



THE STATE  
of **ALASKA**  
GOVERNOR BILL WALKER

**Department of Environmental Conservation**  
DIVISION OF SPILL PREVENTION AND RESPONSE  
Contaminated Sites Program

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Fairbanks, AK 99709-3643  
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[www.dec.alaska.gov](http://www.dec.alaska.gov)

File: 102.38.118

August 29, 2017

Ms. Susan Cruikshank  
239 Ina Street  
Fairbanks, Alaska, 99701

**Re: Decision Document: Residence - Ina Street Overfill  
Cleanup Complete Determination – Institutional Controls**

Dear Ms. Cruikshank:

The Alaska Department of Environmental Conservation (ADEC), Contaminated Sites Program has completed a review of the environmental records associated with the Residence - Ina Street Overfill site located at 239 Ina Street in Fairbanks. Based on the information provided to date, it has been determined that the contaminant concentrations remaining on site do not pose an unacceptable risk to human health or the environment and no further remedial action will be required as long as the institutional controls are maintained and effective and no new information becomes available that indicates residual contamination poses an unacceptable risk.

This Cleanup Complete with Institutional Controls (ICs) determination is based on the administrative record for the site which is located in the offices of ADEC in Fairbanks, Alaska. This decision letter summarizes the site history, cleanup actions, regulatory decisions, and specific conditions required to effectively manage remaining contamination at this site.

**Site Name and Location:**

Residence - Ina Street Overfill  
239 Ina St.  
Fairbanks, Alaska 99701

**Name and Mailing Address of Contact Party:**

Ms. Susan Cruikshank  
239 Ina St.  
Fairbanks, Alaska 99701

**DEC Site Identifiers:**

File No.: 102.38.118  
Hazard ID.: 3236

**Regulatory Authority for Determination:**

18 AAC 75

### Site Description and Background

On December 7, 1999, a heating oil spill occurred at the residence of 239 Ina Street, Fairbanks, Alaska, when the tank was overfilled during fueling. An estimated 430-680 gallons of diesel fuel spilled on the ground and ran along the eastern and southern edges of the foundation footer and beneath a crawlspace located underneath an occupied house located on the property.

### Contaminants of Concern

During the site investigation and cleanup activities at this site, samples were collected from soil, groundwater, and air and analyzed for diesel range organics and benzene, toluene, ethylbenzene, and xylenes. Based on these analyses, the following contaminants were detected above the applicable cleanup levels and are considered Contaminants of Concern at this site:

- Diesel Range Organics (DRO)
- Benzene, toluene, ethylbenzene, and xylenes (BTEX)

### Cleanup Levels

Diesel range organics and BTEX were detected in soil above the approved Method 2 migration to groundwater cleanup levels for the under 40-inch precipitation zone, established in 18 AAC 75.341(c), Table B1, and 18 AAC 75.341 (d), Table B2. Diesel range organics were detected in groundwater above the approved cleanup levels established in 18 AAC 75.345 Table C.

**Table 1 – Approved Cleanup Levels**

Contaminant	Soil <sup>1</sup> (mg/kg)	Groundwater (mg/L)
DRO	250	1.5
Benzene	0.022	NA
Ethylbenzene	0.13	NA
Toluene	6.7	NA
Xylene	1.5	NA

mg/kg = milligrams per kilogram

mg/L = milligrams per liter

<sup>1</sup> –Migration to groundwater pathway, Method 2

### Characterization and Cleanup Activities

In August 2000, approximately 108-cubic yards (cy) of contaminated soil was removed and transported to OIT, Inc. for thermal remediation. During excavation, the existing underground storage tank was also removed. The tank and all associated pipes was examined and no visible damage was observed. Contaminated soil was removed to the greatest extent practicable. It was not possible to remove contaminated soil beneath the house or around the base of a large spruce tree to the southeast of the structure. The site was transferred from the Prevention, Preparedness and Response Program (PPRP) to the Contaminated Sites (CS) Program in March of 2002.

Following the August 2000, excavation of contaminated soil at 239 Ina Street, soil samples were collected from the sides and base of the excavation, including the areas beneath the spruce tree and near the foundation that could not be excavated. These results indicated that contaminants remaining in the soil included DRO up to 6,370-mg/kg, benzene up to 0.0604-mg/kg, toluene up to 7.6-mg/kg, ethylbenzene up to 28.8-mg/kg, and total xylenes up to 187-mg/kg.

To mitigate vapor intrusion and remediate soil contamination remaining under the house, two soil vapor extraction (SVE) systems were installed. One system consisting of perforated pipe placed under a vapor barrier in the crawlspace and the second system consisting of a buried perforated pipe running along the foundation. Each system was depressurized by a ventilation fan and ducted above the roof line of the house.

