Alaska Department of Environmental Conservation

Reuse & Redevelopment Initiative

Brownfield Assessment

ENVIRONMENTAL MANAGEMENT PLAN

Tanana Airport Facility and Community

Tanana, Alaska

Submitted to:
Department of Environmental Conservation
Brownfield Program

By:
SLR International Corp
June 2009

SLR

ENVIRONMENTAL MANAGEMENT PLAN
TANANA AIRPORT FACILITY AND COMMUNITY
TANANA, ALASKA

Prepared for

Alaska Department of Environmental Conservation
Contaminated Sites Program
Division of Spill Prevention and Response
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June 2009

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SLR Project Number
005.0065.09006

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TANANA AIRPORT FACILITY AND COMMUNITY
TANANA, ALASKA

This document has been prepared by SLR International Corp. The material and data in this report were prepared under the supervision and direction of the undersigned.

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CONTENTS

CONTENTS (CONTINUED)

TABLES

FIGURES

APPENDICES

ACRONYMS

°F	degrees Fahrenheit
%	percent
AAC	Alaska Administrative Code
ADOT&PF	Alaska Department of Transportation & Public Facilities
ASTM	American Society for Testing and Materials
BLM	Bureau of Land Management
CFR	Code of Federal Regulations
DEC	Alaska Department of Environmental Conservation
DOT	U.S. Department of Transportation
EMP	Environmental Management Plan
EPA	U.S. Environmental Protection Agency
FAA	Federal Aviation Administration
IGAP	Indian General Assistance Program
IHS	Indian Health Service
HAZWOPER	Hazardous Waste Operations and Emergency Response
LUST	Leaking Underground Storage Tank
OSHA	Occupational Safety and Health Administration
SLR	SLR International Corp
STRP	State & Tribal Response Program

EXECUTIVE SUMMARY

SLR International Corp (SLR) is pleased to submit this Environmental Management Plan (EMP) to the Alaska Department of Environmental Conservation (DEC) for the Tanana Airport Facility and Community, Alaska. This EMP encompasses a review and evaluation of state-owned, federally managed, and privately-owned properties, with known and potential impact, in order to identify known and suspect environmental hindrances that could be a threat to human health or the environment, and pose an obstacle to the safe reuse or redevelopment of property in and around the community.

Eleven contaminated sites located in the vicinity of the Village of Tanana town site included in the DEC contaminated sites and leaking underground storage tank databases were reviewed for this EMP. Summaries of each of these sites, including past actions, current site condition, and remedial recommendations were compiled through record review and interviews with members of the Tanana community.

Fourteen additional potential sites of contamination were identified during a site visit of the Tanana town site using visual observations and information provided during interviews with persons knowledgeable in current and historical environmental conditions in Tanana. SLR recommends conducting Phase I Environmental Site Assessments at each of these locations using American Society for Testing and Materials E1527-05 Standard Practice for Environmental Site Assessments to further evaluate the potential of contamination at these sites. In addition, SLR recommends that actions be taken at two drum sites identified to prevent an imminent release of contaminants to the environment. SLR further recommends that a search for the owner of the buried rail tank cars at the airport be conducted for the purpose of requesting the rail cars, which are configured as underground storage tanks, be decommissioned in accordance with DEC regulations as required by 18 Alaska Administrative Code 78. Landfarming has been identified as the preferred remedial alternative for sites with confirmed contamination that have been sufficiently characterized.

1. INTRODUCTION

In the spring of 2008, based on the number of projects, agencies, perceived environmental concerns, and impact potentially affecting future economic development at the community, the Alaska Department of Environmental Conservation (DEC) determined that the development of an Environmental Management Plan (EMP) for the Tanana Airport Facility and Community would be a project that would benefit the community of Tanana, as well as many of the responsible parties doing work in the community. The purpose of this EMP is to summarize information about known issues and previously unknown or un-characterized sites to allow better communication and understanding between the community and various project managers and responsible parties working in the Village of Tanana. The resulting EMP can serve as a basis for communication between all parties, including the Village, Tribal, and City governments, and various agencies.

The primary State of Alaska properties in question are the Alaska Department of Transportation and Public Facilities (ADOT&PF) lease lots associated with the Tanana airport; however, it was determined appropriate for DEC to evaluate all environmental concerns in the community to help establish a coordinated manner in which to effectively oversee and manage environmental actions at multiple sites in Tanana. Ground water impacts have been historically detected in the water supply well in the community, and the source of this contamination has not been clearly identified. Multiple sources of contamination are known to exist, including state, federal, and private site contamination. There are currently 20 sites identified in the Tanana area from review of the DEC Contaminated Sites and Leaking Underground Storage Tank (LUST) on-line database, of which two are conditionally closed. Seven of the sites identified are not located within, or in close proximity to, the town site, and these sites are not addressed in this EMP. The focus of this EMP is open sites located within the town site or in relative close proximity to it.

This EMP was written on behalf of DEC in response to DEC's request, and encompasses a review and evaluation of state-owned, federally-managed, and privately-owned properties (known and potential) in order to identify known and suspect environmental hindrances that could be a threat to human health or the environment, and pose an obstacle to the safe reuse or redevelopment of property in and around the community.

Funding for this work was provided by DEC's State & Tribal Response Program (STRP) through a grant from the U.S. Environmental Protection Agency (EPA) Brownfield Program.

1.1 PURPOSE OF PROJECT

The purpose of this EMP is to summarize information appropriate for advancing sites through the Brownfields process: promoting better communication between stakeholders, reducing environmental impacts, and providing beneficial reuse of multiple sites.

1.2 SCOPE OF SERVICES SUMMARY

SLR International Corp (SLR) completed the following tasks to develop this EMP.

1.2.1 Task 1 – Records Stakeholder Scoping and Planning Meeting

It was necessary to delay holding a formal stakeholder meeting following development of this EMP because of time constraints. A project kickoff meeting was conducted via teleconference between DEC and SLR prior to the site visit, and interviews were conducted between DEC, the village Indian General Assistance Program (IGAP) environmental coordinator, and local residents.

1.2.2 Task 2 – Site Visit

On June 15 through June 17, 2009, an SLR representative traveled to Tanana to conduct a site visit to assess site conditions, interview individuals, photo-document the visit, and collect sufficient information as necessary to support the completion of an EMP for the community. During the site visit, SLR conducted interviews with individuals from the community to determine, to the extent possible, all known and potential sources of contamination in and around the community. SLR visually assessed the extent of soil staining associated with the properties as identified during the interviews. This information was used to document potential impacts to previously undocumented sites. Site documentation included field notes (Appendix A), site photographs (Appendix B), and copies of any historical records, including documentation of known contamination not included in the DEC contaminated sites or LUST databases that may be available to the community (Appendix C).

1.2.3 Task 3 – Draft and Final EMP Preparation

This EMP is a comprehensive summary based on the inventory of existing background documents, and interviews with members of the Tanana community. SLR provided at least two updates to the DEC project manager as to the status of findings that as research for this EMP progressed, helped identify sections in the report that may be both strong and weak, and better determined where to focus limited resources. The intent of this EMP is to supply all interested stakeholders with a summary document of sites with known or potential environmental impact in the Village of Tanana.

1.3 OBJECTIVES

The following objectives were used to guide the preparation of this EMP:

- Documenting historical property use of open sites identified in the DEC Contaminated Sites and LUST records;
- Preparing a summary of environmental work that has been completed to date in and around the community and identify existing proposed remedial actions;
- Developing recommendations for assessment or cleanup action at sites that are not currently being evaluated; and
- Compiling demographic information about the City of Tanana and community-specific information to provide a complete understanding of issues, concerns, and economic development interests for which environmental hindrances may complicate.

2. COMMUNITY OVERVIEW

2.1 COMMUNITY GENERAL INFORMATION

This section provides information about the community of Tanana, home of the federally-recognized tribe, the Native Village of Tanana.

Tanana was originally developed as a traditional native Alaskan trading settlement. Its location near the junction of the Tanana and Yukon Rivers made it an ideal location for trading between Koyukon and Tanana Athabascans. The City of Tanana was incorporated in 1961, and then in 1982 Tanana was incorporated as a First Class City.

There are 32 miles of local roads maintained by the City of Tanana. The City operates a dock on the river; barged goods can be offloaded at a staging and storage area. The State owns and operates the Ralph M. Calhoun Memorial Airport with a gravel runway. Float planes land on the Yukon River. Cars, trucks, snow machines, all-terrain vehicles, and riverboats are used for local transportation.

