

STATE OF ALASKA

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

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Files: 141.26.002
141.38.011
141.38.021
141.38.022
141.38.037
141.38.038
141.38.044

July 21, 2005

Mr. Glen Shonkwiler
U.S. Army Space & Missile Defense Command
P.O. Box 1500
SMDC-EN-V
Huntsville, AL 35807-3801

Re: Approval of conditional closure for six **No Further Remedial Action Planned** sites in the document titled *Final Environmental Sites Decision Document, Fort Greely, Alaska* dated May 2005

Dear Mr. Shonkwiler:

The Alaska Department of Environmental Conservation (ADEC) has completed review of the document entitled *Final Environmental Sites Decision Document, Fort Greely, Alaska*. ADEC received the document on June 15, 2005. The sites listed below have met the requirements specified in 18 AAC 75.380 and the request for no further remedial action planned at the sites is therefore approved.

Site Name	ADEC Reckey # / File Number	BRAC Parcel ID
World War II Tent Site	199833X915201 CS / 141.38.044	114
Bldg 501 USTs	1995330029801 LUST / 141.26.002	-
Bldg 605 CRTS	199233X930602 CS / 141.38.011	-
Landfarm	199531X107401 CS / 141.38.037	-
Landfill #6 (Family Housing Landfill)	199833X515202 CS / 141.38.021	-
Landfill #7 (1970's Landfill)	199833X515201 CS / 141.38.022	-

The following information was considered in making the determination on the environmental status of the above-listed sites.

World War II Tent Site

Site Background

This site consists of an approximately 42 acre forested area within the South Undeveloped Area (identified as former BRAC Parcel 1). Access to the site is from a trail extending south from the post gate, and south of Big Delta Avenue. The site consists of six clearings identified as former bivouac areas and was reportedly used for equipment testing and engineering experiments during World War II. Aerial photograph reviews and interviews were conducted during the 1998 remedial investigation under Base Realignment and Closure (BRAC) and it was found that the activities in the area were limited to troop maneuvers and use of small arms (rifle/pistol ammunition). The investigation did not reveal contaminant sources at the site; therefore an invasive field investigation was not conducted.

Cleanup Levels

The soil cleanup levels established for this site are found in 18 AAC 75.341, Tables B1 and B2, Method Two, Under 40 Inch Zone.

Site Controls and Exposure Pathways

The World War II Tent Site is located in an administrative control area on Fort Greely in order to minimize risk to human health and the environment. Administrative controls are implemented for this area in accordance with the Decision Document. If future land disturbance activities at the site encounter munitions or other contamination, ADEC must be notified prior to excavation of soil at this site and all soil must properly remediated or disposed of in accordance with applicable regulations.

The site is considered industrial/commercial property and only occupied by Fort Greely personnel or contractors. Since contamination is not documented at this site, exposure pathways are not known. However, administrative controls placed on this site will minimize exposure to unknown contaminants.

ADEC Decision

Based on this information and the administrative controls placed on the site, no further remedial action is needed at this site. If future land disturbance activities at the site encounter contamination, the contaminated material should be properly remediated or disposed of in accordance with applicable regulations.

Building 501 USTs

Site Background

Building 501 (post headquarters) contained two Underground Storage Tanks (UST), No. 430 and No. 474. Building 501 is located in the Admin/Industrial Area at the northwest corner of the intersection of First Street and Big Delta Ave. The USTs at this building supplied diesel fuel for backup generators. As backup generator tanks, the tanks were regulated by 18 AAC 78 UST Regulations, but not subject to leak detection requirements.

UST No. 474 was a 300-gallon diesel tank and was removed August 7, 1995. No contamination was observed during removal. Three excavation samples were collected and analyzed for Diesel Range Organics (DRO). DRO was not detected. Approximately 30 yd³ of excavated soil were placed back into the excavation. UST No. 474 was replaced with current UST No. 430A.

UST No. 430 was a 5,000-gallon diesel tank and was removed August 15, 1995. Minor contamination, possibly from a leak in the line off the fill tube, was identified by field screening during the removal. Four excavation samples were collected and analyzed for DRO. The highest concentration was 6.5 mg/kg, below the ADEC Method Two soil cleanup level of 250 mg/kg. Approximately 80 yd³ of excavated soil were placed back into the excavation.

