226082
Methylene chloride	ND	1.0	CFR136A 601	08/13/95	5226082
1,1,2,2-Tetrachloroethane	ND	1.0	CFR136A 601	08/13/95	5226082

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	105	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G00803

WO #: C0H5H102
LAB #: B5H040102-016
MATRIX: WATER

DATE SAMPLED: 8/01/95
TIME SAMPLED: 11:30
DATE RECEIVED: 8/03/95

GC Volatiles

2 OF 2

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Tetrachloroethene	ND	1.0	CFR136A 601	08/13/95	5226082
1,1,1-Trichloroethane	ND	1.0	CFR136A 601	08/13/95	5226082
1,1,2-Trichloroethane	ND	1.0	CFR136A 601	08/13/95	5226082
Trichloroethene	ND	1.0	CFR136A 601	08/13/95	5226082
Trichlorofluoromethane	ND	1.0	CFR136A 601	08/13/95	5226082
Vinyl chloride	ND	1.0	CFR136A 601	08/13/95	5226082

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	105	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra Environmental Services

ABB ENVIRONMENTAL SERVICES

18G00803

WO #: C0H5H103
LAB #: B5H040102-016
MATRIX: WATER

DATE SAMPLED: 8/01/95
TIME SAMPLED: 11:30
DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Benzene	ND	1.0	CFR136A 602	08/13/95	5226083
Chlorobenzene	ND	1.0	CFR136A 602	08/13/95	5226083
1,2-Dichlorobenzene	ND	1.0	CFR136A 602	08/13/95	5226083
1,3-Dichlorobenzene	ND	1.0	CFR136A 602	08/13/95	5226083
1,4-Dichlorobenzene	ND	1.0	CFR136A 602	08/13/95	5226083
Ethylbenzene	ND	1.0	CFR136A 602	08/13/95	5226083
Toluene	ND	1.0	CFR136A 602	08/13/95	5226083
Xylenes (total)	ND	1.0	CFR136A 602	08/13/95	5226083
Methyl tert-butyl ether	ND	1.0	CFR136A 602	08/13/95	5226083

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Trifluorotoluene	99	(73 - 131)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G00803

WO #: C0H5H
LAB #: B5H040102-016
MATRIX: WATER

DATE SAMPLED: 8/01/95
TIME SAMPLED: 11:30
DATE RECEIVED: 8/03/95

- - - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Lead	ND	5.0	ug/L	MCAWW 239.2	8/07/95	5216109

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G00103

WO #: C0H5J102
LAB #: B5H040102-017
MATRIX: WATER

DATE SAMPLED: 8/01/95
TIME SAMPLED: 12:35
DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromodichloromethane	ND	5.0	CFR136A 601	08/13/95	5226082
Bromoform	ND	5.0	CFR136A 601	08/13/95	5226082
Bromomethane	ND	5.0	CFR136A 601	08/13/95	5226082
Carbon tetrachloride	ND	5.0	CFR136A 601	08/13/95	5226082
Chlorobenzene	ND	5.0	CFR136A 601	08/13/95	5226082
Chloroethane	ND	5.0	CFR136A 601	08/13/95	5226082
2-Chloroethyl vinyl ether	ND	5.0	CFR136A 601	08/13/95	5226082
Chloroform	ND	5.0	CFR136A 601	08/13/95	5226082
Chloromethane	ND	5.0	CFR136A 601	08/13/95	5226082
Dibromochloromethane	ND	5.0	CFR136A 601	08/13/95	5226082
1,2-Dichlorobenzene	ND	5.0	CFR136A 601	08/13/95	5226082
1,3-Dichlorobenzene	ND	5.0	CFR136A 601	08/13/95	5226082
1,4-Dichlorobenzene	ND	5.0	CFR136A 601	08/13/95	5226082
Dichlorodifluoromethane	ND	5.0	CFR136A 601	08/13/95	5226082
1,1-Dichloroethane	ND	5.0	CFR136A 601	08/13/95	5226082
1,2-Dichloroethane	ND	5.0	CFR136A 601	08/13/95	5226082
1,1-Dichloroethene	ND	5.0	CFR136A 601	08/13/95	5226082
trans-1,2-Dichloroethene	ND	5.0	CFR136A 601	08/13/95	5226082
1,2-Dichloropropane	ND	5.0	CFR136A 601	08/13/95	5226082
cis-1,3-Dichloropropene	ND	5.0	CFR136A 601	08/13/95	5226082
trans-1,3-Dichloropropene	ND	5.0	CFR136A 601	08/13/95	5226082
Methylene chloride	ND	5.0	CFR136A 601	08/13/95	5226082
1,1,2,2-Tetrachloroethane	ND	5.0	CFR136A 601	08/13/95	5226082

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	101	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G00103

WO #: C0H5J102 — DATE SAMPLED: 8/01/95
LAB #: B5H040102-017 — TIME SAMPLED: 12:35
MATRIX: WATER — DATE RECEIVED: 8/03/95

GC Volatiles

2 OF 2

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Tetrachloroethene	ND	5.0	CFR136A 601	08/13/95	5226082
1,1,1-Trichloroethane	ND	5.0	CFR136A 601	08/13/95	5226082
1,1,2-Trichloroethane	ND	5.0	CFR136A 601	08/13/95	5226082
Trichloroethene	ND	5.0	CFR136A 601	08/13/95	5226082
Trichlorofluoromethane	ND	5.0	CFR136A 601	08/13/95	5226082
Vinyl chloride	ND	5.0	CFR136A 601	08/13/95	5226082

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	101	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G00103

WO #: C0H5J103 — DATE SAMPLED: 8/01/95
LAB #: B5H040102-017 — TIME SAMPLED: 12:35
MATRIX: WATER — DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Benzene	20	5.0	CFR136A 602	08/13/95	5226083
Chlorobenzene	ND	5.0	CFR136A 602	08/13/95	5226083
1,2-Dichlorobenzene	ND	5.0	CFR136A 602	08/13/95	5226083
1,3-Dichlorobenzene	ND	5.0	CFR136A 602	08/13/95	5226083
1,4-Dichlorobenzene	ND	5.0	CFR136A 602	08/13/95	5226083
Ethylbenzene	9.9	5.0	CFR136A 602	08/13/95	5226083
Toluene	ND	5.0	CFR136A 602	08/13/95	5226083
Xylenes (total)	ND	5.0	CFR136A 602	08/13/95	5226083
Methyl tert-butyl ether	6.1	5.0	CFR136A 602	08/13/95	5226083

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Trifluorotoluene	101	(73 - 131)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental
Services

ABB ENVIRONMENTAL SERVICES

18G00103

WO #: C0H5J
LAB #: B5H040102-017
MATRIX: WATER

DATE SAMPLED: 8/01/95
TIME SAMPLED: 12:35
DATE RECEIVED: 8/03/95

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PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Lead	ND	5.0	ug/L	MCAWW 239.2	8/07/95	5216109

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18GDP303

WO #: C0H5K102 **DATE SAMPLED:** 8/01/95
LAB #: B5H040102-018 **TIME SAMPLED:** 12:45
MATRIX: WATER **DATE RECEIVED:** 8/03/95

GC Volatiles

1 OF 2

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromodichloromethane	ND	5.0	CFR136A 601	08/14/95	5226088
Bromoform	ND	5.0	CFR136A 601	08/14/95	5226088
Bromomethane	ND	5.0	CFR136A 601	08/14/95	5226088
Carbon tetrachloride	ND	5.0	CFR136A 601	08/14/95	5226088
Chlorobenzene	ND	5.0	CFR136A 601	08/14/95	5226088
Chloroethane	ND	5.0	CFR136A 601	08/14/95	5226088
2-Chloroethyl vinyl ether	ND	5.0	CFR136A 601	08/14/95	5226088
Chloroform	ND	5.0	CFR136A 601	08/14/95	5226088
Chloromethane	ND	5.0	CFR136A 601	08/14/95	5226088
Dibromochloromethane	ND	5.0	CFR136A 601	08/14/95	5226088
1,2-Dichlorobenzene	ND	5.0	CFR136A 601	08/14/95	5226088
1,3-Dichlorobenzene	ND	5.0	CFR136A 601	08/14/95	5226088
1,4-Dichlorobenzene	ND	5.0	CFR136A 601	08/14/95	5226088
Dichlorodifluoromethane	ND	5.0	CFR136A 601	08/14/95	5226088
1,1-Dichloroethane	ND	5.0	CFR136A 601	08/14/95	5226088
1,2-Dichloroethane	ND	5.0	CFR136A 601	08/14/95	5226088
1,1-Dichloroethene	ND	5.0	CFR136A 601	08/14/95	5226088
trans-1,2-Dichloroethene	ND	5.0	CFR136A 601	08/14/95	5226088
1,2-Dichloropropane	ND	5.0	CFR136A 601	08/14/95	5226088
cis-1,3-Dichloropropene	ND	5.0	CFR136A 601	08/14/95	5226088
trans-1,3-Dichloropropene	ND	5.0	CFR136A 601	08/14/95	5226088
Methylene chloride	ND	5.0	CFR136A 601	08/14/95	5226088
1,1,2,2-Tetrachloroethane	ND	5.0	CFR136A 601	08/14/95	5226088

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	97	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18GDP303

WO #: C0H5K102
LAB #: B5H040102-018
MATRIX: WATER

DATE SAMPLED: 8/01/95
TIME SAMPLED: 12:45
DATE RECEIVED: 8/03/95

GC Volatiles

2 OF 2

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Tetrachloroethene	ND	5.0	CFR136A 601	08/14/95	5226088
1,1,1-Trichloroethane	ND	5.0	CFR136A 601	08/14/95	5226088
1,1,2-Trichloroethane	ND	5.0	CFR136A 601	08/14/95	5226088
Trichloroethene	ND	5.0	CFR136A 601	08/14/95	5226088
Trichlorofluoromethane	ND	5.0	CFR136A 601	08/14/95	5226088
Vinyl chloride	ND	5.0	CFR136A 601	08/14/95	5226088

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	97	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18GDP303

WO #: C0H5K103 — DATE SAMPLED: 8/01/95
LAB #: B5H040102-018 — TIME SAMPLED: 12:45
MATRIX: WATER — DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Benzene	19	5.0	CFR136A 602	08/14/95	5226093
Chlorobenzene	ND	5.0	CFR136A 602	08/14/95	5226093
1,2-Dichlorobenzene	ND	5.0	CFR136A 602	08/14/95	5226093
1,3-Dichlorobenzene	ND	5.0	CFR136A 602	08/14/95	5226093
1,4-Dichlorobenzene	ND	5.0	CFR136A 602	08/14/95	5226093
Ethylbenzene	13	5.0	CFR136A 602	08/14/95	5226093
Toluene	ND	5.0	CFR136A 602	08/14/95	5226093
Xylenes (total)	ND	5.0	CFR136A 602	08/14/95	5226093
Methyl tert-butyl ether	5.7	5.0	CFR136A 602	08/14/95	5226093

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Trifluorotoluene	100	(73 - 131)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18GDP303

WO #: C0H5K
LAB #: B5H040102-018
MATRIX: WATER

DATE SAMPLED: 8/01/95
TIME SAMPLED: 12:45
DATE RECEIVED: 8/03/95

- - - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Lead	ND	5.0	ug/L	MCAWW 239.2	8/07/95	5216109

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G01403

WO #: C0H5L102
LAB #: B5H040102-019
MATRIX: WATER

DATE SAMPLED: 8/01/95
TIME SAMPLED: 12:30
DATE RECEIVED: 8/03/95

GC Volatiles

1 OF 2

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromodichloromethane	ND	1.0	CFR136A 601	08/14/95	5228030
Bromoform	ND	1.0	CFR136A 601	08/14/95	5228030
Bromomethane	ND	1.0	CFR136A 601	08/14/95	5228030
Carbon tetrachloride	ND	1.0	CFR136A 601	08/14/95	5228030
Chlorobenzene	ND	1.0	CFR136A 601	08/14/95	5228030
Chloroethane	ND	1.0	CFR136A 601	08/14/95	5228030
2-Chloroethyl vinyl ether	ND	1.0	CFR136A 601	08/14/95	5228030
Chloroform	ND	1.0	CFR136A 601	08/14/95	5228030
Chloromethane	ND	1.0	CFR136A 601	08/14/95	5228030
Dibromochloromethane	ND	1.0	CFR136A 601	08/14/95	5228030
1,2-Dichlorobenzene	ND	1.0	CFR136A 601	08/14/95	5228030
1,3-Dichlorobenzene	ND	1.0	CFR136A 601	08/14/95	5228030
1,4-Dichlorobenzene	ND	1.0	CFR136A 601	08/14/95	5228030
Dichlorodifluoromethane	ND	1.0	CFR136A 601	08/14/95	5228030
1,1-Dichloroethane	ND	1.0	CFR136A 601	08/14/95	5228030
1,2-Dichloroethane	ND	1.0	CFR136A 601	08/14/95	5228030
1,1-Dichloroethene	ND	1.0	CFR136A 601	08/14/95	5228030
trans-1,2-Dichloroethene	ND	1.0	CFR136A 601	08/14/95	5228030
1,2-Dichloropropane	ND	1.0	CFR136A 601	08/14/95	5228030
cis-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/14/95	5228030
trans-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/14/95	5228030
Methylene chloride	ND	1.0	CFR136A 601	08/14/95	5228030
1,1,2,2-Tetrachloroethane	ND	1.0	CFR136A 601	08/14/95	5228030

