

006649

Extra Copy

DEPARTMENT OF ECOLOGY
UNDERGROUND STORAGE TANKS

JAN 01 1992

**SITE ASSESSMENT
UNDERGROUND STORAGE TANK REMOVAL
HOLDEN VILLAGE
CHELAN, WASHINGTON**

PROJECT NO. WA193.10

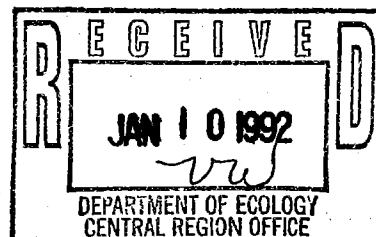
December 20, 1991

Prepared for

Holden Village, Inc.
Chelan, Washington 98816

Prepared by

Geraghty & Miller, Inc.
Environmental Services
8330 154th Avenue NE
Redmond, Washington 98052-3864
(206) 869-6321



SR 1/16/92 SB
Site Contact
Steve Founge
Maintenance operations mgr

**SITE ASSESSMENT
UNDERGROUND STORAGE TANK REMOVAL
HOLDEN VILLAGE
CHELAN, WASHINGTON**

December 20, 1991

Geraghty & Miller, Inc. is submitting this report to Holden Village, Inc. for work performed at Holden Village, Chelan, Washington. The report was prepared in conformance with Geraghty & Miller's strict quality assurance/quality control procedures to ensure that the report meets the highest standards in terms of the methods used and the information presented. If you have any questions or comments concerning this report, please contact one of the individuals listed below.

Respectfully submitted,

GERAGHTY & MILLER, INC.



Kurt S. Anderson
Office Division Manager, Hydrocarbon
Services/Project Manager



Susan J. Keith
Principal Scientist and Associate/
Project Officer

CONTENTS

	<u>Page</u>
INTRODUCTION	1
SITE DESCRIPTION	1
BACKGROUND	2
HYDROGEOLOGY	2
METHODOLOGY	3
UST EXCAVATION AND REMOVAL	3
SOIL SAMPLING	4
ANALYTICAL PROGRAM	5
SITE ASSESSMENT RESULTS	6
UST AND PRODUCT PIPING CONDITIONS	6
FIELD SOIL CONDITIONS	6
LABORATORY ANALYTICAL RESULTS	7
SUMMARY AND CONCLUSIONS	7

TABLE

1. Summary of Soils Sample Analytical Data

FIGURES

1. Site Location Map
2. Site Plan Plant No. 1
3. Approximate Location of Gasoline UST and Product Lines
4. Sample Locations and Excavation Boundaries

APPENDICES

- A. Disposal Certification
- B. Laboratory Analytical Results and Chain-of-Custody Documentation

**SITE ASSESSMENT
UNDERGROUND STORAGE TANK REMOVAL
HOLDEN VILLAGE
CHELAN, WASHINGTON**

INTRODUCTION

Geraghty & Miller, Inc. was retained by Holden Village, Inc. to conduct a site assessment during the decommissioning of two underground storage tanks (USTs) at Holden Village, Chelan, Washington. One 800-gallon and one 2,000-gallon UST and the associated product piping were excavated and removed from the site in June 1991.

The scope of work for the site assessment was developed based on Washington Model Toxics Control Act (MTCA) guidelines for UST removal, known site conditions, and Geraghty & Miller's experience with UST removals. The scope of work was designed to provide site assessment during UST removal activities and to evaluate the physical condition of the USTs, exposed product lines, and soils for visual evidence of leakage.

UST removal was completed on June 25, 1991. This report documents the tasks completed during the UST removal activities and summarizes our findings and conclusions.

SITE DESCRIPTION

Holden Village is located approximately 30 miles uplake (northwest) of Chelan, Washington and approximately 7 miles west of Lake Chelan (Figure 1). The site is remote and only accessible by passenger boat, barge, or helicopter. Holden Village consists of an old mining village with several lodges, chalets, and other buildings and an abandoned mine which was operated until the 1950s. The "town site", which has been operated as a learning retreat community by the Lutheran Church since the early 1960s, is on the east side of Railroad Creek in a valley floor at an elevation of approximately

3,200 feet above mean sea level (msl). The valley is a typical glacial carved U-shaped valley with mountains rising off both sides of the valley floor. The land in the "town site" is owned by Holden Village, and the land in the area of the abandoned mine is owned by the US Forest Service and leased to Holden Village. The abandoned mine is located on the west side of Railroad Creek on the flanks of the peaks which rise to an elevation of over 8,000 feet above msl. Most of the structures in the abandoned mine area are mostly destroyed with the exception of an old mechanic's shop, a recently constructed museum building, and smaller maintenance sheds and pump houses. The 800-gallon gasoline UST was located on the west side of the old mechanic's shop in the abandoned mine area, and the 2,000-gallon UST was located near one of the chalets in the "town site".

BACKGROUND

The 800-gallon UST was located adjacent to an old mechanic's shop which was most recently used for repairing and maintaining large equipment, such as snow blowers, buses, and trucks; the shop was used when the mining was in operation for similar purposes. The 800-gallon UST was used for refueling some of the equipment and vehicles and was installed during the mining days in the 1940s or early 1950's. The 2,000-gallon UST was used for refueling transportation vehicles which hauled passengers and supplies up the 12-mile gravel road from Lake Chelan, and was also installed during the mining days. Both tanks contained leaded gasoline. There were no recorded spills or leaks from the USTs.

HYDROGEOLOGY

The "town site" in the valley floor is predominately underlain by recent fluvial deposits of Railroad Creek, glacial recessional outwash deposits, and colluvium. Grain sizes in these deposits range from silty sand to sandy gravel. Deposits encountered during excavation of the 2,000-gallon UST in the "town site" consisted of brown, damp,

loose, silty fine sand with angular rock debris. Soils in the excavation were wet just below the UST at a depth of about 7 feet, suggesting a local water table at about that depth. The topography surrounding the removed 2,000-gallon UST slopes gently to the south toward Railroad Creek.

Deposits along the flanks of the Railroad Creek valley overlying the metamorphic bedrock typically include colluvium, glacial deposits, and volcanic outfall. Deposits encountered during the excavation of the 800-gallon UST near the mechanic's shop consisted of brown, damp, loose, silty gravelly sand (colluvium and fill) to a depth of about 6 feet, and grey, damp, very dense, silty gravelly sand (till) at the base of the excavation. No ground water was encountered during excavation. The mechanic's shop is a few hundred feet in elevation above Railroad Creek.

METHODOLOGY

Activities conducted by Geraghty & Miller at the site during the UST removal included observing the UST excavation and removal activities, visually inspecting the removed USTs, and collecting soil samples from the UST excavations. The following sections discuss the technical approach and methodology for each of the activities completed during the site assessment.

UST EXCAVATION AND REMOVAL

One 800-gallon and one 2,000-gallon UST and associated product piping were excavated and removed on June 25, 1991. The former locations of the USTs are shown in Figure 2 and 3. The excavation, removal, and disposal of the USTs and piping was conducted by Delhur Industries, Inc. (Delhur) of Port Angeles, Washington.

Prior to excavation, the contents of the gasoline in the UST and associated product piping were emptied by Holden personnel. The interior atmosphere of the

USTs was then made inert with dry ice and approved by the Holden Fire Chief, as delegated by the local Fire Marshall.

After the interior atmospheres of the USTs were made inert, excavation continued around the USTs, and associated product piping, vent lines, and electrical lines were removed.

Following removal of piping and vent lines, the USTs were removed from the ground and transported down to Lake Chelan by Delhur, placed on a barge and transported to Chelan, placed on trucks and transported by Northwest EnviroField Services to their Seattle facility for cleaning and disposal. A letter certifying appropriate disposal of the USTs is included in Appendix A. Geraghty & Miller personnel inspected for evidence of leakage from the USTs and associated piping before they were removed from the site. The results of the UST and product piping removal are discussed in the Site Assessment Results section.

