UST CLOSURE SITE ASSESSMENT

DEPT. OF PUBLIC WORKS
2121 PEGER ROAD
FAIRBANKS, ALASKA

Submitted To:

Rowcon Services
3521 Buffalo Lane
Fairbanks, Alaska 99712

Submitted By:

AGRA Earth & Environmental, Inc.
3504 Industrial Avenue, Suite 5
Fairbanks, Alaska 99701

Patrick Cox
Staff Engineer

Doug Buteyn
Senior Project Manager

July 2000
0-024-01281-3

AGRA
ENGINEERING GLOBAL SOLUTIONS

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1.0 INTRODUCTION

In July 2000, AGRA Earth & Environmental, Inc. (AGRA) completed the Closure Site Assessment for a single underground storage tank (UST) at the City of Fairbanks Department of Public Works Building, 2121 Peger Road , Fairbanks, Alaska. The UST system was composed of a 2000-gallon buried used oil tank and associated piping. The property is located in Section 16, Township 1 South, Range 1 West, Fairbanks Meridian. Figure 1 shows the location of the project site. Figure 2 indicates the site vicinity and the location of the closed UST. Copies of Alaska Department of Environmental Conservation (ADEC) closure documentation, including a signed copy of the Closure Checklist and Site Assessment Summary Form, appear in Appendix A.

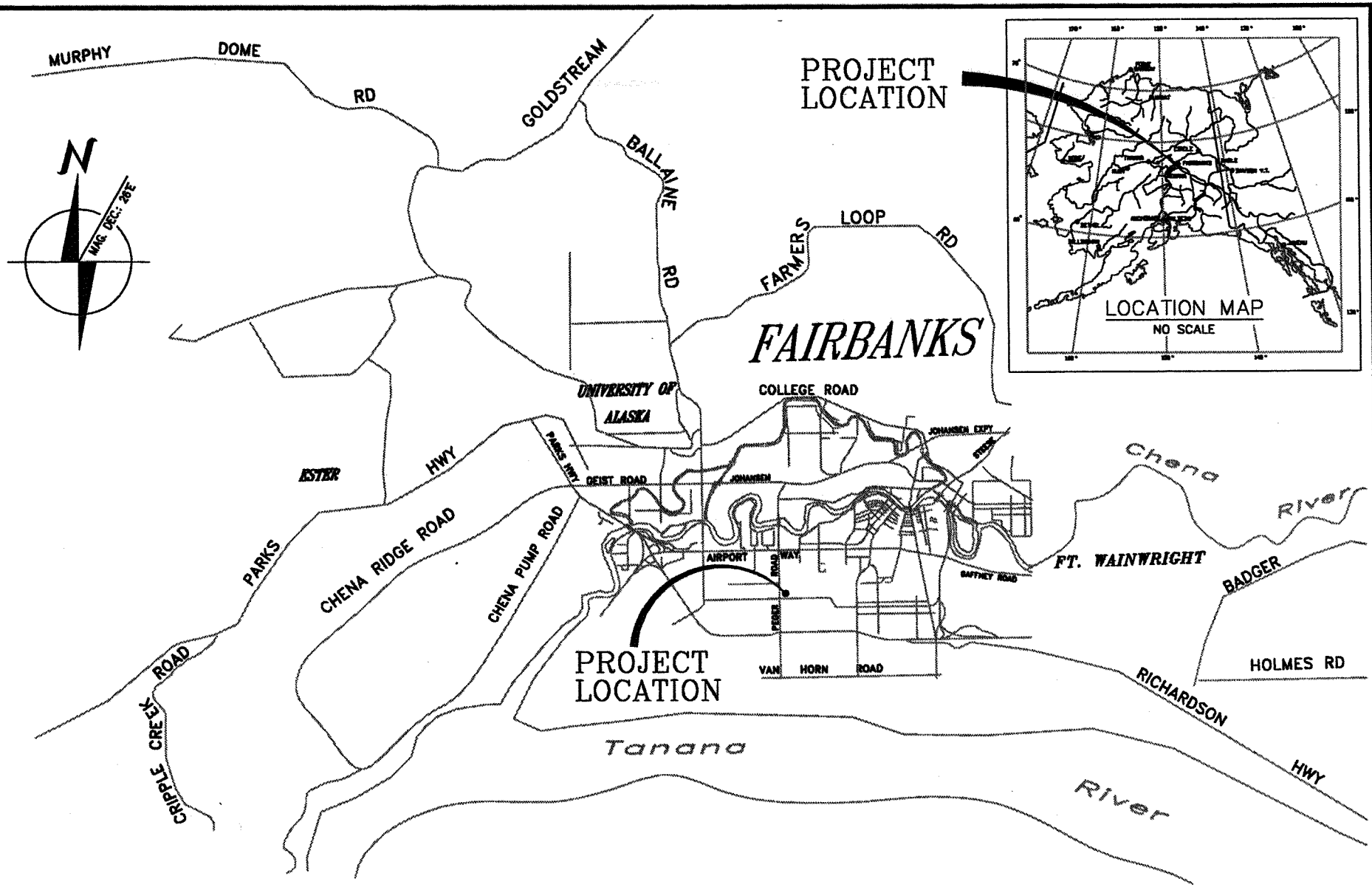
The tank closure was completed in accordance with a contract between the City of Fairbanks and Rowcon Services. AGRA's service were provided under subcontract to Rowcon Services. AGRA has prepared this UST Closure Site Assessment to document the tank decommission process and to present closure soil sample analytical results. This report contains:

- A summary of work conducted by Rowcon Services (Rowcon) and AGRA personnel;
- Observations noting subsurface conditions, soil types, stratification, and zones of potential hydrocarbon impacts;
- Figures depicting the site;
- A copy of the laboratory data for soil samples submitted for analysis; and
- Photographs of work in progress.

In addition, we provide our recommendations regarding tank closure.

1.1 PROJECT DESCRIPTION

The objective of the project was to decommission (in place) the referenced tank in accordance with the ADEC *Underground Storage Tanks* regulations (18 AAC 78) using procedures detailed in American Petroleum Industry Recommended Practice 1604, *Closure of Underground Petroleum Storage Tanks*. AGRA was responsible for conducting site monitoring, collecting representative soil samples from the bottom of the excavation near the tank, and completing this UST Closure Site Assessment report. Rowcon personnel performed the tank closure including soil removal under the supervision of Mr. Keith Rowland (*Certified UST License No. 254*). Excavation closure samples and samples collected from the temporarily stockpiled soil were submitted to the AGRA Environmental Chemistry Laboratory in Portland, Oregon. The project included the following activities: (1) decommissioning one 2000-gallon single-walled metal underground used oil tank; (2) environmental monitoring, soil screening, and documentation of field activities; (3) collecting soil samples for laboratory analysis as required by ADEC regulations; and (4) preparing this summary report.



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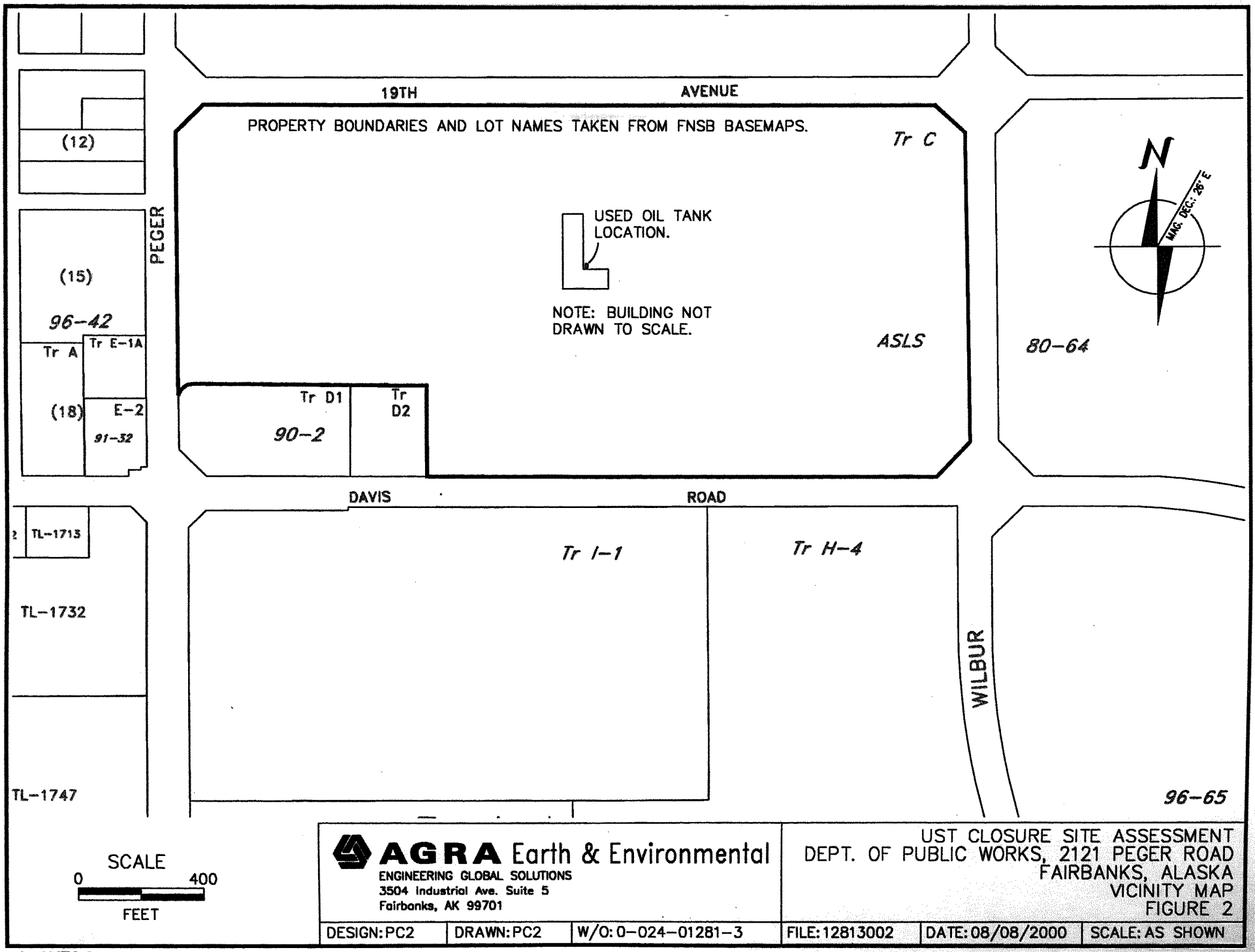
UST CLOSURE SITE ASSESSMENT
DEPT. OF PUBLIC WORKS, 2121 PEGER ROAD
FAIRBANKS, ALAKSA
LOCATION MAP
FIGURE 1

DESIGN: PC2	DRAWN: PC2	W/O: 0-024-01281-3	FILE: 12813001	DATE: 08/08/2000	SCALE: AS SHOWN

An AMEC Company



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UST CLOSURE SITE ASSESSMENT
DEPT. OF PUBLIC WORKS, 2121 PEGER ROAD
FAIRBANKS, ALASKA
VICINITY MAP
FIGURE 2

DESIGN: PC2	DRAWN: PC2	W/O: 0-024-01281-3	FILE: 12813002	DATE: 08/08/2000	SCALE: AS SHOWN

An AMEC Company

1.2 SITE DESCRIPTION

The project site is located at 2121 Peger Road in Fairbanks and consists of a one-story building that provides storage and garage space for the Department of Public Works. The UST served as storage for used oil. The tank area is located in the inside corner of the yard where the two sections of the building meet to form an "L"shape. The tank's long axis is oriented north-south, with six feet of clearance from the eastern side of the building and four feet of clearance from the northern side. The ground surface overlying the tank area was covered with two inches of asphalt, with two feet of soil above the tank.

