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NU

U0010184 T
LUST

DEPARTMENT OF ECOLOGY
UNDERGROUND STORAGE TANKS
101773
NOV 24 1992

Interim soil

**SUDDEN VALLEY
2145 LAKE WHATCOM BLVD.
BELLINGHAM, WASHINGTON**

Inct 3929

MULTIPLE UNDERGROUND STORAGE TANK

REMOVAL

DEPARTMENT OF ECOLOGY	
NWRO/TCP TANK UNIT	
# 3929	<i>Stk 12.28</i>
INTERIM CLEANUP REPORT	<input checked="" type="checkbox"/>
SITE CHARACTERIZATION	<input type="checkbox"/>
FINAL CLEANUP REPORT	<input type="checkbox"/>
OTHER _____	<input type="checkbox"/>
AFFECTED MEDIA: SOIL	<input checked="" type="checkbox"/>
OTHER _____ GW	<input type="checkbox"/>
INSPECTOR (INIT.): AA	DATE 12-15-92

**JOHN A. PINNER & ASSOCIATES
201 GRAND AVENUE
BELLINGHAM, WASHINGTON 98225
(206) 733- 4021 FAX (206)676-6170**

JOHN A. PINNER & ASSOCIATES

CIVIL, STRUCTURAL & GEOTECHNICAL ENGINEERING AND ENVIRONMENTAL SERVICES

November 6, 1992

Mr. Gordy Gerard
Gerard Enterprises
6084 Neevel Road
Ferndale, Wa 98248

RE: Sudden Valley
Three Regulated Underground Storage Tank Removals
2145 Lake Whatcom Blvd.
Bellingham, Washington
Site ID#101773
Owner #U0010184

Dear Mr. Gerard,

Enclosed you will find the results of the soil testing performed by our firm on October 6th & 7th, 1992, together with a Field Inspection Report and Laboratory testing results.

TANK #1

Tank #1 was located in the area of the Restaurant and Golf Course in the Sudden Valley Community. This was a 300 gallon gasoline tank. The tank was purged of all remaining gasoline and removed using a JCB Sidemaster Excavator operated by Mike Wagner of Cannon Electric. Two soil samples were taken from this location.

Soil Sample #5 was taken from under the fill spout at an approximate depth of 3.5 feet. This sample was tested for WTPH-G/BTEX combination with the following results; **<1.0 mg/kg** for Total Petroleum Hydrocarbons, **<0.05 mg/kg** for Benzene, Toluene, Ethyl Benzene and Xylenes. All of these results are **below** the D.O.E. action levels.

Soil Sample #6 was taken from the side wall at an approximate depth of 3.5 feet. This sample was tested for WTPH-G with the following results; **<1.0 mg/kg** for Total Petroleum Hydrocarbons, which is **below** the D.O.E. action levels.

TANK #2

Tank #2 was located at the Maintenance Shop for the Sudden Valley Community. This tank held 1000 gallons of gasoline. The tank was purged of all remaining fuel and removed. This tank was fairly new and had no damage to it from the removal.

In this location there was some contaminated soil. The soil was removed and taken to a location within the Sudden Valley Community which is called "Area Z". It was recommended that the soil be placed on Visqueen with hay bales around the perimeter of the soil beds and covered with visqueen during treatment. Further testing of this soil will be done during the treatment process.

Soil Sample #7 & #8 were taken from the side walls of the of the pit. These samples were tested for WTPH-G with the following results; **<1.0 mg/kg** for Total Petroleum Hydrocarbons, which are **below** the D.O.E. action levels.

Soil Sample #9 was taken from the bottom of the pit. This sample was tested for WTPH-G/BTEX combination with the following results; **6.5 mg/kg** for Total Petroleum Hydrocarbons, **<0.05 mg/kg** for Benzene, Toluene and Xylenes and **0.18 mg/kg** for Ethyl Benzene. All of these results are **below** the D.O.E. action levels.

TANK #3 & #4

Tank #3 and #4 were located in the designated Area Z on Lake Louise Road in the Sudden Valley Community. These were each 1000 gallon gasoline tanks and were together in the same pit. Both tanks were purged with remaining fuel and excavated from the pit.

Soil Sample #10 was taken from under the fill spout of tank #3 at an approximate depth of 4.5 feet. This sample was tested for WTPH-G/BTEX combination with the following results; **<1.0 mg/kg** for Total Petroleum Hydrocarbons, **<0.05 mg/kg** for Benzene, Toluene, Ethyl Benzene and Xylenes. All of these results are **below** the D.O.E. action levels.

