



THE STATE  
of **ALASKA**

GOVERNOR SEAN PARNELL

**Department of Environmental  
Conservation**

DIVISION OF SPILL PREVENTION & RESPONSE  
Contaminated Sites Program

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File No: 1516.38.023

May 14, 2013

Ms. Kara Jurczak  
Senior Project Engineer  
City of Ketchikan Public Works Department  
2930 Tongass Avenue  
Ketchikan, Alaska 99901-5742

RE: Cleanup Complete Determination  
Ketchikan General Hospital  
Hazard ID 3133

Dear Kara,

The Alaska Department of Environmental Conservation, Contaminated Sites Program (DEC) has completed a review of the environmental records associated with the Ketchikan General Hospital facility located at 3100 Tongass Avenue in Ketchikan, Alaska. Based on the information provided to date, the DEC has determined that the contaminant concentrations remaining on site do not pose an unacceptable risk to human health or the environment, and this site will be closed.

This decision is based on the Ketchikan General Hospital Contaminated Site administrative record, which is located in the DEC offices of the in Juneau, Alaska. 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.

**Site Name and Location**  
Ketchikan General Hospital  
3100 Tongass Avenue  
Ketchikan, AK 99901  
USS 1079 Block 6 Lots 2-7

**Address of Contact Party**  
Ms. Kara Jurczak  
Ketchikan Public Works & Engineering  
2930 Tongass Avenue  
Ketchikan, AK 99901

**DEC Site Identifiers**  
Hazard ID 3133  
File: 1516.38.02  
Database rekey 1999130100501

**Regulatory Authority for Determination**  
Title 18 Alaska Administrative Code 75

## **Background**

In 1986, a 2,000-gallon underground storage tank (UST) supplying diesel fuel to the emergency power generator at the Ketchikan General Hospital (KGH) was taken out of service and replaced by an above ground double walled tank with a 6,000-gallon storage capacity. R&M Engineering Ketchikan (R&M) performed a site assessment in conjunction with the closure by removal of two USTs in fall 1999 and a third UST in spring 2000 from under the service entry driveway at the KGH.

Site activities for the UST assessment and the subsequent site investigation and corrective action included the collection of soil samples that were delivered under custody to a DEC approved laboratory and were analyzed by DEC approved methods for diesel (DRO) and residual (RRO) range petroleum hydrocarbons.

## **Release Investigation**

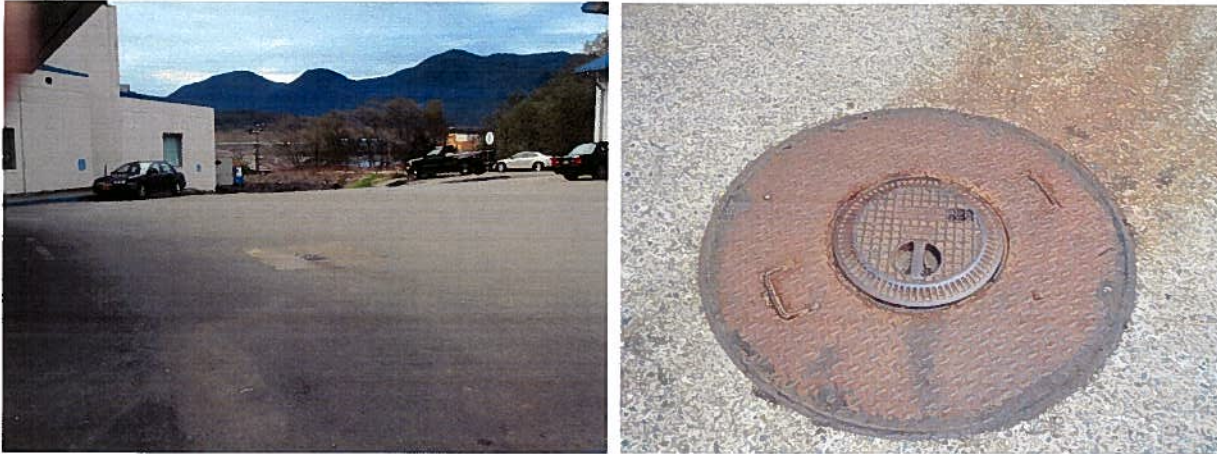
The first removal was Tank 1 a 2,000-gallon diesel UST abandoned since 1986. R&M collected three soil confirmation samples: two from eight feet below ground surface (BGS) in the Tank 1 excavation and one from four feet BGS under the piping run. The results of laboratory analysis detected DRO levels in all samples below Method Two Migration to Groundwater soil cleanup levels.

