5# 8-13-92 JP#

GEOTECH
CONSULTANTS, INC.

13256 N.E. 20th St. (Northup Way), Suite 16
Bellevue, WA 98005
(206) 747-5618
FAX 747-8561

DEPARTMENT OF ECOLOGY
NWRO/TCP TANK UNIT
NC# 3100

INTERIM CLEANUP REPORT	☒
SITE CHARACTERIZATION	☐
FINAL CLEANUP REPORT	☐
OTHER _____	☐
AFFECTED MEDIA: SOIL	☒
OTHER _____ GW	☐
INSPECTOR (INIT.) JP DATE 8-13-92	

May 13, 1992

JN 92208

Clinton Pozzi
14639 Southeast 267th Street
Kent, Washington 98042

RECEIVED
AUG 13 1992
DEPT. OF ECOLOGY

Subject: INTERIM CLOSURE REPORT:
Single Underground Storage Tank
705 Meeker Street
Kent, Washington

Dear Mr. Pozzi:

In accordance with your recent request, Geotech Consultants, Inc. has completed field observation, documentation and laboratory analysis associated with formal "closure" of a single underground storage tank (UST) located at 705 Meeker Street in Kent, Washington. This activity was initiated to satisfy regulatory requirements imposed under WAC 173-360 pertaining to site assessment at the time of closure. This report provides a summary of our field and laboratory methods along with results and conclusions.

Copies of documentation associated with the closure of this UST will be kept on file in our office once they have been received from the tank excavation contractor, and will be appended to our final closure report.

METHODOLOGY/SCOPE OF WORK

Agency Notification/Permits

In compliance with 40 CFR, part 280.71, it is our understanding that a letter of notification to the implementing agency, the Washington Department of Ecology (WDOE), was forwarded prior to commencement of the closure activity. Due to the client's desire for expediency, a waiver of the 30-day advance notification requirement was requested and granted by Roger Nye of the WDOE during a telephone conversation on May 1, 1992.

In addition, as required by the City of Kent, T. M. Services Corporation of Arlington, Washington provided the City of Kent with 24-hour advance notification of their intention to remove the UST, and obtained a permit from the city prior to removal activities.

Tank Excavation/Soil Sampling

On May 4, 1992, an environmental engineer from our firm was present during the removal of a single UST from the property. The tank was apparently discovered earlier in 1992 during the installation of water lines by the City of Kent. The tank was located between Harrison Street and the northern wall of the building at 705 Meeker Street. Soils with odors characteristic of hydrocarbons reportedly extended into Harrison Street. According to Clinton Pozzi, the property owner, the Harrison Street right-of way extends to the north wall of the building, but the city of Kent required that Mr. Pozzi be responsible for the removal and closure of the UST, since it appeared to be associated with his property.

Several inches of liquid was detected in the bottom of the tank. Approximately 50 gallons of this liquid, which appeared to be a mixture of water and gasoline, was pumped into a 55-gallon drum by T. M. Services personnel using a hand pump. Pumping continued until the majority of the liquid had been removed. It is our understanding that this liquid was transported off-site by T.M. Services and disposed of properly.

As required by the City of Kent, prior to removal of the tank, gaseous carbon dioxide was added to the tank by Don Sly, a marine chemist from Sound Testing, Inc., of Seattle, Washington. This method of conditioning is consistent with guidelines offered in API Recommended Practice 1604 (Removal and Disposal of Underground Petroleum Storage Tanks), and API Publication 2015. Mr. Sly certified the tank as inert and safe for transit based on oxygen levels measured in the tank at approximately 1:30 p.m. on May 4, 1992. Two officials from the City of Kent Fire Department arrived on the site at approximately 2:00 p.m., and approved removal of the tank.

Tank removal was performed at approximately 3:30 p.m. with a trackhoe operated by T. M. Services who also transported the tank off site for proper disposal.

Soil Sampling

Samples were collected of soils excavated during removal of the tank. The samples were placed in sterilized glass jars with teflon-sealed lids furnished by the project laboratory. They were stored in an iced chest at the site and taken to the lab in this condition in an effort to preserve sample integrity by minimizing excessive dissipation of volatile fraction hydrocarbons. Each jar was clearly labeled as to sampling location, time of sampling, sampling person, project number, etc. EPA-recommended protocol for sample management, including maintenance of chain-of-custody documentation, was observed during the course of the project.

