1/2

NW 000868

LUST INC # 4586
Lakeridge Paving Co
King Co / Kent

HARTCROWSER

Earth and Environmental Technologies

Hart Crowser, Inc.
1910 Fairview Avenue East
Seattle, Washington 98102
FAX 206.328.5581
206.324.9530

J-3806

January 4, 1994

Mr. Michael Lee
Lakeside Industries, Inc.
Kent Division
26010 180th Avenue SE
Kent, Washington 98042

Re: Underground Storage Tank Removal and Closure Report
Lakeside Industries
Kent, Washington

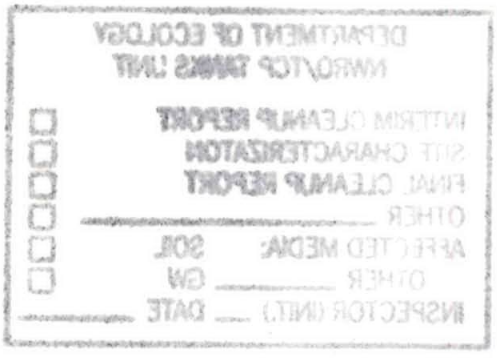
Dear Mr. Lee:

This letter report presents the results of our soil sampling and chemical analyses associated with the removal and closure of one 6,000-gallon diesel underground storage tank (UST) at the referenced site. A generalized vicinity map is shown on Figure 1, with the location of the former UST shown on Figure 2.

We performed the UST decommissioning, and soil sampling and analyses in general accordance with Chapter 173-360 WAC, and *Guidance for Site Checks/Site Assessments for Underground Storage Tanks* (Ecology, 1992).

SUMMARY

Hart Crowser personnel observed the excavation and removal of one 6,000-gallon UST at your site on July 8, 1993. The removed tank was in good condition with no observed corrosion or pitting. Soil in the tank excavation did not appear or smell affected with petroleum hydrocarbons.



Independent Action Report Update

Site Name: Lakeridge Paving Co

Inc. #: 4586 Date of Report: 1-4-94

County: King Date Report Rec'd: 1-5-94 (HQ)

Reviewed by: J. Hickey

Comments (please include: free prod., tank info., media, contaminant migration, GW conc. trends, PCS treated/fate?):

1-6K gal diesel UST was removed on 7-8-93. PCS was successfully overexcavated. 175 yds^3 was treated w/ asphalt batching process on-site.

We collected and analyzed six verification soil samples for chemicals representative of the UST's previous contents to assess if the surrounding soil had been affected. Our tank excavation soil analytical results indicated total petroleum hydrocarbons (TPH) quantified as diesel (Ecology's Method WTPH-D) above MTCA Method A soil cleanup levels (200 mg/kg) in two (NW-1 and B-1) of the six samples collected. After additional excavation, testing verified that all side wall and bottom samples had TPH concentrations below the regulatory limits.

The soil removed during tank and product line removal was taken to an area on site for incorporation into asphalt.

SCOPE OF WORK

Hart Crowser's scope of work for this project included:

- Obtaining a King County Building and Land Development Division Flammable Liquids Storage Tank Permit for the removal of the UST;
- Inerting the UST;
- Observing the excavation and removal of one 6,000-gallon diesel UST;
- Sampling the four side walls, beneath the former tank bottom, and product lines and dispenser;
- Observing tank cleaning activities;
- Resampling the north wall and former tank bottom after additional excavation;
- Assigning laboratory chemical analyses and summarizing the results; and
- Preparing this letter report.

Lakeridge Paving of Kent, Washington provided an excavator and operator to remove the UST. Sound Testing of Seattle, Washington provided a certified marine chemist to inert the tank and certify it for hot work. Tank pumping and cleaning services were provided by Glacier Environmental of Mulkiteo, Washington. Hart Crowser

provided a Washington State Department of Ecology (Ecology)-licensed Tank Supervisor and registered Site Assessor to decommission the UST and perform tank closure soil sampling.

Completed copies of Ecology's 30-Day Notification of Intent to Close/Decommission Tanks, Permanent Closure/Change-In-Service, and Site Check/Site Assessment Checklist are presented in Appendix A.

SURROUNDING LAND USE

We understand the 6,000-gallon UST was installed on the property leased by Lakeside Industries in 1977 (estimated) by Lakeridge Paving. Lakeridge Paving has and currently uses a portion of the property from Lakeside Industries. The property is located in Kent, Washington, and is in an area that is commercially zoned.

TANK REMOVAL EXCAVATION AND SOIL SAMPLING

The UST was removed and tank closure soil samples collected on July 8, 1993. Soil samples were collected from the four side walls at a depth of about 6 feet below ground surface, and beneath the former tank bottom at a depth of about 8 feet using the excavator bucket. The north, south, east, and west side wall samples (NW-1, SW-1, E-1, and W-1, respectively) were discretely collected. The former tank bottom (B-1) soil sample was also discretely collected. The piping soil sample (P-1) was collected using a four-point compositing technique.

Soil sampling locations relative to the covered shop trailer are shown on Figure 2. Soil sampling methods are discussed in Appendix B.

Soil and backfill material surrounding the UST consisted of a sandy gravel (moist to dry, light brown to brown with some organics). No groundwater was encountered during tank removal activities.

