

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

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File: 100.26.046

December 21, 2004

Vicki Nickerson
Goldstream General Store
2591 Goldstream Road
Fairbanks, AK 99709

Re: Goldstream General Store
Event ID 1018

Dear Ms. Nickerson:

The Alaska Department of Environmental Conservation, Contaminated Sites Program (ADEC or Department), reviewed the AMEC Earth & Environmental, Inc. (AMEC) site closure report for the leaking underground storage tank (LUST) site located at Goldstream General Store. Based on the AMEC report and information presented below, the Department has determined that soil contamination remains at the site above the most stringent 18 AAC 75.341 (migration to groundwater) cleanup levels. However, the nature and extent of the contamination does not pose a risk to human health, safety, welfare or the environment and, as a result, no further cleanup action will be required at this time.

The following information was considered in making the determination regarding the environmental status of this site.

Site Background

In 1993, two underground storage tanks (USTs) – a 6,000-gallon diesel tank and a 6,000-gallon unleaded gasoline tank - and associated dispensers were removed from the area west of the general store. An upgraded system of tanks and dispensers was installed on the north side of the store. During the UST removal and site assessment, the subsurface soil around the tank system and pump island was found to be impacted by petroleum hydrocarbons. A permafrost layer was encountered at 7.5 feet below ground surface (bgs) and approximately 500 cubic yards of contaminated soil were excavated from beneath the dispensing island and the UST excavation and stockpiled on-site. This soil was treated (in 1997) by thermal remediation at Organic Incineration Technologies, Inc. (OIT).

AGRA Earth & Environmental (AGRA) completed a release investigation in 1997 to delineate the extent of the impacted soil and recommended excavating an additional 1,000 cubic yards of contaminated soil.

In August 1998, AGRA excavated and stockpiled approximately 1,000 cubic yards of contaminated soil in a long-term holding cell. There were 3 areas of excavation described as:

- Area 1 was approximately 100 square feet at ground surface to a depth of 3 feet;
- Area 2 was approximately 2,600 square feet at ground surface to a depth of 10 feet; and
- Area 3 was approximately 400 square feet at ground surface to a depth of 14 feet.

Permafrost was generally encountered 8 feet bgs throughout the excavation area.

Chemicals of Concern

Potential contaminants of concern at the site include the petroleum indicator compounds: volatile organic compounds (VOCs) that include benzene, toluene, ethylbenzene, and xylenes (BTEX), polynuclear aromatic hydrocarbons (PAHs), gasoline range organics (GRO), diesel range organics (DRO), and total lead.

Soil:

The soil samples collected in the excavation following soil removal indicated that DRO, GRO, toluene, ethylbenzene, total xylenes, total lead, and PAHs were below the 18 AAC 75.341 Tables B1 and B2 (migration to groundwater) Soil Cleanup Levels. However, benzene exceeded the ADEC cleanup levels in several samples. Table 1 shows the final confirmation soil sample results from the excavation.

Table 1: Final confirmation soil sample results from the excavation

Sample ID	Sample Date	Sample Location	Sample Depth (feet)	Benzene (mg/kg)	GRO (mg/kg)
S-5	8/14/98	Area 1	3	0.22	5.4
S-6	8/14/98	Area 2	10	0.36	ND (5)
S-7	8/15/98	Area 2	10	ND (0.05)	ND (5)
S-8	8/15/98	Area 2	10	0.92	13
S-9	8/15/98	Area 3	14	ND (0.05)	ND (5)
S-10	8/15/98	Area 2	6 (sidewall)	4.1	64
S-11	8/15/98	Area 2	5 (sidewall)	1.6	8.8
Dup-1 (S-11)	8/15/98	Area 2	5	2.2	10

mg/kg: milligrams per kilogram

Groundwater:

A groundwater well, located north of the laundromat, provides water to the store and the laundromat. The groundwater in the area is estimated to be more than 100 feet bgs. In February 1997, prior to excavation activities, a tap water sample was collected and analyzed for DRO, GRO, and BTEX. The results did not detect any contaminants above the drinking water standards at the time. In July 2000, another water sample from the laundromat was collected and analyzed for methyl tert-butyl ether (MTBE). This sample was non-detect for that contaminant.

In May 2004, the water well was sampled again for GRO, DRO, VOCs using Environmental Protection Agency (EPA) Method 524.2 and total lead. There were no contaminants of concern detected.