Laboratory Analysis

A sample was first analyzed using the WTPH-HCID test, a qualitative screening method used to determine which petroleum constituents, if any, are present. Based on the results of this test, quantitative methods were used to measure the concentrations of the detected constituents. WDOE-approved methods were used for all analyses.

RESULTS OF CLOSURE INVESTIGATION

General Discussion

The property is located at 705 Meeker Street, in Kent, Washington, as illustrated on the Vicinity Map, Plate 1. A vacant, one-story industrial building currently occupies the site. Topography on the site and in the surrounding region is relatively level. The Green River is located approximately one-half mile south-southwest of the site.

Estimation of the direction of shallow groundwater flow based on local surface topography is difficult, given the absence of a definitive slope in the area. However, it is expected that shallow groundwater in the region flows generally towards the south and west, into the Green River.

The underground storage tank was located near the northern edge of the building, as illustrated on the Site Excavation Plan, Plate 2. An additional ventilation line which did not appear to be associated with this UST was observed coming out of the ground near the eastern edge of the building.

Observations During Tank Removal

The tank removed on May 4, 1992, was a single-wall coated steel tank measuring 7 feet, 6 inches in diameter and having a length of 23 feet, 10 inches. This translates to an estimated maximum capacity in excess of 7,850 gallons. The center of the tank was approximately 6 feet north, and 12 feet west, of the northeast corner of the building.

The tank was in good condition, and no cracks, holes, or defects were observed. The tank was overlaid by a concrete slab, which was approximately 1 foot thick. Soils observed in the excavation consisted of brown and blue-gray, fine-grained sands, with occasional pockets of blue-gray silt, extending for the entire depth of the excavation. No groundwater was observed in the excavation, which extended to an approximate depth of 10 feet.

Soils with strong odors and discoloration characteristic of hydrocarbon contamination were observed in the material excavated during tank removal, and in the sides and bottom of the excavation. Hydrocarbon contamination in the sides appeared to extend from a depth of 2 feet down to the bottom of the excavation.

The material excavated to allow for tank removal was stockpiled on plastic. It was originally intended that this material be remediated on the owner's property by landfarming. However, during the course of excavation, it became apparent that removal of all hydrocarbon-contaminated soils would require excavation toward the north, into Harrison Street and in the vicinity of the newly-installed water main, and considerable excavation underneath the foundation of the building, resulting in possible structural damage. In addition, removal of the tank required excavation approximately 2 feet below the bottom of the foundation footings, which caused soil sluffing and undermining of the foundation footings near the southwest corner of the excavation. The undermining extended approximately 2 feet under the footings, and approximately 5 feet from the southwest corner toward the east. To minimize impact on the structure caused by the open excavation, it was decided that the excavation should be filled immediately. Given the complications involved in the removal of all contamination, it was decided to leave the contamination in place, and to address the problem at a later date if required by regulatory agencies. As authorized by Mr. Pozzi, the

contaminated material was returned to the excavation following removal of the tank. The remainder of excavation was then filled using imported material.

To provide information regarding the nature and severity of hydrocarbon contamination, two samples of the excavated soils were collected for laboratory analysis.

Results of Laboratory Analysis

Laboratory analysis of one of the soil samples (WS-1-SPLS) detected hydrocarbons in the gasoline range. Both samples were therefore analyzed using the WTPH-G method for gasoline, along with analysis for benzene, toluene, ethylbenzene, and xylenes (BTEX). The following table provides a summary of the results of laboratory analysis:

Sample No.	TPH-gas (ppm)	B (ppm)	T (ppm)	E (ppm)	X (ppm)
WS-1-SPLS	2400	0.86	8.10	34.00	119.00
SS-1-SPLS	3500	0.66	13.00	23.00	80.00
MTCA "Method A" Cleanup Levels:	100	0.5	40	20	20

Notes:

(1) ppm denotes parts per million
(2) B,T,E, and X denote benzene, toluene, ethylbenzene, and xylenes, respectively.
(3) TPH denotes total petroleum hydrocarbons

