SR 6/14/91 Interim Report (monitoring) soil

SUMMARY REPORT
FOR
REMOVAL OF THE 500 GALLON
GASOLINE STORAGE TANK
AT THE
BURLINGTON NORTHERN RAILROAD
INTERBAY CAR REPAIR SHOP
SEATTLE, WASHINGTON

Prepared For:
Burlington Northern Railroad
Seattle, Washington

Prepared By:
Environmental Management Resources, Inc,
Redmond, Washington
Project 91-253

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Figures and Tables

SUMMARY REPORT FOR REMOVAL OF THE 500 GALLON UST AT THE INTERBAY CAR REPAIR SHOP - SEATTLE, WASHINGTON

1.0 INTRODUCTION

This report documents the removal and site assessment of the former 500 gallon gasoline underground storage tank (UST) located at the Burlington Northern (BN) Balmer Car Repair Shop at 3600 Gilman Avenue West in Interbay, Washington.

Environmental Management Resources, Inc. (EMR), which is a Washington State licensed UST Service Provider/Site Assessor and Specialty Contractor, provided the site assessment and decommissioning services. The scope of services consisted of tank pumping, removal of the tank and pump island, piping abandonment, collecting confirmation soil samples for chemical analysis, thin-spreading gasoline impacted soil and preparing this report.

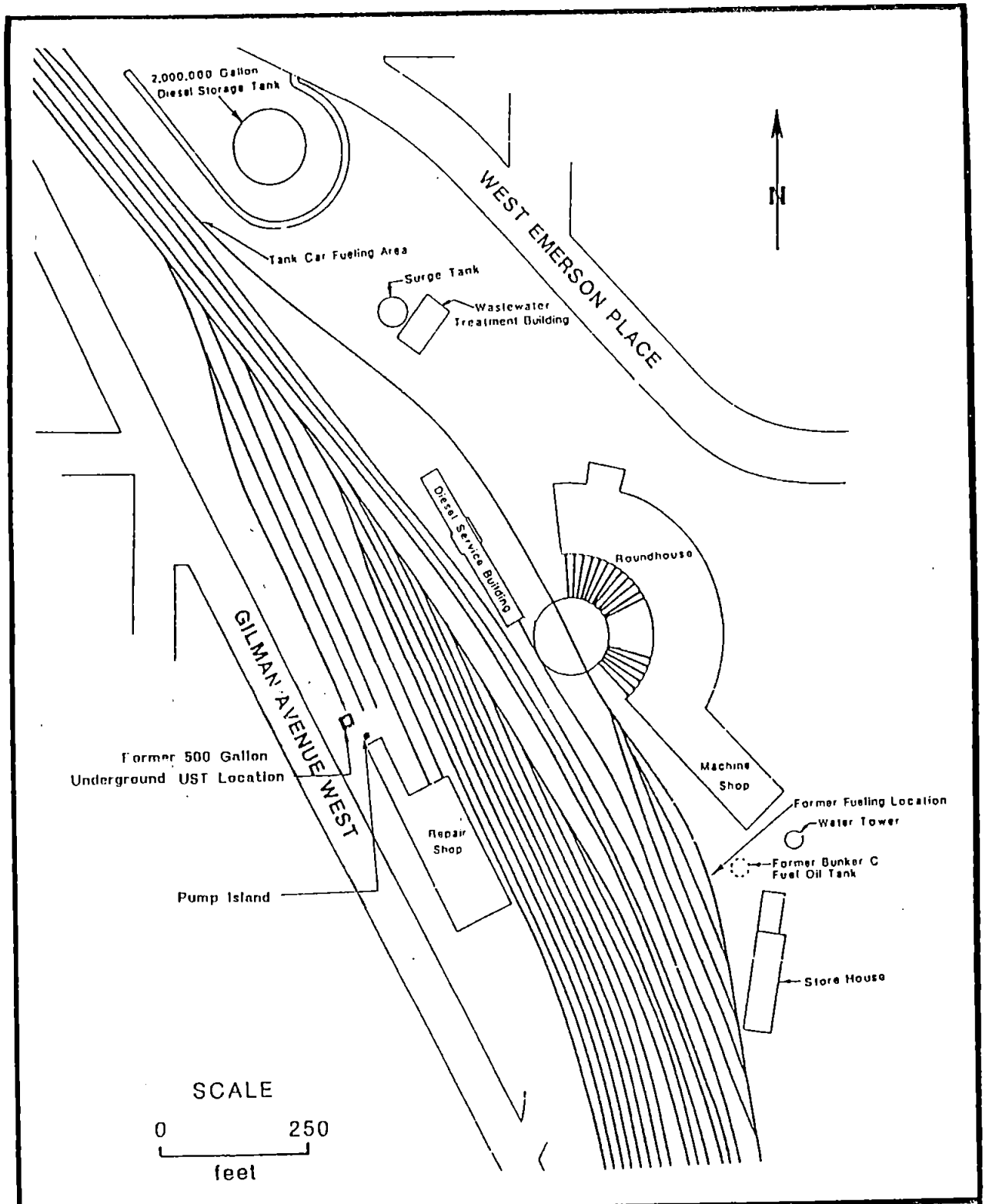
Hollenbeck Excavation of Othello, Washington who is also State licensed for UST Decommissioning, provided the backhoe for excavation and tank removal. Northwest EnviroService of Seattle provided tank pumping, cleaning and disposal. The residual gasoline along with tank rinse water was pumped out by Northwest EnviroService prior to mobilization to the site to remove the tank.