Soil Sample #11 was taken from under the fill spout of tank #4 at an approximate depth of 4.5 feet. This sample was tested for WTPH-G with the following results; **<1.0 mg/kg** for Total Petroleum Hydrocarbons, which is **below** the D.O.E. action levels.

Soil Sample #12 was taken from the north wall of the pit at an approximate depth of 6.5 feet. This sample was tested for

WTPH-G with the following results; **<1.0 mg/kg** for Total Petroleum Hydrocarbons, which is again **below** the D.O.E. action levels.

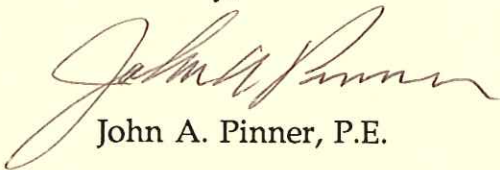
Soil Sample #13 was taken from the south wall of the pit at an approximate depth of 4.0 feet. This sample was tested for WTPH-G with the following results; **<1.0 mg/kg** for Total Petroleum Hydrocarbons, which is **below** the D.O.E. action levels.

Soil Sample #14 was taken from the bottom of the pit. This sample was tested for WTPH-G/BTEX combination with the following results; **<1.0 mg/kg** for Total Petroleum Hydrocarbons, **<0.05 mg/kg** for Benzene, Toluene, Ethyl Benzene and Xylenes. All of these results are **below** the D.O.E. action levels.

It is our conclusion from the laboratory testing results, these sites be considered permanently closed with acceptable levels of contamination.

A follow-up report will be needed when additional testing is done at the "Area Z" treatment location. Please inform our firm when you are ready for additional testing. ✓