During UST and piping removal activities, approximately 50 cubic yards of soil with a hydrocarbon odor were excavated; approximately 40 cubic yards of soil were derived from the 800-gallon UST excavation and approximately 10 cubic yards from the 2,000-gallon UST excavation. These excavated soils were placed on and covered with plastic sheeting in a flat area on the third level of the old mine tailings. The majority of the soils from the 2,000-gallon UST excavation had no odor or visual sign of hydrocarbons and were used for backfill. Clean backfill was transported from a nearby gravel pit to backfill the 800-gallon UST excavation and the remaining volume needed in the 2,000-gallon UST excavation.

SOIL SAMPLING

Three soil samples were collected from each of the UST excavations and submitted to the laboratory for analysis. The sample locations are shown on Figures 2

and 3. Sample UST1-1S was collected from the south sidewall of the 800-gallon UST (UST1) excavation at a depth of about 4 feet below land surface (bls). Sample UST1-1E was collected from the east wall of the UST1 excavation near the shop foundation at a depth of about 4 feet bls. Sample UST1-B was collected from near the base of the UST excavation in weathered and hydrocarbon-stained till at a depth of about 7 feet bls. Sample UST2-E was collected from the east end of the 2,000-gallon UST (UST2) excavation at a depth of about 4 feet bls. Sample UST2-W was collected from the west end of the UST2 excavation near the fill pipe at a depth of about 4 feet bls. Sample UST2-B was collected from the bottom of the excavation beneath UST2 at a depth of about 7 feet bls.

All soil samples were collected using 2.5-inch by 6-inch brass sampling tubes. Samples were collected by pushing the tubes directly into soil in the bucket of the backhoe as soil was excavated. The ends of all tubes were immediately covered with Teflon™ sheeting, capped with plastic covers, and sealed with self-adhesive silicone rubber tape. Sealed samples were immediately placed in an ice-filled portable cooler for storage and transport to the laboratory. A chain-of-custody record accompanied the samples to document sample identity, requested analysis, and sample receipt by the laboratory. The laboratory analytical program for the soil samples is discussed in the following section.

ANALYTICAL PROGRAM

Geraghty & Miller submitted soil samples collected during UST removal activities to Pacific Northwest Environmental Laboratory, Inc. (PNEL) of Redmond, Washington for chemical analysis. All samples submitted were to be analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX) using U.S. Environmental Protection Agency (EPA) Method 8020, for total petroleum hydrocarbons (TPH) using modified EPA Method 8015, and for total lead using EPA Method 6010.

SITE ASSESSMENT RESULTS

During UST removal activities, Geraghty & Miller visually inspected UST1 and UST2 for evidence of leakage and the excavated soils for evidence residual hydrocarbons. The following sections discuss the results of the field data collected during the UST removal activities and the results of laboratory analysis of the soil samples.

UST AND PRODUCT PIPING CONDITIONS

Visual inspection of the excavated USTs did not reveal any signs of holes or seam failure. Inspection of the product piping revealed no obvious signs of rupture.

FIELD SOIL CONDITIONS

Soils containing residual hydrocarbons and emitting a strong hydrocarbon odor were encountered near the mechanic's shop above, to the sides, and beneath the 800-gallon UST near the mechanic's shop. These soils were excavated during removal of the UST with the exception of hydrocarbon-stained soils near the foundation of the mechanic's shop. Excavation of soils near the mechanic's shop was halted because of the possibility of structural damage. Soils at the base of the excavation were excavated down to the top of unweathered till at a depth of about 7.5 feet bls, the extent to which the track hoe could excavate the dense till. The unweathered till was not stained with hydrocarbons.

Soils emitting an odor of hydrocarbons were encountered only in soils near the fill pipe of the 2,000-gallon UST. These soils were excavated and transported to the abandoned mine site, where they were placed on and covered with plastic sheeting. Visual signs of hydrocarbon staining were not observed, and hydrocarbon odors were not detected in the remainder of the excavation.

LABORATORY ANALYTICAL RESULTS

Six soil samples were collected for laboratory analysis during excavation of the USTs and associated product piping. Copies of laboratory analytical reports and chain-of-custody documents for soil samples are provided in Appendix B. The laboratory results, field sampling data, and MTCA Method A cleanup levels for soils are summarized in Table 1.

The results of the laboratory analysis of soil samples collected from the 800-gallon UST excavation (Table 1) indicate that all three samples contain concentrations of TPH above the MTCA Method A cleanup levels for soils. Concentrations of BTEX and total lead were below MTCA Method A cleanup levels for soils. With the exception of the area near the foundation of the mechanic's shop (Sample UST1-1E), the soils with hydrocarbon staining were excavated.

The results of laboratory analysis of soil samples collected from the 2,000-gallon UST excavation (Table 1) indicated that only one sample (UST2-W) contained concentrations of TPH above MTCA Method A cleanup levels for soils. Soils in the area of sample UST2-W were not in contact with ground water and were excavated during UST removal. Concentrations of BTEX and total lead were below MTCA Method A cleanup levels for soils.

SUMMARY AND CONCLUSIONS

The following conclusions are based on data collected during the site assessment Geraghty & Miller conducted at Holden Village during the removal of one 800-gallon UST and one 2,000-gallon UST and their associated product piping.

- Visual inspection of the excavated USTs and associated product piping did not reveal any obvious signs of holes or seam failure.

- Soils containing residual hydrocarbons were encountered during excavation of the 800-gallon and 2,000-gallon USTs and associated product piping.
- The results of laboratory analysis of the three soil samples collected from the 800-gallon UST excavation indicate that all three samples contain TPH concentrations exceeding MTCA Method A cleanup levels for soils. Concentrations of BTEX and total lead did not exceed MTCA Method A cleanup levels for soils in any of the three soil samples.
- The results of laboratory analysis of soil samples collected from the 2,000-gallon UST excavation indicate that one of the three soil samples submitted to the laboratory contains TPH concentrations exceeding MTCA Method A cleanup levels for soils. Concentrations of BTEX and total lead did not exceed MTCA Method A cleanup levels for soils in any of the three samples.
- Soils exhibiting visual signs of hydrocarbons in the 800-gallon UST excavation were excavated, with the exception of soils extending beneath the mechanic's shop. The base of the excavation was extended until very dense, unweathered till was encountered.
- Soils exhibiting visual signs of hydrocarbons were encountered in the 2,000-gallon UST excavation around the fill pipe area. These soils were excavated.
- Excavated soils from both UST locations with visual signs of hydrocarbons were transported to a flat area of the old mine tailings, placed on plastic sheeting, and prepared for aeration.

- The excavated USTs were removed from the site and transported to Northwest EnviroField Services of Seattle, Washington for cleaning and disposal.
- Following excavation, the pits were backfilled with clean gravelly sands and native soils.

TABLE

Table 1. Summary of Soils Sample Analytical Data
Holden Village, Washington
Project No. WA193.01

Sample Identification	Sample Location	Date Collected	Sample Depth (Feet bls)	TPH As Gasoline (mg/kg)	Benzene (ug/kg)	Toluene (ug/kg)	Ethyl Benzene (ug/kg)	Total Xylenes (ug/kg)	Total Lead (mg/kg)
UST1-1S	S end of UST1	25-Jun-91	4	130	50 U	170	1400	1300	15.2
UST1-1E	E side of UST1	25-Jun-91	4	178	50 U	50 U	1200	360	13.9
UST1-B	Beneath UST1	25-Jun-91	7	1100	500 U	500 U	2500	3400	24.3
UST2-E	E side of UST2	25-Jun-91	4	3.5	5 U	5 U	5 U	30	4.5
UST2-W	W side of UST2	25-Jun-91	6	135	50 U	50 U	50 U	400 U	14.1
UST2-B	Beneath UST2	25-Jun-91	7	1.8	5 U	5 U	5 U	10 U	9.7
Ecology Method A Cleanup Level for Soils (1):				100	500	40,000	20,000	20,000	250

(1) Washington Department of Ecology, Cleanup Standards Amendments to Model Toxics Control Act Regulation, Adopted January 28, 1991, Effective February 28, 1991.