All soil samples were submitted to the Hart Crowser Chemistry Laboratory in Seattle, Washington, for analysis for TPH quantified as diesel (using Ecology's Method WTPH-D).

Following tank excavation soil sampling activities, the former UST was cleaned. Hart Crowser observed the tank pumping and cleaning activities. A total of about 60 gallons of diesel/rinseate and sludge were removed from the UST and transported for disposal. The tank contents disposal certificate is presented in Appendix C. We understand Lakeridge Paving will retain ownership of the removed UST and may have a use for the tank other than for fuel storage.

TANK EXCAVATION SOIL CHEMICAL TEST RESULTS

Table 1 presents the tank excavation and product dispenser chemical analytical results. Laboratory certificates of analyses are presented in Appendix D.

Tank excavation soil chemical results indicated WTPH-D concentrations above the MTCA Method A soil cleanup levels (200 mg/kg) in the north wall and former tank bottom soil samples (240 and 5,200 mg/kg, respectively). The remaining four soil samples had detected TPH concentrations below 200 mg/kg.

ADDITIONAL EXCAVATION, SOIL SAMPLING, AND ANALYTICAL RESULTS

Additional soil was excavated from the north wall and former tank bottom and discrete samples collected (NW-1A and B-1A). The two soil samples were analyzed for TPH as described above. The analytical results for both NW-1A and B-1A showed concentrations above the 200 mg/kg TPH soil cleanup levels (530 and 220 mg/kg, respectively). After removing more soil from the north wall and former tank bottom, discrete samples (N-2 and B-2) showed concentrations of TPH below both the cleanup levels and the detection limit.

RECOMMENDATIONS

No further action is required at this time. The remaining concentrations of TPH (quantified as diesel) in the soil are below the MTCA Method A cleanup level of 200 mg/kg.

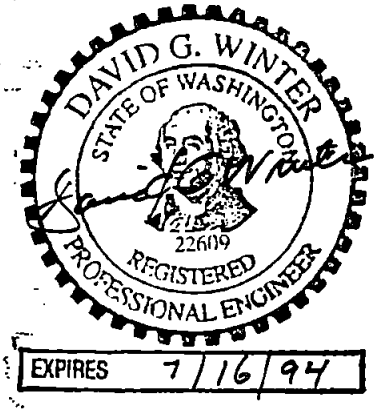
LIMITATIONS

Work for this project was performed, and this letter report prepared, in accordance with generally accepted professional practices for the nature and conditions of the work completed in the same or similar localities, at the time the work was performed. It is intended for the exclusive use of the Lakeside Industries for the subject property. This report completes the scope of work defined in our proposal 93-41-1076, dated May 5, 1993. No other warranty, express or implied, is made.

We trust this report meets your needs. Please call James Hest or David Winter at (206) 324-9530 if you have questions or if we can be of further assistance.

Sincerely,

HART CROWSER, INC.



1/4/94

JAMES A. HEST
Project Engineer

DAVID G. WINTER, P.E.
Manager of Remediation Services

JAH\DGW:jjr\cen
3806.LR

Attachments:

Table 1 -	Summary of Tank Excavation Soil Chemical Test Data
Figure 1 -	Vicinity Map
Figure 2 -	Site Plan Showing Soil Sample Locations
Appendix A -	Permanent Closure/Change-in-Service Checklist; and Site Check/Site Assessment Checklist
Appendix B -	Soil Sampling Methods
Appendix C -	Tank Contents Disposal Certificate
Appendix D -	Laboratory Analytical Reports Hart Crowser Chemistry Laboratory

cc: (w/Attachments)
(3) Washington State Department of Ecology, UST Section, Olympia, P.O. Box 47655

(UST Permanent Closure/Change-in-Service Checklist only)
Washington State Department of Ecology, UST Section, Olympia, MS PV-11

