STATE OF ALASKA

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

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February 10, 2006

Mr. Darren Mulkey
M & O Environmental Compliance Coordinator
Alaska Department of Transportation and Public Facilities
2301 Peger Road
Fairbanks, AK 99709-5399

Re: Record of Decision
ADOT&PF O'Brien Creek Maintenance Station
Mile 113 Taylor Highway.
Reckey # 1990330030501
Event ID 000020

Dear Mr. Mulkey:

The Alaska Department of Environmental Conservation, Contaminated Sites Program (ADEC) has completed review of the document entitled *Underground Storage Tank Corrective Action ADOT&PF O'Brien Creek Maintenance Station, Mile 113 Taylor Highway, Alaska.* Based on the information presented in this report and data contained within the administrative case file, ADEC has determined that soil contamination remains at the site above the most stringent 18 AAC 75 soil cleanup levels. However, the nature and extent of this contamination do not pose a risk to human health or the environment, and as a result, no further cleanup action is required at this time.

Please note the following information that was considered in making the determination on the environmental status of the site.

Site Background
The Alaska Department of Transportation and Public Facilities (ADOT&PF) O'Brien Creek Maintenance Station is located at Mile 113 of the Taylor Highway. The legal description of the property is: USS 4006, Lot 6, Section 9, Township 7 South, Range 32 East, Fairbanks Meridian. The site is located adjacent to O'Brien Creek which borders the site to the north and west. The area is sparsely populated and there is no known use of groundwater in the area. The drinking water for the facility is trucked in from Tok. It was reported (by Shannon & Wilson) that the depth to potable groundwater at the site is greater than 100 feet and attempts to drill wells in the area have been unsuccessful (i.e. failed to produce water, even at depths of several hundred feet).

Four underground storage tanks (USTs) were removed from this site between 1992 and 1998. The tanks were described as:

1. Tank #1, a 3,000-gallon diesel tank;
2. Tank #2, a 3,000-gallon unleaded gasoline tank;
3. Tank #3, a 3,000-gallon diesel tank; and
4. Tank #4, an unregistered 500-gallon used oil tank.

Tanks #1 and #2 were used for fueling ADOT&PF maintenance vehicles, and were connected to a fueling island. Tank #3 serviced the maintenance facilities generator building, and Tank #4 was adjacent to the west wall of the shop.

In 1992, NORTECH removed Tank #2; soil samples from the base of the excavation contained diesel range organic (DRO) contamination up to 8,500 mg/kg. Approximately 135 cubic yards of contaminated soil were excavated and stockpiled on site. Tank #3, adjacent to the generator building, was also removed and soil samples from that excavation only detected 30 mg/kg of DRO contamination. The samples were not analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX) analytes.

In 1993, NORTECH drilled four soil borings in the former Tank #2 area, with two borings completed as monitor wells. The depth of the borings ranged between 23 and 29 feet below ground surface (bgs); groundwater was encountered at 23 feet. Hydrocarbon contamination extended to 23 feet. At this depth a clay-rich schist bedrock soil type transitioned to more competent bedrock. Monitoring well (MW)-1 contained 3 to 5 inches of floating product at the time the well was installed and benzene concentrations in the groundwater ranged from 2.67 to 37.5 mg/L. Soil samples from two of the borings (located west of Tank #2) did not detect contamination above the most stringent ADEC soil cleanup levels. These borings were assumed to be down gradient from the source area.

In September 1995, an attempt to sample the groundwater failed because neither groundwater nor product was present. It was concluded that the groundwater encountered in 1993 probably was seasonal perched water within an unconsolidated alluvium soil.

In 1998, EMCON observed the removal of Tank #1 (previously reported to be a 3,000-gallon diesel tank but identified by EMCON as 5,000 gallons) and Tank #4 (the 500-gallon waste oil tank) from separate excavations. Both excavations were extended to approximately 8 feet bgs and the tanks were reportedly in good condition. Twenty cubic yards of contaminated soil were excavated and stockpiled on site but no analytical samples were collected from the stockpile.

The soil samples from beneath Tank #1 contained DRO up to 12,500 mg/kg and ethylbenzene up to 16.4 mg/kg. No petroleum contamination was detected above the most stringent ADEC cleanup levels beneath Tank #4. Arsenic was detected at 20.5 mg/kg but EMCON concluded the arsenic is likely within the range of naturally occurring background concentrations.

In May 2002, Shannon & Wilson collected three samples each from the 1992, and 1998 stockpiles. Contaminant concentrations ranged from 1,560 mg/kg DRO and 24.4 mg/kg GRO. BTEX was not detected above the cleanup levels.

In July 2002, Shannon & Wilson returned to the site in an attempt to remove contaminated soil beneath Tanks #1 and #2. The soil was excavated to a depth of 22 feet bgs and 680 cubic yards of contaminated soil were stockpiled on site. Three test pits were then excavated (23 to 26 feet bgs) to determine the extent of the contamination. The test pits were terminated at bedrock; groundwater was not encountered at that depth.

Soil samples from the limits of the 2002 excavation ranged up to 5,270 mg/kg GRO and 3,450 mg/kg DRO. Benzene was detected up to 22.1 mg/kg and toluene, ethylbenzene, and total xylenes ranged up to 319 mg/kg, 165 mg/kg, and 1,003 mg/kg respectively. The test pits did contain low levels of petroleum contamination but the impacted soil was limited to the schist/bedrock interface, roughly 22 to 26 feet below ground surface.

Samples from the 1998 (20 cubic yards) and 2002 (680 cubic yards) combined stockpile detected 671 to 1,170 mg/kg GRO and 942 to 1,720 mg/kg DRO. Benzene ranged from 1.85 to 5.08 mg/kg, toluene from 26.8 to 52.6 mg/kg, ethylbenzene from 17.7 to 26.4 mg/kg, and total xylenes from 99.6 to 195.5 mg/kg.