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	106	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G01403

WO #: C0H5L102
LAB #: B5H040102-019
MATRIX: WATER

DATE SAMPLED: 8/01/95
TIME SAMPLED: 12:30
DATE RECEIVED: 8/03/95

GC Volatiles

2 OF 2

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Tetrachloroethene	ND	1.0	CFR136A 601	08/14/95	5228030
1,1,1-Trichloroethane	ND	1.0	CFR136A 601	08/14/95	5228030
1,1,2-Trichloroethane	ND	1.0	CFR136A 601	08/14/95	5228030
Trichloroethene	ND	1.0	CFR136A 601	08/14/95	5228030
Trichlorofluoromethane	ND	1.0	CFR136A 601	08/14/95	5228030
Vinyl chloride	ND	1.0	CFR136A 601	08/14/95	5228030

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	106	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G01403

WO #: C0H5L103 — DATE SAMPLED: 8/01/95
LAB #: B5H040102-019 — TIME SAMPLED: 12:30
MATRIX: WATER — DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Benzene	ND	1.0	CFR136A 602	08/14/95	5228033
Chlorobenzene	ND	1.0	CFR136A 602	08/14/95	5228033
1,2-Dichlorobenzene	ND	1.0	CFR136A 602	08/14/95	5228033
1,3-Dichlorobenzene	ND	1.0	CFR136A 602	08/14/95	5228033
1,4-Dichlorobenzene	ND	1.0	CFR136A 602	08/14/95	5228033
Ethylbenzene	ND	1.0	CFR136A 602	08/14/95	5228033
Toluene	ND	1.0	CFR136A 602	08/14/95	5228033
Xylenes (total)	ND	1.0	CFR136A 602	08/14/95	5228033
Methyl tert-butyl ether	ND	1.0	CFR136A 602	08/14/95	5228033

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Trifluorotoluene	97	(73 - 131)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental
Services

ABB ENVIRONMENTAL SERVICES

18G01403

WO #: C0H5L
LAB #: B5H040102-019
MATRIX: WATER

DATE SAMPLED: 8/01/95
TIME SAMPLED: 12:30
DATE RECEIVED: 8/03/95

- - - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Lead	ND	5.0	ug/L	MCAWW 239.2	8/07/95	5216109

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra Environmental Services

ABB ENVIRONMENTAL SERVICES

18G01103

WO #: C0H5M102
LAB #: B5H040102-020
MATRIX: WATER

DATE SAMPLED: 8/01/95
TIME SAMPLED: 15:35
DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromodichloromethane	ND	1.0	CFR136A 601	08/14/95	5228030
Bromoform	ND	1.0	CFR136A 601	08/14/95	5228030
Bromomethane	ND	1.0	CFR136A 601	08/14/95	5228030
Carbon tetrachloride	ND	1.0	CFR136A 601	08/14/95	5228030
Chlorobenzene	ND	1.0	CFR136A 601	08/14/95	5228030
Chloroethane	ND	1.0	CFR136A 601	08/14/95	5228030
2-Chloroethyl vinyl ether	ND	1.0	CFR136A 601	08/14/95	5228030
Chloroform	ND	1.0	CFR136A 601	08/14/95	5228030
Chloromethane	ND	1.0	CFR136A 601	08/14/95	5228030
Dibromochloromethane	ND	1.0	CFR136A 601	08/14/95	5228030
1,2-Dichlorobenzene	ND	1.0	CFR136A 601	08/14/95	5228030
1,3-Dichlorobenzene	ND	1.0	CFR136A 601	08/14/95	5228030
1,4-Dichlorobenzene	ND	1.0	CFR136A 601	08/14/95	5228030
Dichlorodifluoromethane	ND	1.0	CFR136A 601	08/14/95	5228030
1,1-Dichloroethane	ND	1.0	CFR136A 601	08/14/95	5228030
1,2-Dichloroethane	ND	1.0	CFR136A 601	08/14/95	5228030
1,1-Dichloroethene	ND	1.0	CFR136A 601	08/14/95	5228030
trans-1,2-Dichloroethene	ND	1.0	CFR136A 601	08/14/95	5228030
1,2-Dichloropropane	ND	1.0	CFR136A 601	08/14/95	5228030
cis-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/14/95	5228030
trans-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/14/95	5228030
Methylene chloride	ND	1.0	CFR136A 601	08/14/95	5228030
1,1,2,2-Tetrachloroethane	ND	1.0	CFR136A 601	08/14/95	5228030

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	101	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G01103

WO #: C0H5M102
LAB #: B5H040102-020
MATRIX: WATER

DATE SAMPLED: 8/01/95
TIME SAMPLED: 15:35
DATE RECEIVED: 8/03/95

GC Volatiles

2 OF 2

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Tetrachloroethene	ND	1.0	CFR136A 601	08/14/95	5228030
1,1,1-Trichloroethane	ND	1.0	CFR136A 601	08/14/95	5228030
1,1,2-Trichloroethane	ND	1.0	CFR136A 601	08/14/95	5228030
Trichloroethene	ND	1.0	CFR136A 601	08/14/95	5228030
Trichlorofluoromethane	ND	1.0	CFR136A 601	08/14/95	5228030
Vinyl chloride	ND	1.0	CFR136A 601	08/14/95	5228030

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	101	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra Environmental Services

ABB ENVIRONMENTAL SERVICES

18G01103

WO #: C0H5M103
LAB #: B5H040102-020
MATRIX: WATER

DATE SAMPLED: 8/01/95
TIME SAMPLED: 15:35
DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Benzene	ND	1.0	CFR136A 602	08/14/95	5228033
Chlorobenzene	ND	1.0	CFR136A 602	08/14/95	5228033
1,2-Dichlorobenzene	ND	1.0	CFR136A 602	08/14/95	5228033
1,3-Dichlorobenzene	ND	1.0	CFR136A 602	08/14/95	5228033
1,4-Dichlorobenzene	ND	1.0	CFR136A 602	08/14/95	5228033
Ethylbenzene	ND	1.0	CFR136A 602	08/14/95	5228033
Toluene	**1.7**	**1.0**	**CFR136A 602**	**08/14/95**	**5228033**
Xylenes (total)	ND	1.0	CFR136A 602	08/14/95	5228033
Methyl tert-butyl ether	ND	1.0	CFR136A 602	08/14/95	5228033

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Trifluorotoluene	100	(73 - 131)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G01103

WO #: C0H5M
LAB #: B5H040102-020
MATRIX: WATER

DATE SAMPLED: 8/01/95
TIME SAMPLED: 15:35
DATE RECEIVED: 8/03/95

- - - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Lead	12.3	5.0	ug/L	MCAWW 239.2	8/07/95	5216109

NOTE: AS RECEIVED

Quanterra Environmental Services

ABB ENVIRONMENTAL SERVICES

18GDP203

WO #: C0H5N102
LAB #: B5H040102-021
MATRIX: WATER

DATE SAMPLED: 8/01/95
TIME SAMPLED:
DATE RECEIVED: 8/03/95

GC Volatiles

1 OF 2

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromodichloromethane	ND	1.0	CFR136A 601	08/14/95	5228030
Bromoform	ND	1.0	CFR136A 601	08/14/95	5228030
Bromomethane	ND	1.0	CFR136A 601	08/14/95	5228030
Carbon tetrachloride	ND	1.0	CFR136A 601	08/14/95	5228030
Chlorobenzene	ND	1.0	CFR136A 601	08/14/95	5228030
Chloroethane	ND	1.0	CFR136A 601	08/14/95	5228030
2-Chloroethyl vinyl ether	ND	1.0	CFR136A 601	08/14/95	5228030
Chloroform	ND	1.0	CFR136A 601	08/14/95	5228030
Chloromethane	ND	1.0	CFR136A 601	08/14/95	5228030
Dibromochloromethane	ND	1.0	CFR136A 601	08/14/95	5228030
1,2-Dichlorobenzene	ND	1.0	CFR136A 601	08/14/95	5228030
1,3-Dichlorobenzene	ND	1.0	CFR136A 601	08/14/95	5228030
1,4-Dichlorobenzene	ND	1.0	CFR136A 601	08/14/95	5228030
Dichlorodifluoromethane	ND	1.0	CFR136A 601	08/14/95	5228030
1,1-Dichloroethane	ND	1.0	CFR136A 601	08/14/95	5228030
1,2-Dichloroethane	ND	1.0	CFR136A 601	08/14/95	5228030
1,1-Dichloroethene	ND	1.0	CFR136A 601	08/14/95	5228030
trans-1,2-Dichloroethene	ND	1.0	CFR136A 601	08/14/95	5228030
1,2-Dichloropropane	ND	1.0	CFR136A 601	08/14/95	5228030
cis-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/14/95	5228030
trans-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/14/95	5228030
Methylene chloride	ND	1.0	CFR136A 601	08/14/95	5228030
1,1,2,2-Tetrachloroethane	ND	1.0	CFR136A 601	08/14/95	5228030

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	105	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18GDP203

WO #: C0H5N102
LAB #: B5H040102-021
MATRIX: WATER

DATE SAMPLED: 8/01/95
TIME SAMPLED:
DATE RECEIVED: 8/03/95

GC Volatiles

2 OF 2

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Tetrachloroethene	ND	1.0	CFR136A 601	08/14/95	5228030
1,1,1-Trichloroethane	ND	1.0	CFR136A 601	08/14/95	5228030
1,1,2-Trichloroethane	ND	1.0	CFR136A 601	08/14/95	5228030
Trichloroethene	ND	1.0	CFR136A 601	08/14/95	5228030
Trichlorofluoromethane	ND	1.0	CFR136A 601	08/14/95	5228030
Vinyl chloride	ND	1.0	CFR136A 601	08/14/95	5228030

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	105	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18GDP203

WO #: C0H5N103 — DATE SAMPLED: 8/01/95
LAB #: B5H040102-021 — TIME SAMPLED:
MATRIX: WATER — DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Benzene	ND	1.0	CFR136A 602	08/14/95	5228033
Chlorobenzene	ND	1.0	CFR136A 602	08/14/95	5228033
1,2-Dichlorobenzene	ND	1.0	CFR136A 602	08/14/95	5228033
1,3-Dichlorobenzene	ND	1.0	CFR136A 602	08/14/95	5228033
1,4-Dichlorobenzene	ND	1.0	CFR136A 602	08/14/95	5228033
Ethylbenzene	ND	1.0	CFR136A 602	08/14/95	5228033
Toluene	ND	1.0	CFR136A 602	08/14/95	5228033
Xylenes (total)	ND	1.0	CFR136A 602	08/14/95	5228033
Methyl tert-butyl ether	ND	1.0	CFR136A 602	08/14/95	5228033

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Trifluorotoluene	95	(73 - 131)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental
Services

ABB ENVIRONMENTAL SERVICES

18GDP203

WO #: C0H5N
LAB #: B5H040102-021
MATRIX: WATER

DATE SAMPLED: 8/01/95
TIME SAMPLED:
DATE RECEIVED: 8/03/95

- - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Lead	ND	5.0	ug/L	MCAWW 239.2	8/10/95	5221082

