FACSIMILE COVER SHEET

Date: 3-22-95 Total Number of Pages: 20

To: SCOTT SEERY

Company: _____

Fax #: 510 - 337 - 9335

From: STEVEN MCRAE

Horizon Engineering & Testing
(A Subsidiary of Arizona Instrument Corporation)
4114 East Wood Street - Phoenix, AZ 85040
Telephone: (602)470-1414 Toll Free: (800)229-2930
Fax Number: (602)470-5270

Arizona Instrument

October 29, 1993

Stu Depper
Leather Cleaner TLC
3815 Broadway
Piedmont, CA 94611

Re: Tank Tightness Tests - Leather Cleaner TLC
3815 Broadway , Oakland , CA

Dear Stu,

Precision tests were performed on underground storage tanks at the above locations using the *Tracer Tight®* method of tank tightness testing. We have reviewed the data produced in conjunction with this test for purposes of verifying the results and certifying the tank system. The testing was performed in accordance with *Tracer Tight®* protocol, which meets the criteris set forth in NFPA 329 for a precision tank test.

The results of testing are shown on the following certification page and indicate whether the tank and associated piping passed or failed. Included with the certification is a report consisting of laboratory analysis, condensed data sheet and a site map. If you have any questions do not hesitate to contact us.

Sincerely,

Quinn Johnson
Environmental Technologies

rm

Enclosures

4114 East Wood Street
Phoenix AZ 85040-1941 USA
(602) 470-1414
Fax (602) 470-1888

Arizona Instrument

4114 East Wood Street • Phoenix, Arizona 85040-1941 • (602) 470-1414

CERTIFICATION

Contract No: 5383-93

Test Date: October 25, 1993

Customer: Leather Cleaner TLC
Attn: Stu Depper
3815 Broadway
Piedmont CA 94611

Site: Leather Cleaner TLC
Contact: Stu Depper
3815 Broadway
Oakland CA 94611

Tank No.	Tank Product	Tank Test Result
1	Solvent	Pass
2	Solvent & H20	Pass
3	Solvent	Pass
4	Solvent	Pass
5	Fuel Oil/H20	Pass
6	Solvent	Pass

Reeves, D. —
1/31/93 - 1/31/94
certified by Tracer Research

Technician
Name: David Reeves
License No.: 90-1125
State: CA

Technician's Signature Dawne Reeves

TRC Job #: [illegible]
Date: 10-18-93

CHAIN OF CUSTODY RECORD

Enclose with each shipping order
Form 1003 Page 1 of 1

Client: Leather Cleaner T.L.C. Address: 3815 Broadway City: Oakland State: Ca. Contact: Stu Depper
Site / Program: Leather Cleaner T.L.C. Project #: 5383-93 Phone: (510) 658-8660
Affiliate: A.Z.I. - Horizon Engineering Collected By: David W Reeves #01026
90-1125

Probe #	Depth	Cluster #	Sampling Date	Sampling Time	Vacuum	Remarks	Analysis Requested: TVHC A	B	C	D	Received	Date Analyzed	By	LAB Remarks
1	5'		10/18		2	RUSH								
2					2									
1-2		A			2									
3					2									
2-3		B			2									
4					2									
5					2									
6					2									
5-6		C			2									
7					2									
8					2									
9					2									
Blank					—									

Relinquished By: Dave Reeves Date/Time: 10/18 Received By: Eric Kerber (?) 10-19-93
Time/Date Relinquished By: Time/Date
Relinquished By: Date/Time Relinquished By: Time/Date Relinquished By: Time/Date

Maximum Pump Vacuum (inches Hg) 21 Remarks

Final Sample Disposition Date Billed:

WHITE - Return with samples to lab YELLOW - Return with samples to lab PINK - Return with samples to lab ORANGE - Sender's copy