Crawlspace soil samples were collected in November and December of 2002, from a depth of 3-feet (ft.) to determine the concentrations and lateral extent of contamination remaining beneath the building. Contaminated soil was observed near the east footing at a depth of 3-ft below the surface of the crawlspace and extended along the length of the footing approximately 10-ft and west of the footing approximately 5-ft. The highest DRO concentration of 15,900-mg/kg was found at 3-ft below the surface of the crawlspace just inside the footing and close to the monitoring well location. The concentration of ethylbenzene ranged up to 16.1-mg/kg and total xylene was up to 65.6-mg/kg, both exceeding the migration to groundwater cleanup levels. Benzene was not detected, however the practical quantitation limit exceeded ADEC cleanup level for benzene.

#### *Groundwater monitoring*

Following excavation efforts, a monitoring well was installed where the spill occurred. In August 2000, DRO in groundwater was 1.8-mg/L, slightly above the DEC cleanup level of 1.5-mg/L. Depth to groundwater is approximately 15-feet below ground surface (ft. bgs). Quarterly monitoring was implemented. DRO decreased beneath cleanup levels by the December 2001, sampling event and continued to decrease over four groundwater monitoring events to levels below the detection limit. BTEX concentrations were lower than ADEC cleanup levels for all nine monitoring events. The last groundwater monitoring event was in November of 2002.

#### *Indoor Air Quality*

Nortech, Inc. evaluated indoor air quality over the winter of 2001-2002. This assessment included walk-through monitoring for total volatile organic carbon (VOC) with a parts per billion level photoionization detector and conducted multiday monitoring for BTEX and VOCs using passive diffusion samplers in the house and crawlspace. The passive diffusion samplers have a detection limit of 0.01 part per million (ppm). Investigations were conducted when the SVE system was operating and when it was turned off, and when the house was occupied and unoccupied. Trace quantities of xylenes, 0.012-ppm, were detected in the crawlspace after the SVE had been turned off. BTEX was not detected in the house. All other VOCs were within background levels documented in local and international studies for a residential structure (0.05 – 0.4 ppm) in spite of the fact that significant renovations, including painting and the installation of new vinyl flooring with mastic, had recently been completed. The primary air exchange route in the home is under the kitchen door and through the garage, which is a source of furnace and vehicle emissions. Based on these and other results, such as examining air flow patterns, it was determined that vapors from remaining contamination were not migrating into the house and the crawlspace ventilation system was shut off on March 28, 2002. The foundation ventilation system was also shut off at an unknown time.

**Cumulative Risk Evaluation**

Soil contamination that remains beneath the building footprint exceeded cleanup levels and therefore also exceed cumulative risk. Inhalation and soil ingestion pathways are controlled as the remaining contamination at the site is sub-surface and institutional controls are in place to prevent future exposure without prior DEC approval.

**Exposure Pathway Evaluation**

Following investigation and cleanup at the site, exposure to the remaining contaminants was evaluated using ADEC's Exposure Tracking Model (ETM). Exposure pathways are the conduits by which contamination may reach human or ecological receptors. ETM results show all pathways to be one of the following: De-Minimis Exposure, Exposure Controlled, or Pathway Incomplete. A summary of this pathway evaluation is included in Table 2.

**Table 2 – Exposure Pathway Evaluation**

<b>Pathway</b>	<b>Result</b>	<b>Explanation</b>
Surface Soil Contact	De-Minimis Exposure	Contamination is not present in surface soil (0 to 2-ft bgs).
Sub-Surface Soil Contact	Exposure Controlled	Contamination remains beneath the building footprint covered by greater than 2-ft of soil and a vapor barrier or building foundation.
Inhalation – Outdoor Air	De-Minimis Exposure	Remaining contamination above human health and inhalation levels in the sub-surface soil is estimated to remain in a very small area beneath the building footprint.
Inhalation – Indoor Air (vapor intrusion)	Exposure Controlled	A vapor barrier was installed in the crawlspace above the source area. Greater than 2-ft of clean soil is present above the contaminated soil.
Groundwater Ingestion	De-Minimis Exposure	Contaminants decreased below cleanup levels during the last four sampling events.
Surface Water Ingestion	De-Minimis Exposure	Contaminants in groundwater are below cleanup levels. Most of the contaminated soil was excavated. Much of the remaining contamination is beneath the building footprint and is not likely to impact surface-water.
Wild and Farmed Foods Ingestion	Pathway Incomplete	Contaminants of concern do not have the potential to bio-accumulate in plants or animals.
Exposure to Ecological Receptors	De-Minimis Exposure	A large tree was present over contaminated soil that did not exceed human health cleanup levels. A decision was made to leave the tree rather than excavate the small amount of remaining contaminated soil.