At both sites, samples were not analyzed for Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX), or Polynuclear Aromatic Hydrocarbons (PAH), a regulatory requirement.

Cleanup Levels

The soil cleanup levels established for this site are found in 18 AAC 75.341, Tables B1 and B2, Method Two, Under 40 Inch Zone.

<u>Contaminant</u>	<u>Cleanup Level (mg/kg)</u>
DRO	250
Gasoline-Range Organics (GRO)	300
Benzene	0.02
Toluene	5.4
Ethylbenzene	5.5
Xylenes (total)	78

Site Controls and Exposure Pathways

This site is considered industrial/commercial property and only occupied by Fort Greely personnel or contractors. DRO contamination at this site is below migration to ground water, ingestion, and inhalation cleanup levels, however, confirmation samples were not collected for BTEX and PAHs.

The USTs located at Building 501 are located in an administrative control area on Fort Greely. Administrative controls are implemented for this source area in accordance with the Decision Document. Soil is considered to be potentially contaminated with petroleum. ADEC must be notified prior to excavation of soil at this site. All soil excavated from this area must be tested and managed appropriately.

ADEC Decision

Based on the existing soil sampling information and the administrative controls placed on the site, no further remedial action is needed for UST No. 474 and UST No. 430. Since the detected petroleum compounds were so low, ADEC will not require additional sampling for BTEX and PAH (18 AAC 75.341) unless full closure is requested. If future land disturbance activities at the site encounter contamination, ADEC should be notified and contaminated material should be properly remediated or disposed of in accordance with applicable regulations.

Building 605 CRTC, UST No. 482

Site Background

Building 605 was the Cold Regions Testing Center (CRTC) shop. Building 605 is located in the Admin/Industrial Area, north of Arctic Avenue and just west of the Building 606 power plant. The site is approximately 700 ft east on the north side of Arctic Avenue. The building housed the post vehicle maintenance shop at the south end, and a former paint bay, battery storage, wash rack, electric motor repair shop, and vehicle warm storage in the north half. At the time of the Preliminary Assessment (PA), wastes (oil, antifreeze, etc.) were stored at a hazardous waste/materials accumulation point inside the building. Batteries were filled and charged inside the building; floor drains were reportedly sealed off to prevent leakage into the sewer system. The drain in the paint bay was connected to sewer leading to the wastewater treatment facility; the paint bay was not in use at the time of the PA. The wash bay was connected to an oil-water separator, which was also connected to the sewer line. No spills were known to have occurred at the site.

A 500-gallon used oil UST (Tank No. 482) was removed from the site in approximately 1986. Little additional information about the removal was found. Apparently, no UST site assessment was conducted and there was no documented evidence of release. The UST was removed prior to enactment of ADEC's regulated tank program and prior to implementation of ADEC UST Regulations 18 AAC 78.

Cleanup Levels

If contamination is present at the site, the soil cleanup levels established for this site are found in 18 AAC 75.341, Tables B1 and B2, Method Two, Under 40 Inch Zone.

Site Controls and Exposure Pathways

The site is considered industrial/commercial property and only occupied by Fort Greely personnel or contractors. Since contamination is not documented at this site, exposure pathways are not known. However, administrative controls placed on this site will minimize exposure to unknown contaminants.

Building 605 CRTC, UST No. 482 is located in an administrative control area on Fort Greely. Administrative controls are implemented for this area in accordance with the Decision Document. Soil from this area is considered to be potentially contaminated with petroleum products. ADEC must be notified prior to excavation of soil at this site. All soil excavated from this area must be tested and managed appropriately.

ADEC Decision

Based on the available documentation and the administrative controls placed on this site, no further remedial action will be required for UST No. 482. If future land disturbance activities at the site encounter contamination, ADEC should be notified and contaminated material should be properly remediated or disposed of in accordance with applicable regulations.