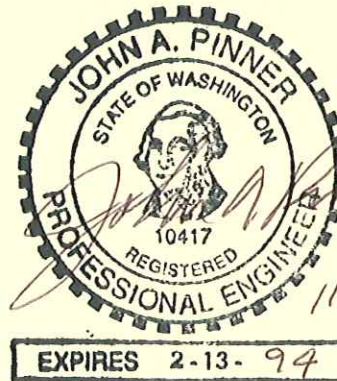
Sincerely,

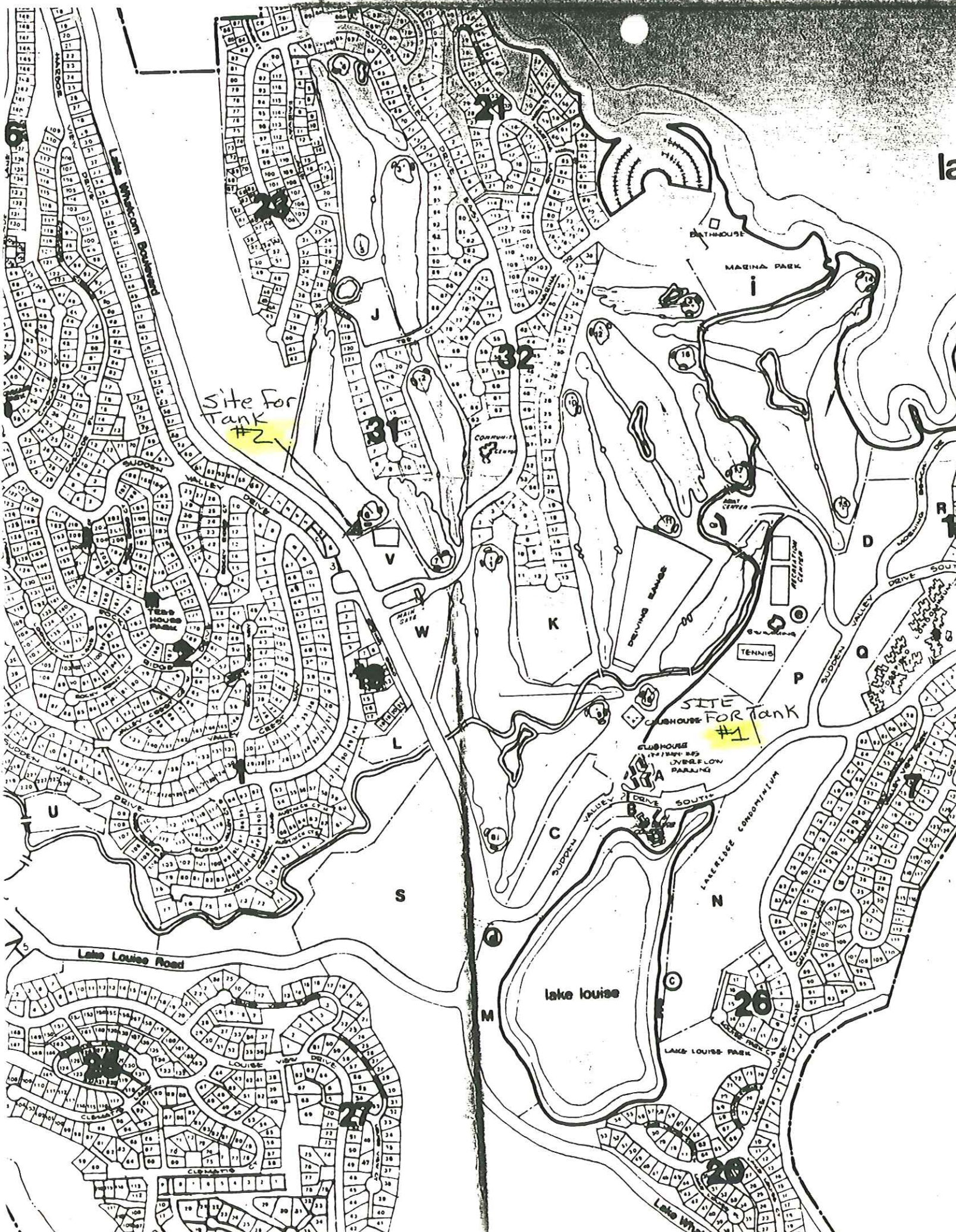


John A. Pinner, P.E.

Enc: Field Inspection Report
Sound Analytical Lab results
Vicinity Map
Photographs
Site Assessment Checklist

cc: Mr. Joe Hickey, D.O.E., Bellevue, Wa
Underground Storage Tank Section, Olympia, Wa
Sudden Valley Management