2.0 SITE BACKGROUND

The tank was installed in about 1973 by Burlington Northern Railroad and consisted of a 500-gallon steel cylindrical tank, 40 feet of product line and a single electric suction pump island dispenser and associated tank vent piping. The UST was used to store and dispense gasoline for railroad vehicles. Figure One is a site vicinity map of the area and indicates the tank location with respect to adjacent buildings and roadways.

The tank did not have any leak detection systems or secondary containment systems although there is a monitor well located approximately three feet north of the former tank location. This well is associated with an ongoing site investigation and has been sampled by others in the past.

The tank complex had no hold down or anchoring systems and was overlaid by approximately twelve inches of soil and an eight inch thick steel-reinforced concrete slab surrounded by asphalt pavement. There were no indications of underground utilities of any type in close proximity of the tank complex, as determined by utility locates. A storm drain was present about sixty feet to the southeast of the tank complex.



Facility Map
BNRR-Interbay, WA

EMR Environmental Management Resources, Inc.

The soil type in the vicinity of the former tank complex is comprised of miscellaneous fill in the upper few feet to brown fine-grained sands and silts at depth. The ground water beneath the site is not suitable for drinking and its depth below ground surface varies with the seasons. The depth to groundwater is approximately 10 to 12 feet.

The land use in the immediate area is that of a large rail yard facility with multiple buildings associated with the operation and servicing of railroad equipment. The outlying areas are a mixture of residential, commercial and light industrial.

3.0 SITE INSPECTION

The site inspection did not yield any indications of spills or releases of product. The locations of the tank and piping trench leading to the dispensing island were clearly visible by noting areas of asphalt patching associated with the installation. The fill end of the tank was located and opened for inspection of the tank interior. The tank appeared empty. Above ground utilities were not going to be a hinderance as none were present.

4.0 TANK REMOVAL PROCESS

4.1 Site Preparation

The tank removal process was initiated on April 25, by cutting the asphalt and concrete surface cover above the former tank. On April 29, the concrete and asphalt was removed and placed adjacent to the tank area. The actual decommissioning began the following day by removing the overlying soil to expose the tank for inerting and purging.

The UST was inerted by placing approximately 15 pounds of dry ice into the tank to expel vapors before removal. A representative of the Seattle Fire Department inspected the site to check the tank for explosive potential. The Fire Department permitted the tank to be removed as the lower explosive limit and the oxygen concentrations had been reduced to a safe concentration.