TPH Total petroleum hydrocarbons

bls Below land surface

mg/kg Milligrams per kilogram

ug/kg Micrograms per kilogram

U Compound not detected at the given detection limit

UST1 800-gallon underground storage tank

UST2 2,000-gallon underground storage tank

Analyses were performed by Columbia Analytical Services of Bothell, Washington, using the following USEPA methods:

TPH: Modified Method 8015

BTEX: Method 8020

Total Lead: Method 6010

FIGURES

DRAFTER: SAC

APPROVED: KSA

CHECKED:

DRAWING:

FILE NO.:

WA193.10

PRJCT NO.:

DWG DATE: SEPT. 1991



SOURCE: USGS 15 Minute Topographic Map, HOLDEN, WASHINGTON Quadrangle dated 1944.

0 3000 6000 9000 12000 FEET

0 1 2 3 MILES



QUADRANGLE LOCATION



**GERAGHTY
& MILLER, INC.**
Environmental Services

SITE LOCATION MAP

Holden Village
Chelan, Washington

FIGURE

1

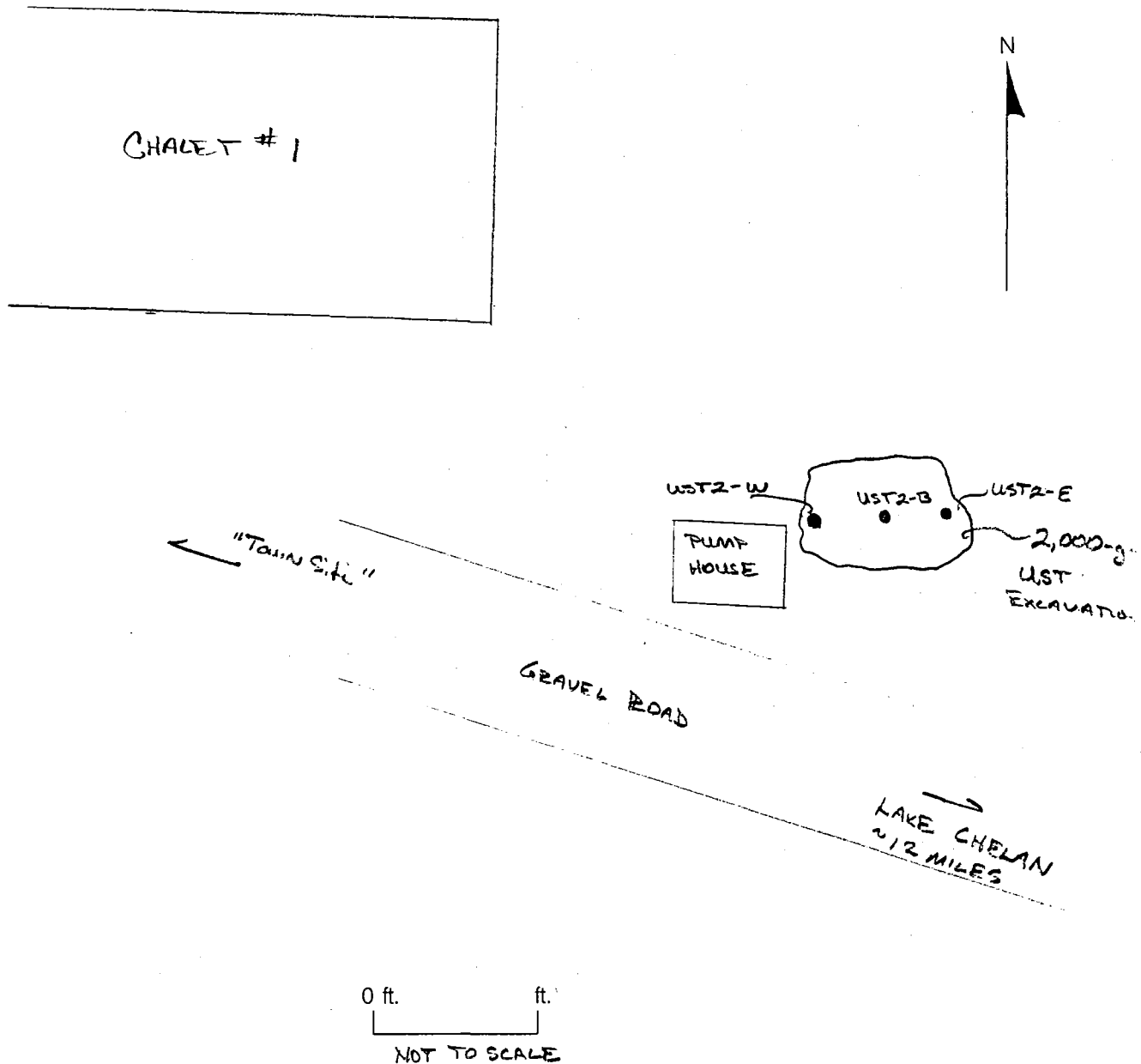
LOCATION SKETCH

Well(s) NA Project/No. Holden Village, WA WA193.10 Page 1 of 1

Site Location Holden Village, Chelan Washington

Observer KURT ANDERSON

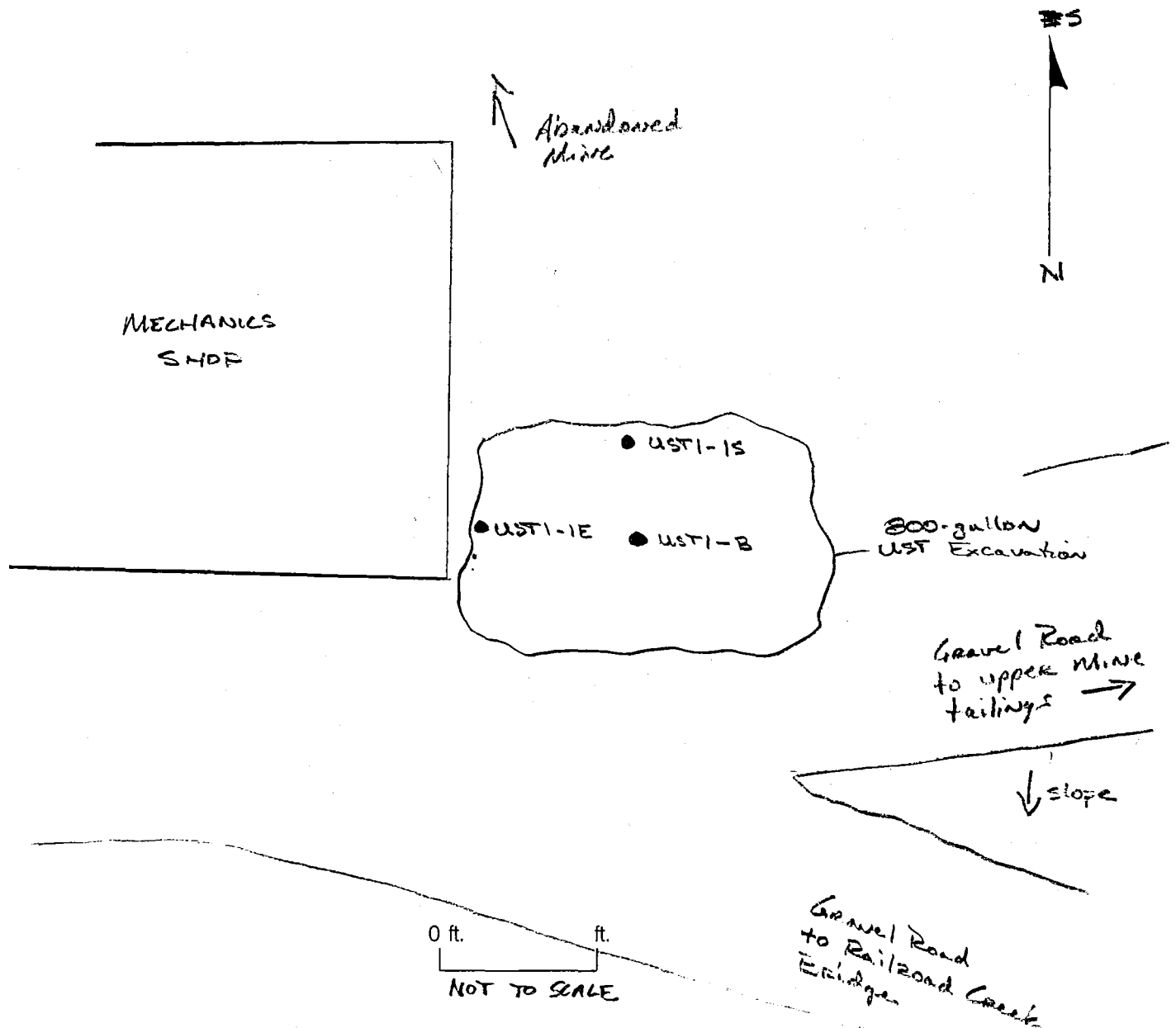
(Locate all wells, borings, etc. with reference to three permanent reference points; tape all distances; clearly label all wells, roads, and permanent features)