The second UST removal in fall 1999 was Tank 3, an 8,000-gallon tank that supplied fuel to the KGH boilers. Stained soil was observed four feet BGS in the excavation to remove Tank 3. R&M directed the removal of contaminated soil to the extent practicable from between subsurface storm water, sewer and electrical structures, and the building foundation. R&M collected two confirmation samples from soil remaining in the bottom of the Tank 3 excavation and two from soil removed from the site under the tank vent and the supply piping. R&M estimated the volume of remaining contaminated material at five cubic yards. A broken vent pipe was the apparent source of the release. R&M placed a 6-inch diameter cast iron well casing upright in the excavation to provide access to groundwater (if present) to investigate for impacts from contaminated soil. A volume of eight cubic yards of contaminated soil was transported to the Ketchikan Landfill for storage.

In January 2000, Tank 2, an active 6,000-gallon heating oil UST was closed by removal from under the service entry driveway at the KGH. Petroleum contamination of the tank bedding material was removed to the extent practicable from between the KGH building foundation to the north and the sidewalk in front of the Ketchikan Alcohol Rehabilitation (KAR) House facility to the south. The depth of excavation to remove contaminated material reached bedrock on the east, west and north sides. R&M collected two confirmation samples from soil remaining in the bottom of the Tank 2 excavation and two from soil removed from the site under the tank vent and the supply piping. R&M estimated the remaining volume of contaminated soil in the Tank 2 excavation was three cubic yards. To facilitate well installation to investigate groundwater for contamination at a later date, a six inch diameter cast iron pipe was left upright in the excavation where the Tank 3 vent pipe was located.

R&M described the locations where contaminated soil remains in the two UST excavations as bedrock depressions, utility corridors, along the building foundation and under sidewalks. R&M estimated the total volume of remaining soil contamination in the two UST excavations at eight cubic yards. Three cubic yards in former Tank 2 UST site and five cubic yards remain at the former Tank 3 UST site.

*Tank 3 Soil Investigation*



R&M estimated the volume of contaminated soil excavated to close Tank 3 by removal at eight cubic yards. The vent and piping samples collected during excavation above the tank had DRO levels of 12,000 milligrams per kilogram (mg/kg) and 22,000 mg/kg respectively. The highest levels detected in soil remaining at the Tank 3 UST site, the depth below the surface that the sample was taken, and the Method Two Ingestion Pathway soil cleanup levels in 18 AAC 75.341 Table B2 that are applicable to this site are displayed in Table 1. The levels in bold print are the contaminant(s) of concern for the site.

Hydrocarbon range	Greatest level in soil mg/kg	Sample name, location and depth below the surface	M2 MTG Cleanup Levels mg/kg
DRO	8,100	S6 (T3 Bottom) at 7 feet	8,250
RRO	390	S6 (T3 Bottom) at 7 feet	8,300

**Table 1** The highest contaminant levels in remaining soil in the Tank 3 excavation.

*Tank 2 Soil Investigation*



R&M estimated the volume of contaminated soil excavated to close Tank 2 by removal at eight cubic yards. The vent (S2) and piping (S4) samples collected during excavation above the tank had DRO levels of 20,000 milligrams per kilogram (mg/kg) and 41,000 mg/kg respectively. The highest level detected in soil remaining at the Tank 2 UST site, the depth below the surface that the sample was taken, and the

Method Two Ingestion Pathway soil cleanup levels in 18 AAC 75.341 Table B2 that are applicable to this site are displayed in Table 2 below. The levels in bold print are the contaminant(s) of concern for the site.

Hydrocarbon Range	Greatest level in soil mg/kg	Sample name, location and depth below the surface	M2 Ingestion Soil Levels in mg/kg
DRO	1,800	S7 (SE Pit Corner) at 8 feet	8,250
RRO	180	S5 (Under Tank 2) at 6 feet	8,300

Table 2 The highest contaminant levels in remaining soil in the Tank 2 excavation.

The contaminated soil from each UST closure by removal was transported to the Ketchikan Landfill for storage. A composite soil sample of the 16 cubic yard volume of contaminated soil stored at the Ketchikan Landfill had a DRO level of 2,800 mg/kg. The contaminated soil was loaded into containers and DEC authorized shipment to the Rabanco Facility in WA where it was remediated.