CONCLUSIONS/RECOMMENDATIONS

Based upon the information developed as a result of this closure investigation, it appears that soils proximal to the former UST were contaminated as a result of its operation. The results of laboratory analysis of soil samples collected from the UST excavation suggest that these soils contain concentrations of gasoline, benzene, ethylbenzene, and xylenes which exceed cleanup levels specified in the Model Toxics Control Act (MTCA). As discussed in the body of this

report, the contamination was left in place due to the complications involved in undertaking a complete cleanup. These included the risk of structural damage to the building on the property, and the necessity of extending the excavation into Harrison Street, where a water main is reportedly located.

As previously discussed, removal of the tank required excavation below the foundation of the building. The excavation was filled in as soon as possible to minimize structural effects, but it is probable that the material used to fill the excavation will experience significant settlement under the load imposed by the structure. This may result in differential settlement of the building over time. If this condition is not acceptable, we recommend underpinning the foundation in this area.

Mr. Joe Hickey of the Washington Department of Ecology (WDOE) has informed us that his agency will require further activities by the property owner to address the contaminated soil which remains in the vicinity of the former UST.

Prior to selection of a remediation method, we recommend drilling at least one borehole within the tank excavation to examine the vertical extent of the contaminated soils under the tank and the groundwater conditions. Additional borings may be required to investigate the lateral boundaries of the contamination as hydrocarbon odors were noticed in the utility trench for the street water main. Knowledge of the size, shape, location and concentration of the contaminant plume may influence the choice of a remediation method. Potential choices of remedial action plans include:

1) Excavation of Contaminated Soils:

This alternative involves the removal of the hydrocarbon-contaminated soils proximal to the former UST, followed by the collection of soil samples intended to provide information regarding the effectiveness of the cleanup. It is doubtful that a complete cleanup can be achieved by excavation without seriously impairing the structural integrity of the building, and without disturbing the water main which reportedly runs along the southern side of Harrison Street. However, given the limitations imposed by these features, it is probable that the WDOE will accept a partial cleanup.

Should this alternative be selected, we recommend that a WDOE-registered site assessor from our staff be present to observe remedial activities as an independent third party, and to collect soil samples.

The contaminated material removed from the excavation could be transported off-site for treatment or disposal, or could be treated on-site by landfarming. Current costs for off-site treatment or disposal of hydrocarbon-contaminated soils range between $50 and $75 per ton. This does not include hauling costs or additional laboratory analysis which may be necessary to meet acceptance requirements of the selected facility.

It is probable that the excavated material could also be successfully treated by on-site landfarming. This procedure would involve spreading the soil on top of an impermeable membrane (usually plastic) in a layer 1 to 2 feet thick, followed by periodic tilling. Once remediation appears to be completed, soil samples should be collected for laboratory analysis intended to show that hydrocarbon concentrations have been reduced to acceptable levels. This procedure is relatively inexpensive compared to off-site alternatives, but requires several months, and a relatively large treatment area.

2) <u>"In Situ" Biological Treatment:</u>

With this method the contaminated soil would be treated "in place" by introducing a solution containing nutrients and anaerobic hydrocarbon-ingesting microorganisms. This would require drilling several boreholes, then installing infiltration wells to allow for application of the solution. Once vapor levels inside the wells suggest that remediation has been successfully completed, subsurface soil samples should be collected to assess the effectiveness of the cleanup.

The use of this approach would avoid some of the complications of the previous alternative, including the possibility of further structural damage caused by excavation proximal to the on-site building and the disposal or treatment of large volumes of excavated soil. It is probable that this approach would also be less expensive.

In-place biological treatment could result in a "complete" cleanup, defined here as the reduction of hydrocarbon concentrations to levels below MTCA cleanup guidelines in subsurface soils throughout the area proximal to the former UST. However, extensive drilling for collection of soil samples, including drilling in Harrison Street and inside the on-site building, would be required to provide adequate data supporting claims that a complete cleanup has occurred. As previously stated, the WDOE will probably accept a partial cleanup in this case. If a partial cleanup is acceptable, we would recommend boreholes be drilled in the general vicinity of the former UST to allow for sample collection.

