CITY OF RICHLAND

505 Swift Blvd. • Box 190 • Richland, Washington 99352 • (509) ~~943-7390~~ • FAX (509) ~~943-3666~~

ENGINEERING AND UTILITY SERVICES

December 16, 1998

#9093
U1270

MS. DEBRA KROON
Washington Department of Ecology
Toxics Cleanup Program
15 West Yakima Avenue
Yakima, WA 98902

SUBJECT: **UST SITE CLOSURE REPORT, RICHLAND MUNICIPAL LANDFILL #9093**

Dear Ms. Kroon,

Attached to this letter is the closure report for the UST removal for Site #9093 at the City of Richland municipal landfill. The report prescribes further independent remedial investigation to evaluate a relatively small amount of residual contamination.

The report also includes a subcontractor invoice and summary of costs incurred by the City for the project, with the intent of recovering up to 50% through the grant program we have previously discussed. The total project cost, including field work, analysis, and administrative support was $9,153.00. If further fiscal data is required, it shall be provided immediately upon request. Please inform the City of the status of the program and our impending partial reimbursement for these costs.

If you have any other questions or comments, please call me at (509) 942-7791. Thank you for your time, effort, and patience in providing direction to us on this project and the grant process.

Sincerely,

George J. Jackson

GEORGE J. JACKSON, P.E.
Environmental Engineer
Civil and Environmental Engineering

GJJ:mel

Attachment

cc: Roger Wright w/o
Jim Penor w/o
File

1.0 SCOPE AND INTRODUCTION

1.1 Scope

This report summarizes the actions taken to remove the single underground storage tank (UST) at the City of Richland Sanitary Landfill from service on October 2, 1998. All work was done in conjunction with the regulatory requirements delineated within Washington Administrative Code (WAC) 173-360, Underground Storage Tank Regulations, and all applicable federal and state health and safety requirements.

1.2 Introduction

In early 1995, a new fueling station comprising of a tank containing diesel fuel and dispensing pad and pumps was installed at the landfill by Wondrack distribution. Due to the new fueling station, the old fueling station, installed in 1978, was no longer necessary, and was closed. All liquid in the tank was removed via a pumping process, and the electrical power was disconnected.

Per WAC regulations, the decision was made to decommission and remove the UST at the landfill. Tightness testing of the UST during its operational life indicated that it was very unlikely that the UST was leaking. The site check and assessment was scheduled to be performed during tank removal activities.

2.0 BACKGROUND

2.1 Site Location

The UST is located near the southwest corner of the scalehouse at the landfill, which is located near the corner of Grosscup Road and State Route 240, in Richland, Washington. Figure 1 shows the site location in relation to the entire city, and Figure 2 shows the location of the USTs in relation to the major site structure, the scalehouse.

2.2 Site Description

The UST and associated pumping equipment was installed in 1977 and placed into service to dispense diesel fuel to the heavy equipment fleet used for solid waste disposal operations. Upon construction of a new fueling station at the landfill, the fueling station was closed in early 1995. The contents of the tanks were removed shortly thereafter, and the fueling station remained dormant until the removal action on October 2, 1998. It should also be noted that tightness testing was performed on the tank shortly before it was removed from service, and although documentation could not be found, landfill and engineering personnel present at that time had stated that the tightness testing indicated that the tank was structurally stable, and that the possibility of leaks based on this testing should have been minimal.

The tank was installed in a single excavation, located just to the south of the large scalehouse building which is used at the site to provide access control and monitoring for disposal parties. The soils found in the excavation were backfill sands comprised of primarily sandy loam, and the native soils in the vicinity of the landfill range from very fine to gravely sands. The depth to groundwater beneath scalehouse is approximately 50 feet below grade, and the direction of local groundwater flow is towards the east. Based on previous aquifer testing and the relatively small soil particle size distribution, the velocity of groundwater flow is slow (25 feet per year), confining the spread of aquifer contamination. In addition, based on historical potentiometric data, the smear zone at the interface between the vadose and saturated formation is believed to be very small based on the distance to the river and small seasonal fluctuations in local groundwater levels.

After final remedial actions have been completed for the site, the land will continue to be used as part of the landfill facility. There is very little chance that the site shall be used for residential or recreational use in the future.

3.0 FIELD ACTIVITY SUMMARY

The UST removal was performed on Friday, October 2, 1998. The excavation was confined to the minimal lateral and vertical dimensions required to remove the UST. Since no release had been previously confirmed, no additional excavation was warranted.

3.1 Soils

In general, the soils were dry fine silty sands with a permeability of approximately 5×10^{-3} cm/s, with very little, if any, odor of fuel vapors. The only fuel odors detected by the Site Assessors were very faint, and from soils excavated from beneath the bottom of the UST.

Soil samples were taken with a backhoe from the bottom of the excavation, at a depth of approximately 8 feet below grade, six inches below the surface of the excavation, and collected using hand tools decontaminated with distilled water. Three samples were taken from the bottom of the excavation from underneath where the tank resided. In addition, one soil sample was taken from the excavated soil pile, which was estimated to be 110 cubic yards. Groundwater was not present in the excavation; therefore no groundwater samples were taken.

3.2 Groundwater

Groundwater samples are taken from six locations at the landfill facility as part of normal landfill operations per WAC requirements. No fuel contamination has been detected in the results of any groundwater analysis from the landfill, although there are no groundwater monitoring wells within the immediate vicinity of the scalehouse or the tank location.

3.3 Tanks

The liquid contents of the tanks were pumped out prior to the inerting and removal of the USTs. Very small volumes of liquid were present inside the tanks. The 5,500-gallon tank had a very minimal amount of fluid removed. The tanks had been pumped out when the service island was taken out of service by the City in 1992.

The tank was visually inspected after removal from the ground and appeared to have sustained structural integrity; no holes or punctures due to corrosion were identified.

4.0 SAMPLING AND ANALYSIS

During tank removal activities, an excavation and associated soil pile was created. In order to complete site assessment activities on which any future remedial actions would be based, soil sampling and analysis, and the appropriate disposition of the excavated soils were performed.

4.1 Excavation and Soil Disposal

The excavation was extended to a depth of approximately 8 feet, and confined laterally to marginally larger than the tank's footprint. The total amount of soil excavated was approximately 110 cubic yards. Excavated soil was sampled, subsequently moved to another aera of the City of Richland sanitary landfill, and placed in a specific permitted area designated for petroleum-contaminated soils for aeration and natural attenuation treatment processes.

4.2 Sampling Summary

4.3 Analytical Results

A total of four soil samples were taken per WAC regulations, and analyzed for VOC compounds and TPH-Diesel. The following table summarizes the results of the sampling and analysis activities.

TABLE 1. RESULTS FROM SOIL SAMPLING AND ANALYSIS

Sample No.	Location/Depth	Contaminant of Concern (COC)				
		TPH-D mg/kg	Benzene µg/kg	Toluene µg/kg	Ethylbenzene µg/kg	Xylenes µg/kg
L-01-01	Underneath the center of the tank (8 ft)	13,900	<5	<5	<5	<5
L-01-02	Underneath the eastern edge of the tank (7 ft)	12,100	<5	<5	<5	<5
L-01-03	From the excavated soil pile.	330	<5	<5	<5	<5
L-01-04	From near the bottom of the western edge of the excavation (7 ft)	<50	<5	<5	<5	<5
MTCA Cleanup Level		200	500	40,000	20,000	20,000

5.0 FUTURE REMEDIAL INVESTIGATION/ACTION

Based on the analytical data, it is apparent that some diesel fuel contamination exists along the bottom, and potentially to the east of the excavation. The excavation was backfilled with clean soil shortly after sampling was completed, based on the field observations that no fuel odors were detected during the excavation, except during the purging of vapor from the tank. Additionally, further excavation towards the east would have resulted in the possible compromising of the structural integrity of the scalehouse. Therefore, the following actions shall be taken in the near future:

1. Further sampling shall be completed at three points around the eastern half of the excavation at one foot and six feet below ground. The analytical results of these samples shall further delineate the extent of the contamination plume.

2. Based on the results of the additional sampling and analysis, one of two remedial actions shall be taken, with approval from the Department of Ecology:

    a. Prescribe no action--remediation shall occur via natural attenuation with possible institutional controls. The isolation of the contamination with respect to the underlying groundwater, any potential drinking water sources, and public access, and the continued future use of the overlying land as part of the landfill complex may support this option.

    b. Prescribe active remediation. Based on the proximity of the tank location and excavation to existing service roads and the scalehouse, a small soil vapor extraction or soil venting system Could potentially be effective in treating the remaining contamination.

All decisions made regarding further remedial actions after the additional characterization has been completed shall be in compliance with all MTCA requirements and in conjunction with direction provided by the Department of Ecology.

6.0 APPENDICES AND SUPPLMENTAL INFORMATION

The following is an index of the required Appendices and supplemental information:

A. Site Check/Site Assessment Checklist
B. Site Maps/Plans
C. Analytical Results
D. Contractor Invoice
E. Summary of City of Richland Costs

APPENDIX A--Site Check/Site Assessment Checklist

UNDERGROUND STORAGE TANK
Site Check / Site Assessment Checklist

FOR OFFICE USE ONLY
Site #: 9093
Owner #: U1270

INSTRUCTIONS

When a release has **not** been confirmed and reported, this Site Check/Site Assessment Checklist must be completed and signed by a person certified by IFCI or a Washington registered professional engineer who is competent, by means of examination, experience, or education, to perform site assessments. **The results of the site check or site assessment must be included with this checklist.** This form must be submitted to Ecology at the address shown below within 30 days after completion of the site check/site assessment.

SITE INFORMATION: Include the Ecology site ID number if the tanks are registered with Ecology. This number may be found on the tank owner's invoice or tank permit.

TANK INFORMATION: Please list all tanks for which the site check or site assessment is being conducted. Use the owner's tank ID numbers if available, and indicate tank capacity and substance stored.