The 1992 stockpile (135 cubic yards) contained contamination (714 mg/kg DRO) in one of three samples above cleanup levels. ADEC approved this stockpile to be used (disposed) in a non-environmentally sensitive area.

In September 2005, Shannon & Wilson reported sample results from the remaining soil stockpile. All five samples were below ADEC migration to groundwater cleanup levels for DRO, GRO, and BTEX and ADEC approved use (disposal) of the stockpile soil in a non-environmentally sensitive area.

Exposure Pathway Evaluation

The following exposure and/or migration pathways were considered in this decision document. The exposure pathways for human health that were evaluated include: indoor and outdoor inhalation; ingestion of soil; dermal contact with soil; and ingestion of groundwater or surface water.

The site is a commercial/industrial site used for storage and maintenance of equipment by ADOT&PF employees. The contamination exceeding cleanup levels is located more than 15 feet below ground surface and the inhalation; ingestion; dermal contact pathways are not considered to be complete unless the soil is excavated.

The migration to groundwater and surface water pathways were evaluated. The groundwater ingestion pathway is not an issue based on site specific conditions. The naturally occurring hydrogeologic conditions are not conducive for groundwater to be used as a drinking water source. The groundwater at the site is greater than 100 feet bgs and attempts to drill wells in the area have been unsuccessful (i.e. failed to produce water, even at depths of several hundred feet). The migration to groundwater pathway may be complete but the site specific conditions allow the soil contamination (above the 18 AAC 75.341 migration to groundwater levels) to remain on site and naturally attenuate without impacting groundwater.

The migration to surface water pathway is not considered complete due to the site specific conditions and the cleanup efforts that were employed there to remove the source material. Surface water is not used as a drinking water source; therefore this exposure pathway is not an issue.

Cleanup Levels
The soil cleanup levels established for this site are the 18 AAC 75.341 Tables B1 and B2 Method Two, "under 40 inch zone" migration to groundwater levels.

Table 1, Soil sample from the 2002 excavation and test pits. Concentrations are listed in mg/kg; sample results exceeding cleanup levels are in bold.

Sample ID	Depth	DRO	GRO	Benzene	Toluene	Ethyl-benzene	p&m Xylenes	o-Xylene
2	24.5	**400**	**933**	**10.9**	**50.2**	4.56	49.3	7.82
3	22	**642**	300	**0.187**	0.512	2.29	7.96	3.63
4	22	**1,320**	**732**	**0.272**	0.598	**5.95**	18.7	9.63
5	23	**3,450**	**1,250**	**2.19**	2.77	**5.76**	25.9	18.2
7	22	**733**	**350**	**2.67**	<0.416	2.31	10.9	4.51
8	22	**2,330**	**1,270**	**12.8**	**40.4**	**6.95**	55.7	12.0
9	22	**1,130**	**2,270**	**11.7**	**183**	**75.0**	**289**	**135**
10	22	<21.3	4.50	**0.407**	0.619	0.0742	0.334	0.170
11	22	<21.5	8.93	**0.616**	1.12	0.197	0.798	0.390
12	22	90.8	44.2	**0.544**	1.84	0.878	3.38	1.62
13	16	**1,530**	**5,270**	**22.1**	**319**	**165**	**711**	**292**
14	16	**1,590**	**1,840**	**2.93**	**56.2**	**37.0**	**215**	**119**
16	20	218	90.6	**0.0447**	1.74	1.83	11.7	5.33
17	22	<25.9	3.19	**0.0628**	0.396	0.0727	0.354	0.207
ADEC Cleanup level		**250**	**300**	**0.02**	**5.4**	**5.5**	**78 Total**	**78 Total**

ADEC Decision
The cleanup actions at this site have resulted in the removal of four USTs and over 835 cubic yards of contaminated soil. The excavated soil achieved the ADEC cleanup levels established for the site and its removal from the ground minimized the risk to human health and the environment. There is residual contamination remaining in the ground but its location does not pose an unacceptable risk and it will naturally attenuate over time.

Based on the information provided to date, ADEC has determined that the cleanup actions employed at the ADOT&PF O'Brien Maintenance Station have been effective in removing the majority of the contamination at the site. The contamination remaining beneath the former USTs does not pose a risk to human health or the environment provided site specific conditions and/or

controls are attached to the property. As a result of this determination, ADEC will require no further remedial action subject to the following conditions:

1. An Institutional Control will be added to the ADEC Contaminated Sites Database identifying the nature and extent of contamination remaining on site.

2. In accordance with 18 AAC 78.274(b), ADEC approval shall be obtained prior to removal and/or disposal of soil or groundwater from this site to an off site location. If excavation is planned for the area of the former USTs, a plan to address the contamination remaining there shall be submitted to ADEC for review and approval.

3. ADEC must be notified prior to installation of drinking water wells or other groundwater extraction wells on or in the vicinity of this site.

4. In accordance with 18 AAC 78.276(f)(2) ADEC may require additional site assessment, monitoring, remediation, and/or other necessary actions at this facility should new information become available that indicates contamination at this site may pose a threat to human health or the environment.

ADEC will consider a Site Closure (and removal of institutional controls) only after the soil achieves the established cleanup levels for the site.

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 Kim DeRuyter at (907) 451-2752 or via e-mail at Kim_DeRuyter@dec.state.ak.us.

Sincerely,

Kim DeRuyter

Kim DeRuyter
Environmental Program Specialist

Sincerely,

Jim Frechione

Jim Frechione
Environmental Program Manager