If this alternative is selected, we recommend that a WDOE-registered UST assessor from our staff be present to observe the initial drilling and well installation, and to collect subsurface soil samples obtained by drilling after remediation has been completed.

LIMITATIONS

This letter has been prepared for specific application to this project in a manner consistant with that level of care and skill normally exercised by members of the environmental science profession currently practicing under similar conditions in the area, and in accordance with the terms and conditions set forth in your request. This letter is for the exclusive use of Clinton Pozzi and his representatives. No other warranty is expressed or implied. If new information is developed in future site work which may include excavations, borings, studies, etc., Geotech Consultants, Inc. should be allowed to reevaluate the conclusions of this report and to provide amendments as required.

If you have any questions or if we may be of further service, please do not hesitate to contact us.

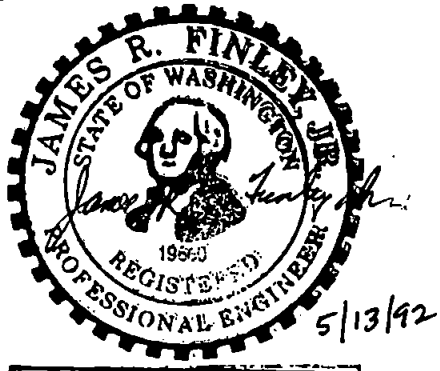
Respectfully Submitted,

GEOTECH CONSULTANTS, INC.