The primary drainage direction is to the east. Based on data collected at nearby locations, the depth to groundwater is estimated to be approximately ten to fifteen feet below the ground surface.

The soil overlying the tank appeared to be a moist brown sandy gravel. Climatic conditions during this project included a temperature of sixty degrees Fahrenheit with partly cloudy skies. Excavated soil was temporarily stockpiled on the ground surface adjacent to the excavation area in a single stockpile covering approximately 16 by 12 feet.

2.0 METHODS

In each of the following subsections, AGRA provides a summary of pertinent field methods used during the tank closure and site assessment operations.

2.1 TANK DECOMMISSION AND SOIL EXCAVATION

Rowcon personnel prepared the tank for in-site decommissioning in general agreement with the American Petroleum Institute Recommended Practice 2015 *Removal and Disposal of Used Underground Petroleum Storage Tanks*. The following procedures were used during tank closure:

- Careful excavation exposed the top and east side of the tank;
- A model 1314 explosimeter was used to monitor for explosive vapors and to determine that safe handling conditions were present in the tank interior during closure;
- 150 gallons of used oil were pumped from the tank and removed from the site for storage and subsequent thermal remediation at OIT, Inc.;
- Rowcon personnel entered the tank (in accordance with OSHA requirements under section 29 CFR, 1910.146) to wash the interior and seal pipes; and
- The tank was filled with sand to render it permanently unusable for future fuel storage.

The 2000-gallon tank was decommissioned in place on July 7, 2000. Clean soil was stockpiled on site adjacent to the excavation during site work. The excavated clean soil and imported fill were used as backfill in the surrounding tank area to finish the excavation.

2.2 ENVIRONMENTAL ASSESSMENT MONITORING

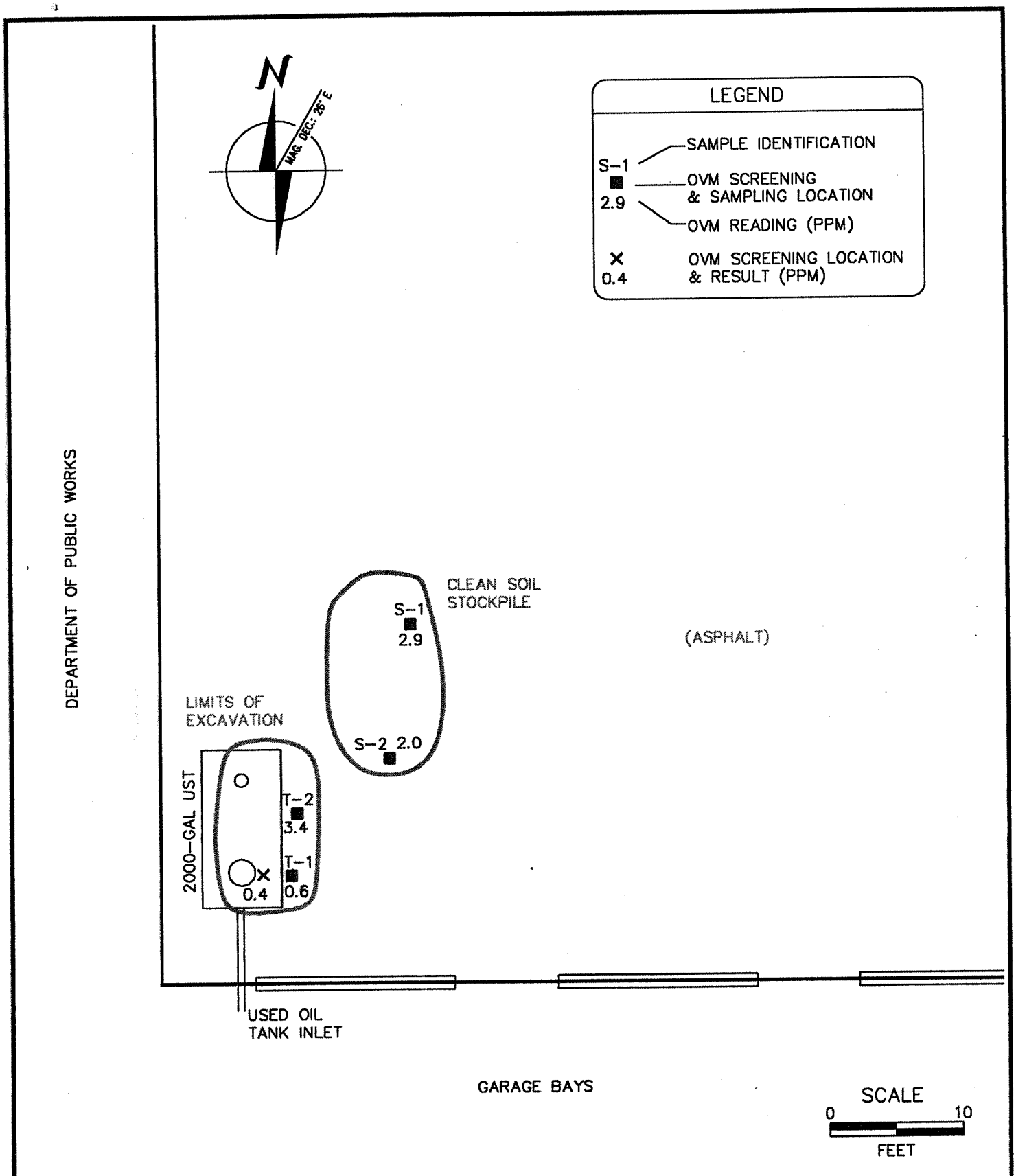
AGRA personnel performed assessment monitoring in accordance with the *ADEC Underground Storage Tanks Procedures Manual.* During the soil excavation and tank decommission process, AGRA personnel were on site to observe and document the project activities. A photographic log is included as Appendix B of this report. Additional site-specific field documentation included:

- Qualitative observations of the excavated soil;
- Field screening of the excavated soil using a Mini-Rae model PGM -76 Photoionization Device (PID) ;
- Visual inspection for holes and other signs of potential leakage during examination of the tank; and
- Field drawings depicting the location of the tank, excavation limits, soil sample locations, and associated soil screening measurements.

2.3 SAMPLE COLLECTION AND LABORATORY ANALYSES

Field screening samples were collected by filling a clean, sealable plastic bag approximately one-third full of soil. The screening samples were labeled using the same number as the analytical sample, and the sample number was written directly on the bag using an indelible marker. Prior to screening, each sample was warmed for approximately 15 minutes inside the field vehicle. Sample analysis consisted of inserting the PID probe into a small opening at the top of the sample bag and allowing the headspace gas inside the bag to be pumped through the instrument. The PID provides a digital display, in parts per million (ppm), of the concentration of volatile organic compounds in the headspace gas. For each sample, the maximum reading observed on the display was recorded as the headspace gas concentration for that sample.

Upon completion of tank closure operations, AGRA personnel collected two representative soil samples (T-1 and T-2) from beside the tank, at a depth of 8 feet, in accordance with ADEC regulations. Based on the reported use of the tank to store used oil, the samples were analyzed for the following hydrocarbon contaminants: diesel range organics (DRO) and residual range organics (RRO) by ADEC method AK102/103; benzene, toluene, ethylbenzene, xylene (BTEX) and gasoline range organics (GRO) by ADEC method AK101; volatile organic compounds (VOC) by ADEC method AK8260. Additionally, the samples were analyzed for the following heavy metals: arsenic (As), beryllium (Be), cadmium (Ca), chromium (Cr), lead (Pb), nickel (Ni), and vanadium (V). The samples for GRO/BTEX analysis were collected in encore samplers and preserved in methanol within 24 hours. AGRA personnel also collected two samples (SS-1 and SS-2) from the clean soil stockpile to characterize those materials. The samples were obtained from hand-excavated test pits advanced approximately 18 inches into the soil pile to allow sampling of a fresh surface. A quality assurance (QA) duplicate sample was collected from sample SS-1. Sample locations and the



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UST CLOSURE SITE ASSESSMENT
DEPT. OF PUBLIC WORKS, 2121 PEGER ROAD
FAIRBANKS, ALASKA
SITE MAP
FIGURE 3

DESIGN: PC2	DRAWN: PC2	W/O: 0-024-01281-3	FILE: 12813003	DATE: 08/30/2000	SCALE: AS SHOWN

An AMEC Company

results of direct PID field screening are shown in Figure 3. Analytical samples were submitted to AGRA's Environmental Chemistry Laboratory in Portland, Oregon. A trip blank accompanied the samples during field work and transport to the laboratory.

3.0 OBSERVATIONS

In each of the following subsections, AGRA details the observations noted during the tank closure and soil removal operations.

3.1 TANK AND PIPING

The tank was observed to be a standard 2000-gallon single-walled metal tank situated approximately two feet bgs. The long axis of the tank was oriented roughly north-south. Upon exposure of the tank, AGRA personnel inspected the tank metal, which appeared to be in good condition with minor surface rusting and no noticeable dents or abrasions. AGRA personnel observed no holes or punctures in the tank, or other signs of leakage, during this assessment. System piping consisted of a line connecting the tank to the adjacent building. The piping was capped at the tank inlet point and sealed with grout at the opposite end (within the building) by Rowcon personnel. The photographs in Appendix B show the condition of the tank during this assessment.

3.2 SUBSURFACE CONDITIONS

The excavation associated with the 2000-gallon UST covered an area of roughly 108 square feet at ground surface with an approximate depth of eight to nine feet at the center of the excavation. AGRA personnel visually classified the soils encountered during site work as moist brown sandy gravel (*Unified Soil Classification: GW*) extending to the bottom of the excavation.

PID screening of the soil excavated from the top of the tank produced organic vapor concentrations of 0.4ppm. Soils screened at 8 feet (sample sites T-1 and T-2) produced concentration levels of 0.6ppm and 3.4ppm, respectively. The soil samples were relatively dry to moist, and groundwater was not observed during the excavation process.

The soil excavated during the tank and piping closure was placed in a stockpile measuring approximately 16 by 12 feet. PID screening measurements taken from sample locations S-1 and S-2 in the stockpile were 2.9ppm and 2.0ppm, respectively.

4.0 LABORATORY RESULTS

Tables 1 and 2 summarize the data obtained from the tank area and the stockpiled soil. Not presented in those tables are the results for the VOC analyses which included non-detectable concentrations of all VOC analytes in all samples. A copy of the laboratory report appears in Appendix C.