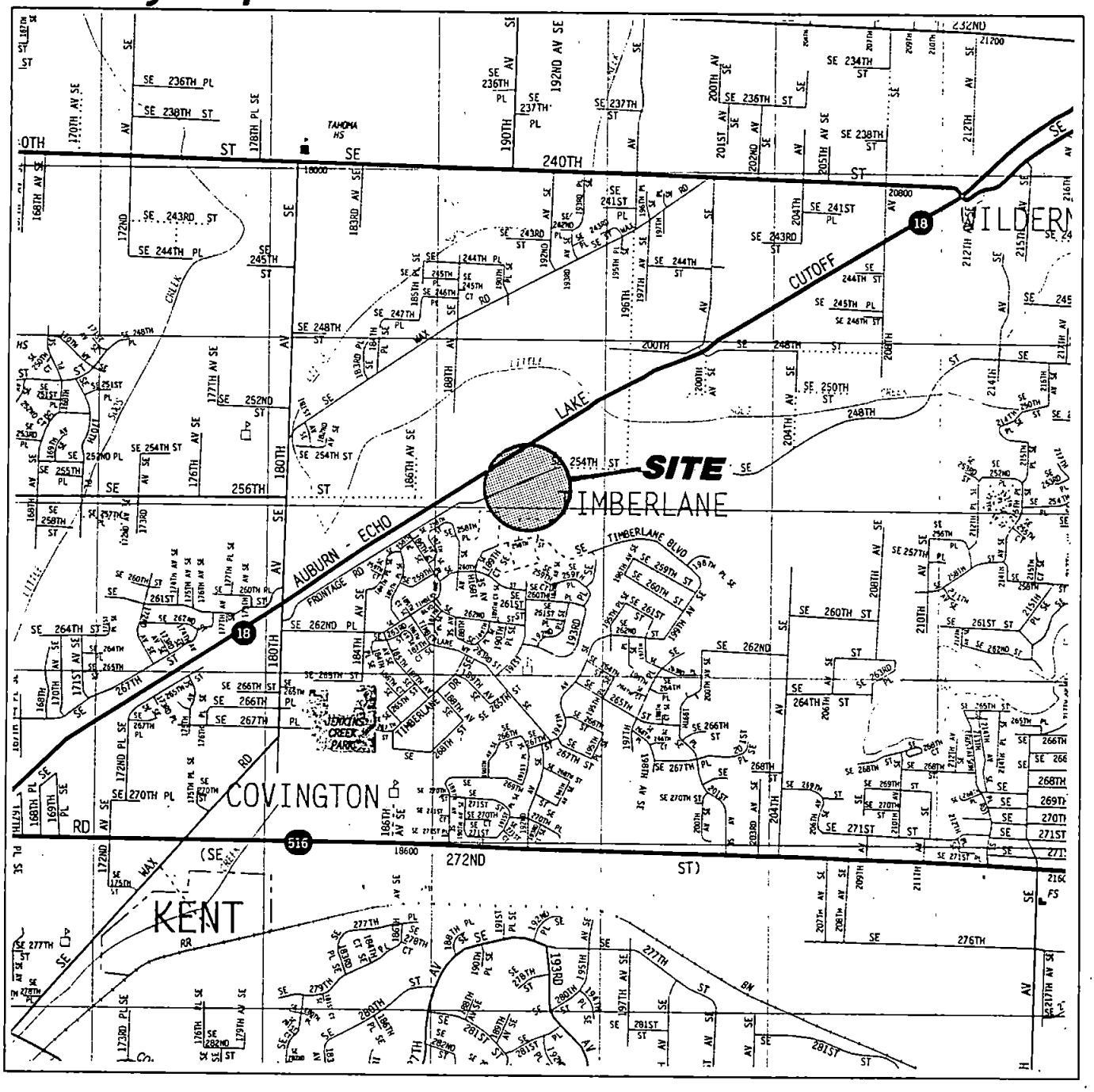
Table 1 - Summary of Tank Excavation Soil Chemical Test Data

Sample ID	Sampling Location	TPH-D Concentration in mg/kg (ppm)
B-1*	Bottom	5,200
W-1	West Side Wall	20 U
NW-1*	North Side Wall	240
E-1	East Side Wall	20 U
SW-1	South Side Wall	72
NW-1A*	North Side Wall (Second Excavation)	530
B-1A*	Bottom (Second Excavation)	220
N-2	North Side Wall (Third Excavation)	20 U
B-2	Bottom (Third Excavation)	20 U
P-1	Product Line & Dispenser	110
MTCA Method A Soil Cleanup Level TPH - Diesel Range		200

Notes:
U - Not detected at the method detection limit indicated.
TPH-D - Total petroleum hydrocarbons quantified as diesel by Ecology Method WTPH-D.
* - Soil sample collected from area subsequently excavated.

3806.LR

Vicinity Map



HARTCROWSER

J-3806 1/94

Figure 1

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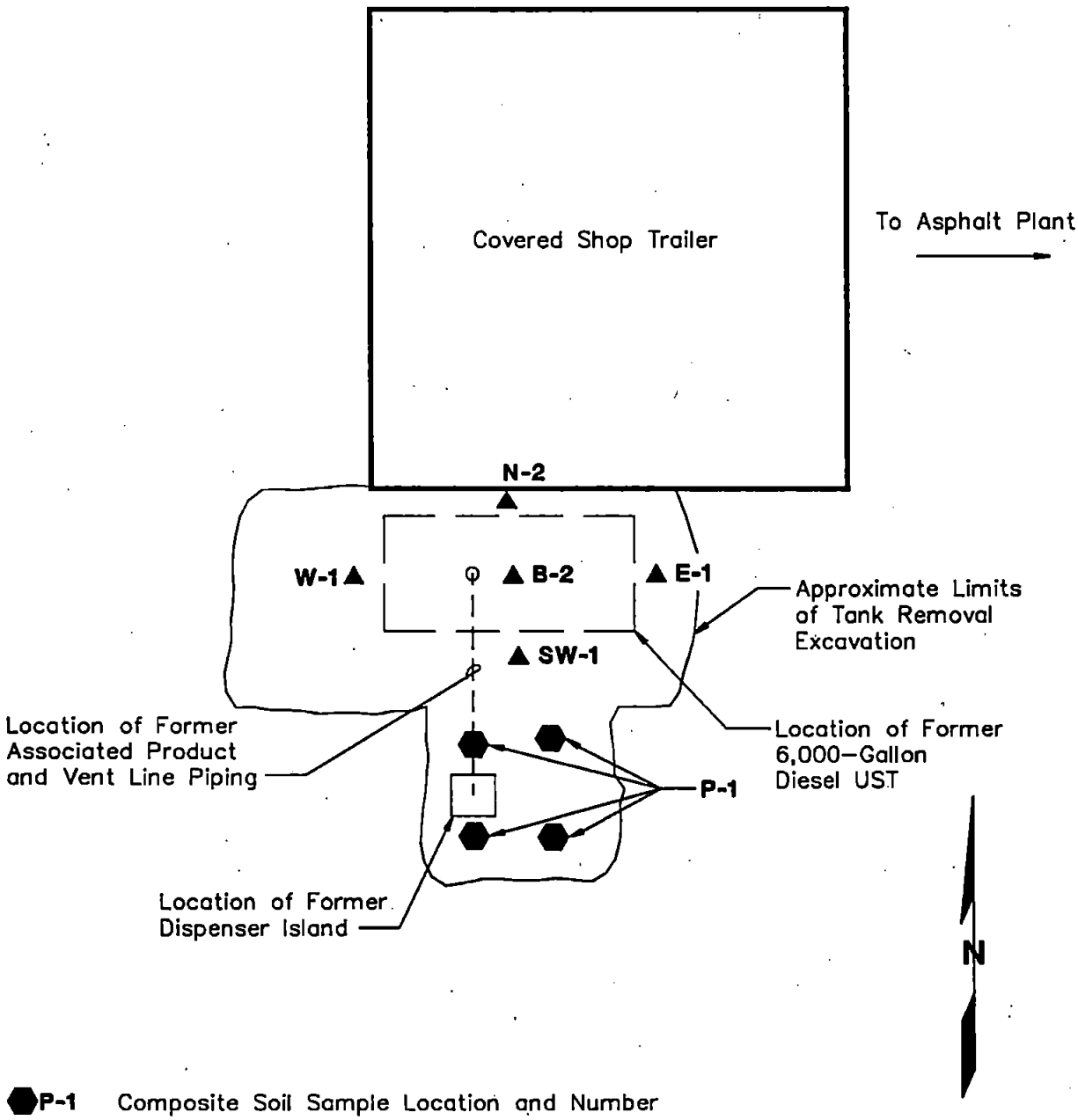
Site Plan Showing Soil Sample Locations