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18GEB203

WO #: C0H5P102 — DATE SAMPLED: 8/01/95
LAB #: B5H040102-022 — TIME SAMPLED: 15:30
MATRIX: WATER — DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromodichloromethane	ND	1.0	CFR136A 601	08/14/95	5228030
Bromoform	ND	1.0	CFR136A 601	08/14/95	5228030
Bromomethane	ND	1.0	CFR136A 601	08/14/95	5228030
Carbon tetrachloride	ND	1.0	CFR136A 601	08/14/95	5228030
Chlorobenzene	ND	1.0	CFR136A 601	08/14/95	5228030
Chloroethane	ND	1.0	CFR136A 601	08/14/95	5228030
2-Chloroethyl vinyl ether	ND	1.0	CFR136A 601	08/14/95	5228030
Chloroform	ND	1.0	CFR136A 601	08/14/95	5228030
Chloromethane	ND	1.0	CFR136A 601	08/14/95	5228030
Dibromochloromethane	ND	1.0	CFR136A 601	08/14/95	5228030
1,2-Dichlorobenzene	ND	1.0	CFR136A 601	08/14/95	5228030
1,3-Dichlorobenzene	ND	1.0	CFR136A 601	08/14/95	5228030
1,4-Dichlorobenzene	ND	1.0	CFR136A 601	08/14/95	5228030
Dichlorodifluoromethane	ND	1.0	CFR136A 601	08/14/95	5228030
1,1-Dichloroethane	ND	1.0	CFR136A 601	08/14/95	5228030
1,2-Dichloroethane	ND	1.0	CFR136A 601	08/14/95	5228030
1,1-Dichloroethene	ND	1.0	CFR136A 601	08/14/95	5228030
trans-1,2-Dichloroethene	ND	1.0	CFR136A 601	08/14/95	5228030
1,2-Dichloropropane	ND	1.0	CFR136A 601	08/14/95	5228030
cis-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/14/95	5228030
trans-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/14/95	5228030
Methylene chloride	ND	1.0	CFR136A 601	08/14/95	5228030
1,1,2,2-Tetrachloroethane	ND	1.0	CFR136A 601	08/14/95	5228030

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	98	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18GEB203

WO #: C0H5P102
LAB #: B5H040102-022
MATRIX: WATER

DATE SAMPLED: 8/01/95
TIME SAMPLED: 15:30
DATE RECEIVED: 8/03/95

GC Volatiles

2 OF 2

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Tetrachloroethene	ND	1.0	CFR136A 601	08/14/95	5228030
1,1,1-Trichloroethane	ND	1.0	CFR136A 601	08/14/95	5228030
1,1,2-Trichloroethane	ND	1.0	CFR136A 601	08/14/95	5228030
Trichloroethene	ND	1.0	CFR136A 601	08/14/95	5228030
Trichlorofluoromethane	ND	1.0	CFR136A 601	08/14/95	5228030
Vinyl chloride	ND	1.0	CFR136A 601	08/14/95	5228030

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	98	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra Environmental Services

ABB ENVIRONMENTAL SERVICES

18GEB203

WO #: C0H5P103
LAB #: B5H040102-022
MATRIX: WATER

DATE SAMPLED: 8/01/95
TIME SAMPLED: 15:30
DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Benzene	ND	1.0	CFR136A 602	08/14/95	5228033
Chlorobenzene	ND	1.0	CFR136A 602	08/14/95	5228033
1,2-Dichlorobenzene	ND	1.0	CFR136A 602	08/14/95	5228033
1,3-Dichlorobenzene	ND	1.0	CFR136A 602	08/14/95	5228033
1,4-Dichlorobenzene	ND	1.0	CFR136A 602	08/14/95	5228033
Ethylbenzene	ND	1.0	CFR136A 602	08/14/95	5228033
Toluene	ND	1.0	CFR136A 602	08/14/95	5228033
Xylenes (total)	ND	1.0	CFR136A 602	08/14/95	5228033
Methyl tert-butyl ether	ND	1.0	CFR136A 602	08/14/95	5228033

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Trifluorotoluene	99	(73 - 131)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental
Services

ABB ENVIRONMENTAL SERVICES

18GEB203

WO #: C0H5P
LAB #: B5H040102-022
MATRIX: WATER

DATE SAMPLED: 8/01/95
TIME SAMPLED: 15:30
DATE RECEIVED: 8/03/95

- - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Lead	ND	5.0	ug/L	MCAWW 239.2	8/10/95	5221082

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G02103

WO #: C0H5Q102
LAB #: B5H040102-023
MATRIX: WATER

DATE SAMPLED: 8/01/95
TIME SAMPLED: 16:00
DATE RECEIVED: 8/03/95

GC Volatiles

1 OF 2

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromodichloromethane	ND	1.0	CFR136A 601	08/14/95	5228030
Bromoform	ND	1.0	CFR136A 601	08/14/95	5228030
Bromomethane	ND	1.0	CFR136A 601	08/14/95	5228030
Carbon tetrachloride	ND	1.0	CFR136A 601	08/14/95	5228030
Chlorobenzene	ND	1.0	CFR136A 601	08/14/95	5228030
Chloroethane	ND	1.0	CFR136A 601	08/14/95	5228030
2-Chloroethyl vinyl ether	ND	1.0	CFR136A 601	08/14/95	5228030
Chloroform	ND	1.0	CFR136A 601	08/14/95	5228030
Chloromethane	ND	1.0	CFR136A 601	08/14/95	5228030
Dibromochloromethane	ND	1.0	CFR136A 601	08/14/95	5228030
1,2-Dichlorobenzene	ND	1.0	CFR136A 601	08/14/95	5228030
1,3-Dichlorobenzene	ND	1.0	CFR136A 601	08/14/95	5228030
1,4-Dichlorobenzene	ND	1.0	CFR136A 601	08/14/95	5228030
Dichlorodifluoromethane	ND	1.0	CFR136A 601	08/14/95	5228030
1,1-Dichloroethane	ND	1.0	CFR136A 601	08/14/95	5228030
1,2-Dichloroethane	ND	1.0	CFR136A 601	08/14/95	5228030
1,1-Dichloroethene	ND	1.0	CFR136A 601	08/14/95	5228030
trans-1,2-Dichloroethene	ND	1.0	CFR136A 601	08/14/95	5228030
1,2-Dichloropropane	ND	1.0	CFR136A 601	08/14/95	5228030
cis-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/14/95	5228030
trans-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/14/95	5228030
Methylene chloride	ND	1.0	CFR136A 601	08/14/95	5228030
1,1,2,2-Tetrachloroethane	ND	1.0	CFR136A 601	08/14/95	5228030

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	101	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra Environmental Services

ABB ENVIRONMENTAL SERVICES

18G02103

WO #: C0H5Q102
LAB #: B5H040102-023
MATRIX: WATER

DATE SAMPLED: 8/01/95
TIME SAMPLED: 16:00
DATE RECEIVED: 8/03/95

GC Volatiles

2 OF 2

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Tetrachloroethene	ND	1.0	CFR136A 601	08/14/95	5228030
1,1,1-Trichloroethane	ND	1.0	CFR136A 601	08/14/95	5228030
1,1,2-Trichloroethane	ND	1.0	CFR136A 601	08/14/95	5228030
Trichloroethene	ND	1.0	CFR136A 601	08/14/95	5228030
Trichlorofluoromethane	ND	1.0	CFR136A 601	08/14/95	5228030
Vinyl chloride	ND	1.0	CFR136A 601	08/14/95	5228030

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	101	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G02103

WO #: C0H5Q103
LAB #: B5H040102-023
MATRIX: WATER

DATE SAMPLED: 8/01/95
TIME SAMPLED: 16:00
DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Benzene	ND	1.0	CFR136A 602	08/14/95	5228033
Chlorobenzene	ND	1.0	CFR136A 602	08/14/95	5228033
1,2-Dichlorobenzene	ND	1.0	CFR136A 602	08/14/95	5228033
1,3-Dichlorobenzene	ND	1.0	CFR136A 602	08/14/95	5228033
1,4-Dichlorobenzene	ND	1.0	CFR136A 602	08/14/95	5228033
Ethylbenzene	ND	1.0	CFR136A 602	08/14/95	5228033
Toluene	ND	1.0	CFR136A 602	08/14/95	5228033
Xylenes (total)	ND	1.0	CFR136A 602	08/14/95	5228033
Methyl tert-butyl ether	**8.7**	**1.0**	**CFR136A 602**	**08/14/95**	**5228033**

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Trifluorotoluene	94	(73 - 131)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G02103

WO #: C0H5Q
LAB #: B5H040102-023
MATRIX: WATER

DATE SAMPLED: 8/01/95
TIME SAMPLED: 16:00
DATE RECEIVED: 8/03/95

- - - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Lead	ND	5.0	ug/L	MCAWW 239.2	8/10/95	5221082

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

TRIP BLANK 1

WO #: C0H5R101 — DATE SAMPLED: 8/01/95
LAB #: B5H040102-024 — TIME SAMPLED:
MATRIX: WATER — DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromodichloromethane	ND	1.0	CFR136A 601	08/14/95	5228030
Bromoform	ND	1.0	CFR136A 601	08/14/95	5228030
Bromomethane	ND	1.0	CFR136A 601	08/14/95	5228030
Carbon tetrachloride	ND	1.0	CFR136A 601	08/14/95	5228030
Chlorobenzene	ND	1.0	CFR136A 601	08/14/95	5228030
Chloroethane	ND	1.0	CFR136A 601	08/14/95	5228030
2-Chloroethyl vinyl ether	ND	1.0	CFR136A 601	08/14/95	5228030
Chloroform	ND	1.0	CFR136A 601	08/14/95	5228030
Chloromethane	ND	1.0	CFR136A 601	08/14/95	5228030
Dibromochloromethane	ND	1.0	CFR136A 601	08/14/95	5228030
1,2-Dichlorobenzene	ND	1.0	CFR136A 601	08/14/95	5228030
1,3-Dichlorobenzene	ND	1.0	CFR136A 601	08/14/95	5228030
1,4-Dichlorobenzene	ND	1.0	CFR136A 601	08/14/95	5228030
Dichlorodifluoromethane	ND	1.0	CFR136A 601	08/14/95	5228030
1,1-Dichloroethane	ND	1.0	CFR136A 601	08/14/95	5228030
1,2-Dichloroethane	ND	1.0	CFR136A 601	08/14/95	5228030
1,1-Dichloroethene	ND	1.0	CFR136A 601	08/14/95	5228030
trans-1,2-Dichloroethene	ND	1.0	CFR136A 601	08/14/95	5228030
1,2-Dichloropropane	ND	1.0	CFR136A 601	08/14/95	5228030
cis-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/14/95	5228030
trans-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/14/95	5228030
Methylene chloride	ND	1.0	CFR136A 601	08/14/95	5228030
1,1,2,2-Tetrachloroethane	ND	1.0	CFR136A 601	08/14/95	5228030

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	96	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra Environmental Services

ABB ENVIRONMENTAL SERVICES

TRIP BLANK 1

WO #: C0H5R101
LAB #: B5H040102-024
MATRIX: WATER

DATE SAMPLED: 8/01/95
TIME SAMPLED:
DATE RECEIVED: 8/03/95

GC Volatiles

2 OF 2

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Tetrachloroethene	ND	1.0	CFR136A 601	08/14/95	5228030
1,1,1-Trichloroethane	ND	1.0	CFR136A 601	08/14/95	5228030
1,1,2-Trichloroethane	ND	1.0	CFR136A 601	08/14/95	5228030
Trichloroethene	ND	1.0	CFR136A 601	08/14/95	5228030
Trichlorofluoromethane	ND	1.0	CFR136A 601	08/14/95	5228030
Vinyl chloride	ND	1.0	CFR136A 601	08/14/95	5228030

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	96	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra Environmental Services

ABB ENVIRONMENTAL SERVICES

TRIP BLANK 1

WO #: C0H5R102 — DATE SAMPLED: 8/01/95
LAB #: B5H040102-024 — TIME SAMPLED:
MATRIX: WATER — DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Benzene	ND	1.0	CFR136A 602	08/14/95	5228033
Chlorobenzene	ND	1.0	CFR136A 602	08/14/95	5228033
1,2-Dichlorobenzene	ND	1.0	CFR136A 602	08/14/95	5228033
1,3-Dichlorobenzene	ND	1.0	CFR136A 602	08/14/95	5228033
1,4-Dichlorobenzene	ND	1.0	CFR136A 602	08/14/95	5228033
Ethylbenzene	ND	1.0	CFR136A 602	08/14/95	5228033
Toluene	ND	1.0	CFR136A 602	08/14/95	5228033
Xylenes (total)	ND	1.0	CFR136A 602	08/14/95	5228033
Methyl tert-butyl ether	ND	1.0	CFR136A 602	08/14/95	5228033