4.2 Tank Removal, Visual Inspection, and Disposal

Once approval for removal was granted by the Fire Department, soil was excavated from around the tank itself. The excavated soil was stockpiled adjacent to the excavation. The product and vent lines were disconnected and capped and the tank was lifted out of the excavation. Representatives from the Burlington Northern Railroad and their consultant were present and observed the tank removal activities.

After removal, the tank was visually inspected by an EMR field engineer and the representative from Burlington Northern for signs of holes or damage, or both. The tank appeared in good condition and no holes or leak points were visible. There was some corrosion visible in the form of pock marks near the tank bottom but none were

rusted through.

There was visual and olfactory evidence of contamination around the tank fill end (north end of tank) and was most likely related to spillage associated with past tank refueling activities. There was also some fuel staining around the area where the product line connected to the tank (south end of tank) and was thought to have originated from a leaky pipe union. The fuel impacted soil from both ends of the tank was also excavated prior to collection of confirmation soil samples.

The dimensions of the excavation upon completion of soil removal were approximately seven feet wide by twelve feet long with a depth of seven feet on the south end and ten feet on the north end. Removal of soil on the north end of the bottom of the excavation was hindered due to the close proximity of an existing monitor well associated with other site investigation activities. The excavated soil was stockpiled on a paved surface until receipt of soil analytical data.

The tank was left on site overnight and was inerted once again with dry ice on the morning of May 1, prior to being picked up by Northwest EnviroService. The tank was loaded onto a flat-bed truck and was secured for transportation to their facility for cleaning and cutting. The concrete and asphalt debris was transported to the Woodworth Asphalt facility in Tacoma, Washington for disposal.