Few homes in Tanana are outfitted with complete plumbing systems, and as indicated in the 2000 U.S. Census, 80.5 percent (%) of households lack complete plumbing systems and do not incorporate a sink, bath/shower, or flush toilet. Likewise, 77.9% of houses sampled lacked a complete kitchen, and did not include a stove, refrigerator, or running water. Most homes use outhouses or honey buckets and nearly all community residents haul water. A piped water and sewer system serves some facilities and residences in Tanana. A significant amount of community water distribution improvement has been made by the Village Safe Water program since 2000. As of the writing of this EMP, there are 40 households connected to the public water system in Tanana.

Electricity is provided by Tanana Power Company, Inc. Drinking water in Tanana originates from one well located near the Yukon River. During times when water is not accessible from this well, typically from March to April, water is collected from the river (photograph 3 of Appendix B) at a location approximately 250 feet from the drinking water well. All drinking water sourced from either the well or the river is treated at a water treatment plant, operated by Too'gha, Inc., a non-profit utility board that maintains all city water and sewer utilities (DEC Community Database Online). One watering point, located at the water treatment plant (photograph 4 of Appendix B), is available for residential water hauling. A drilling log describing the lithology and completion of the city drinking water well is included in Appendix D.

The well is currently being monitored under the Drinking Water Program of DEC's Division of Environmental Health. Increasing concentrations of benzene have been measured in the drinking water supply wells beginning in 1992; however, concentrations are presently below

maximum allowable contamination limits. The drinking water well is included in DEC's contaminated sites database and is further discussed in Table 1.

2.1.1 LOCATION

Tanana is situated on the north bank of the Yukon River (Figure 1), approximately two miles west of the Tanana and Yukon Rivers confluence in Interior Alaska. The community is accessible by air and river transportation and is located 130 air miles west of Fairbanks, at approximately 65.171940° North Latitude and -152.078890° West Longitude (Sec. 17, T004N, R022W, Fairbanks Meridian). Tanana encompasses 11.6 square miles of land and 4.0 square miles of water (DEC Community Database Online).

2.1.2 CLIMATE

Tanana receives approximately 13 inches of precipitation per year and is subject to flooding of the Yukon River. Tanana experiences extreme seasonal temperature differentials, with daily minimum temperatures ranging from between minus 48 degrees Fahrenheit (°F) and minus 14°F in January, and daily maximum temperatures between 64°F and 70°F in July. Historical temperature extremes in Tanana were 71°F below zero in winter and 94°F above zero in summer. The river is ice-free from mid-May through mid-October (DEC Community Database Online).

2.1.3 POLITICAL ORGANIZATIONAL STRUCTURE

In 1982, Tanana was incorporated as a First Class City within Alaska. The local Tanana government has a seven-member city council and a separately elected mayor. City council members work together to perform the duties of a Planning Commission. Additional elected or appointed officials include four school board members. The city council oversees the administration and operation of municipal services and utilities including the landfill; airport; dock; police; volunteer fire department, emergency medical service, and ambulance; fire hall; school; gravel sales; roads and streetlights; equipment rental; teachers housing; beverage control; incarceration facility, and public safety housing (DEC Community Database Online).

2.1.4 COMMUNITY DEMOGRAPHICS

Traditional Athabascan way of life is still prevalent in Tanana today, and in 2000, 81.5% of the Tanana population, were of Alaska Native or part Native background. A federally-recognized tribe, the Native Village of Tanana, resides in Tanana. Subsistence, potlatches, dances, and foot races are predominant in the community culture of Tanana. Subsistence foods include salmon, whitefish, moose, bear, ptarmigan, waterfowl, and berries.

The 2000 U.S. Census data indicates 308 people reside in Tanana, yielding a population density of 26.6 people per square mile of land. Likewise, 166 housing units occupy Tanana, yielding a housing density of 14.3 housing units per square mile of land. There are 121 households in Tanana, including 69 family households, and 45 vacant housing units, 42 of which are unoccupied due to seasonal use.

TABLE 1
DEC KNOWN CONTAMINATED SITES IN TANANA

DEC File Number	Site Owner	Site Name	History	Recommendations	Reference
780.38.004	City of Tanana	Tanana City Drinking Water Well	*Spill Date: 10/31/1996 Spill ID: 2648* Increasing concentrations of benzene have been measured in drinking water supply wells beginning in 1992. Benzene concentrations are presently below MCL, however, the extent and source of contamination is unknown. Antimony is also present near the MCL, and RRO was detected in one water sample collected from Tanana Tribal Council municipal drinking water well in August 2001 by the EPA. The Alaska Drinking Water Protection Program conducted a source water assessment of the drinking water system in Tanana in June 2004, and identified potential and current sources of contaminants for the public drinking water sources. These include: gasoline stations, wastewater treatment facilities, large-capacity septic systems, fuel tanks, and ADEC-recognized contaminated sites. A detailed inventory can be found in Appendix H. These identified potential and existing sources of contamination are considered sources of bacteria and viruses, nitrates and/or nitrites, volatile organic chemicals, heavy metals, cyanide and other inorganic chemicals, synthetic organic chemicals, and other organic chemicals contaminant categories. The Tanana City Drinking Water Well site is shown in photograph 1 in Appendix B.		ADEC Contaminated Sites Database, http://www.dec.state.ak.us/SPAR/CSP/db_search.htm. June 2009. Alaska Division of Environmental Health, Drinking Water Program. *Source Water Assessment A Hydrogeologic Susceptibility and Vulnerability Assessment for the Tanana Safewater Facility Drinking Water System, Tanana, Alaska PWSID # 360109.001*. June 2004.
780.38.012	City of Tanana	Tanana School	*Spill Date: 7/26/2006 Spill ID :4357* Petroleum contamination was discovered during removal of two 15,000-gallon USTs used to heat the school building. The tanks were installed in 1971 and were taken out of service approximately five years prior to removal. Sampling results indicate virtually all contaminated soil was removed, however, 800 cubic yards of contaminated soil was stockpiled on a 10-mil liner at the City of Tanana old dumpsite on the west end of town. Landfarming was the approved method for remediating the stockpiled soil and reportedly in 2007, city workers spread the top 1-foot of the stockpile to get an even layer of soil and added approximately a 1/2 ton of fertilizer to the entire pile surface. The City has scheduled testing of this pile for sometime in 2009.	ADEC recommends turning the pile as soon as the ground is thawed and weather permits to further promote degradation of the contaminants. ADEC also recommends discussing with the project manager the sampling plan for the stockpile to ensure that enough representative samples are collected to determine the remaining contaminant concentrations within the stockpile.	ADEC. Letter RE: Contaminated stockpile from two 15,000 gallon buried heating oil tanks removal, Tanana School. January 5, 2009. ADEC Contaminated Sites Database, http://www.dec.state.ak.us/SPAR/CSP/db_search.htm, June 2009. Independent Consultant Associated. Letter RE: Update on Contaminated Stockpile from Two 15,000-Gallon Buried Heating Oil Tanks Removal Summer 2006, Tanana School, Tanana Alaska. December 1, 2008.
780.38.003	IHS U.S. Department of Health & Human Services	IHS Tanana Health Center	*Spill Date: 12/29/1982 Spill ID: 116* The IHS hospital compound is in the former location of Fort Gibbon. The site is a 7.5 acre property developed with a number of buildings, including the Tanana Health Center clinic and offices, the Tanana Tribal Council offices, an elder's home, seven residences, a drinking water plant, an abandoned military hospital, and a tank farm. An area historically used as an unpermitted hazardous materials dump is located in the northeastern portion of the property. Major petroleum spills from the tank farm have been reported, as well as an unknown amount of fuel spilled at the pumphouse at the site. Multiple environmental investigations have been conducted starting in 1989 to delineate the location and extent of contaminated soil at the site. Soil contamination above ADEC cleanup levels has been identified at 13 individual areas at the site. Ground water monitoring indicated DRO is present above ADEC cleanup levels. Petroleum contaminated soil, reportedly generated from UST removal, is stockpiled at the site northwest of the former hospital. Appendix E includes a summary of all environmental assessment findings for the site and includes recommendations for each condition sited. The site CERCLIS ID number is AKN001002276. The site is shown in photographs 15, 16, 17, and 18 in Appendix B.	A 2007 Project Summary document prepared by the IHS Department of Human Services proposed a four-phase remediation effort over a period of eight years at a projected cost of $4,184,000. The proposed goal is to demolish underutilized and deteriorated structures at the IHS hospital compound, cleanup petroleum-contaminated soil to meet state and federal requirements and excess mission non-essential property through the General Services Administration or transfer the property to the Tanana Indian Reorganization Act Tribe under the authority of Public Law 93-638 in accordance with their master planning and health care needs. Phase 1 includes the development of an abatement/demolition plan and the abatement/demolition of three vacant structures including the excess of eight small outbuildings. Phase 2 includes the design of a full-scale remediation treatment area, the construction of a small scale pilot remediation treatment area for landfarming petroleum-contaminated soils at the City of Tanana landfill, and the construction of the full-scale remediation treatment area at the landfill. Phase 3 includes excavating and transporting petroleum-contaminated soil from the hospital compound to the remediation treatment area and landfarming the contaminated soils over several years. Excavations at the hospital compound will be replaced with clean borrow material. Abandoned fuel fill pipe and asbestos-wrapped steam pipe (tunnel heating system) will be excavated and disposed of in Phase 3. Phase 4 is contingent upon the status of replacement facilities and new community water and sewer in accordance with the Tribe's master planning efforts. It includes the proposed	ADEC Contaminated Sites Database, http://www.dec.state.ak.us/SPAR/CSP/db_search.htm. June 2009. Indian Health Service Department of Human Services. *Project Summary Document Tanana Environmental Remediation, Indian Health Service Former Indian Health Service Hospital. March 2009.* *Indian Health Service Division of Engineering Services. 2006 Groundwater Monitoring Report, Former Indian Health Service Hospital, Tanana, Alaska. January 2007.*