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Trifluorotoluene	73	(73 - 131)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra Environmental Services

ABB ENVIRONMENTAL SERVICES

18G01503

WO #: C0H5T102
LAB #: B5H040102-025
MATRIX: WATER

DATE SAMPLED: 8/02/95
TIME SAMPLED: 8:20
DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromodichloromethane	ND	1.0	CFR136A 601	08/14/95	5226088
Bromoform	ND	1.0	CFR136A 601	08/14/95	5226088
Bromomethane	ND	1.0	CFR136A 601	08/14/95	5226088
Carbon tetrachloride	ND	1.0	CFR136A 601	08/14/95	5226088
Chlorobenzene	ND	1.0	CFR136A 601	08/14/95	5226088
Chloroethane	ND	1.0	CFR136A 601	08/14/95	5226088
2-Chloroethyl vinyl ether	ND	1.0	CFR136A 601	08/14/95	5226088
Chloroform	ND	1.0	CFR136A 601	08/14/95	5226088
Chloromethane	ND	1.0	CFR136A 601	08/14/95	5226088
Dibromochloromethane	ND	1.0	CFR136A 601	08/14/95	5226088
1,2-Dichlorobenzene	ND	1.0	CFR136A 601	08/14/95	5226088
1,3-Dichlorobenzene	ND	1.0	CFR136A 601	08/14/95	5226088
1,4-Dichlorobenzene	ND	1.0	CFR136A 601	08/14/95	5226088
Dichlorodifluoromethane	ND	1.0	CFR136A 601	08/14/95	5226088
1,1-Dichloroethane	ND	1.0	CFR136A 601	08/14/95	5226088
1,2-Dichloroethane	ND	1.0	CFR136A 601	08/14/95	5226088
1,1-Dichloroethene	ND	1.0	CFR136A 601	08/14/95	5226088
trans-1,2-Dichloroethene	ND	1.0	CFR136A 601	08/14/95	5226088
1,2-Dichloropropane	ND	1.0	CFR136A 601	08/14/95	5226088
cis-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/14/95	5226088
trans-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/14/95	5226088
Methylene chloride	ND	1.0	CFR136A 601	08/14/95	5226088
1,1,2,2-Tetrachloroethane	ND	1.0	CFR136A 601	08/14/95	5226088

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	89	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G01503

WO #: C0H5T102
LAB #: B5H040102-025
MATRIX: WATER

DATE SAMPLED: 8/02/95
TIME SAMPLED: 8:20
DATE RECEIVED: 8/03/95

GC Volatiles

2 OF 2

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Tetrachloroethene	ND	1.0	CFR136A 601	08/14/95	5226088
1,1,1-Trichloroethane	ND	1.0	CFR136A 601	08/14/95	5226088
1,1,2-Trichloroethane	ND	1.0	CFR136A 601	08/14/95	5226088
Trichloroethene	ND	1.0	CFR136A 601	08/14/95	5226088
Trichlorofluoromethane	ND	1.0	CFR136A 601	08/14/95	5226088
Vinyl chloride	ND	1.0	CFR136A 601	08/14/95	5226088

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	89	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra Environmental Services

ABB ENVIRONMENTAL SERVICES

18G01503

WO #: C0H5T103
LAB #: B5H040102-025
MATRIX: WATER

DATE SAMPLED: 8/02/95
TIME SAMPLED: 8:20
DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Benzene	ND	1.0	CFR136A 602	08/14/95	5226093
Chlorobenzene	ND	1.0	CFR136A 602	08/14/95	5226093
1,2-Dichlorobenzene	ND	1.0	CFR136A 602	08/14/95	5226093
1,3-Dichlorobenzene	ND	1.0	CFR136A 602	08/14/95	5226093
1,4-Dichlorobenzene	ND	1.0	CFR136A 602	08/14/95	5226093
Ethylbenzene	ND	1.0	CFR136A 602	08/14/95	5226093
Toluene	ND	1.0	CFR136A 602	08/14/95	5226093
Xylenes (total)	ND	1.0	CFR136A 602	08/14/95	5226093
Methyl tert-butyl ether	**1.4**	**1.0**	**CFR136A 602**	**08/14/95**	**5226093**

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Trifluorotoluene	90	(73 - 131)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G01503

WO #: C0H5T
LAB #: B5H040102-025
MATRIX: WATER

DATE SAMPLED: 8/02/95
TIME SAMPLED: 8:20
DATE RECEIVED: 8/03/95

- - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Lead	7.9	5.0	ug/L	MCAWW 239.2	8/10/95	5221082

NOTE: AS RECEIVED

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G00703

WO #: C0H5V102
LAB #: B5H040102-026
MATRIX: WATER

DATE SAMPLED: 8/02/95
TIME SAMPLED: 8:30
DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromodichloromethane	ND	1.0	CFR136A 601	08/14/95	5226088
Bromoform	ND	1.0	CFR136A 601	08/14/95	5226088
Bromomethane	ND	1.0	CFR136A 601	08/14/95	5226088
Carbon tetrachloride	ND	1.0	CFR136A 601	08/14/95	5226088
Chlorobenzene	ND	1.0	CFR136A 601	08/14/95	5226088
Chloroethane	ND	1.0	CFR136A 601	08/14/95	5226088
2-Chloroethyl vinyl ether	ND	1.0	CFR136A 601	08/14/95	5226088
Chloroform	ND	1.0	CFR136A 601	08/14/95	5226088
Chloromethane	ND	1.0	CFR136A 601	08/14/95	5226088
Dibromochloromethane	ND	1.0	CFR136A 601	08/14/95	5226088
1,2-Dichlorobenzene	ND	1.0	CFR136A 601	08/14/95	5226088
1,3-Dichlorobenzene	ND	1.0	CFR136A 601	08/14/95	5226088
1,4-Dichlorobenzene	ND	1.0	CFR136A 601	08/14/95	5226088
Dichlorodifluoromethane	ND	1.0	CFR136A 601	08/14/95	5226088
1,1-Dichloroethane	ND	1.0	CFR136A 601	08/14/95	5226088
1,2-Dichloroethane	ND	1.0	CFR136A 601	08/14/95	5226088
1,1-Dichloroethene	ND	1.0	CFR136A 601	08/14/95	5226088
trans-1,2-Dichloroethene	ND	1.0	CFR136A 601	08/14/95	5226088
1,2-Dichloropropane	ND	1.0	CFR136A 601	08/14/95	5226088
cis-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/14/95	5226088
trans-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/14/95	5226088
Methylene chloride	ND	1.0	CFR136A 601	08/14/95	5226088
1,1,2,2-Tetrachloroethane	ND	1.0	CFR136A 601	08/14/95	5226088

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	102	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G00703

WO #: C0H5V102 **DATE SAMPLED:** 8/02/95
LAB #: B5H040102-026 **TIME SAMPLED:** 8:30
MATRIX: WATER **DATE RECEIVED:** 8/03/95

GC Volatiles

2 OF 2

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Tetrachloroethene	ND	1.0	CFR136A 601	08/14/95	5226088
1,1,1-Trichloroethane	ND	1.0	CFR136A 601	08/14/95	5226088
1,1,2-Trichloroethane	ND	1.0	CFR136A 601	08/14/95	5226088
Trichloroethene	ND	1.0	CFR136A 601	08/14/95	5226088
Trichlorofluoromethane	ND	1.0	CFR136A 601	08/14/95	5226088
Vinyl chloride	ND	1.0	CFR136A 601	08/14/95	5226088

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	102	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G00703

WO #: C0H5V103
LAB #: B5H040102-026
MATRIX: WATER

DATE SAMPLED: 8/02/95
TIME SAMPLED: 8:30
DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Benzene	ND	1.0	CFR136A 602	08/14/95	5226093
Chlorobenzene	ND	1.0	CFR136A 602	08/14/95	5226093
1,2-Dichlorobenzene	ND	1.0	CFR136A 602	08/14/95	5226093
1,3-Dichlorobenzene	ND	1.0	CFR136A 602	08/14/95	5226093
1,4-Dichlorobenzene	ND	1.0	CFR136A 602	08/14/95	5226093
Ethylbenzene	ND	1.0	CFR136A 602	08/14/95	5226093
Toluene	ND	1.0	CFR136A 602	08/14/95	5226093
Xylenes (total)	ND	1.0	CFR136A 602	08/14/95	5226093
Methyl tert-butyl ether	ND	1.0	CFR136A 602	08/14/95	5226093

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Trifluorotoluene	97	(73 - 131)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G00703

WO #: C0H5V
LAB #: B5H040102-026
MATRIX: WATER

DATE SAMPLED: 8/02/95
TIME SAMPLED: 8:30
DATE RECEIVED: 8/03/95

- - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Lead	16.0	5.0	ug/L	MCAWW 239.2	8/10/95	5221082

NOTE: AS RECEIVED

Quanterra Environmental Services

ABB ENVIRONMENTAL SERVICES

18G00603

WO #: C0H5W102
LAB #: B5H040102-027
MATRIX: WATER

DATE SAMPLED: 8/02/95
TIME SAMPLED: 9:00
DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromodichloromethane	ND	1.0	CFR136A 601	08/14/95	5226088
Bromoform	ND	1.0	CFR136A 601	08/14/95	5226088
Bromomethane	ND	1.0	CFR136A 601	08/14/95	5226088
Carbon tetrachloride	ND	1.0	CFR136A 601	08/14/95	5226088
Chlorobenzene	ND	1.0	CFR136A 601	08/14/95	5226088
Chloroethane	ND	1.0	CFR136A 601	08/14/95	5226088
2-Chloroethyl vinyl ether	ND	1.0	CFR136A 601	08/14/95	5226088
Chloroform	ND	1.0	CFR136A 601	08/14/95	5226088
Chloromethane	ND	1.0	CFR136A 601	08/14/95	5226088
Dibromochloromethane	ND	1.0	CFR136A 601	08/14/95	5226088
1,2-Dichlorobenzene	ND	1.0	CFR136A 601	08/14/95	5226088
1,3-Dichlorobenzene	ND	1.0	CFR136A 601	08/14/95	5226088
1,4-Dichlorobenzene	ND	1.0	CFR136A 601	08/14/95	5226088
Dichlorodifluoromethane	ND	1.0	CFR136A 601	08/14/95	5226088
1,1-Dichloroethane	ND	1.0	CFR136A 601	08/14/95	5226088
1,2-Dichloroethane	ND	1.0	CFR136A 601	08/14/95	5226088
1,1-Dichloroethene	ND	1.0	CFR136A 601	08/14/95	5226088
trans-1,2-Dichloroethene	ND	1.0	CFR136A 601	08/14/95	5226088
1,2-Dichloropropane	ND	1.0	CFR136A 601	08/14/95	5226088
cis-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/14/95	5226088
trans-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/14/95	5226088
Methylene chloride	ND	1.0	CFR136A 601	08/14/95	5226088
1,1,2,2-Tetrachloroethane	ND	1.0	CFR136A 601	08/14/95	5226088

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	103	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G00603

WO #: C0H5W102 — DATE SAMPLED: 8/02/95
LAB #: B5H040102-027 — TIME SAMPLED: 9:00
MATRIX: WATER — DATE RECEIVED: 8/03/95

GC Volatiles

2 OF 2

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Tetrachloroethene	ND	1.0	CFR136A 601	08/14/95	5226088
1,1,1-Trichloroethane	ND	1.0	CFR136A 601	08/14/95	5226088
1,1,2-Trichloroethane	ND	1.0	CFR136A 601	08/14/95	5226088
Trichloroethene	ND	1.0	CFR136A 601	08/14/95	5226088
Trichlorofluoromethane	ND	1.0	CFR136A 601	08/14/95	5226088
Vinyl chloride	ND	1.0	CFR136A 601	08/14/95	5226088

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	103	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G00603