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J-3806 1/94

Figure 2

JAH 7/13/93 1=1

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APPENDIX A
COPIES OF ECOLOGY'S 30-DAY NOTIFICATION OF INTENT TO CLOSE/DECOMMISSION TANKS; PERMANENT CLOSURE/CHANGE-IN-SERVICE CHECKLIST; AND SITE CHECK/SITE ASSESSMENT CHECKLIST

UNDERGROUND STORAGE TANK
30 Day Notice of Intent to Close/Decommission Tanks

The purpose of this form is to provide the Department of Ecology with notice of intent to close/decommission an UST. It must be received 30 days prior to the closure activities. It must be signed and dated by either the owner/operator of the UST to be closed or his/her authorized representative. (This could be the firm contracted to do the work.) Ecology will notify the identified person of the earliest date closure/decommissioning activities may commence.

For questions on completing this form please call (206) 459-6293.

Please type or use ink.

The completed checklist should be mailed to:

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

1. TANK OWNER AND LOCATION

UST Owner/Operator: Lakeridge Paving Company

Owners Mailing Address: 19601 Frontage Road (Street) Box 5430 (P.O. Box)

Kent (City) WA (State) 98064 (ZIP-Code)

Telephone: (206) 631-8290

Site ID Number (on invoice or available from Ecology if tank is registered): 001743

Site/Business Name: Lakeridge Paving Company / Lakeside Industries

Site Address: 19601 Frontage Road (Street) King (County)

Kent (City) WA (State) 98042 (ZIP-Code)

2. TANK PERMANENT CLOSURE TO BE PERFORMED BY (If known):

Firm: Hart Crowser

Address: 1910 Fairview Avenue East (Street)

Seattle (City) WA (State) 98102 (ZIP-Code)

Telephone: (206) 324-9530 Contact Name: Jim Hest

3. TANK INFORMATION

Tank Identification	Approx. Closure Date	Tank Capacity (gallons)	Tank Age (years)	Last Substance Stored
1	June 1993	6000	15	Diesel

4. SIGNATURE OF TANK OWNER/OPERATOR OR AUTHORIZED REPRESENTATIVE:

Signature	Title	Date
[signature]	Partner	5-7-93

ECY 101-155 (11/90)

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
P. O. Box 47655.
Olympia, WA 98504-7655

1. UST SYSTEM OWNER AND LOCATION

Site Owner/Operator: Lakeridge Paving Company

Owners Address: 19601 Frontage Road (Street) P.O. Box 5430 (P.O. Box)

Kent (City) WA (State) 98064 (ZIP-Code)

Telephone: (206) 631-8290

Site ID Number (on invoice or available from Ecology if tank is registered): 001743

Site/Business Name: Lakeridge Paving Company / Lakeside Industries

Site Address: 19601 Frontage Road (Street) King (County)

Kent (City) WA (State) 98042 (ZIP-Code)

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

Firm: Hart Crowser, Inc License Number: 5000079

Address: 1910 Fairview Avenue East (Street)

Seattle (City) WA (State) 98102 (P.O. Box / ZIP-Code)

Telephone: (206) 324-9530

Licensed Supervisor: John David Watts Decommissioning License Number: W 1401

ECY 010-162
(12/90)

This page must be completed separately for each tank permanently closed (decommissioned) or changed in-service at the site. For additional tanks you may photocopy this form prior to completing.