TABLE 1 (CONTINUED)
DEC KNOWN CONTAMINATED SITES IN TANANA

DEC File Number	Site Owner	Site Name	History	Recommendations	Reference
				abatement/demolition of the remaining seven structures. The drinking water well and sewage lift station will be decommissioned. Water storage tanks and water and sewer pipes will be abandoned in place. Finally, the IHS will seek conditional closure of the site from ADEC and excess or transfer the property.	
780.26.004	IHS U.S. Department of Health & Human Services	IHS Tanana Building. 303	*Spill Date: 5/15/1992 Spill ID: 24328* Water level gauging data and ground water sample analytical data were obtained during ground water monitoring activities at the former IHS Hospital in Tanana, Alaska during July and August 2006. Activities included measuring distances to ground water from the top of each well casing and sampling 14 existing ground water monitoring wells. ADEC established an alternative cleanup level for DRO that was exceeded in samples collected at wells MW-1, MW-6, MW-13, and MW-14. The cleanup level for GRO was exceeded at well MW-6. None of the wells exceeded established cleanup levels for benzene, toluene, ethylbenzene, or total xylenes. Free-product (petroleum that is present as a non-aqueous-phase liquid) in the form of thinly dispersed globules or droplets was observed in the bail water at wells MW-6, MW-13, and MW-14. It should be noted that free-product was not detected by the interface probe at those wells and was not of sufficient quantity to be measured in the bail water, therefore, sampling and analysis of ground water was performed at those wells where free-product was observed. The site is shown in photograph 27 in Appendix B.	Free-product recovery from ground water is not recommended at this time. The regulations require that free-product be recovered to the maximum extent practical. The term "practical" is defined as means capable of being designed, constructed, and implemented in a reliable and cost-effective manner, taking into consideration existing technology, site location, and logistics. Cost-effective recovery of mobile product from recovery wells generally requires a measurable product thickness accumulation of at least 1 inch. Recovery trenches and drain systems are also not practical given the thickness of the Vadose zone and extreme fluctuations in the water table at this site (19 feet). Removal of contaminated surface soil for subsequent aboveground treatment, natural attenuation of contaminated subsurface soil, continued ground water monitoring, and the implementation of institutional controls restricting land use is the recommended approach for this site. If subsequent ground water monitoring indicates free-product has mobilized to the point that it can be recovered in a reliable and cost-effective manner, then free-product recovery in conjunction with the removal of Vadose zone soil or shallow smear zone soil for subsequent aboveground treatment and disposal is recommended in accordance with ADEC guidelines. Finally, it is recommended that the monitoring of wells MW-9 and MW-11 be discontinued or reduced based on favorable historical ground water sampling results.	Indian Health Service Division of Engineering Services. *2006 Groundwater Monitoring Report, Former Indian Health Service Hospital, Tanana, Alaska*. January 2007 ADEC Contaminated Sites Database, http://www.dec.state.ak.us/SPAR/CSP/db_search.htm. June 2009.
780.38.014	Tanana Power Company	Tanana Power Company	*Spill Date: 3/26/2002 Spill ID: 3946* The Tanana Power Company operated the power plant at Lot 8 Block 10 of the Tanana site from 1966 to 1983. Surface soils devoid of vegetation with dark stains were spotted in the northwest corner of the property by an EPA contractor. Analysis of soil samples collected on an adjacent property to the site near the stained area had elevated levels of benzene, toluene, ethylbenzene, total xylenes, GRO, DRO, RRO, semi volatile organic compounds, PAHs, and trace levels of pesticides. A site assessment was conducted in July 2008. Hydrocarbon-contaminated soils were found from 2.5 feet to 13.5 feet bgs. Field screening and confirmation soil sampling indicated DRO and benzene concentrations are present above ADEC cleanup levels. PAHs were also detected at concentrations above ADEC cleanup levels. Photographs of the site are included as photograph 6 and 7 in Appendix B.	Amundsen Environmental Services proposes a cleanup strategy of excavation and stockpiling/landfarming an estimated 800 cubic yards of hydrocarbon-contaminated soils from the Old Tanana Power Company. The cleanup should be undertaken to meet ADEC Method Two cleanup levels. Soils would be removed from the existing residential neighborhood and stockpiled on Tanana Power Company, Inc. property to the north.	Admundensen Environmental Services. *Tanana Power Plant Lot 8, Block 10 Site Characterization Report*. April 2009. ADEC Contaminated Sites Database, http://www.dec.state.ak.us/SPAR/CSP/db_search.htm, June 2009.
780.38.013	ADOT&PF	ADOT&PF Tanana Maintenance Shop	*Spill Date: 10/1/2004 Spill ID: 4375* Several abandoned drums likely containing used oil were identified behind the ADOT&PF maintenance shop at the Tanana Airport by ADEC staff in 2004. The Site is also the former location of a leaking AST that was removed in 2006. A new AST was installed and a photographic survey of abandoned drums, assumed to be associated with ADOT&PF maintenance shop operations, was conducted. A 2007 site investigation was conducted to determine the nature and extent of soil contamination remaining at the site. Contaminated soil was identified bellow the former drum storage area and the former AST. During 2008 activities, contaminated soil was excavated from the drum site. Confirmation samples collected from the limits of the drum site excavation were below cleanup levels demonstrating that all contamination at the drum site had been removed. Contaminated soil removed from the drum site was transferred to an ADOT&PF-approved landspreading location on the Tanana Airport property. At the AST location, test pits were excavated and sampled in 2008 to further determine the extent and		ADEC Contaminated Sites Database, http://www.dec.state.ak.us/SPAR/CSP/db_search.htm, June 2009. Hoefler Consulting Group (HCG). *Alaska Department of Transportation and Public Facilities Tanana, Alaska 2007 Site Characterization Report.* June 2007. HCG. ADOT Tanana Airport Data Report (NPT 1890281311). September 26, 2008.