WO #: C0H5W103
LAB #: B5H040102-027
MATRIX: WATER

DATE SAMPLED: 8/02/95
TIME SAMPLED: 9:00
DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Benzene	ND	1.0	CFR136A 602	08/14/95	5226093
Chlorobenzene	ND	1.0	CFR136A 602	08/14/95	5226093
1,2-Dichlorobenzene	ND	1.0	CFR136A 602	08/14/95	5226093
1,3-Dichlorobenzene	ND	1.0	CFR136A 602	08/14/95	5226093
1,4-Dichlorobenzene	ND	1.0	CFR136A 602	08/14/95	5226093
Ethylbenzene	ND	1.0	CFR136A 602	08/14/95	5226093
Toluene	ND	1.0	CFR136A 602	08/14/95	5226093
Xylenes (total)	ND	1.0	CFR136A 602	08/14/95	5226093
Methyl tert-butyl ether	2.7	1.0	CFR136A 602	08/14/95	5226093

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Trifluorotoluene	100	(73 - 131)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

18G00603

WO #: C0H5W
LAB #: B5H040102-027
MATRIX: WATER

DATE SAMPLED: 8/02/95
TIME SAMPLED: 9:00
DATE RECEIVED: 8/03/95

REQUESTED METALS

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Lead	5.9	5.0	ug/L	MCAWW 239.2	8/14/95	5226003

NOTE: AS RECEIVED

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

TRIP BLANK 2

WO #: C0H5X101
LAB #: B5H040102-028
MATRIX: WATER

DATE SAMPLED: 8/02/95
TIME SAMPLED:
DATE RECEIVED: 8/03/95

GC Volatiles

1 OF 2

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromodichloromethane	ND	1.0	CFR136A 601	08/14/95	5226088
Bromoform	ND	1.0	CFR136A 601	08/14/95	5226088
Bromomethane	ND	1.0	CFR136A 601	08/14/95	5226088
Carbon tetrachloride	ND	1.0	CFR136A 601	08/14/95	5226088
Chlorobenzene	ND	1.0	CFR136A 601	08/14/95	5226088
Chloroethane	ND	1.0	CFR136A 601	08/14/95	5226088
2-Chloroethyl vinyl ether	ND	1.0	CFR136A 601	08/14/95	5226088
Chloroform	ND	1.0	CFR136A 601	08/14/95	5226088
Chloromethane	ND	1.0	CFR136A 601	08/14/95	5226088
Dibromochloromethane	ND	1.0	CFR136A 601	08/14/95	5226088
1,2-Dichlorobenzene	ND	1.0	CFR136A 601	08/14/95	5226088
1,3-Dichlorobenzene	ND	1.0	CFR136A 601	08/14/95	5226088
1,4-Dichlorobenzene	ND	1.0	CFR136A 601	08/14/95	5226088
Dichlorodifluoromethane	ND	1.0	CFR136A 601	08/14/95	5226088
1,1-Dichloroethane	ND	1.0	CFR136A 601	08/14/95	5226088
1,2-Dichloroethane	ND	1.0	CFR136A 601	08/14/95	5226088
1,1-Dichloroethene	ND	1.0	CFR136A 601	08/14/95.	5226088
trans-1,2-Dichloroethene	ND	1.0	CFR136A 601	08/14/95	5226088
1,2-Dichloropropane	ND	1.0	CFR136A 601	08/14/95	5226088
cis-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/14/95	5226088
trans-1,3-Dichloropropene	ND	1.0	CFR136A 601	08/14/95	5226088
Methylene chloride	ND	1.0	CFR136A 601	08/14/95	5226088
1,1,2,2-Tetrachloroethane	ND	1.0	CFR136A 601	08/14/95	5226088

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	102	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

TRIP BLANK 2

WO #: C0H5X101 **DATE SAMPLED:** 8/02/95
LAB #: B5H040102-028 **TIME SAMPLED:**
MATRIX: WATER **DATE RECEIVED:** 8/03/95

GC Volatiles

2 OF 2

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Tetrachloroethene	ND	1.0	CFR136A 601	08/14/95	5226088
1,1,1-Trichloroethane	ND	1.0	CFR136A 601	08/14/95	5226088
1,1,2-Trichloroethane	ND	1.0	CFR136A 601	08/14/95	5226088
Trichloroethene	ND	1.0	CFR136A 601	08/14/95	5226088
Trichlorofluoromethane	ND	1.0	CFR136A 601	08/14/95	5226088
Vinyl chloride	ND	1.0	CFR136A 601	08/14/95	5226088

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	102	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra Environmental Services

ABB ENVIRONMENTAL SERVICES

TRIP BLANK 2

WO #: C0H5X102
LAB #: B5H040102-028
MATRIX: WATER

DATE SAMPLED: 8/02/95
TIME SAMPLED:
DATE RECEIVED: 8/03/95

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Benzene	ND	1.0	CFR136A 602	08/14/95	5226093
Chlorobenzene	ND	1.0	CFR136A 602	08/14/95	5226093
1,2-Dichlorobenzene	ND	1.0	CFR136A 602	08/14/95	5226093
1,3-Dichlorobenzene	ND	1.0	CFR136A 602	08/14/95	5226093
1,4-Dichlorobenzene	ND	1.0	CFR136A 602	08/14/95	5226093
Ethylbenzene	ND	1.0	CFR136A 602	08/14/95	5226093
Toluene	ND	1.0	CFR136A 602	08/14/95	5226093
Xylenes (total)	ND	1.0	CFR136A 602	08/14/95	5226093
Methyl tert-butyl ether	ND	1.0	CFR136A 602	08/14/95	5226093

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Trifluorotoluene	99	(73 - 131)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental
Services

Quality Control Summary

Quanterra QC Program Summary

Method Blanks

Laboratory Control Samples

Matrix Spike/Matrix Spike Duplicates

Chain-of-Custody

Quanterra
Environmental Services

Quanterra Quality Control Program Summary

Quanterra Environmental Services considers continuous analytical method performance evaluations to be an integral portion of the data package, and routinely includes the pertinent QA/QC data associated with analytical results. Brief discussions of the various QA/QC procedures utilized to measure acceptable method and matrix performance follow. Further documentation of specific policies and procedures in use are available, upon request, from the Quanterra Quality Control Department.

The program described below provides Quanterra's interpretation of QC requirements described in SW-846, 3rd edition -Final Update II. Additional interpretations specific to other aspects of methods performed, such as instrument calibration and bench procedures, are described in program-specific documents (e.g. US Corps of Engineers, AFCEE, etc.) and associated method standard operating procedures. Where explicit program requirements or project requirements exist, certain elements of the Quanterra QC Program may be superseded by these requirements.

Elements of the Quanterra QC Program

Where other clear regulatory guidance, contract specifications, or client requirements are not available, the Quanterra QC Program provides guidance for Batch QC requirements. The Quality Control Batch is a set of up to 20 field samples of similar matrix, which are processed together under the same conditions, within the same time frame. Included in each Quality Control Batch is a Method Blank, Laboratory Control Sample, and Matrix Spike Duplicate. For methods that require independent sample preparation prior to analysis, the QC Batch is defined at the preparation stage. For methods that do not require independent sample preparation, the QC Batch is defined at the instrument. The QC Batch Number is provided on each result page in association with the parameter(s) presented, and may be used to cross-reference sample results with the associated QC data.

Method Blank Evaluations

Laboratory analytical method blanks are systematically prepared and analyzed in order to continuously evaluate the system interference and background contamination levels associated with each applicable analytical method. Method blanks include all aspects of actual laboratory procedures involving sample preparation and analysis, substituting analyte-free water or solid for the actual sample. Under normal circumstances, the Method Blank should not exhibit analytes of interest above the reported detection limit. Due to the presence of some analytes in a typical laboratory setting, the following common laboratory contaminants are exceptions to this rule, provided they are not present in the method blank at greater than five times the reporting limit.

Volatiles	Semi-Volatiles	Metals
Methylene chloride	Dimethyl phthalate	Calcium
Toluene	Diethyl phthalate	Magnesium
2-Butanone	Di-n-butyl-phthalate	Sodium
Acetone	Butyl benzyl phthalate	
	Bis (2-ethylhexyl) phthalate	

A method blank is performed with each analytical batch. A minimum of 5% of all laboratory analyses are method blanks.

Laboratory Control Sample (LCS) Evaluations

Known concentrations of designated matrix spike (target analyte) compounds are added to a method blank prior to extraction and analysis. Percent recovery determinations of individual target analytes in the LCS demonstrate the laboratory's method performance for the QC Batch relative to these target analytes (or other individual components represented by a subset of control analytes). Percent recovery data is displayed alongside acceptance criteria, that is typically derived from laboratory historical data. Failure of a Laboratory Control Sample to meet established recovery criteria for control analytes is cause for corrective actions to occur, which typically includes re-extraction and re-analysis of all samples associated with the QC Batch. An LCS is performed with each analytical batch. A minimum of 5% of all laboratory analyses are laboratory control samples.

Quanterra
Environmental Services

Quanterra Quality Control Program Summary (continued)

Surrogate Spike Recovery Evaluations

For GC and GC/MS analyses, known concentrations of designated surrogate spikes, consisting of a number of similar, non-method compounds or method compound analogues, are added to sample fractions prior to sample extraction and analysis. The percent recovery determinations calculated from the subsequent analysis is one indication of the overall method efficiency for the individual sample. The surrogate spike recovery data is displayed alongside acceptance limits at the bottom of each applicable analytical result report page. Where sufficient laboratory-generated data does not yet exist to determine appropriate control limits, advisory limits may be enacted until sufficient data is collected to allow implementation of control limits.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Evaluations

In conjunction with the analysis of a client-provided field sample, a known concentration of designated matrix spike compounds (target analytes) are added to two aliquots of the actual sample. Percent recovery determinations are calculated from both spiked aliquots, using target analyte concentrations already present in the actual sample as a baseline. The percent recovery determinations indicate the accuracy of the method specific to the target analytes (or other individual components represented by a subset of control analytes) in the individual sample matrix. Comparison of the percent recoveries in the two spiked aliquots yields a relative percent difference (RPD). Percent recovery and relative percent difference data is displayed alongside historical criteria, that may be used to judge individual sample matrix effects for specific analytes. MS/MSD data is evaluated by the laboratory with respect to the individual sample matrix. In cases where MS/MSD data indicate sample method performance outside of historical criteria, the laboratory control sample results are referenced to ensure acceptable method performance by the laboratory for the sample batch. For analyses which are inappropriately suited for matrix spikes (e.g. pH), non-spiked duplicate analyses are performed to generate precision data. Matrix spike duplicates are typically performed on at least one sample within each analytical batch. A minimum of 10% of all laboratory analyses are matrix spikes or duplicates.

Corrective Action Evaluations

The goal of the Quanterra Quality Control Program is to generate data that demonstrates process control, and allows for client usability of data. Where the analytical process is demonstrated to vary from established criteria, or client requirements have not been met, data evaluation resulting in corrective action may be required. Corrective action may include re-preparation and/or reanalysis of field samples and QC samples. Where appropriate or necessary to allow proper interpretation of results presented in the final report, details of corrective actions taken during the laboratory processing of samples are presented as a case narrative at the front of the report. Alternatively, routine corrective action, such as reanalysis, may be footnoted on individual sample result pages.

Analytical Result Qualifier Flags

Where applicable , data qualifiers may be appended to analytical results in order to allow for proper interpretation of the result presented. Typically, the presence of data qualifier flag on an analytical result page is accompanied by a footnote explaining the qualifier. Common data qualifiers include, but are no limited to the following:

J -indicates an estimated concentration is reported due to method limitations such as matrix interference or instrumental detection limitations.

B -indicates the presence of a particular analyte in the associated laboratory method blank.

DIL -indicates percent recovery determination was not possible due to dilution associated with the sample matrix conditions or high target analyte concentrations.

X -indicates internal standards used for a GC or GC/MS analysis did not meet established criteria, typically due to a sample matrix effect.

E -indicates an estimated concentration is reported due to analyte response beyond the established instrumental calibration range, typically due to presence of a wide range of target analyte concentrations.