**Notes to Table 2:** “De-Minimis Exposure” means that in ADEC’s judgment receptors are unlikely to be affected by the minimal volume or concentration of remaining contamination. “Pathway Incomplete” means that in ADEC’s judgment contamination has no potential to contact receptors. “Exposure Controlled” means there is an institutional control in place limiting land or groundwater use and there may be a physical barrier in place that prevents contact with residual contamination.

**ADEC Decision**

Petroleum contaminated soil is confined to a small area, approximately 5-ft by 10-ft, along the eastern wall of the crawl space and around the base of a tree. ADEC has approved the use of institutional controls to limit potential future exposure and risk to human health or the environment. A Notice of Environmental Contamination and Institutional Controls (NEC-IC) has been recorded in the land records maintained by the Alaska Department of Natural Resources and a copy is attached to this letter.

Although soil contamination remains in excess of migration to groundwater levels, groundwater monitoring over several events indicates that it is not impacting groundwater above cleanup levels. Therefore, ADEC has determined the residual soil contamination does not pose an unacceptable migration to groundwater concern. The groundwater monitoring well was decommissioned on August 8, 2017, by ADEC staff.

An assessment of indoor air quality provided evidence that mitigation efforts at this site are protective of human health, safety, and the environment, as only trace quantities of xylene vapors were detected in the home or crawlspace. Maintenance was conducted on the vapor barrier during August of 2017, by a contractor.

Institutional controls necessary to support this closure determination include:

1. The Landowner agrees to notify ADEC prior to any sale or transfer of the property and shall report to ADEC every 2 years to document the status of compliance with the institutional controls described in this notice. Such notice and reports should be sent to the ADEC at:

Alaska Department of Environmental Conservation  
Division of Spill Prevention and Response  
Contaminated Sites Program  
Attention: IC Unit  
P.O. Box 111800  
Juneau, AK 99811-1800

or be submitted electronically to [CS.Submittals@alaska.gov](mailto:CS.Submittals@alaska.gov).

2. No groundwater wells shall be installed in the area covered by the institutional controls without prior ADEC approval.
3. The vapor barrier shall remain in place and be adequately maintained until ADEC receives documentation that soil beneath this structure meets ADEC cleanup levels.
4. In the event that the remaining contaminated soil becomes accessible in the future due to the building being removed, the land owner shall notify ADEC and, if determined necessary, cleanup the soil.
5. If the use of the building changes, or if other buildings are constructed within 30-feet of the contaminated area, ADEC must be notified and may require a vapor intrusion evaluation to determine if building occupants could be affected by vapors.

Standard site closure conditions that apply to all sites include:

1. ADEC approval is required prior to moving any soil or groundwater off any site that is, or has been, subject to the site cleanup rules (see 18 AAC 75.325(i). A “site” as defined by 18 AAC 75.990 (115) means an area that is contaminated, including areas contaminated by the migration of hazardous substances from a source area, regardless of property ownership. In the future, if soil will be excavated or groundwater will be brought to the surface (for example to dewater in support of construction) it must be characterized and managed following regulations applicable at that time and ADEC approval must be obtained before moving the soil or water off the property.
2. Movement or use of contaminated material in a manner that results in a violation of 18 AAC 70 water quality standards is prohibited.
3. Groundwater throughout Alaska is protected for use as a water supply for drinking, culinary and food processing, agriculture including irrigation and stock watering, aquaculture, and industrial use. Contaminated site cleanup complete determinations are based on groundwater being considered a potential drinking water source. In the event that groundwater from this site is to be used for other purposes in the future, such as aquaculture, additional characterization and treatment may be required to ensure the water is suitable for its intended use.

ADEC has determined the cleanup is complete as long as the institutional controls are properly implemented and no new information becomes available that indicates residual contamination may pose an unacceptable risk. The ADEC Contaminated Sites Database will be updated to reflect the change in site status to “Cleanup Complete with Institutional Controls” and will include a description of the contamination remaining at the site.

The institutional controls will be removed in the future if documentation is provided that shows concentrations of all residual hazardous substances remaining at the site are below the levels that allow for unrestricted exposure to, and use of, the contaminated media and that the site does not pose a potential unacceptable risk to human health, safety or welfare, or to the environment. Standard conditions 1-3 above will remain in effect after ICs are removed.

This determination is in accordance with 18 AAC 75.380 and does not preclude ADEC from requiring additional assessment and/or cleanup action if the institutional controls are determined to be ineffective or if new information indicates that contaminants at this site may pose an unacceptable risk to human health or the environment.