REASON FOR CONDUCTING SITE CHECK/SITE ASSESSEMENT: Please check the appropriate item.

CHECKLIST: Please initial each item in the appropriate box.

SITE ASSESSOR INFORMATION: This form must be signed by the registered site assessor who is responsible for conducting the site check/site assessment.

Underground Storage Tank Section
Department of Ecology
PO Box 47655
Olympia WA 98504-7655

SITE INFORMATION

Site ID Number (Available from Ecology if the tanks are registered): 9093

Site/Business Name: CITY OF RICHLAND LANDFILL

Site Address: 3102 GROSSCUP (Street) Telephone: (509) 942-7791

City RICHLAND State WA Zip Code 99352

TANK INFORMATION

Tank ID No.	Tank Capacity	Substance Stored
1	5,500	~~GASOLINE~~ DIESEL

REASON FOR CONDUCTING SITE CHECK / SITE ASSESSMENT

Check one:

_____ Investigate suspected release due to on-site environmental contamination.
_____ Investigate suspected release due to off-site environmental contamination.
_____ Extend temporary closure of UST system for more than 12 months.
_____ UST system undergoing change-in-service.
_____ UST system permanently closed-in service.
_____ UST system permanently closed with tank removed.
_____ Abandoned tank containing product.
_____ Required by Ecology or delegated agency for UST system closed before 12/22/88.
_____ Other (describe): _____

CHECKLIST

Each item of the following checklist shall be initialed by the person registered with the Department of Ecology whose signature appears below.	YES	NO
1. The location of the UST site is shown on a vicinity map.	X	
2. A brief summary of information obtained during the site inspection is provided. (see Section 3.2 in site assessment guidance)	X	
3. A summary of UST system data is provided. (see Section 3.1.)	X	
4. The soils characteristics at the UST site are described. (see Section 5.2)	X	
5. Is there any apparent groundwater in the tank excavation?		X
6. A brief description of the surrounding land use is provided. (see Section 3.1)	X	
7. Information has been provided indicating the number and types of samples collected, methods used to collect and analyze the samples, and the name and address of the laboratory used to perform the analyses.	X	
8. A sketch or sketches showing the following items is provided:		
- location and ID number for all field samples collected	X	
- groundwater samples distinguished from soil samples (if applicable)	X	
- samples collected from stockpiled excavated soil	X	
- tank and piping locations and limits of excavation pit	X	
- adjacent structures and streets	X	
- approximate locations of any on-site and nearby utilities	X	
9. If sampling procedures different from those specified in the guidance were used, has justification for using these alternative sampling procedures been provided? (see Section 3.4)	N/A	
10. A table is provided showing laboratory results for each sample collected including; sample ID number, constituents analyzed for and corresponding concentration, analytical method and detection limit for that method.	X	
11. Any factors that may have compromised the quality of the data or validity of the results are described.	X	
12. The results of this site check/site assessment indicate that a confirmed release of a regulated substance has occurred.	X	

SITE ASSESSOR INFORMATION

GEORGE JACKSON / STEVE McNUTT
Person registered with Ecology

CITY OF RICHLAND
Firm Affiliated with

Business Address: PO BOX 190
Street

Telephone: (509) 942-7791

RICHLAND
City

WA
State

99352
Zip Code

I hereby certify that I have been in responsible charge of performing the site check/site assessment described above. Persons submitting false information are subject to penalties under Chapter 173.360 WAC.

12/16/98
Date

George J Jackson
Signature of Person Registered with Ecology

APPENDIX B--Site Maps/Plans

FIGURE 1

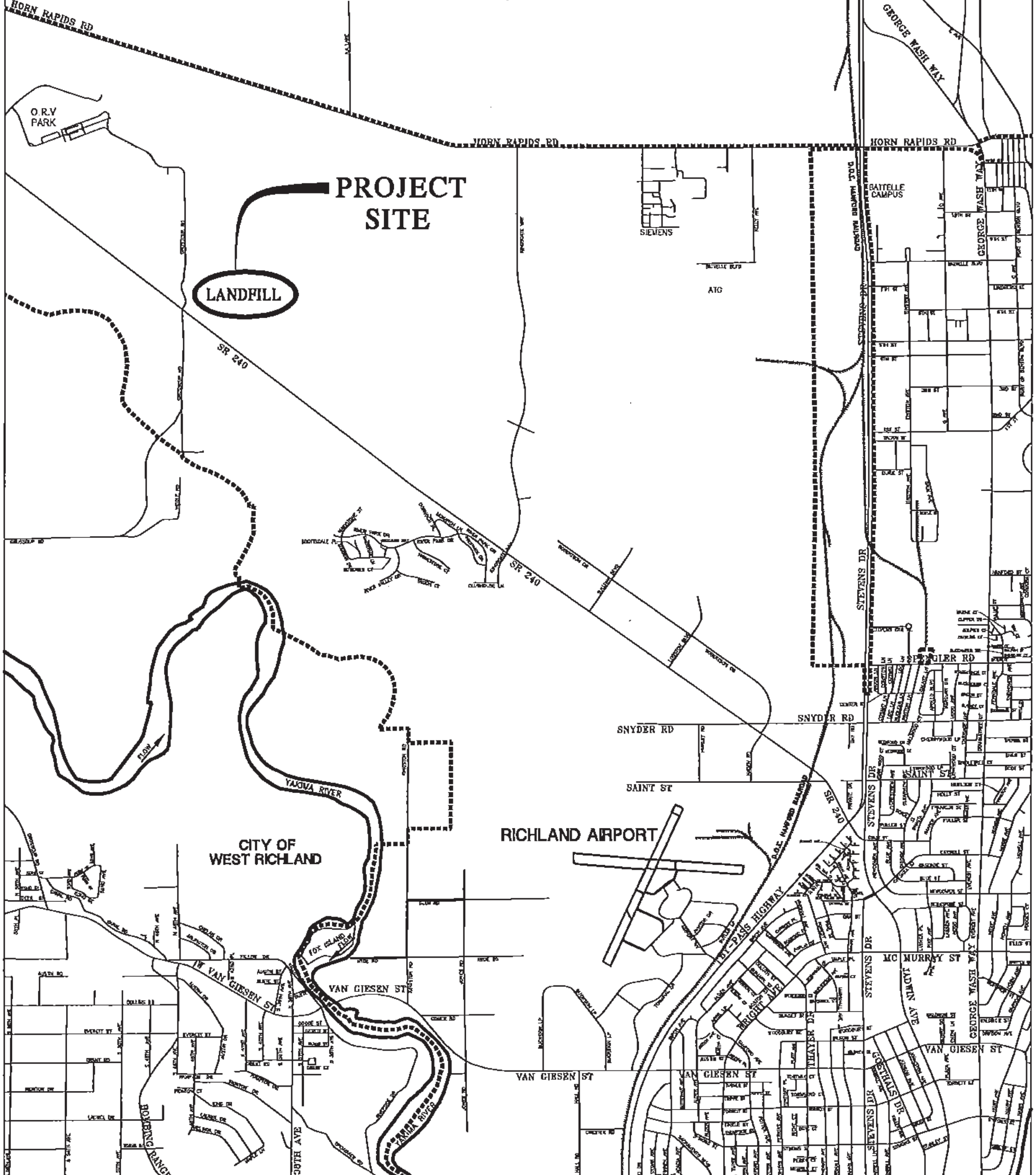
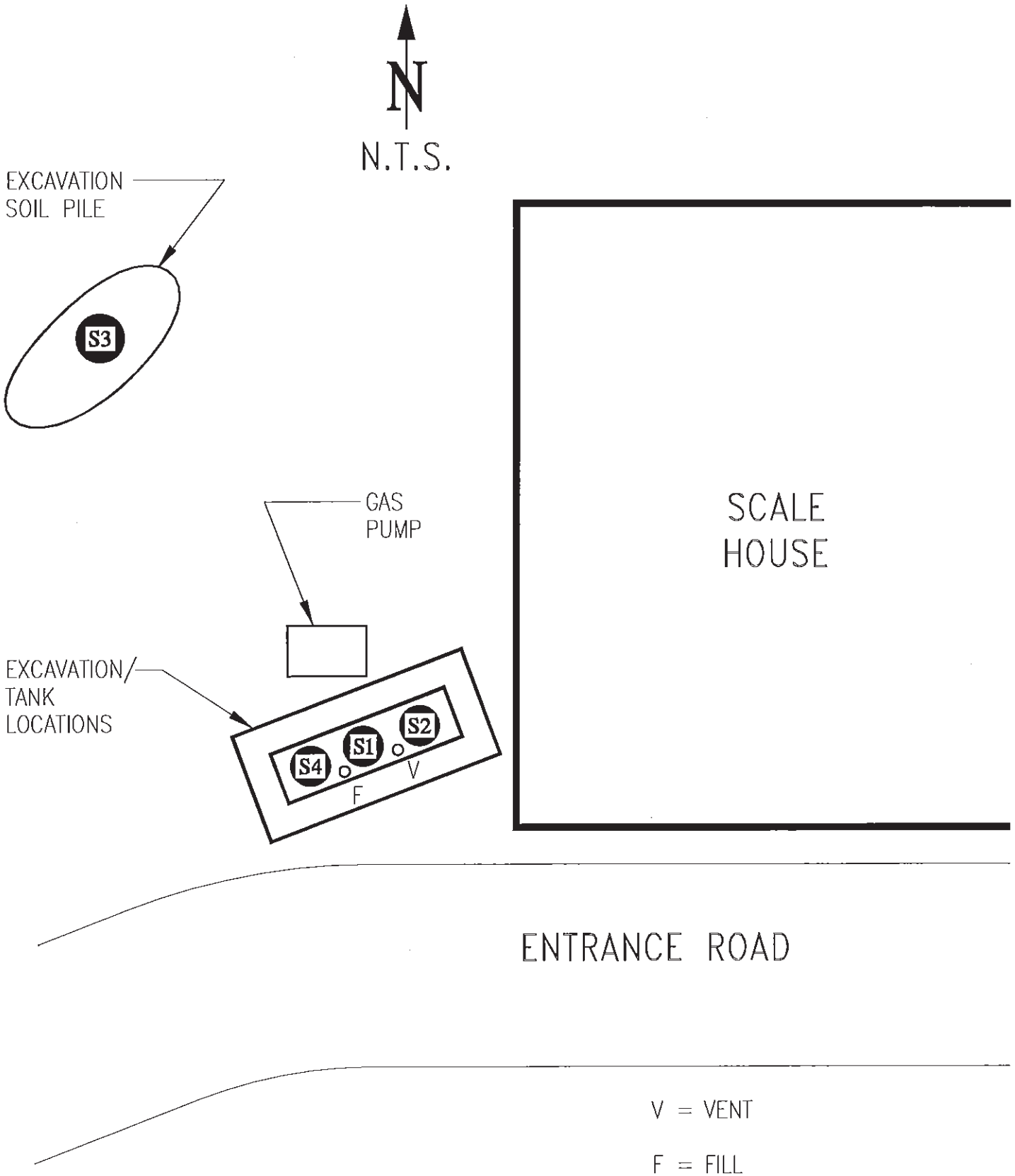