Quanterra Environmental Services

METHOD BLANK REPORT

LAB #: B5H140000-069

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
Bromodichloromethane	ND	1.0	8/12/95	5226069
Bromoform	ND	1.0	8/12/95	5226069
Bromomethane	ND	1.0	8/12/95	5226069
Carbon tetrachloride	ND	1.0	8/12/95	5226069
Chlorobenzene	ND	1.0	8/12/95	5226069
Dibromochloromethane	ND	1.0	8/12/95	5226069
Chloroethane	ND	1.0	8/12/95	5226069
2-Chloroethyl vinyl ether	ND	1.0	8/12/95	5226069
Chloroform	ND	1.0	8/12/95	5226069
Chloromethane	ND	1.0	8/12/95	5226069
1,2-Dichlorobenzene	ND	1.0	8/12/95	5226069
1,3-Dichlorobenzene	ND	1.0	8/12/95	5226069
1,4-Dichlorobenzene	ND	1.0	8/12/95	5226069
Dichlorodifluoromethane	ND	1.0	8/12/95	5226069
1,1-Dichloroethane	ND	1.0	8/12/95	5226069
1,2-Dichloroethane	ND	1.0	8/12/95	5226069
1,1-Dichloroethene	ND	1.0	8/12/95	5226069
trans-1,2-Dichloroethene	ND	1.0	8/12/95	5226069
1,2-Dichloropropane	ND	1.0	8/12/95	5226069
cis-1,3-Dichloropropene	ND	1.0	8/12/95	5226069
trans-1,3-Dichloropropene	ND	1.0	8/12/95	5226069
Trichlorofluoromethane	ND	1.0	8/12/95	5226069
Methylene chloride	ND	1.0	8/12/95	5226069
1,1,2,2-Tetrachloroethane	ND	1.0	8/12/95	5226069
Tetrachloroethene	ND	1.0	8/12/95	5226069
SURROGATE RECOVERY	%	ACCEPTABLE LIMITS		
Bromochloromethane	103	(78 - 122)		

NOTE:

ND (NONE DETECTED)

Quanterra Environmental Services

METHOD BLANK REPORT

LAB #: B5H140000-069

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
1,1,1-Trichloroethane	ND	1.0	8/12/95	5226069
1,1,2-Trichloroethane	ND	1.0	8/12/95	5226069
Trichloroethene	ND	1.0	8/12/95	5226069
Vinyl chloride	ND	1.0	8/12/95	5226069

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	103	(78 - 122)

NOTE:

ND (NONE DETECTED)

Quanterra Environmental Services

METHOD BLANK REPORT

LAB #: B5H140000-070

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
Benzene	ND	1.0	8/12/95	5226070
Chlorobenzene	ND	1.0	8/12/95	5226070
1,2-Dichlorobenzene	ND	1.0	8/12/95	5226070
1,3-Dichlorobenzene	ND	1.0	8/12/95	5226070
1,4-Dichlorobenzene	ND	1.0	8/12/95	5226070
Ethylbenzene	ND	1.0	8/12/95	5226070
Toluene	ND	1.0	8/12/95	5226070
Xylenes (total)	ND	1.0	8/12/95	5226070
Methyl tert-butyl ether	ND	1.0	8/12/95	5226070

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Trifluorotoluene	104	(73 - 131)

NOTE:

ND (NONE DETECTED)

Quanterra Environmental Services

METHOD BLANK REPORT

LAB #: B5H140000-082

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
Bromodichloromethane	ND	1.0	8/13/95	5226082
Bromoform	ND	1.0	8/13/95	5226082
Bromomethane	ND	1.0	8/13/95	5226082
Carbon tetrachloride	ND	1.0	8/13/95	5226082
Chlorobenzene	ND	1.0	8/13/95	5226082
Dibromochloromethane	ND	1.0	8/13/95	5226082
Chloroethane	ND	1.0	8/13/95	5226082
2-Chloroethyl vinyl ether	ND	1.0	8/13/95	5226082
Chloroform	ND	1.0	8/13/95	5226082
Chloromethane	ND	1.0	8/13/95	5226082
1,2-Dichlorobenzene	ND	1.0	8/13/95	5226082
1,3-Dichlorobenzene	ND	1.0	8/13/95	5226082
1,4-Dichlorobenzene	ND	1.0	8/13/95	5226082
Dichlorodifluoromethane	ND	1.0	8/13/95	5226082
1,1-Dichloroethane	ND	1.0	8/13/95	5226082
1,2-Dichloroethane	ND	1.0	8/13/95	5226082
1,1-Dichloroethene	ND	1.0	8/13/95	5226082
trans-1,2-Dichloroethene	ND	1.0	8/13/95	5226082
1,2-Dichloropropane	ND	1.0	8/13/95	5226082
cis-1,3-Dichloropropene	ND	1.0	8/13/95	5226082
trans-1,3-Dichloropropene	ND	1.0	8/13/95	5226082
Trichlorofluoromethane	ND	1.0	8/13/95	5226082
Methylene chloride	ND	1.0	8/13/95	5226082
1,1,2,2-Tetrachloroethane	ND	1.0	8/13/95	5226082
Tetrachloroethene	ND	1.0	8/13/95	5226082
SURROGATE RECOVERY	%	ACCEPTABLE LIMITS		
Bromochloromethane	97	(78 - 122)		

NOTE:

ND (NONE DETECTED)

Quanterra Environmental Services

METHOD BLANK REPORT

LAB #: B5H140000-082

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
1,1,1-Trichloroethane	ND	1.0	8/13/95	5226082
1,1,2-Trichloroethane	ND	1.0	8/13/95	5226082
Trichloroethene	ND	1.0	8/13/95	5226082
Vinyl chloride	ND	1.0	8/13/95	5226082

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	97	(78 - 122)

NOTE:

ND (NONE DETECTED)

Quanterra Environmental Services

METHOD BLANK REPORT

LAB #: B5H140000-083

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
Benzene	ND	1.0	8/13/95	5226083
Chlorobenzene	ND	1.0	8/13/95	5226083
1,2-Dichlorobenzene	ND	1.0	8/13/95	5226083
1,3-Dichlorobenzene	ND	1.0	8/13/95	5226083
1,4-Dichlorobenzene	ND	1.0	8/13/95	5226083
Ethylbenzene	ND	1.0	8/13/95	5226083
Toluene	ND	1.0	8/13/95	5226083
Xylenes (total)	ND	1.0	8/13/95	5226083
Methyl tert-butyl ether	ND	1.0	8/13/95	5226083

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Trifluorotoluene	101	(73 - 131)

NOTE:

ND (NONE DETECTED)

Quanterra Environmental Services

METHOD BLANK REPORT

LAB #: B5H140000-088

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
Bromodichloromethane	ND	1.0	8/13- 8/14/95	5226088
Bromoform	ND	1.0	8/13- 8/14/95	5226088
Bromomethane	ND	1.0	8/13- 8/14/95	5226088
Carbon tetrachloride	ND	1.0	8/13- 8/14/95	5226088
Chlorobenzene	ND	1.0	8/13- 8/14/95	5226088
Dibromochloromethane	ND	1.0	8/13- 8/14/95	5226088
Chloroethane	ND	1.0	8/13- 8/14/95	5226088
2-Chloroethyl vinyl ether	ND	1.0	8/13- 8/14/95	5226088
Chloroform	ND	1.0	8/13- 8/14/95	5226088
Chloromethane	ND	1.0	8/13- 8/14/95	5226088
1,2-Dichlorobenzene	ND	1.0	8/13- 8/14/95	5226088
1,3-Dichlorobenzene	ND	1.0	8/13- 8/14/95	5226088
1,4-Dichlorobenzene	ND	1.0	8/13- 8/14/95	5226088
Dichlorodifluoromethane	ND	1.0	8/13- 8/14/95	5226088
1,1-Dichloroethane	ND	1.0	8/13- 8/14/95	5226088
1,2-Dichloroethane	ND	1.0	8/13- 8/14/95	5226088
1,1-Dichloroethene	ND	1.0	8/13- 8/14/95	5226088
trans-1,2-Dichloroethene	ND	1.0	8/13- 8/14/95	5226088
1,2-Dichloropropane	ND	1.0	8/13- 8/14/95	5226088
cis-1,3-Dichloropropene	ND	1.0	8/13- 8/14/95	5226088
trans-1,3-Dichloropropene	ND	1.0	8/13- 8/14/95	5226088
Trichlorofluoromethane	ND	1.0	8/13- 8/14/95	5226088
Methylene chloride	ND	1.0	8/13- 8/14/95	5226088
1,1,2,2-Tetrachloroethane	ND	1.0	8/13- 8/14/95	5226088
Tetrachloroethene	ND	1.0	8/13- 8/14/95	5226088

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	97	(78 - 122)

NOTE:

ND (NONE DETECTED)

Quanterra Environmental Services

METHOD BLANK REPORT

LAB #: B5H140000-088

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
1,1,1-Trichloroethane	ND	1.0	8/13- 8/14/95	5226088
1,1,2-Trichloroethane	ND	1.0	8/13- 8/14/95	5226088
Trichloroethene	ND	1.0	8/13- 8/14/95	5226088
Vinyl chloride	ND	1.0	8/13- 8/14/95	5226088

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	97	(78 - 122)

NOTE:

ND (NONE DETECTED)

Quanterra Environmental Services

METHOD BLANK REPORT

LAB #: B5H140000-093

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
Benzene	ND	1.0	8/13- 8/14/95	5226093
Chlorobenzene	ND	1.0	8/13- 8/14/95	5226093
1,2-Dichlorobenzene	ND	1.0	8/13- 8/14/95	5226093
1,3-Dichlorobenzene	ND	1.0	8/13- 8/14/95	5226093
1,4-Dichlorobenzene	ND	1.0	8/13- 8/14/95	5226093
Ethylbenzene	ND	1.0	8/13- 8/14/95	5226093
Toluene	ND	1.0	8/13- 8/14/95	5226093
Xylenes (total)	ND	1.0	8/13- 8/14/95	5226093
Methyl tert-butyl ether	ND	1.0	8/13- 8/14/95	5226093

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Trifluorotoluene	97	(73 - 131)

NOTE:

ND (NONE DETECTED)

Quanterra Environmental Services

METHOD BLANK REPORT

LAB #: B5H160000-030

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
Bromodichloromethane	ND	1.0	8/14/95	5228030
Bromoform	ND	1.0	8/14/95	5228030
Bromomethane	ND	1.0	8/14/95	5228030
Carbon tetrachloride	ND	1.0	8/14/95	5228030
Chlorobenzene	ND	1.0	8/14/95	5228030
Dibromochloromethane	ND	1.0	8/14/95	5228030
Chloroethane	ND	1.0	8/14/95	5228030
2-Chloroethyl vinyl ether	ND	1.0	8/14/95	5228030
Chloroform	ND	1.0	8/14/95	5228030
Chloromethane	ND	1.0	8/14/95	5228030
1,2-Dichlorobenzene	ND	1.0	8/14/95	5228030
1,3-Dichlorobenzene	ND	1.0	8/14/95	5228030
1,4-Dichlorobenzene	ND	1.0	8/14/95	5228030
Dichlorodifluoromethane	ND	1.0	8/14/95	5228030
1,1-Dichloroethane	ND	1.0	8/14/95	5228030
1,2-Dichloroethane	ND	1.0	8/14/95	5228030
1,1-Dichloroethene	ND	1.0	8/14/95	5228030
trans-1,2-Dichloroethene	ND	1.0	8/14/95	5228030
1,2-Dichloropropane	ND	1.0	8/14/95	5228030
cis-1,3-Dichloropropene	ND	1.0	8/14/95	5228030
trans-1,3-Dichloropropene	ND	1.0	8/14/95	5228030
Trichlorofluoromethane	ND	1.0	8/14/95	5228030
Methylene chloride	ND	1.0	8/14/95	5228030
1,1,2,2-Tetrachloroethane	ND	1.0	8/14/95	5228030
Tetrachloroethene	ND	1.0	8/14/95	5228030
SURROGATE RECOVERY	%	ACCEPTABLE LIMITS		
Bromochloromethane	94	(78 - 122)		

NOTE:

ND (NONE DETECTED)

Quanterra Environmental Services

METHOD BLANK REPORT

LAB #: B5H160000-030

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
1,1,1-Trichloroethane	ND	1.0	8/14/95	5228030
1,1,2-Trichloroethane	ND	1.0	8/14/95	5228030
Trichloroethene	ND	1.0	8/14/95	5228030
Vinyl chloride	ND	1.0	8/14/95	5228030

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Bromochloromethane	94	(78 - 122)

NOTE:

ND (NONE DETECTED)

Quanterra Environmental Services

METHOD BLANK REPORT

LAB #: B5H160000-033

GC Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
Benzene	ND	1.0	8/14/95	5228033
Chlorobenzene	ND	1.0	8/14/95	5228033
1,2-Dichlorobenzene	ND	1.0	8/14/95	5228033
1,3-Dichlorobenzene	ND	1.0	8/14/95	5228033
1,4-Dichlorobenzene	ND	1.0	8/14/95	5228033
Ethylbenzene	ND	1.0	8/14/95	5228033
Toluene	ND	1.0	8/14/95	5228033
Xylenes (total)	ND	1.0	8/14/95	5228033
Methyl tert-butyl ether	ND	1.0	8/14/95	5228033