LOCATION SKETCH

Well(s) NA Project/No. Holden Village WA193.10 Page 1 of 1
 Site Location Holden Village, Chelan, Washington
 Observer Kurt Anderson

(Locate all wells, borings, etc. with reference to three permanent reference points; tape all distances; clearly label all wells, roads, and permanent features)



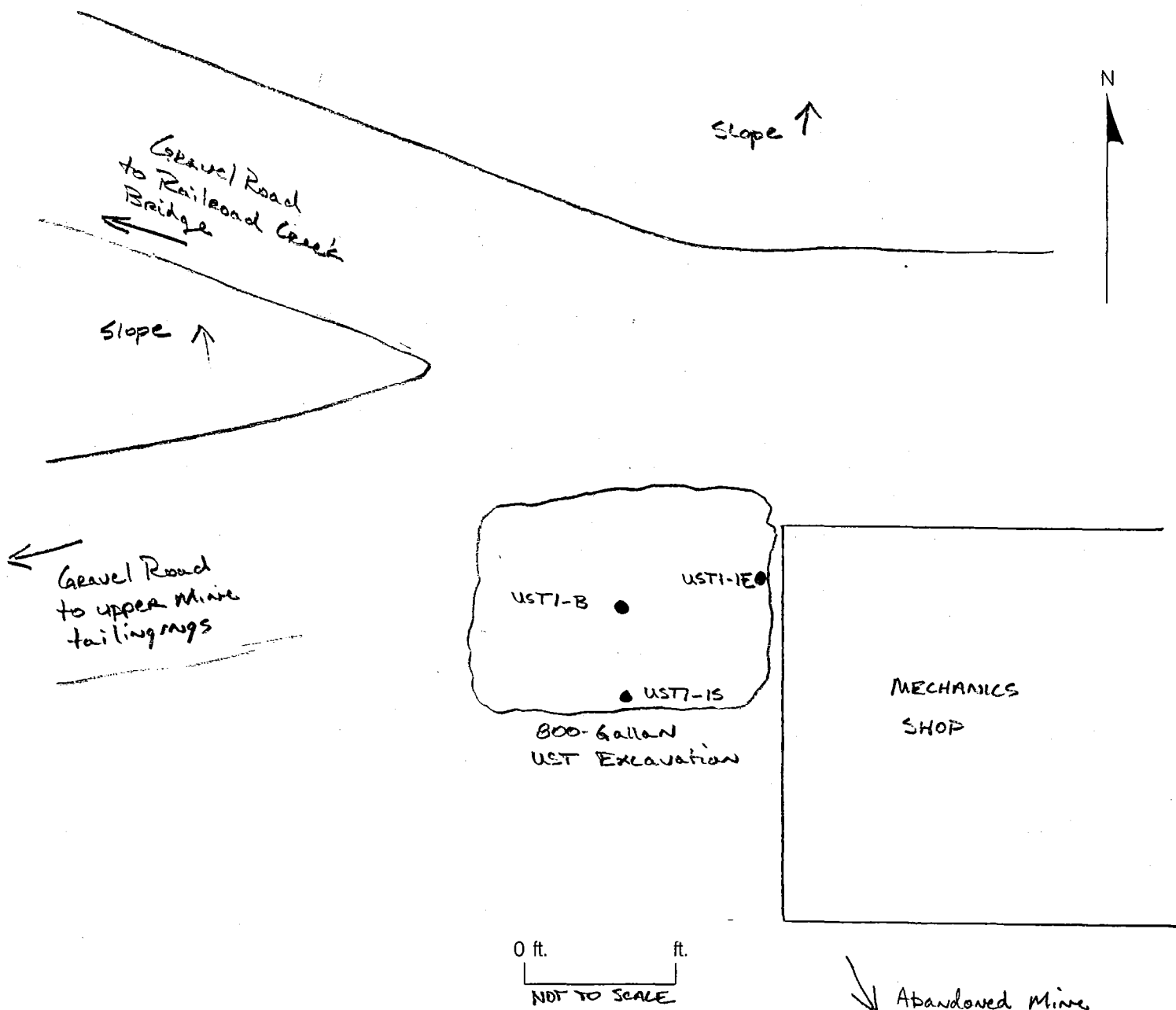
LOCATION SKETCH

Well(s) NA Project/No. Holden Village WA193.10 Page 1 of 1

Site Location Holden Village, Chelan, Washington

Observer KURT ANDERSON

(Locate all wells, borings, etc. with reference to three permanent reference points; tape all distances; clearly label all wells, roads, and permanent features)



APPENDIX A
DISPOSAL CERTIFICATION

DELHUR INDUSTRIES, INC.

GENERAL CONTRACTORS

RECEIVED

JUL 11 1991

GERAGHTY & MILLER, INC.
Seattle, Washington

4333 Tumwater Access Rd. • P.O. Box 1116 • Port Angeles, WA 98362-0210 • (206) 457-1133 • FAX (206) 457-8773

To: Holden Village, Inc.

July 9, 1991

Re: Tank Removal

Attn: Jim McGrath

Dear Jim,

Enclosed please find materials relating to the recent tank removal at Holden village;

1. Copy of waiver of 30 day closure notice from The Department of Ecology.

2. Copy of DOE letter dated February 11, 1991, for your information, please note closure records requirement.

3. Underground Storage Tank permanent closure checklists for 800 gallon tank.

4. Underground Storage Tank permanent closure checklists for 2000 gallon tank.

5. Disposal certification for 800 and 2000 gallon tanks from Northwest Enviro Field Services.

You will note that items 3 & 4 are duplicated. I need you to sign and return one copy each to me so that they may be submitted to the Department of Ecology.

Because we were able to combine loads with the barge company the cost to barge down the lake was less. Accordingly please deduct \$868.46 from the originally quoted \$11,372.00. consequently your bill for tank removal and disposal is \$10,503.54.

Thank you for the opportunity to be of service to you and also for the tour of your facility.

Sincerely,


A. L. Sample

cc: Kurt Anderson with Garity and Miller, 8330 154th Ave. N.E.,
Redmond, WA. 98052

DELHUII15804

"An equal opportunity Employer"

DELHUR INDUSTRIES, INC.

GENERAL CONTRACTORS

4333 Tumwater Access Rd. • P.O. Box 1116 • Port Angeles, WA 98362-0210 • (206) 457-1133 • FAX (206) 457-8773

TO: Holden Village, Inc.
Chelan, Wa 98816

INVOICE NO. 9129
JOB NO. S 2470
P.O. NO. _____
DATE July 10, 1991

INVOICE

JOB DESCRIPTION: Fuel Tank Removal

Quote	\$ 11,372.00
Less	(868.46)

	\$ 10,503.54
Tax	819.28

	\$ 11,322.82
	=====

CHRISTINE GREGOIRE
Director



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

106 South 6th Ave. • Yakima, Washington 98902-3387 • (509) 575-2490

June 24, 1991

RECEIVED
JUN 25 1991
Ans'd.....

Tony Sample
Del Hur Industries, Inc.
P.O. Box 1116
Port Angeles, Wa. 98362

Subject: Underground Storage Tank Permanent Closure at Holden, Wa.

Dear Tony:

Per our telephone conversation at 0900 hours today and your description of the remote location of the tanks and the fact that your equipment is currently onsite your request to waive the 30 Day Notice on Intent to Close/Decommission tanks is approved.

Sincerely,

A handwritten signature in cursive script that reads "Jim Chulos".