TABLE 1 (CONTINUED)
DEC KNOWN CONTAMINATED SITES IN TANANA

DEC File Number	Site Owner	Site Name	History	Recommendations	Reference
			location of contamination in this area. Results from both the 2007 and 2008 investigations at the former AST location indicate DRO, benzene, and ethylbenzene above ADEC cleanup levels are present in soils around the former AST. The site is shown in photograph 24 of Appendix B.		
780.38.008	ADOT&PF	FAA Tanana FABLM/AK Fire Service Station	*Spill Date: 1/25/1989 Spill ID: 723* Reported potential contaminants onsite in unknown quantities include petroleum, oil, lubricant waste, PCBs, asbestos, solvents, herbicides, paints, antifreeze. Dates of disposal, presence, or extent of contamination are unknown. Site investigations conducted indicate that fuel, primarily DRO, are contaminants of concern. Furthermore, isolated areas of benzene many exist across the FAA Flight Service Station. In 1998, soil was excavated in the locations of two former USTs at the site that were previously removed without ADEC guidance. Confirmation sampling determined that all soil in the excavation area did not contain concentrations of DRO, benzene, toluene, ethylbenzene, or total xylenes above ADEC cleanup levels. USTs with known contamination remain on site. These USTs are identified in LUST file 780.26.003.		ADEC Contaminated Sites Database. http://www.dec.state.ak.us/SPAR/CSP/db_search.htm, June 2009. U.S. Department of the Interior Bureau of Land Management Alaska Fire Service. *Tanana Fire Station Assessment.* August 1998.
780.26.003	Alaska Fire Service BLM	BLM Alaska Fire Service Tanana Station	*Spill Date: 8/30/1993 Spill ID: 24397* Expected to excavate the three 3,000-gallon 100LL AVGAS USTs in 1994. Twelve yards of contaminated soil is stockpiled on site. Previous file #780.38.008. The site is shown in photograph 30 in Appendix B.		ADEC Contaminated Sites Database. http://www.dec.state.ak.us/SPAR/CSP/db_search.htm, June 2009.
780.38.006	FAA	BLM/AK Fire Service Housing Complex Tanana	*Spill Date: 9/23/1993 Spill ID: 1928* This site includes BLM-owned property in the Former Living Quarter's Area, identified in Figure 3. Ground water at the site is impacted and contamination is moving towards the Yukon River, approximately 200 yards from the site. A rough site assessment was conducted in 1993 to assess possible contamination at four housing units in the Former Living Quarter's Area including homes #207, #106, #103, and #104. All of the houses used electric heat, however, three of the homes had previously been heated using fuel oil. Tanks remaining at the properties include a 1,000-gallon tank with 348 gallons of diesel remaining at #106, a 500-gallon tank with 275 gallons of diesel left at house #103; and a 500-gallon tank with 154 gallons of diesel left at house #104. Eight-foot test holes were drilled around areas of suspected contamination. Samples collected indicated contamination at houses #104 and #106. The site is shown in photograph 25 in Appendix B.		U.S. Department of the Interior Bureau of Land Management Alaska Fire Service. Letter Re: Soil Testing, Tanana FAA Housing. September 15, 1993. ADEC Contaminated Sites Database, http://www.dec.state.ak.us/SPAR/CSP/db_search.htm. June 2009.
780.38.010	U.S. Department of Interior BLM	BLM Tanana Lot 3 Former Tank Farm	*Spill Date: 2/28/2001 Spill ID: 3804* According to the BLM statement of work for the current removal action, the tank cars and most of the solid waste have been removed from the lot. Grid oriented field screening at 12 inches bgs on the 5-acre site of a former tank farm showed that petroleum contamination is present. DRO at 33,200 parts per million was detected from laboratory analysis of samples taken from a low-lying swampy area of silty sand soil where vegetation is suppressed. The Nenana Fuel Company has removed all solid waste (including the battery pile) from the property. The Nenana Fuel Company formerly operated a fuel offloading facility at the site and the company's fuel storage and distribution activities in the 1970s and 1980s is responsible for most of the contamination on the property. Ownership history of the property is unclear, however, reportedly the lot never left BLM ownership. In 2003, contaminated soil was excavated from the site; however, confirmation samples indicated that DRO remained in soils on site at concentrations above ADEC cleanup levels.	In 2005, Shannon and Wilson Inc. prepared a plan to remove contaminated soil remaining on site, as well as an abandoned fuel pipeline leading from the Yukon River to the site. Tasks for this work included soil excavation in the area of the 2003 corrective action areas; draining and removal of the old fuel pipeline; excavation of contaminated soils encountered during pipeline removal; and packaging, transporting, and treating or disposing of contaminated soil residual fuel, and pipeline scrap. Field screening and soil sampling would be used to confirm that the extent of contamination has been removed and to characterize excavated contaminated soil for treatment and/or disposal. Options for handling contaminated soil would be determined upon completion of the excavation activities, once the quantity of contaminated soil is known. Disposal options for handling contaminated soil would be determined upon completion of the excavation activities, once the quantity of contaminated soil is known. Disposal examples include on-site thermal treatment; transportation via barge and highway for off-site thermal treatment; or disposal at the Tanana City Landfill. Residual fuel drained from the pipeline will be transported off site for disposal. Pipeline sections and other non-hazardous solid waste will be disposed of at the Tanana City Landfill.	ADEC Contaminated Sites Database, http://www.dec.state.ak.us/SPAR/CSP/db_search.htm. June 2009. Shannon & Wilson, Inc. *Sampling and Analysis Plan Tanana Tank Site, Tanana, Alaska.* June 2005. Wilder Construction Company. *Work Plan, Site Investigation and Soil Removal Tanana Tank Site, Tanana, Alaska.* November 15, 2002.

TABLE 1 (CONTINUED)
DEC KNOWN CONTAMINATED SITES IN TANANA

DEC File Number	Site Owner	Site Name	History	Recommendations	Reference
780.38.001	FAA	FAA Tanana Station	*Spill Date: 12/15/1994 Spill ID: 2324* The FAA Tanana Station Site includes the NDB facility, the VORTAC facility, the FSS, and FAA-owned property at the Former Living Quarter's Area (Figure 3). Petroleum hydrocarbon contamination was present in site soils and ground water; free-product present in wells at various locations at the facility, including wells adjacent to the Yukon River. At the VORTAC facility, a 1,000-gallon UST was removed in 1997. Petroleum hydrocarbon concentrations in confirmation samples were below ADEC cleanup levels and clean closure of the VORTAC facility was achieved. At the NDB facility, a storage shed, generator, and two fuel storage tanks were removed during the 1960s. The only structures present now are an antenna and associated transformer. An oil sample was collected from the transformer in 1992 and analyzed for PCBs. PCB results for the transformer oil were 320 milligrams per kilogram, classifying the transformer as “PCB-contaminated.” This transformer has been replaced. At the FSS facility, a 1,064–gallon non-regulated UST (15-C-1) was excavated in 1997. A second UST was encountered under the FSS building and was left in place. In 1998, additional soil samples were collected from two soil borings. Three test pits were excavated in 1997 to attempt to locate a reported dry well. No signs of a dry well were observed. An inactive water supply well was abandoned in 1997. Confirmation soil samples from the UST excavation had one DRO above the ADEC Level B cleanup level. Soil samples from the two soil borings were below ADEC cleanup levels for DRO and benzene, toluene, ethylbenzene, and total xylenes. The FSS building was demolished in 2007, and the second UST was decommissioned, and all remaining contaminated soil from both USTs was excavated at that time. At the Former Living Quarters Area in 1997, fuel storage tanks and pipelines were decommissioned; two stained surface soil areas near the Shop Building and Engine Generator Building were excavated; four water wells and two sewage lift stations were abandoned; Buildings 30 and 602 were demolished; and lead-based paint abatement was performed on exterior siding of Buildings 30 and 205. Confirmation soil samples from several excavations indicated that soil contamination remained at the site. Ground water monitoring, soil sampling, surface water and sediment sampling; aquifer slug and pumping tests; and bail down rebound tests were performed from 1999 through 2003. Petroleum-contaminated soil was found to remain in the surficial silt (0 foot to approximately 10 feet deep) and the underlying sandy gravel soil (10 feet to 25 feet deep); benzene, GRO, and DRO at concentrations above ADEC Table C cleanup levels are present at the site; and three main ground water plumes exist: originating generally between the State Building and Shop Building 205 and extending around a permafrost area southward towards Quarters Building 102, near the decommissioned fuel pipeline "T" junction and extending southwards towards well MW003, and South of Engine Generator Building 600 and extending southwards towards probe MP029. In 2007, stockpiled soil at the Former Living Quarter's Area was treated using Infra-red Thermal boxes. Post-treated soil sampling indicated soil is below ADEC cleanup levels. The site is shown in photograph 26 in Appendix B.	Closure of the FSS station was recommended by AHTNA Government Services Corporation. For the Former Living Quarters Area potential remedial alternative were identified in the CH2MHill Tanana FAA Station presentation. Potential remedial approaches for benzene in ground water would include: natural attenuation with long-term monitoring; air sparging of hotspot areas; and institutional controls if the property is transferred. Residual DRO in soil and ground water has a lower risk and mobility potential and alternatives were not identified. Remediation alternatives for stockpiled soil include landspreading or thermal treatment. To move forward with the site, CH2MHILL suggested the following: seek ADEC review and approval of alternative cleanup levels and closure requirements; A Feasibility Study report will be prepared that includes a remedial alternative evaluation and selection of a preferred alternative; review and comments by ADEC, ADOT&PF and Tanana community; finalize approach; implementation of further remedial actions and/or long-term monitoring.	CH2MHILL Constructors Inc. *Tanana FAA Station Power Point Presentation*. 2004ADEC Contaminated Sites Database, http://www.dec.state.ak.us/SPAR/CSP/db_search.htm. June 2009.