Henry Perrin by RME

Henry Perrin
Environmental Engineer

Registered UST Site Assessor

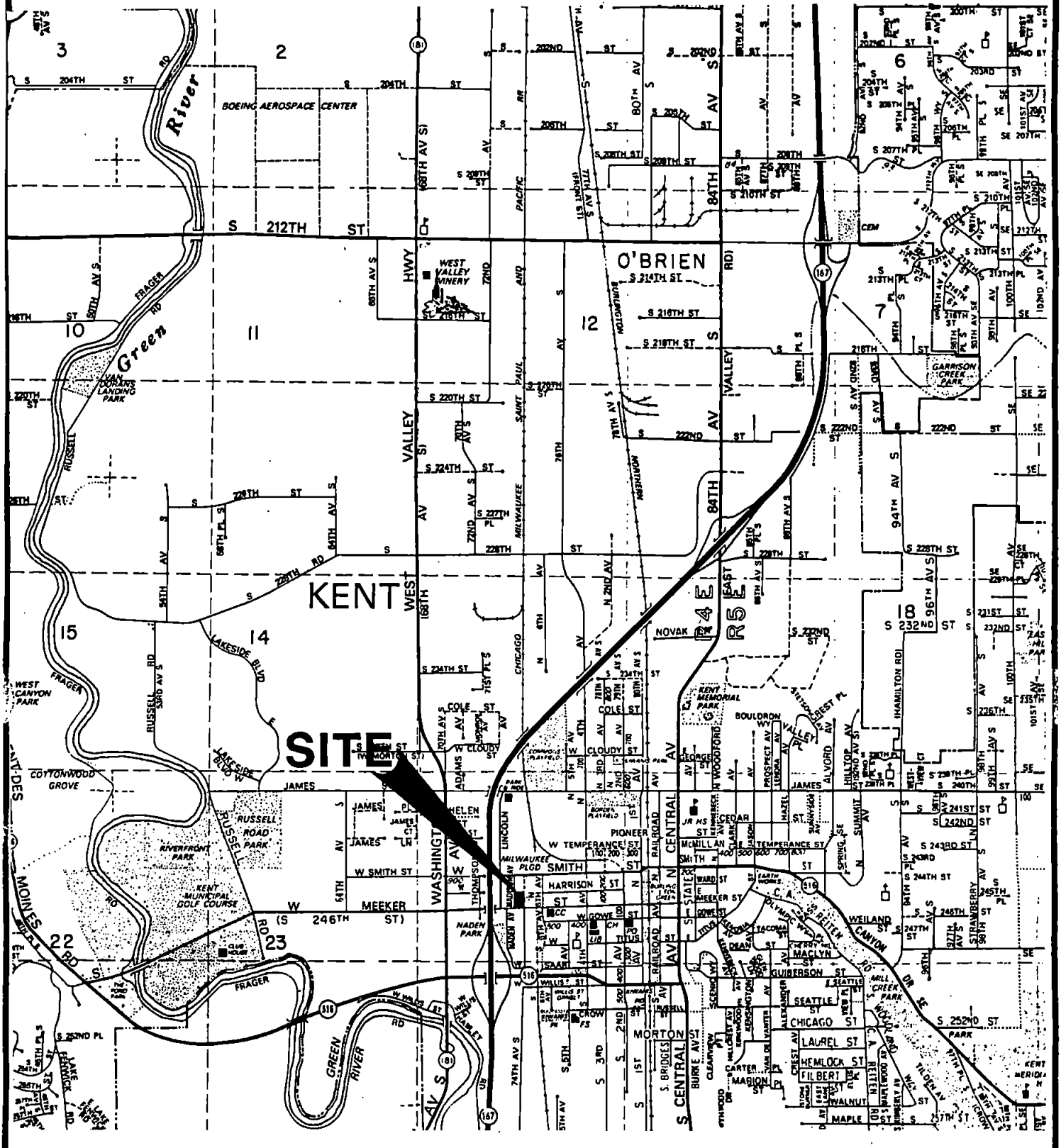


5/13/92

EXPIRES 8/17/93

James R. Finley, Jr., P.E.
President

Attachments: Plate 1, Vicinity Map
Plate 2, Site Excavation Plan
WDOE UST Site Assessment Checklist
Laboratory Results (6)



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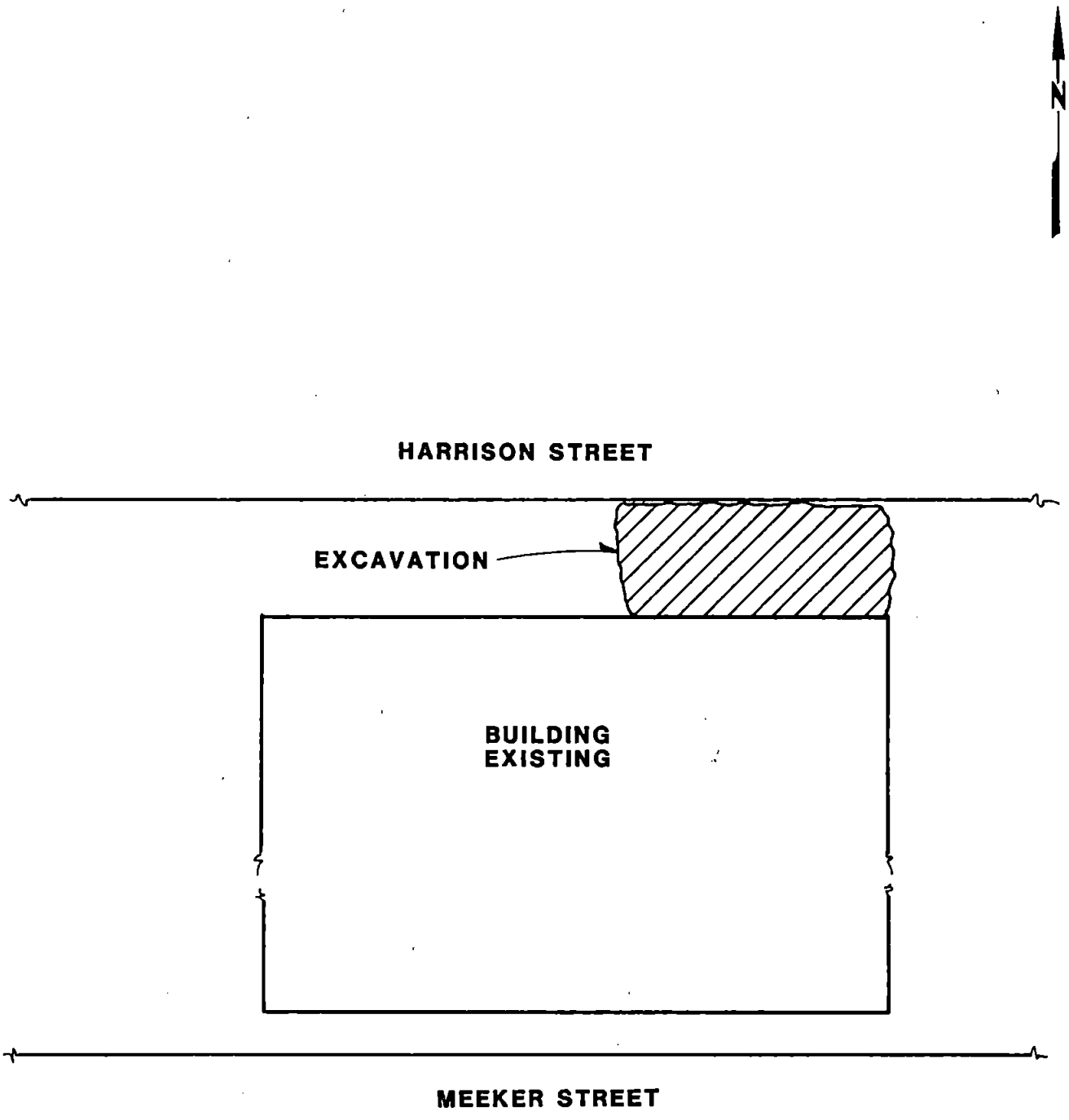
VICINITY MAP
705 MEEKER STREET
KENT, WASHINGTON