### **Appeal**

Any person who disagrees with this decision may request an adjudicatory hearing in accordance with 18 AAC 15.195 – 18 AAC 15.340 or an informal review by the Division Director in accordance with 18 AAC 15.185. Informal review requests must be delivered to the Division Director, 555 Cordova Street, Anchorage, Alaska, 99501-2617, within 15 days after receiving the department’s decision reviewable under this section. Adjudicatory hearing requests must be delivered to the Commissioner of the Department of Environmental Conservation, 410 Willoughby Avenue, Suite 303, P.O. Box 111800, Juneau, Alaska, 99811-1800, within 30 days after the date of issuance of this letter, or within 30 days after the department issues a final decision under 18 AAC 15.185. If a hearing is not requested within 30 days, the right to appeal is waived.

If you have questions about this closure decision, please feel free to contact me at (907) 451-2752 or email at [shawn.tisdell@alaska.gov](mailto:shawn.tisdell@alaska.gov).

Sincerely,



Shawn Tisdell  
Project Manager

**Enclosures: *Figure 1 & 2***  
***Recorded NEC-IC Agreement***

Cc (via email): Spill Prevention and Response, Cost Recovery Unit

**Note: This letter is being transmitted to you in electronic format only. If you require a paper copy, let us know and we will be happy to provide one to you. In the interest of reducing file space, the Division of SPAR/Contaminated Sites Program is transitioning to electronic transmission of project correspondence.**