	Size	Product	Inoc.	Cap	H2O	Inch through Put	Tracer Amount	Depth to Bottom
1	800	SOLVENT	A14	OK	0	13 / 1	/ 1	113
2	800	SOLVENT	D45	OK	18	115 / 1	/ 1	132
3	3500	SOLVENT	B45	OK	1.75	12 / 1	/ 1	156
4	1000	SOLVENT	D45	OK	2.75	44 / 1	/ 1	182
5	8000	FUEL OIL	C24	OK	18	18 / 1	/ 1	175
6	4000	GASOLINE	D10	OK	1	30 / 1	/ 1	157
7								

LineTest: ☐ Tracer ☐ Pressure ☐ Vents ☒ None

Are leak detectors present? (Circle One) Yes (No)

Are leak detectors being tested? (Circle One) Yes (No)

Ground Water Conditions: (Check One)

Stable ☐ High After Heavy Rain ☐

Fluctuating ☐ Low After Drought ☐

Tidal Influence ☒

01047

Date 10-4 Tech. C. YARN License # 90-1047

Site Name LEATHER CLEANER TLC

Address 3815 BROADWAY Contact STU DEPPER

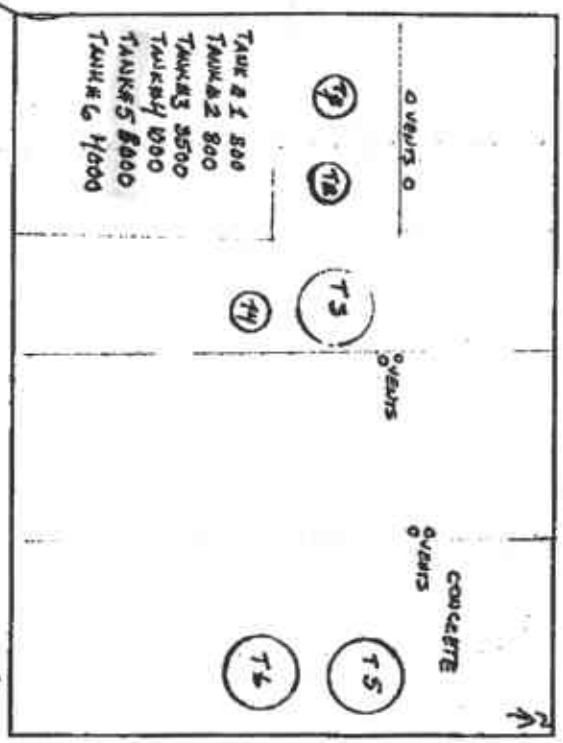
OAKLAND CA 94611 Phone 510-658-5660

City State Zip

Field Note NO LINES OR LDTS TESTED

TANK #2 INNOCULATED WITH ALCOHOL TRACER

MIX 30 ALSO TANK #5 ALKOHOL + TRACER MIX



Tanks 2 + 5 had water in them

Tracer Research Corporation

PREPARED FOR:

Horizon Engineering & Testing
936 E. Javelina
Suite 1
Mesa, Arizona 85214

Tracer Tight® Test
of
6 Underground Storage Tanks
at the
Leather Cleaners T.L.C.
3815 Broadway
Oakland, CA
October 25, 1993

SUBMITTED BY:

Jim Cook
TRACER RESEARCH CORPORATION

JOB # 93-5253-01

TABLE OF CONTENTS

INTRODUCTION

Horizon Engineering and Tracer Research Corporation performed Tracer Tight® leak testing of 6 underground storage tanks at the Leather Cleaners T.L.C. site in Oakland, CA. The tanks were inoculated with tracer on [redacted]. Samples were collected on October 18, [redacted] with sample vacuums of 2 inches Hg. The following table shows the tank size, type of tracer in each tank, and the product through put factor in the first 72 hours after inoculation.

