

# STATE OF ALASKA

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

FRANK MURKOWSKI, GOVERNOR

610 University Avenue  
Fairbanks, AK 99709-3643  
PHONE: (907) 451-2752  
FAX: (907) 451-2155  
www.dec.state.ak.us

File: 100.38.128

February 9, 2006

Kris Dubois  
Fairbanks International Airport  
6450 Airport Way, Suite 1  
Fairbanks, AK 99709

Re: Record of Decision  
ADOT&PF Fairbanks International Airport Hydrant Fuel System - Distribution Line  
Reckey #2005310005401, Event ID 3016

Dear Ms. Dubois:

The Alaska Department of Environmental Conservation, Contaminated Sites Program (ADEC) has completed review of the document entitled *Response to ADEC Comments, NFRAP Request for Three UST Sites and Fuel Hydrant Site*, dated August 17, 2005. Based on the information presented in this report and other site data within the administrative case file, ADEC has determined that soil and groundwater contamination remain at this Fairbanks International Airport (FIA) site above the most stringent 18 AAC 75 cleanup levels. However, the nature and extent of the 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.

NOTE: The release sites addressed by this decision document are associated with the eastern portion of the hydrant system known as the distribution line. The western portion of the hydrant system, known as the vendor line, is not addressed in this decision. This site is regulated under 18 AAC 78 and 18 AAC 75.

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

### Site Background

A hydrant fueling system was used to fuel aircraft on the FIA south apron in the 1980s. It experienced operational and maintenance problems that resulted in it being shut down in 1986. It should be noted that the system was not drained of fuel product until 1998.

In 1993, ADOT&PF reported free phase fuel product in the south heavy apron area during a structural investigation to replace a sewer line. An inspection by Shannon & Wilson and Enterprise Engineering of the hydrant system was completed in 1997 and 1998 and they concluded that it was the source of the soil and groundwater contamination in this area.

A site assessment (limited to the eastern portion of the pipeline known as the distribution line) conducted in 1999 by Oasis Environmental identified three areas where leaking had occurred: the low point drain and two valve pits. The investigation extended from the hydrant system pump house (near Brumbaugh Avenue and Airport Industrial Road) to the end of the hydrant system piping near Gate 3 of the airport terminal. The assessment screened for groundwater impacts using temporary well points on a 100-foot grid spacing. Soil borings were then installed based on soil gas and groundwater screening data to characterize the extent of soil impact downgradient of the release areas. Groundwater monitoring wells were then installed to characterize groundwater impact near the fringes of soil impact and within known release areas.

The Bioscreen Natural Attenuation Decision Support System was used to model the three primary contaminant plumes observed during the 1999 investigation. The model indicated that the contaminant plumes associated with the low point drain, valve pit #1, and valve pit #2 releases could be expected to travel 40 feet, 90 feet, and 135 feet, respectively. The report concluded that the model results compared well with observed site conditions.

The 1999 assessment included calculation of risk-based cleanup levels for soil and groundwater contamination associated with the hydrant system. Based on ADEC comments, these levels were revised in an Oasis report dated August 17, 2005.

In 2000, six product recovery wells were installed near the three areas of concern. Approximately 135 gallons were recovered during pilot testing in 2000, but subsequent product recovery efforts through 2002 recovered only 10 gallons. In 2003, ADEC determined the product recovery efforts were no longer practicable and approved the termination of the recovery efforts.

#### **Chemicals of Concern**

The contaminants of concern identified at the site are:

Benzene, Toluene, Ethylbenzene and total Xylenes (BTEX)

Gasoline range organics (GRO)

Diesel range organics (DRO)

#### **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.

Asphalt or concrete pavement currently covers most of the site. This minimizes the possible exposure pathways of ingestion, dermal contact, and/or inhalation. However, there may be exposure issues if soil excavation occurred there. To minimize and control this risk, any soil excavation in areas of remaining soil contamination will require notification of ADEC and the oversight of a qualified third-party environmental consultant.

The groundwater ingestion pathway may be an issue if groundwater is used for potable purposes. The depth to groundwater in this area is approximately 9 to 12 feet below ground surface (bgs) and typically flows in a northwesterly direction. Two groundwater wells are located on the site, a lawn-watering well and an emergency firefighting well. The firefighting well is no longer usable and is

scheduled for decommissioning. Any groundwater well on site should be evaluated for water quality purposes to ensure 18 AAC 70, 18 AAC 75 and 18 AAC 80 standards are not violated.

Surface water is not used as a drinking water source; therefore this exposure pathway is not an issue.

The migration pathways include: migration to groundwater; surface water and/or indoor air. The migration to groundwater pathway is considered complete since soil contamination exceeds the 18 AAC 75.341 levels and groundwater has been impacted above the 18 AAC 75.345 Table C levels. The migration to surface water pathway was evaluated based on groundwater monitoring data and modeling of the contaminant plume. This pathway was determined to be incomplete because contaminants are not expected to reach the nearest surface water bodies. The indoor air pathway was evaluated for the Alaska Airlines Air Cargo Building and the Airport Rescue and Firefighting/Maintenance Building.

As part of an active airport, the site is in a commercial/industrial use area and is expected to remain so in the future. The risk at this site was evaluated based on exposure to non-residential receptors. The cumulative risks from carcinogenic and non-carcinogenic compounds at this site were determined to be within the acceptable risk range established by ADEC.