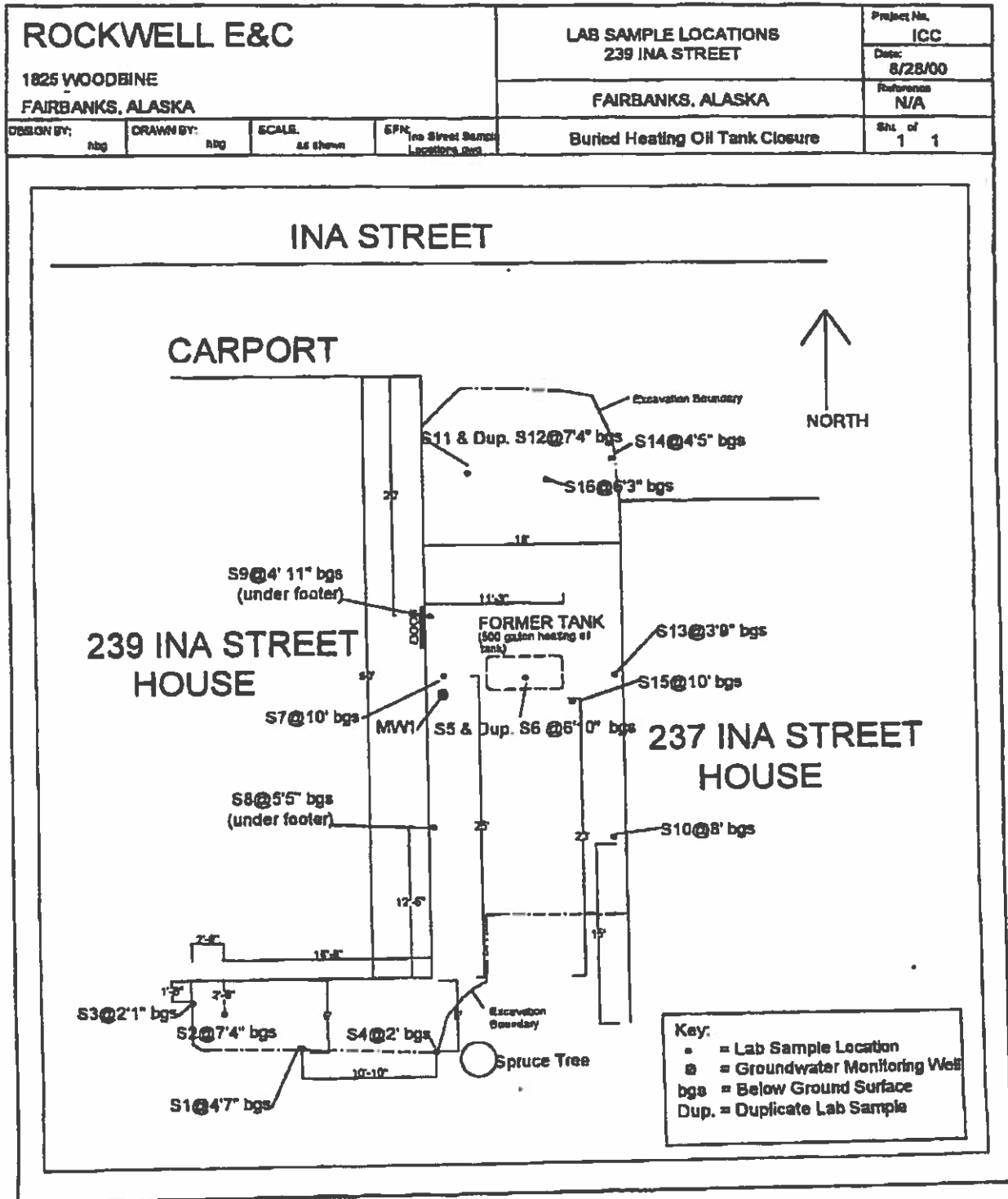


Figure 1: Soil sampling location and excavation area



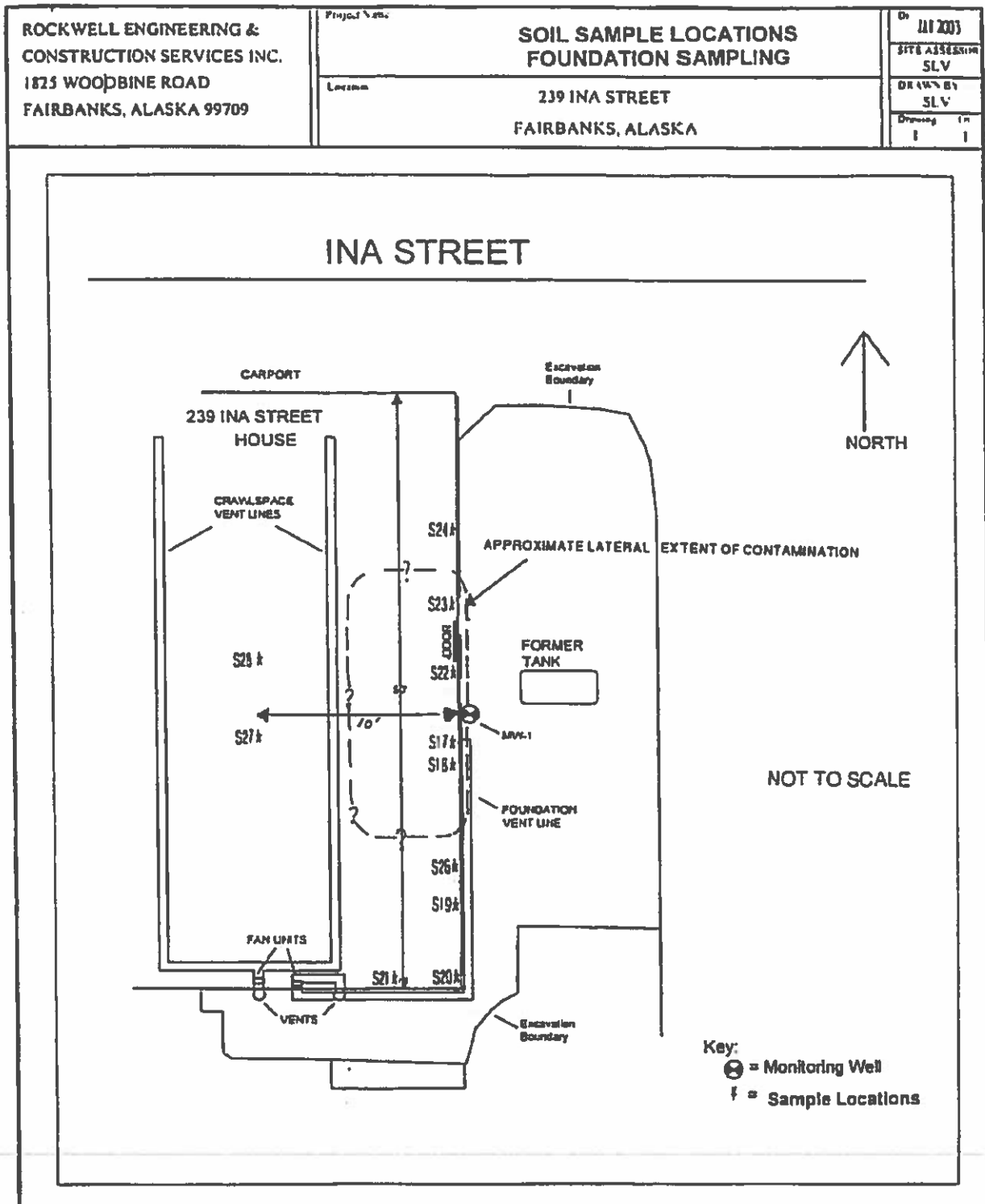


Figure 2: Estimated remaining soil contamination.