TANK #	SIZE(GAL)	TRACER	FACTOR
Tank 1	800	A	1
Tank 2	800	D	1
Tank 3	3,500	B	1
Tank 4	1,000	D	1
Tank 5	1,000	C	1
Tank 6	4,000	D	1

The following table shows the type of product in the tank, the product level and the water level in each tank measured in inches at time of inoculation and sampling.

		AT INOCULATION		AT SAMPLING	
TANK #	PRODUCT	H_2O	PRODUCT	H_2O	PRODUCT
Tank 1	Solvent	0.00	13.00	0.00	15.25
Tank 2	Solvent& H2O	18.00	115.00	22.14	132.00
Tank 3	Solvent	1.75	12.00	1.75	11.00
Tank 4	Solvent	2.75	44.00	2.75	21.50
Tank 5	Fuel Oil/H2O	18.00	18.00	18.00	18.00
Tank 6	Solvent	1.00	30.00	1.00	28.00

The depth to water in the tank pit was determined to be 7 feet below grade. The groundwater conditions are stable.

CONCEPT OF OPERATION AND IMPLEMENTATION

The tracer leak detection method relies upon the addition of a highly volatile liquid chemical to the product in the tank. If a leak occurs in the underground storage system, product is released into the surrounding soil. The tracer escapes from the product by vaporization and disperses into the soil by molecular diffusion. Various means are used to sample the soil vapors in the immediate vicinity of the underground storage tanks and associated piping. Each probe has an effective detection radius of approximately 10 feet. This means that a given probe should detect a leak anywhere within the area described by the 10 foot radius around the probe. The tracer must be placed in the tank at least two weeks prior to the probe sampling for this method to be effective. This process of leak detection by placing a liquid or gas tracer in a liquid product followed by detection of the tracer underground in the vapor phase is protected under *TRACER* patents.

Pipelines are located using radio frequency induction and/or connection equipment.

The throughput factor is used to determine the amount of tracer chemical used to inoculate a given tank. The throughput factor is a multiplier and is based on the number of tank refills expected within the first three days after inoculation. Tracer is added to the tank in an amount that will insure adequate tracer concentration after receiving all product deliveries scheduled for the first three days after inoculation.

LEAK DETECTION CRITERIA

The classification of leakage is based on the presence or absence of tracer.

PASS	FAIL
Criteria:	Criteria:
NO tracer detected	tracer detected

If requested, total volatile hydrocarbon (TVHC) concentrations are measured to give additional information about site conditions. The TVHC data provide information about the severity of the leakage, and the degree of any possible environmental damage that may have occurred. The TVHC data is not used as a criterion factor to determine the status of a particular tank(s) or piping and is provided as supplemental information only.

Tracer Research Corporation

CERTIFICATION

Job Number : 93-5253-01

Date : 10/25/93

Location: Leather Cleaners T.L.C.
3815 Broadway
Oakland, CA

TANK #	PRODUCT	SIZE(gal)	TRACER	LEAK STATUS *TANK*	*LINE*
Tank 1	Solvent	800	A	Pass	N/A
Tank 2	Solvent& H2O	800	D	Pass	N/A
Tank 3	Solvent	3,500	B	Pass	N/A
Tank 4	Solvent	1,000	D	Pass	N/A
Tank 5	Fuel Oil/H2O	1,000	C	Pass	N/A
Tank 6	Solvent	4,000	D	Pass	N/A

Tracer Research Corporation certifies that the tanks and product distribution lines listed in the above table have been tested by means of Tracer Tight®, which meets the criteria set forth in NFPA 329 for a precision leak test. According to EPA standard test procedures for evaluating leak detection methods, the Tracer Tight® method is capable of detecting leaks of 0.05 gallons per hour with a Probability of Detection (P_D) of 0.97 and Probability of False Alarm (P_{FA}) of 0.029.

Submitted by:

Jim Cook
Tracer Research Corporation

Testers State License Number: N/A

The following criteria are used for the classification of leakage based on the presence or absence of tracer.