Site for Tank #2

SITE Clubhouse For Tank #1

BATHHOUSE

MAGINA PARK

DRIVING RANGE

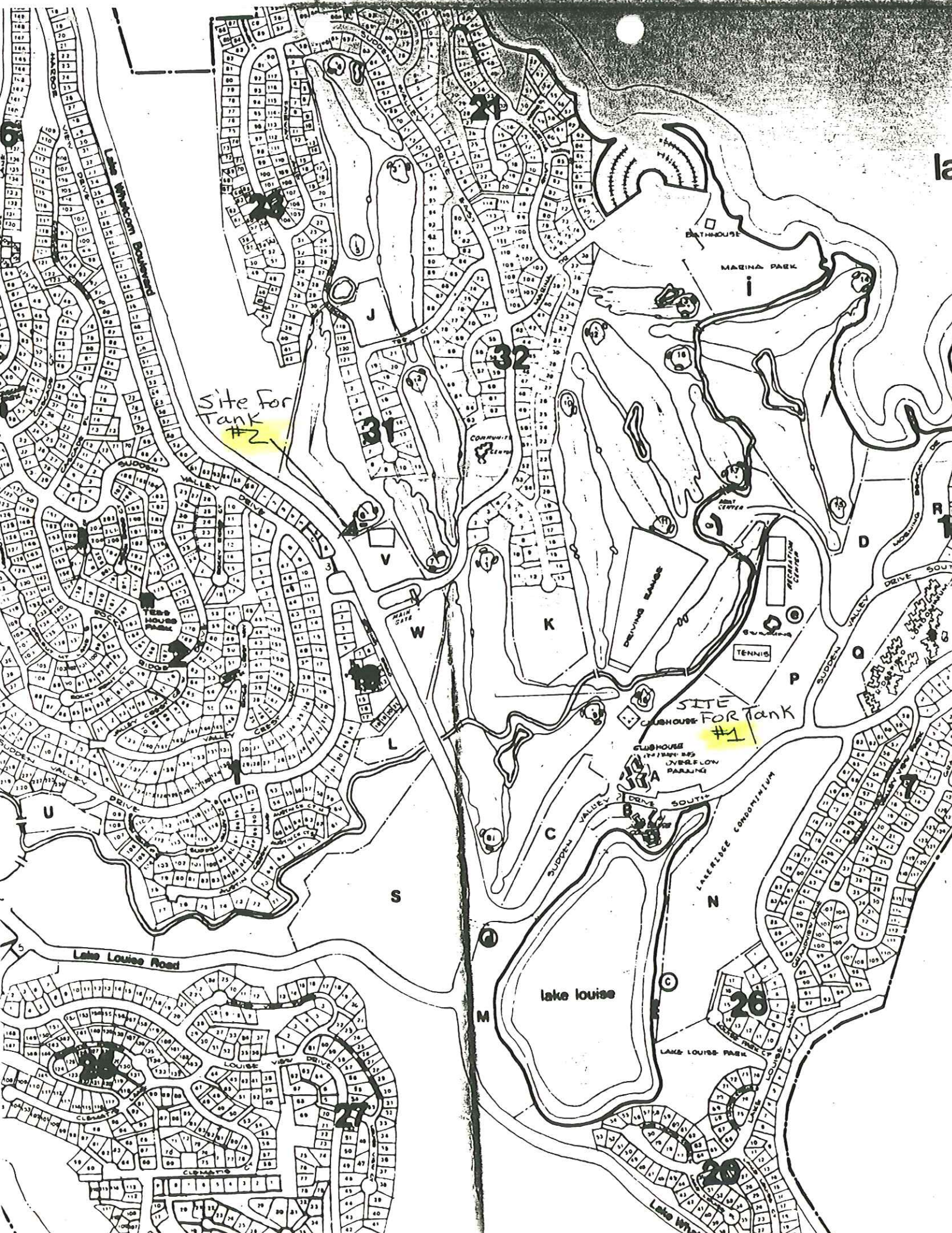
TENNIS

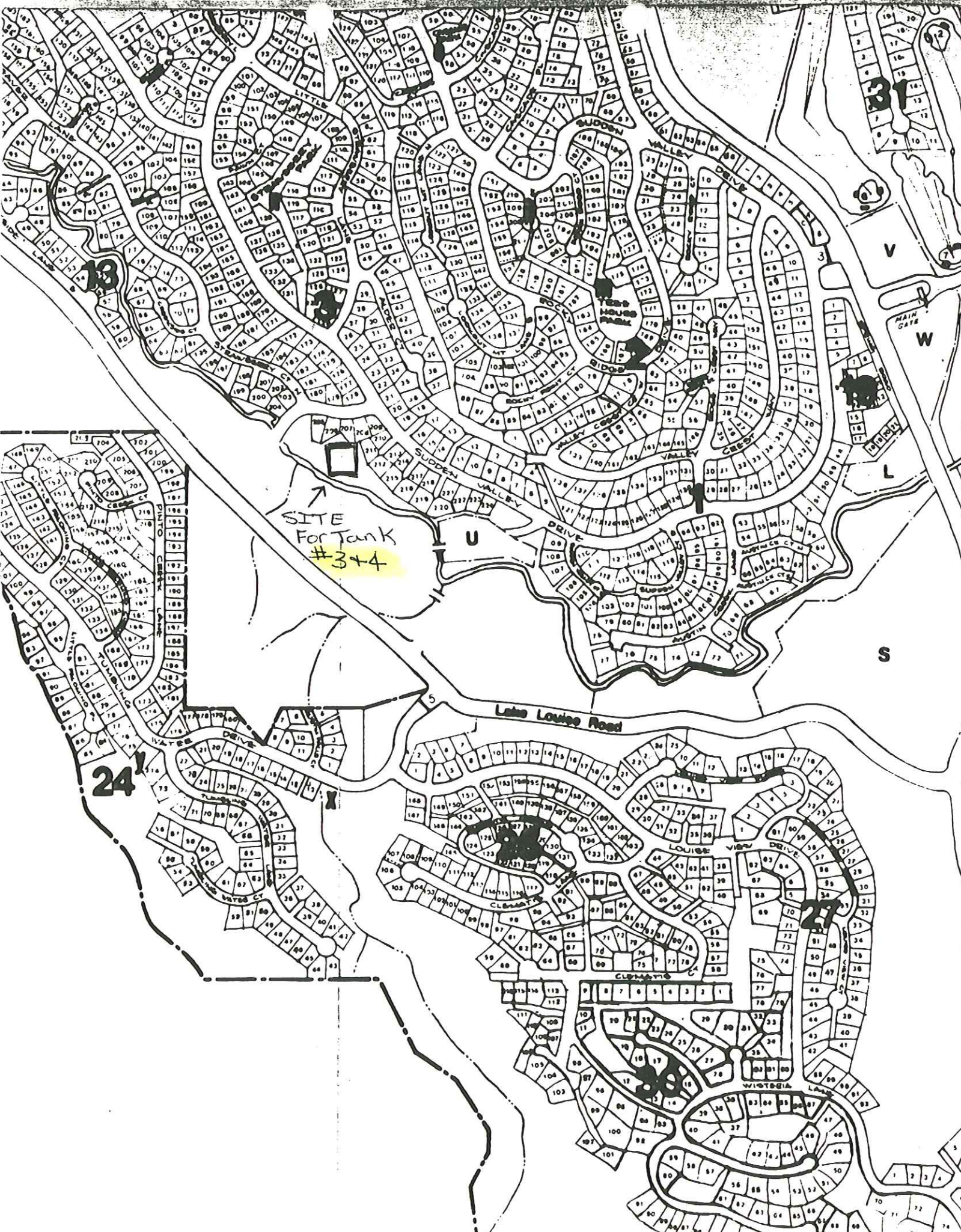
CLUBHOUSE (1987) 85 OVERFLOW PARKING

lake louise

LAKE LOUISE PARK

Lake Louise Road





TANK #1



VIEW OF EXCAVATED TANK NEAR RESTAURNT/CLUB HOUSE



VIEW OF GOLF COURSE FROM BANK THAT TANK WAS LOCATED ON

TANK #2



LOADED AND READY FOR TRANSPORT (TANK LOOKS LIKE NEW)



PIT FROM TANK #2 AT MAINTENANCE BUILDING

TANKS #3 & #4



LOCATION OF TANKS 3 & 4 IN "AREA Z" NEAR SHOP BUILDING



SOUND ANALYTICAL SERVICES, INC.

John A. Pinner & Assoc.
Project: Gerard Enterprises, Sudden Valley
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Lab No. 27748
October 30, 1992

Lab No. 27748-5

Client ID: #5

WTPH-G with BTEX by Method 8020
Date Extracted: 10-15-92
Date Analyzed: 10-20-92

Gasoline, mg/kg (C7-C12)	< 1.0
Benzene, mg/kg	< 0.05
Toluene, mg/kg	< 0.05
Ethyl Benzene, mg/kg	< 0.05
Xylenes, mg/kg	< 0.05

SURROGATE RECOVERY, %

Trifluorotoluene	72
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Continued

SOUND ANALYTICAL SERVICES, INC.

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Lab No. 27748
October 30, 1992

Lab No. 27748-9

Client ID: #6

WTPH-G

Date Extracted: 10-15-92

Date Analyzed: 10-20-92

Gasoline, mg/kg < 1.0
(C7-C12)