# Notice of Environmental Contamination and Institutional Controls

**Grantor:** Susan Cruikshank,  
Residence - Ina Street Overfill

**Legal Description:** Section 3, Township 001S, Range 001W, Fairbanks Meridian, D-2 Quadrangle;  
Lot 14, Block 4, Charles Slater Homestead Subdivision

**Recording District:** 401-Fairbanks

**Return to:** Shawn Tisdell , 610 University Avenue, Fairbanks, AK, 99709

**State Business-** No Charge

RECEIVED

AUG 29 2017 

CONTAMINATED  
SITES  
FAIRBANKS

## NOTICE OF ENVIRONMENTAL CONTAMINATION AND INSTITUTIONAL CONTROLS

As required by the Alaska Department of Environmental Conservation, pursuant to 18 AAC 75.375 Susan Cruikshank, the Landowner(s) of the subject property, hereby provides public notice that the property located at: 239 Ina Street, Fairbanks, Alaska, 99701, and more particularly described as follows:

Section 3, Township 001S, Range 001W, Fairbanks Meridian, D-2 Quadrangle;  
Lot 14, Block 4, Charles Slater Homestead Subdivision

has been subject to a discharge or release and subsequent cleanup of oil or other hazardous substances, regulated under 18 AAC 75, Article 3;. This release and cleanup are documented in the Alaska Department of Environmental Conservation (ADEC) contaminated sites database at [http://www.dec.state.ak.us/spar/csp/db\\_search.htm](http://www.dec.state.ak.us/spar/csp/db_search.htm) under the site name Residence - Ina Street Overfill and Hazard ID number 3236.

By signing this notice, ADEC and the Landowner have agreed that the institutional controls described below are necessary and appropriate, and shall be maintained and be binding on the Landowner and its agents, successors and assigns. If the Landowner transfers, sells, assigns, leases or subleases the property or any portion of the property covered by the institutional controls, the Landowner shall incorporate a copy of this notice into the documents of transfer, sale, assignment, lease or sublease.

ADEC has reviewed and approved, subject to the institutional controls described below, the cleanup as protective of human health, safety, welfare, and the environment. No further cleanup is necessary at this site as long as the institutional controls remain in place and effective and no new information becomes available that indicates to ADEC that the site may pose an unacceptable risk to human health, safety, welfare, or the environment.

ADEC determined, in accordance with 18 AAC 75.325 – .390 site cleanup rules, that cleanup has been performed to the maximum extent practicable even though residual diesel-contaminated soil exists on-site. Approximately 108 cubic yards of diesel contaminated soil was excavated and removed. Further cleanup was determined to be impracticable because the remaining contamination is located under the residence and beneath a large tree. Contamination is confined to an area of approximately 5 feet by 10 feet in the crawlspace under the home and several cubic yards around the base of the tree. A vapor mitigation system was installed in the crawlspace that successfully removed volatile components of diesel fuel and an indoor air survey concluded that remaining fuel was not migrating into the structure.

The following institutional controls and standard conditions shall be maintained:

### Institutional Controls

1. The Landowner agrees to notify ADEC prior to any sale or transfer of the property and shall report to ADEC every 2 years to document the status of compliance with the



institutional controls described in this notice. Such notice and the reports should be sent to the ADEC at:

Alaska Department of Environmental Conservation  
Division of Spill Prevention and Response  
Contaminated Sites Program  
Attention: IC Unit  
P.O. Box 111800  
Juneau, AK 99811-1800

or be submitted electronically to [CS.Submittals@alaska.gov](mailto:CS.Submittals@alaska.gov).

2. No groundwater wells shall be installed in the area covered by the institutional controls without prior ADEC approval.
3. The vapor barrier shall remain in place and be adequately maintained until the ADEC receives documentation that soil beneath this structure meets ADEC cleanup levels.
4. In the event that the remaining contaminated soil becomes accessible in the future due to the building being removed, the land owner shall notify ADEC and, if determined necessary, cleanup the soil.
5. If the use of the building changes, or if other buildings are constructed within 30 feet of the contaminated area, ADEC must be notified and may require a vapor intrusion evaluation to determine if building occupants could be affected by vapors.

#### Standard Conditions

6. ADEC approval is required prior to moving any soil or groundwater off any site that is, or has been, subject to the site cleanup rules (see 18 AAC 75.325(i)). A "site" as defined by 18 AAC 75.990 (115) means an area that is contaminated, including areas contaminated by the migration of hazardous substances from a source area, regardless of property ownership. In the future, if soil will be excavated or groundwater will be brought to the surface (for example to dewater in support of construction) it must be characterized and managed following regulations applicable at that time and ADEC approval must be obtained before moving the soil or water off the property.
7. Movement or use of contaminated material in a manner that results in a violation of 18 AAC 70 water quality standards is prohibited.
8. Groundwater throughout Alaska is protected for use as a water supply for drinking, culinary and food processing, agriculture including irrigation and stock watering, aquaculture, and industrial use. Contaminated site cleanup complete determinations are based on groundwater being considered a potential drinking water source. In the event that groundwater from this site is to be used for other purposes in the future, such as aquaculture, additional characterization and treatment may be required to ensure the water is suitable for its intended use.