3. TANK CLOSURE/CHANGE-IN-SERVICE INFORMATION

1. Tank ID Number (as registered with Ecology): 1
2. Year installed: ~1977
3. Tank capacity in gallons: 6000
4. Date of last use: about 1993
5. Last substance stored: diesel
6. Date of closure/change-in-service: July 8, 1993
7. Type of closure: Closure with Tank Removal [X] In-place Closure [ ] Change-in-Service [ ]
8. If in-place closure is used, the tank has been filled with the following substance: _____
9. If change-in-service, indicate new substance stored in tank: _____
10. Local permit(s) (if any) obtained from: King County Flammable Liquids Storage Tank Permit

Always contact local authorities regarding permit requirements.

11. Has a site assessment been completed? Yes [X] No [ ]

Unless an external release detection system is operating at the time of closure or change in service, and a report is provided as specified in WAC 173-360-390, a site assessment must be conducted. This site assessment must be conducted by a person registered with the Department of Ecology to perform site assessments. Results of the site assessment must be included with the Site Assessment Checklist (ECY 010-158).

4. CHECKLIST

Each item of the following checklist shall be initialed by the **licensed supervisor** whose signature appears below.

	Yes	No	NA*
1. Has all liquid been removed from product lines?	JDW		
2. Has all product piping been capped or removed?	JDW		
3. Have all non-product lines been capped or removed?	JDW		
4. Have all liquid and accumulated sludges been removed from the tank?	JDW		
5. Has the tank been properly purged or inerted?	JDW		
6. Have the drop tube, fill pipe, gauge pipe, pumps and other tank fixtures been removed?	JDW		
7. Have all tank openings been plugged or capped? NOTE: One plug should have 1/8 inch vent hole.	JDW		
8. Have all sludges removed from the tank been designated and disposed of in accordance with the state of Washington's dangerous waste regulations (Chapter 173-303 WAC)?	JDW		
9. If removed, was tank properly labeled and disposed of in accordance with all applicable local, state and federal regulations? tank reused for purposes other than underground petroleum storage	JDW		

*Item not applicable

I hereby certify that I have been the licensed supervisor present on site during the above listed permanent closure activities and to the best of my knowledge they have been conducted in compliance with all applicable state and federal laws, regulations and procedures pertaining to underground storage tanks.

Persons submitting false information are subject to penalties under Chapter 173.360 WAC.

7-14-93
Date

Signature of Licensed Supervisor

5. ADDITIONAL REQUIRED SIGNATURES

8/25/93
Date

Signature of Licensed Service Provider (firm) Owner or Authorized Representative

3-19-93
Date

Signature of Tank Owner or Authorized Representative

UNDERGROUND STORAGE TANK
Site Check/Site Assessment Checklist

WASHINGTON STATE DEPARTMENT OF ECOLOGY

For Office Use Only	
Owner #	
Site #	

INSTRUCTIONS:

When a release has **not** been confirmed and reported, this Site Check/Site Assessment Checklist must be completed and signed by a person registered with Ecology. **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 ASSESSMENT: 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
P. O. Box 47655
Olympia, WA 98504-7655

SITE INFORMATION

Site ID Number (on invoice or available from Ecology if the tanks are registered): 00 1743

Site/Business Name: Lakeridge Paving

Site Address: 19601 Frontage Road, P.O.Box 5430 (Street) Telephone: (206) 631 - 8290

Kent (City) WA (State) 98064 (ZIP-Code)

TANK INFORMATION

Tank ID No.	Tank Capacity	Substance Stored
1	6,000 gallon	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-place.
- ✓ 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.	JDW	
2.	A brief summary of information obtained during the site inspection is provided. (see Section 3.2 in site assessment guidance)	JDW	
3.	A summary of UST system data is provided. (see Section 3.1)	JDW	
4.	The soils characteristics at the UST site are described. (see Section 5.2)	JDW	
5.	Is there any apparent groundwater in the tank excavation?		JDW
6.	A brief description of the surrounding land use is provided. (see Section 3.1)	JDW	
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.	JDW	
8.	A sketch or sketches showing the following items is provided:		
	- location and ID number for all field samples collected	JDW	
	- groundwater samples distinguished from soil samples (if applicable)	NA	
	- samples collected from stockpiled excavated soil	NA	
	- tank and piping locations and limits of excavation pit	JDW	
	- adjacent structures and streets	JDW	
	- approximate locations of any on-site and nearby utilities	JDW	
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)	NA	
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.	JDW	
11.	Any factors that may have compromised the quality of the data or validity of the results are described.		JDW

12.	*The results of this site check/site assessment indicate that a confirmed release of a regulated substance has occurred.*	JDW	

SITE ASSESSOR INFORMATION

John David Watts — Person registered with Ecology

Hart Crowser, Inc — Firm Affiliated with

Business Address: 1910 Fairview Avenue East (Street) — Telephone: (206) 324-9530

Seattle (City) — WA (State) — 98102-3699 (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.

7-14-93 — Date

J. D. Watts — Signature of Person Registered with Ecology

APPENDIX B
SOIL SAMPLING METHODS

APPENDIX B
SOIL SAMPLING METHODS

This appendix documents the procedures Hart Crowser used in obtaining and handling the soil samples collected at the site.

The limits of the tank excavations were measured using an engineers tape. The approximate excavation depths were measured relative to ground surface.