SURROGATE RECOVERY, %

Trifluorotoluene 74

Lab No. 27748-10

Client ID: #7

WTPH-G

Date Extracted: 10-15-92

Date Analyzed: 10-20-92

Gasoline, mg/kg < 1.0
(C7-C12)

SURROGATE RECOVERY, %

Trifluorotoluene 66

Continued

SOUND ANALYTICAL SERVICES, INC.

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Project: Gerard Enterprises, Sudden Valley
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Lab No. 27748
October 30, 1992

Lab No. 27748-11

Client ID: #8

WTPH-G

Date Extracted: 10-15-92

Date Analyzed: 10-20-92

Gasoline, mg/kg < 1.0
(C7-C12)

SURROGATE RECOVERY, %

Trifluorotoluene 74

Lab No. 27748-12

Client ID: #11

WTPH-G

Date Extracted: 10-15-92

Date Analyzed: 10-20-92

Gasoline, mg/kg < 1.0
(C7-C12)

SURROGATE RECOVERY, %

Trifluorotoluene 74

Continued

SOUND ANALYTICAL SERVICES, INC.

John A. Pinner & Assoc.
Project: Gerard Enterprises, Sudden Valley
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Lab No. 27748
October 30, 1992

Lab No. 27748-6

Client ID: #9

WTPH-G with BTEX by Method 8020
Date Extracted: 10-15-92
Date Analyzed: 10-20-92

Gasoline, mg/kg (C7-C12)	6.5	X2
Benzene, mg/kg	< 0.05	
Toluene, mg/kg	< 0.05	
Ethyl Benzene, mg/kg	0.18	
Xylenes, mg/kg	< 0.05	

SURROGATE RECOVERY, %

Trifluorotoluene	66
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Continued

SOUND ANALYTICAL SERVICES, INC.