HORN RAPIDS RD
O.R.V PARK
PROJECT SITE
LANDFILL
SR 240
SIEMENS
BATTELLE CAMPUS
GEORGE WASH WAY
STEVENS DR
SPENGLER RD
SNYDER RD
SAINT ST
RICHLAND AIRPORT
CITY OF WEST RICHLAND
YAKIMA RIVER
FLOW
FOX ISLAND
VAN GIESEN ST
W VAN GIESEN ST
BY-PASS HIGHWAY
MC MURRAY ST
JADWIN AVE
THAYER DR
GOETHALS DR
WILLIAMS BLVD
SWIFT BLVD
BOMBING RANGE RD
S 38TH AVE
N

FIGURE 2 - SITE DETAILS



APPENDIX C--Analytical Results

City of Richland
Contact: George Jackson
Sample Date: 09/30/98
Reporting Date: 11/12/98

Test Description	Test Method	# of Samples	Price/test	Extended Price
Diesel	NWTPH-Dx	4	$90.00	$360.00
Volatile Organic Compounds (VOCs)	EPA 8260	4	$195.00	$780.00
Total Cost				$1,140.00
5% Member Discount				($57.00)
Actual Cost				$1,083.00

This bill should go to the attention of Mike Mitchell.

Landfill UST

WASHINGTON PUBLIC POWER
SUPPLY SYSTEM

Environmental and Analytical Laboratory
P.O. Box 968
Richland, WA 99352
Attn: Todd A. Borak, Maildrop 1025

11-20-98 10:15 RCVD

November 12, 1998

City of Richland
505 Swift Blvd. • Box 190
Richland, WA 99352
Attn: George Jackson

Dear George:

Enclosed please find the analytical data that you requested for your Landfill UST Removal project.

The following is a cross correlation of client and Supply System laboratory identifications for your convenience.

CLIENT ID	SUPPLY SYSTEM ID
L-01-01	3499
L-01-02	3500
L-01-03	3501
L-01-04	3502

The samples were received on Monday, October 5, 1998. At the time of receipt, the samples were logged in and properly maintained prior to their subsequent analyses.

If you should have any questions pertaining to the data package, please feel free to contact me at 377-8035 or Susan Royer at 377-8709.

Sincerely,

Todd A Borak

Todd A. Borak

Project Manager

WASHINGTON PUBLIC POWER
SUPPLY SYSTEM

Date Sampled: 10/2/98
Customer: City of Richland Solid Waste Department
505 Swift Blvd. Box 190
Richland WA 99352

Sample # 3499 **Customer ID:** L-01-01
Phone # (509) 943-7390
Entered By: Susan Royer
Approved By: SRoyer

Parameter	Result	Detection Limit	Method
Dibromofluoromethane	88 %	%	8260A
1,2-Dichloroethane-d4 (SS)	84 %	%	8260A
Toluene-d8 (SS)	97 %	%	8260A
4-Bromofluorobenzene (SS)	89 %	%	8260A
Chloromethane	<5 ug/kg	5 ug/kg	8260A
Vinyl Chloride	<5 ug/kg	5 ug/kg	8260A
Bromomethane	<5 ug/kg	5 ug/kg	8260A
Chloroethane	<5 ug/kg	5 ug/kg	8260A
Trichlorofluoromethane	<5 ug/kg	5 ug/kg	8260A
Acrylonitrile	<15 ug/kg	15 ug/kg	8260A
1,1-Dichloroethene	<5 ug/kg	5 ug/kg	8260A
Iodomethane	<15 ug/kg	15 ug/kg	8260A
Carbon disulfide	<25 ug/kg	25 ug/kg	8260A
Acetone	<25 ug/kg	25 ug/kg	8260A
Methylene chloride	<5 ug/kg	5 ug/kg	8260A
trans-1,2-Dichloroethene	<5 ug/kg	5 ug/kg	8260A
cis-1,2-Dichloroethene	<5 ug/kg	5 ug/kg	8260A
1,1-Dichloroethane	<5 ug/kg	5 ug/kg	8260A
Chloroform	<5 ug/kg	5 ug/kg	8260A
Bromochloromethane	<5 ug/kg	5 ug/kg	8260A
1,2-Dichloroethane	<5 ug/kg	5 ug/kg	8260A
2-Butanone	<25 ug/kg	25 ug/kg	8260A
1,1,1-Trichloroethane	<5 ug/kg	5 ug/kg	8260A
Carbon tetrachloride	<5 ug/kg	5 ug/kg	8260A
Benzene	<5 ug/kg	5 ug/kg	8260A
Trichloroethene	<5 ug/kg	5 ug/kg	8260A
1,2-Dichloropropane	<5 ug/kg	5 ug/kg	8260A
Vinyl acetate	<25 ug/kg	25 ug/kg	8260A
Dibromomethane	<5 ug/kg	5 ug/kg	8260A
Bromodichloromethane	<5 ug/kg	5 ug/kg	8260A
cis-1,3-Dichloropropene	<5 ug/kg	5 ug/kg	8260A
trans-1,3-Dichloropropene	<5 ug/kg	5 ug/kg	8260A
1,1,2-Trichloroethane	<5 ug/kg	5 ug/kg	8260A
Dibromochloromethane	<5 ug/kg	5 ug/kg	8260A
1,2-Dibromoethane	<5 ug/kg	5 ug/kg	8260A
Bromoform	<5 ug/kg	5 ug/kg	8260A
4-Methyl-2-pentanone	<15 ug/kg	15 ug/kg	8260A
Toluene	<5 ug/kg	5 ug/kg	8260A
Tetrachloroethene	<5 ug/kg	5 ug/kg	8260A
2-Hexanone	<15 ug/kg	15 ug/kg	8260A
Chlorobenzene	<5 ug/kg	5 ug/kg	8260A
Ethylbenzene	<5 ug/kg	5 ug/kg	8260A
Total Xylenes	<5 ug/kg	5 ug/kg	8260A
Styrene	<5 ug/kg	5 ug/kg	8260A

WASHINGTON PUBLIC POWER
SUPPLY SYSTEM

Date Sampled: 10/2/98 **Sample #** 3499 **Customer ID:** L-01-01

1,1,1,2-Tetrachloroethane	<5 ug/kg	5 ug/kg	8260A
1,1,2,2-Tetrachloroethane	<5 ug/kg	5 ug/kg	8260A
1,2,3-Trichloropropane	<5 ug/kg	5 ug/kg	8260A
trans-1,4-Dichloro-2-Butene	<5 ug/kg	5 ug/kg	8260A
1,3-Dichlorobenzene	<5 ug/kg	5 ug/kg	8260A
1,4-Dichlorobenzene	<5 ug/kg	5 ug/kg	8260A
1,2-Dichlorobenzene	<5 ug/kg	5 ug/kg	8260A
1,2-Dibromo-3-chloropropane	<10 ug/kg	10 ug/kg	8260A

WASHINGTON PUBLIC POWER
SUPPLY SYSTEM

Date Sampled: 10/2/98
Customer: City of Richland Solid Waste Department
505 Swift Blvd. Box 190
Richland WA 99352

Sample # 3499 **Customer ID:** L-01-01
Phone # (509) 943-7390
Entered By: Susan Royer
Approved By: SRoyer

Parameter	Result	Detection Limit	Method
Diesel	13900 mg/kg	50 mg/kg	WTPH-D
2-Fluorobiphenyl	62 %	%	WTPH-D
p-Terphenyl	92 %	%	WTPH-D

WASHINGTON PUBLIC POWER
SUPPLY SYSTEM

Date Sampled: 10/2/98
Customer: City of Richland Solid Waste Department
505 Swift Blvd. Box 190
Richland WA 99352

Sample # 3500 **Customer ID:** L-01-02
Phone # (509) 943-7390
Entered By: Susan Royer
Approved By: SRoyer