Abbreviations:

ADEC – Alaska Department of Environmental Conservation
ADOT&PF – Alaska Department of Transportation & Public Facilities
AST – aboveground storage tank
AVGAS – aviation gasoline
bgs – below ground surface
BLM – Bureau of Land Management
DRO – diesel range organics
EPA – U.S. Department of Environmental Conservation
FAA – Federal Aviation Administration
FSS – Flight Service Station
GRO gasoline range organics
IHS – Indian Health Service
LUST – Leaking Underground Storage Tank
MCL – Maximum Contaminant Limit
NDB – Non-Directional Beacon
PAHs – polynuclear aromatic hydrocarbons
PCB – polychlorinated biphenyls
RRO – residual range organics
UST – underground storage tank
VORTAC – Very-High Frequency Omnidirectional Range Tactical Air Navigation

According to 2000 U.S. Census data, 100 Tanana residents are employed. Two-thirds of the full-time jobs in Tanana are with the city, school district, or native council. There are also a number of positions with local businesses and services. The unemployment rate at the time of the 2000 U.S. Census was 23.66%, although 52.38% of all adults were not in the work force. The median household income was $29,750, per capita income was $12,077, and 22.95% of residents were living below the poverty level. Bureau of Land Management (BLM), firefighting, trapping, construction work, and commercial fishing are important seasonal cash sources. Seventeen residents hold commercial fishing permits. There is one school located in the community, attended by 38 students.

2.2 COMMUNITY INVOLVEMENT

Following development of the Tanana EMP, a team of stakeholders were identified to discuss the desired cleanup and reuse of the Tanana contaminated sites. Reuse of contaminated sites is desirable to members of the community because limited open space is available in the city. Several homes located in a low lying area of Tanana are subject to flooding and the community has expressed a desire to relocate these homes to the location of the former Tanana Power Company.

2.2.1 COMMUNITY CONCERNS

Primary community concerns were identified through conversations with Tanana residents during the site visit. The source of contamination for the drinking water well is unknown and this is a concern for the residents of Tanana. Likewise, the community is concerned by the amount of known contaminated sites and potential contaminated sites located in the City of Tanana that have not yet been remediated. Furthermore, sewage disposal practices, where sewage is pumped into the river, causes concern for subsistence fishing in Tanana.

2.2.2 INTERVIEWS AND STAKEHOLDER INPUT

Interviews were conducted with individuals available during the site visit that were knowledgeable about current and historical environmental conditions in Tanana. The following includes pertinent information gathered from interviews conducted for this EMP.

Cynthia and Dale Erickson, residents of Tanana and owners and operators of Tanana Commercial Company, were interviewed on June 15, 2009. Cynthia indicated that the drinking water well occasionally is unable to provide sufficient water draw between March and April. When this occurs, drinking water is collected from the river. Water from the well or from the river is sent to the treatment plan. The treatment plant is also the location of the city Laundromat and is the only filling station for hauling drinking water in town.

Cynthia identified a large swale containing wooden and metallic debris and 55-gallon drums located near the city water well as a potential contamination source for the drinking water well (also known as the Joe Burns property) (Photograph 5 in Appendix B). Additional sources in the area identified include the current Don's Video property. While Don's Video is no longer operational, fuel was formerly stored and dispensed at the site. Cynthia also

expressed concern about possible contamination at the landing. Cynthia indicated that in 2004 people were asked to bring waste material that included potential contamination sources (drums, batteries, scrap equipment, etc.) to the landing where it was staged for shipment. The shipment, however, did not happen and the material remained at the landing for five years. Additional community concerns identified by Cynthia and Dale include sewer/water installations in Tanana as home sewer vents often freeze in winter.

Don Eller, owner of the Tanana Power Company and former resident of Tanana, was interviewed on June 15, 2009. Don identified the swale containing wooden and metallic debris, and the 55-gallon drums in the vicinity of the drinking water well as possible sources of contamination. He also pointed out that the property across the street from the drinking water well as a potential source of contamination (this area was also identified by Mike Andon as a former gasoline storage area). Don acknowledged three buried rail tank cars historically used to store gasoline at the airport as a potential contaminated site in Tanana. Don also identified a former Fort Gibbon wood stave tank farm where wooden containers were used to store fuel near and upgradient of, the drinking water well.

Kathleen Peters-Zuray, the Tanana IGAP Coordinator, was interviewed June 15, 2009. Kathleen identified contamination concerns resulting from recent flooding of the Yukon River in Tanana where outhouses and fuel tanks throughout Tanana were knocked over. According to Kathleen, the "circle" residents were hardest hit by the flood. Kathleen expressed concern about known contaminated sites in Tanana that have not been cleaned up and is apprehensive about Federal Aviation Administration (FAA) remediation where they sell buildings rather than decommission them. Additionally, Kathleen is concerned about the effect of sewage disposal practices on subsistence fishing as sewage is discharged into the river in the fall. The sewage dispensing site is shown in photograph 2 in Appendix B. Potential contamination sources not identified from review of DEC's LUST and Contaminated Sites records include the past practice of spraying oil onto Front Street for dust control. Kathleen also identified the former Tanana Gas Company store as a potential contamination source since it was a fuel supplier and owner and operator of underground storage tanks in Tanana.

Mike Andon, resident of Tanana, was interviewed on June 17, 2009. Mike identified a former drum storage area located across the street from the drinking water well. This former drum storage area was located approximately 100 feet northwest of the drinking water well. According to Mike, over 200 drums of high octane gasoline were stored here and he was aware of at least one occasion where several drums were punctured by a fork lift.

3. PROPERTY/SITE OVERVIEW

3.1 GENERAL OVERVIEW OF SITE PROPERTIES

There are 20 sites identified in the Tanana area from review of the DEC Contaminated Sites and LUST on-line database records. Two LUST sites identified; *FAA-Tanana VORTAC*, file identification (ID) 780.26.001; and *Tanana Gas Company*, file ID 780.26.002; have been cleaned up and closed and are not discussed further in this EMP Seven additional sites listed under file number 780.38.002, including *Bear Creek RRS Yukon River POL Site SS008*, *Bear Creek RRS Borrow Pit Area SS007*, *Bear Creek RRS Barrel Storage Area SS006*, *Bear Creek RRS Fuel Storage Area SS003*, *Bear Creek RRS Equipment Bldg SS004*, *Bear Creek RRS Landfill LF001*, and *Bear Creek RRS Vehicle Maintenance Shop SS002,* are not located in close proximity to the town site and are also not discussed further in this EMP. The eleven remaining know active contaminated sites are in the Tanana town site area and are identified below with their respective DEC contaminated sites or LUST database file number.

1. Tanana City Drinking Water Well – 780.38.004
2. Tanana School – 780.38.012
3. IHS Tanana Health Center – 780.38.003
4. IHS Tanana Building 303 – 780.26.004
5. Tanana Power Company – 780.38.014
6. ADOT&PF Tanana Maintenance Shop – 780.38.013
7. FAA Tanana FABLM/AK Fire Service Station – 780.38.008
8. BLM Alaska Fire Service Tanana Station – 780.26.003
9. BLM/AK Fire Service Housing Complex Tanana – 780.38.006
10. BLM Tanana Lot 3 Former Tank Farm – 780.38.010
11. FAA Tanana Station (Flight Service Station) – 780.38.001
12. FAA Tanana Station (Former Living Quarters) – 780.38.001

Additional sites of environmental concern in Tanana identified through reporting reviews, interviews, and the site visit, include the following:

1. Buried Rail Tank Cars
2. Former Washeteria
3. Tanana Power Company
4. City Shop / Garage

5. Don's Video
6. Former Fort Gibbon Tank Farm
7. Former Front Street Drum Storage Area
8. Drums and Debris in Swale
9. Former Fort Gibbon Wood Stave Tank Farm
10. Tanana Gas Company Store
11. Tanana Gas Company Fuel Station
12. Second Avenue Drum Storage Area
13. Scrap and Hazardous Material Storage Area
14. Front Street Dust Control

3.2 GEOLOGIC SETTING

Soils in the vicinity of Tanana consist of stratified silty and sandy loam approximately 2 feet to 3 feet thick, derived from fluvial and eolian deposits. Permafrost in the Tanana area is generally discontinuous and occurs at depths of 5 feet to 15 feet below ground surface. Soils on the lower portion of the floodplain are poorly drained and commonly are saturated above shallow permafrost. Soils on the higher natural levels are well drained and generally free of permafrost. (Ecology and the Environment, 1992)

3.3 KNOWN CONTAMINATED SITES

Summaries of each site located in the Tanana town site that are included in the DEC Contaminated Sites or LUST databases, are presented in Table 1. Information presented in Table 1 includes the DEC file number, the site owner, the spill date, the spill number, a brief site history known contamination sources and past actions or investigations at the site, recommendations if provided, and reference documents used to determine the information included in this table for each site.