Landfarm (UST Soil Stockpile bioremediation)

Site Background

Petroleum-contaminated soil excavated during UST removals at Fort Greely and the Black Rapids facility was stockpiled and landfarmed at the Landfill No. 7 area south of the main cantonment. The site is located approximately 2 miles south of the main cantonment area, accessed via Landfill Road. The site consisted of approximately 12,100 yd³ of diesel-contaminated soil and approximately 1,190 yd³ of gasoline-contaminated soil. In 1995, a landfarming operation was conducted to remediate the contaminated soil. Because the site was a former landfill and the depth to ground water was determined to be about 270 feet below ground surface, ADEC waived the requirement for a bottom liner at the site. Samples were collected in 1995, 1996, and 1997 to monitor the soil treatment progress. Concentrations of GRO and DRO decreased. Closure sampling in 1997 indicates that only 2 of 48 samples collected exceeded the 100 mg/kg Method One Cleanup level for DRO and ADEC approved use of the treated soil as daily landfill cover material at Landfill No. 7 and Landfill No. 8 and as surface coarse on Fort Greely roads.

In 1999, additional petroleum-contaminated soils (with DRO exceedances up to 18,000 mg/kg) were placed on the landfarm from Beales Range Facility, UST removals, and miscellaneous spills. The windrows were tilled twice in 1999 and in 2000 and confirmation sampling occurred. Results indicate that 6 of the 26 samples collected exceeded Method Two Soil Cleanup Level for DRO. No other contaminant concentrations exceeded cleanup levels and metals were within background concentrations. In 2001, the soil from the UST removals and spills were tilled again and field screened with a Photo Ionization Detector and approximately 60 yd³ of higher-level contaminated soil were excavated and thermally treated by OIT soil treatment facility in Fairbanks. In 2003, ADEC approved use of the remaining 1010 yd³ of landfarmed soil for daily cover at Fort Greely Landfill No. 8, which is adjacent to Landfill No. 7.

Cleanup Levels

The soil cleanup levels established for this site are found in 18 AAC 75.341, Tables B1 and B2, Method Two, Under 40 Inch Zone.

<u>Contaminant</u>	<u>Cleanup Level (mg/kg)</u>
DRO	250
GRO	300
Residual Range Organics (RRO)	10,000
Benzene	0.02
Toluene	5.4
Ethylbenzene	5.5
Xylenes (total)	78

Site Controls and Exposure Pathways

The landfarming site is co-located with Landfill No. 7 and therefore administrative and institutional controls have been established by Fort Greely in order to minimize risk to human health and the environment. Administrative and institutional controls are implemented for this source area in accordance with the Decision Document. ADEC must be notified prior to excavation of soil at this

site. All soil excavated from this area must be tested and managed appropriately. Ground water in this area is not to be used for drinking water.

The site is considered industrial/commercial property and only occupied by Fort Greely personnel or contractors. The remaining low-level contamination was placed in Landfill No. 8, there is no building present at this site, and ground water is not used as a drinking water source. Therefore, the ingestion and inhalation pathways are incomplete if established administrative and institutional controls remain in place.

ADEC Decision

The extent of investigative and remedial effort and the administrative controls placed on the site is considered adequate to support no further remedial action to be conducted at this site. This determination recognizes that any remaining contamination does not pose a risk to human health or the environment and is subject to administrative controls. If future land disturbance activities at the site encounter contamination, the contaminated material should be properly remediated or disposed of in accordance with applicable regulations.

Landfill No. 6

Site Background

Landfill No. 6 is the Family Housing Landfill, covering approximately 11 acres. The site is located approximately 1,200 ft south of the family housing area in the main cantonment. The landfill was used in the mid-1950s through 1960. The landfill has since been covered with soil and graded. The original purpose of this landfill was to provide a disposal site for grubbing material and debris from construction of housing. The landfill is also believed to have accepted sanitary wastes (domestic garbage and septic tank wastes) buried in trenches.

Four soil borings were drilled to 41.5 to 42.0 ft below ground surface around the perimeter of the landfill in 1995 to investigate for leachate. Thirty-six samples were collected. Analyses included Total Petroleum Hydrocarbon (TPH), DRO, GRO, Volatile Organic Compounds (VOCs), Semi-Volatile Organic Compounds (SVOCs), chlorinated herbicides, pesticides, Polychlorinated Biphenyls (PCBs), and metals.