Jim Chulos, Supervisor
Underground Storage Tank Unit
Solid and Hazardous Waste Section



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Mail Stop PV-11 • Olympia, Washington 98504-8711 • (206) 459-6000

February 11, 1991

TO: Tank Owners/Operators and Other Interested Parties

FROM: Thom Lufkin
Underground Storage Tank Section Supervisor

SUBJECT: Permanent Tank Closure or Decommissioning

This memorandum describes the requirements for the removal or closure in-place of underground storage tanks (USTs), based on the Washington State regulations, Chapter 173-360 WAC. The complete UST regulations can be obtained from the Washington Department of Ecology UST Program.

The key elements which may be involved in closure, and which are expanded on in this memorandum, are:

1. Requirements to use licensed firms and supervisors for tank closure;
2. Thirty-day notice requirement;
3. Possibility of local permit requirement;
4. Likelihood that a federal identification number for the transport and disposal of the tank sludge will be required;
5. Site assessment requirement;
6. Abandonment procedures;
7. Release reporting requirement; and
8. Closure record-keeping requirement.

Licensed Firms and Supervisors Must Be Used

The licensing program was established by emergency rule on June 29, 1990. Site assessments can only be performed by persons registered with Ecology. Firms performing tank installation, retrofitting, decommissioning, tank tightness testing or cathodic protection and individuals supervising these activities, are required to have a license. If you have questions about the licensing program, contact Guy Barrett at (206) 438-7881.

Thirty-day Notification Requirement

WAC 173-360-385 requires that the Department of Ecology be notified at least thirty (30) days prior to beginning tank closure. This written

notification must be submitted on the form provided by the department for that purpose (copy attached).

The purpose of the thirty day period is to allow time for a state or local UST official to contact the tank owner or operator prior to closure and possibly arrange to be present on site during closure.

The contents of the tank may be pumped without waiting for the thirty days to elapse. Petroleum products can possibly be recycled; hazardous substances, in most cases, will need to be disposed of as dangerous waste. (See the "Dangerous Waste" portion of this memo.)

Once closure is completed, complete the attached closure forms and return to Ecology at the address shown on the form.

A Local Closure Permit May Be Required

Although certain aspects of the Uniform Fire Code are preempted by the state UST rules, local permit requirements still apply in many areas of the state. A closure permit may be required from the local fire chief or other local official prior to closure. You should contact your local official regarding permit requirements at the same time you file your 30-day notice with the Department of Ecology.

Abandonment Procedures

State regulations for permanent closure (Chapter 173-360 WAC) indicate tanks must be emptied, with all liquid and sludge removed and disposed of in an approved manner. The tank must then either be removed from the ground or filled with a solid inert material. Sand slurry, a weak cement slurry (to avoid creating a giant boulder that may cause problems later on), or foam, are all acceptable fill materials. Water is not an inert substance and is not an acceptable fill material.

Although state regulations allow in-place closures, Ecology strongly recommends tank removal. It is easier to obtain the samples needed for the site assessment (described below) when the hole is excavated. Tank removal may also make any future sale of property less complicated.

Procedures described in American Petroleum Institute (API) Bulletin 1604, "Removal and Disposal of Used Underground Petroleum Storage Tanks", should be followed for compliance with closure requirements. A summary of this bulletin is attached. Because this bulletin is copyrighted, Ecology cannot provide it. Copies can be obtained from API by sending \$12 to: API Publications and Distribution Department, 1220 L St. NW, Washington D.C. 20005, or by calling API at (202) 682-8375. Additional guidance that may be useful include Publication 2015, "Cleaning Petroleum Storage Tanks", and the National Institute for Occupational Safety and Health, "Criteria for Working in a Confined Space".

Tank closure is a potentially dangerous operation because of flammability and other hazards. Only qualified personnel should perform this work under the supervision of a licensed supervisor. Closure should never be done by an unqualified or inexperienced person.

A Federal ID Number May Be Necessary

Certain liquids which have been stored in USTs, such as gasoline, fuel oil, or diesel may be able to be used as products (gasoline sold and used in a motor vehicle). If this is the case, the liquids are not wastes. Fuels and water mixtures may be sent off-site to be burned for energy recovery without a manifest. The owner or operator should receive documentation that such fuels have in fact been burned for energy recovery in an approved manner.

Tanks that have stored leaded petroleum possibly contain sludge having a high lead content; this sludge may be regulated as a dangerous waste. Persons handling and disposing of the sludge should ensure that they understand the applicable state dangerous waste regulations. Fuels, hazardous substances, oil or other petroleum based materials that are dangerous wastes and are sent off-site for disposal to a dangerous waste facility, must be under manifest and the owner or operator must obtain a federal ID number. It is the responsibility of the tank owner to make the correct determination regarding the waste, based on Ecology's dangerous waste list, characteristics, and criteria included in Chapter 173-303 WAC.

If a free liquid component of the sludge is present when the product in a storage tank is removed, and if the liquid is to be disposed of, the liquid should be tested to see if it meets the flash point or toxicity criteria for dangerous waste. If no liquid component is present, only the toxicity test needs to be run. If the sludge is a dangerous waste, it must be disposed of at an approved dangerous waste facility. If the sludge does not qualify as a dangerous waste, it may be disposed at a landfill as solid waste.

For petroleum products, the most likely dangerous characteristics are ignitability and TC toxicity, and a TC toxicity test for lead and benzene will be sufficient. If free liquids are present a flash point test for ignitability should be performed. Sludge should also be tested for lead and benzene. If petroleum contaminated soils are found, you need to notify the Department of Ecology.

If it is known that other dangerous wastes have been added to the tank contents (i.e. solvents), then the whole mixture must be managed as dangerous waste. For further information on dangerous waste criteria, contact the appropriate regional office of Ecology.

Site Assessment Required

Before permanent closure is completed, the state UST rules require owners and operators to have a site assessment performed. A site assessment is an investigation for the presence of a release at that portion of the UST site where the UST system is located. This investigation must be conducted by a person registered with Ecology to perform site assessments. A list of persons registered to perform site assessments is available at Ecology's regional offices (see attachment for phone numbers).

The site assessment must be performed according to Ecology's guidance document for performing site assessments. It provides information on required sampling procedures, including the number and locations of samples to be obtained and required laboratory analyses. This guidance document has been sent to persons registered to conduct site assessments and is also available at the regional offices.

Increasingly, insurance companies and lending institutions are requiring proof that a proper site assessment has been done. This increases the importance that an adequate site assessment be performed according to Ecology's guidelines and that tank owners maintain records of the site assessment results.

Responsibility for Reporting Leaks Discovered During Tank Removal

If contaminated soil, contaminated groundwater, or free product (liquid or vapor) is discovered during the tank removal, site assessment, or by any other means, the owner and/or operator must notify the appropriate regional office of the Department of Ecology within 24 hours of detection of the release. State staff will then evaluate the situation to determine if further action is needed. Telephone contacts are provided at the conclusion of this memo.

Soil contaminated by petroleum is ordinarily not considered a hazardous waste, but it is considered a hazardous substance under the Washington Model Toxics Control Act. It can generally be treated on-site or disposed of as a solid waste, but in some instances may need to be disposed of as a hazardous waste. Soil contaminated by a hazardous substance other than petroleum must be dealt with on a case-by-case basis.

Closure Records

Owners and operators must maintain records capable of demonstrating their compliance with the site assessment required under WAC 173-360-390. The results of the excavation zone assessment must be maintained at the UST site or at a readily available alternative site, and must be immediately available for inspection for at least five years after permanent closure or change-in-service. If they cannot be kept on-site, owners/operators may mail them to the Department of Ecology headquarters

office in Lacey. Although the rule only requires record retention for five years, it is recommended that records be maintained indefinitely; proof of a "clean closure" is very important regarding any future property transfers or related business transactions, such as obtaining loans or insurance.