3.4 OWNERSHIP INFORMATION

Site ownership information for known contaminated sites in the Tanana town site is included in Table 1.

3.5 RECORDS REVIEW

Records reviewed to prepare this EMP included DEC's Contaminated Sites and LUST databases in addition to report files maintained by DEC for each listed site. The database and available historical site reports were used to chronicle the history of each site; identify known contamination sources, and previous environmental investigations, or remediation conducted at the site, and remedial recommendations that may have been made for each site. Report

references for each site are identified in Table 1 and are also included in the reference section of this document.

The State of Alaska Division of Environmental Health Drinking Water Program records were also reviewed for this EMP. The Drinking Water program identified three public drinking water sources, including one well and two surface water locations. Analytical data for the drinking water well (Appendix F) was reviewed in addition to a Source Water Assessment prepared by the Drinking Water Protection Program.

4. ENVIRONMENTAL REVIEW AND SUMMARY OF FINDINGS

This section summarizes the findings of environmental file reviews and on-site interviews conducted with community members in the Village of Tanana.

4.1 HISTORICAL ENVIRONMENTAL REVIEW

Information reviewed for preparation of this EMP included records of known contaminated sites discussed in Section 3.5, and interviews with community members, discussed in Section 2.2.2.

4.2 SITE RECONNAISSANCE METHODOLOGY

Representatives from SLR and DEC visited Tanana on June 15 through June 17, 2009. The primary objective for the site visit was, through visual observation and interviews with persons knowledgeable in the present and historical activities conducted in the community, to document and ground-truth potential environmental concerns and areas of contamination in Tanana not included in the DEC contaminated sites or LUST databases. Photographs of all potential contaminated sites identified, with the exception of the Scrap and Hazardous Material Storage Area, were taken (Appendix B), and the locations were recorded using a handheld global positioning system device (Appendix G). Observations of potentially contaminated sites are discussed in Section 5.2. Locations of known contaminated sites identified in the DEC databases were also confirmed during the site visit.

4.3 POTENTIAL SOURCE AREAS

All active contaminated sites identified in the DEC contaminated sites and LUST records are known source areas of contamination. These sites are discussed in detail in Table 1 and the locations of these sites are shown on Figures 1 and 2.

Additional areas of potential concern in Tanana identified through SLR's 2009 site visit are discussed below. The locations of these potential sites are shown on Figure 2. Previous investigations conducted to determine potential areas of environmental concern in Tanana were conducted by Ridolfi Engineers Inc. in 2002 (Ridolfi, 2002), and by the DEC Alaska Drinking Water Protection Program in 2004 (DEC Drinking Water Protection Program, 2004). Tables and figures presenting the sites of concern identified through these studies are presented in Appendix C and Appendix H. The information presented below was determined through visual observation and interviews conducted during SLR's Tanana site visit, documented in Section 2.2.2.

4.3.1 BURIED RAIL TANK CARS

Three rail tank cars, each reportedly 15,000-gallons in size, are buried near the runway at the airport. The tanks have manholes visibly protruding upwards through the ground surface. A former fuel dispenser is located near the tanks. No evidence of fuel spills at this area was observed; however, as a bulk fuel storage location, this area is a potential contamination source. The tanks are reportedly abandoned and information on the owner and operational history of this fuel storage and dispensing system was not available. The site is shown in photographs 22 and 23 in Appendix B.

4.3.2 FORMER WASHETERIA

Two 55-gallon capacity drums and a 10,330-gallon train fuel tank were observed at the site of the former washeteria during SLR's site visit. No soil staining was observed at this facility; however, a fuel odor was noted indicating contamination is present in this area. The site is shown in photograph 20 in Appendix B.

4.3.3 TANANA POWER COMPANY

Tanks stored at the Tanana Power Company include eight 25,000-gallon capacity diesel storage tanks, two 25,000-gallon capacity compartment diesel tanks, one 4,000-gallon capacity city fuel dispenser tank, and one empty 25,000-gallon capacity contingency tank. While this is a bulk petroleum storage facility and could be a potential contaminated site, no staining, stressed vegetation, or other evidence of spills were observed during the site visit. The Tanana Power Company is shown in photograph 12 in Appendix B.

4.3.4 CITY SHOP / GARAGE

Multiple miscellaneous bulk fuel storage tanks under 1,000 gallons, as well as heavy machinery identified in Section 6.3, are stored at the city shop. There was some minor staining observed during the site visit indicating a possible release at this site. The City Shop / Garage are shown in photographs 13 and 14 in Appendix B.

4.3.5 DON'S VIDEO

Don's video, no longer in operation, reportedly stored and dispensed fuel. No evidence of dispensing activities was identified at this location during the site visit; however, a few unidentified drums were noted to be located at this property.

4.3.6 FORMER FORT GIBBON TANK FARM

A tank farm reportedly operated by Fort Gibbon was formerly located in the vicinity of the contaminated drinking well. In 1898, Fort Gibbon was founded at Tanana to maintain the telegraph line between Fairbanks and Nome. Later, in 1908, the telegraph line was abandoned for wireless radio communications. Fort Gibbon was abandoned in 1923. No other information is known about this site, however, as a former bulk fuel storage area; this is a

potential source of contamination. A nearby but separate facility, referred to as the Former Fort Gibbon Wood Stave Tank Farm, is located to the southwest of this tank farm and is discussed below. The site is shown in photograph 5 in Appendix B.

4.3.7 FORMER FRONT STREET DRUM STORAGE AREA

In 1966 or 1967, over 200 drums of high octane gasoline were reportedly stored at this location. A former employee for this area described an instance of a fork lift puncturing a few drums at this site making it a likely source of contamination. The site area is shown in photograph 5 in Appendix B.

4.3.8 DRUMS AND DEBRIS IN SWALE

A large drum dump was observed during the site visit. Ten to 15 drums were present in this location. All of the drums observed during the June 2009 site visit were in poor condition, and the drums were corroded such that a release may be imminent. The site area is shown in photograph 5 in Appendix B.

4.3.9 FORMER FORT GIBBON WOOD STAVE TANK FARM

Wooden containers and wood stave tanks were reportedly used to store fuel for the Fort Gibbon facility. Wood alone is not sufficient containment for fuel, and it is likely that historical contamination is present in the areas of any former wooden fuel storage containers. Additionally, an old pump reportedly associated with the wood stave tank farm was observed during the site visit. The pump was in poor condition and any oil used to operate this pump likely has been released. It is not known when this system was decommissioned. Photograph 11 in Appendix B shows the pump at the site.

4.3.10 TANANA GAS COMPANY STORE

The former store operated by the Tanana Gas Company was reportedly a location of fuel storage and is a logical potential contamination source; however, the store is no longer operational and no staining, stressed vegetation, or evidence of contamination was observed during the site visit.

4.3.11 TANANA GAS COMPANY FUEL STATION

The Tanana Gas Company is identified as a closed LUST site in the DEC LUST database, therefore, the former underground storage tank is not included as a potential source of contamination. A bulging drum containing unknown liquids was observed on the property during the site visit. This drum has the potential for leaks and could be a possible contamination source. The Tanana Gas Company Fuel Station is shown in photographs 9 and 10 in Appendix B.

4.3.12 SECOND AVENUE DRUM STORAGE AREA

This drum storage area was observed during the site visit. Approximately eight drums and 30 gas cylinders were present at the time of observation. All of the drums appeared to be in poor condition and one of the drums was bulging. It is possible the weathered drums at this location have previously caused a release and potential contamination. The site area is shown in photograph 21 in Appendix B.

4.3.13 SCRAP AND HAZARDOUS MATERIAL STORAGE AREA

In 2004 scrap and hazardous material was reportedly transported to a storage area near the Yukon river by the residents of Tanana for staging prior to removal by barge. Materials brought to this area were reported to include batteries, old engines, and drums and plastic buckets of miscellaneous fluids. The materials were reportedly never barged out. . The staging area was not visited during the 2009 site visit and may have been within the area flooded during breakup in spring 2009. The present location of the materials historically staged at this area is unknown.