PASS

Criteria:

No tracer detected

FAIL

Criteria:

tracer detected

APPENDIX A - Results of U.S. EPA Test Evaluation

Tracer Research Corporation

Results of U.S. EPA Standard Evaluation Nonvolumetric Tank Tightness Testing Method

This form tells whether the tank tightness testing method described below complies with the performance requirements of the federal underground storage tank regulation. The evaluation was conducted by the equipment manufacturer or a consultant to the manufacturer according to the U.S. EPA's "Standard Test Procedure for Evaluating Leak Detection Methods: Nonvolumetric Tank Tightness Testing Methods." The full evaluation report also includes a form describing the method and a form summarizing the test data.

Tank owners using this leak detection system should keep this form on file to prove compliance with the federal regulations. Tank owners should check with State and local agencies to make sure this form satisfies their requirements.

Method Description

Name: Tracer Research Corporation
Vendor: Tracer Research Corporation
3855 North Business Center Drive
(street address)
Tucson (city) Arizona (state) 85705 (zip) (602) 888-9400 (phone)

Evaluation Results

This method, which declares a tank to be leaking when a threshold amount of Tracer chemical is detected as a vapor in the soil outside the tank has an estimated probability of false alarms [P(FA)] of 2.9 % based on the test results of 1 false alarms out of 34 tests. A 95% confidence interval for P(FA) is from 0 to 8.5 %.

The corresponding probability of detection [P(D)] of a 0.005 gallon per hour leak is 97.1 % based on the test results of 33 detections out of 34 simulated leak tests. A 95% confidence interval for P(D) is from 91.5 to 100 %.

Does this method use additional modes of leak detection? [ ] Yes [X] No
If Yes, complete additional evaluation results on page 3 of this form.

Based on the results above, and on page 3 if applicable, this method [X] does [ ] does not meet the federal performance standards established by the U.S. Environmental Protection Agency (0.10 gallon per hour at P(D) of 95% and P(FA) of 5%).

Test Conditions During Evaluation

The evaluation testing was conducted in a varying size gallon [X] steel [X] fiberglass tank that was _____ inches in diameter and ___ inches long, installed in _____ backfill.

The ground-water level was varying inches above the bottom of the tank.

Nonvolumetric TTT Method Tracer Tight (TM)
Version _____

Test Conditions During Evaluation (continued)

The tests were conducted with the tank varying percent full.

The temperature difference between product added to fill the tank and product already in the tank ranged from N/A °F to N/A °F, with a standard deviation of N/A °F.

STODDARD

The product used in the evaluation was varying gasoline, diesel, jet fuel and heating oil.

This method may be affected by other sources of interference. List these interferences below and give the ranges of conditions under which the evaluation was done. (Check None if not applicable.)
[ ] None

Interferences	Range of Test Conditions
_____	_____
_____	_____
_____	_____

Limitations on the Results

- The performance has not been substantially changed.
- The vendor's instructions for using the method are followed.
- The tank contains a product identified on the method description form.
- The tank capacity is ___ gallons or smaller.
- The difference between added and in-tank product temperatures is no greater than + or - _____degrees Fahrenheit.

[ ] Check if applicable:
Temperature is not a factor because Tracer detection outside of tank does not depend on fuel temperature inside tank. Temperature does not affect the amount of Tracer released.

- The waiting time between the end of filling the test tank and the start of the test data collection is at least ___ hours.
- The waiting time between the end of "topping off" to final testing level and the start of the test data collection is at least <x hours.
- The total data collection time for the test is at least ___ hours.
- The product volume in the tank during testing is 0-100 % full.
- This method [ ] can [ ] cannot be used if the ground-water level is above the bottom of the tank.

Other limitations specified by the vendor or determined during testing:

1. After Tracer chemical is added, you must wait at least 14 days to collect samples from vapor probes. 2. Alternative approaches must be used if top of tank is under water. These approaches are available through Tracer Research Corp.