Soil Sampling

Because the sides of the excavations were not supported or sloped back, no personnel entered the excavations. Soil was collected from the sides and bottom of the excavation using the excavator bucket. We collected soil samples from the center of the excavator bucket (6 to 12 inches depth) with a stainless steel spoon and placed it in a stainless steel bowl prior to placement in sampling jars.

The tank excavation and piping soil samples were field screened for possible petroleum hydrocarbon contamination by half filling a headspace jar with soil, covering the opening with aluminum foil and screw-top lid, and placing the jar in a warm location for 10 to 15 minutes. Organic vapor headspace measurements were taken using an HNU photoionization detector fitted with a 10.2 eV lamp. This procedure assists in quantifying petroleum hydrocarbons in soil.

The stainless steel sampling equipment was decontaminated between samples using an Alconox wash and successive rinses of tap and deionized water.

Soil samples were immediately placed in chemically clean, air-tight glass sample jars, labeled and placed in an insulated cooler with blue ice, and transported under chain of custody protocol to the Hart Crowser Chemistry Laboratory in Seattle, Washington. Chain of custody forms are included in Appendix D.

APPENDIX C
TANK CONTENTS DISPOSAL CERTIFICATE

Marine Vacuum Service, Inc.
MARINE AND INDUSTRIAL CLEANING

P.O. Box 24263, Seattle, Washington 98124
Telephone (206) 762-0240
24 Hour Service

BILL OF LADING AND GALLONAGE REPORT

Date 7-8-93

CUSTOMER GLACER ENVIRO
~~VESSEL~~ LAKE SIDE INDUSTRIES ASPHALT PLANT
LOCATION 26010 180th AVE SE.

Report Prepared By: RC Truck #: 22
Gallons Pumped: 50 Sludge: 10
Disposed: M.V.S.
Charged To:
Other (Problems): PUMP WASH WATER FROM 6000 GAL DIESEL TANK

Driver's Signature: R Calvin
Customer's Signature

1993-07-13 16:53 TOTAL P.01 PAGE = 01

APPENDIX D
LABORATORY ANALYTICAL REPORTS
HART CROWSER CHEMISTRY LABORATORY

HARTCROWSER

Earth and Environmental Technologies

Hart Crowser, Inc.
1910 Fairview Avenue East
Seattle, Washington 98102
FAX 206.328.5581
206.324.9530

CHEMISTRY LABORATORY ANALYTICAL REPORT

July 15, 1993

Jim Hest, Hart Crowser Project Engineer

RE: Lakeside Industries, J-3806

Attached are the compiled results from analyses conducted on samples received June 8, 1993. We performed extractions and analyses as indicated:

	Matrix	Quantity	Date Extracted	Date Analyzed
► TPH-D	Soil	6	7/13/93	7/13/93

This report contains the following:

- ► Analytical results for soil samples presented on a dry weight basis.
- ► Data qualifiers.
- ► Results for method blanks.
- ► Recoveries for spiked samples.
- ► Differences for duplicate analyses.
- ► Recoveries for laboratory control sample.
- ► Copies of chain of custody forms.

HART CROWSER, INC.

James Herndon

JAMES HERNDON
Laboratory Manager
Washington State Department of Ecology
Laboratory Accreditation Number C134

Analytical Results

Results in ppm (mg/kg or mg/L)

Compound	P-1	WW-1	EW-1
Matrix	Soil	Soil	Soil
% Moisture	6%	7%	7%
TPH-D, C12 > C24 (Diesel)	110	20 U	20 U
TPH-D, C24 > C37 (Oil)	77	50 U	50 U
2-Fluorobiphenyl (surr #1)	96%	84%	96%
o-Terphenyl (surr #2)	97%	82%	96%
Hexacosane - nC26 (surr #3)	106%	92%	105%

Compound	B-1	Duplicate B-1	NW-1
Matrix	Soil	Soil	Soil
% Moisture	8%	8%	6%
TPH-D, C12 > C24 (Diesel)	5,200	6,900	240
TPH-D, C24 > C37 (Oil)	50 U	50 U	160
2-Fluorobiphenyl (surr #1)	117%	146%	101%
o-Terphenyl (surr #2)	M	M	105%
Hexacosane - nC26 (surr #3)	106%	124%	116%

Analytical Results, continued

Results in ppm (mg/kg or mg/L)

Compound	SW-1
Matrix	Soil
% Moisture	6%
TPH-D, C12 > C24 (Diesel)	72
TPH-D, C24 > C37 (Oil)	41 J
2-Fluorobiphenyl (surr #1)	95%
o-Terphenyl (surr #2)	99%
Hexacosane - nC26 (surr #3)	110%

Data Qualifiers

U	Not detected at indicated detection limit.
-	Below detection limit.
J	Estimated value below detection limit.
B	Also detected in associated method blank.
M	Unable to calculate recovery due to matrix interference.
n/t	Test not performed.
n/a	Not applicable.
Surr	Surrogate compound.