Job No:	Date:		Plate:
92208	MAY 1992		1



GEOTECH
CONSULTANTS

SITE EXCAVATION PLAN
705 MEEKER STREET
KENT, WASHINGTON

Job No.:	Date:		Plate:
92208	MAY 1992	1"=15'	2

TCP File (LUST): Pozzi Former Truck Stop

RECEIVED
MAY 15 1992
DEPT. OF ECOLOGY

UNDERGROUND STORAGE TANK
Site Check/Site Assessment Checklist

The purpose of this form is to certify the proper investigation of an UST site for the presence of a release. These activities shall be conducted in accordance with Chapter 173.360 WAC. A description of the various situations requiring a site check or site assessment is provided in the guidance document for UST site checks and site assessments.

This Site Check/Site Assessment Checklist shall be completed and signed by a person registered with the Department of Ecology to perform site assessments.

Two copies of the results of the site check or site assessment should be included with this checklist according to the reporting requirements in the guidance document for UST site checks and site assessments.

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

The completed checklist should be mailed to the following address:

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

1. UST SYSTEM OWNER AND LOCATION

UST Owner/Operator: ~~[illegible]~~ Clinton Pozzi

Owners Address: 14639 SE 267th (Street)

Kent (City) WA (State) 98042 (P.O. Box / ZIP-Code)

Telephone: (206) 631-0575

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

Site/Business Name: Vacant

Site Address: 705 Meeker St. (Street)

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

2. SITE CHECK/SITE ASSESSMENT CONDUCTED BY:

Registered Person: Henry Perrin c/o Geotech Consultants

Address: 13256 NE 20th St, Suite 16 (Street / P.O. Box)

Bellevue (City) WA (State) 98005 (ZIP-Code)

Telephone: (206) 747-5618

3. TANK INFORMATION

1. Tank ID Number (as registered with Ecology): —
2. Year installed: Unknown
3. Tank capacity in gallons: N 7,800
4. Last substance stored: Gasoline

4. 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
_____ Required by Ecology or delegated agency for UST system closed before December 22, 1988
_____ Other (describe): _____

5. 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. Has the site check/site assessment been conducted according to applicable procedures specified in the UST site check/site assessment guidance issued by the Department of Ecology?	H.P.	
2. Has a release from the UST system been confirmed? *NOTE: Owners/operators must report all confirmed releases to the Department of Ecology or delegated agency within 24 hours.*	H.P.	
3. Are the results of the site check/site assessment enclosed with this checklist? *NOTE: Two copies of the site check/site assessment results must be submitted to the Department of Ecology according to the reporting requirements specified in the UST site check/site assessment guidance.*	H.P.	

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.