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Trifluorotoluene	120	(73 - 131)

NOTE:

ND (NONE DETECTED)

Quanterra
Environmental
Services

METHOD BLANK REPORT

LAB #: B5H040102

METALS

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE
		BATCH:5216109			
Lead	ND	5.0	ug/L	MCAWW 239.2	8/07/95
		BATCH:5221082			
Lead	ND	5.0	ug/L	MCAWW 239.2	8/10/95
		BATCH:5226003			
Lead	ND	5.0	ug/L	MCAWW 239.2	8/14/95

NOTE:

ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CHECK SAMPLE REPORT

QC BATCH: 5226069
LAB #: B5H140000-069 C

PREPARATION DATE: 8/12/95
DATE ANALYZED: 8/12/95

GC Volatiles

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
Chloromethane	84	(1.0-193)
Vinyl chloride	93	(28-163)
Bromomethane	88	(1.0-144)
Chloroethane	103	(46-137)
Trichlorofluoromethane	109	(21-156)
1,1-Dichloroethene	107	(28-167)
Methylene chloride	105	(25-162)
trans-1,2-Dichloroethene	123	(38-155)
1,1-Dichloroethane	102	(47-132)
Chloroform	113	(49-133)
1,1,1-Trichloroethane	104	(41-138)
Carbon tetrachloride	86	(43-143)
1,2-Dichloroethane	104	(51-147)
Trichloroethene	97	(35-146)
1,2-Dichloropropane	107	(44-156)
Bromodichloromethane	96	(42-172)
2-Chloroethyl vinyl ether	94	(14-186)
cis-1,3-Dichloropropene	71	(22-178)
trans-1,3-Dichloropropene	69	(22-178)
1,1,2-Trichloroethane	100	(39-136)
Tetrachloroethene	105	(26-162)
Dibromochloromethane	78	(24-191)
Chlorobenzene	101	(38-150)
Bromoform	76	(13-159)
1,1,2,2-Tetrachloroethane	101	(8.0-184)
1,3-Dichlorobenzene	100	(7.0-187)
1,2-Dichlorobenzene	99	(1.0-208)
1,4-Dichlorobenzene	106	(42-143)

Quanterra
Environmental Services

CHECK SAMPLE REPORT

QC BATCH: 5226070
LAB #: B5H140000-070 C

PREPARATION DATE: 8/12/95
DATE ANALYZED: 8/12/95

GC Volatiles

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
Benzene	100	(39-150)
Toluene	99	(46-148)
Chlorobenzene	97	(55-135)
Ethylbenzene	99	(32-160)
1,3-Dichlorobenzene	98	(50-141)
1,4-Dichlorobenzene	95	(42-143)
1,2-Dichlorobenzene	96	(37-154)

Quanterra
Environmental Services

CHECK SAMPLE REPORT

QC BATCH: 5226082
LAB #: B5H140000-082 C

PREPARATION DATE: 8/13/95
DATE ANALYZED: 8/13/95

GC Volatiles

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
Chloromethane	114	(1.0-193)
Vinyl chloride	84	(28-163)
Bromomethane	74	(1.0-144)
Chloroethane	95	(46-137)
Trichlorofluoromethane	108	(21-156)
1,1-Dichloroethene	114	(28-167)
Methylene chloride	110	(25-162)
trans-1,2-Dichloroethene	133	(38-155)
1,1-Dichloroethane	108	(47-132)
Chloroform	113	(49-133)
1,1,1-Trichloroethane	109	(41-138)
Carbon tetrachloride	101	(43-143)
1,2-Dichloroethane	110	(51-147)
Trichloroethene	107	(35-146)
1,2-Dichloropropane	109	(44-156)
Bromodichloromethane	101	(42-172)
2-Chloroethyl vinyl ether	89	(14-186)
cis-1,3-Dichloropropene	67	(22-178)
trans-1,3-Dichloropropene	64	(22-178)
1,1,2-Trichloroethane	104	(39-136)
Tetrachloroethene	113	(26-162)
Dibromochloromethane	90	(24-191)
Chlorobenzene	104	(38-150)
Bromoform	85	(13-159)
1,1,2,2-Tetrachloroethane	94	(8.0-184)
1,3-Dichlorobenzene	104	(7.0-187)
1,2-Dichlorobenzene	104	(1.0-208)
1,4-Dichlorobenzene	103	(42-143)

Quanterra
Environmental Services

CHECK SAMPLE REPORT

QC BATCH: 5226083
LAB #: B5H140000-083 C

PREPARATION DATE: 8/13/95
DATE ANALYZED: 8/13/95

GC Volatiles

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
Benzene	102	(39-150)
Toluene	99	(46-148)
Chlorobenzene	100	(55-135)
Ethylbenzene	101	(32-160)
1,3-Dichlorobenzene	101	(50-141)
1,4-Dichlorobenzene	98	(42-143)
1,2-Dichlorobenzene	98	(37-154)

Quanterra
Environmental Services

CHECK SAMPLE REPORT

QC BATCH: 5226088
LAB #: B5H140000-088 C

PREPARATION DATE: 8/14/95
DATE ANALYZED: 8/14/95

GC Volatiles

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
Chloromethane	144	(1.0-193)
Vinyl chloride	91	(28-163)
Bromomethane	88	(1.0-144)
Chloroethane	110	(46-137)
Trichlorofluoromethane	96	(21-156)
1,1-Dichloroethene	110	(28-167)
Methylene chloride	107	(25-162)
trans-1,2-Dichloroethene	132	(38-155)
1,1-Dichloroethane	99	(47-132)
Chloroform	105	(49-133)
1,1,1-Trichloroethane	100	(41-138)
Carbon tetrachloride	77	(43-143)
1,2-Dichloroethane	105	(51-147)
Trichloroethene	102	(35-146)
1,2-Dichloropropane	105	(44-156)
Bromodichloromethane	96	(42-172)
2-Chloroethyl vinyl ether	57	(14-186)
cis-1,3-Dichloropropene	69	(22-178)
trans-1,3-Dichloropropene	62	(22-178)
1,1,2-Trichloroethane	102	(39-136)
Tetrachloroethene	106	(26-162)
Dibromochloromethane	84	(24-191)
Chlorobenzene	102	(38-150)
Bromoform	84	(13-159)
1,1,2,2-Tetrachloroethane	103	(8.0-184)
1,3-Dichlorobenzene	109	(7.0-187)
1,2-Dichlorobenzene	105	(1.0-208)
1,4-Dichlorobenzene	109	(42-143)

Quanterra
Environmental Services

CHECK SAMPLE REPORT

QC BATCH: 5228030
LAB #: B5H160000-030 C

PREPARATION DATE: 8/14/95
DATE ANALYZED: 8/14/95

GC Volatiles

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
Chloromethane	80	(1.0-193)
Vinyl chloride	70	(28-163)
Bromomethane	111	(1.0-144)
Chloroethane	116	(46-137)
Trichlorofluoromethane	97	(21-156)
1,1-Dichloroethene	102	(28-167)
Methylene chloride	107	(25-162)
trans-1,2-Dichloroethene	124	(38-155)
1,1-Dichloroethane	100	(47-132)
Chloroform	110	(49-133)
1,1,1-Trichloroethane	116	(41-138)
Carbon tetrachloride	116	(43-143)
1,2-Dichloroethane	118	(51-147)
Trichloroethene	114	(35-146)
1,2-Dichloropropane	115	(44-156)
Bromodichloromethane	112	(42-172)
2-Chloroethyl vinyl ether	96	(14-186)
cis-1,3-Dichloropropene	118	(22-178)
trans-1,3-Dichloropropene	113	(22-178)
1,1,2-Trichloroethane	92	(39-136)
Tetrachloroethene	114	(26-162)
Dibromochloromethane	92	(24-191)
Chlorobenzene	85	(38-150)
Bromoform	114	(13-159)
1,1,2,2-Tetrachloroethane	114	(8.0-184)
1,3-Dichlorobenzene	99	(7.0-187)
1,2-Dichlorobenzene	105	(1.0-208)
1,4-Dichlorobenzene	99	(42-143)

Quanterra
Environmental
Services

CHECK SAMPLE REPORT

QC BATCH: 5228033
LAB #: B5H160000-033 C

PREPARATION DATE: 8/14/95
DATE ANALYZED: 8/14/95

GC Volatiles

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
Benzene	89	(39-150)
Toluene	94	(46-148)
Chlorobenzene	102	(55-135)
Ethylbenzene	81	(32-160)
1,3-Dichlorobenzene	69	(50-141)
1,4-Dichlorobenzene	90	(42-143)
1,2-Dichlorobenzene	78	(37-154)

Quanterra
Environmental
Services

LCS - DCS REPORT

QC BATCH: 5226093
LAB #: B5H140000-093 C

WO #:
PREPARATION DATE: 8/14/95
DATE ANALYZED: 8/14/95

GC Volatiles

COMPOUND	LCS PERCENT RECOVERY	DCS PERCENT RECOVERY	Q/C LIMITS	RPD	RPD LIMITS
Benzene	105	105	(39-150)	0.26	25
Toluene	104	105	(46-148)	0.96	25
Chlorobenzene	101	102	(55-135)	1.2	25
Ethylbenzene	105	104	(32-160)	0.68	25
1,3-Dichlorobenzene	105	108	(50-141)	2.6	25
1,4-Dichlorobenzene	102	103	(42-143)	1.7	25
1,2-Dichlorobenzene	102	105	(37-154)	3.6	25

Calculations are performed before rounding to avoid round-off errors in calculated results

Quanterra
Environmental
Services

CHECK SAMPLE REPORT

LAB #: B5H040102

METALS

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS	PREPARATION - ANALYSIS DATE
	BATCH:5216109		
Lead	115	(83-119)	8/07/95
	BATCH:5221082		
Lead	104	(83-119)	8/10/95
	BATCH:5226003		
Lead	105	(83-119)	8/14/95

Quanterra
Environmental
Services

SAMPLE - SAMPLE DUP

WO #: C006Q

LAB #: B5E170104-004
MATRIX: SOLID

- - - - - - - - - - - - - - - - - - **INORGANIC ANALYTICAL REPORT** - - - - - - - - - - - - - - - -

PARAMETER	RESULT SMP	RESULT DUP	RPD	RPD LIMIT	EXTRACTION / ANALYSIS DATE	QC BATCH
Residue (Total) as Percent Solids	93.4	93.6	0.2	(0-20)	5/23- 5/24/95	5144006

Quanterra
Environmental
Services

SAMPLE - SAMPLE DUP

WO #: C0427

LAB #: B5F260104-006
MATRIX: SOLID

- - - - - - - - - - - - - - - - - - **INORGANIC ANALYTICAL REPORT** - - - - - - - - - - - - - - - -

PARAMETER	RESULT SMP	RESULT DUP	RPD	RPD LIMIT	EXTRACTION / ANALYSIS DATE	QC BATCH
Residue (Total) as Percent Solids	96.3	96.3	0.07	(0-20)	7/05/95	5186013

Quanterra
Environmental
Services

SAMPLE - SAMPLE DUP

WO #: C00XL

LAB #: B5E240107-019
MATRIX: SOLID

- - - - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - - -

PARAMETER	RESULT SMP	DUP	RPD	RPD LIMIT	EXTRACTION / ANALYSIS DATE	QC BATCH
Residue (Total) as Percent Solids	83.5	83.0	0.5	(0-20)	5/25- 5/26/95	5146014