Stockpile:

In July 2002, the 1000 cubic yard soil stockpile was sampled at 3, 6, and 9 foot depths below the surface. The plan was to remove the top 3 feet of soil from the stockpile and spread it west of the pile within the designated wetland under a permit from the United States Army Corp of Engineers. The sample results indicated the upper 3 feet of soil met established cleanup levels and approximately 400 cubic yards was used as fill material.

In June 2003, the remaining 600 cubic yards of the contaminated soil stockpile were moved to an area south of the store and mixed with sand and/or topsoil to enhance degradation. The soils were spread on site and hydro-seeded. In May 2004, ten soil samples were collected approximately 8 to 16 inches below the surface and analyzed for GRO, DRO, and BTEX. Five of those samples were also analyzed for total lead and one sample was analyzed for PAHs. The sample results indicated DRO, GRO, toluene, ethylbenzene, total xylenes, total lead, and PAHs were not detected at concentrations exceeding the 18 AAC 75.341 Tables B1 and B2 (migration to groundwater) Cleanup Levels.

Benzene concentrations exceeded the 18 AAC 75.341 Table B1 Cleanup Level (0.002 mg/kg) in 3 of the 10 samples. Benzene concentrations in these samples ranged from 0.0361 mg/kg to 0.0722 mg/kg.

Cleanup Levels

The various exposure pathways evaluated at this site were ingestion; inhalation and migration to groundwater. Since all the pathways are potentially complete at the site, the most stringent cleanup levels of the various pathways (i.e. migration to groundwater) is considered applicable.

Table 2 presents the 18 AAC 75.341 Tables B1 and B2 cleanup levels for soil in the under 40-inch precipitation zone for the various pathways of exposure.

Table 2: 18 AAC 75.341 Tables B1 and B2 Soil Cleanup Levels, Under 40-inch Zone

Contaminant	Ingestion	Inhalation	Migration to Groundwater
DRO	10,250	12,500	250
GRO	1400	1400	300
Benzene	150	9	0.02
Toluene	20,300	180	5.4
Ethylbenzene	10,000	89	5.5
Total Xylenes	203,000	81	78

All levels are in mg/kg.

The groundwater cleanup levels applicable at this site are the 18 AAC 75.345 Table C levels.

ADEC Decision

The cleanup actions to date at this site have resulted in the removal of the older UST system and 1500 cubic yards of impacted soil. The soil confirmation samples collected from the excavation identified benzene as the only contaminant of concern above the 18 AAC 75.341 Table B1 migration to groundwater cleanup level.

In order to evaluate the risk posed by the contamination remaining above the established cleanup levels, the migration to groundwater pathway was assessed. The groundwater in this area is 100 feet bgs and was sampled from the groundwater well on site. There has been no contamination detected in those samples.

The site assessment reports identified a permafrost layer approximately 8 feet below ground surface (bgs). It is assumed that this serves as a barrier to any vertical migration to the groundwater and the low levels of benzene remaining on site does not pose a risk to the drinking water.

ADEC has determined that the cleanup actions employed at Goldstream General Store were effective in excavating and removing the majority of impacted soil. There is minor soil contamination remaining at the site (above the established cleanup levels) but it does not pose a risk to human health or the environment provided site specific conditions and/or controls are attached to the property.

Based on the information provided to date, ADEC will require no further remedial action subject to the following conditions:

1. A deed notice is filed at the Fairbanks Recording District regarding the contaminant concentrations at the site for soil contamination that exceeds ADEC cleanup levels. A notice will also be entered into the ADEC's Contaminated Sites Database.
2. In accordance with 18 AAC 75.325(i), ADEC approval will be obtained prior to removal and/or disposal of soil or groundwater from this site to an off-site location.
3. In accordance with 18 AAC 75.380(d)(1), additional investigation and cleanup may be required if new information is discovered which leads the ADEC to make a determination that the cleanup described in this decision is not protective of human health, safety, and welfare or the environment.

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 of the decision. 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 of the decision. If a hearing is not requested within 30 days, the right to appeal is waived.

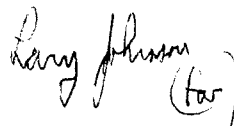
If you have any questions, please contact Deborah Williams at (907) 451-5174 or via e-mail at Deborah_Williams@dec.state.ak.us.

Sincerely,



Deborah Williams
Environmental Specialist

Sincerely,



Jim Frechione
Environmental Conservation Manager