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Lab No. 27748

October 30, 1992

Lab No. 27748-7

Client ID: #10

WTPH-G with BTEX by Method 8020

Date Extracted: 10-15-92

Date Analyzed: 10-20-92

Gasoline, mg/kg < 1.0
(C7-C12)

Benzene, mg/kg < 0.05

Toluene, mg/kg < 0.05

Ethyl Benzene, mg/kg < 0.05

Xylenes, mg/kg < 0.05

SURROGATE RECOVERY, %

Trifluorotoluene 70

Continued

SOUND ANALYTICAL SERVICES, INC.

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Lab No. 27748
October 30, 1992

Lab No. 27748-13

Client ID: #12

WTPH-G

Date Extracted: 10-15-92

Date Analyzed: 10-20-92

Gasoline, mg/kg < 1.0
(C7 - C12)

SURROGATE RECOVERY, %

Trifluorotoluene 63

Lab No. 27748-14

Client ID: #13

WTPH-G

Date Extracted: 10-15-92

Date Analyzed: 10-20-92

Gasoline, mg/kg < 1.0
(C7 - C12)

SURROGATE RECOVERY, %

Trifluorotoluene 65

SOUND ANALYTICAL SERVICES



MARTY FRENCH

SOUND ANALYTICAL SERVICES, INC.

John A. Pinner & Assoc.
Project: Gerard Enterprises, Sudden Valley
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Lab No. 27748
October 30, 1992

Lab No. 27748-8

Client ID: #14

WTPH-G with BTEX by Method 8020

Date Extracted: 10-15-92

Date Analyzed: 10-20-92

Gasoline, mg/kg (C7-C12)	< 1.0
Benzene, mg/kg	< 0.05
Toluene, mg/kg	< 0.05
Ethyl Benzene, mg/kg	< 0.05
Xylenes, mg/kg	< 0.05

SURROGATE RECOVERY, %

Trifluorotoluene	71
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Continued

SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS

4813 PACIFIC HIGHWAY EAST, TACOMA, WASHINGTON 98424 - TELEPHONE (206)922-2310 - FAX (206)922-5047

QUALITY CONTROL REPORT

WTPH-G with BTEX by EPA SW-846 Method 8020

Client: John A Pinner & Assoc.
Lab No: 27748qcl
Matrix: Soil
Units: mg/kg
Date: October 30, 1992

DUPLICATES

Dup No. 27748-14

Parameter	Sample (S)	Duplicate (D)	RPD	FLAGS
Gasoline (C ₇ -C ₁₂)	< 1.0	< 1.0	0.0	
<u>SURROGATE RECOVERY, %</u> Trifluorotoluene	65	70		

RPD = Relative Percent Difference
= $[(S - D) / ((S + D) / 2)] \times 100$

METHOD BLANK

Blank No. 92101957

Parameter	Blank Value
Gasoline (C ₇ -C ₁₂)	< 1.0
Benzene	< 0.05
Toluene	< 0.05
Ethyl Benzene	< 0.05
Xylenes	< 0.05
<u>SURROGATE RECOVERY, %</u> Trifluorotoluene	88

SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS

4813 PACIFIC HIGHWAY EAST, TACOMA, WASHINGTON 98424 - TELEPHONE (206)922-2310 - FAX (206)922-5047

QUALITY CONTROL REPORT

WTPH-D (Diesel Range Organics)

Client: John A Pinner & Assoc.
Lab No: 27748qc2
Matrix: Soil
Units: mg/kg
Date: October 30, 1992

DUPLICATES

Dup No. 27748-4

Parameter	Sample (S)	Duplicate (D)	RPD	Flag
Diesel ($>C_{12}-C_{24}$)	< 25	< 25	0.0	
<u>SURROGATE RECOVERY, %</u> o-terphenyl	62	51		

RPD = Relative Percent Difference
= $[(S - D) / ((S + D) / 2)] \times 100$

METHOD BLANK

Parameter	Blank Value
Diesel	< 25
<u>SURROGATE RECOVERY, %</u> o-terphenyl	70