FURTHER INFORMATION can be obtained by contacting the following:

Sue Simms at Ecology Headquarters (Lacey): (206) 459-6293 or
1-800-826-7716

FOR REPORTING OF CONTAMINATED SITES ONLY, contact the following offices:
Ecology Northwest Regional Office (Redmond): (206) 867-7000

Ecology Southwest Regional Office (Tumwater): (206) 753-2353

Ecology Central Regional Office (Yakima): (509) 575-2800

Ecology Eastern Regional Office (Spokane): (509) 456-2926

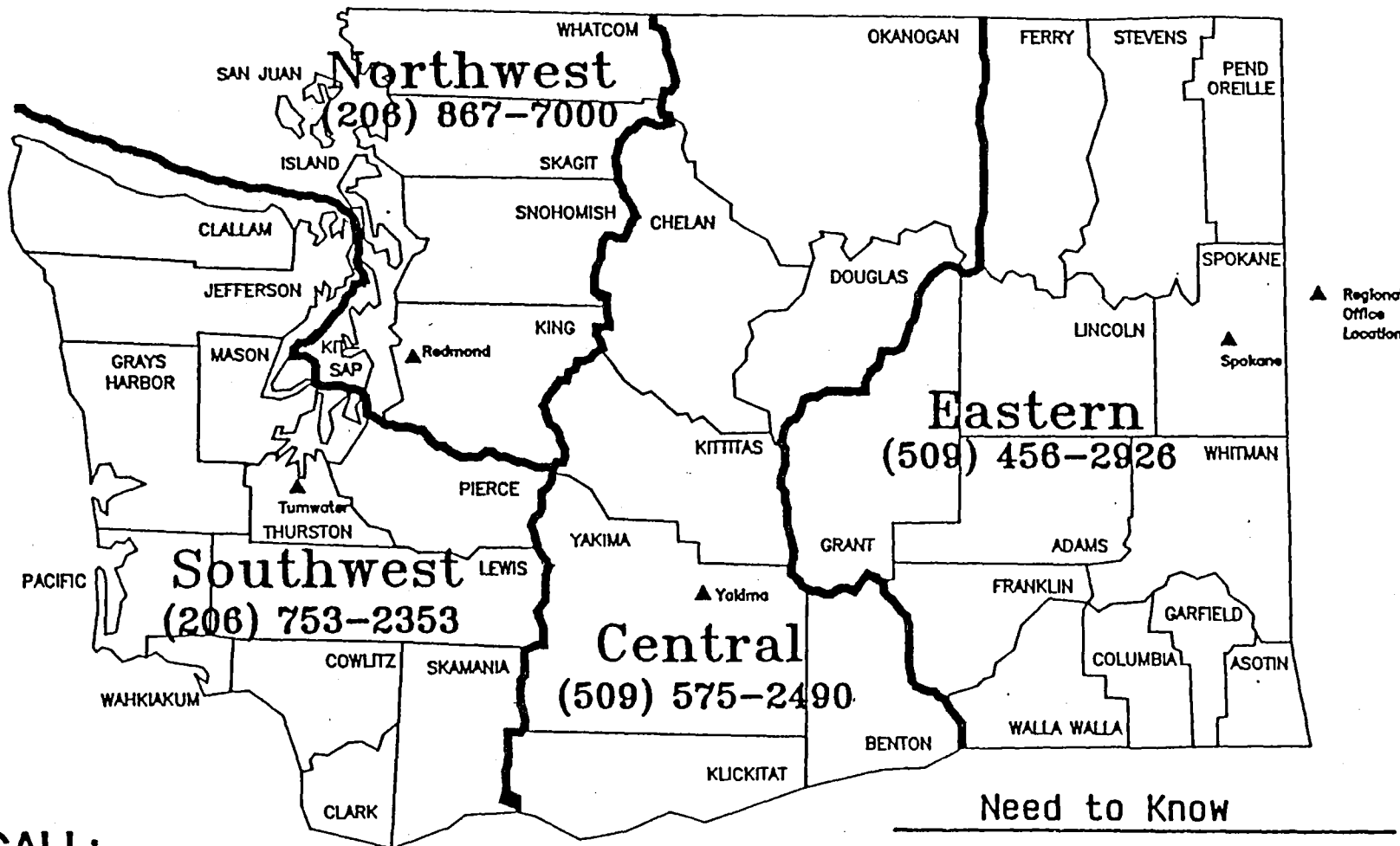
John Alspach at Environmental Protection Agency Regional Headquarters:
EPA Region 10, 1200 6th Ave., Mailstop WD-139, Seattle, WA 98101 (206)
553-1086

Robert Cutler at Environmental Protection Agency Washington Operations
Office (Lacey): (206) 753-9543

FOR REPORTING TANKS OR CONTAMINATED SITES LOCATED ON INDIAN LANDS,
Contact the Environmental Protective Agency at the address above.

Department of Ecology Regional Office

24-Hour Oil & Hazardous Materials Spill Reporting Numbers



OR CALL:

Division of Emergency Management
Statewide 24 Hour Spill Number
1-800-262-5990

Need to Know

- Reporting Party
- Company Name
- Contact Phone(s)
- Material
- Resource Damages (i.e. dead fish)
- Quantity
- Concentration
- Location
- Cleanup Status

Revised 6/88



UNDERGROUND STORAGE TANK Permanent Closure/Change-In-Service Checklist

The purpose of this form is to certify the proper closure/change-in-service of underground storage tank (UST) systems. These activities must be conducted in accordance with Chapter 173.360 WAC. Washington State UST rules require the tank owner or operator to notify Ecology in writing 30 days prior to closure or change-in-service of tanks. This must be done by completing the 30 Day Notice form (ECY 010-155).

This Permanent Closure Checklist shall be completed and signed by a Licensed Decommissioning Supervisor. The supervisor shall be on site when all tank permanent closure/change-in-service activities are being conducted. The firm which employs the licensed supervisor shall also be licensed by the Washington State Department of Ecology as a Service Provider. If any of the activities listed below have been supervised by a different licensed supervisor, a separate checklist must be filled out and signed by the licensed supervisor performing those activities.

For further information about completing this form, please contact the Department of Ecology UST Program.

A separate checklist must be completed for each UST system (tank and associated piping), except that UST systems at one site may be reported together by completing page 2 of this form separately for each system. The completed checklist should be mailed to the following address within 30 days of the completion of the closure or change-in-service.

Underground Storage Tank Section
Department of Ecology
Mail Stop PV-11
Olympia, WA 98504-8711

1. UST SYSTEM OWNER AND LOCATION

Site Owner/Operator: Holden Village, Inc.

Owners Address:

Chelan WA 98816
Street City State P.O. Box ZIP-Code

Telephone:

()

no phone service to Holden Village
SB

Site ID Number (on invoice or available from Ecology if tank is registered): NONE

Site/Business Name: Holden Village, Inc.

Site Address:

Chelan WA 98816
Street City State ZIP-Code

2. TANK PERMANENT CLOSURE/CHANGE-IN-SERVICE PERFORMED BY:

Firm: Delhur Industries, Inc.

License Number: SO01864

Address:

4333 Tumwater Access Rd Port Angeles WA 98362
Street City State P.O. Box ZIP-Code

Telephone:

()

Licensed Supervisor:

Decommissioning
License Number: W001370



UNDERGROUND STORAGE TANK Permanent Closure/Change-In-Service Checklist

The purpose of this form is to certify the proper closure/change-in-service of underground storage tank (UST) systems. These activities must be conducted in accordance with Chapter 173.360 WAC. Washington State UST rules require the tank owner or operator to notify Ecology in writing 30 days prior to closure or change-in-service of tanks. This must be done by completing the 30 Day Notice form (ECY 010-155).

This Permanent Closure Checklist shall be completed and signed by a Licensed Decommissioning Supervisor. The supervisor shall be on site when all tank permanent closure/change-in-service activities are being conducted. The firm which employs the licensed supervisor shall also be licensed by the Washington State Department of Ecology as a Service Provider. If any of the activities listed below have been supervised by a different licensed supervisor, a separate checklist must be filled out and signed by the licensed supervisor performing those activities.

For further information about completing this form, please contact the Department of Ecology UST Program.

A separate checklist must be completed for each UST system (tank and associated piping), except that UST systems at one site may be reported together by completing page 2 of this form separately for each system. The completed checklist should be mailed to the following address within 30 days of the completion of the closure or change-in-service.