TABLE 1
Summary of Sample Analytical Data

(hydrocarbons)

Sample ID	PID (ppm)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	RRO (mg/kg)
Cleanup Limit(b)		0.02	5.4	5.5	78	300	250	11,000
T-1	.6	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.15)	ND(5)	ND(25)	ND(100)
T-2	3.4	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.15)	ND(5)	ND(25)	ND(100)
S-1	2.9	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.15)	ND(5)	ND(25)	ND(100)
S-2	2.0	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.15)	ND(5)	ND(25)	110
DUP-1	---	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.15)	ND(5)	ND(25)	ND(100)

Sample DUP-1 is a field duplicate of sample S-1.
ND - indicates the analyte was not detected above the detection limit shown.
(a) - Method reporting limits are elevated because the BTEX sample had a low percent soilids.
(b) - Based on "migration to groundwater" criteria for an "under 40 inch zone" in Table B1, 18AAC78.

TABLE 2
Summary of Sample Analytical Data
(heavy metals)

Sample	Arsenic(a)	Barium	Cadmium	Chromium	Nickel	Lead	Vanadium
Limit(b)	2	1100	5	26	87	400	3400
T-1	<4.0	59.1	.4	10.2	13.5	<4.0	21.6
T-2	8.2	52.8	.6	8.8	12.9	<4.0	19.1
S-1	<4.0	43.8	.6	7.8	11.4	<4.0	17.8
S-2	9.0	54.2	.4	8.8	14.2	66.7	17.3
S-3	6.3	65.0	.3	10.1	16.1	4.6	23.1

(a) - All Arsenic values are below Fairbanks area background levels as cited in US Dpt. of Interior Geological Survey Report 78-959.
(b) - Based on "migration to groundwater" criteria for an "under 40 inch zone" in Table B1, 18AAC78.

AGRA personnel obtained one duplicate soil sample (DUP-1) in conjunction with the collection of sample S-1 and submitted this sample as a quality control indicator. Concentrations of GRO, DRO and all BTEX compounds were reported to be non-detectable for all of the excavation and clean stockpile soil samples. The concentration of RRO in the clean stockpile sample, S-2, was reported at 110 mg/kg, all others being non-detectable. Additionally, AGRA personnel submitted a trip blank sample which accompanied the samples through shipment to the laboratory for testing. This sample showed non-detectable results for all BTEX compounds. Heavy metal concentration for all samples were within acceptable limits. Although arsenic concentrations exceeded the cleanup limit, all reported concentrations for arsenic are below background concentrations within the Fairbanks area (USGS Open-File Report 78-959).

5.0 CONCLUSIONS

Rowcon and AGRA personnel completed the in-place decommissioning of a single 2000-gallon used oil tank that formerly supported operations at the City of Fairbanks Department of Public Works Building. AGRA personnel collected representative soil samples from beside the tank for laboratory analysis in accordance with ADEC UST regulations. Additionally, the soils removed from the tank area during site work were screened with an PID and sampled for laboratory testing. Review of the analytical results for samples corresponding to soils remaining at the site show that they produced results below the most stringent ADEC cleanup standards. Arsenic concentrations exceed the cleanup limit but are less than documented background concentrations for the Fairbanks area. Rowcon personnel used the excavated clean stockpile to backfill the excavation. Used oil removed from the tank was drummed and shipped off-site to Rowcon storage facility pending thermal remediation at OIT, Inc. The tank was cleaned and rendered unusable for future oil storage by filling the tank with clean sand.

6.0 RECOMMENDATIONS

Based on the analytical results obtained, the soil remaining in the tank area contains petroleum hydrocarbons and heavy metals in concentrations below the most stringent ADEC cleanup levels. AGRA field observations reported no indications of adverse hydrocarbon impacts to the subsurface soils extending from ground surface to the excavation base. Furthermore, there appears to be little potential for impact to the groundwater and/or to potential receptors. On this basis, AGRA recommends that the tank owner request a final closure ruling from the ADEC for the closed tank on site.

7.0 LIMITATIONS

The observations and findings presented in this report are professional opinions based on the information gained from a limited number of soil samples collected from a limited number of locations on the site. The measured concentrations of the tested analytes may not be representative of concentrations in unsampled portions of the property. The analytical methods used were selected based on the known past usage of the tank. Additional analytes not tested for during this investigation may or may not be present. No warranty or guarantee is expressed or implied.

APPENDIX A

ADEC CLOSURE DOCUMENTATION

UNDERGROUND STORAGE TANKS
ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION

INTENT TO CLOSE OR CHANGE IN SERVICE

Notice of intent to close a UST system is required at least 15 days but no later than 60 days prior to the beginning of closure. See 18 AAC 78.085 (a). "Close" includes removal, closure in place or change in service and applies to tank or piping or both. "Change in Service" means to change the use of a UST containing a regulated substance to a non-regulated substance (like heating oil).

Facility - Location (Do Not Use P.O. Box)
Name Dept. of Public Works
Street Address 2121 Peger Road
City Fairbanks
State/Zip Alaska 99701
Phone 907-459-6896
Fax —

ADEC Facility ID #: 345
Expected Date of Closure 6/27/00

Tank Owner
Name City of Fairbanks
Address 800 Cushman Street
City Fairbanks
State/Zip Alaska 99701
Phone 907-459-6740
Fax 907-452-5913

ADEC Tank ID #'s: 5
Owner Tank ID#'s (if different) —

IMPORTANT:

- **Form:** This form must be completed and sent to ADEC at the address or fax listed on page 2 between 15-60 days prior to closure.
- **Certified Worker:** Alaska Statute AS 46.03.375 requires those who supervise a UST closure be currently certified by the State of Alaska in UST Decommissioning.
- **Spills:** A UST with a confirmed release must be permanently removed from the ground; In place closure or change in Service is not allowed.
- **Assessment:** A Site Characterization report in accordance with 18 AAC 78.090 must be performed at the time of closure by an Impartial third party using a "qualified person" (18 AAC 78.995 (118)).

Closure Information

- Certified UST Worker performing closure: Keith Rowland Certification #: 254 Expiration Date: 12/31/01
- Person and Company Performing Site Characterization: AGRA Earth & Environmental, Inc.
- Method of Closure (select one) [ ] Removal [X] In-place [ ] Change in Service
- Is there evidence of a leak or spill at this site? [ ] Yes [X] No
- Have you contacted the local fire department of your intent to close the tanks? [X] Yes [ ] No
- Where are the tank, piping, equipment and sludge to be disposed of? In-place

Closure for (please check): [X] **Tank and Piping** [ ] **Tank only** [ ] **Piping only**

ADEC Tank ID #	Owner Tank ID # (if different)	Tank Age	Tank Size	Product Stored	Date Last Used
5	—	20 yrs	2000 gal	Used Oil	Unknown

Notice Submitted By: [ ] Owner [ ] Operator [X] Other AGRA Earth & Environmental

Douglas Buteyn (Please print name)
Douglas J Buteyn (Signature)
Sr. Project Manager (Title)
6/12/00 (Date)
479-7586 (Phone)
479-0193 (Fax)

--OTHER SIDE PLEASE--

APPENDIX B

ADEC Storage Tank Program
Site Assessment & Release Investigation Summary Form

This document summarizes information from site assessments and release investigation reports that are required by Alaska's Underground Storage Tanks Regulations (18 AAC 78). It is intended to ensure minimum requirements are met when submitting full reports to ADEC. It cannot be substituted for comprehensive site assessment or release investigation reports. Site assessments (as defined in AS 46.03.450) are conducted to check for the presence or absence of petroleum contamination. If contamination of soil or groundwater is identified then a release investigation is required. Site assessments and release investigations must be conducted by a qualified impartial third party (as defined in 18 AAC 78) and in accordance with chapter two of the Underground Storage Tanks Procedures Manual (UST Manual).

How to fill out this form

Type or print in ink the requested information and sign in ink the "signature" blocks on page 7. Please attach this form to the comprehensive site assessment or release investigation report (or include it in the report introduction) and submit it to the nearest ADEC field operations office (Juneau, Anchorage, Fairbanks or Soldotna).

1. GENERAL INFORMATION

Purpose of Site assessment/ Release investigation: In-site closure
(Closure, Change-in-service, Suspected or confirmed release, Compliance check, Other)

Owner of site:
City of Fairbanks — 459-6881
Name of company/legal entity that owns the site — Phone number
800 Cushman St. — Fairbanks, AK 99701
Mailing address — City, State, Zip code

Operator of site:
Dept. of Public Works — 459-6896
Name of company/legal entity that operates the site — Phone number
2121 Peger Rd — Fairbanks, AK 99701
Mailing address of operator — City, State, Zip code

Location of site:
Dept. of Public Works — 459-6896
Name of site (e.g. John Doe's Service Station) — Phone number
2121 Peger Rd — Fairbanks, AK 99701
Physical address of site (be as specific as possible) — City, State, Zip code
Fairbanks meridian — Section 16, township 1S, Range 1W
Legal description of site — Section/township/range
storage and garage — ADEC 345 / #5
Type of business at site — Facility ID # / Tank ID number(s)

Financial Assistance Applications filed (this site only)	NA ☐ Site assessment/ tightness test	☐ Tank cleanup	☐ Tank upgrade	☐ Tank closure	
Reports on file with ADEC:	☑ Tightness test	☐ Closure notice	☐ Other_____		

2. SYSTEM AND TANK STATUS

Describe the status, size, and contents of the tanks that have been at the site:

Tank ID Number:	Tank No. 5	Tank No. ___	Tank No. ___	Tank No. ___	Tank No. ___
Tank status (check one) Currently in use					
Temporarily closure					
Closed/left in place	✓				
Closed/removed					
Total capacity (gallons)	2000				
Contents (diesel, etc)	used oil				

3. FIRM CONDUCTING SITE ASSESSMENT AND RELEASE INVESTIGATION

AGRA Earth and Environmental 479-7586
Name of firm Phone number

3504 Industrial Ave., Suite 5 Fairbanks, AK 99701
Mailing address City, State, Zip code

Douglas Buteyn Patrick M. Cox II
Site assessment supervisor(s) Person(s) collecting samples

4. SITE HISTORY

Based on the best available knowledge, please check the appropriate box below:

Y	N	
__	✓	Was soil contamination observed or identified?
__	✓	Was groundwater contamination observed or identified?
__	✓	Did inventory control or prior tank repairs indicate a possible release?
✓	__	Has a tank tightness test been performed on any USTs on the site?
✓	__	Have any of the facility's USTs or piping ever failed a tightness test?
__	✓	Have there been any previous site assessments performed at this site?
__	✓	Do previous site assessments indicate any contamination has occurred?

Jane Dale of City of Fairbanks conducted tightness test in Spring 1999

If the answer to any of these questions is yes, please describe (or attach copy of report discussion). Give dates and circumstances, use continuation sheet if necessary:

5. FIELD SCREENING ANALYSIS

Date(s) of field screening: July 7, 2000
Temperature(s) during screening: 60 °F
Estimated wind speeds: still
Weather (clear, raining, etc): partly cloudy

Type of field detection instrument used: photoionization device
Brand: Mini-Rae
Model: PGM-76
Date calibrated: July 7, 2000

Number of tests: 5
Range of results: low = 1.6 ppm; high 3.4 ppm

If an instrument wasn't used, what field detection method was used?_____

Number of tests:_____
Range of results:_____

6. COLLECTION OF SOIL SAMPLES

For site assessments done for USTs remaining in place
Check the appropriate boxes below (if not applicable, leave blank):

Y	N	
✓		Were samples taken from borings (or test pits) within 5 feet of the UST?
NA		Were samples collected from within 2 feet below the bottom of the UST?
	✓	Were dispensers connected to the UST system?
NA		Were samples taken from borings (or test pits) adjacent to dispensers?
	✓	Were samples taken from borings (or test pits) adjacent to piping?

How many borings/pits were made? 4 How many samples were analyzed? 5

For site assessments done at excavation and removal of USTs:
Check the appropriate boxes below (if not applicable, leave blank):

Y	N	
		Were any areas of obvious contamination identified or observed?
		Were samples taken from areas of obvious contamination?
		Were at least two discrete analytical samples taken from excavated pit area?
		Was at least one sample taken from below each dispensing island's piping?
		Was at least one sample taken from the piping trench?
		Were the samples referenced above collected taken from native soil within two feet below the bottom of the tank pit or dispenser/piping trench?
		If multiple tanks were removed, were at least three samples collected?
		Were additional samples collected for each 250 square feet of excavated pit over 250 square feet?

Number of distinct points sampled:_____ Estimated excavation's surface area: _____

For all site assessments
Check the appropriate boxes below:

Y	N	
✓		Were field duplicate samples collected and analyzed?
✓		Were all samples kept at the appropriate temperature until analysis?
✓		Were all samples extracted & analyzed within recommended holding times?
✓		Did chain-of-custody/transfer logs accompany samples to laboratory?

7. LABORATORY ANALYSIS OF SOIL SAMPLES

(see Table 1 of UST Procedures Manual or Table G of 18 AAC 78.800(b))

Identify the possible contaminants (gasoline, BTEX, diesel, etc.): DRO, RRO, BTEX, GRO, VOC, As, Be, Cd, Cr, Pb, Ni, V

Please list the analytical methods used to detect these contaminants in the soil samples, the number of samples analyzed by each method, and the range of results for each method:

Possible product	Analytical method	Number of samples	Range of results	Location(s) of sample point(s) w/ highest level of contamination
DRO	AK 102/103	5	all non-detectable	
RRO	AK 102/103	5	<100 through 110	S-2
BTEX	AK 101	5	all non-detectable	
GRO	AK 101	5	all non-detectable	
VOC	AK 8260	5	all non-detectable	
heavy metals	EPA-600/4-79-20	5	0.4-66.7	S-2

8. GROUNDWATER INVESTIGATION

Check the appropriate boxes below:

Y	N	
—	✓	Was groundwater encountered during the excavation or drilling work?
—	NA	Were borings drilled/pits dug at least five feet below the USTs bottom?
—	✓	Is groundwater or seasonal high water table known or suspected to exist within five feet of the bottom of the USTs?
—	✓	Were samples taken from borings drilled/test pits dug to this water level?
✓	—	Were all these samples analyzed within recommended holding times?

How many groundwater/saturated-soil samples were collected & analyzed? NA

How many of these samples were taken from the top 6" of water table? NA

How many field QC samples were analyzed? 1 (Trip blanks) 1 (Duplicates) ____ (Decon blanks)

9. LABORATORY ANALYSIS OF GROUNDWATER SAMPLES

NA

(see Table 1 of UST Procedures Manual or Table G of 18 AAC 78.800(b))

Identify the possible contaminants at the site: _____

Identify the analytical methods used to detect these contaminants in the water samples, the number of samples analyzed by each method, and the range of results for each method:

Analytical method	**Number of samples**	**Range of results (ppm)**	**Location(s) of sample point with highest level of contamination**
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

10. DISPOSAL OF MATERIALS

Check the appropriate boxes below (if not applicable, leave blank):

Y	N	
✓	__	Were tanks cleaned in accordance with API 2015 (Cleaning Petroleum Storage Tanks)?
✓	__	Were the tanks and piping ~~removed~~ in-place and ~~disposed~~ in accordance with API 1604 (Removal and disposal of used petroleum Storage tanks)?

Where were the tanks and piping disposed? NA

Where was the tank sludge and rinsewater disposed? OTT

11. STOCKPILES

Check the appropriate boxes below:

Y	N	
__	__	Is any soil stockpiled at the site?
__	__	Are soils stockpiled in accordance with 18 AAC 78.311?

12. RELEASE INVESTIGATION

Check the appropriate box below:

Y (N)

— — Was any petroleum contamination identified during site assessment?
(Answer "yes" if any evidence a release occurred; if no, proceed to item 13)

If contamination was found, what was matrix score for site? _____
(Attach completed matrix score sheet to this form)

When did release occur? _____ (Date & time) When was release confirmed? _____ (Date & time)

When was ADEC notified? _____ (Date & time) List ADEC staff notified: _____ (Name)

What is status of UST that prompted the investigation? ____ In use ____ Out-of-use, product still in system ____ Out-of-use; system empty ____ Permanently closed

Briefly describe (or attach copy of report discussion) the steps taken to prevent further migration of the release and steps taken to monitor and mitigate fire and safety hazards:_____

_____

_____

_____

13. SITE SKETCH

Sketch the site in the space below. Alternatively, attach a site map to the back of the form. The sketch (or accompanying narrative) should include the following information:

- locations of all USTs, piping, and dispensers
- distances from tanks to nearby structures
- property line locations
- location and dimensions of excavation(s)
- type of backfill used to surround system
- locations of any known historical releases
- locations of any observed contamination
- location of any boreholes and test pits
- soil types
- field screening locations and readings
- sampling locations, depths, & sample ID numbers
- water wells and monitoring wells (if present)
- depth to groundwater/seasonal high groundwater
- locations of any stockpiled soils
- north arrow
- bar scale (specify feet or meters)

For release investigations, in addition to the above information, show the groundwater gradient; surface drainages (including potential hydraulic connections with groundwater) and utility trenches.

14. QUALITY ASSURANCE

Check the appropriate boxes below:

Y	N	
—	✓	Were there deviations from Chapter 2 of the UST Procedures Manual? (Note that any deviations must be documented in a section of the comprehensive report)
✓	—	Is a field quality control summary included in the reports?
✓	—	Is a laboratory QC summary included in the report for all samples used to verify cleanup levels have been met?

15. CERTIFICATION

The following certification is to be signed by the assessment firm's principal investigator or Quality Assurance Officer:

I certify that except as specifically noted in this report, all statements and data appearing in this report are in conformance with the provisions of Chapter 2 of the UST Procedures Manual.

Patrick M. Cox II
(Print name)

Staff Engineer
(Title)

(Signature)

8/30/2000
(Date)

The following certification is to be signed by the UST owner/operator (or designated representative):

I certify that I have personally examined and am familiar with the information in this and all attached documents and based on my inquiry of the individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

(Print name)

(Specify if owner, operator, representative)

(Signature)

(Date)

(Street Address)

(City, State, Zip)

16. ATTACHMENTS

Please check the boxes showing any comprehensive reports attached to this summary:

✓ Site Assessment Report (include if no release investigation is needed)

— Release Investigation Report (include if release investigation is needed)

UNDERGROUND STORAGE TANKS
ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION

POST-CLOSURE

Post-closure information is required to be submitted no later than 30 days after UST closure or change in service. See 18 AAC 78.085 (f). The UST Owner or Operator must fill out and sign page 1. The Certified UST Worker who performed or supervised the closure must fill out and sign Page 2. Both must be submitted together.

Facility - Location (Do Not Use P.O. Box)
Name Department of Public Works
Address 2121 Peger Road
City Fairbanks
State/Zip AK 99701
Phone 459-6896
Fax 456-6276

ADEC Facility ID #: 345

Tank Owner
Name City of Fairbanks
Address 800 Cushman St.
City Fairbanks
State/Zip AK 99701
Phone 459-6881
Fax 459-6710

Expected Date of Closure 10-JUL-2000

Closure
Performed by (name): Keith Rowland
UST Certification #: 254
Date Closure Completed: 10-JUL-2000

Site Characterization
Qualified Person (name): Patrick M. Cox
Company: AGRA
Date Performed: 7-JUL-2000

IMPORTANT:

- **Form:** This form must be completed and sent to ADEC at the address or fax listed on Page 2 no later than 30 days after closure.
- **Certified Worker:** Alaska Statute AS 46.03.375 requires those who supervise a UST closure be currently certified by the State of Alaska in UST Decommissioning.
- **Spills:** A UST with a confirmed release must be permanently removed from the ground. "In-place" closure or change in service is not allowed.
- **Assessment:** A Site Characterization report in accordance with 18 AAC 78.090 must be performed at the time of closure by an impartial third party using a "qualified person" (18 AAC 78.995 (118)). The report must be submitted to ADEC within 60 days after closure.

Closure for (please check): [ ] Tank and Piping [ ] Tank only [ ] Piping only

ADEC Tank ID #	Owner Tank ID# (If different)	Tank Size	Status (Circle One)	Date Product Last Stored	Contamination Found? Yes/No
5		2000	Removed (Closed in Ground)	07/07/2000	NO
			Removed Closed in Ground		
			Removed Closed in Ground		
			Removed Closed in Ground		

Notice Submitted By: [ ] Owner [ ] Operator [X] Other Consultant

Patrick M. Cox II (Please print name) | Staff Engineer (Title) | 907-479-7586 (Phone)

(Signature) | 08/07/2000 (Date) | 907-479-0193 (Fax)

--OTHER SIDE PLEASE--

CLOSURE CHECKLIST:

A certified UST worker who performs or supervises UST closure must complete and sign this checklist.

TANK REMOVAL

[ ] I was on the job site for all work requiring certification of closure;

[ ] Contents of tank and piping were emptied and tank was purged or inerted of flammable vapors;

[ ] Tanks were cleaned in accordance with API 1604;

[ ] Piping was removed and all accessible holes except vent lines were plugged or capped; and

[ ] Tanks and piping were removed, labeled accordingly and disposed of properly.

TANK IN-GROUND CLOSURE OR CHANGE IN SERVICE

[✓] I was on the job site for all work requiring certification of closure;

[✓] Contents of tank and piping were emptied and tank was purged or inerted of flammable vapors;

[✓] Tanks were cleaned in accordance with API 1604;

[✓] Piping was removed and all accessible holes except vent lines were plugged or capped; and

[✓] Tank was filled with solid inert material; or

[ ] Tank was disconnected from regulatory use.

I understand the information provided above is true and accurate. I understand that certified worker who fails to submit this portion of the form may be subject to license suspension or revocation.

Keith Rowland (Please Print Name) | 254 (Alaska UST Certification #) | 12/01 (Expiration Date)

(Signature) | 8/7/00 (Today's Date)

488-8428 (Phone) | Same (Fax)

Return Completed Forms to:	Questions?
ADEC, Storage Tank Program 555 Cordova Street Anchorage, AK 99501 Fax 907-269-7507	Call Toll Free 1-800-478-4974 in Alaska or 907-269-7537. Or go to our web page at http://www.state.ak.us/dec/dspar/stp_home.htm

APPENDIX B

PHOTO-DOCUMENTARY LOG

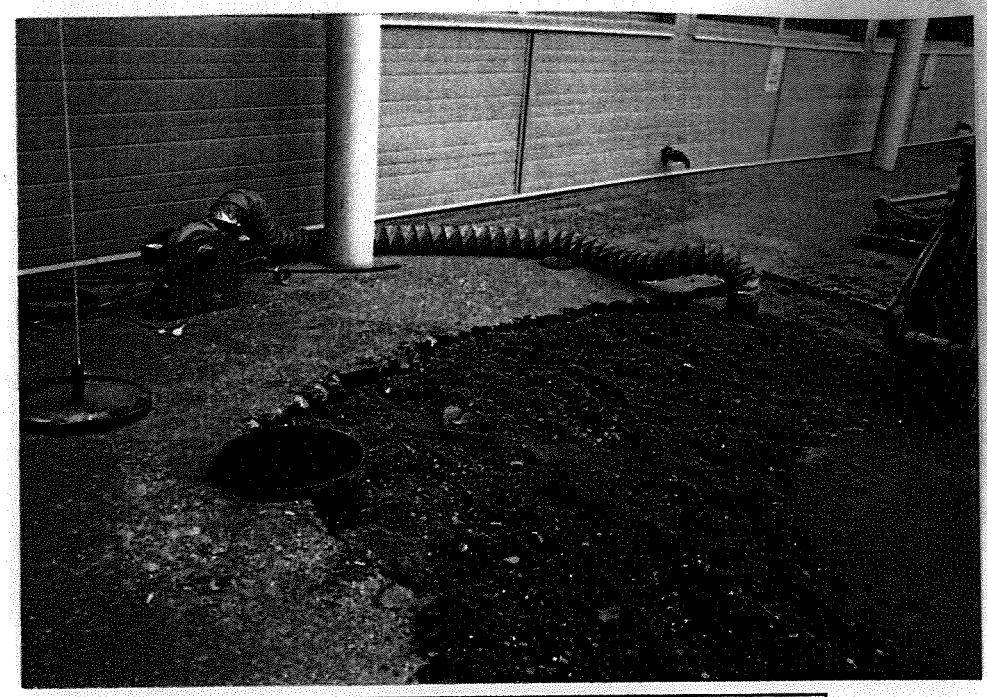

Photo 1: City of Fairbanks Department of Public Works used oil tank, prior to excavating, looking northwest.

Photo 2: Tank exposed along entire east side, looking southwest. Samples T-1 and T-2 were retrieved from the bottom of this excavation.

Photo 3: Soil stockpile and view of one-story maintenance complex. Excavation was limited to safe distance from the building (on the west side and south end).

Photo 4: Rowcon personnel entered and cleaned the UST. 150 gallons of used oil were removed.

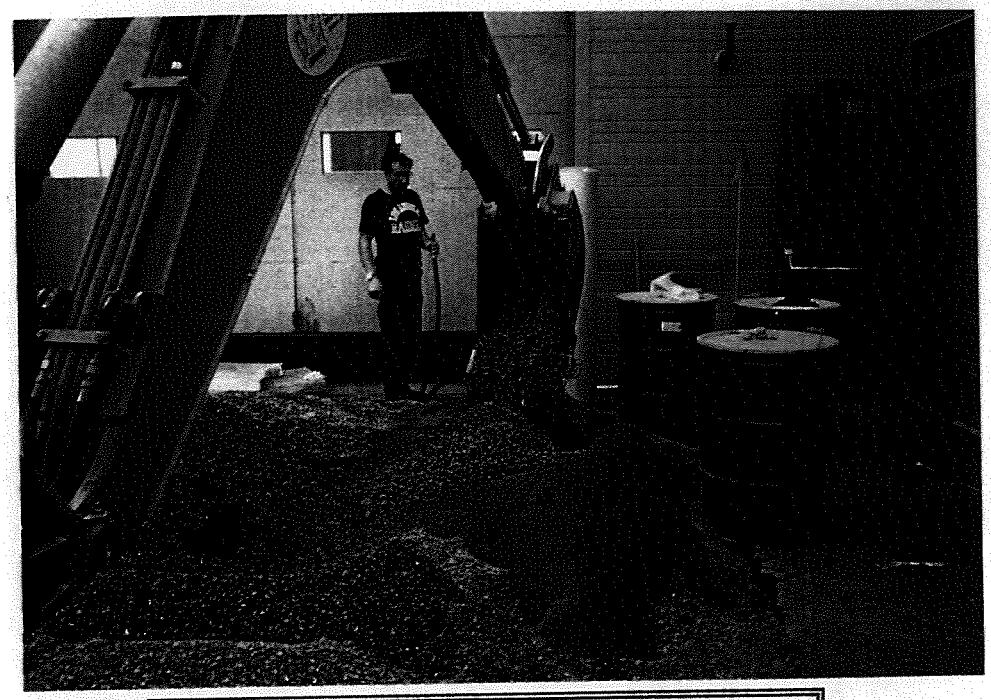

Photo 5: The tank was closed in situ. Rowcon filled the tank with a layer of sand followed by pea gravel (shown).

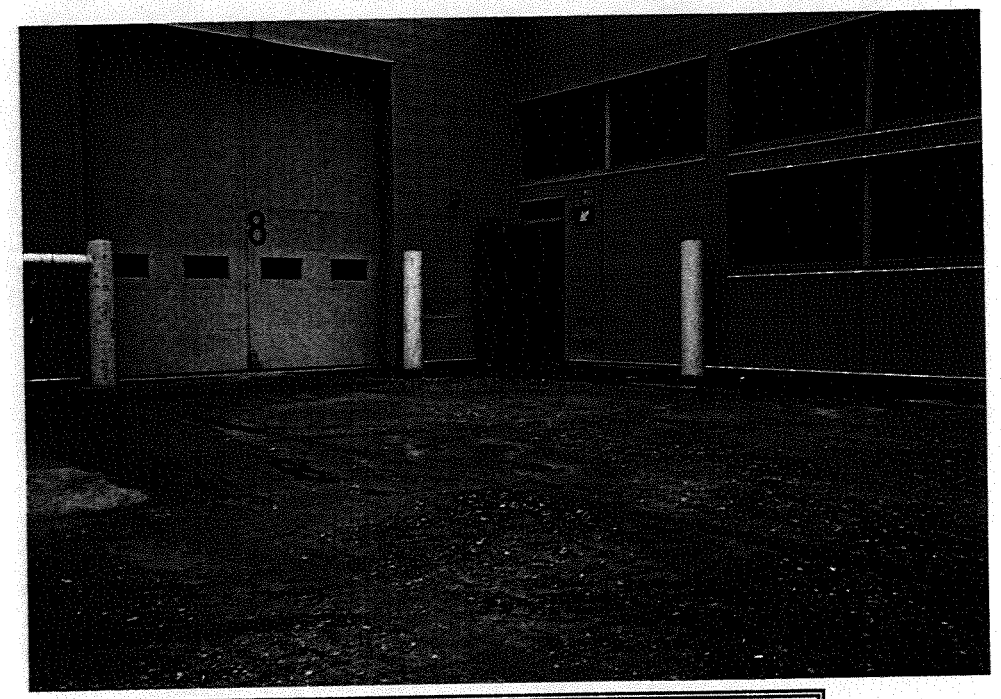

Photo 6: The tank manhole and overflow pipe were cut down and sealed, as were underground pipes leading to building. Site was backfilled and restored.

APPENDIX C

LABORATORY DATA

AGRA
ENGINEERING GLOBAL SOLUTIONS

AGRA Earth &
Environmental, Inc.
7477 SW Tech Center Drive
Portland, Oregon
USA 97223-8025
Tel (503) 639-3400
Fax (503) 620-7892

July 28, 2000

AGRA Earth & Environmental
3504 Industrial Avenue #5
Fairbanks, AK 99701

Attention: Doug Buteyn

AEF FAIRBANKS
AUG - 7 2000
RECEIVED

Dear Mr. Buteyn:

RE: Analytical Results for Project 9-024-01281-3

Attached are the results for the samples submitted on July 12, 2000 from the above referenced project. For your reference, our project number associated with these samples is AK000406.

The samples were analyzed at the AGRA Earth & Environmental Portland Chemistry Laboratory. The samples were also subcontracted to SVL, Inc. The SVL results are included as Appendix A of this report.

All analyses were conducted in accordance with applicable QA/QC guidelines. The results apply only to the samples submitted.

Please feel free to contact me if you have any questions regarding this report, or if I can be of any assistance in any other matter.

Respectfully submitted,

AGRA Earth & Environmental

Sean Gormley
Laboratory Manager

Laboratory ID # UST-008

Project: Used Oil Tank Removal
Project No.: 9-024-01281-3
Project Manager: Doug Buteyn
Sample Matrix: Soil

Service Request No.: AK000406
Report Date: 07/17/00
Report No.: 00040601
C.O.C. No.: 03660

Volatile Organic Compounds by GC/MSD
EPA Methods 5030B/8260B
mg/kg(ppm)

Sample Name: / Lab Code:	T-1 406-1	T-2 406-2	S-1 406-3	S-2 406-4	DUP-1 406-5	Lab Blank 406-MB	Reporting Limit
Dichlorodifluoromethane	ND	ND	ND	ND	ND	ND	0.1
Chloromethane	ND	ND	ND	ND	ND	ND	0.1
Vinyl Chloride	ND	ND	ND	ND	ND	ND	0.1
Bromomethane	ND	ND	ND	ND	ND	ND	0.1
Chloroethane	ND	ND	ND	ND	ND	ND	0.1
Trichlorofluoromethane	ND	ND	ND	ND	ND	ND	0.1
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	0.1
Acetone	ND	ND	ND	ND	ND	ND	0.1
Carbon Disulfide	ND	ND	ND	ND	ND	ND	2.0
Methylene Chloride	ND	ND	ND	ND	ND	ND	0.1
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	0.5
MTBE	ND	ND	ND	ND	ND	ND	0.1
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	0.1
2,2-Dichloropropane	ND	ND	ND	ND	ND	ND	0.1
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	0.1
2-Butanone(MEK)	ND	ND	ND	ND	ND	ND	0.1
Bromochloromethane	ND	ND	ND	ND	ND	ND	1.0
Chloroform	ND	ND	ND	ND	ND	ND	0.1
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	0.5
Carbon Tetrachloride	ND	ND	ND	ND	ND	ND	0.1
1,1-Dichloropropene	ND	ND	ND	ND	ND	ND	0.1
Benzene	ND	ND	ND	ND	ND	ND	0.1
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	0.1
Trichloroethene	ND	ND	ND	ND	ND	ND	0.1
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND	0.1
Dibromomethane	ND	ND	ND	ND	ND	ND	0.1
Bromodichloromethane	ND	ND	ND	ND	ND	ND	0.1
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	0.1
4-Methyl-2-Pentanone(MIBK)	ND	ND	ND	ND	ND	ND	0.1
Toluene	ND	ND	ND	ND	ND	ND	1.0
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	0.1
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	0.1
Tetrachloroethene	ND	ND	ND	ND	ND	ND	0.1
2-Hexanone	ND	ND	ND	ND	ND	ND	0.1
1,3-Dichloropropane	ND	ND	ND	ND	ND	ND	1.0
Dibromochloromethane	ND	ND	ND	ND	ND	ND	0.1
1,2-Dibromoethane	ND	ND	ND	ND	ND	ND	0.1
Chlorobenzene	ND	ND	ND	ND	ND	ND	0.1
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	0.1
Ethylbenzene	ND	ND	ND	ND	ND	ND	0.1
m,p-Xylene	ND	ND	ND	ND	ND	ND	0.1
o-Xylene	ND	ND	ND	ND	ND	ND	0.2
Styrene	ND	ND	ND	ND	ND	ND	0.1

Not Detected

AGRA

Project: Used Oil Tank Removal
Project No.: 9-024-01281-3
Project Manager: Doug Buteyn
Sample Matrix: Soil

Service Request No.: AK000406
Report Date: 07/17/00
Report No.: 00040601b
C.O.C. No.: 03660

Volatile Organic Compounds by GC/MSD
EPA Methods 5030B/8260B
mg/kg(ppm)

Sample Name: / Lab Code:	T-1 406-1	T-2 406-2	S-1 406-3	S-2 406-4	DUP-1 406-5	Lab Blank 406-MB	Reporting Limit
Bromoform	ND	ND	ND	ND	ND	ND	0.5
Isopropylbenzene	ND	ND	ND	ND	ND	ND	0.1
Bromobenzene	ND	ND	ND	ND	ND	ND	0.1
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	0.1
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	ND	0.1
n-Propylbenzene	ND	ND	ND	ND	ND	ND	0.1
2-Chlorotoluene	ND	ND	ND	ND	ND	ND	0.1
4-Chlorotoluene	ND	ND	ND	ND	ND	ND	0.1
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	ND	0.1
tert-Butylbenzene	ND	ND	ND	ND	ND	ND	0.1
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	ND	0.1
sec-Butylbenzene	ND	ND	ND	ND	ND	ND	0.1
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND	0.1
4-Isopropyltoluene	ND	ND	ND	ND	ND	ND	0.1
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	0.1
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	0.1
n-Butylbenzene	ND	ND	ND	ND	ND	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	ND	ND	ND	ND	ND	0.5
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	2.5
Hexachlorobutadiene	ND	ND	ND	ND	ND	ND	2.5
Naphthalene	ND	ND	ND	ND	ND	ND	2.5
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	ND	2.5
Sample Date:	07/07/00	07/07/00	07/07/00	07/07/00	07/07/00	07/14/00	
Extraction Date:	07/07/00	07/07/00	07/07/00	07/07/00	07/07/00	07/14/00	
Analysis Date:	07/14/00	07/14/00	07/14/00	07/14/00	07/14/00	07/14/00	
Surrogate Recoveries:							Control Limits
Dibromofluoromethane:	97%	98%	99%	102%	100%	108%	89%-115%
Toluene-d_8:	96%	96%	97%	98%	97%	106%	89%-124%
4-Bromofluorobenzene:	109%	105%	106%	112%	107%	113%	90%-127%

) Not Detected

nature of Chemist

/QC Review

AGRA

Project: Used Oil Tank Removal
Project No.: 9-024-01281-3
Project Manager: Doug Buteyn
Sample Matrix: Soil

Service Request No.: AK000406
Report Date: 07/17/00
Report No.: 00040602
C.O.C. No.: 03660

QC Data Report
BS/BSD Summary
Volatile Organic Compounds by GC/MSD
EPA Methods 5030B/8260B
mg/kg(ppm)

Sample Name: / Lab Code:	Lab Blank 406-MB	Spike Level (mg/kg)	Blank Spike	Percent Recovery (BS)	Blank Spike Duplicate	Percent Recovery (BSD)	% Recovery Control Criteria	Relative Percent Difference (RPD)
1,1 - Dichloroethene	<0.1	2.5	2.9	116	2.8	112	82% - 126%	4
Benzene	<0.1	2.5	2.8	112	2.7	108	96% - 115%	4
Trichloroethene	<0.1	2.5	2.6	104	2.5	100	91% - 107%	4
Toluene	<0.1	2.5	2.7	108	2.6	104	96% - 116%	4
Chlorobenzene	<0.1	2.5	2.9	116(a)	2.7	108	97% - 112%	7
Sample Date:	07/14/00	~	07/14/00	~	07/14/00	~		
Extraction Date:	07/14/00	~	07/14/00	~	07/14/00	~		
Analysis Date:	07/14/00	~	07/14/00	~	07/14/00	~		
Surrogate Recovery:							**Control Limits**	
)ibromofluoromethane:	108%	~	104%	~	112%	~	89%-115%	
Toluene-d_8:	106%	~	102%	~	109%	~	89%-124%	
-Bromofluorobenzene:	113%	~	109%	~	119%	~	90%-127%	

Not Detected
ke Source: Ultra Scientific, CLP-100N, Lot M-1791.
Outside of acceptance limits. Since no target analytes were detected in the samples, it is the opinion of the laboratory
t the elevated recovery does not adversely affect usability of the data.

ature of Chemist

QC Review

AGRA
ENGINEERING GLOBAL SOLUTIONS

Project: Used Oil Tank Removal
Project No.: 9-024-01281-3
Project Manager: Doug Buteyn
Sample Matrix: Soil

Service Request No.: AK000406
Report Date: 07/17/00
Report No.: 00040603
C.O.C. No.: 03660

QC Data Report
MS/MSD Summary
Volatile Organic Compounds by GC/MSD
EPA Methods 5030B/8260B
mg/kg(ppm)

Sample Name: / Lab Code:	T-1 406-1	Spike Level (mg/kg)	Matrix Spike	Percent Recovery (MS)	Matrix Spike Duplicate	Percent Recovery (MSD)	% Recovery Control Criteria	Relative Percent Difference (RPD)
1,1 - Dichloroethene	<0.1	2.5	2.8	112	2.7	108	61% - 119%	4
Benzene	<0.1	2.5	2.6	104	2.6	104	73% - 113%	<1
Trichloroethene	<0.1	2.5	2.4	96	2.4	96	72% - 113%	<1
Toluene	<0.1	2.5	2.5	100	2.5	100	70% - 117%	<1
Chlorobenzene	<0.1	2.5	2.6	104	2.6	104	73% - 114%	<1
Sample Date:	07/07/00	~	07/07/00	~	07/07/00	~		
Extraction Date:	07/07/00	~	07/07/00	~	07/07/00	~		
Analysis Date:	07/14/00	~	07/14/00	~	07/14/00	~		
Surrogate Recovery:							**Control Limits**	
Dibromofluoromethane:	97%	~	98%	~	98%	~	89%-115%	
Toluene-d_8:	96%	~	96%	~	95%	~	89%-124%	
4-Bromofluorobenzene:	109%	~	105%	~	102%	~	90%-127%	

) Not Detected
)ike Source: Ultra Scientific, CLP-100N, Lot M-1791.

ature of Chemist

QC Review

AGRA

Project: Used Oil Tank Removal
Project No.: 9-024-01281-3
Project Manager: Doug Buteyn
Sample Matrix: Soil

Service Request No.: AK000406
Report Date: 07/19/00
Report No.: 00040606
C.O.C. No.: 03660

Gasoline Range Organics & BTEX
ADEC Method AK101
mg/kg(ppm)
Dry Weight Basis

Sample Name:	T-1	T-2	S-1	S-2	DUP-1	TRIP BLANK	Lab Blank	Method Reporting Limit
Lab Code:	406-1	406-2	406-3	406-4	406-5	406-6	406-MB	
Gasoline:	ND	ND	ND	ND	ND	ND	ND	5.0
Benzene:	ND	ND	ND	ND	ND	ND	ND	0.05
Toluene:	ND	ND	ND	ND	ND	ND	ND	0.05
Ethylbenzene:	ND	ND	ND	ND	ND	ND	ND	0.05
Total Xylenes:	ND	ND	ND	ND	ND	ND	ND	0.15
Sample Date:	07/07/00	07/07/00	07/07/00	07/07/00	07/07/00	07/07/00	07/18/00	
Extraction Date:	07/07/00	07/07/00	07/07/00	07/07/00	07/07/00	07/07/00	07/18/00	
Analysis Date:	07/18/00	07/18/00	07/18/00	07/18/00	07/18/00	07/18/00	07/18/00	
Surrogate Recovery: (a,a,a-Trifluorotoluene):								**Control Limits**
Gasoline Analysis(FID):	102%	106%	103%	109%	103%	101%	111%	82%-114%
BTEX Analysis(PID):	94%	96%	93%	100%	94%	92%	102%	64%-121%

ND Not Detected

C. Tracy Dulin
nature of Chemist

QC Review

AGRA

Project: Used Oil Tank Removal
Project No.: 9-024-01281-3
Project Manager: Doug Buteyn
Sample Matrix: Soil

Service Request No.: AK000406
Report Date: 07/19/00
Report No.: 00040607
C.O.C. No.: 03660

QC Data Report
Blank Spike Recoveries
Gasoline Range Organics & BTEX
ADEC Method AK101
mg/kg(ppm)
As Received Basis

Sample Name: / Lab Code:	Lab Blank 406-MB	Spike Level (mg/kg)	Blank Spike (BS)	Percent Recovery (BS)	Blank Spike Duplicate (BSD)	Percent Recovery (BSD)	Relative Percent Difference	Control Limits
Gasoline:	ND	25	25	100	26	104	4	81%-127%
Benzene:	ND	1.0	0.84	84	0.92	92	9	74%-126%
Toluene:	ND	1.0	0.87	87	0.92	92	6	75%-125%
Ethylbenzene:	ND	1.0	0.86	86	0.89	89	3	75%-118%
Total Xylenes:	ND	3.0	2.8	93	2.9	97	4	81%-125%
Sample Date:	07/18/00	~	07/18/00	~	07/18/00	~	~	
Extraction Date:	07/18/00	~	07/18/00	~	07/18/00	~	~	
Analysis Date:	07/18/00	~	07/18/00	~	07/18/00	~	~	
Surrogate Recovery (a,a,a-Trifluorotoluene):							**Control Limits**	
Gasoline Analysis(FID):	111%	~	120%	~	115%	~	82%-114%	
BTEX Analysis(PID):	102%	~	116%	~	105%	~	64%-121%	

D Not Detected
ɔike Source: Ultra Scientific RGO-601, Lot # M-1832
ɔike Source: Accustandard WA-VPH Lot # A7060438

C. Tracy Dulin
nature of Chemist

QC Review

AGRA
ENGINEERING GLOBAL SOLUTIONS

Project: Used Oil Tank Removal
Project No.: 9-024-01281-3
Project Manager: Doug Buteyn
Sample Matrix: Soil

Service Request No.: AK000406
Report Date: 07/19/00
Report No.: 00040608
C.O.C.: 03660

QC Data Report
Matrix Spike Recoveries
BTEX Compounds
ADEC Method AK101
mg/kg(ppm)
As Received Basis

Sample Name:	T-1	Spike Level	Matrix Spike	Percent Recovery	Matrix Spike Duplicate	Percent Recovery	Control	Relative Percent Difference
Lab Code:	406-1	(mg/kg)	(MS)	(MS)	(DMS)	(DMS)	Limits	(RPD)
Benzene	ND	3.4	3.2	94	3.2	94	59%-115%	<1
Toluene	ND	3.4	3.2	94	3.2	94	59%-118%	<1
Ethylbenzene	ND	3.4	3.0	88	3.1	91	58%-112%	3
Total Xylenes	ND	10	9.3	93	9.4	94	59%-124%	1
Sample Date:	07/07/00	~	07/07/00	~	07/07/00	~	~	
Extraction Date:	07/07/00	~	07/07/00	~	07/07/00	~	~	
Analysis Date:	07/18/00	~	07/18/00	~	07/18/00	~	~	
Surrogate Recovery:							**Control Limits**	
a,a,a-Trifluorotoluene:	94%	~	100%	~	102%	~	64%-121%	
4-Bromofluorobenzene:	91%	~	98%	~	98%	~	74%-122%	

D Not Detected
pike Source: Accustandard WA-VPH Lot # A7060438.

J. Tracy Dulin
nature of Chemist

/QC Review

AGRA
ENGINEERING GLOBAL SOLUTIONS

Project: Used Oil Tank Removal
Project No.: 9-024-01281-3
Project Manager: Doug Buteyn
Sample Matrix: Soil

Service Request No.: AK000406
Report Date: 07/25/00
Report No.: 00040609
C.O.C. No.: 03660

Diesel & Residual Range Organics
ADEC Method AK 102/AK 103
mg/kg(ppm)
Dry Weight Basis

Sample Name	Lab Code	Sample Date	Extraction Date	Analysis Date	Diesel Result	Heavy Oil Result	Surrogate Recovery	
							O-Terphenyl	Squalane
T-1	406-1	07/07/00	07/20/00	07/23/00	<25	<100	75	76
T-2	406-2	07/07/00	07/20/00	07/23/00	<25	<100	75	79
S-1	406-3	07/07/00	07/20/00	07/23/00	<25	<100	71	72
S-2	406-4	07/07/00	07/20/00	07/23/00	<25	110	80	83
DUP-1	406-5	07/07/00	07/20/00	07/23/00	<25	<100	64	66
Lab Blank	406-MB	07/20/00	07/20/00	07/22/00	<25	<100	67	63

Signature of Chemist

QC Review

AGRA
ENGINEERING GLOBAL SOLUTIONS

Project: Used Oil Tank Removal
Project No.: 9-024-01281-3
Project Manager: Doug Buteyn
Sample Matrix: Soil

Service Request No.: AK000406
Report Date: 07/25/00
Report No.: 00040610
C.O.C. No.: 03660

QC Summary Report
Diesel and Residual Range Organics
ADEC Method AK 102/103
mg/kg(ppm)

Blank Spike Recoveries (As Received Basis)

Sample Name: / Lab Code:	Lab Blank Batch QC	Spike Level (mg/kg)	Blank Spike	Percent Recovery (BS)	Blank Spike Duplicate	Percent Recovery (BSD)	Relative Percent Difference
Diesel:	<25	250	240	96	230	92	4
Heavy Oil:	<100	330	250(a)	76	300	91	18
Acceptance Limits:	~	~	~	60%-120%	~	60%-120%	<20
Extraction Date:	07/20/00	~	07/20/00	~	07/20/00	~	~
Analysis Date:	07/22/00	~	07/22/00	~	07/22/00	~	~
Surrogate Recoveries:							**Control Limits**
o-Terphenyl:	67%	~	87%	~	81%	~	60%-120%
Squalane:	63%	~	71%	~	86%	~	60%-120%

Duplicate Recoveries (Dry Weight Basis)

Sample Name: / Lab Code:	Dup-1 406-5	Sample Duplicate	Relative Percent Difference
Diesel:	<25	<25	(b)
Heavy Oil:	<100	<100	(b)
Acceptance Limits:	~	~	<25
Sample Date:	07/07/00	07/07/00	~
Extraction Date:	07/20/00	07/20/00	~
Analysis Date:	07/23/00	07/23/00	~
Surrogate Recovery:			**Control Limits**
O-Terphenyl:	64%	71%	50%-150%
Squalane:	66%	74%	50%-150%

Spike Source: ADEC Method AK102 Diesel Blend (AGRA Lot #00-06-15-3)
ADEC Method AK103 Heavy Oill Blend (AGRA Lot #00-06-04-6)

Result is from an analysis performed on 07/23/00.
Not applicable when sample concentration is less than the method reporting limit.

Kevin Stutte
nature of Chemist

/QC Review

AGRA
ENGINEERING GLOBAL SOLUTIONS

AGRA Earth & Environmental Portland Chemistry Laboratory
Sample Receipt Documentation Form

Project: Used Oil Tank Removal	Cooler Temperatures
SR No.: AK000406	4.4°C 3.7°C
Date: 7/12/00	2.9°C
Time: 10:45	
Temperature of Cooler Upon Receipt (Record to the Right):	5.8°C 5.8°C
Received By: KD	

Section One: Shipping/Delivery Issues

1.	Method of Sample Delivery: FedEx soil jars metn jars			
2.	Airbill or Courier Receipt Number: 8087 1197 1945 / 8087 1197 1967			
3.	Is a copy of the airbill or courier receipt available to be placed in the job file?	(Yes)	No	NA

Section Two: Sample Custody Issues

4.	Are custody seals on the shipping container intact?	Yes	No	(NA)
5.	Is a COC or other sample transmittal document present?	(Yes)	No	NA
6.	Is the COC complete?	(Yes)	No	NA
7.	Are the sample seals intact?	Yes	No	(NA)
8.	Does the COC match the samples received?	(Yes)	No	NA

Section Three: Sample Integrity Issues

9.	Are all sample containers intact and not leaking?	(Yes)	No	NA
10.	Are all samples preserved properly?	(Yes)	No	NA
11.	Are all samples within holding time for the required tests?	(Yes)	No	NA
12.	*Were all samples received at the proper temperature?	Yes	(No)	NA
13.	Are samples for volatiles and other headspace sensitive parameters free of headspace or bubbles?	Yes	No	(NA)

Section Four: Sample Containers Received:

14.	4 oz. glass jars: 15	19.	2oz. amber (MeOH): 11
15.	8 oz. glass jars:	20.	Encore samplers:
16.	40ml VOA vials:	21.	500ml plastic:
17.	1 liter glass:	22.	1liter plastic:
18.	Other (describe):		

Temperatures for: soil and water = 4°C-6°C, MeOH jars = 25°C, air = not required

Reviewed By: _____

Laboratory Manager or Designee

U366U

AGRA
Earth & Environmental
3504 Industrial Avenue, Suite 5
Fairbanks, Alaska, U.S.A. 99701
Tel (907) 479-7586 Fax (907) 479-0193

CHAIN OF CUSTODY

PROJECT: Used Oil Tanks Removal
PROJECT No.: 9-024-01281-3
CLIENT: City of Fairbanks
PHONE No.:
PROJECT MANAGER: ~~Patrick Cox II~~ DOUG BUTEYNE
PHONE No.:
SAMPLER'S NAME (please print): Patrick Cox II
PHONE No.: 907-479-7586
SAMPLER'S SIGNATURE: Stephanie D. Forster for Patrick Cox II

ANALYSIS REQUESTED (circle, check box or write preferred method in box)

SAMPLE I.D.	DATE	TIME	MATRIX	PRESERVATIVE	CONTAINERS No.	CONTAINERS VOL.	BTEX by 5030 / 8020	GRPH by 5030 /8015	DRPH by 3550 / 8100	BTEX/GRPH Combo by 5030 / 8020-8015	TPH by 3550 / 418.1	Halogenated Volatiles by 5030 / 8010	WTPH-418.1 MODIFIED	Aromatics by 602	Polynuclear Aromatics by 610 or 8310	Total Halogens (TOX) by 9076	~~Total Metals by EPA~~ As, Ba, Cd, Cr, Pb Ni, Vanadium	Purgeable Organics GC/MS by 8240 or 624	Base/Neut/acid/Organics GC/MS by 625 or 8270	PCB by 8080	BTEX / GRO by AK 101	DRO / RRO by AK 102/103	VOC - 8260		
1. T-1	7/7/00	915	Soil	chill/MeOH	3	40z											X				X	X	X		
2. T-2	7/7/00	930	Soil	chill/MeOH	2	60-ml											X				X	X	X		
3. S-1	7/7/00	945	"	" "	"	"											X				X	X	X		
4. S-2	7/7/00	1000	"	" "	"	"											X				X	X	X		
5. DUP-1	7/7/00	1010	"	" "	"	"											X				X	X	X		
6. TRIP BLANK			Soil	" "	1	60ml											X				X	X	X		
7.																					X		N/A		
8.																									
9.																									
10.																									

SAMPLE RECEIPT
TOTAL # CONTAINERS:
CONDITION OF CONTAINERS:
CONDITION OF SEALS:

LABORATORY: ~~FBKS~~ AEE Portland
SHIPPING I.D. / AIRBILL #:
CARRIER: Fed Ex
DOT DESIGNATION:

TURNAROUND TIME
- ☐ 8 HOUR
- ☐ 24 HOUR
- ☐ 1 WEEK
- ☒ 2 WEEK (standard)
- ☐ OTHER _____

SPECIAL INSTRUCTIONS / ADDITIONAL COMMENTS
** Please call Doug Buteyne to confirm requested analyses

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
1. Stephanie D. Forster / AEE FBKS	7/10/00	1030	1.		
2.			2.		
3.			3. Kimberly A. Davis AGRA	7/12/00	10:45

PAGE 1 OF 1

AGRA Earth & Environmental, Inc. (7/94)

DISTRIBUTION: White, Yellow - Laboratory, Pink - Originator

Appendix A
Subcontracted Data

SVL ANALYTICAL, INC.
One Government Gulch ■ P.O. Box 929 ■ Kellogg, Idaho 83837-0929 ■ Phone: (208)784-1258 ■ Fax: (208)783-0891

REPORT OF ANALYTICAL RESULTS

CLIENT : Agra Earth & Environmental

SVL JOB No. : 94872
SVL SAMPLE No.: 237062

CLIENT SAMPLE ID: T-1
Sample Collected: 7/07/00 9:15
Sample Receipt : 7/13/00
Date of Report : 7/18/00 As Received Basis

% Solids: 96.3%
Matrix: SOIL

Determination	Result	Units	Dilution	Method	Test Date	Reference
Arsenic	<4.0	mg/kg	1	6010B	7/17/00	2
Barium	59.1	mg/kg	1	6010B	7/17/00	2
Cadmium	0.4	mg/kg	1	6010B	7/17/00	2
Chromium	10.2	mg/kg	1	6010B	7/17/00	2
Nickel	13.5	mg/kg	1	6010B	7/17/00	2
Lead	<4.0	mg/kg	1	6010B	7/17/00	2
Vanadium	21.6	mg/kg	1	6010B	7/17/00	2

REFERENCES: 1) "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-20; 2) "Test Methods for Evaluating Solid Wastes, 3rd Edition", SW 846, 1994; 3) "Standard Methods for the Examination of Water and Wastewater", 18th ED. 1992; 4) ASTM Method; 5) 40 CFR, Part 261

viewed By: Kirby Gray Date 7/18/00
7/18/00 13:18

SVL ANALYTICAL, INC.
One Government Gulch ■ P.O. Box 929 ■ Kellogg, Idaho 83837-0929 ■ Phone: (208)784-1258 ■ Fax: (208)783-0891

REPORT OF ANALYTICAL RESULTS

CLIENT : Agra Earth & Environmental
SVL JOB No. : 94872
SVL SAMPLE No.: 237063
CLIENT SAMPLE ID: T-2
Sample Collected: 7/07/00 9:30
Sample Receipt : 7/13/00
% Solids: 96.1%
Date of Report : 7/18/00 As Received Basis
Matrix: SOIL

Determination	Result	Units	Dilution	Method	Test Date	Reference
Arsenic	8.2	mg/kg	1	6010B	7/17/00	2
Barium	52.8	mg/kg	1	6010B	7/17/00	2
Cadmium	0.6	mg/kg	1	6010B	7/17/00	2
Chromium	8.8	mg/kg	1	6010B	7/17/00	2
Nickel	12.9	mg/kg	1	6010B	7/17/00	2
Lead	<4.0	mg/kg	1	6010B	7/17/00	2
Vanadium	19.1	mg/kg	1	6010B	7/17/00	2

REFERENCES: 1) "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-20; 2) "Test Methods for Evaluating Solid Wastes, 3rd Edition", SW 846, 1994; 3) "Standard Methods for the Examination of Water and Wastewater", 18th ED. 1992; 4) ASTM Method; 5) 40 CFR, Part 261

eviewed By: Kirby Gray Date 7/18/00
7/18/00 13:18

SVL ANALYTICAL, INC.
ine Government Gulch ■ P.O. Box 929 ■ Kellogg, Idaho 83837-0929 ■ Phone: (208)784-1258 ■ Fax: (208)783-0891

REPORT OF ANALYTICAL RESULTS

CLIENT : Agra Earth & Environmental

SVL JOB No. : 94872
SVL SAMPLE No.: 237064

CLIENT SAMPLE ID: S-1
Sample Collected: 7/07/00 9:45
Sample Receipt : 7/13/00
Date of Report : 7/18/00

% Solids: 96.4%
Matrix: SOIL

As Received Basis

Determination	Result	Units	Dilution	Method	Test Date	Reference
Arsenic	<4.0	mg/kg	1	6010B	7/17/00	2
Barium	43.8	mg/kg	1	6010B	7/17/00	2
Cadmium	0.6	mg/kg	1	6010B	7/17/00	2
Chromium	7.8	mg/kg	1	6010B	7/17/00	2
Nickel	11.4	mg/kg	1	6010B	7/17/00	2
Lead	<4.0	mg/kg	1	6010B	7/17/00	2
Vanadium	17.8	mg/kg	1	6010B	7/17/00	2

REFERENCES: 1) "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-20; 2) "Test Methods for Evaluating Solid Wastes, 3rd Edition", SW 846, 1994; 3) "Standard Methods for the Examination of Water and Wastewater", 18th ED. 1992; 4) ASTM Method; 5) 40 CFR, Part 261

viewed By: Kirby Isaac Date 7/18/00
7/18/00 13:18

SVL ANALYTICAL, INC.
One Government Gulch ■ P.O. Box 929 ■ Kellogg, Idaho 83837-0929 ■ Phone: (208)784-1258 ■ Fax: (208)783-0891

REPORT OF ANALYTICAL RESULTS

CLIENT : Agra Earth & Environmental

SVL JOB No. : 94872
SVL SAMPLE No.: 237065

CLIENT SAMPLE ID: S-2
Sample Collected: 7/07/00 10:00
Sample Receipt : 7/13/00
Date of Report : 7/18/00 As Received Basis

% Solids: 96.6%
Matrix: SOIL

Determination	Result	Units	Dilution	Method	Test Date	Reference
Arsenic	9.0	mg/kg	1	6010B	7/17/00	2
Barium	54.2	mg/kg	1	6010B	7/17/00	2
Cadmium	0.4	mg/kg	1	6010B	7/17/00	2
Chromium	8.8	mg/kg	1	6010B	7/17/00	2
Nickel	14.2	mg/kg	1	6010B	7/17/00	2
Lead	66.7	mg/kg	1	6010B	7/17/00	2
Vanadium	17.3	mg/kg	1	6010B	7/17/00	2

REFERENCES: 1) "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-20; 2) "Test Methods for Evaluating Solid Wastes, 3rd Edition", SW 846, 1994; 3) "Standard Methods for the Examination of Water and Wastewater", 18th ED. 1992; 4) ASTM Method; 5) 40 CFR, Part 261

Reviewed By: Kirby Gray Date 7/18/00
7/18/00 13:18

SVL ANALYTICAL, INC.
ne Government Gulch ■ P.O. Box 929 ■ Kellogg, Idaho 83837-0929 ■ Phone: (208)784-1258 ■ Fax: (208)783-0891

REPORT OF ANALYTICAL RESULTS

CLIENT : Agra Earth & Environmental
SVL JOB No. : 94872
SVL SAMPLE No.: 237066

CLIENT SAMPLE ID: DUP-1
Sample Collected: 7/07/00 10:10
Sample Receipt : 7/13/00
Date of Report : 7/18/00 As Received Basis

% Solids: 95.7%
Matrix: SOIL

Determination	Result	Units	Dilution	Method	Test Date	Reference
Arsenic	6.3	mg/kg	1	6010B	7/17/00	2
Barium	65.0	mg/kg	1	6010B	7/17/00	2
Cadmium	0.3	mg/kg	1	6010B	7/17/00	2
Chromium	10.1	mg/kg	1	6010B	7/17/00	2
Nickel	16.1	mg/kg	1	6010B	7/17/00	2
Lead	4.6	mg/kg	1	6010B	7/17/00	2
Vanadium	23.1	mg/kg	1	6010B	7/17/00	2

REFERENCES: 1) "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-20; 2) "Test Methods for Evaluating Solid Wastes, 3rd Edition", SW 846, 1994; 3) "Standard Methods for the Examination of Water and Wastewater", 18th ED. 1992; 4) ASTM Method; 5) 40 CFR, Part 261

:viewed By: Kimberly Gray Date 7/18/00
7/18/00 13:18

/L ANALYTICAL, INC.

Quality Control Report

Part I Prep Blank and Laboratory Control Sample

Client :Agra Earth & Environmental

SVL JOB No. :94872

Analyte	Method	Matrix	Units	Prep Blank	True—LCS—Found		LCS %R	Analysis Date
Arsenic	6010B	SOIL	mg/kg	<4.0	136	138	101.5	7/17/00
Barium	6010B	SOIL	mg/kg	<0.2	124	146	117.7	7/17/00
Cadmium	6010B	SOIL	mg/kg	<0.2	118	124	105.1	7/17/00
Chromium	6010B	SOIL	mg/kg	<0.5	89.3	90.9	101.8	7/17/00
Nickel	6010B	SOIL	mg/kg	<2.3	156	165	105.8	7/17/00
Lead	6010B	SOIL	mg/kg	<4.0	138	141	102.2	7/17/00
Vanadium	6010B	SOIL	mg/kg	<0.5	79.1	75.8	95.8	7/17/00
% Solids	999	SOIL	%		N/A		N/A	7/23/00

LEGEND:

LCS = Laboratory Control Sample LCS %R = LCS Percent Recovery N/A = Not Applicable

VL ANALYTICAL, INC.

Quality Control Report

Part II Duplicate and Spike Analysis

Client :Agra Earth & Environmental

SVL JOB No :94872

Test Method	Matrix	QC SAMPLE ID Units	Result	Duplicate Result	RPD%	Matrix Spike Result	SPK ADD	%R	Test Date
6010B	SOIL	1 mg/kg	<4.0	4.9	200.0	106	100	106.0	7/17/00
6010B	SOIL	1 mg/kg	59.1	63.0	6.4	160	100	100.9	7/17/00
6010B	SOIL	1 mg/kg	0.4	0.2	66.7	97.5	100	97.1	7/17/00
6010B	SOIL	1 mg/kg	10.2	9.3	9.2	111	100	100.8	7/17/00
6010B	SOIL	1 mg/kg	13.5	12.8	5.3	111	100	97.5	7/17/00
6010B	SOIL	1 mg/kg	<4.0	<4.0	UDL	101	100	101.0	7/17/00
6010B	SOIL	1 mg/kg	21.6	22.1	2.3	123	100	101.4	7/17/00
Sol. 999	SOIL	1 %	96.3	95.3	1.0	N/A	N/A	N/A	7/17/00

EGEND:

)% = (|SAM - DUP|/((SAM + DUP)/2) * 100) M in Duplicate indicates MSD. UDL = Both SAM & DUP not detected.

KE ADD column, A = Post Digest Spike; %R = Percent Recovery N/A = Not Analyzed; R > 4S = Result more than 4X the Spike Added

Sample 1: SVL SAM No.: 237062 Client Sample ID: T-1

AGRA
ENGINEERING GLOBAL SOLUTIONS
7477 SW Tech Center Drive
Portland, Oregon, U.S.A. 97223-8025
Tel (503)639-3400 Fax (503) 620-7892

SVL

3324
94872

CHAIN OF CUSTODY

PROJECT: Used Oil Tank Removal/406	PROJECT No.: 9-024-01281-3
REPORT TO: Sean Gormley	PHONE No.: (503)639-3400
PROJECT MANGER	PHONE No.
SAMPLER'S NAME (please print)	PHONE No.
SAMPLER'S SIGNATURE	

SAMPLE I.D.	DATE	TIME	MATRIX	PRESERVATIVE	CONTAINERS No.	CONTAINERS VOL.
1. T-1	7/7/00	915	S	—	1	4oz
2. T-2		930		—		
3. S-1		945		—		
4. S-2		1000		—		
5. DUP-1		1010		—		
6.						
7.						
8.						
9.						
10.						

ANALYSIS REQUESTED (circle, check box or write preferred method in box)

BTEX by EPA 602 / 8021	TPH-G	BTEX / TPH-G	TPH-HCID	TPH-D / TPH-D EXTENDED	TPH by EPA 8015 MODIFIED / 8015B	TPH-418.1 MODIFIED	TPH by EPA 418.1	GC / MS EPA 624 / EPA 8260 Volatiles	GC / MS EPA 625 / 8270 Semi-volatiles	VOCS EPA 601 / 602 or EPA 8021	PCBs EPA 608 / 8081 / 8082	LEAD EPA 6010 / EPA 7421 Total / Dissolved	TOTAL METALS	TCLP	As, Ba, Cd, Cr, Pb, Ni Vanadium			
															X			
															X			
															X			
															X			
															X			

SAMPLE RECEIPT	LABORATORY	TURNAROUND TIME	QC Reporting Requirements (Add'l charges may apply)	COMMENTS / INSTRUCTIONS
TOTAL # CONTAINERS	SHIPPING I.D. / AIRBILL #	☐ 8 HOUR	☐ LEVEL I	
CONDITION OF CONTAINERS	CARRIER	☐ 24 HOUR	☐ LEVEL II	
CONDITION OF SEALS	DOT DESIGNATION	☐ 1 WEEK	☐ LEVEL II w/project specific Duplicates/Spikes	
		X 2 WEEK (standard)	☐ Level III (Full validation package)	
		☐ OTHER		

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
1. Kimberly A. Davis AGRA	7/12/00	1245	1.	7/13/00	10:40
2.			2.		
3			3		

PAGE 1 OF 1