5.0 CONFIRMATION SOIL SAMPLING AND ANALYSIS

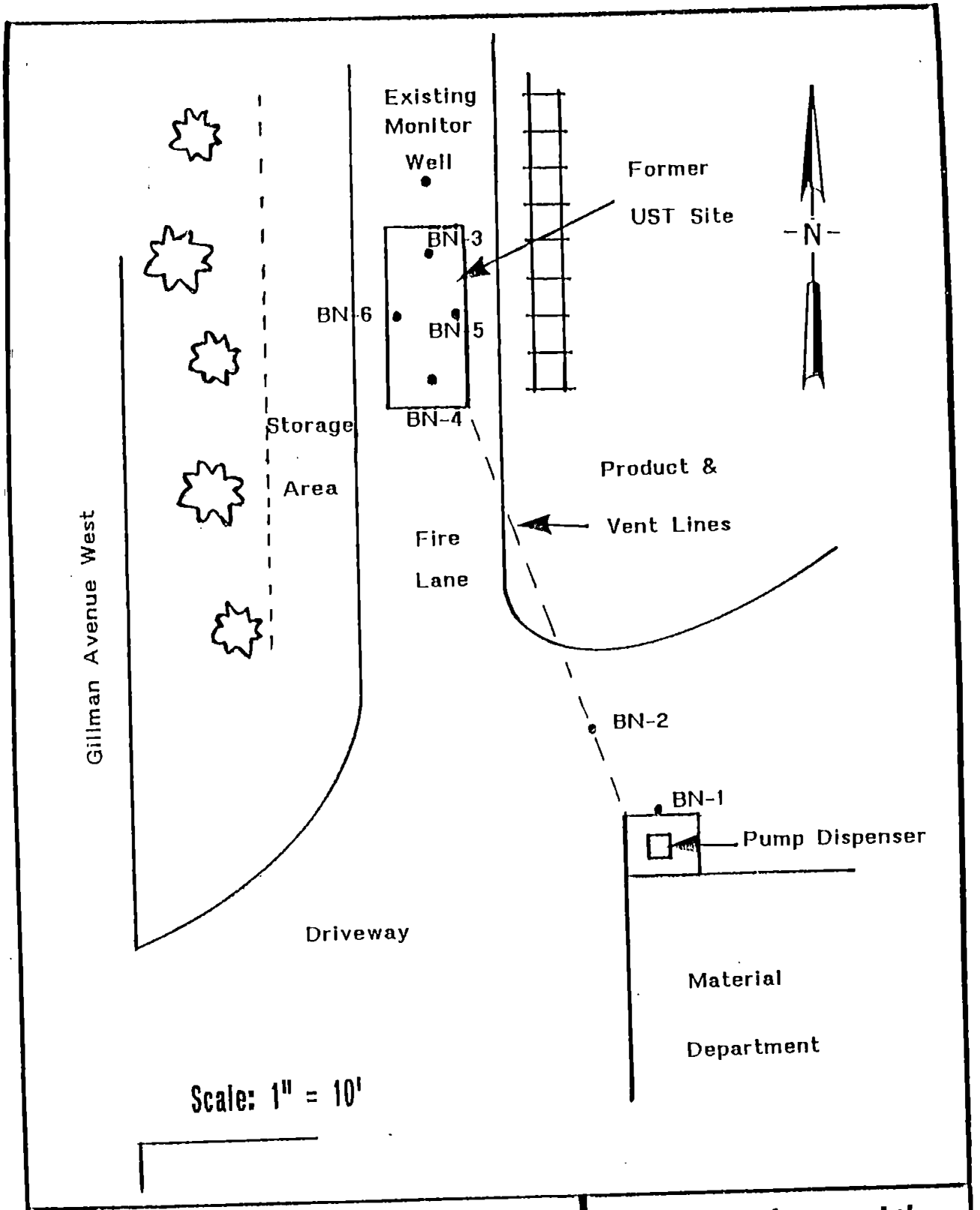
5.1 Sample Collection

An EMR field engineer collected two sidewall and two bottom soil samples for a total of four discrete soil samples from the tank excavation area (BN-3, 4, 5, and 6). Discrete soil samples were also collected from under the former pump island dispensing equipment (BN-1) and from under the product and vent line trench (BN-2). A composite soil sample was also collected from the pile of excavated soil (BN-7) from the former UST area. The soil sample locations are shown on Figure 2.

All samples were collected with a stainless steel hand auger. The soil was then transferred with stainless steel spoons directly into laboratory-supplied glass containers with teflon-lined lids. The samples were then stored on ice until delivery to NorthCreek Analytical Lab in Bothell, Washington. All soil samples were submitted for 24-hour turnaround of results.

5.2 Sample Analysis

Soil samples from the former tank area excavation, pump island, pipe trench and soil stockpile were analyzed for total petroleum hydrocarbons (TPH) by the Modified-8015 Method; Benzene, Toluene, Ethylbenzene and Xylene (BTEX) by EPA Method 8020



BN-INTERBAY
Balmer Car Shop
Figure 1

Environmental Management Resources, Inc.

and also for Total Lead.

6.0 ANALYTICAL RESULTS

The soil analytical results are summarized in Table 1. The analytical reports and chain-of-custody records are included in Appendix A. All petroleum hydrocarbon and lead analytical parameters were non-detected in all soil samples except BN-3 (north end of tank) and BN-7 (excavated soil). Total lead was the only compound detected in soil sample BN-1 (pump island).

The soil sample designated BN-3 contained 30 milligrams per kilogram (mg/kg) of TPH as gasoline, and 1.9, 7.5, 0.74 and 5.3 mg/kg of BTEX compounds, respectively. Soil sample BN-7 contained 120 mg/kg TPH as gasoline, 17 mg/kg total lead, with BTEX compounds being ND, 6.0, 2.7 and 16 mg/kg, respectively. Sample BN-1 contained total lead at 8.9 mg/kg. None of the other soil samples contained a detectable concentration of any of the constituents for which they were analyzed.

Mr. Joe Hickey of The Washington Department of Ecology (WDOE) was notified by telephone upon receipt of analytical data for his opinion as to the necessity to remove additional soil from the north end of the excavation where BN-3 was collected (benzene at 1.9 mg/kg). Mr. Hickey indicated that backfilling the excavation with a porous fill and leaving the surface unpaved for a period of time was acceptable, providing that BN monitor the ground water in the vicinity of the former UST complex with the adjacent monitor well. Mr. Hickey also suggested onsite thin-spreading on plastic for the gasoline-impacted soil removed from the excavation, to allow for physical aeration.