4.3.14 FRONT STREET DUST CONTROL

Oil containing polychlorinated biphenyls was reportedly historically sprayed on the roads in Tanana for dust control. Front Street was reportedly heavily oiled and, as a result, heavy or residual range oils may be detectable in surface roads. Road samples in Tanana are reported to have been collected for petroleum hydrocarbon analysis, but these reports were not available to SLR.

4.4 KNOWN OR PERCEIVED DATA GAPS

Flooding during spring 2009 and in earlier years may have washed out obvious evidence of contamination in flooded areas, including soil staining and stressed vegetation that would have been observed during the site visit. The magnitude of impact to environmental media at the potentially contaminated sites not included in DEC's Contaminated Sites or LUST records is unknown, and it is possible that no contamination is present at these sites.

5. RECOMENDED ACTIONS

The following sections summarize proposed actions to aid in addressing contaminated areas in Tanana.

5.1 RECOMMENDED REMEDIAL ACTIONS BY SOURCE AREA

Specific recommended environmental actions for sites included in the DEC Contaminated Sites and LUST records are included in Table 1. SLR recommends conducting Phase I Environmental Site Assessments at the potential sites not included in the DEC databases, identified in Section 5.2, using American Society for Testing and Materials (ASTM) E1527-05 Standard Practice for Environmental Site Assessments. In addition, SLR recommends that actions be taken at the two drum sites to prevent an imminent release of contaminants to the environment. SLR further recommends that a search for the owner of the buried rail tank cars at the airport be conducted for the purpose of requesting the rail cars, which are configured as USTs, be decommissioned in accordance with DEC regulations as required by 18 Alaska Administrative Code (AAC) 78.

5.2 GENERAL SOIL REMEDIATION STRATEGIES

The following remedial strategies have been considered for the management of contaminated soil in Tanana. Site-specific characterization should be conducted to determine the extent and location of contamination prior to finalizing remediation strategies.

- **Passive Biopile Construction** – In this option, excavated soils are mixed with clean soil, placed on a treatment area, and covered. Aeration is provided passively through perforated pipe extending into the pile. The pile is covered and a leachate collection sump is included to manage water if the cover is damaged. The pile is left until the soils meet specified cleanup levels for land spreading or beneficial reuse.
- **Road Base Encapsulation** – This method would be appropriate if a barrier to provide zero net infiltration was part of the road prism design along with other requirements of 18 AAC 75.360(11)(G). However, as soil in Tanana is mostly a silt matrix, and since silt is not generally suitable as road base material, this option is likely not feasible for Tanana because it would require blending contaminated soil with significant amounts of uncontaminated material to meet construction specifications.
- **Daily Landfill Cover** – Under this option, contaminated soils could be used for landfill cover. This option requires permission from DEC's Solid Waste Program, and typically is contingent on pre-treatment of soil prior to use as landfill cover. This alternative is a common form of beneficial reuse of contaminated soil, is less expensive than many other options at remote sites, and effectively manages risks associated with contaminated soil. Following treatment to acceptable standards, this

method would require the construction of a temporary soil stockpile or landfarming area to store/manage the material until it is used as cover material.

- **Landfarming** – This method includes spreading the contaminated soil into a 1-foot thick layer. The soil is tilled monthly during the summer months using a roto-tiller. Tilling aerates the soils to promote aerobic degradation of contaminants in the soil. The addition of fertilizer is also used to promote biological activity. Initial landfarm characterization samples are collected to document contaminant levels at the time of placement. Characterization samples are collected on an annual basis to determine when cleanup goals are met. The DEC Solid Waste Program may specify the cleanup requirements prior to using landfarmed soils as daily landfill cover.
- **Thermal Remediation** – Thermal remediation of contaminated soil is generally expensive at remote locations both to ship in treatment equipment and for the fuel required, and is most likely not a feasible option for Tanana.
- **Shipment off Site for treatment or disposal** – This option is used if soils cannot be reasonably treated on site and is most feasible when inexpensive transportation is available. If soil storage is determined to be hazardous, or no appropriate area exists for on-site treatment, it may have to be containerized and transported to a facility for treatment or disposal. In these instances, treatment typically involves incineration, and disposal typically involves placement in a permitted landfill.

The results of the evaluation of the identified soil remedial alternatives are presented in Table 2. The preferred alternative for contaminated soils at Tanana is landfarming prior to use as landfill cover. Precedence exists for using contaminated soils as landfill cover in rural communities, but it requires approval by DEC's Solid Waste Program. The Solid Waste Program requires that contaminated soil be managed prior to use as landfill cover after landfarming has been implemented to reduce contaminant levels to acceptable thresholds. Depending on the contaminant concentrations, this process typically takes two to three years.

Any management alternative for contaminated soil at the site should be preceded by the management, reduction and removal or disposal of construction debris, piping, above or below ground storage containers, buildings, or other material.

5.3 AVAILABLE RESOURCES IN TANANA AREA

Equipment identified in Tanana during the site visit included two large excavators, several small excavators, two bulldozers, two graders, two water trucks, and four to five dump trucks. Reportedly 20 people in the City of Tanana are trained in Hazardous Waste Operations and Emergency Response (HAZWOPER) per Occupational Safety and Health Administration (OSHA) requirements in 29 Code of Federal Regulations (CFR) 1910.120.

5.4 QUALIFICATIONS OF QUALIFIED PERSONNEL

Personnel working on any field component for this project must be trained in HAZWOPER per the OSHA requirements in 29 CFR 1910.120. Equipment operators must have certification with a commercial driver's license and be able to verify their training and experience to operate equipment required for this project.

Table 2
Evaluation of Remedial Alternatives for Soil

Alternative	Environmental Protection	Regulatory Compliance	Effectiveness	Implement-ability	Cost	Overall Rating
No Action	Fair	Fair	Poor	Excellent	Good; site ground water monitoring required	Fair
Passive Biopile Construction	Good	Good	Fair	Fair	Fair	Fair
Road Base Encapsulation	Good	Good	Good	Fair; Best if pavement is used in road construction. The contaminated soil is silt which is likely unsuitable for road base use.	Fair	If pavement is used – Good If not - Fair
Daily Landfill Cover	Fair	Fair	Fair	Good	Good	Good
Landfarming	Fair	Fair	Fair	Fair	Good	Good
Thermal Remediation	Fair	Fair	Good	Fair	Poor; extremely high cost for small projects	Fair

6. CONCLUSIONS

The following conclusions were drawn regarding the status of contaminated sites in the Village of Tanana.

Eleven contaminated sites located in the Tanana town site vicinity are current DEC contaminated sites or LUST sites. A summary of the DEC records and SLR site interview findings for each of these sites are included in Table 1 of this EMP.

SLR identified 14 additional sites of potential concern with respect to contamination with hazardous material. These sites were identified from interviews with Tanana community members and from visual observation during the site visit. SLR recommends conducting Phase I Environmental Site Assessment at each of these locations using ASTM E1527-05 Standard Practice for Environmental Site Assessments to further evaluate the potential of contamination at these sites. SLR identified landfarming as the preferred remedial alternative for sites with confirmed contamination that have been sufficiently characterized. In addition, SLR recommends that actions be taken at the two drum sites to prevent an imminent release of contaminants to the environment. SLR further recommends that a search for the owner of the buried rail tank cars at the airport be conducted for the purpose of requesting the buried rail cars, which were reportedly historically operated as USTs, be decommissioned in accordance with DEC UST regulations as required by 18 AAC 78.

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LIMITATIONS

The services described in this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, nor the use of segregated portions of this report.