Maximum concentrations of DRO (33 mg/kg) and GRO (58 mg/kg) are below ADEC Method Two cleanup levels. Trace concentrations of di-n-butyl phthalate and bis(2-ethylhexyl) phthalate were detected well below ADEC Method Two cleanup levels.

Methylene chloride was detected up to 0.023 mg/kg, slightly exceeding the ADEC Method Two migration to ground water cleanup level. The report attributed this analyte to most likely be the result of laboratory contamination. No other VOC detections exceeded ADEC Method Two cleanup levels.

Maximum detected concentrations of the pesticides alpha BHC (0.002 mg/kg), delta BHC (0.002 mg/kg), 4,4-DDD (0.065 mg/kg), endosulfan (0.003 mg/kg), 4,4-DDT (0.36 mg/kg), 4,4-DDE (0.04 mg/kg), and dieldrin (0.009 mg/kg) were below ADEC Method Two cleanup levels. PCBs were not detected.

The maximum detected concentration of arsenic (41 mg/kg) and chromium (98 mg/kg) exceed ADEC Method Two cleanup levels. The maximum arsenic concentration is only slightly outside

the background range (4 to 40 mg/kg). Only one chromium sample result out of 44 exceeded the background range of 8 to 43 mg/kg for Fort Greely.

Ground-water monitoring wells were not installed at this site.

Cleanup Levels

The soil cleanup levels established for this site are found in 18 AAC 75.341, Tables B1 and B2, Method Two, Under 40 Inch Zone.

<u>Contaminant</u>	<u>Cleanup Level (mg/kg)</u>
Diesel-Range Organics (DRO)	250
Gasoline-Range Organics (GRO)	300
Benzene	0.02
Toluene	5.4
Ethylbenzene	5.5
Xylenes (total)	78
Di-n-butyl phthalate	1700
Bis(2-ethylhexyl) phthalate	590
Methylene chloride	0.015
Alpha-BHC	0.0026
Endosulfan	7
4,4-DDT	24
4,4-DDD	35
4,4-DDE	24
Dieldrin	0.015
Arsenic	2
Chromium (Total)	26

Site Controls and Exposure Pathways

Landfill No. 6 is located in an administrative and institutional control area on Fort Greely. Administrative and institutional controls are implemented for this source area in accordance with the Decision Document. Soil and ground water from this area are considered to be potentially contaminated with petroleum. ADEC must be notified prior to excavation of soil at this site. All soil excavated from this area must be tested and managed appropriately. Ground water in this area is not to be used for drinking water.

The exposure pathways evaluated at these sites include migration to ground water, inhalation and/or ingestion of contaminated soil or drinking water by workers. The site is considered industrial/commercial property and only occupied by Fort Greely personnel or contractors. The depth to water is estimated to be 200 ft below ground surface. The remaining contamination is in a capped and graded landfill, there is no building present at this site, and ground water is not used as a drinking water source. Therefore, the ingestion and inhalation pathways are incomplete so long as established administrative and institutional controls remain in place.

ADEC Decision

Based on the existing information and the administrative controls placed on this site, no further remedial action is needed for Landfill No. 6. This determination recognizes that remaining contamination does not pose a risk to human health or the environment and is subject to administrative and institutional controls. If future land disturbance activities at the site encounter contamination, the contaminated material should be properly remediated or disposed of in accordance with applicable regulations.

Landfill No. 7

Site Background

Landfill No. 7 is also termed the "1970's Landfill" and is approximately 7 acres. Landfill No. 7 is located immediately east of the currently active Landfill No. 8, which is located approximately 2 miles south of the main cantonment. The site is accessed via Landfill Road east and south of the cantonment. It included a regular landfill area (SWMU No. 37) and a construction debris trench (SWMU No. 13). SWMU No. 37 was operated from 1976 through 1978. The landfill is believed to have accepted sanitary wastes (domestic garbage and septic tank waste), refuse ash, construction/demolition debris, barrels, tires, batteries, and scrap vehicles. Use of SWMU No. 37 ceased in 1978; it was covered with soil and graded. SWMU No. 13, located in the southeast section of Landfill No. 7, accepted construction debris from 1988 through 1989. Contamination has not been documented in the landfill or in the ground water. The area is now permitted by the ADEC Solid Waste Program to receive Construction and Demolition (C & D) waste. The C & D waste is placed on top of the old landfill and is periodically covered with soil.