Attached are diagrams that shows the property boundaries, locations of existing structures, the area that has been cleaned up, the approximate location and extent of remaining soil contamination which is subject to the institutional controls described in this notice and the locations where confirmation soil samples were collected.

Failure to comply with the institutional controls described herein may result in ADEC reopening the site and requiring additional site characterization and cleanup.



In the event that new information becomes available which indicates that the site may pose an unacceptable risk to human health, safety, welfare or the environment, further site characterization and cleanup may be necessary under 18 AAC 75.325-.390

This notice and the institutional controls remain in effect until a written determination from ADEC is recorded that documents contaminants remaining at the site have been shown to meet the residential use soil cleanup levels defined in 18 AAC 75.340 and groundwater cleanup levels in Table C within 18 AAC 75.345 and that off-site transportation of soil and/or groundwater are no longer a potential concern.

For more information on the contaminated site in this notice, please see ADEC Contaminated Sites Program file number 102.38.118 for the site named Residence - Ina Street Overfill

Susan Chikshank  
Signature of Landowner

7/25/2017  
Date

SUSAN Chikshank  
Printed Name of Landowner

Shawn E Tisdell  
Signature of Authorized ADEC Representative

7/25/2017  
Date

Shawn E Tisdell  
Printed Name of Authorized ADEC Representative



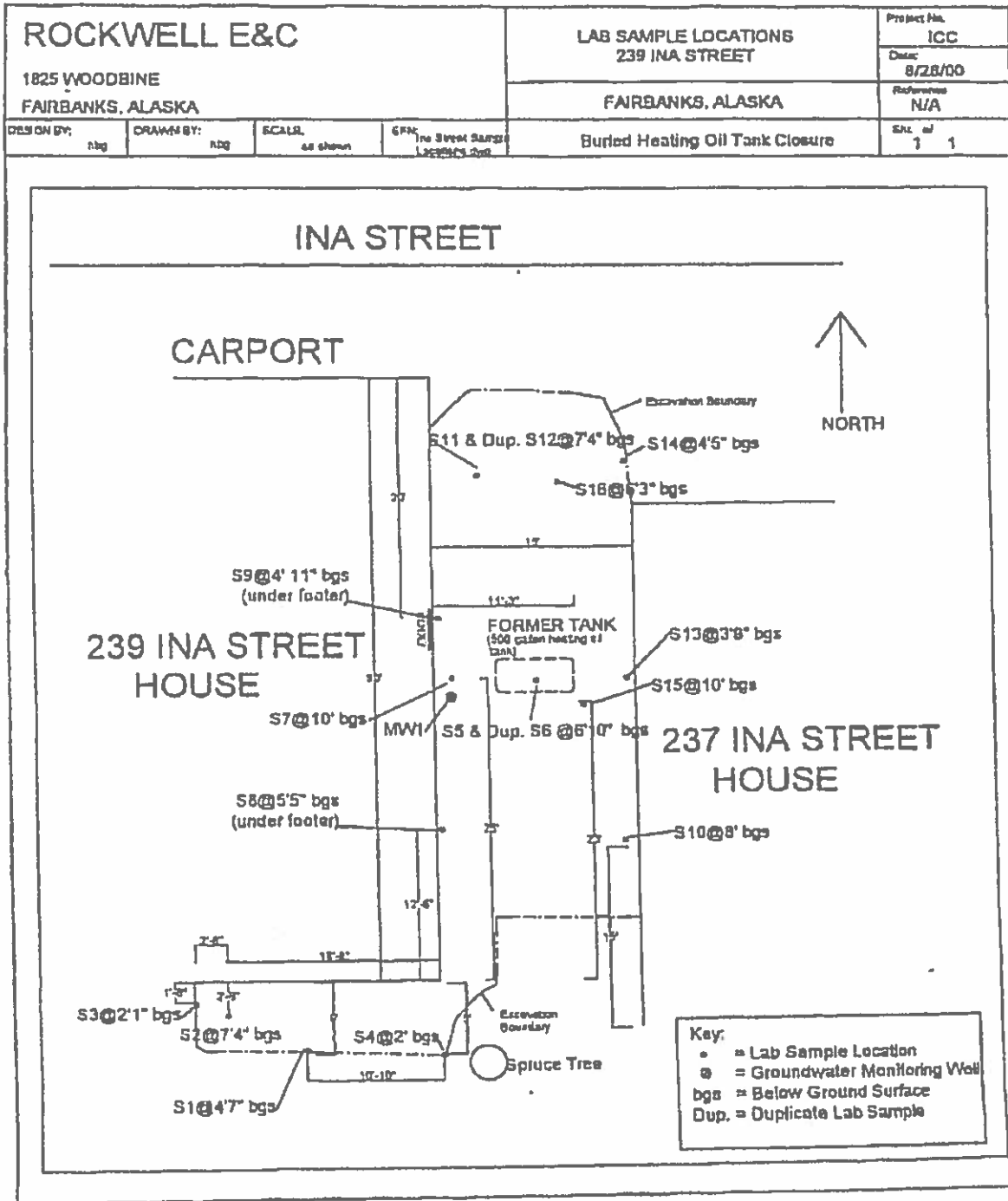


Figure 1: Soil sampling location and excavation area



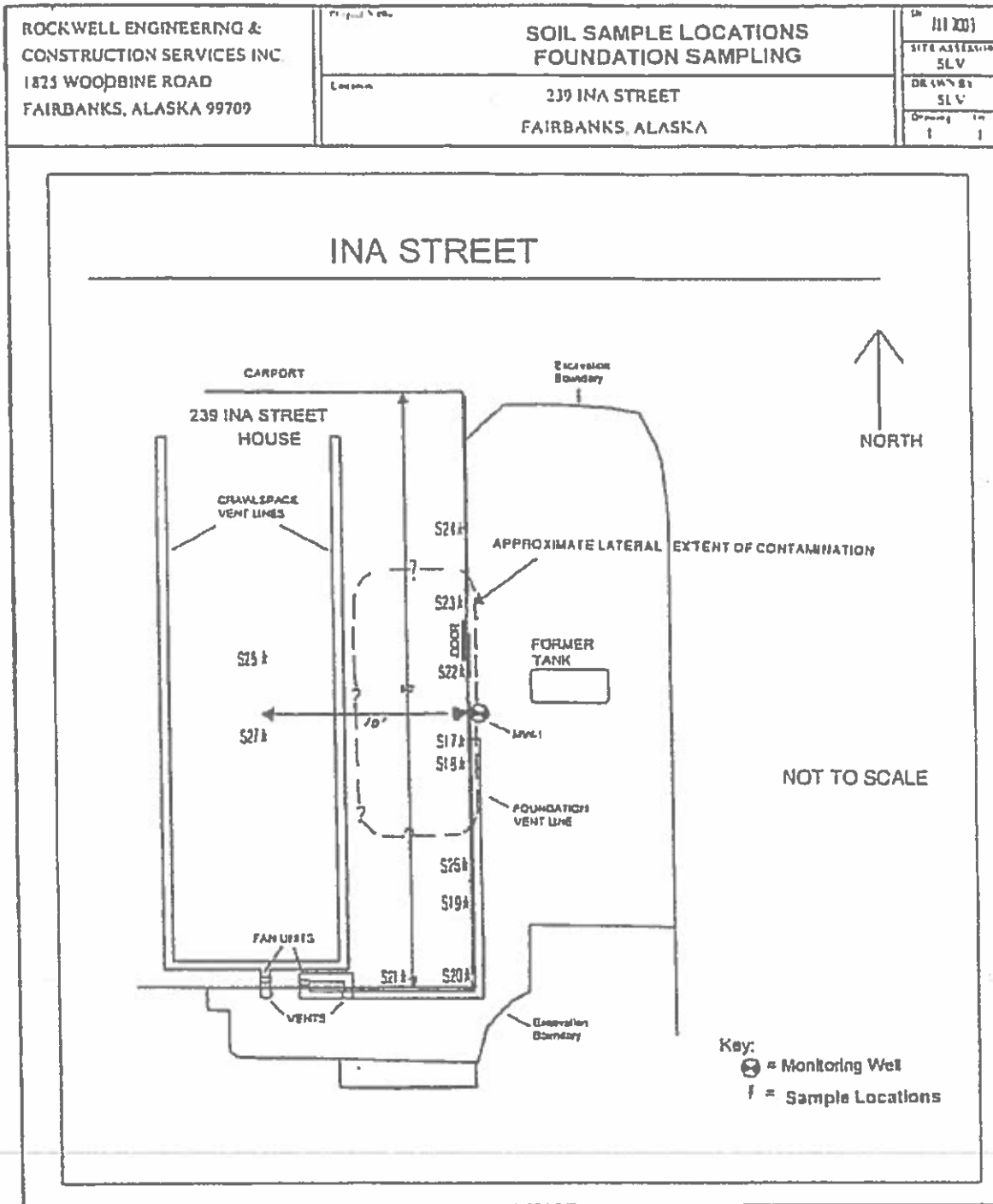


Figure 2: Estimated remaining soil contamination.