Parameter	Result	Detection Limit	Method
Dibromofluoromethane	90 %	%	8260A
1,2-Dichloroethane-d4 (SS)	86 %	%	8260A
Toluene-d8 (SS)	101 %	%	8260A
4-Bromofluorobenzene (SS)	86 %	%	8260A
Chloromethane	<5 ug/kg	5 ug/kg	8260A
Vinyl Chloride	<5 ug/kg	5 ug/kg	8260A
Bromomethane	<5 ug/kg	5 ug/kg	8260A
Chloroethane	<5 ug/kg	5 ug/kg	8260A
Trichlorofluoromethane	<5 ug/kg	5 ug/kg	8260A
Acrylonitrile	<15 ug/kg	15 ug/kg	8260A
1,1-Dichloroethene	<5 ug/kg	5 ug/kg	8260A
Iodomethane	<15 ug/kg	15 ug/kg	8260A
Carbon disulfide	<25 ug/kg	25 ug/kg	8260A
Acetone	<25 ug/kg	25 ug/kg	8260A
Methylene chloride	<5 ug/kg	5 ug/kg	8260A
trans-1,2-Dichloroeth	<5 ug/kg	5 ug/kg	8260A
cis-1,2-Dichloroethene	<5 ug/kg	5 ug/kg	8260A
1,1-Dichloroethane	<5 ug/kg	5 ug/kg	8260A
Chloroform	<5 ug/kg	5 ug/kg	8260A
Bromochloromethane	<5 ug/kg	5 ug/kg	8260A
1,2-Dichloroethane	<5 ug/kg	5 ug/kg	8260A
2-Butanone	<25 ug/kg	25 ug/kg	8260A
1,1,1-Trichloroethane	<5 ug/kg	5 ug/kg	8260A
Carbon tetrachloride	<5 ug/kg	5 ug/kg	8260A
Benzene	<5 ug/kg	5 ug/kg	8260A
Trichloroethene	<5 ug/kg	5 ug/kg	8260A
1,2-Dichloropropane	<5 ug/kg	5 ug/kg	8260A
Vinyl acetate	<25 ug/kg	25 ug/kg	8260A
Dibromomethane	<5 ug/kg	5 ug/kg	8260A
Bromodichloromethane	<5 ug/kg	5 ug/kg	8260A
cis-1,3-Dichloropropene	<5 ug/kg	5 ug/kg	8260A
trans-1,3-Dichloropropene	<5 ug/kg	5 ug/kg	8260A
1,1,2-Trichloroethane	<5 ug/kg	5 ug/kg	8260A
Dibromochloromethane	<5 ug/kg	5 ug/kg	8260A
1,2-Dibromoethane	<5 ug/kg	5 ug/kg	8260A
Bromoform	<5 ug/kg	5 ug/kg	8260A
4-Methyl-2-pentanone	<15 ug/kg	15 ug/kg	8260A
Toluene	<5 ug/kg	5 ug/kg	8260A
Tetrachloroethene	<5 ug/kg	5 ug/kg	8260A
2-Hexanone	<15 ug/kg	15 ug/kg	8260A
Chlorobenzene	<5 ug/kg	5 ug/kg	8260A
Ethylbenzene	<5 ug/kg	5 ug/kg	8260A
Total Xylenes	<5 ug/kg	5 ug/kg	8260A
Styrene	<5 ug/kg	5 ug/kg	8260A

WASHINGTON PUBLIC POWER
SUPPLY SYSTEM

Date Sampled: 10/2/98 **Sample # 3500** **Customer ID: L-01-02**

1,1,1,2-Tetrachloroethane	<5 ug/kg	5 ug/kg	8260A
1,1,2,2-Tetrachloroethane	<5 ug/kg	5 ug/kg	8260A
1,2,3-Trichloropropane	<5 ug/kg	5 ug/kg	8260A
trans-1,4-Dichloro-2-Butene	<5 ug/kg	5 ug/kg	8260A
1,3-Dichlorobenzene	<5 ug/kg	5 ug/kg	8260A
1,4-Dichlorobenzene	<5 ug/kg	5 ug/kg	8260A
1,2-Dichlorobenzene	<5 ug/kg	5 ug/kg	8260A
1,2-Dibromo-3-chloropropane	<10 ug/kg	10 ug/kg	8260A

WASHINGTON PUBLIC POWER
SUPPLY SYSTEM

Date Sampled: 10/2/98
Sample # 3500 **Customer ID:** L-01-02
Customer: City of Richland Solid Waste Department
Phone # (509) 943-7390
505 Swift Blvd. Box 190
Entered By: Susan Royer
Richland WA 99352
Approved By: SRoyer

Parameter	Result	Detection Limit	Method
Diesel	12100 mg/kg	50 mg/kg	WTPH-D
2-Fluorobiphenyl	80 %	%	WTPH-D
p-Terphenyl	79 %	%	WTPH-D

WASHINGTON PUBLIC POWER
SUPPLY SYSTEM

Date Sampled: 10/2/98
Customer: City of Richland Solid Waste Department
505 Swift Blvd. Box 190
Richland WA 99352

Sample # 3501 **Customer ID:** L-01-03
Phone # (509) 943-7390
Entered By: Susan Royer
Approved By: SRoyer

Parameter	Result	Detection Limit	Method
Dibromofluoromethane	88 %	%	8260A
1,2-Dichloroethane-d4 (SS)	86 %	%	8260A
Toluene-d8 (SS)	103 %	%	8260A
4-Bromofluorobenzene (SS)	95 %	%	8260A
Chloromethane	<5 ug/kg	5 ug/kg	8260A
Vinyl Chloride	<5 ug/kg	5 ug/kg	8260A
Bromomethane	<5 ug/kg	5 ug/kg	8260A
Chloroethane	<5 ug/kg	5 ug/kg	8260A
Trichlorofluoromethane	<5 ug/kg	5 ug/kg	8260A
Acrylonitrile	<15 ug/kg	15 ug/kg	8260A
1,1-Dichloroethene	<5 ug/kg	5 ug/kg	8260A
Iodomethane	<15 ug/kg	15 ug/kg	8260A
Carbon disulfide	<25 ug/kg	25 ug/kg	8260A
Acetone	<25 ug/kg	25 ug/kg	8260A
Methylene chloride	<5 ug/kg	5 ug/kg	8260A
trans-1,2-Dichloroethene	<5 ug/kg	5 ug/kg	8260A
cis-1,2-Dichloroethene	<5 ug/kg	5 ug/kg	8260A
1,1-Dichloroethane	<5 ug/kg	5 ug/kg	8260A
Chloroform	<5 ug/kg	5 ug/kg	8260A
Bromochloromethane	<5 ug/kg	5 ug/kg	8260A
1,2-Dichloroethane	<5 ug/kg	5 ug/kg	8260A
2-Butanone	<25 ug/kg	25 ug/kg	8260A
1,1,1-Trichloroethane	<5 ug/kg	5 ug/kg	8260A
Carbon tetrachloride	<5 ug/kg	5 ug/kg	8260A
Benzene	<5 ug/kg	5 ug/kg	8260A
Trichloroethene	<5 ug/kg	5 ug/kg	8260A
1,2-Dichloropropane	<5 ug/kg	5 ug/kg	8260A
Vinyl acetate	<25 ug/kg	25 ug/kg	8260A
Dibromomethane	<5 ug/kg	5 ug/kg	8260A
Bromodichloromethane	<5 ug/kg	5 ug/kg	8260A
cis-1,3-Dichloropropene	<5 ug/kg	5 ug/kg	8260A
trans-1,3-Dichloropropene	<5 ug/kg	5 ug/kg	8260A
1,1,2-Trichloroethane	<5 ug/kg	5 ug/kg	8260A
Dibromochloromethane	<5 ug/kg	5 ug/kg	8260A
1,2-Dibromoethane	<5 ug/kg	5 ug/kg	8260A
Bromoform	<5 ug/kg	5 ug/kg	8260A
4-Methyl-2-pentanone	<15 ug/kg	15 ug/kg	8260A
Toluene	<5 ug/kg	5 ug/kg	8260A
Tetrachloroethene	<5 ug/kg	5 ug/kg	8260A
2-Hexanone	<15 ug/kg	15 ug/kg	8260A
Chlorobenzene	<5 ug/kg	5 ug/kg	8260A
Ethylbenzene	<5 ug/kg	5 ug/kg	8260A
Total Xylenes	<5 ug/kg	5 ug/kg	8260A
Styrene	<5 ug/kg	5 ug/kg	8260A

WASHINGTON PUBLIC POWER
SUPPLY SYSTEM

Date Sampled: 10/2/98 **Sample #** 3501 **Customer ID:** L-01-03

1,1,1,2-Tetrachloroethane	<5 ug/kg	5 ug/kg	8260A
1,1,2,2-Tetrachloroethane	<5 ug/kg	5 ug/kg	8260A
1,2,3-Trichloropropane	<5 ug/kg	5 ug/kg	8260A
trans-1,4-Dichloro-2-Butene	<5 ug/kg	5 ug/kg	8260A
1,3-Dichlorobenzene	<5 ug/kg	5 ug/kg	8260A
1,4-Dichlorobenzene	<5 ug/kg	5 ug/kg	8260A
1,2-Dichlorobenzene	<5 ug/kg	5 ug/kg	8260A
1,2-Dibromo-3-chloropropane	<10 ug/kg	10 ug/kg	8260A

WASHINGTON PUBLIC POWER
SUPPLY SYSTEM

Date Sampled: 10/2/98 **Sample #** 3501 **Customer ID:** L-01-03

Customer: City of Richland Solid Waste Department **Phone #** (509) 943-7390

505 Swift Blvd. Box 190 **Entered By:** Susan Royer

Richland WA 99352 **Approved By:** SRoyer

Parameter	Result	Detection Limit	Method
Diesel	330 mg/kg	50 mg/kg	WTPH-D
2-Fluorobiphenyl	100 %	%	WTPH-D
p-Terphenyl	113 %	%	WTPH-D

WASHINGTON PUBLIC POWER
SUPPLY SYSTEM

Date Sampled: 10/2/98
Customer: City of Richland Solid Waste Department
505 Swift Blvd. Box 190
Richland WA 99352

Sample # 3502 **Customer ID:** L-01-04
Phone # (509) 943-7390
Entered By: Susan Royer
Approved By: SRoyer

