

SEAN PARNELL, GOVERNOR

**DEPT. OF ENVIRONMENTAL CONSERVATION
DIVISION OF SPILL PREVENTION AND RESPONSE
CONTAMINATED SITES PROGRAM**

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File: 2332.38.038

March 22, 2011

Estate of Doris J. Welch
C/O Tammy Dudley, Personal Representative
253 West Corral
Soldotna, AK 99669

Re: Decision Document; Residence - 217 Marathon Drive, Seward
Cleanup Complete Determination

Dear Mrs. Dudley:

The Alaska Department of Environmental Conservation (ADEC), Contaminated Sites Program has completed a review of the environmental records associated with the Residence - 217 Marathon Drive, Seward site, located in Seward, Alaska. Based on the information provided to date, it has been determined that the contaminant concentrations remaining on site should not pose an unacceptable risk to human health or the environment. No further cleanup action is required at this time, provided that onsite groundwater is not used for drinking water.

This decision is based on the administrative record for this site, which is located in the offices of the ADEC in Soldotna, Alaska. ADEC has not inspected this site. All information specific to the Residence - 217 Marathon Drive, Seward site presented in this Determination is based on information that has been reported to ADEC, under the requirements of 18 AAC 75. This letter summarizes the decision process used to determine the environmental status of this site and provides a summary of the regulatory issues considered in this Cleanup Complete determination.

Introduction

Site Name and Location:

Residence - 217 Marathon Drive, Seward
217 Marathon Drive
Seward, Alaska

Name and Mailing Address of Land Owner:

Doris J. Welch Estate
Tammy Dudley- Personal Representative
253 West Corral
Soldotna, AK 99669

ADEC Site Identifiers

File: 2332.38.038

Hazard ID: 25250

Regulatory authority under which the site is being cleaned up:

18 AAC 75

Background

An underground home heating oil tank (UST) was replaced in September 2007 with an above ground heating oil tank. Two hundred and fifty gallons of fuel were placed into the above ground tank. Several weeks later Seward Plumbing and Heating connected the heating oil tank to the furnace and the furnace was started. On October 27, the Dudleys were informed that the furnace was no longer working and that a strong diesel odor was noted in the house. It was determined that the heating oil was released at the former UST location due to a failure to disconnect the return fuel line from the furnace to the former heating oil UST location.

Site Characterization and Cleanup Actions

Tauriainen Engineering/Northern Test Lab (NTL) staff began site assessment activities less than a week after the release was discovered. Three samples were collected from the crawl space and were analyzed for diesel range organics (DRO) and residual range organics (RRO). DRO sample results ranged from 8,580 mg/kg to 43,200 mg/kg. The focus of the release investigation was the area of the former underground heating oil tank location. Contaminated soil was excavated to a depth of approximately 9.5 feet, silt soils were encountered at a depth of approximately 7 feet. Approximately 30 cubic yards of impacted soil was removed from the excavation and stockpiled on site, and contamination was believed to remain beneath an existing house deck to the west of the release location. No excavation confirmation samples were collected prior to the excavation being backfilled with clean pit-run material. A single soil sample collected from the stockpile had a DRO concentration of 2,170 mg/kg.

In November 2008, Travis/Peterson Environmental Consulting (TPECI) continued site characterization and remediation activities. The deck was removed from the house to allow for access to impacted soils that were previously found to extend beneath the deck. Eight soil borings were advanced within and around the release area. Three of the soil borings, all within the known or suspected area of contamination, encountered petroleum contamination exceeding ADEC Method 2 Cleanup Levels. Maximum concentrations encountered included DRO at 4,360 mg/kg, gasoline range organics (GRO) at 679 mg/kg, benzene at 0.0845 mg/kg, and ethylbenzene at 9.77 mg/kg. Toluene and xylene (3.6 mg/kg and 56.1 mg/kg respectively) were encountered at concentrations below their Method 2 Cleanup Levels. Several polynuclear aromatic hydrocarbons (PAHs) were also encountered, all below the ADEC Method 2 Cleanup Levels.