Underground Storage Tank Section
Department of Ecology
Mail Stop PV-11
Olympia, WA 98504-8711

1. UST SYSTEM OWNER AND LOCATION

Site Owner/Operator:	<u>Holden Village, Inc.</u>		
Owners Address:			
	Street		P.O. Box
	<u>Chelan</u>	<u>WA</u>	<u>98816</u>
	City	State	ZIP-Code
Telephone:	<u>()</u>		
Site ID Number (on invoice or available from Ecology if tank is registered):	<u>NONE</u>		
Site/Business Name:	<u>Holden Village, Inc.</u>		
Site Address:			
	Street		County
	<u>Chelan</u>	<u>WA</u>	<u>98816</u>
	City	State	ZIP-Code

2. TANK PERMANENT CLOSURE/CHANGE-IN-SERVICE PERFORMED BY:

Firm:	<u>Delhur Industries, Inc.</u>	License Number:	<u>S001864</u>
Address:	<u>4333 Tumwater Access Rd.</u>	P.O. Box	<u>1116</u>
	Street		P.O. Box
	<u>Port Angeles</u>	<u>WA</u>	<u>98362</u>
	City	State	ZIP-Code
Telephone:	<u>(206) 457-1133</u>		
Licensed Supervisor:	<u>A. L. Sample</u>	Decommissioning License Number:	<u>W001370</u>



**Northwest
EnviroField
Services**

DISPOSAL CERTIFICATION

DATE: July 9, 1991

TO: Del Hur Industries Inc.
P.O. Box 1116
Port Angeles, WA 98362

REFERENCE P.O.# Tony Samples

To whom it may concern,

This letter is to certify that Northwest EnviroField Services has received the following tank(s) for cleaning and disposal in accordance with all federal, state and local rules and regulations:

- 1.) One (1) 800 gallon gasoline
- 2.) One (1) 2,000 gallon gasoline

NWEFS JOB # 32-23337

DATE RECEIVED: 06-27-91

DATE CLEANED: 07-01-91

DATE OF DISPOSAL: 07-01-91

METHOD OF DISPOSAL: Scrap Steel

LOCATION OF TANK ORIGIN: Holden Village / Holden, WA

If you have any questions or requests for service, feel free to contact this office at (206) 762-1190.

Thank you for your business and we look forward to being of service in the future.

Sincerely,

Northwest EnviroField Services

Kim Ducatt
Underground Tank Division

KD:fg

APPENDIX B

**LABORATORY ANALYTICAL RESULTS AND
CHAIN-OF-CUSTODY DOCUMENTATION**



Pacific Northwest Environmental Laboratory, Inc.

3820 159th Avenue, N.E.

Redmond, WA 98052

(206) 885-0083

FAX (206) 867-2214

July 12, 1991

Kurt Anderson
Geraghty & Miller
8330 154th Ave. N.E.
Redmond, Wa. 98052-3864



JUL 13 1991

GERAGHTY & MILLER, INC.
Seattle, Washington

NARRATIVE FOR PNELI 3330

Enclosed are data summary sheets and supporting documentation for the samples received on June 27, 1991 of the Holden Village project. The samples were received as follows:

<u>CLIENT ID</u>	<u>PNELI ID</u>	<u>DATE COLLECTED</u>
UST1-1S	3330-01	06-25-91
UST1-1E	3330-02	06-25-91
UST1-B	3330-03	06-25-91
UST2-E	3330-04	06-25-91
UST2-W	3330-05	06-25-91
UST2-B	3330-06	06-25-91

Listed below are anomalies and narratives associated with the receipt and/or analysis of these samples.

Sample Receiving

There were no anomalies associated with the receipt of these samples.

Purgeable Aromatics (BTEX) by GC

Benzene, Toluene, Ethylbenzene, and Xylene by Method 8020, Test Methods for Evaluating Solid Waste, United States Environmental Protection Agency, SW-846, 3rd Ed., 1986.

Total Petroleum Hydrocarbons as Gasoline by GC

Purge and Trap Method 5030 followed by Modified 8015 of Test Methods for Evaluating Solid Waste, United States Environmental Protection Agency, SW-846, 3rd Ed., 1986.

High concentrations of non-target analytes caused interference with BTEX compounds in samples 3330-01, -02, -03 and -05. As a result, detection limits have been raised for these samples.

TVPH results have been quantitated against the full range of gasoline; however, the pattern exhibited by all the samples in this case is inconsistent with the gasoline pattern.

Samples 3330-01, -02, -03 and -05 required dilution.

Kurt Anderson
Geraghty & Miller
July 12, 1991
Page 2

Metals

Inductively Coupled Plasma Method determination by Method 6010, Test Methods for Evaluating Solid Waste, United States Environmental Protection Agency, SW-846, 3rd Ed., 1986.

There were no anomalies associated with the preparation and/or analysis of these samples.

All samples in this case were batched with QC samples previously reported in PNELI Case 3242. All comments concerning QC results and sample analyses are summarized here.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designee, as verified by the following signature.

Sincerely,

A handwritten signature in cursive script, reading "Rand G. Jenkins". The signature is written in dark ink and is positioned below the word "Sincerely,".

Enclosures

DATA REPORTING QUALIFIERS

Some of these qualifiers may appear in this analytical data report. Soil samples are analyzed and reported on a dry weight basis unless otherwise noted.

Organics Data Qualifiers

- A - This flag indicates that a TIC is a suspected aldol-condensation product.
- B - Indicates compound was found in the associated blank as well as in the sample.
- C - This flag applies to pesticide results where the identification has been confirmed by GC/MS.
- D - This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- E - This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis.
- J - Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, or when the mass spectral data indicate the presence of a target compound that meets the identification criteria but the result is less than the sample quantitation limit but greater than zero.
- M - Indicates value is taken from a medium level analysis.
- ND- Not detected. Detection limit shown in parentheses.
- NQ- Not quantitated as...
- U - Indicates compound was analyzed for but not detected at the given detection limit. The sample quantitation limit was corrected for dilution and for percent moisture, when applicable.
- X - Other specific flags and footnotes may be required to properly define the results. If more than two qualifiers are required for a sample result, the "X" flag combines several flags, as needed. For instance, the "X" flag might combine the "A," "B," and "D" flags for some sample.
- * - Indicates spiked compounds used for MS/MSD analysis.

Inorganics Data Qualifiers

- NA- Relative percent difference calculation is not applicable to analytes when not detected.
- NC- Not calculated when analyte is not detected.
- NS- Not calculated when sample concentration of analyte exceeds spike level by a factor of four or more.
- U - Indicates that analyte was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.
- B - Indicates that the reported value is less than the Contract Required Detection Limit(CRDL) but greater than or equal to the Instrument Detection Limit (IDL).
- E - The reported value is estimated because of the presence of interference. An explanatory note must be included under Comments on the Cover Page (if the problem applies to all samples) or on the specific FORM-I (if it is an isolated problem).
- M - Duplicate injection precision not met.
- N - Spike sample recovery not within control limits.
- S - The reported value was determined by the Method of Standard Additions (MSA).
- W - Post-digestion spike for furnace AA analysis is out of control limits (85-115%), while sample absorbance is less than 50% of spike absorbance. (See Exhibit E.)
- * - Duplicate analysis not within control limits.
- - Correlation coefficient for the MSA is less than 0.995.