Nonvolumetric TTT Method Tracer Tight (TM)
Version _____

> **Safety Disclaimer: This test procedure only addresses the issue of the method's ability to detect leaks. It does not test the equipment for safety hazards.**

Additional Evaluation Results (if applicable)

This method, which declares a tank to be leaking when _____ has an estimated probability of false alarms [P(FA)] of _____ % based on the test results of _____ false alarms out of ___ tests. Note: A perfect score during testing does not mean that the method is perfect. Based on the observed results, a 95% confidence interval for P(FA) is from 0 to _____ %.

The corresponding probability of detection [P(D)] of a _____ gallon per hour leak is _____% based on the test results of _____ detections out of _____ simulated leak tests. Note: A perfect score during testing does not mean that the method is perfect. Based on the observed results, a 95% confidence interval for P(D) is from 0 to _____%.

> **Water detection mode (if applicable)**

Using a false alarm rate of 5%, the *minimum water level* that the water sensor can detect with a 95% probability of detection is N/A inches.

Using a false alarm rate of 5%, the *minimum change in water level* that the water sensor can detect with a 95% probability of detection is N/A inches.

Based on the minimum water level and change in water level that the water sensor can detect with a false alarm rate of 5% and a 95% probability of detection, the *minimum time* for the system to detect an increase in water level at an incursion rate of 0.10 gallon per hour is N/A minutes in a N/A - gallon tank.

Certification of Results

I certify that the nonvolumetric tank tightness testing method was installed and operated according to the vendor's instruction. I also certify that the evaluation was performed according to the standard EPA test procedure to nonvolumetric tank tightness testing methods and that the results presented above are those obtained during the evaluation.

H. Kendall Wilcox
(printed name)

H. Kendall Wilcox
(signature)

October 4, 1990
(date)

Ken Wilcox Associates
(organization performing evaluation)

Blue Springs, Missouri 64015
(city, state, zip)

(816) 229-0860
(phone number)

APPENDIX B - ANALYTICAL DATA

Tracer Research Corporation

Horizon/Leather Cleaner, TLC
3815 Broadway, Oakland, CA

93-5253-01

10/26/93 CONDENSED DATA Page 1

Location	Compound	Concentration
001-5	A	0.0000
001-5	B	0.0000
001-5	C	0.0000
001-5	D	0.0000
[redacted]	[redacted]	[redacted]
002-5	A	0.0000
002-5	B	0.0000
002-5	C	0.0000
002-5	D	0.0000
002-5	[redacted]	[redacted]
003-5	A	0.0000
003-5	B	.0002
003-5	C	0.0000
003-5	D	0.0000
003-5	TVHC	[redacted]
004-5	A	0.0000
004-5	B	0.0000
004-5	C	0.0000
004-5	D	0.0000
004-5	TVHC	0.0000
005,006	A	0.0000
005,006	B	0.0000
005,006	C	0.0000
005,006	D	0.0000
005,006	TVHC	0.0000
007-5	A	0.0000
007-5	B	0.0000
007-5	C	0.0000
007-5	D	0.0000
007-5	TVHC	0.0000

TVHC in mg/L, Tracers in mg/L
0.0000 = Not detected Detection Limits: Tracer (0.0001)
-99999999999 = No sample TVHC (0.05)