Method Blanks

Results in ppm (mg/kg or mg/L)

Compound	07/13/93
Matrix	Soil
TPH-D, C12 > C24 (Diesel)	20 U
TPH-D, C24 > C37 (Oil)	50 U
2-Fluorobiphenyl (surr #1)	74%
o-Terphenyl (surr #2)	76%
Hexacosane - nC26 (surr #3)	81%

Spikes

% Recovery

Compound	MS SW-1	MSD SW-1
Matrix	Soil	Soil
TPH-D, C12 > C24 (Diesel)	62%	80%
2-Fluorobiphenyl (surr #1)	108%	87%
o-Terphenyl (surr #2)	114%	103%
Hexacosane - nC26 (surr #3)	120%	106%

Duplicates

Relative % Difference

Compound	B-1	SW-1
Matrix	Soil	Soil
TPH-D, C12 > C24 (Diesel)	-28%	-25%

Laboratory Control Sample

% Recovery

Compound	07/13/93
Matrix	Soil
TPH-D, C12 > C24 (Diesel)	102%
2-Fluorobiphenyl (surr #1)	119%
o-Terphenyl (surr #2)	M
Hexacosane - nC26 (surr #3)	110%

Sample Custody Record

DATE 7/8/93 PAGE 1 OF 1

HARTCROWSER

Hart Crowser, Inc.
1910 Fairview Avenue East
Seattle, Washington 98102-3699

JOB NUMBER 3806 LAB NUMBER

PROJECT MANAGER Hest

PROJECT NAME Lakeside Industries

SAMPLED BY: JDW

LAB NO.	SAMPLE	TIME	STATION	MATRIX	TESTING: Ecology's WTPH-D	NO. OF CONTAINERS	OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS
	P-1	7/8/93	product line	Soil	X	1	
	WW-1		West side wall		X	1	
	EW-1		east side wall		X	1	
	B-1		bottom		X	1	
	NW-1		North side wall		X	1	
	SW-1		South side wall		X	1	

RELINQUISHED BY	DATE	RECEIVED BY	DATE
SIGNATURE	7/8/93	SIGNATURE	7/8
PRINTED NAME: David L Watts	TIME	PRINTED NAME: YuSun Han	TIME
COMPANY: HC	1500	COMPANY: HCI	2:00 pm

RELINQUISHED BY	DATE	RECEIVED BY	DATE
SIGNATURE		SIGNATURE	
PRINTED NAME	TIME	PRINTED NAME	TIME
COMPANY		COMPANY	

TOTAL NUMBER OF CONTAINERS 6

METHOD OF SHIPMENT hand

SPECIAL SHIPMENT/HANDLING OR STORAGE REQUIREMENTS

Samples in S-3

DISTRIBUTION:

1. PROVIDE WHITE AND YELLOW COPIES TO LABORATORY
2. RETURN PINK COPY TO PROJECT MANAGER
3. LABORATORY TO FILL IN SAMPLE NUMBER AND SIGN FOR RECEIPT
4. LABORATORY TO RETURN WHITE COPY TO HART CROWSER

HARTCROWSER

Earth and Environmental Technologies

Hart Crowser, Inc.
1910 Fairview Avenue East
Seattle, Washington 98102
FAX 206.328.5581
206.324.9530

CHEMISTRY LABORATORY ANALYTICAL REPORT

August 25, 1993

Jim Hest, Hart Crowser Project Engineer

RE: Lakeside Industries, J-3806, Sequence A

Attached are the compiled results from analyses conducted on samples received August 18, 1993. We performed extractions and analyses as indicated:

	Matrix	Quantity	Date Extracted	Date Analyzed
► TPH-D	Soil	2	8/19/93	8/19/93

This report contains the following:

- Analytical results for soil samples presented on a dry weight basis.
- Data qualifiers.
- Results for method blanks.
- Differences for duplicate analyses.
- Recoveries for laboratory control sample.
- Copies of chain of custody forms.

HART CROWSER, INC.

James Herndon

JAMES HERNDON
Laboratory Manager
Washington State Department of Ecology
Laboratory Accreditation Number C134

Analytical Results

Results in ppm (mg/kg or mg/L)

Compound	B-1A	Duplicate B-1A	NW-1A
Matrix	Soil	Soil	Soil
% Moisture	7%	7%	6%
TPH-D, C12 > C24 (Diesel)	220	180	530
2-Fluorobiphenyl (surr #1)	94%	96%	96%
o-Terphenyl (surr #2)	95%	97%	101%
Hexacosane - nC26 (surr #3)	97%	99%	99%

Data Qualifiers

U	Not detected at indicated detection limit.
-	Below detection limit.
J	Estimated value below detection limit.
B	Also detected in associated method blank.
M	Unable to calculate recovery due to matrix interference.
n/t	Test not performed.
n/a	Not applicable.
Surr	Surrogate compound.

Method Blanks

Results in ppm (mg/kg or mg/L)

Compound	08/19/93
Matrix	Soil
TPH-D, C12 > C24 (Diesel)	20 U
2-Fluorobiphenyl (surr #1)	93%
o-Terphenyl (surr #2)	105%
Hexacosane - nC26 (surr #3)	106%

Duplicates

Relative % Difference

Compound	B-1A
Matrix	Soil
TPH-D, C12 > C24 (Diesel)	20%

Laboratory Control Sample

% Recovery

Compound	08/19/93
Matrix	Soil
TPH-D, C12 > C24 (Diesel)	96%
2-Fluorobiphenyl (surr #1)	125%
o-Terphenyl (surr #2)	M
Hexacosane - nC26 (surr #3)	110%

(A)