Inorganics Method Qualifiers

- CV- Manual Cold Vapor AA
- F - FURNACE AA
- P - ICP

PURGEABLE AROMATICS (BTEX) BY GC
Method 8020

Client Sample ID	UST1-1S	UST1-1E	UST1-B	UST2-E
PNELI Sample ID	3330-01	3330-02	3330-03	3330-04
Sample Matrix	Soil	Soil	Soil	Soil
Date Sample Received	06-27-91	06-27-91	06-27-91	06-27-91
Date Sample Analyzed	07-08-91	07-08-91	07-08-91	07-08-91
Units of Measure	µg/kg	µg/kg	µg/kg	µg/kg

Compounds

Benzene	50	U	50	U	500	U	5	U
Toluene	170		50	U	500	U	5	U
Ethylbenzene	1400		1200		2500		5	U
Total Xylenes	1300		360		3400		30	

Surrogate

% Fluorobenzene	73	86	85	98
% 4-Bromofluorobenzene	100	100	100	100

PURGEABLE AROMATICS (BTEX) BY GC
Method 8020

Client Sample ID	UST2-W	UST2-B
PNELI Sample ID	3330-05	3330-06
Sample Matrix	Soil	Soil
Date Sample Received	06-27-91	06-27-91
Date Sample Analyzed	07-08-91	07-08-91
Units of Measure	$\mu\text{g/kg}$	$\mu\text{g/kg}$

Compounds

Benzene	50	U	5	U
Toluene	50	U	5	U
Ethylbenzene	50	U	5	U
Total Xylenes	400	U	10	U

Surrogate

% Fluorobenzene	74	88
% 4-Bromofluorobenzene	100	100

PURGEABLE AROMATICS (BTEX) BY GC
Method 8020

Client Sample ID	Extr.Blank	Extr. Blank	Extr. Blank	Method Blank
PNELI Sample ID	3330-EB1	3330-EB2	3330-EB3	3330-MB
Sample Matrix	Soil/MeOH	Soil/MeOH	Soil/MeOH	Water
Date Sample Extracted	07-05-91	07-06-91	07-08-91	07-08-91
Date Sample Analyzed	07-08-91	07-08-91	07-08-91	07-08-91
Units of Measure	µg/kg	µg/kg	µg/kg	µg/kg

Compounds

Benzene	0.5	U	0.5	U	0.5	U	0.5	U
Toluene	0.5	U	0.5	U	0.5	U	0.5	U
Ethylbenzene	0.5	U	0.5	U	0.5	U	0.5	U
Total Xylene	1.0	U	1.0	U	1.0	U	1.0	U

Surrogate

% Fluorobenzene	116	125	118	116
% 4-Bromofluorobenzene	100	100	100	100

QC SUMMARY
PURGEABLE AROMATICS (BTEX) BY GC

Client Sample ID: UST2-E PNELI Sample ID: 3330-04
Sample Matrix: Soil/MeOH Extr. Date Sample Received: 06-27-91
Units of Measure: $\mu\text{g/kg}$ Date Sample Analyzed: 07-08-91

MATRIX SPIKE RESULTS

Compound	Spike Added	Sample Conc.	MS Conc.	MS % Rec.	Water QC Limits Rec.	Soil QC Limits Rec.
Benzene	10	0.5 U	8.9	89	76-127	66-142
Toluene	10	0.5 U	9.0	90	76-125	59-139

MATRIX SPIKE DUPLICATE RESULTS

Compound	Spike Added	MSD Conc.	MSD % Rec.	% RPD	Water QC Limits RPD Rec.	Soil QC Limits RPD Rec.
Benzene	10	8.6	86	3.4	11 76-127	21 66-142
Toluene	10	9.0	90	0	13 76-125	21 59-139

TPH - GASOLINE RANGE PETROLEUM PRODUCTS BY GC
Method 5030/Mod. 8015

Client Sample ID	UST1-1S	UST1-1E	UST1-B	UST2-E
PNELI Sample ID	3330-01	3330-02	3330-03	3330-04
Sample Matrix	Soil	Soil	Soil	Soil
Date Sample Received	06-27-91	06-27-91	06-27-91	06-27-91
Date Sample Analyzed	07-06-91	07-05-91	07-06-91	07-05-91
Units of Measure	mg/kg	mg/kg	mg/kg	mg/kg

Compounds

TPH Quantitated as:

Gasoline	130	178	1100	3.5
----------	-----	-----	------	-----

Surrogate

% Fluorobenzene	73	74	84	64
% 2-Chlorotoluene	75	128	103	104

* Quantitated against the full range of gasoline.

TPH - GASOLINE RANGE PETROLEUM PRODUCTS BY GC
Method 5030/Mod. 8015

Client Sample ID	UST2-W	UST2-B
PNELI Sample ID	3330-05	3330-06
Sample Matrix	Soil	Soil
Date Sample Received	06-27-91	06-27-91
Date Sample Analyzed	07-06-91	07-06-91
Units of Measure	mg/kg	mg/kg

Compounds

TPH Quantitated as:

Gasoline	135	1.8
----------	-----	-----

Surrogate

% Fluorobenzene	96	61
% 2-Chlorotoluene	107	91

* Quantitated against the full range of gasoline.

TPH - GASOLINE RANGE PETROLEUM PRODUCTS BY GC
Method 5030/Mod. 8015

Client Sample ID	Extr. Blank	Extr. Blank	Method Blank
PNELI Sample ID	3330-EB1	3330-EB1	3330-MB
Sample Matrix	Soil/MeOH	Soil/MeOH	Water
Date Sample Extracted	07-05-91	07-06-91	NA
Date Sample Analyzed	07-06-91	07-06-91	07-06-91
Units of Measure	mg/kg	mg/kg	mg/kg

Compounds

TPH Quantitated as:

Gasoline	0.2 U	0.2 U	0.02 U
----------	-------	-------	--------

Surrogate

% Fluorobenzene	116	118	116
% 2-Chlorotoluene	110	108	114

* Quantitated against the full range of gasoline.

QC SUMMARY
TPH - GASOLINE RANGE PETROLEUM PRODUCTS BY GC

Client Sample ID: NA PNELI Sample ID: 3322-05
Sample Matrix: Soil/MeOH Extr. Date Sample Received: 06-26-91
Units of Measure: $\mu\text{g/kg}$ Date Sample Analyzed: 07-03-91

MATRIX SPIKE RESULTS

Compound	Sample Conc.	MS Conc.	MS Spike Level	Percent Recovery
TPH Quantitated as:				
Gasoline	20 U	186	200	93

MATRIX SPIKE DUPLICATE RESULTS

Compound	Sample Conc.	MSD Conc.	MSD Spike Level	Percent Recovery	RPD
TPH Quantitated as:					
Gasoline	20 U	214	200	107	14

PRIORITY POLLUTANT METALS ANALYSIS

Method 6010

Client Sample ID: UST1-1S

PNELI Sample ID: 3330-01

Sample Matrix: Soil

Date Sample Received: 06-27-91

Units of Measure: mg/kg

% Solids Content: 85.4

Analyte		Concentration	Method Blank Concentration		M	Date Analyzed
Lead	(Pb)	15.2	6.0	U	P	07-08-91

PRIORITY POLLUTANT METALS ANALYSIS

Method 6010

Client Sample ID: UST1-1E

PNELI Sample ID: 3330-02

Sample Matrix: Soil

Date Sample Received: 06-27-91

Units of Measure: mg/kg

% Solids Content: 92.4

Analyte		Concentration	Method Blank Concentration	M	Date Analyzed
Lead	(Pb)	13.9	6.0 U	P	07-08-91

PRIORITY POLLUTANT METALS ANALYSIS

Method 6010

Client Sample ID: UST1-B

PNELI Sample ID: 3330-03

Sample Matrix: Soil

Date Sample Received: 06-27-91

Units of Measure: mg/kg

% Solids Content: 69.7

Analyte		Concentration	Method Blank Concentration		M	Date Analyzed
Lead	(Pb)	24.9	6.0	U	P	07-08-91

PRIORITY POLLUTANT METALS ANALYSIS

Method 6010

Client Sample ID: UST2-E

PNELI Sample ID: 3330-04

Sample Matrix: Soil

Date Sample Received: 06-27-91

Units of Measure: mg/kg

% Solids Content: 93.6

Analyte		Concentration		Method Blank Concentration		M	Date Analyzed
Lead	(Pb)	4.5	U	6.0	U	P	07-08-91

PRIORITY POLLUTANT METALS ANALYSIS

Method 6010

Client Sample ID: UST2-W

PNELI Sample ID: 3330-05

Sample Matrix: Soil

Date Sample Received: 06-27-91

Units of Measure: mg/kg

% Solids Content: 81.7

Analyte		Concentration	Method Blank Concentration	M	Date Analyzed
Lead	(Pb)	14.1	6.0 U	P	07-08-91

PRIORITY POLLUTANT METALS ANALYSIS
Method 6010

Client Sample ID: UST2-B

PNELI Sample ID: 3330-06

Sample Matrix: Soil

Date Sample Received: 06-27-91

Units of Measure: mg/kg

% Solids Content: 70.2

Analyte		Concentration	Method Blank Concentration		M	Date Analyzed
Lead	(Pb)	9.7	6.0	U	P	07-08-91