Groundwater was encountered at approximately 21.5 feet below ground surface. Monitoring well B was installed at the release location. Free product (heating oil) was encountered during monitor well installation and sampling activities. Groundwater analytical samples were collected for benzene, toluene, ethylbenzene, and xylenes (BTEX), GRO, DRO, and PAHs. DRO was detected in groundwater at a concentration of 266 mg/L. DRO was the only contaminant encountered that exceeded ADEC groundwater cleanup levels.

Additional assessment and removal activities occurred in the spring of 2009. Impacted soils within the approximately 21 foot by 32 foot crawl space were excavated by hand. A clay layer was encountered at a depth of approximately 5 feet below the floor joist/outside ground surface. Significant contamination was encountered above and in the clay layer, and the contaminated soil was reportedly excavated to the maximum extent possible while maintaining the structural stability of the house and a safe work environment. Several confirmation soil samples were collected from the crawl space excavation after removal operations were complete. Four of the 11 samples exceeded regulatory cleanup levels for DRO, with the highest sample concentration being 6,160 mg/kg. The maximum concentration of GRO was 107 mg/kg. Toluene was encountered at a maximum concentration of 51.8 µg/kg, ethylbenzene was encountered at a maximum concentration of 496 µg/kg, and xylenes were encountered at a maximum concentration of 6,020 µg/kg. Benzene was not detected above the detection limits. TPECI estimated that approximately 55 cubic yards of contaminated soil was excavated from the crawl space. There is a significant discrepancy in the reported quantity of contaminated soil excavated and removed from this site. TPECI arranged for the transport, treatment, and disposal of the crawlspace soils (reported at 55 cubic yards), along with the approximately 30 cubic yards of soil previously excavated by Tauriainen Engineering/Northern Test Lab. However Alaska Soil Recycling, the soil treatment contractor, reported that they received 65.86 tons; which is equivalent to approximately 45 cubic yards.

Monitoring well B was abandoned in 2010 due to groundwater not being encountered during subsequent sampling attempts. Four additional monitoring wells were installed to delineate the extent of groundwater contamination. Monitoring well L was placed in the vicinity of former monitoring well B. Analytical sampling of these four monitoring wells occurred in April 2010 for BTEX, GRO, and DRO. The only hydrocarbon constituent encountered above cleanup levels in the sampling event was in monitoring well L, which had a DRO concentration of 2.36 mg/L. The 4 wells were sampled a second time in August 2010 with no contamination being detected in any well. Monitoring well L was sampled again in November 2010 with no contamination being encountered.

TPECI reported that they historically smelled fuel odors in the residence. Later, following the removal of contaminated soil from the crawl space, they reported that Photo-Ionization Detector (PID) readings in the crawl space did not register volatile organic compounds and they no longer smelled fuel. TPECI further reported that a 6 mil vapor barrier was installed in the crawl space at the homeowner's direction.

The excavated soils (approximately 45 cubic yards) were treated at Alaska Soil Recycling.

The residence is currently unoccupied.

Maximum historical soil contaminant concentrations that exceed the ADEC Method 2 Cleanup Levels that have been reported to ADEC during the history of this project were:

Benzene	0.845 mg/kg,
Ethylbenzene	9.77 mg/kg,
GRO	679 mg/kg, and
DRO	43,200 mg/kg

Contaminants of Concern

During the investigations and corrective action/cleanup work performed at this site, soil and water samples were collected and analyzed for BTEX, GRO, DRO, and PAHs. Based on these analyses, and knowledge of the source area, the following Contaminants of Concern may remain in surface and/or subsurface soil at concentrations exceeding the applicable ADEC soil cleanup levels:

- Benzene
- Ethylbenzene
- GRO
- DRO

Soil and Groundwater Cleanup Levels

The default soil cleanup levels for this site are established in 18 AAC 75.341, Method Two, Tables B1 and B2, Migration to Groundwater.

<u>Contaminant</u>	<u>Site Cleanup Level (mg/kg)</u>
Benzene	0.025
Ethylbenzene	6.9
GRO	300
DRO	250

The default groundwater cleanup levels for this site are established in 18 AAC 75.345 Table C Groundwater Cleanup Levels.