7.0 CONCLUSIONS

Gasoline and its associated BTEX compounds were detected in the bottom north end of the former UST area and were below WDOE Method A Compliance Levels for TPH, Lead, Toluene, Ethylbenzene and Xylene. Benzene detected at 1.9 mg/kg was above the Compliance Level of 0.5 mg/kg. The excavation was backfilled with gravel and left unpaved for volatilization to occur from the native soil at the base of the excavation. At your request, we will complete the surface restoration in the vicinity of the former UST. We recommend waiting a minimum of 30 days prior to resurfacing the area.

The excavated soil contained TPH at 120 mg/kg, which is above the Method A Compliance Level of 100 mg/kg. This soil was transported to the east side of the rail yard and placed within a bermed and plastic-lined cell on railroad property for physical aeration. We estimate this soil volume to be about 25 cubic yards. We recommend that you sample this soil for TPH and BTEX when no further volatile emissions are being emitted from the soil.

TABLE 1

SOIL ANALYTICAL DATA
BN-INTERBAY UST
ALL RESULTS IN MG/KG

SAMPLE NUMBER	LOCATION	EPA METHOD 8015 MODIFIED TPH AS GASOLINE	EPA METHOD 8020 BENZENE	TOLUENE	ETHYL-BENZENE	XYLENE	TOTAL LEAD
BN-1	UNDER PUMP ISLAND	ND	ND	ND	ND	ND	8.9
BN-2	PRODUCT LINE TRENCH	ND	ND	ND	ND	ND	ND
BN-3	NORTH END/BOTTOM OF EXCAVATION	30	1.9	7.5	0.74	5.3	ND
BN-4	SOUTH END/BOTTOM OF EXCAVATION	ND	ND	ND	ND	ND	ND
BN-5	EAST SIDEWALL OF EXCAVATION	ND	ND	ND	ND	ND	ND
BN-6	WEST SIDEWALL OF EXCAVATION	ND	ND	ND	ND	ND	ND
BN-7	EXCAVATED SOIL	120	ND	6.0	2.7	16	17
*MDL		1.0	0.050	0.10	0.10	0.10	7.5

ND - Not detected at Method Detection Limit
*MDL - Method Detection Limit

Results of Confirmation Soil Samples

Environmental Management Resources, Inc.

APPENDIX A

RAW ANALYTICAL DATA AND CHAIN OF CUSTODY

NORTH CREEK ANALYTICAL

18939 120th Avenue N.E., Suite 101 • Bothell, WA 98011-2569
Phone (206) 481-9200 • FAX (206) 485-2992

Environ. Management Resources Client Project ID: BN-Interbay UST, 91-253 Sampled: Apr 30, 1991

NORTH CREEK ANALYTICAL

18939 120th Avenue N.E., Suite 101 • Bothell, WA 98011-2569
Phone (206) 481-9200 • FAX (206) 485-2992

Environ. Management Resources	Client Project ID:	BN-Interbay UST, 91-253	Sampled: Apr 30, 1991
2773 152nd Avenue NE	Matrix Descript:	Soil	Received: Apr 30, 1991
Redmond, WA 98052	Analysis Method:	EPA 5030/8015/8020	Analyzed: May 1, 1991
Attention: Bryan W. Stone	First Sample #:	104-1072	Reported: May 1, 1991

TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (WTPH-G/BTEX)