Parameter	Result	Detection Limit	Method
Dibromofluoromethane	95 %	%	8260A
1,2-Dichloroethane-d4 (SS)	93 %	%	8260A
Toluene-d8 (SS)	110 %	%	8260A
4-Bromofluorobenzene (SS)	104 %	%	8260A
Chloromethane	<5 ug/kg	5 ug/kg	8260A
Vinyl Chloride	<5 ug/kg	5 ug/kg	8260A
Bromomethane	<5 ug/kg	5 ug/kg	8260A
Chloroethane	<5 ug/kg	5 ug/kg	8260A
Trichlorofluoromethane	<5 ug/kg	5 ug/kg	8260A
Acrylonitrile	<15 ug/kg	15 ug/kg	8260A
1,1-Dichloroethene	<5 ug/kg	5 ug/kg	8260A
Iodomethane	<15 ug/kg	15 ug/kg	8260A
Carbon disulfide	<25 ug/kg	25 ug/kg	8260A
Acetone	<25 ug/kg	25 ug/kg	8260A
Methylene chloride	<5 ug/kg	5 ug/kg	8260A
trans-1,2-Dichloroethene	<5 ug/kg	5 ug/kg	8260A
cis-1,2-Dichloroethene	<5 ug/kg	5 ug/kg	8260A
1,1-Dichloroethane	<5 ug/kg	5 ug/kg	8260A
Chloroform	<5 ug/kg	5 ug/kg	8260A
Bromochloromethane	<5 ug/kg	5 ug/kg	8260A
1,2-Dichloroethane	<5 ug/kg	5 ug/kg	8260A
2-Butanone	<25 ug/kg	25 ug/kg	8260A
1,1,1-Trichloroethane	<5 ug/kg	5 ug/kg	8260A
Carbon tetrachloride	<5 ug/kg	5 ug/kg	8260A
Benzene	<5 ug/kg	5 ug/kg	8260A
Trichloroethene	<5 ug/kg	5 ug/kg	8260A
1,2-Dichloropropane	<5 ug/kg	5 ug/kg	8260A
Vinyl acetate	<25 ug/kg	25 ug/kg	8260A
Dibromomethane	<5 ug/kg	5 ug/kg	8260A
Bromodichloromethane	<5 ug/kg	5 ug/kg	8260A
cis-1,3-Dichloropropene	<5 ug/kg	5 ug/kg	8260A
trans-1,3-Dichloropropene	<5 ug/kg	5 ug/kg	8260A
1,1,2-Trichloroethane	<5 ug/kg	5 ug/kg	8260A
Dibromochloromethane	<5 ug/kg	5 ug/kg	8260A
1,2-Dibromoethane	<5 ug/kg	5 ug/kg	8260A
Bromoform	<5 ug/kg	5 ug/kg	8260A
4-Methyl-2-pentanone	<15 ug/kg	15 ug/kg	8260A
Toluene	<5 ug/kg	5 ug/kg	8260A
Tetrachloroethene	<5 ug/kg	5 ug/kg	8260A
2-Hexanone	<15 ug/kg	15 ug/kg	8260A
Chlorobenzene	<5 ug/kg	5 ug/kg	8260A
Ethylbenzene	<5 ug/kg	5 ug/kg	8260A
Total Xylenes	<5 ug/kg	5 ug/kg	8260A
Styrene	<5 ug/kg	5 ug/kg	8260A

WASHINGTON PUBLIC POWER
SUPPLY SYSTEM

Date Sampled: 10/2/98 **Sample #** 3502 **Customer ID:** L-01-04

1,1,1,2-Tetrachloroethane	<5 ug/kg	5 ug/kg	8260A
1,1,2,2-Tetrachloroethane	<5 ug/kg	5 ug/kg	8260A
1,2,3-Trichloropropane	<5 ug/kg	5 ug/kg	8260A
trans-1,4-Dichloro-2-Butene	<5 ug/kg	5 ug/kg	8260A
1,3-Dichlorobenzene	<5 ug/kg	5 ug/kg	8260A
1,4-Dichlorobenzene	<5 ug/kg	5 ug/kg	8260A
1,2-Dichlorobenzene	<5 ug/kg	5 ug/kg	8260A
1,2-Dibromo-3-chloropropane	<10 ug/kg	10 ug/kg	8260A

WASHINGTON PUBLIC POWER
SUPPLY SYSTEM

Date Sampled: 10/2/98
Customer: City of Richland Solid Waste Department
505 Swift Blvd. Box 190
Richland WA 99352

Sample # 3502 **Customer ID:** L-01-04
Phone # (509) 943-7390
Entered By:
Approved By: SRoyer

Parameter	Result	Detection Limit	Method
Diesel	<50 mg/kg	50 mg/kg	WTPH-D
2-Fluorobiphenyl	100 %	%	WTPH-D
p-Terphenyl	102 %	%	WTPH-D

W/ INGTON PUBLIC POWER SUPPLY SYSTEM
P.O. Box 968 M/D 1025
Richland, WA 99352
Phone (509) 377-8058

ENVIRONMENTAL & ANALYTICAL SUPPORT LABORATORY CHAIN OF CUSTODY

Project or Activity: Landfill UST Removal

Collected By: George Jackson, Steve McNutt

Sample ID Number	Sample Location Description	Sample Date	Sample Time	Sample Matrix: Soil	Water	Other	No. of Containers	Analysis Required	Remarks
	Landfill	10/2/98	11:15	X			4	VOC, TPH-D	

Relinquished By:	Date/Time:	Received By:	Date/Time:
Steve McNutt	10/5/98 07:48	Todd A Bowles	10/5/98 0745
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:

APPENDIX D--Contractor Invoice

K KASER CO, INC

ROADS • SEWER & WATER LINES • SEWER HOOKUPS • SEPTIC SYSTEMS
LEVELING • DUMP TRUCKS • UNDERGROUND STORAGE TANKS • INSTALLATION
DECOMMISSIONING AND UPGRADING OF EXISTING SYSTEMS

229 N. Fruitland • Kennewick Washington 99336

KKASER@TRIDENT
(509) 586-7335
FAX (509) 582-6330

October 4, 1998

City of Richland
2700 Duportail St, Bldg 100
Richland, WA 99352

Engineering & Util. Services
Box 190

Ph: 942 7755
Fax 942 7397

I N V O I C E

CR(d)1004.01

Job Location: Richland Landfill
Job Completed: October 2, 1998
Job Description: Landfill UST Removal Project
Purchase Order: 17735

1.	Remove and dispose of concrete/pavement	$ 300.00
2.	Removal, transportation, and disposal of residual liquids from the UST	150.00
3.	Excavate soil above and around the tank, and place at the specified location at the landfill.	1,500.00
4.	Removal and disposal of the 6,000-gallon UST and all associated underground items,such as the pumping system, vent/fill piping/fittings, etc.	800.00
5.	Backfill the excavation with material provided by the City to 95% compaction i 2-ft lifts.	1,800.00
6.	Shoring for sides of excavation, as required for worker safety and to protect the structural integrity of the nearby scale house and paved roads	1,200.00
Total		$5,750.00
8% sales tax		460.00
TOTAL:		$6,210.00

Total due this invoice (1st half, i.e. 50%) $3,105.00

Please make check payable to:

K KASER CO INC
229 N FRUITLAND
KENNEWICK WA 99336

Thank you for your business! We appreciate your calling us. If you have any questions, please call.

Net 10 days. Finance charge of 1½% per mo. (annual 18%) applied to unpaid past due balance.

CITY OF RICHLAND
P.O. BOX 190
RICHLAND, WA 99352-0190
(509) 943-7547 Fax (509) 943-7397

PURCHASE ORDER NO. 17736

DATE	ISSUED BY
9/25/98	S. GRAVES

1. Delivery to be in strict accordance with this order.
2. All freight or carryng charges must be prepaid.
3. Do not include any federal excise taxes. A certificate will be furnished.
4. Provide 3 copies of the invoice, unless previously supplied.
5. Anti-Discrimination certificate required on purchases of $500.00 or more.

DELIVERY DATE:

TERMS: NET 30

SHIP VIA:

K KASER CO., INC
229 N. FRUITLAND
KENNEWICK WA 99336

If remittance is to be made to an address other than above.

DELIVER TO: CITY OF RICHLAND

BILL TO: ENGINEERING & UTILTY SVCS PO BOX 190
RICHLAND, WA 99352

REQ NO.
VENDOR NO. L3013
FUND: WATER
DIV: SOLID WASTE

ITEM	QUANTITY	UNIT	CITY OF RICHLAND STOCK NUMBER	DESCRIPTION: ARTICLE OR SERVICES	UNIT PRICE	TOTAL PRICE
				FINAL PAYMENT OF THE LANDFILL UST REMOVAL PROJECT (50%)		$2,875.00
				PAYMENT TO BE MADE 30 DAYS AFTER COMPLETION AND FINAL ACCEPTANCE OF PROJECT BY GEORGE JACKSON		
				Previously paid 50% on P.O. #17735.		
				Invoice #CR(d)1104.02		
				FAX PO TO KATHY KASER AT 582-6330		
				THIS IS A PUBLIC WORKS PROJECT ALL DOCUMENTATION HAS BEEN SIGNED AND RECEIVED.		

FUND	DIV	BASUB EL	OBJECT	UTIL G/L	WO	AMOUNT
404	362	501.50	01.216	94500		$3,105.00

SUB TOTAL	$2,875.00
DISCOUNT	(
SALES TAX	230.00
TRANSPORTATION	
TOTAL	$3,105.00

11/4/98

510500 DEPARTMENT FILE COPY - 5 PURCHASE ORDER NO. 17736

K KASER CO. INC

ROADS • SEWER & WATER LINES • SEWER HOOKUPS • SEPTIC SYSTEMS
LEVELING • DUMP TRUCKS • UNDERGROUND STORAGE TANKS • INSTALLATION
DECOMMISSIONING AND UPGRADING OF EXISTING SYSTEMS

229 N. Fruitland - Kennewick Washington 99336

KKASECI1@aol.com
(509) 586-7935
FAX (509) 582-6330

November 3, 1998

Tammy, Paying from fax copy for remaining 50% of contracted amount (in lieu of retainage). Thanks Shari

City of Richland
2700 Duportail St, Bldg 100
Richland, WA 99352

Ph: 942 7755
Fax 942 7397

INVOICE

CR(d)1104.02

Job Location: Richland Landfill
Job Completed: October 2, 1998
Job Description: Landfill UST Removal Project
Purchase Order: 17735 -pd 10-8-98 (see attached)

1.	Remove and dispose of concrete/pavement	$ 300.00
2.	Removal, transportation, and disposal of residual liquids from the UST	150.00
3.	Excavate soil above and around the tank, and place at the specified location at the landfill.	1,500.00
4.	Removal and disposal of the 6,000-gallon UST and all associated underground items,such as the pumping system, vent/fill piping/fittings, etc.	800.00
5.	Backfill the excavation with material provided by the City to 95% compaction i 2-ft lifts.	1,800.00
6.	Shoring for sides of excavation, as required for worker safety and to protect the structural integrity of the nearby scale house and paved roads	1,200.00
Total		$5,750.00
8% sales tax		460.00
TOTAL:		$6,210.00
10/09/98	Less payment received, thank you ☺	-3,105.00
BALANCE DUE		$3,105.00

Please make check payable to:

K KASER CO INC
229 N FRUITLAND
KENNEWICK WA 99336

Thank you for your business! We appreciate your calling us. If you have any questions, please call.