Horizon/Leather Cleaner, TLC
3815 Broadway, Oakland, CA

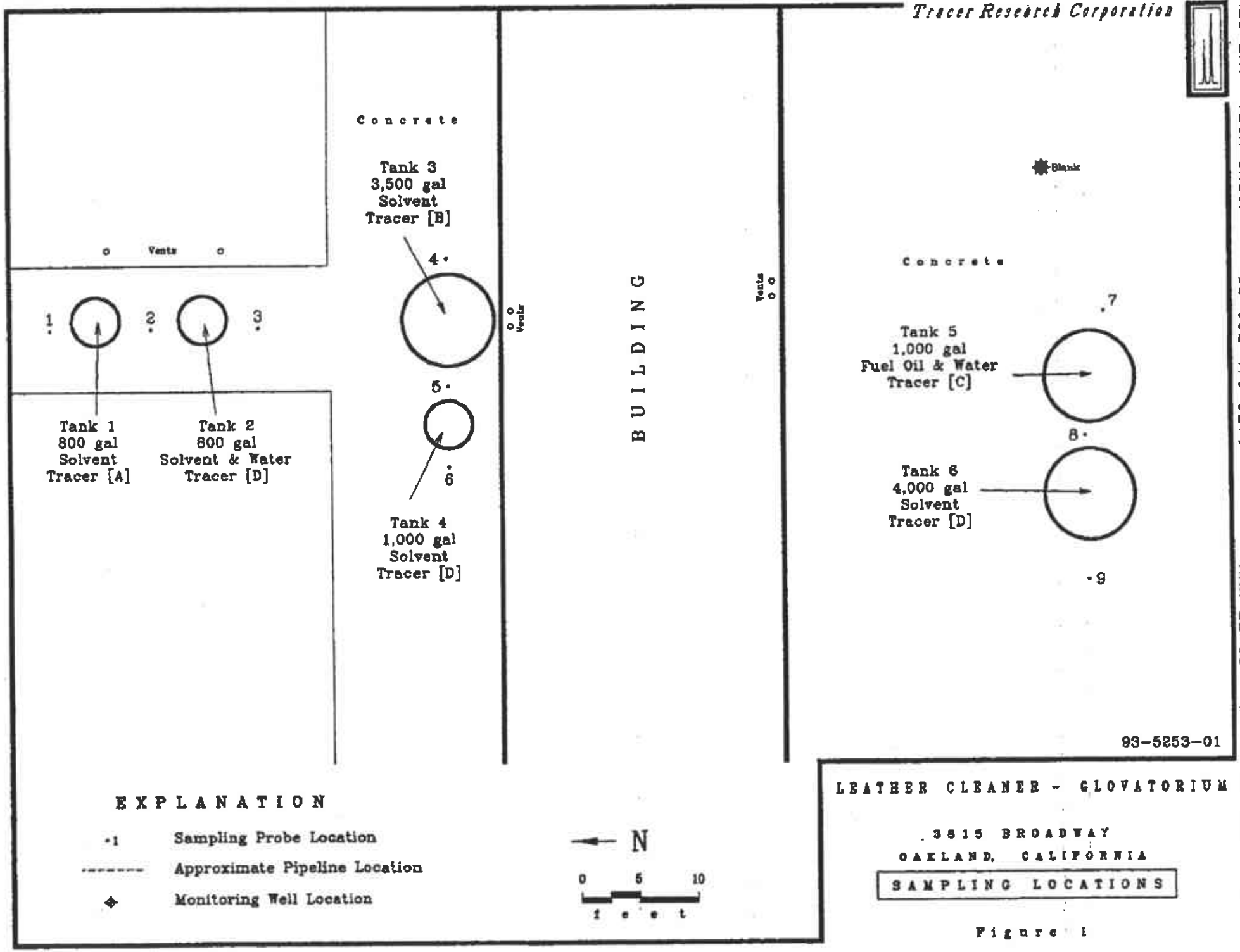
93-5253-01

Tracer Research Corporation

10/26/93 CONDENSED DATA

Location	Compound	Concentration
008-5	A	0.0000
008-5	B	0.0000
008-5	C	0.0000
008-5	D	0.0000
008-5	TVHC	0.0000
009-5	A	0.0000
009-5	B	0.0000
009-5	C	0.0000
009-5	D	0.0000
009-5	TVHC	0.0000
BLANK01	A	0.0000
BLANK01	B	0.0000
BLANK01	C	0.0000
BLANK01	D	0.0000
BLANK01	TVHC	0.0000