5/12/92
Date

Signature of Person Registered with Ecology

6. OWNER'S SIGNATURE

X 5-7-92
Date

Clinton D. Pozzi
Signature of Tank Owner or Authorized Representative

ON-SITE ENVIRONMENTAL INC.

May 11, 1992

Henry Perrin
GeoTech Consultants
13256 N.E. 20th St.
Suite 16
Bellevue, WA 98005

Dear Mr. Perrin:

Enclosed are the results of the analyses of samples submitted on May 6, 1992 from Project 92208.

We appreciate this opportunity to be of service to you on this project. If you have any questions regarding this report, please feel free to call me.

Sincerely,

Tammy C. Howard

Tammy C. Howard
Senior Chemist

Enclosures

RECEIVED MAY 1 2 1992

2859 - 152nd Ave NE • Redmond, WA 98052 • (206) 883-3881

Date of Report: May 11, 1992
Samples Submitted: May 6, 1992
Lab Traveler: 05-002
Project: 92208

HYDROCARBON INDENTIFICATION
BY METHOD WTPH-HCID

Sample #	GC Characterization	Surr. Recovery
WS-1-SPLS	The chromatogram indicates the presence of hydrocarbons in the gasoline range (C7-C12).	120%
Method Blank	<20 ppm Gasoline <40 ppm Diesel Fuel	80%

Date of Report: May 11, 1992
Samples Submitted: May 6, 1992
Lab Traveler: 05-002
Project: 92208

Matrix: Soil
Units: ppb

ANALYSIS BY EPA 8020 & WTPH-G
(PURGE & TRAP)

Sample #:	WS-1-SPLS	SS-1-SPLS
Dilution Factor	1000	1000
Analyte:		
Benzene	860[J]	660[J]
Toluene	81,000	13,000
Ethylbenzene	34,000	23,000
m- & p-Xylene	68,000	40,000
o-Xylene	51,000	40,000
Gas Units: ppm		
TPH/Gas	2,400	3,500
Surr. Recovery	103%	108%

J-The value indicated was below the practical quantitation limit.

Date of Report: May 11, 1992
Samples Submitted: May 6, 1992
Lab Traveler: 05-002
Project: 92208

Matrix: Soil
Units: ppb

ANALYSIS BY EPA 8020 & WTPH-G
(PURGE & TRAP)

QUALITY CONTROL

Sample #:	Method Blank	SS-1-SPLS Original	SS-1-SPLS Duplicate	Matrix Spike
Dil.Fact.	50	1000	1000	
Analyte:				
Benzene	<50	660[J]	1,200[J]	A
Toluene	<50	13,000	4,700	A
Ethylbenzene	<50	23,000	22,000	A
m- & p-Xylene	<50	40,000	38,000	A
o-Xylene	<50	40,000	38,000	A
Gas Units: ppm				
TPH/Gas	<50	3,500	3,700	
Surr. Recovery	100%	108%	107%	

A-Matrix Spike data not required due to high sample concentration.
J-The value indicated was below the practical quantitation limit.

Date of Report: May 11, 1992
Samples Submitted: May 6, 1992
Lab Traveler: 05-002
Project: 92208

RESULTS OF DRY WEIGHT

Sample #	Matrix	Moisture
WS-1-SPLS	soil	27%
SS-1-SPLS	soil	19%

CHAIN OF CUSTODY RECORD

Client: GEOTECH

ON-SITE ENVIRONMENTAL INC.

05.002

Project Manager: HENRY PERRIN

2859 152nd Ave. NE
Redmond, WA 98052
(206) 883-3881

Project #: 92208

Project Name:

dash	Sample Number	Date Sampled	Type	# Jars	Analysis Required	Comments
1	~~0220~~ WS-1-SPLS	5/4	S	1	HCID, RUN APPROP WITH ANALYSIS	COASTER
2	☑ SS-1 SPLS	5/4	S	1	RUN APPROP ANALYSIS	"

Submitted: [signature]	date: 5/6/92	Received by: Bob Wallace	date:	5/6/92
Firm: GEOTECH	time: 11:30	Firm: OSE	time:	11:30 AM.
Submitted:	date:	Received by:	date:	
Firm:	time:	Firm:	time:	