#### Soil 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 results in mg/kg; sample results exceeding cleanup levels are in bold.**

Sample Location	Depth (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	GRO	DRO
99B1	13	ND	0.341	2.72	12.16	141	110
99B3	11	<b>0.246</b>	1.72	<b>8.4</b>	<b>108.1</b>	<b>1040</b>	NT
99B3	13	NT	NT	NT	NT	NT	<b>10700</b>
99B6	11	<b>0.371</b>	1.22	<b>21.2</b>	<b>90.7</b>	<b>896</b>	NT
99B6	13	NT	NT	NT	NT	NT	<b>336</b>
99B7	11	NT	NT	NT	NT	NT	<b>1620</b>
99B7	13	<b>0.124</b>	1.39	<b>5.58</b>	30.7	198	NT
99B10	8	NT	NT	NT	NT	NT	<b>6820</b>
99B10	10	<b>0.36</b>	2.2	<b>19.3</b>	<b>97.1</b>	<b>1080</b>	NT
99B10	12	NT	NT	NT	NT	NT	<b>9800</b>
99B13	8	<b>0.495</b>	3.55	<b>16.2</b>	<b>83.3</b>	<b>631</b>	<b>1470</b>
99B14	8	NT	NT	NT	NT	NT	<b>1170</b>
99B14	10	ND	2.33	<b>9.54</b>	76	<b>649</b>	<b>8920</b>
ADEC Soil Cleanup Level		0.02	5.4	5.5	78	300	250

ND is not detected.

NT is not tested.

### Groundwater Cleanup Levels

The groundwater cleanup levels established for this site are the 18 AAC 75.345 Tables C.

**Table 2, Groundwater sample results in mg/L; most recent sample results exceeding cleanup levels are in bold.**

Sample Location	Date	Benzene	Toluene	Ethylbenzene	Xylenes	GRO	DRO
MW-1/MW-1R*	7/27/05	ND	ND	0.01	0.0230	0.262	41.7
MW-2	9/27/05	0.00734	0.00155	0.00491	0.0267	0.135	6.61
MW-4	8/5/99	<b>0.156</b>	0.529	0.102	3.05	<b>8</b>	<b>6.14</b>
MW-5	8/6/99	<b>0.149</b>	<b>0.72</b>	0.094	4.1	<b>10</b>	<b>7.63</b>
MW-7 (decommissioned)	8/6/99	<b>0.484</b>	<b>0.999</b>	<b>1.06</b>	6.23	<b>19</b>	<b>45</b>
MW-11/MW-11R	9/27/05	<b>0.0095</b>	ND	ND	ND	NT	NT
MW-15	7/27/05	<b>0.00542</b>	0.0851	0.00183	0.1499	0.674	0.443
MW-16 (decommissioned)	8/14/02	<b>0.00697</b>	0.0256	0.00302	0.1853	0.562	0.68
MW-17 (decommissioned)	8/12/99	<b>0.122</b>	0.317	0.258	1.724	<b>5.2</b>	<b>4.34</b>
MW-18	7/27/05	<b>0.193</b>	0.345	ND	2.473	<b>6.28</b>	<b>8.84</b>
MW-22	8/12/99	ND	ND	0.0113	ND	0.218	2.21
MW-25	7/27/05	<b>0.141</b>	0.406	0.00647	2.237	<b>5.9</b>	<b>5.66</b>
MW-29	9/19/00	ND	ND	ND	ND	ND	2.51
MW-30	9/18/00	ND	ND	ND	ND	ND	3.17
ADEC Soil Cleanup Level		0.005	0.7	1.0	10	1.3	1.5

ND is not detected.

NT is not tested.

Three monitoring wells were selected as alternate points of compliance for the spills associated with the hydrant releases: MW-25, MW-15, and MW-18.

### ADEC Decision

Cleanup actions at the fuel hydrant site consisted of product recovery to the extent practicable. Based on the information provided, the ADEC has determined that there is residual contamination remaining in the soil and groundwater, but the contamination is stable and poses minimal risk to receptors. The contamination is expected to naturally attenuate over time.

As a result of this determination and the impracticality of remedial action on an active airport apron, 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 and its use as an industrial / commercial airport facility.

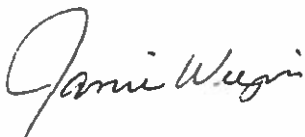
2. In accordance with 18 AAC 78.274(b), ADEC approval will be obtained prior to removal and/or disposal of soil or groundwater from this site to an off site location. If excavation is planned for areas where residual contamination has been identified, a plan to address the contamination will be submitted to ADEC for review and approval.
3. If land use at this site changes from industrial/commercial, ADEC will be notified and the risks to human health will be re-evaluated.
4. ADEC shall be notified prior to installation of drinking water wells or other groundwater extraction wells on (or adjacent to) this site.
5. Excavation or trench work conducted in areas of residual contamination shall follow applicable OSHA regulations.
6. In accordance with 18 AAC 78.276(f)(2) ADEC reserves the right to require additional site assessment, monitoring, remediation, and/or other necessary actions at this facility should new information become available that indicates contamination may pose a risk to human health or the environment.
7. A groundwater monitor plan shall be developed that includes the three monitoring wells (MW-25, MW-15, and MW-18) selected as alternate points of compliance and four additional monitor wells (MW-1R, MW-22, MW-29, and MW-30). These wells will be sampled annually during the fall high water event for GRO, DRO, and BTEX.

ADEC will consider a Site Closure without conditions (and removal of institutional controls) when the soil and groundwater consistently meets 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.

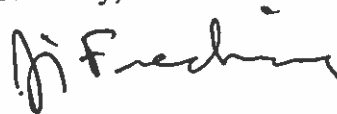
If you have any questions, please contact Kim DeRuyter at (907) 451-2752 or via email at [kim\\_deruyter@dec.state.ak.us](mailto:kim_deruyter@dec.state.ak.us).

Sincerely,



Janice Wiegiers  
Environmental Program Specialist

Sincerely,



Jim Frechione  
Environmental Program Manager



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