Sample Custody Record

DATE 8-18-93 PAGE 1 OF 1

HARTCROWSER

Hart Crowser, Inc.
1910 Fairview Avenue East
Seattle, Washington 98102-3699

JOB NUMBER 3806 LAB NUMBER

PROJECT MANAGER J. HEST

PROJECT NAME LAKESIDE INDUSTRIES

SAMPLED BY: JMF

LAB NO.	SAMPLE	TIME	STATION	MATRIX	TESTING: WTPH-D	NO. OF CONTAINERS	OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS
					~~X~~	1	
		10:20	NW-1A	SOIL	X	1	
		11:00	B-1A	"	X		

RELINQUISHED BY	DATE	RECEIVED BY	DATE
SIGNATURE	8/18	SIGNATURE	8/18
PRINTED NAME JIM FELDER	TIME	PRINTED NAME Ross Rossin	TIME
COMPANY HC	1140	COMPANY HC	1140

RELINQUISHED BY	DATE	RECEIVED BY	DATE
SIGNATURE		SIGNATURE	
PRINTED NAME	TIME	PRINTED NAME	TIME
COMPANY		COMPANY	

TOTAL NUMBER OF CONTAINERS

METHOD OF SHIPMENT

SPECIAL SHIPMENT/HANDLING OR STORAGE REQUIREMENTS: 48 hr TAT verbal as per J. Hest 8/18 SRL

NO EXTENDED ANALYSIS.

S-L

DISTRIBUTION:

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HARTCROWSER

Earth and Environmental Technologies

Hart Crowser, Inc.
1910 Fairview Avenue East
Seattle, Washington 98102
FAX 206.328.5581
206.324.9530

CHEMISTRY LABORATORY ANALYTICAL REPORT

November 23, 1993

James Hest, Hart Crowser Project Engineer

RE: Lakeside Covington, J-3806, Sequence B

Attached are the compiled results from analyses conducted on samples received October 28, 1993. We performed extractions and analyses as indicated:

	Matrix	Quantity	Date Extracted	Date Analyzed
► TPH-D	Soil	2	10/29/93	10/29/93

This report contains the following:

- ► Analytical results for soil samples presented on a dry weight basis.
- ► Data qualifiers.
- ► Results for method blanks.
- ► Recoveries for laboratory control sample.
- ► Copies of chain of custody forms.

HART CROWSER, INC.

James Herndon

JAMES HERNDON
Laboratory Manager
Washington State Department of Ecology
Laboratory Accreditation Number C134

Analytical Results

Results in ppm (mg/kg or mg/L)

Compound	N-2	B-2	Duplicate B-2
Matrix	Soil	Soil	Soil
% Moisture	3%	5%	5%
TPH-D, C12 > C24 (Diesel)	20 U	20 U	20 U
2-Fluorobiphenyl (surr #1)	94%	87%	82%
o-Terphenyl (surr #2)	95%	93%	86%
Hexacosane - nC26 (surr #3)	102%	98%	94%

Data Qualifiers

U Not detected at indicated detection limit.
\- Below detection limit.
J Estimated value below detection limit.
B Also detected in associated method blank.
M Unable to calculate recovery due to matrix interference.
n/t Test not performed.
n/a Not applicable.
Surr Surrogate compound.

Method Blanks

Results in ppm (mg/kg or mg/L)

Compound	10/29/93
Matrix	Soil
TPH-D, C12 > C24 (Diesel)	20 U
2-Fluorobiphenyl (surr #1)	93%
o-Terphenyl (surr #2)	99%
Hexacosane - nC26 (surr #3)	106%

Laboratory Control Sample

% Recovery

Compound	10/29/93
Matrix	Soil
TPH-D, C12 > C24 (Diesel)	98%
2-Fluorobiphenyl (surr #1)	121%
o-Terphenyl (surr #2)	M
Hexacosane - nC26 (surr #3)	119%

(B)

Sample Custody Record

DATE 10/28/93 PAGE 1 OF 1

HARTCROWSER

Hart Crowser, Inc.
1910 Fairview Avenue East
Seattle, Washington 98102-3699

JOB NUMBER 3806 LAB NUMBER

PROJECT MANAGER HEST

PROJECT NAME LAKESIDE - COVINGTON

SAMPLED BY: HEST

LAB NO.	SAMPLE	TIME	STATION	MATRIX	TESTING: WTPH-D (not extended)	NO. OF CONTAINERS	OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS
	B-2	10/28/93	Bottom	SOIL	X	1	
	N-2	10/28/93	NORTH WALL	"	X	1	

RELINQUISHED BY	DATE	RECEIVED BY	DATE
James Hest (SIGNATURE)	10/28/93	Debbie Meyers (SIGNATURE)	10/28/93
JAMES HEST (PRINTED NAME)	TIME	Debbie Meyers (PRINTED NAME)	TIME
HART CROWSER (COMPANY)	1145	HC (COMPANY)	1300
RELINQUISHED BY	DATE	RECEIVED BY	DATE
SIGNATURE		SIGNATURE	
PRINTED NAME	TIME	PRINTED NAME	TIME
COMPANY		COMPANY	

TOTAL NUMBER OF CONTAINERS 2

METHOD OF SHIPMENT

SPECIAL SHIPMENT/HANDLING OR STORAGE REQUIREMENTS LOCATED IN SAMPLES 3

DISTRIBUTION:

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