Net 10 days. Finance charge of 1½% per mo. (annual 18%) applied to unpaid past due balance.

CITY OF RICHLAND
P.O. BOX 190
RICHLAND, WA 99352-0190
(509)942-9161
Budget Year: 1998

PURCHASE ORDER NO. 17735

DATE	ISSUED BY
9/25/98	S. GRAVES

DELIVERY DATE

TERMS: NET 30

SHIP VIA:

K KASER CO., INC.
229 N. FRUITLAND
KENNEWICK WA 99336

DELIVER TO: CITY OF RICHLAND
BILL TO: ENGR & UTILITY SVCS. PO BOX 190
RICHLAND, WA 99352

REQ NO.
VENDOR: 13013
FUND: WATER
DIV: SOLIDWASTE

ITEM	QTY	UNIT	STOCK NUMBER	DESCRIPTION: ARTICLE OR SERVICES	UNIT PRICE	TOTAL PRICE
				UNOERGROUND ITEMS, SUCH AS THE PUMPING SYSTEM, VENT/FILL PIPING/ FITTINGS, ETC.	800.000	800.00
5	225	CY		BACKFILL THE EXCAVATION WITH MATERIAL PROVIDED BY THE CITY TO 95% COMPACTION IN 2-FT LIFTS	8.000	1,800.00
6	40	LF		SHORING FOR SIOES OF EXCAVATION AS REQUIRED FOR WORKER SSAFETY AND TO PROTECT THE STRUCTURAL INTEGRITY OF THE NEARBY SCALE HOUSE AND PAVED ROADS	30.000	1,200.00
				IN LIEU OF THE PERFORMANCE BOND FOR THIS PROJECT, THE CONTRACTOR HAS OPTED FOR THE FOLLOWING PAY- MENT SCHEDULE		
				50% PAYMENT OF INVOICE DUE UPON COMPLETION AND ACCEPTANCE OF PROJECT		
				LESS 50%		2,875.00-
				THE REMAINING 50% WILL BE PAID		

FUND	DIV	BASUB EL	OBJECT	UTIL G/L	WO	AMOUNT

CERTIFICATE

I, the undersigned do hereby certify under penalty of perjury, that the materials have been furnished, the services rendered or the Labor performed as described herein, and that the claim is a just, due and unpaid obligation against the City of Richland, and that I am authorized to authenticate and certify to said claim.

(Date Received) (By)

CITY OF RICHLAND
P.O. BOX 190
RICHLAND, WA 99352-0190
(509)942-9161
Budget Year: 1998

PURCHASE ORDER NO. 17735 PAGE 3 OF 3

DATE	ISSUED BY
9/25/98	S. GRAVES

DELIVERY DATE

TERMS: NET 30

SHIP VIA:

DELIVER TO: CITY OF RICHLAND
BILL TO: ENGR & UTILITY SVCS. PO BOX 190

RICHLAND, WA 99352

K KASER CO., INC.
229 N. FRUITLAND
KENNEWICK WA 99336

REQ NO. VENDOR: 13013
FUND: WATER
DIV: SOLIDWASTE

ITEM	QTY	UNIT	STOCK NUMBER	DESCRIPTION: ARTICLE OR SERVICES	UNIT PRICE	TOTAL PRICE
				IN FULL ON THE CITY'S PURCHASE ORDER #17736 30 DAYS AFTER THE THE PROJECT IS COMPLETE AND ACCEPTED.		
				CONFIRMING ORDER WITH KATHY KASER		
				FAX PO TO 582-6330		
				THIS IS A PUBLIC WORKS PROJECT		
				ALL DOCUMENTATION HAS BEEN SIGNED AND RECEIVED		

FUND	DIV	BASUB EL	OBJECT	UTIL G/L	WO	AMOUNT

CERTIFICATE

I, the undersigned do hereby certify under penalty of perjury, that the materials have been furnished, the services rendered or the Labor performed as described herein, and that the claim is a just, due and unpaid obligation against the City of Richland, and that I am authorized to authenticate and certify to said claim.

(Date Received) (By)

LANDFILL UST REMOVAL PROJECT

PURCHASE ORDER NO. 17735

CITY OF RICHLAND

P.O. BOX
RICHLAND, WA 99352-0190
(509) 943-7547 x Fax (509) 943-7397

pd 10-8-98

PURCHASE ORDER NO. 17735 PAGE 1 OF 3

1. Delivery to be in strict accordance with this order.
2. All freight or carryng charges must be prepaid.
3. Do not include any federal excise taxes.
   A certificate will be furnished.
4. Provide 3 copies of the invoice, unless previously supplied.
5. Anti-Discrimination certificate required on purchases of $500.00 or more.

DATE	ISSUED BY
9/25/98	S. GRAVES

DELIVERY DATE

TERMS: NET 30

SHIP VIA:

K KASER CO., INC.
229 N. FRUITLAND
KENNEWICK WA 99336

If remittance is to be made to an address other than above.

DELIVER TO: CITY OF RICHLAND

BILL TO: ENGR & UTILITY SVCS. PO BOX 190
RICHLAND, WA 99352

REQ NO.

VENDOR NO. 13013

FUND: WATER
DIV: SOLIDWASTE

ITEM	QUANTITY	UNIT	CITY OF RICHLAND STOCK NUMBER	DESCRIPTION: ARTICLE OR SERVICES	UNIT PRICE	TOTAL PRICE
				PURCHASE ORDER 17735 IS BEING ISSUED BY THE CITY OF RICHLAND FOR THE LANDFILL UST REMOVAL PROJECT		
				ALL PRICES, TERMS AND CONDITIONS ARE PER YOUR QUOTE RESPONSE DATED 9/12/98.		
				WORK SCHEDULE IS TO BE COORDINATED WITH GEORGE JACKSON, CITY ENGR.		
				Invoice ~~RR~~(d)1004.01		
1	10	SY		REMOVE AND DISPOSE OF CONCRETE AND/OR PAVEMENT	30.00	300.00
2	50	GAL		REMOVAL, TRANSPORTATION, AND DISPOSAL OF RESIDUAL LIQUIDS FROM THE UST.	3.00	150.00
3	150	CY		EXCAVATE SOIL ABOVE AND AROUND THE TANK, AND PLACE AT THE SPECIFIED LOCATION AT THE THE LANDFILL	10.00	1,500.00
4	1	EA		REMOVAL AND DISPOSAL OF THE 6,000 GALLON UST AND ALL ASSOCIATED		

FUND	DIV	BASUB EL	OBJECT	UTIL G/L	WO	AMOUNT
404	D62	534.50	31.216	94200		$3,105.00

SUB TOTAL	2,875.00
DISCOUNT	(
SALES TAX	230.00
TRANSPORTATION	
TOTAL	3,105.00

210500

DEPARTMENT FILE COPY - 5998 PURCHASE ORDER NO. 17735

CITY OF RICHLAND

P.O. BOX
RICHLAND, WA 99352-0190
(509) 943-7547 • Fax (509) 943-7397

PURCHASE ORDER NO. L7735 PAGE 2 OF 3

1. Delivery to be in strict accordance with this order.
2. All freight or carryng charges must be prepaid.
3. Do not include any federal excise taxes.
   A certificate will be furnished.
4. Provide 3 copies of the invoice, unless previously supplied.
5. Anti-Discrimination certificate required on purchases of $500.00 or more.

DATE	ISSUED BY
9/25/96	S. GRAVES

DELIVERY DATE

TERMS: NET 30

SHIP VIA:

K KASER CO., INC
329 N. FRUITLAND
KENNEWICK WA 99336

DELIVER TO: CITY OF RICHLAND

BILL TO: ENGR & UTILITY SVCS. PO BOX 150
RICHLAND, WA 99352

If remittance is to be made to an address other than above.

REQ NO. VENDOR NO. 13013
FUND: WATER
DIV: SOLIDWASTE

ITEM	QUANTITY	UNIT	CITY OF RICHLAND STOCK NUMBER	DESCRIPTION: ARTICLE OR SERVICES	UNIT PRICE	TOTAL PRICE
				UNDERGROUND ITEMS, SUCH AS THE PUMPING SYSTEM, VENT/FILL PIPING/ FITTINGS, ETC.	800.00	800.00
5	225 CY			BACKFILL THE EXCAVATION WITH MATERIAL PROVIDED BY THE CITY TO 95% COMPACTION IN 2-FT LIFTS	8.00	1,800.00
	40 LF			SHORING FOR SIDES OF EXCAVATION AS REQUIRED FOR WORKER SSAFETY AND TO PROTECT THE STRUCTURAL INTEGRITY OF THE NEARBY SCALE HOUSE AND PAVED ROADS	30.00	1,200.00
				IN LIEU OF THE PERFORMANCE BOND FOR THIS PROJECT, THE CONTRACTOR HAS OPTED FOR THE FOLLOWING PAY-MENT SCHEDULE		
				50% PAYMENT OF INVOICE DUE UPON COMPLETION AND ACCEPTANCE OF PROJECT -Less 50%		(2,875.00)
				THE REMAINING 50% WILL BE PAID		

FUND	DIV	BASUB EL	OBJECT	UTIL G/L	WO	AMOUNT

SUB TOTAL	
DISCOUNT	(
SALES TAX	
TRANSPORTATION	
TOTAL	

DEPARTMENT FILE COPY - 5 PURCHASE ORDER NO. L7735

CITY OF RICHLAND

P.O. BOX
RICHLAND, WA 99352-0190
(509) 943-7547 • Fax (509) 943-7397

PURCHASE ORDER NO. 17736 PAGE 1 OF 2

DATE	ISSUED BY
9/25/96	S. BRAVES

DELIVERY DATE

TERMS: NET 30

SHIP VIA:

1. Delivery to be in strict accordance with this order.
2. All freight or carryng charges must be prepaid.
3. Do not include any federal excise taxes. A certificate will be furnished.
4. Provide 3 copies of the invoice, unless previously supplied.
5. Anti-Discrimination certificate required on purchases of $500.00 or more.