<u>Contaminant</u>	<u>Site Cleanup Level (mg/L)</u>
DRO	1.5

Pathway Evaluation

Following investigation and cleanup at the site, exposure to any remaining contamination 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 current pathways to be one of the following: Low Potential Exposure, De Minimis Exposure, or Pathway Incomplete. A summary of this pathway evaluation is included in Table 1.

Table 1 – Exposure Pathway Evaluation

Pathway	Result	Explanation
Surface Soil Contact	De-minimis exposure	Residual contamination in surface soil is below ADEC 'ingestion' and 'direct contact' soil cleanup levels.

Sub-Surface Soil Contact	De-minimis exposure	Residual contamination in sub-surface soil is below ADEC 'ingestion' and 'direct contact' soil cleanup levels.
Inhalation – Outdoor Air	De-minimis exposure	Residual contamination in surface and sub-surface soil is below ADEC 'inhalation' soil cleanup levels.
Inhalation – Indoor Air (vapor intrusion)	Low Potential exposure	Soil contamination remained beneath the building. The remaining extent of contamination is believed to be limited, and vapors from the soil are unlikely to pose a significant risk to indoor air quality. No indoor air sampling was conducted to document the indoor air quality. A 6 mil thick liner was installed to prevent vapor migration, the integrity of the liner is not known. Any vapors currently present in indoor air will continue to diminish as the residual contamination biodegrades.
Groundwater Ingestion	De-minimis exposure	Contamination remains in the subsurface soil above migration to groundwater cleanup levels and also reached the groundwater. Groundwater monitoring has depicted that groundwater contaminant concentrations have decreased to below cleanup levels at the specific locations monitored. Groundwater at the site is not currently used as a drinking water source. This property is currently connected to the City of Seward public water supply system.
Surface Water Ingestion	Pathway Incomplete	Residual contaminant migration to adjacent wetland areas or surface waters is not anticipated.
Wild Foods Ingestion	Pathway Incomplete	Wild food harvest on this property is not likely.
Exposure to Ecological Receptors	Pathway Incomplete	No impact is anticipated.

Notes to Table 1: “De-minimis exposure” means that in ADEC’s judgment receptors are unlikely to be affected by the minimal volume of remaining contamination. “Pathway Incomplete” means that in ADEC’s judgment contamination has no potential to contact receptors. “Low Potential exposure” means that in ADEC’s judgment a potential exposure exists but receptors are unlikely to be significantly affected by the remaining contamination.

ADEC Decision

Soil contamination remains on site above established default cleanup levels, including soil beneath the house. The indoor air vapor intrusion pathway was evaluated; however indoor air quality was not documented through indoor air sampling and analysis. ADEC has determined that cleanup actions completed at this site have sufficiently reduced contaminant concentrations such that any residual petroleum contamination should not pose an unacceptable risk to human

health or the environment. Therefore this site is being issued a Cleanup Complete determination subject to the following condition.

1. Water wells shall not be installed at this property without the prior review and approval of ADEC.

Although a Cleanup Complete determination has been granted, ADEC approval is still required for off-site soil disposal in accordance with 18 AAC 75.325 (i). Please note that movement or use of potentially contaminated soil in a manner that results in a violation of 18 AAC 70 water quality standards is unlawful.

The monitoring wells remaining at the property are no longer necessary for groundwater quality monitoring. These wells must now be decommissioned in accordance with an ADEC approved work plan by July 1, 2011. The monitoring well decommissioning work plan must be submitted by May 2, 2011, and a report documenting the decommissioning of the 4 monitoring wells must be submitted by August 15, 2011.


This determination is in accordance with 18 AAC 75.380(d) and does not preclude ADEC from requiring additional assessment and/or cleanup action if future information indicates that 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, 410 Willoughby Avenue, Suite 303, Juneau, Alaska 99801, 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, Juneau, Alaska 99801, 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 Cleanup Complete decision, or any other aspect of this project, please contact me at (907) 262-5210 x245, or via e-mail at don.fritz@alaska.gov

Recommended By,



Donald G. Fritz
Environmental Program Specialist

Approved By,



Paul Horwath
Environmental Engineer

CC: Michael Travis - Travis/Peterson Environmental Consulting Group, Inc.
Thomas P. Amodio- Reeves Amodio LLC