TVHC in mg/L, Tracers in mg/L
0.0000 = Not detected Detection Limits: Tracer (0.0001)
-99999999999 = No sample TVHC (0.05)



LEATHER CLEANER - GLOVATORIUM

3815 BROADWAY
OAKLAND, CALIFORNIA

SAMPLING LOCATIONS

Figure 1

Tracer Research Corporation

Horizon/Leather Cleaner, TLC
3815 Broadway, Oakland, CA

93-5253-01

10/26/93 CONDENSED DATA Page 1

Location	Compound	Concentration
001,002	A	0.0000
001,002	B	.0001
001,002	C	0.0000
001,002	D	0.0000
001,002	TVHC	20.3560

TVHC in mg/L, Tracers in mg/L
0.0000 = Not detected Detection Limits: Tracer (0.0001)
-99999999999 = No sample TVHC (0.05)

SITE INFORMATION FORM

Sampling Technician Name: DAVID REEVES Tracer ID. No.: 01026

License No.: 90-1125

Tracer Job No.:

Site Name: LEATHER CLEANER TLL GLOVATORIUM Job No.: 5383-93

Site Address: 3815 BROADWAY City: OAKLAND State: CA Zip: 94611

Precision Test ☑
Soil Gas Survey ☐
Water Ingress ☐
Leak Delineation ☐
Monthly Monitoring ☐

Date of inoculation: 10-4-93

Date of sampling: 10-18-93

Depth to ground water in tank pit at sampling: GROUND WATER IS AT 7'

Ground water condition: Check one ✓

Stable ☐ Fluctuating seasonal ☐ Tidal influence ☒ High after heavy rain ☐ Low after drought ☐

Tank No.	Initial test	Annual test	Retest	Volume in gallons	Product	Tracer type	Through put factor	Tracer amount (in cans)	At inoculation: H_2O level in tank (in inches)	At inoculation: Product level (in inches)	At sampling: H_2O level in tank (in inches)	At sampling: Product level (in inches)	Depth to Bottom of tank (in inches)	
1	☐	☒	☐	800	SOLVENT	A14	1	1	0	13	0	15 1/4	113	9.4'
2	☐	☒	☐	800	SOLVENT + WATER	D45	1	1	18	115	22 1/4	132	132	11
3	☐	☒	☐	3500	SOLVENT	B45	1	1	1.75	12	1 3/4	11	156	13
4	☐	☒	☐	1000	SOLVENT	D45	1	1	2.75	44	23/4	21 1/2	182	15.2
5	☐	☒	☐	8000	FUEL OIL + WATER	C24	1	1	18	18	18	18	175	14.6
6	☐	☒	☐	4000	SOLVENT. ~~UNKNOWN~~	D101	1	1	1	30	1	28	157	13.1
	☐	☐	☐											
	☐	☐	☐											

Comments: NO LINES OR LOTS TESTED Constant spills around tank #1-2-3-4
TANK #2 INNOCULATED WITH ALCOHOL TRACER MIX
TANK #5

Tracer Research Corporation

U.C.T. Letters

7-10-89	Notice of Violation
11-20-89	2nd Notice
1-22-90	Final Notice
8-20-90	Final Notice
1-8-91	Interim measures
1-13-94	5-year permit form letter
5-1-94	5-year permit follow-up letter
9-23-94	Notice to remove tanks

Concerns:

1) Copy of Lab analysis performed on waste
2) manifest for disposal of all waste after 10/92
3) Date 'The Castle Cleaners' went out of business
4) Are drums (of waste) still in building?
   If not - where did they go?
5) Establish deadline to remove waste from building
6) What % of floor space is not being rented out
7) Boilers - if boiler is disconnected, then boiler is in operation - copy of permit for operating sm. boiler from BAAQMD.