K KASER CO., INC.
239 N. FRUITLAND
KENNEWICK WA 99336

If remittance is to be made to an address other than above.

DELIVER TO: CITY OF RICHLAND

BILL TO: ENGR & UTILITY SVCS. PO BOX 190
RICHLAND, WA 99352

REQ NO. VENDOR NO. L3012
FUND: WATER
DIV: SOLIDWASTE

ITEM	QUANTITY	UNIT	CITY OF RICHLAND STOCK NUMBER	DESCRIPTION: ARTICLE OR SERVICES	UNIT PRICE	TOTAL PRICE
				IN FULL ON THE CITY'S PURCHASE ORDER #17736 30 DAYS AFTER THE THE PROJECT IS COMPLETE AND ACCEPTED.		
				CONFIRMING ORDER WITH KATHY KASER		
				FAX PO TO 582-6330		
				THIS IS A PUBLIC WORKS PROJECT		
				ALL DOCUMENTATION HAS BEEN SIGNED AND RECEIVED		

FUND	DIV	BASUB EL	OBJECT	UTIL G/L	WO	AMOUNT

SUB TOTAL	
DISCOUNT	(
SALES TAX	
TRANSPORTATION	
TOTAL	

DEPARTMENT FILE COPY - 5 PURCHASE ORDER NO. 17736

P.O. 1/2 upon comp. 1/2 30 days after accept.

all Pmt. 30 days after accept.

CITY OF RICHLAND

505 Swift Blvd. • Box 190 • Richland, Washington 99352 • (509) 943-7390 • FAX (509) 943-5666

PURCHASING DEPARTMENT; 2700 DUPORTAIL, BLDG. 100
MAILING ADDRESS: PO BOX 190
PHONE: 509-942-7765 FAX 509-942-7397

September 1, 1998

1/2 & 1/2

PO 17735 1st 50%
17736 2nd 50%

U#1308

Kathy Kaser
K. Kaser Co., Inc.
229 N. Fruitland
Kennewick, WA 99336

RE: Quotation for Landfill UST Removal Project

Dear Kathy,

Per our telephone conversation this afternoon, I am enclosing our specifications for the Landfill UST Removal Project quote.

Please fax your quote response to my attention at 942-7397 by end of business day (3:30 p.m.) on Wednesday, September 9, 1998.

Thank you for your assistance in this matter. If you have any questions, please call me at 942-7327.