#### *Groundwater*

Due to soil contamination remaining trapped by structures at the UST sites, the R&M Site Assessment Report dated May 2000 proposed to install two sampling wells to investigate groundwater for petroleum contamination at each of the former UST sites. The locations were proposed to determine both the direction of groundwater flow and the probable extent of residual petroleum contamination from the UST release. The wells were never installed.

In 2011 DEC requested the City of Ketchikan pursue an investigation of groundwater at the site for contamination. Examination of the standpipe wells positioned in the former UST excavation sites in 1999 and 2000 during a cycle of heavy rain found no groundwater. Since groundwater was consistently not present the pathway was determined to be incomplete and the installation of sampling wells for groundwater investigation was abandoned.

#### **Contaminants of Concern**

Soil samples at the site have been analyzed for diesel (DRO) and residual (RRO) range petroleum hydrocarbons. Based on these analyses and knowledge of the site, the following Contaminant of Concern was identified:

Diesel Range Hydrocarbons

#### **Cleanup Levels**

The default soil cleanup levels for this site are established in 18 AAC 75.341, Method Two, Tables B1 and B2, Direct Contact for the Over 40-inch Rainfall Zone.

Contaminant	Site Cleanup Level (mg/kg)
DRO	8,250

Groundwater could not be found at the site and was not investigated. As a result, groundwater cleanup levels are not applicable for this site.



May 14, 2013

### **Pathway Evaluation**

Following investigation and cleanup at the site, exposure to the remaining contaminants was evaluated using DEC'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 3 as Attachment A to this letter.

### **DEC Decision**

The cleanup actions to date have served to excavate and adequately remove contaminated soil from the site. Based on the information available, DEC has determined there is no longer a risk to human health or the environment and no further assessment or cleanup action is required. This site will be designated as closed on the Contaminated Sites Database.

Although a Cleanup Complete Determination has been granted, DEC approval is required for off-site soil disposal in accordance with 18 AAC 75.325(i). Additionally, movement or use of potentially contaminated soil in a manner that results in a violation of 18 AAC 70 water quality standards is unlawful. This determination is in accordance with 18 AAC 75.380(d) and does not preclude DEC 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 closure decision, please contact the DEC project manager, Bruce Wanstall at (907) 465-5210.

Sincerely,



Bruce Wanstall  
Environmental Program Specialist

Attachment A: Table 3 – Exposure Pathway Evaluation

cc: Bill Janes, Manager, State & Private Contaminated Sites Program

**Attachment A: Exposure Pathway Evaluation**

**Table 3 – Exposure Pathway Evaluation**

<b>Pathway</b>	<b>Result</b>	<b>Explanation</b>
Surface Soil Contact	Pathway Incomplete	Surface soil contamination has been removed and remediated off-site. There is no soil contamination remaining at the surface on the site above the direct contact cleanup levels.
Sub-Surface Soil Contact	De-minimis exposure	Soil contamination in the subsurface is at levels below Human Health Ingestion Levels.
Inhalation – Outdoor Air	De-minimis exposure	Contamination remains in the subsurface, but no volatile compounds are unlikely present at levels above outdoor inhalation screening levels
Inhalation – Indoor Air (vapor intrusion)	Pathway Incomplete	Buildings are present but any remaining volatile petroleum levels are either below laboratory reporting limits and/or the inhalation and migration to groundwater screening levels.
Groundwater Ingestion	Pathway Incomplete	Groundwater is not present in the subsurface at the site and was not investigated for contamination.
Surface Water Ingestion	Pathway Incomplete	The City of Ketchikan supplies drinking water to the area and the nearby urban stream hydraulically connected to the site is not of sufficient quality to become a future potable water source.
Wild Foods Ingestion	Pathway Incomplete	The site and the urban area are not a wild foods harvest area and none of the contaminants have potential to bioaccumulate in flora or fauna.
Exposure to Ecological Receptors	Pathway Incomplete	Ecological receptors are not present at the site.

Notes to Table 1: “De-minimis exposure” means that in DEC’s judgment receptors are unlikely to be affected by the minimal volume of remaining contamination. “Pathway incomplete” means that in DEC’s judgment contamination has no potential to contact receptors. “Exposure controlled” means there is an administrative mechanism in place limiting land or groundwater use, or a physical barrier in place that deters contact with residual contamination.