The Landfill No. 7 area was also used under the former BRAC program as a staging area for petroleum-contaminated soil stockpiles and thermal processing of soil that was excavated from the Robin Road Fuel Spill, Evergreen Road Petroleum, Oil, and Lubricants (POL) Facility, and the North Delta Tank Farm. A portion of Landfill No. 7 was also used as a landfarming area to treat petroleum-contaminated soil from various USTs and spills from 1995-2001 and the landfarm is addressed as a separate site. ADEC previously approved the use of the landfarmed soils as cover material for Landfill Nos. 7 and 8.

Cleanup Levels

The soil cleanup levels established for this site are found in 18 AAC 75.341, Tables B1 and B2, Method Two, Under 40 Inch Zone.

Site Controls and Exposure Pathways

The site is considered industrial/commercial property and only occupied by Fort Greely personnel or contractors. Since contamination is not documented at this site, exposure pathways are not known. Any contamination in the landfill will be below ground surface because the landfill has a soil cover. Additionally, administrative and institutional controls placed on this site will minimize exposure to unknown contaminants.

Landfill No. 7 is located in an administrative and institutional control area on Fort Greely. Institutional controls are implemented for this source area in accordance with the Decision

Document. Soil and ground water from this area are considered to be potentially contaminated. ADEC must be notified prior to excavation of soil at this site. All soil excavated from this area must be tested and managed appropriately. Ground water in this area is not to be used for drinking water.

ADEC Decision

Based on the existing information and the administrative and institutional controls placed on this site, no further remedial action is needed for Landfill No. 7. This determination recognizes that potential contamination does not pose a risk to human health or the environment and is subject to administrative and institutional controls. If future land disturbance activities at the site encounter contamination, the contaminated material must be properly remediated or disposed of in accordance with applicable regulations.

ADEC General Conditions

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

1. In accordance with 18 AAC 78.274(b), ADEC approval must be obtained prior to removal and/or disposal of soil from these sites. In addition, the ADEC shall be notified prior to any excavation in the impacted area as screening for impacted material and the use of properly trained excavation personnel may be required.
2. Well installation restrictions should be followed for applicable sites and the ADEC shall be notified prior to installation of ground water wells at, or in the immediate vicinity of the contamination.
3. The ADEC shall be notified prior to construction or reconstruction of structures that will be used for human occupation if the buildings are located above, or near, identified areas of contamination. Further evaluation of the potential for vapor intrusion may be necessary if construction is anticipated.
4. The administrative control requirements will also be noted in the ADEC's Contaminated Sites Database.
5. ADEC will consider a full Site Closure (and removal of administrative and/or institutional controls) only after the soil and/or ground water achieves the established cleanup levels for the sites.

In accordance with 18 AAC 75.380(d)(1), ADEC reserves the right to request additional site assessment and remediation of contaminated areas should new information become available that suggests that contamination of this site may pose significant risks to human health 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 after receiving the Department's 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 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.

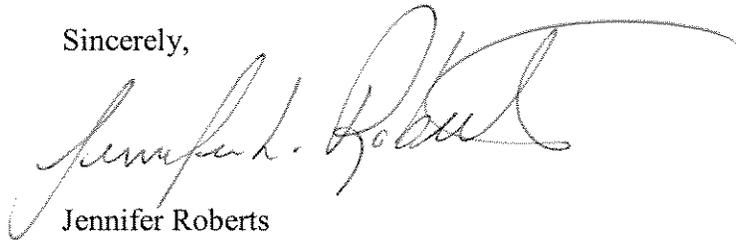
If you have any questions, please contact Emily Youcha at (907) 451-2180 or via e-mail at emily_youcha@dec.state.ak.us.

Sincerely,



Emily Youcha
Environmental Program Specialist

Sincerely,



Jennifer Roberts
Environmental Program Manager

cc: Jacques Gusmano, EPA Region 10
Steve Fields, RAB co-chair