Sincerely,

Michael R. Mitchell

Michael R. Mitchell
Contracts Officer

srg

MRM/srg
Enclosure

RICHLAND LANDFILL UST LOCATION
1998

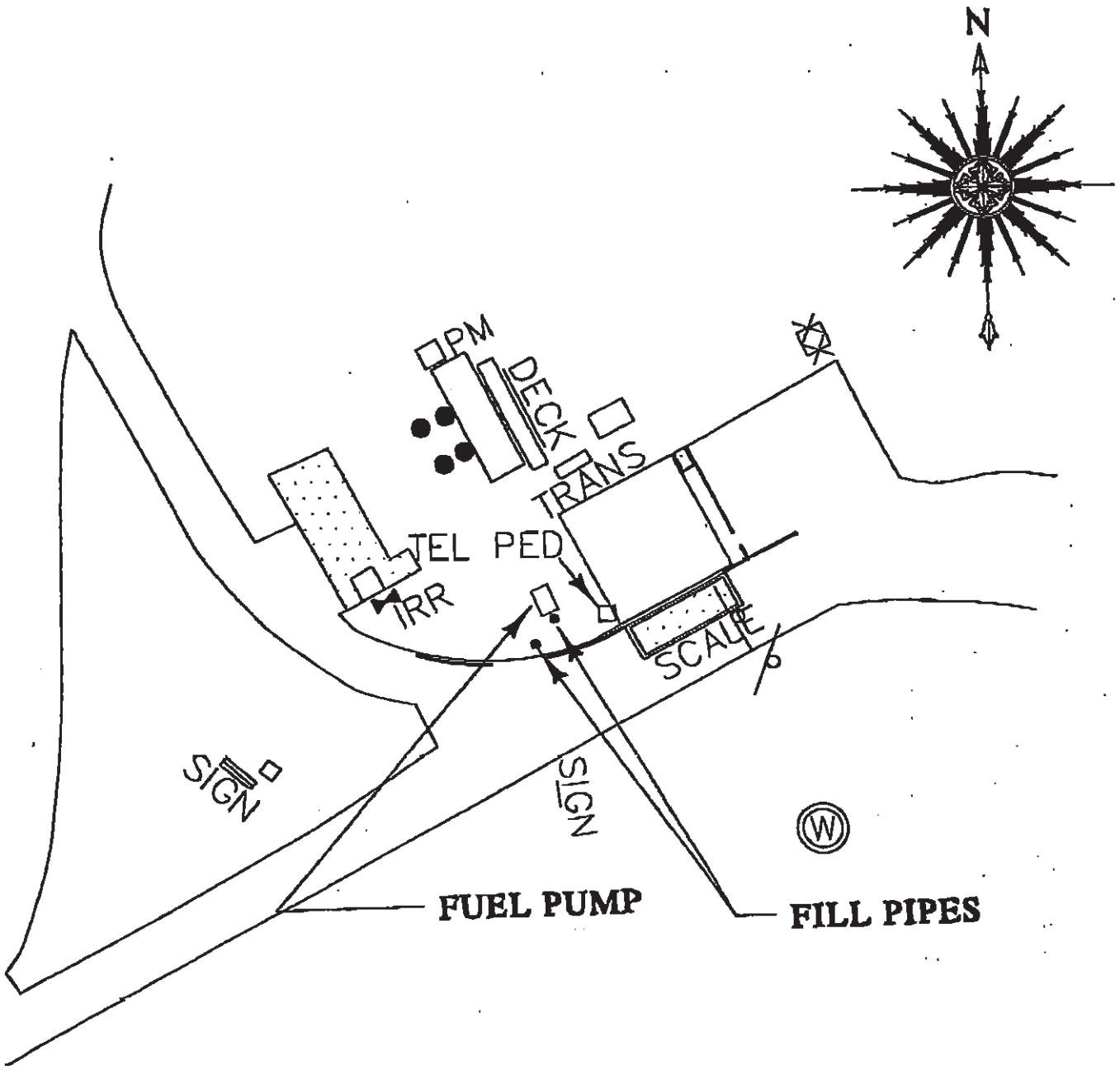


FIGURE 2

UST REMOVAL PROJECT LOCATION
1998

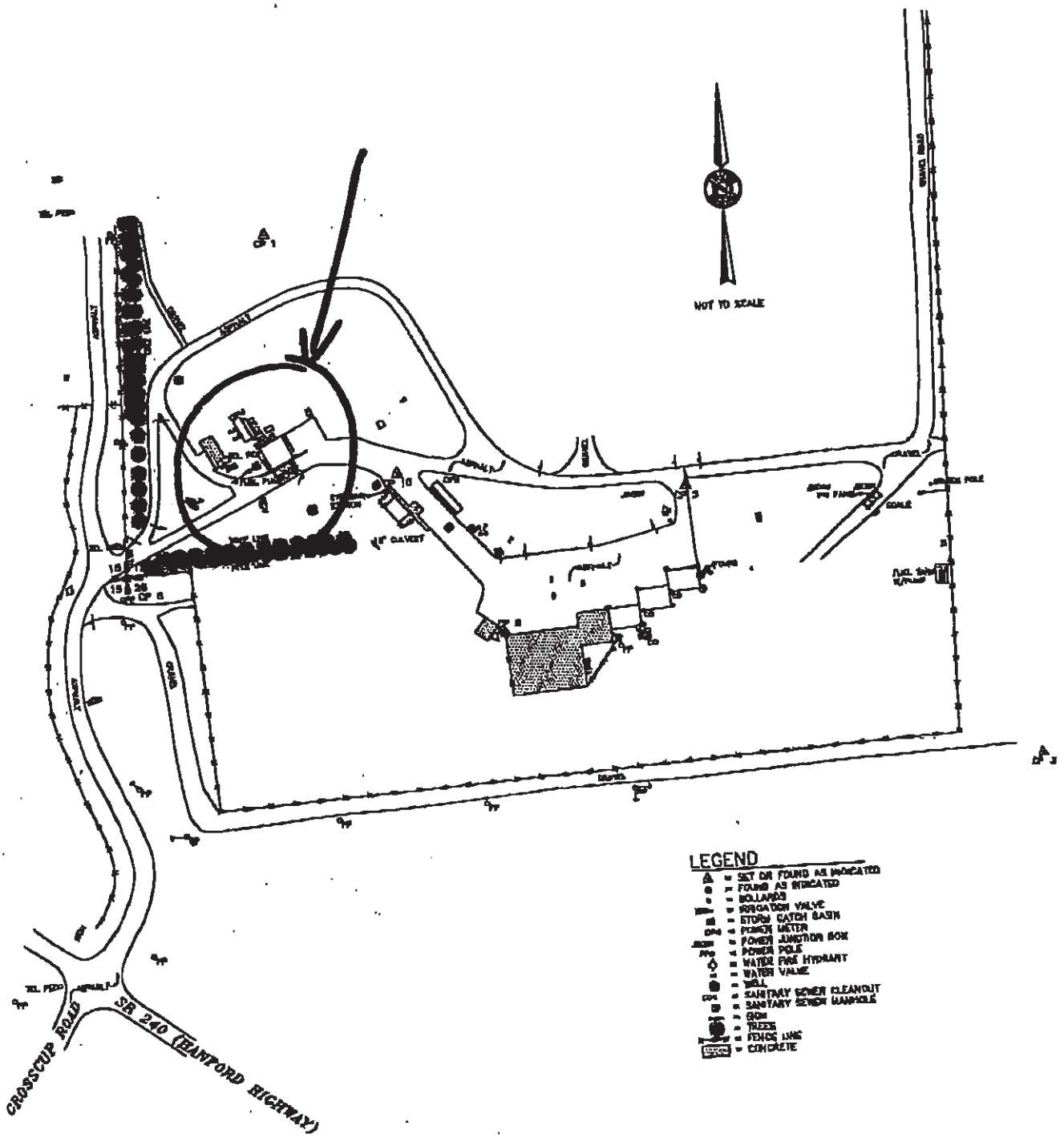


FIGURE 1

The following is a schedule of all required technical submittals:

City of Richland Landfill UST Removal Project Required Submittal Schedule

Item #	Description	Due Date
1	Related Experience Summary, as described in Section 2.1A	With quote.
2	Project Organization, including copies of licenses for field supervisors, as described in Section 2.1B.	With quote.
3	Proposed Site Layout, as described in Section 2.3A.	With quote.
4	Project Health and Safety Plan	Ten (10) days After Award
5	Richland Fire Department Tank Removal Permit Application	Five (5) days Before Mobilization
6	Copies of Transportation Manifests, signed upon receipt of materials by the disposal company.	Ten (10) days after shipment.
7	Set of detailed field notes from Field Supervisor.	Ten (10) days after completion of field work.

2.7 Backfill

After the excavation sampling has been completed, the Contractor shall backfill the excavation. Backfill shall be completed using material provided by the City, and be compacted to 95% of maximum density as determined by ASTM 698. Backfill activities shall be completed in two foot lifts. The purpose of the compacted backfill is to maintain the structural integrity of the nearby building and pavement. Compaction testing and records indicating this requirement has been met shall be completed by a subcontractor procured by the City.

2.8 Field Notes

The Contractor shall supply a copy of their field notes to the City within two weeks of the job completion. The field notes shall include copies of any manifests used in transporting the excavated tanks to the disposal facility.

3.0 QUOTATION INFORMATION/SUBMITTAL SCHEDULE

The following is an itemized list of items included in the scope of work for this project that must be quoted. The final quotation shall be based on estimated volumes for concrete/asphalt, soils, and tank contents removal and disposal. Final payment shall be based on actual volumes, therefore unit prices are integral to the quotation.

City of Richland Landfill UST Removal Project Quotation Schedule

Item #	Estimated Qty.	Unit	Description	Unit Price	Total Price
1	10	yd^2	Remove and dispose of concrete/pavement.	30.00	300.00
2	50	gal.	Removal, transportation, and disposal of residual liquids from the UST.	3.00	150.00
3	150	yd^3	Excavate soil above and around the tank, and place at the specified location at the landfill.	10.00	1,500.00
4	1	ea.	Removal and disposal of the 6,000 gallon UST and all associated underground items, such as the pumping system, vent/fill piping/fittings, etc.	800.00	800.00
5	225	yd^3	Backfill the excavation with material provided by the City to 95% compaction in 2-ft lifts.	8.00	1,800.00
6	40	lf	Shoring for sides of excavation, as required for worker safety and to protect the structural integrity of the nearby scale house and paved roads.	30.00	1,200.00
				TOTAL	

FIVE THOUSAND, SEVEN HUNDRED, FIFTY DOLLARS 5,750.00

Submitted By:	K. KASER CO. INC.	Signature:	Kathryn E. Kaser
Contractor: →		Date: 9-12-98	PRES

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KENNEWICK WA 99336

ph. 509 586-7335
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H. Contractor personnel shall wear proper personal protective equipment (PPE) during all work activities. PPE shall include combustible gas and oxygen meters to be used to monitor the ambient working conditions.

I. The Contractor is responsible for providing excavation safety systems, such as shoring or required sloping. Shoring should also be used to prevent damage to the scale house and the existing road surfaces, as required.

J. No workers shall enter any tank during work activities without the express written permission of the City representative. A Confined Space Entry Permit shall be required prior to any worker entering a tank.

K. The Contractor is responsible for maintaining jobsite copies of training records to verify that all workers are certified as OSHA 40-Hour Hazardous Waste Site Workers.

2.4 Excavation

Since little is known about the exact tank dimensions or location, the dimensions and extent of excavation will be highly-dependent upon field conditions. It is known that the tank has a capacity of 6,000 gallons. Based on other similar City facilities, it is believed that the tank is cylindrical, 16 feet in length, 8 feet in diameter, and at a depth between 2 to 10 feet below grade. Groundwater depths at the site are approximately 90 feet, and will not be encountered during operations.

The Contractor shall work in conjunction with City personnel, such that City personnel can complete required sampling of excavated soils during operations.

Excavation activities shall be performed in full accordance with all applicable items delineated within the City of Richland Standard Specifications, Earthwork, Section 2.3, "Pipeline Trench Excavation and Backfill", which has been attached to this document.

2.5 Purging/Inerting

After initial excavation activities, the liquid and vapor contents of the tank must be removed. It is believed that the tank has maintained structural integrity based on tightness testing performed several years ago, therefore the liquid contents of the tank should be minimal. The liquid contents that are pumped out must be disposed of in a manner required by all applicable regulations.

After the liquid has been removed from the tanks, purging with carbon dioxide or inerting with gas shall be performed to remove flammable vapors, or dilute them below their flammable limits. During all purging/inerting activities, extreme care shall be taken to control all static electricity, to prevent sparking which could cause a fire or explosion.

2.6 Tank Removal

During tank removal, the Contractor shall monitor any spillage of material from the tank. Underlying soils and gravels which are impacted by spilled materials from the tank shall be excavated, sampled, and placed with the soils from the main excavation for disposal.

The tank must be labeled within 24 hours of removal to indicate that the tank contained fuel oils, may have contained organic lead, and are not suitable for reuse.

The Contractor is also responsible for the removal and disposal of all subsurface structures associated with the UST, such as the pumping system and all associated piping.

After the tank has been removed, three soil samples must be taken from the excavation prior to backfilling. City personnel shall take the samples, and provide direction to the Contractor to obtain the samples using their equipment.

D. National Fire Protection Association (NFPA):

- NFPA 30 *"Flammable and Combustible Liquids Code"*
- NFPA 70B *"Electrical Equipment Maintenance"*
- NFPA 77 *"Standard Procedure for Cleaning or Safeguarding Small Tanks and Containers"*

E. American Society of Testing Materials (ASTM):

- ASTM D4318-87 *"Liquid Limit, Plastic Limit, and Plasticity Index of Soils"*
- ASTM D422-92 *"Size Analysis of Soils"*
- ASTM D1557-91 *"Laboratory Compaction Characteristics of Soil Using Modified Effort"*
- ASTM D2922-91 *"Density of Soils and Soil-Aggregate in Place by Nuclear Methods"*

2.3 Mobilization and Operations General Requirements

A. The Contractor shall provide the City with a site layout for operations, based on Figures 1 and 2, which are attached to this scope of work to provide a map of the vicinity around the UST to be removed. Few records exist regarding the UST with the exception that it is a 6,000 gallon tank, and there is strong evidence that minimal leaking occurred during its service life, if any. Based on similar projects, the tank is believed cylindrical, 16 feet long and 8 feet in diameter, and at a depth no greater than 10 feet below grade. In addition, the fill piping is marked such that the tank should be easily located.

B. All roads in the vicinity of the project are private roads, so right-of-way permits are not required.

C. Good housekeeping practices shall be exhibited at the site during the project. Materials, supplies, and equipment shall be stored in an orderly and sanitary manner, and free from accumulation of non-hazardous waste generated during operations.

D. The Contractor shall assume full responsibility for ensuring that all employees working onsite are cognizant of the following:

- All applicable safety rules and regulations.
- Training and procedures for all equipment used during operations.
- Health implications and risks involved in working with petroleum hydrocarbons and organic lead
- The proper methods for removing, storing, and disposing of materials contaminated with petroleum hydrocarbons and organic lead.

E. During work activities, the Contractor is responsible for preventing any potential ignition of flammable vapors from the tank by installing the following administrative controls at the site:

- Posting "No Smoking" signs throughout the site.
- Prohibiting all flame and/or spark-producing equipment within 50 feet of the tank.
- Using non-sparking tools for all operations.
- Controlling static electricity.

F. Access control shall be supplied by the Contractor to prevent unauthorized personnel or the general public from entering the work area. The use and maintenance of barricades, and "No Trespassing" signs around the perimeter of the work area is required.

G. The City shall provide markings to indicate all underground utility lines in the vicinity of the UST. However, the Contractor shall be responsible to take precautions upon encountering such underground utility lines to ensure worker safety and prevent damage to the infrastructure.

APPENDIX E--Summary of City of Richland Costs

Landfill UST Project Incurred Costs

Name	Role	Hours	Rate	Total
George Jackson	Project Manager/Engineer	20	$75.00	$1,500
Steve McNutt	Environmental Scientist	8	$45.00	$360
	Total			$1,860

Note: Rates are based on an approximate 3.0 multiple on salary.
Actual fully-burdened costs incurred are higher.