Quanterra
Environmental Services

MATRIX SPIKE REPORT

QC BATCH: 5226069
LAB #: B5H040102-008 S
MATRIX: WATER

WO #: C0H54
PREPARATION DATE: 8/13/95
DATE ANALYZED: 8/13/95

GC Volatiles

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
Chloromethane	101	(75-131)
Vinyl chloride	88	(44-176)
Bromomethane	75	(37-145)
Chloroethane	97	(82-121)
Trichlorofluoromethane	97	(87-131)
1,1-Dichloroethene	106	(43-131)
Methylene chloride	96	(82-122)
trans-1,2-Dichloroethene	122	(81-115)
1,1-Dichloroethane	94	(83-117)
Chloroform	96	(69-121)
1,1,1-Trichloroethane	98	(81-125)
Carbon tetrachloride	97	(81-129)
1,2-Dichloroethane	96	(75-139)
Trichloroethene	98	(75-123)
1,2-Dichloropropane	101	(75-123)
Bromodichloromethane	98	(61-133)
2-Chloroethyl vinyl ether	4.2	(50-156)
cis-1,3-Dichloropropene	64	(78-122)
trans-1,3-Dichloropropene	62	(65-128)
1,1,2-Trichloroethane	90	(81-133)
Tetrachloroethene	99	(75-127)
Dibromochloromethane	88	(87-130)
Chlorobenzene	90	(58-133)
Bromoform	82	(72-116)
1,1,2,2-Tetrachloroéthane	82	(70-126)
1,3-Dichlorobenzene	93	(81-115)
1,2-Dichlorobenzene	94	(85-119)
1,4-Dichlorobenzene	96	(84-115)

Calculations are performed before rounding to avoid round-off errors in calculated results

Quanterra
Environmental Services

MATRIX SPIKE REPORT

QC BATCH: 5228030
LAB #: B5H070107-002 S
MATRIX: WATER

WO #: C0J3N
PREPARATION DATE: 8/15/95
DATE ANALYZED: 8/15/95

GC Volatiles

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
Chloromethane	77	(75-131)
Vinyl chloride	147	(44-176)
Bromomethane	170	(37-145)
Chloroethane	180	(82-121)
Trichlorofluoromethane	117	(87-131)
1,1-Dichloroethene	121	(43-131)
Methylene chloride	105	(82-122)
trans-1,2-Dichloroethene	141	(81-115)
1,1-Dichloroethane	109	(83-117)
Chloroform	110	(69-121)
1,1,1-Trichloroethane	127	(81-125)
Carbon tetrachloride	125	(81-129)
1,2-Dichloroethane	116	(75-139)
Trichloroethene	119	(75-123)
1,2-Dichloropropane	115	(75-123)
Bromodichloromethane	106	(61-133)
2-Chloroethyl vinyl ether	0	(50-156)
cis-1,3-Dichloropropene	99	(78-122)
trans-1,3-Dichloropropene	102	(65-128)
1,1,2-Trichloroethane	91	(81-133)
Tetrachloroethene	126	(75-127)
Dibromochloromethane	90	(87-130)
Chlorobenzene	96	(58-133)
Bromoform	112	(72-116)
1,1,2,2-Tetrachloroethane	122	(70-126)
1,3-Dichlorobenzene	94	(81-115)
1,2-Dichlorobenzene	97	(85-119)
1,4-Dichlorobenzene	91	(84-115)

Calculations are performed before rounding to avoid round-off errors in calculated results

Quanterra
Environmental Services

MATRIX SPIKE REPORT

QC BATCH: 5228033
LAB #: B5H070107-002 S
MATRIX: WATER

WO #: C0J3N
PREPARATION DATE: 8/15/95
DATE ANALYZED: 8/15/95

GC Volatiles

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
Benzene	64	(70-117)
Toluene	68	(70-117)
Chlorobenzene	101	(58-133)
Ethylbenzene	63	(84-106)
1,3-Dichlorobenzene	73	(81-115)
1,4-Dichlorobenzene	65	(84-115)
1,2-Dichlorobenzene	71	(85-119)

Calculations are performed before rounding to avoid round-off errors in calculated results

Quanterra
Environmental Services

MATRIX SPIKE REPORT

QC BATCH: 5226070
LAB #: B5H040102-008 S
MATRIX: WATER

WO #: C0H54
PREPARATION DATE: 8/13/95
DATE ANALYZED: 8/13/95

GC Volatiles

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
Benzene	97	(70-117)
Toluene	95	(70-117)
Chlorobenzene	94	(58-133)
Ethylbenzene	95	(84-106)
1,3-Dichlorobenzene	95	(81-115)
1,4-Dichlorobenzene	93	(84-115)
1,2-Dichlorobenzene	93	(85-119)

Calculations are performed before rounding to avoid round-off errors in calculated results

Quanterra
Environmental Services

MATRIX SPIKE REPORT

QC BATCH: 5226088
LAB #: B5H070107-003 S
MATRIX: WATER

WO #: C0J3R
PREPARATION DATE: 8/14/95
DATE ANALYZED: 8/14/95

GC Volatiles

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
Chloromethane	63	(75-131)
Vinyl chloride	83	(44-176)
Bromomethane	73	(37-145)
Chloroethane	91	(82-121)
Trichlorofluoromethane	103	(87-131)
1,1-Dichloroethene	109	(43-131)
Methylene chloride	109	(82-122)
trans-1,2-Dichloroethene	126	(81-115)
1,1-Dichloroethane	107	(83-117)
Chloroform	114	(69-121)
1,1,1-Trichloroethane	107	(81-125)
Carbon tetrachloride	98	(81-129)
1,2-Dichloroethane	105	(75-139)
Trichloroethene	97	(75-123)
1,2-Dichloropropane	107	(75-123)
Bromodichloromethane	105	(61-133)
2-Chloroethyl vinyl ether	0	(50-156)
cis-1,3-Dichloropropene	80	(78-122)
trans-1,3-Dichloropropene	89	(65-128)
1,1,2-Trichloroethane	97	(81-133)
Tetrachloroethene	107	(75-127)
Dibromochloromethane	87	(87-130)
Chlorobenzene	97	(58-133)
Bromoform	88	(72-116)
1,1,2,2-Tetrachloroethane	109	(70-126)
1,3-Dichlorobenzene	100	(81-115)
1,2-Dichlorobenzene	99	(85-119)
1,4-Dichlorobenzene	101	(84-115)

Calculations are performed before rounding to avoid round-off errors in calculated results

Quanterra
Environmental
Services

MATRIX SPIKE REPORT

LAB #: B5H040102-001

METALS

COMPOUND	SPIKE PERCENT RECOVERY	SPIKE/DUP PERCENT RECOVERY	Q/C LIMITS	RPD	RPD LIMITS	PREPARATION - ANALYSIS DATE
		BATCH:5216109 MATRIX: WATER				
Lead	104	101	(55-137)	2.4	(0-11)	8/07/95

NOTE:

Calculations are performed before rounding to avoid round-off errors in calculated results

Quanterra Environmental Services, Tampa
Sample Shipper Evaluation and Receipt Form

Client: ABB-ES Project Name/Number: USS PANAMA CITY

Samples Received by: [signature] Date Received: 8.3.95
Signature

Sample Evaluation Form by: [signature]
Signature

Type of shipping containers samples received in:

Quanterra cooler: _____ Client cooler: _____

Quanterra shipper _____ Box _____ Other _____

Any "NO" responses or discrepancies should be explained in the "Comments" section.

		Yes	No
1)	Were custody seals on shipping container(s) intact?	✓	
2)	Were custody papers properly included with samples?	✓	
3)	Were custody papers properly filled out (ink, signed, match labels)?	✓	
4)	Did all bottles arrive in good condition (unbroken)?	✓	
5)	Were all bottle labels complete (sample no., date, signed, analysis preservatives)?	✓	
6)	Were correct bottles used for the tests indicated?	✓	
7)	Were proper sample preservativion techniques indicated?	✓	
8)	Were samples received within adequate holding times?	✓	
9)	Were all VOA bottles checked for the presence of air bubbles? (If air bubbles were found, indicate in comment section)	✓	
10)	Were samples in direct contact with wet ice? NOTE TEMPERATURE BELOW	✓	
11)	Were samples accepted into the laboratory? (If "No", see comments)	✓	

Cooler # 4 Temp 4 C Cooler # 3 Temp. 5 C

Comments: _____

ABB ENVIRONMENTAL SERVICES, INC.

SDG #

COC #

Task Order #: 069
Job #: 7578-31
Office Ph #: (904) 656-1293
Field Office Ph #:

PROJECT NAME: CSS PANAMA CITY
SITE NAME: SITE 327
PROJECT MANAGER: MARK DIBLIN
COPY TO: KAREN HARTNETT
REQ. COMPLETION DATE: STANDARD

LAB TEST CODES

A 0031

Comments	SAMPLE IDENTIFIER	SAMPLE DATE	SAMPLE TIME	MATRIX	SAMPLE TYPE COMP	SAMPLE TYPE GRAB	TICS (Y/N)	TOTAL CONTAINERS	1 601/602 w/HCl	2 Pb w/HNO_3	3	4	5	6	7	8	LAB CODE PARAMETER METHOD PRESERVATIVE VOLUME	LAB BATCH NO: / Comments
	18G00303	7/31/95	1700	W		X		4	3	1								
	18G01003	7/31/95	1635	W		X		4	3	1								
	18G00Z03	7/31/95	1715	W		X		4	3	1								
	18G00903	7/31/95	1800	W		X		4	3	1								
	18G00403	7/31/95	1740	W		X		4	3	1								
	18G0ZZ03	7/31/95	1835	W		X		4	3	1								
	18GEB103	7/31/95	1830	W		X		4	3	1								
	18G01303	7/31/95	1820	W		X		4	3	1								
	18G01703	8/1/95	0820	W		X		4	3	1								
	18DP1003	8/1/95	0830	W		X		4	3	1								
	18G00503	8/1/95	0830	W		X		4	3	1								
TOTAL PARAMETERS PER COLUMN																		

NOTES:

LAB COMMENTS:

NEESA QC LEVEL

ABB ENVIRONMENTAL SERVICES, INC.

SDG #

COC #

Task Order #: 069

Job #: 7578-31

Office Ph #: (904) 656-1283

Field Office Ph #:

PROJECT NAME: CSS PANAMA CITY
SITE NAME: SITE 327
PROJECT MANAGER: MARK DIBLIN
COPY TO: KAREN HARTNETT
REQ. COMPLETION DATE: STANDARD

LAB TEST CODES: 1 2 3 4 5 6 7 8

A0032

Comments	SAMPLE IDENTIFIER	SAMPLE DATE	SAMPLE TIME	MATRIX	SAMPLE TYPE COMP	SAMPLE TYPE GRAB	TICS (Y/N)	TOTAL CONTAINERS	1: 601/602 w/HCl	2: Pb w/HNO_3	3	4	5	6	7	8	LAB CODE PARAMETER METHOD PRESERVATIVE VOLUME / Comments
	18G01603	8/1/95	0945	W		X		4	3	1							
	18G01903	8/1/95	1035	W		X		4	3	1							
	18G01803	8/1/95	1015	W		X		4	3	1							
	18G02003	8/1/95	1130	W		X		4	3	1							
	18G00803	8/1/95	1130	W		X		4	3	1							
	18G00103	8/1/95	1235	W		X		4	3	1							
	18GDP303	8/1/95	1245	W		X		4	3	1							
	18G01403	8/1/95	1230	W		X		4	3	1							
	18G01103	8/1/95	1535	W		X		4	3	1							
	18GDP203	8/1/95		W		X		4	3	1							
	~~18DP203~~	~~8/1/95~~		~~W~~		~~X~~		~~4~~	~~3~~	~~1~~		JK					

LAB BATCH NO:

TOTAL PARAMETERS PER COLUMN

NEESA QC LEVEL

NOTES:

LAB COMMENTS:

ABB ENVIRONMENTAL S[illegible] INC.

ABB ENVIRONMENTAL SERVICES, INC.

SDG #

COC #

Task Order #: 069
Office Ph #:
Job #: 7578-31
Office Ph #:
(904) 656-1293
Field Office Ph #:

PROJECT NAME: CSS PANAMA CITY
SITE NAME: SITE 327
PROJECT MANAGER: MARK DIBLIN
COPY TO: KAREN HARTNETT
REQ. COMPLETION DATE: STANDARD

LAB TEST CODES

A 0033

Comments	SAMPLE IDENTIFIER	SAMPLE DATE	SAMPLE TIME	MATRIX	SAMPLE TYPE: COMP	SAMPLE TYPE: GRAB	TIC B (Y/N)	TOTAL CONTAINERS	1: 601/602 w/HCl	2: Pb w/HNO3	3	4	5	6	7	8	LAB CODE PARAMETER METHOD PRESERVATIVE VOLUME	LAB BATCH NO: / Comments
	18GEB203	8/1/96	1530			X		4	3	1								
	18G02103	8/1/95	1600			X		4	3	1								
	TRIP BLANK	—	—					3	3									

NUMBERS PER COLUMN

TOTAL PARAMETERS PER COLUMN

NEESA QC LEVEL

NOTES:

LAB COMMENTS: