Guidance

Preparing a Heating Oil Tank Soil Matrix Cleanup Report

Guidance for Contractors and Homeowners
Oregon Administrative Rule 340-177-0055(6)

January 2020

State of Oregon
Department of
Environmental
Quality

Last Updated: 1/1/20
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For “property transaction”, “expedite” or “rush only” processing of this file please use this address:

Oregon Department of Environmental Quality
Heating Oil Tank Program
700 NE Multnomah St, Suite 600
Portland, OR 97232

For all other transactions regarding this file please use this address:

Oregon Department of Environmental Quality
Attention – Revenue Section
700 NE Multnomah St., Suite 600
Portland, OR 97232

Preparing a Heating Oil Tank Soil Matrix Cleanup Report

The quality and completeness of a Heating Oil Tank Soil Matrix Cleanup Report submitted by contractors, and homeowners who do their own work, are important factors in how responsive DEQ is in registering these reports. DEQ developed this "model" HOT Soil Matrix Cleanup Report to provide an example of a complete report. Many of the pages are DEQ-provided forms where requested information needs to be filled in completely. Many of the attachments are copies of documents received from laboratories or from treatment and disposal companies receiving contaminated materials.

Other critical, site-specific parts of the report are the narrative discussion describing major activities involved in completing cleanup of soil contaminated with heating oil and presentation of sampling data. The narrative discussion should simply explain the soil cleanup, sampling that took place and standard practices that were followed. Simple tables displaying sampling results and associated site maps showing sampling locations and depths are critical to quick, complete understanding of what was found at the site and demonstrating that environmental standards are met.

For each topic outlined below, there's a corresponding example of the document or information that satisfies that requirement.

1. HOT Project Cost Summary Form [1 page]. **Please do not attach this sheet to the rest of cleanup report.**
2. HOT Certified Report Cover Page Form [1 page].
   a. Version for use by contractors
   b. Version for use by homeowners
3. HOT Cleanup Checklist [4 pages]
4. HOT Initial Cleanup Report Form [1 page]
5. HOT Final Cleanup Report Form [2 pages]
6. Example of Cleanup Report Cover Page
7. Example of Cleanup Report Table of Contents
8. Example of Cleanup Narrative Discussion.
   a. Introduction
   b. Site activities
   c. Sampling methodology and analytical results
   d. Soil matrix determination
   e. Summary
   f. Recommendations
   g. Attachments
9. Example of Table of Sample Results
   a. Soil sample results
   b. Water sample results, **if applicable**
10. Example of Site and Vicinity Maps
11. Example of Sample Locations and Results Sketch
12. Soil Matrix Scoring Sheet and Level of Cleanup Determination
13. Example of Chain of Custody Form
14. Example of Laboratory Report
15. Example of Treatment or Disposal Receipts

   a. Tank content disposal receipt for any fuel, sludge and/or rinse water pumped out of tank
   b. Tank disposal receipt if heating oil tank is decommissioned by removal
   c. Soil treatment or disposal receipt if contaminated soil is excavated and hauled off-site
16. Example of Decommissioning and Cleanup Photos

Copies of standard forms referred to or pictured in this report are available by:

1. Downloading from these web pages:
   a. Contractors go to - https://www.oregon.gov/deq/tanks/Pages/HOT-Service-Providers.aspx
   b. Homeowners go to - https://www.oregon.gov/deq/tanks/Pages/HOT-Homeowners.aspx
2. Calling DEQ's Northwest Region Office, Portland, at 503-229-6170
3. Calling toll-free in Oregon and leaving a message at 1-800-742-7878
4. Sending e-mail requests to hotinfo@deq.state.or.us.
5. Writing to DEQ's Northwest Region office:
   Oregon Department of Environmental Quality
   Heating Oil Tank Program
   700 NE Multnomah St., Suite 600
   Portland, OR 97232

Additional technical information and links to other agency programs are also available on the web pages whose addresses are listed in 1a and 1b above.

1. Heating Oil Tank Project Cost Summary Form

Project Cost Summary form available at: https://www.oregon.gov/deq/tanks/Pages/HOT-Forms.aspx

ALERT! Contractors and homeowners **please do not** staple or bind with the rest of soil matrix cleanup report. This form **is not** filed in the Heating Oil Tank certification folder.

OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY
Underground Storage Tank Program

HEATING OIL TANK SERVICES
SERVICE PROVIDER REPORT CERTIFICATION

PROJECT COST SUMMARY

This form must be completed by the licensed service provider for each certified heating oil tank project submitted to DEQ.

This summary must be included with the project certification cover sheet, checklist, and decommissioning or cleanup report. Upon receipt, DEQ will separate this form from the report and compile the project cost information for future reference. *This form is used to record general information only and is not part of the individual file for any specific project.*

Complete the following information for Questions 1 through 5:

1. **Date** the heating oil project was complete: _____

2. **County** the tank site is located in: _____

3. Project **cost** (what did it cost to perform the services listed below): _____

4. **Type** of certification category (check one):
   - ☐ Decommissioning only
   - ☐ Soil Matrix Cleanup
   - ☐ Generic Remedy Cleanup
   - ☐ Risk-Based Cleanup

5. Rate the general **complexity** of the project as compared to other similar projects of the same category that your company has worked on:
   - ☐ Normal — No unusual circumstances
   - ☐ Moderate — Some difficulties encountered
   - ☐ Difficult — Problems encountered that caused increased work or other complexities

2. Heating Oil Tank Certified Report Cover Page Form

a. For use by HOT service providers (contractors complete DEQ's one-page form).

Certified report cover page form available at: https://www.oregon.gov/deq/tanks/Pages/HOT-Forms.aspx

ALERT! See "Certification Instructions for Service Providers" for information about fees that must be submitted with each report: https://www.oregon.gov/deq/tanks/Pages/HOT-Forms.aspx

OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY
Underground Storage Tank Program

HEATING OIL TANK SERVICES
SERVICE PROVIDER REPORT CERTIFICATION

CERTIFIED REPORT COVER PAGE INFORMATION

The following information must be **reproduced exactly as written on official company stationary** (showing the company name, address, and phone number), ***for each certified project report***. Each project that is certified must include a separate certification cover that includes the information listed on this page.

- **Include the following information:**

  Date of Report Certification
  Tank Owner Name
  Tank Site Address
  Tank Owner Mailing Address (if different from site address)
  DEQ Cleanup File Number (Not applicable for decommissioning projects)
  Type of Project and Fee: (list only one) Soil Matrix Cleanup ($250);
  HOT Generic Remedy Cleanup ($350);
  Risk-Based Cleanup ($450); or
  Decommissioning (no contamination detected; $100)

- **Print the following statement exactly as written and sign:**

<Company Name> has performed heating oil tank services at the above property and certifies that the work performed meets the appropriate requirements of OAR 340-122-0205 through 340-122-0360 and OAR Chapter 340, Division 177.

Based on information and belief formed after reasonable inquiry, the heating oil tank services performed under this certification were conducted in compliance with all applicable federal, state, and local laws.

<Company Name> is currently insured as required by OAR 340-163-0050.

Signed By:_____ Date Signed:_____
<Print name and title of person signing under signature>
<The only persons who can sign certifications are those designated in the license application>

Licensed Service Provider Company Name:_____

Service Provider License Number:_____ Expiration Date:_____

- *Attach* all of the following for each certified project:
  - appropriate project certification checklist, signed by licensed supervisor
  - project report, including all supporting documentation
  - project cost summary form (do NOT put this form on company letterhead)

See "Certification Instructions for Service Providers" (Form No. DEQ-06-LQ-015) for information about fees that must be submitted with each report

b. For use by heating oil tank homeowners (homeowners complete DEQ's one-page form)

Homeowners certified report form available at: https://www.oregon.gov/deq/tanks/Pages/HOT-Forms.aspx

ALERT! A non-refundable filing fee of $250 must be submitted with each HOT Soil Matrix Cleanup Report

Date: _____

Tank Owner Name: _____

Tank Site Address: _____

DEQ Cleanup File Number: _____-____-_____.

Type of Project: (check one)
? Soil Matrix Cleanup
? HOT Generic Remedy Cleanup
? Risk-Based Cleanup with Corrective Action Plan
? Voluntary Decommissioning

I have performed heating oil tank services at the above property and certify that the work performed meets the appropriate requirements of OAR 340-122-205 through 340 -122-0360 and OAR Chapter 340, Division 177.

Based on information and belief after reasonable inquiry, the heating oil tank services performed under this certification were conducted in compliance with all applicable federal, state, and local laws.

Signed By:_____Date Signed: _____

- Attach all the following
  - Appropriate project certification checklist, signed by homeowner
  - Project report, including all supporting documentation
  - Registration fee

3. Heating Oil Tank Cleanup Checklist Form

Complete DEQ's four-page form. Cleanup checklist form available at:
https://www.oregon.gov/deq/tanks/Pages/HOT-Forms.aspx

DEQ
State of Oregon Department of Environmental Quality

OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY
Underground Storage Tank Program

HEATING OIL TANK SERVICES
SERVICE PROVIDER REPORT CERTIFICATION

CLEANUP CHECKLIST

This checklist is divided into five sections. **Section A must be completed for all cleanup projects.** Complete Sections B, C, D, or E as appropriate for the type of cleanup option selected. The checklist must be filled out as completely as possible and any exceptions noted for the certification to be valid.

GENERAL INFORMATION

Tank Owner Name: _____

Tank Site Address: _____

_____

DEQ Cleanup File Number: _____ - _____ - _____.

Date Release Reported: _____

Licensed HOT Service Provider Company Name: _____

_____ License Number

_____ Expiration Date

✓ **Check each item as complete and correct.** By checking any of the boxes in this checklist, you are indicating that the statement applies to this project. If there are any exceptions to the statement, please note them in the comment area provided at the end of the checklist. If the statement does not apply, please do not check the box.

NOTE: TPH = Total Petroleum Hydrocarbons as diesel by method NWTPH-Dx

Note: The submittal of this checklist does not replace a final cleanup report

This checklist MUST be signed and dated on page 4

SECTION A - ALL CLEANUP PROJECTS

- ❑ A1. The release of petroleum was reported to DEQ (OAR 340-163-0020(4)).
- ❑ A2. No free product is present or was removed during initial abatement actions.
- ❑ A3. Water is present at the site and DEQ was notified. Please note the name of the DEQ Staff person notified and the date of notification_____.
- ❑ A4. A site sketch, drawn approximately to scale, is included in the report (OAR 340-122-0345) which clearly shows:
  - ❑ The location of all buildings and other key features, both man-made and natural;
  - ❑ The names of adjacent streets and properties;
  - ❑ The location of all excavations including those that were for the removal of tanks and associated piping as well as those that were strictly for the removal of contaminated soils;
  - ❑ The location of all identified underground storage tanks, including those that were decommissioned as well as those that remain on the site in the vicinity of the cleanup;
  - ❑ All soil and water sample locations including sample depths and analytical results; and
  - ❑ Location of remaining contaminated soil (for risk-based decision making and generic remedy only).
- ❑ A5. All soil and/or water samples have been properly collected, coded, stored, shipped, and analyzed as required, and chain-of-custody forms have been filled out (OAR 340-122-0218, 340-122-0340 and 340-122-0345).

CHECK EITHER A6a or A6b, NOT BOTH

- ❑ A6a. Petroleum-contaminated soil has been removed from the property and properly handled, disposed of, or treated.
  Amount of soil taken off-site for treatment/disposal:_____.
  Disposal/treatment location:_____.
- ❑ A6b. No petroleum-contaminated soil removal occurred.

- ❑ A7. A report has been prepared which includes a detailed description of everything that was observed and performed at the site and contains all of the information required by (check one):
  - ❑ OAR 340-122-0360 and OAR 340-177-0055
  - ❑ DEQ's "Heating Oil Tank Generic Remedy Guidance Document" (January 24, 2000)
  - ❑ DEQ's "Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites" (September, 1999)

For Soil Matrix cleanup project, complete Section B.

♦

For Generic Remedy cleanup project, complete Section C.

♦

For Risk-Based cleanup project (simple, soil-only), complete Section D.

♦

Complete Section E for:
All sites where groundwater is encountered and soil matrix standards for closure are not met.
All sites where heating oil tank constituent concentrations exceed the risk based concentrations in Appendix A of the DEQ's "Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites" (September, 1999).

SECTION B - SOIL MATRIX CLEANUP

☐ B8. No contaminated soil exceeding the soil matrix level established for this site remains onsite. If a pocket of contamination exceeding the matrix level remains, use the appropriate checklist in Section C, D, or E instead.

CHECK EITHER B9a or B9b, NOT BOTH

☐ B9a. TPH concentrations were all below 100 mg/kg.

☐ B9b. TPH concentrations greater than 100 mg/kg remain in the soil and a Matrix Score Sheet has been completed. Supporting documentation for the matrix evaluation is included in the report. This project is a (check one):

☐ Level 2 site (500 ppm TPH)
☐ Level 3 site (1,000 ppm TPH)

☐ B10. Groundwater was encountered, but no benzene, toluene, ethylbenzene, and total xylenes (BTEX) or polynuclear aromatic hydrocarbons (PAHs) were detected in water above risk-based concentrations. No BTEX was detected in soil samples collected from the soil/water interface pursuant to OAR-340-122-340.

SECTION C - GENERIC REMEDY

☐ C8. Contamination is limited to soil only, and the remaining contaminated soil is a minimum of _____ feet above the seasonal high groundwater level.

☐ C9. The magnitude and extent of contamination has been clearly delineated both horizontally and vertically to at least 500 mg/kg TPH.

☐ C10. The volume of contaminated soil remaining in the subsurface above 500 mg/kg TPH is less than 65 cubic yards. Volume calculations are included in the cleanup report.

☐ C11. Any contaminated soil left in place is deeper than 3 feet below ground surface.

☐ C12. The maximum heating oil TPH concentration remaining in the soil is less than 10,000 mg/kg. The maximum TPH concentration detected remaining in the soil is _____ (mg/kg).

☐ C13. Contaminated soil left in place is greater than 2,500 mg/kg TPH. A representative soil sample was collected from the most contaminated soil remaining at the site and analyzed for benzene, ethylbenzene and napththalene. No benzene detected in the soil in excess of 0.1 ppm, no ethylbenzene detected in soil in excess of 0.82 ppm and no naphthalene in soil in excess of 6.5 ppm.

SECTION D - SOIL ONLY RISK-BASED EVALUATIONS

☐ D8. Contamination is limited to soil only. The magnitude and extent of heating oil contamination (as TPH), has been clearly delineated vertically and horizontally (OAR 340-122-0240). *Note: It is often a site-by-site decision on the adequacy of this determination. Contact the Department if there are questions on this issue.*

☐ D9. A sample representative of the most contaminated soil remaining at the site was obtained and analyzed. No BTEX or PAHs were detected in the soil in excess of any risk-based concentration in DEQ's "Risk-Based Decision Making for the Remediation of Petroleum Contaminated Sites" (September 2003) guidance document.

SECTION E - GROUNDWATER AND COMPLEX RISK-BASED EVALUATIONS

Note: These certifications are complex and may require Department involvement. Please contact the Department for assistance as appropriate.

❑ E8. The magnitude and extent of heating oil contamination as TPH in soil, and BTEX & PAHs in groundwater, have been clearly delineated vertically and horizontally (OAR 340-122-0240). *Note: It is often a site-by-site decision on the adequacy of this determination. Contact the Department if there are questions on this issue.*

❑ E9. A mass balance calculation for vapor intrusion into the structure of benzene was performed using the *Screening Model for Volatilization from Soil to Indoor Air at Heating Oil Tank Sites* posted on the Department's web page at https://www.oregon.gov/deq/tanks/Pages/HOT-Screening-Model.aspx.

❑ E10. A detailed risk based evaluation has been conducted and the site has been found to be in compliance with OAR 340-122-0205 through 340-122-260. A detailed report documenting the finding has been prepared.

General Comments:

_____

_____

_____

_____

_____

_____

_____

_____

_____

SIGNATURE

Licensed HOT Supervisor Name: _____
(please print)

_____ _____
License Number Expiration Date

Check the correct box for each section completed in this checklist:
ρ Section A *AND* ρ Section B *OR* ρ Section C *OR* ρ Section D *OR* ρ Section E

"By my signature below, I state that the information contained in this checklist is true and complete to the best of my knowledge."

Supervisor Signature:_____ Date:_____

Note: If more than one supervisor was involved with the project, please add a second sheet with the license information and a signature block.

4. INITIAL Heating Oil Tank Cleanup Report Form

Complete DEQ's one-page INITIAL Heating Oil Cleanup Report Form. INITIAL Cleanup Report Form available at https://www.oregon.gov/deq/tanks/Pages/HOT-Forms.aspx

OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY
Underground Storage Tank Program

HEATING OIL TANK SERVICES
SERVICE PROVIDER REPORT CERTIFICATION

INITIAL HEATING OIL CLEANUP REPORT FORM

If required by OAR 340-177-0055(5), complete this INITIAL report and submit it to the DEQ NWR office **as soon as possible**, but at least within 45 days from the date the release from a heating oil tank is confirmed.

Property Owner Name:_____ DEQ Cleanup File No.: _____

Property Address: _____

City/State/Zip Code:_____ County:_____

Owner Phone Number: _____

Owner Mailing Address (if different): _____

_____ Date the release was originally suspected (e.g. water in tank) or confirmed (sight, smell, test).

_____ Date the release was reported to DEQ. Name of DEQ person contacted: _____
Note: Releases must be reported within 72-hours by owner or service provider.

Circle One

Yes No A visual inspection of the release has been made and immediate actions taken to prevent any further release or migration of heating oil into surrounding soils or groundwater.

Yes No Any fire, explosion, and/or vapor hazards in soil or groundwater have been identified and mitigated.
___Yes ___No ___NA Monitoring for hazards has continued beyond initial identification.

Yes No NA As much heating oil/sludge as possible has been removed from the tank. Gallons removed: _____
Name of oil **recycling** or **disposal** company (circle one): _____

Yes No Hazards posed by contaminated soil that has been excavated or exposed have been remedied.
Note: Contaminated soil cannot be stored on-site for more than 30 days without a permit from DEQ.

Yes No Free product has been observed in the **tank pit** and/or **groundwater** (circle any that apply).
Note: Any free product observed must be removed and properly treated/disposed.

Yes No Groundwater has been encountered during tank decommissioning or cleanup actions taken to-date.
Note: DEQ must be notified immediately when groundwater is encountered at any time.

Yes No Measurements for the presence of a release where contamination is most likely to be encountered have been made at the time of this report. If yes, note highest TPH sample result:_____mg/kg TPH-Dx.

Yes No Cleanup actions have been initiated at the time of this report. If no, include proposed schedule for cleanup and state reason for delayed cleanup on back of this form: Proposed cleanup date (mo/yr) _____

"By my signature below, I state that the information contained in this report is true and complete to the best of my knowledge."

Name of person preparing report (please print): _____

Signature:_____ Date:_____

Supervisor License No.:_____ Expiration Date: _____

Licensed Heating Oil Tank Service Provider Company: _____

Company License Number:_____ Expiration Date: _____

5. FINAL Heating Oil Tank Cleanup Report Form

Complete DEQ's two-page FINAL Heating Oil Tank Report Form. FINAL Cleanup Report Form available at https://www.oregon.gov/deq/tanks/Pages/HOT-Forms.aspx

DEQ
State of Oregon Department of Environmental Quality

OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY
Underground Storage Tank Program

HEATING OIL TANK SERVICES
SERVICE PROVIDER REPORT CERTIFICATION

FINAL HEATING OIL CLEANUP REPORT FORM

Complete this FINAL report and submit it to the DEQ Northwest Regional Office (2020 SW 4th Avenue, Suite 400, Portland, OR 97201) **as soon as possible**, but within sixty (60) days from the date the release from a heating oil tank is cleaned up. If this report cannot be submitted within the required time frame, contact DEQ (503-229-6170) to request an extension. OAR 340-177-0055(6)

Property Owner Name:_____ DEQ Cleanup File No.:_____

Property Address:_____

City/State/Zip Code:_____ County:_____

Owner Phone Number:_____

Owner Mailing Address (if different):_____

Licensed Cleanup Service Provider Company:_____

License Number:_____ Expiration Date:_____

_____ Date tank ____ **removed** or decommissioned ____ **in-place**. Approx. size of tank:_____ gallons
(check √ all that apply and provide requested information)
If tank filled in-place:
What type of fill material was used?_____ How much?_____ gallons
Tank must be completely filled with inert solid material that is compacted and appropriate for site conditions.

If tank was removed, where was it recycled or disposed of?_____
What national code of practice was followed during decommissioning?

_____
Describe how the tank was cleaned as thoroughly as possible to the maximum extent practicable:
_____
_____

How much product (oil) was removed? _____gal. Sludge? _____gal. Water? _____gal.

Where was the product/sludge/water recycled?_____ Disposed?_____

_____ Date cleanup **started**. _____ Date cleanup **completed**.

(Check √ Yes or No)

____ Yes ____ No An INITIAL heating oil cleanup report form has already been submitted. ***If cleanup had not been started at the time of the initial report, include a new initial report form that has the missing information completed.***

____ Yes ____ No A narrative report is attached.

Complete the rest of this form. Be sure to sign and date page two after answering all questions.

1. How was the release discovered? Describe:_____

2. What initial measures were taken to control the spread of contamination? Describe:_____

_____

3. What was observed when the tank was removed from the pit or decommissioned in-place? Describe:_____

How much contaminated soil was removed?_____cubic yards/tons (circle one)

5. What was done with the contaminated soil? (check below)
___Disposed of at:_____(name of disposal company)
___ Treated off-site at:_____(name of treatment company)
___ Treated on-site. ATTACH copy of Solid Waste Letter Authorization permit approved by DEQ.
___Yes No On-site treatment of contaminated soil is complete.

6. What actions were taken during cleanup? Describe:_____
_____

(circle one)

6. Yes No Groundwater was encountered in the tank pit. If yes, ATTACH a separate summary of the data collected and decision made by DEQ in accordance with OAR 340-122-0355(3).

7. What is the highest TPH-Dx concentration measured?_____mg/kg Sample ID No._____

8. Provide a summary of the concentrations measured in the FINAL round of samples from each sample location.
Note: Write in the specific unit of measurement for each contaminant. Write in "N/A" if sample was not analyzed for a contaminant. Use additional pages as necessary to summarize final results.

Sample ID	Sample Media Location Soil/Water	NWTPH-Dx Conc. (mg/kg)	B T E or X Detected?	Any PAH's Detected?
_____	_____	_____	__Yes ___No ___N/A	_Yes __No ___N/A	_____
_____	_____	_____	__Yes ___No ___N/A	_Yes __No ___N/A	_____
_____	_____	_____	__Yes ___No ___N/A	_Yes __No ___N/A	_____
_____	_____	_____	__Yes ___No ___N/A	_Yes __No ___N/A	_____

9. Check the type of remedial option selected for this cleanup project. Include any additional information necessary to satisfy the specific remedial option report requirements. **(check only one)**

___ Soil Matrix OAR 340-177-0065(1)(a) Note: *include matrix score sheet*
___ Risk-Based OAR 340-177-0065(1)(b)
___ Generic Remedy OAR 340-177-0065(1)(c)

10. The following information should be ATTACHED as part of this report (list the attachment number you assign for each one):

Attachment Number

_____ Site map, drawn roughly to scale, showing the location of all buildings on the property and on adjacent properties and the location of the heating oil tank. Include distances in feet between objects.

_____ Sketch of the property that clearly shows the sample locations and depths of all soil and/or water samples collected and identifies each location and sample with an unique sample identification code.

_____ Copies of chain-of-custody forms for all soil and water samples collected.
Note: Chain-of-custody forms should include the date, time, and location of each sample collected; the name and company of the person collecting the samples; a description of how the samples were collected, stored, and shipped to the laboratory; and note any problems encountered during the cleanup or sampling process that may have affected sample integrity. Forms should clearly state the address of where samples were collected as a unique identifier.

_____ Copies of all laboratory data reports. Test methods used, including method reporting limits, must be included.

_____ Copies of all receipts or permits related to the disposal of any **oil** / **sludge**, **free product**, contaminated **soil**, and/or decommissioned **tank** and **piping** (circle all that apply).

_____ Photographs taken at the time of heating oil tank decommissioning and cleanup (not required, but helpful).

"By my signature below, I state that the information contained in this report is true and complete to the best of my knowledge."

Name of person preparing report (please print): _____

Signature:_____ Date: _____

Supervisor License No.:_____ Expiration Date: _____

6. Example of Cleanup Report Cover Page

HEATING OIL TANK
SOIL MATRIX CLEANUP REPORT

Site Address:
1015 NE Oil St.
Voluntary, Oregon 97999
DEQ No. 37-03-0005

Prepared by:
HOT Tank Excavators
2030 NE Tank St.
Steel, Oregon 97990
(phone) 503-229-5263
(fax) 503-229-6945
(e-mail) hottank@comcast.com

Prepared For:
Joe Homeowner
1015 NE Oil St.
Voluntary, Oregon 97999

December 2012

7. Example of Cleanup Report Table of Contents

Table of Contents

8. Example of Cleanup Report Narrative Discussion

1.0 Introduction

1.1 General

This report by HOT Tank Excavators details in-place decommissioning of a 500-gallon, steel heating oil tank and associated soil sampling activities. The activities took place from August 10 to 15, 2012 at 1015 NE Oil St. in Voluntary, Oregon (see vicinity and site map in Section 7.2). The top of the heating oil tank was buried two feet below ground surface and the bottom of the tank is at 6.5 feet bgs.

1.2 Site Description

The property is located in a residential section of Voluntary, Oregon and is on the northeast corner of Tenth and Oil streets. The topography of the property has a five percent slope to the north. There are no surface streams on the property. The residence at the site is currently occupied. The heating oil tank is located two feet north and 10 feet east of the northwest corner of the house.

1.3 Soils and Geology

The first two feet of soil were a darkish brown to black silty topsoil. From two feet to the bottom of the site assessment borings at 7.5 feet, the soils were a yellow-brown clay. No bedrock was encountered to the bottom of the soil borings.

1.4 Groundwater.

Groundwater was not encountered in the site assessment borings to 7.5 feet bgs.

2.0 Site Activities

2.1 Standards Used

The American Petroleum Institute's Publication 1604, *Removal and Disposal of Used Underground Petroleum Storage Tanks,* was used for this guide in completing the in-place decommissioning.

2.2 Heating Oil Tank Decommissioning

On Aug. 10, 2012, HOT Tank Excavators excavated all the surface soils to uncover the top of the heating oil tank. The soil was temporarily stored on-site on top of heavy duty plastic sheeting to prevent possible contamination of surface soils. No visible contamination or odor was present in these soils. Both the fill pipe and vent pipe were removed from the tank. After insuring that the tank was properly inerted, a hole big enough to allow internal inspection was cut into the top of the tank.

Fuel Oil Company of Waste, Oregon removed 30 gallons of unused fuel oil from the tank and another 60 gallons of rinse water from the tank (see content disposal receipts in Section 7.7 (a)). Waste materials went to their processing facility for treatment and/or disposal. After the tank was thoroughly cleaned, an internal inspection was made of the tank looking for any corrosion holes or other points of obvious structural failure.

NOTE 1: While performing an internal inspection, always ensure an adequate supply of fresh air is present in the tank.
NOTE 2: If any corrosion holes of other points of structural failure are noted, soil samples must be taken at these locations of probable maximum soil contamination.

As discussed in more detail in Section 2.4, soil samples were collected on Aug. 11, 2012. After site assessment sample results were obtained from the laboratory on Aug. 14, 2012, it was concluded that the soil matrix Level II cleanup standards were met. To decommission the tank in-place, a cement slurry was pumped into the tank until all the void space was filled. Since no contaminated soil needed to be excavated, the site was backfilled and restored to original grade.

Section 7.8 shows photos of the above-described activities.

NOTE: If the heating oil tank was decommissioned by removal, include a narrative discussion of this activity at this point in the report. Also discuss how and where the tank was disposed of (see Section 7.7 (b) for an example of a tank disposal receipt).

2.3 Contaminated Soil Cleanup Activities

NOTE: If contaminated soil is excavated and hauled off-site, please include a narrative discussion of the soil cleanup activity at this point in the report. Also discuss where the contaminated soil was hauled for treatment or disposal (see Section 7.7 (c) for an example of a contaminated soil disposal receipt).

2.4 Site Assessment Activities

On Aug. 11, 2012 soil samples were collected at the site. Since no areas of tank failure were noted during the internal inspection, site assessment borings were advanced at either end of the heating oil tank. See Section 7.3 for sample locations and results. The borings were installed within six inches of each end of the tank. Since visibly contaminated soil was first observed at three feet bgs on the east end of the tank, soil sample E-3.0-001 was collected to possibly represent the most contaminated soil at the site. The east soil boring was advanced to one foot below the tank bottom and sample E-7.5-002 was collected. The last sample W-7.5-003 was collected at 7.5 feet bgs on the west end of the tank where no contaminated soil was observed in the removed soils.

3.0 Sampling Methodology and Analytical Results

Soil sampling was performed in accordance with OAR 340-122-0345. Samples were placed in glass sampling containers supplied by the laboratory. Sample containers were filled to the top with soil to eliminate any air space in the container. Samples were placed in an ice chest to keep them cold. A chain of custody form was filled out and accompanied the samples to the laboratory (see Section 7.5).

Sampling results are summarized in a table in Section 7.1. The west end soil sample W-7.5-003 tested non-detect (ND) or less than the method detection limit of 50 parts per million. The results for the east end samples E-3.0-001 and E-7.5-002 were 450 and 300 ppm, respectively, for NWTPH-Dx. Since contamination was detected above method detection limits, a soil matrix cleanup analysis was performed.

4.0 Soil Matrix Cleanup Determination

To determine the soil matrix cleanup standards for the site, a soil matrix score was calculated using the soil matrix scoring sheet – See Section 7.4. The site scored a 30 after considering the five factors to be evaluated. A score of 30 results in a soil matrix Level II cleanup standard of 500 ppm NWTPH-Dx for this site. Since the contamination was decreasing with depth it appears the worst contamination has been detected. Since all sample results were below 500 ppm, it is concluded the site meets the soil matrix Level II cleanup standard.

NOTE: Had any sample results come back above 500 ppm for NWTPH-Dx, then several options could be considered. Option 1 would be some soil removal with the goal of removing those soils with contamination above 500 ppm. Additional confirmation soil samples would need to be collected and tested to show the goal was met. Option 2 would be to evaluate the site for compliance with the heating oil generic remedy or risk-based cleanup standards. It is likely that additional samples would be required to define the amount of soil with contamination levels above 500 ppm. Further, analysis to test for petroleum constituents such as benzene, ethylbenzene, naphthalene and polynuclear aromatic hydrocarbons are necessary to apply the generic remedy or risk-based standards. Depending on the testing results, soil removal is also an option to bring a site into compliance with the generic remedy or risk-based standards.

5.0 Summary

A 500-gallon heating oil tank was decommissioned in-place. Thirty gallons of unused fuel and 60 gallons of rinse water were removed from the tank by Fuel Oil company of Waste, Oregon. The tank was filled with a cement slurry and the site backfilled to original grade.

Three site assessment soil samples were collected in native soils from adjacent to and below the bottom of the tank with results for NWTPH-Dx ranging from non-detect to 450 ppm.

A soil matrix Score of 30 was calculated for the site resulting in a Level II cleanup standards of 500 ppm for NWTPH-Dx. Since these results were below Level II soil matrix cleanup levels, no contaminated soils were excavated. No groundwater was encountered to 7.5 feet bgs.

6.0 Recommendation

HOT Tank Excavators certify that the site complies with soil matrix cleanup rules found in OAR 340 – Divisions 122 and 177 and that no further action is required. HOT Tank Excavators recommends that DEQ register this heating oil tank soil matrix cleanup site and notify the homeowner that the file is closed.

9. Example of Table of Sample Results

7.0 Attachments

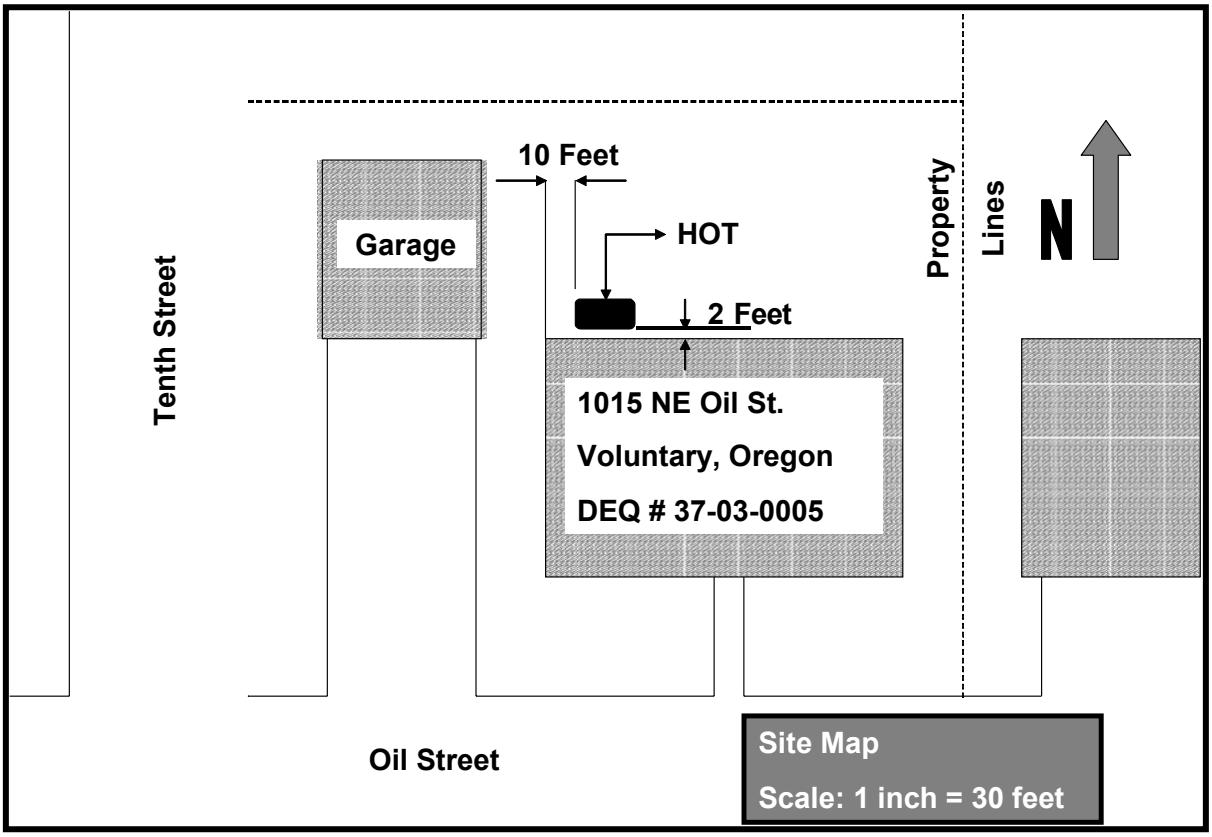
7.1 Table of Soil Sample Results

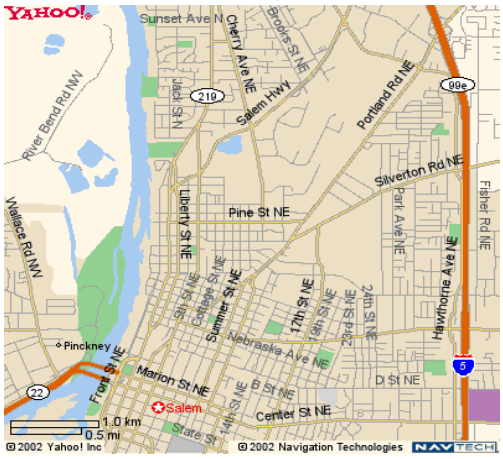
Sample Date	Sample Number	Sample Location	Depth in Feet	Analysis Run	Results in ppm
8-11-03	E-3.0-001	East end of tank	3.0	NWTPH-Dx	450
8-11-03	E-7.5-002	East end of tank	7.5	NWTPH-Dx	300
8-11-03	W-7.5-003	West end of tank	7.5	NWTPH-Dx	ND (<50)

NOTE: Add a table showing results of any groundwater sampling if groundwater was encountered in the tank pit excavation or site assessment borings.

10. Example of Site and Vicinity Maps

7.2 Vicinity and Site Maps

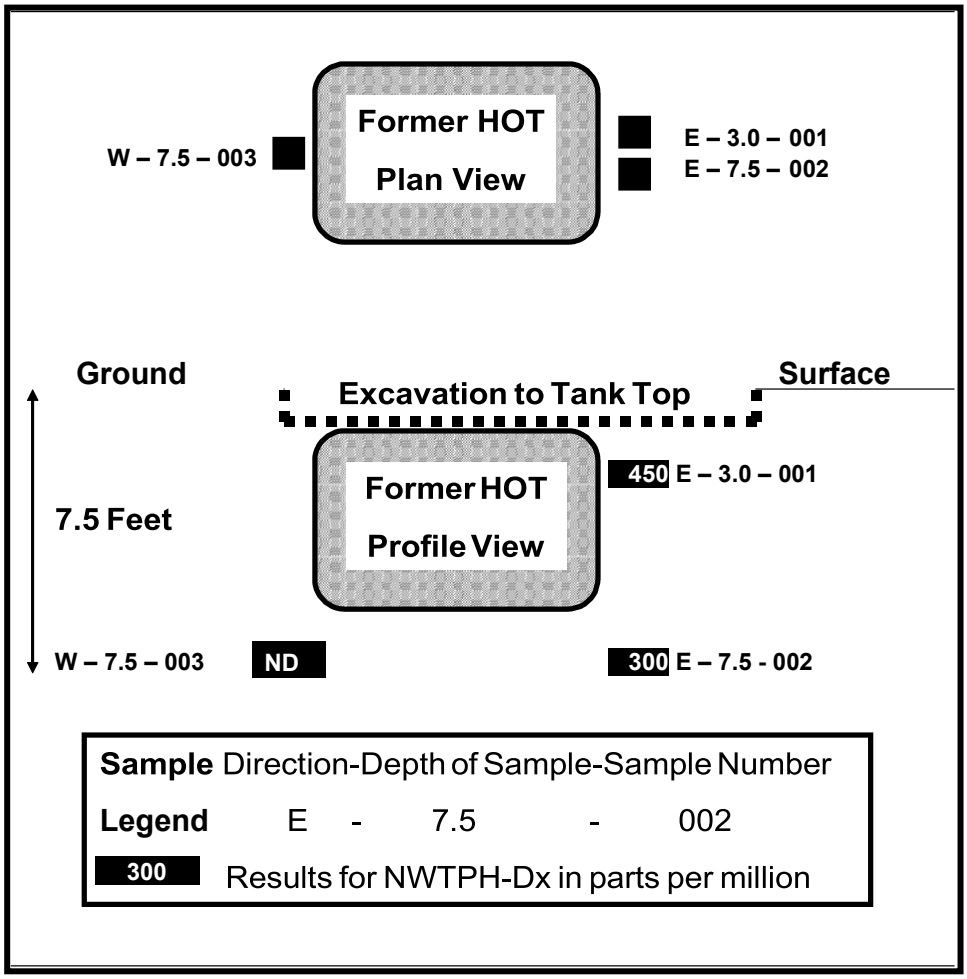




Vicinity Map

11. Example of Sample Locations and Results Sketch

7.3 Sample Locations and Results



A GOOD SAMPLE LOCATION SITE SKETCH HAS:

- **All sample locations shown**
- **Depth of samples shown**
- **Each sample uniquely identified**
- **Sample results shown**
- **Both a plan view and a profile view**

12. Example of Soil Matrix Score Sheet

7.4 Soil Matrix Analysis and Score Sheet

1. Depth to Groundwater < 25 feet 25 - 50 feet 51 - 100 feet > 100 feet	 (10) (7) (4) (1)	10
2. Mean Annual Precipitation > 45 inches 20 - 45 inches < 20 inches	 (10) (5) (1)	5
3. Native Soil Type Course sands, gravels Silts, fine sands Clays	 (10) (5) (1)	1
4. Sensitivity of Uppermost Aquifer Sole Source Current Potable Future Potable Non-potable	 (10) (7) (4) (1)	4
5. Potential Receptors Many, near Medium Few, far	 (10) (5) (1)	10
TOTAL SCORE	=	30

MATRIX SCORE	Cleanup Level (ppm TPH)	
	Gasoline	Diesel
Level 1: > 40 pts.	40	100
Level 2: 25 - 40 pts.	80	500
Level 3: < 25 pts.	130	1000

13. Example of Chain of Custody Form

7.5 Chain of Custody Form

[redacted]

CASCADE ENVIRONMENTAL SERVICES INC. Lab Order:
P.O. Box 14128 Portland, Oregon 97214
TEL 503-233-1193 FAX 503-233-2838 www.myoiltank.com info@cascade-environmental.com

CHAIN OF CUSTODY Laboratory: **Environmental Services Laboratory, Inc.** 17400 SW Upper Boones Ferry Rd. Portland, Oregon 97224

PROJECT NO.	PROJECT NAME	PROJECT STREET ADDRESS	PROJECT CITY, STATE
			Portland, OR
COMPANY Cascade Environmental Services	REPORT ATTENTION Don Francis	PHONE NO. 503-233-1193	FAX NO. 503-233-2838
SAMPLES COLLECTED BY	DATE(S) COLLECTED 5-14-3	SPECIAL INSTRUCTIONS	SAMPLES CHILLED TO 4° C? Yes

FIELD ID	TIME COLLECTED	MEDIA	CONTAINER	VOLUME ETC	ANALYSIS REQUIRED	TURNAROUND	LAB ID
SO1-G1-79	1010 am / pm	SOIL	GLASS JAR	4 OUNCE	NWTPH-Dx	24	01
SO2-G2-79	1030 am / pm	S	S	S	S + BetX / PAH	S	02
	am / pm						
	am / pm						
	am / pm						
	am / pm						
	am / pm						
	am / pm						
	am / pm						
	am / pm						
	am / pm						

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
[redacted]	5-14-3 3:45	[redacted]	5-14-03 1545
[redacted]	5-14-03 1625	[redacted]	5-14-03 1625
RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME

Environmental Services Laboratory will return white copy to Cascade Environmental with lab report and keep yellow copy for files. Cascade retains pink copy.

ATTACHMENT #3

14. Example of Laboratory Report

7.6 Laboratory Results

Pacific Northwest Laboratories
65 Centennial Loop
Eugene, Oregon 97401
(541) 484-4493 Fax: 484-4188

LABORATORY REPORT

PNL REPORT NUMBER: 4240

CLIENT:
CLIENT PROJECT CODE:
SITE LOCATION:

ITEMS ANALYZED: 2 soil samples

DATE SAMPLES COLLECTED: September 23, 2002
DATE ANALYSIS COMPLETED: October 2, 2002

METHOD: **NWTPH-Dx**
Results and Method Reporting Limits (MRL) presented in mg/kg (ppm)
ND = Compound not detected

	Diesel		Lube Oil	
Sample I.D	Result	MRL	Result	MRL
SPD01-P1-4'9"	ND	25	ND	100
SPD01-P2-5'2"	15000		ND	100
LAB BLANK	ND	25	ND	100

Surrogate Recoveries

Sample I.D	Percent	Acceptance Limits
SPD01-P1-4'9"	122	50-150
SPD01-P2-5'2"		
LAB BLANK	116	

Unable to calculate Surrogate Recovery due to analyte concentration

15a. Example of Tank Content Disposal Receipt

7.7 (a) Disposal Receipt for Tank Contents

ATTACHMENT #5

OIL RE-REFINING CO., INC.

Main Office
4150 N. Suttle Rd.
Portland, OR 97217

24 Hour Emergency
(503) 286-8352
1-800-367-8894

701 Bozarth
P.O. Box 1407
Woodland, WA 98674
EPA # WAD 980986012

No. 106313
Date: 3-27-02
Cust. I.D. # 7042
Call Back:

Generator: Cascade Environmental
Name Contact Person
2305 SE Sixth Portland Or 97206 233-1193
Address City State Zip Phone

Billing Address:
P.O. Box 14128
Portland Or 97293

Consigned To: Fuel Processors EPA #ORD 980975492
Destination: 4150 N Suttle Rd Portland Or 97217
Via Carrier: OARCO
Driver: Rick Truck No.: 0680 Miles Run: N/A

Profile Date: Attached
CK# 5076 P.O.#
Load Ticket # Weight:

Gal./Brl.	Description	Sniffer P/F	CDT/ HCDT	pH	Flash Point	Rate Per Gal./Brl.	Rate Per Hour	Charge
490	Waste Diesel	P				N/C		N/C
586	Emulsified Diesel & water	P		6		35		205.10
	Flash >200°F Exempt from Regulation							
1	Stop clog					55.00		55.00
	Diesel & water in same tanks							
Above materials transported for recycling. EPA #					Total:			260.10

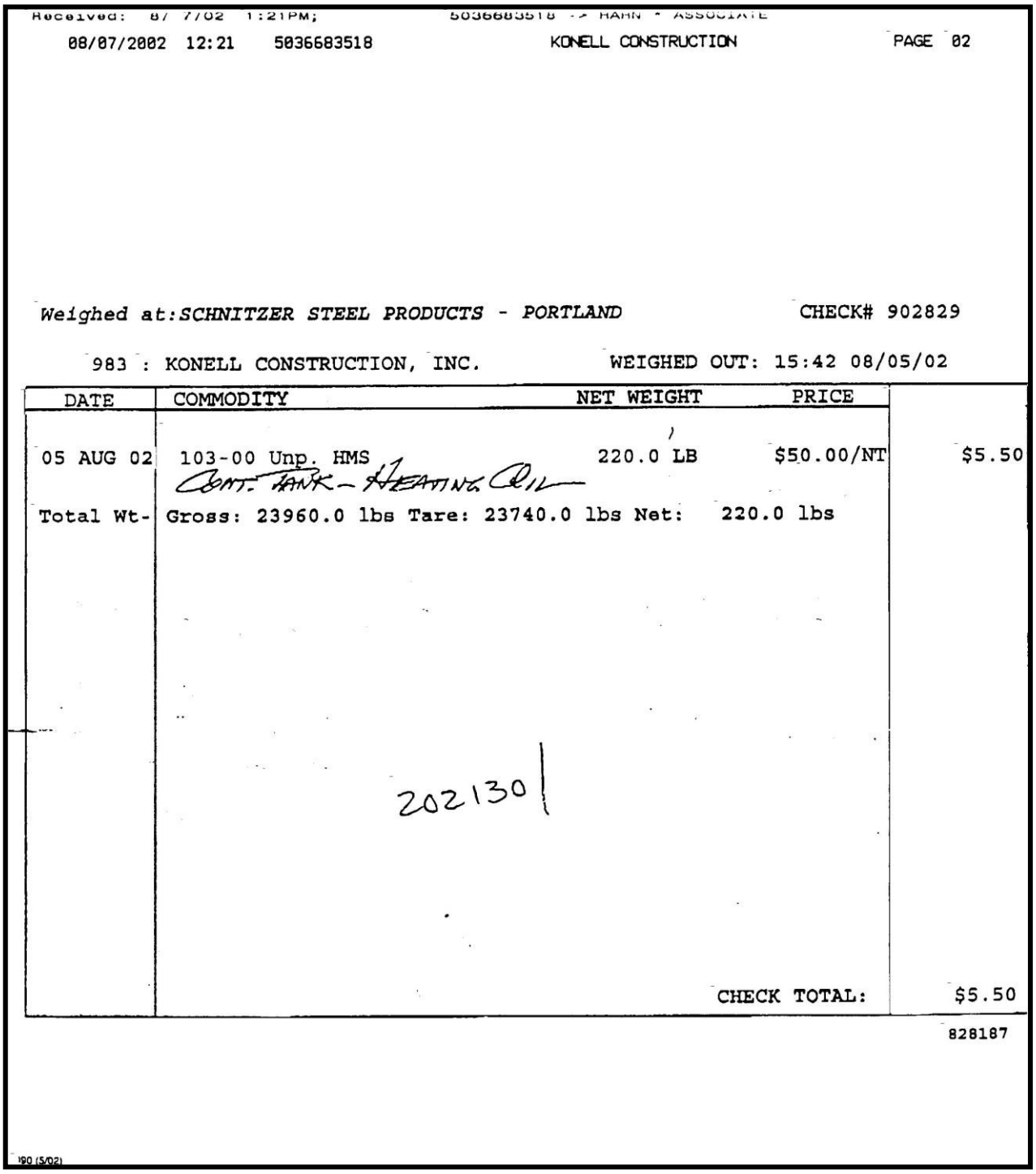
Customer warrants that the waste petroleum products being transferred by the above collector do not contain any contaminants including, without limitation, pesticides, chlorinated solvents at concentrations greater than 1000 PPM, PCBs at concentrations greater than 2 PPM (or 50 PPM with Manifest), or any other material classified as hazardous waste by 40 CFR part 261, Subparts C and D (implementing the Federal Resource Conservation and Recovery Act) or by any equivalent State hazardous waste or hazardous substance classification program. Should laboratory tests find this waste product not in compliance with 40 CFR Part 261, customer (generator) agrees to pay for all disposal costs incurred.

Signed: X

Date: 3/27/02

15b. Example of Tank Disposal Receipt

7.7 (b) Disposal Receipt for Tank



Received: 8/ 7/02 1:21PM; 5036883518 -> HAHN * ASSOCIATE

08/07/2002 12:21 5036683518 KONELL CONSTRUCTION PAGE 02

Weighed at:SCHNITZER STEEL PRODUCTS - PORTLAND CHECK# 902829

983 : KONELL CONSTRUCTION, INC. WEIGHED OUT: 15:42 08/05/02

DATE	COMMODITY	NET WEIGHT	PRICE	
05 AUG 02	103-00 Unp. HMS CONT. TANK - HEATING OIL	220.0 LB	$50.00/NT	$5.50
Total Wt-	Gross: 23960.0 lbs Tare: 23740.0 lbs Net:	220.0 lbs		

202130

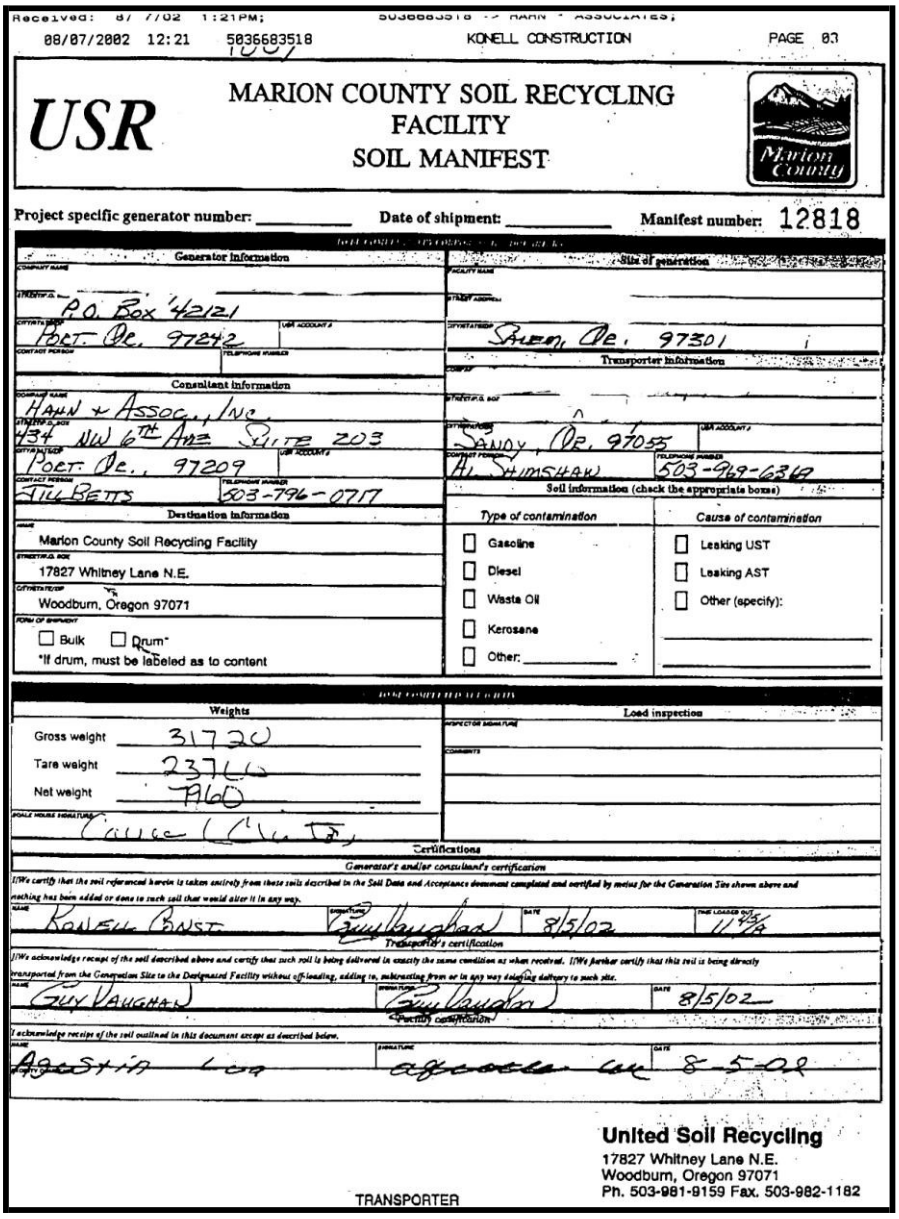
CHECK TOTAL: $5.50

828187

190 (5/02)

15c. Example of Soil Treatment or Disposal Receipt

7.7 (c) Treatment or Disposal Receipt for Contaminated Soil



Received: 8/ 7/02 1:21PM; 5036683518 -> HAHN - ASSOCIATES;
08/07/2002 12:21 5036683518 KONELL CONSTRUCTION PAGE 03
1007

USR MARION COUNTY SOIL RECYCLING FACILITY SOIL MANIFEST

Project specific generator number: _____ Date of shipment: _____ Manifest number: 12818

Generator Information
P.O. Box 42121
Port. Or. 97242

Site of generation
Salem, Or. 97301

Consultant information
Hahn + Assoc., Inc.
434 NW 6th Ave. Suite 203
Port. Or., 97209
Jill Betts 503-796-0717

Transporter Information
Sandy, Or. 97055
Al Shimshaw 503-969-6360

Destination Information
Marion County Soil Recycling Facility
17827 Whitney Lane N.E.
Woodburn, Oregon 97071
☐ Bulk ☐ Drum*
*If drum, must be labeled as to content

Soil information (check the appropriate boxes)

Type of contamination	Cause of contamination
☐ Gasoline	☐ Leaking UST
☐ Diesel	☐ Leaking AST
☐ Waste Oil	☐ Other (specify):
☐ Kerosene	
☐ Other:	

Weights
Gross weight 31720
Tare weight 23760
Net weight 7960

Load inspection

Certifications

Generator's and/or consultant's certification
I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data and Acceptance document completed and certified by notice for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.
NAME Konell Const SIGNATURE Guy Vaughan DATE 8/5/02 TIME LOADED OUT 11:45

Transporter's certification
I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way changing delivery to such site.
NAME Guy Vaughan SIGNATURE Guy Vaughan DATE 8/5/02

Facility certification
I acknowledge receipt of the soil outlined in this document except as described below.
NAME Agustin Lua SIGNATURE agustin lua DATE 8-5-02

United Soil Recycling
17827 Whitney Lane N.E.
Woodburn, Oregon 97071
Ph. 503-981-9159 Fax. 503-982-1182

TRANSPORTER

16. Example of HOT Decommissioning and Cleanup Photos

7.8 Site Photos