Sample Number	Sample Description	Purgeable Hydrocarbons mg/kg (ppm)	Benzene mg/kg (ppm)	Toluene mg/kg (ppm)	Ethyl Benzene mg/kg (ppm)	Xylenes mg/kg (ppm)	Surrogate Recovery %
104-1072	BN-1	N.D.	N.D.	N.D.	N.D.	N.D.	92
104-1073	BN-2	N.D.	N.D.	N.D.	N.D.	N.D.	95
104-1074	BN-3	30	1.9	7.5	0.74	5.3	95
104-1075	BN-4	N.D.	N.D.	N.D.	N.D.	N.D.	89
104-1076	BN-5	N.D.	N.D.	N.D.	N.D.	N.D.	82
104-1077	BN-6	N.D.	N.D.	N.D.	N.D.	N.D.	90
104-1078	BN-7	120	N.D.	6.0	2.7	16	102
BLK	Method Blank	N.D.	N.D.	N.D.	N.D.	N.D.	90
Detection Limits:		1.0	0.050	0.10	0.10	0.10	

NORTH CREEK ANALYTICAL

18939 120th Avenue N.E., Suite 101 • Bothell, WA 98011-2569
Phone (206) 481-9200 • FAX (206) 485-2992

Environ. Management Resources
2773 152nd Avenue NE

Client Project ID: BN-Interbay UST, 91-253
Method : EPA 8020

Analyst : B. Fletcher

NORTH CREEK ANALYTICAL

18939 120th Avenue N.E., Suite 101 • Bothell, WA 98011-2569
Phone (206) 481-9200 • FAX (206) 485-2992

Environ. Management Resources
2773 152nd Avenue NE
Redmond, WA 98052
Attention: Bryan W. Stone

Client Project ID: BN-Interbay UST, 91-253
Method : EPA 7421
Sample Matrix : Soil
Units : mg/kg
QC Sample #: 104-1010

Analyst : M. Essig

Extracted: Apr 30, 1991
Analyzed: May 1, 1991
Reported: May 1, 1991

QUALITY CONTROL DATA REPORT

ANALYTE	Pb
Sample Conc.:	N.D.
Spike Conc. Added:	50
Conc. Matrix Spike:	49
Matrix Spike % Recovery:	98
Conc. Matrix Spike Dup.:	53
Matrix Spike Duplicate % Recovery:	106
Relative % Difference:	7.8

Sheet 18

Environmental Management Resources, Inc. (EMR)

SAMPLE IDENTIFICATION

CHAIN-OF-CUSTODY RECORD

Check delivery method:
Samples hand carried from site to lab ☐
Samples shipped from site directly to lab ☐
Shipment method/carrier: _____
Custody seal #: _____
Attn: _____

ct Number: -253
Project Name/Client: BN-INTERBAY UST
olers: (Signature): Bryan Stone

Sample Number (Field ID Number)	Date	Time	Sampling Point Description	No. of Containers	Analyses Required: Gasoline Source	BTEX (EPA 8020)	TPH (Mod-8015)	TOTAL LEAD	See "Req for Chem Serv"	X = Susp. Hazard. Mtrl.	Sample Type (water, soil, etc)	Sample Container	Remarks	Sample Lab Number
BN-1	4/30/91	1355	Pump Island	1	X	X	X				SOIL			104107Z
BN-2	"	1400	Pipe Trench	1	X	X	X				"			1073
BN-3	"	1600	N. end Bottom	1	X	X	X				"			1074
BN-4	"	1430	S. end Bottom	1	X	X	X				"			1075
BN-5	"	1420	E side	1	X	X	X				"			1076
BN-6	"	1415	W side	1	X	X	X				"			1077
BN-7	"	1615	STOCKPILE (HOT)	1	X	X	X				"			1078

acked/Relinquished by: (Signature) Bryan Stone	Date/Time 4/30/91 1630	Item Numbers:	Received by: (Signature)
elinquished by: (Signature)	Date/Time	Item Numbers:	Received by: (Signature) [Laboratory Personnel]
Disposed of by: (Signature)	Items / Date/Time	Laboratory Receiving Notes:	

Date/Time: 4/30 5:30

Custody seal intact?
Temperature of shipping container: Cool
Sample Condition: Satisfactory
Laboratory Invoice Number:

Rush TURN. (24 hr) need results by tomorrow (verbal)
Gasoline Tank

d Lab Results To: B. STONE EMR

ents: Verbal results to 940-5278 Cellular phone

Copies: White - Original to Accompany Samples