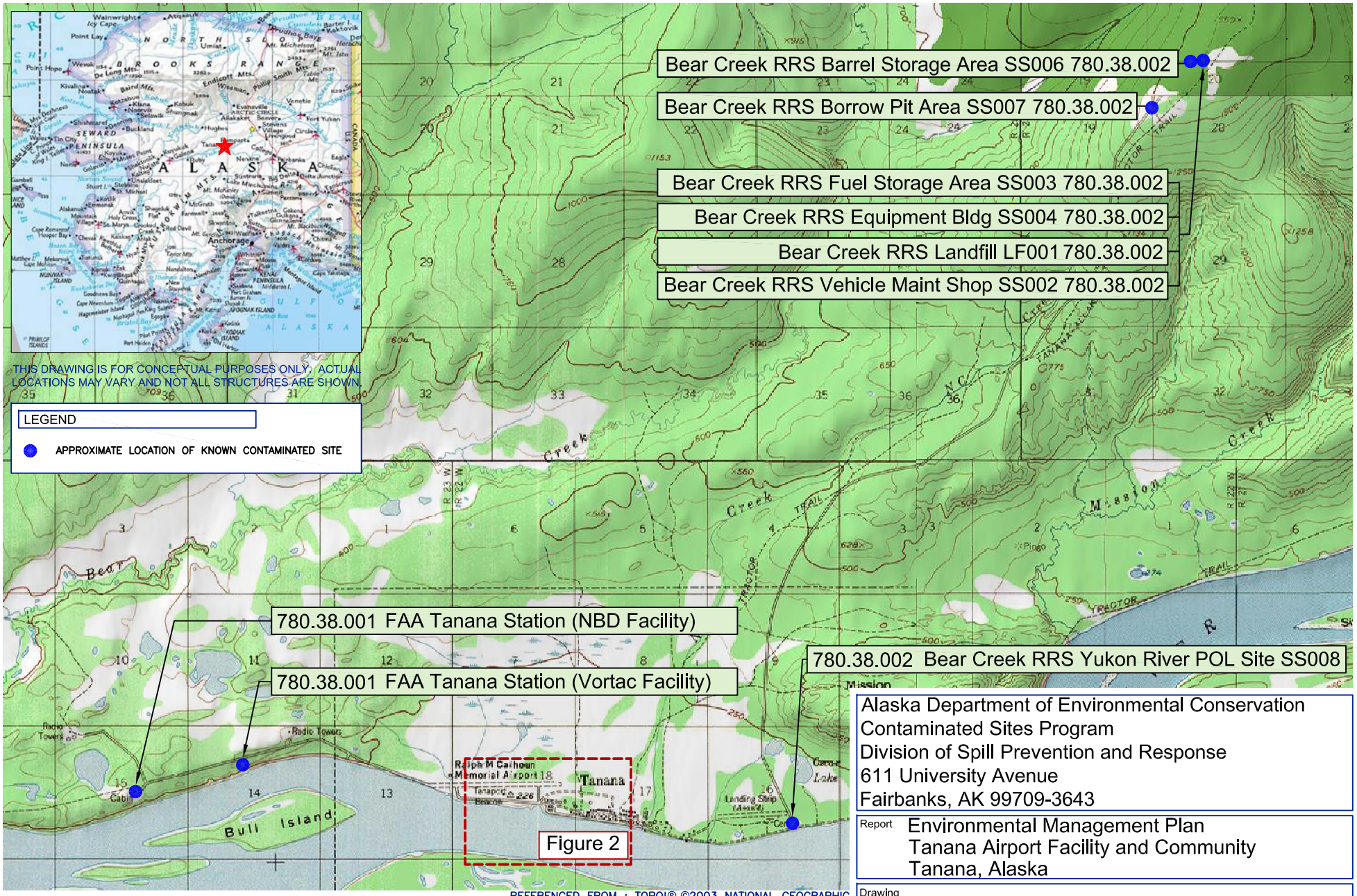
The purpose of an environmental assessment is to reasonably evaluate the potential for or actual impact of past practices on a given site area. In performing an environmental assessment, it is understood that a balance must be struck between a reasonable inquiry into the environmental issues and an exhaustive analysis of each conceivable issue of potential concern. The following paragraphs discuss the assumptions and parameters under which such an opinion is rendered.

No investigation is thorough enough to exclude the presence of hazardous materials at a given site. If hazardous conditions have not been identified during the assessment, such a finding should not therefore be construed as a guarantee of the absence of such materials on the site, but rather as the result of the services performed within the scope, limitations, and cost of the work performed.

Environmental conditions may exist at the site that cannot be identified by visual observation. Where subsurface work was performed, our professional opinions are based in part on interpretation of data from discrete sampling locations that may not represent actual conditions at unsampled locations.

Except where there is express concern of our client, or where specific environmental contaminants have been previously reported by others, naturally occurring toxic substances, potential environmental contaminants inside buildings, or contaminant concentrations that are not of current environmental concern may not be reflected in this document.

FIGURES



SLR

Alaska Department of Environmental Conservation
Contaminated Sites Program
Division of Spill Prevention and Response
611 University Avenue
Fairbanks, AK 99709-3643

Report: Environmental Management Plan
Tanana Airport Facility and Community
Tanana, Alaska

Drawing: Contaminated Sites Location Map

Date: June 2, 2009	Scale: 1"=1mi	Fig. No. 1
File Name: F1 Tanana	Project No. 005.0065.09006	

LEGEND

- APPROXIMATE LOCATION OF KNOWN CONTAMINATED SITE
- APPROXIMATE LOCATION OF COMMUNITY CONCERN / POTENTIAL CONTAMINATED SITE
- FUEL DISPENSING STATION
- STOCKPILE OBSERVED DURING JUNE 2009 SITE VISIT

KNOWN CONTAMINATED SITES

FIGURE NUMBER	ADEC FILE NUMBER	SITE NAME
1	780.38.004	TANANA CITY DRINKING WATER WELL
2	780.38.012	TANANA SCHOOL
3	780.38.003	IHS TANANA HEALTH CENTER
4	780.26.004	IHS TANANA BLDG. 303
5	780.38.014	TANANA POWER COMPANY
6	780.38.013	ADOT&PF TANANA MAINTENANCE SHOP
7	780.38.008	FAA TANANA FABLM/AK FIRE SERVICE STATION
8	780.26.003	BLM ALASKA FIRE SERVICE TANANA STATION
9	780.38.006	BLM/AK FIRE SERVICE HOUSING COMPLEX TANANA
10	780.38.010	BLM TANANA LOT 3 FORMER TANK FARM
11	780.38.001	FAA TANANA STATION (FLIGHT SERVICE STATION)
12	780.38.001	FAA TANANA STATION (FORMER LIVING QUARTERS)

COMMUNITY CONCERNS / POTENTIAL SITES

FIGURE NUMBER	SITE DESCRIPTION
1	BURIED RAIL TANK CARS
2	FORMER WASHETERIA
3	TANANA POWER COMPANY
4	CITY SHOP/GARAGE
5	DON'S VIDEO
6	FORMER FORT GIBBON TANK FARM
7	FORMER FRONT STREET DRUM STORAGE AREA
8	DRUMS AND DEBRIS IN SWALE
9	FORMER FORT GIBBON WOOD STAVE TANK FARM
10	TANANA GAS COMPANY STORE
11	TANANA GAS COMPANY FUEL STATION
12	SECOND AVENUE DRUM STORAGE AREA
13	SCRAP AND HAZARDOUS MATERIAL STORAGE AREA
14	FRONT STREET DUST CONTROL

2006 AERIAL PHOTOGRAPH REFERENCED FROM : ©2009 GOOGLE EARTH PRO

SLR

THIS DRAWING IS FOR CONCEPTUAL PURPOSES ONLY. ACTUAL LOCATIONS MAY VARY AND NOT ALL STRUCTURES ARE SHOWN.

SCALE: 1" = 525'
WHEN PLOTTED AT 11 x 17 PAGE SIZE
0 525 1050 1575'

N

Alaska Department of Environmental Conservation
Contaminated Sites Program
Division of Spill Prevention and Response
611 University Avenue
Fairbanks, AK 99709-3643

Report: Environmental Management Plan
Tanana Airport Facility and Community
Tanana, Alaska

Drawing: Contaminated Sites Location Map Tanana City Detail

Date	June 2, 2009	Scale	1"=525'
File Name	F2 Tanana	Project No.	005.0065.09006
		Fig. No.	2

LEGEND	
	INTERMITTENT STREAM
	FAA PROPERTY
	BLM PROPERTY
	FUEL LINE REMOVED
	FUEL LINE REMAINING
	LIMITS OF UST EXCAVATION

NOTES

PROPERTY OUTSIDE OF FAA AND BLM LOTS IS WITHIN STATE DOT TANANA AIRPORT PROPERTY

ALL FUEL STORAGE TANKS IN THE FORMER LIVING QUARTERS AREA HAVE BEEN REMOVED

DIAGRAM IS REFERENCED FROM CH2MHILL'S 2004 TANANA FAA STATION STATUS POWER POINT PRESENTATION

SLR

THIS DRAWING IS FOR CONCEPTUAL PURPOSES ONLY. ACTUAL LOCATIONS MAY VARY AND NOT ALL STRUCTURES ARE SHOWN.

Alaska Department of Environmental Conservation
Contaminated Sites Program
Division of Spill Prevention and Response
611 University Avenue
Fairbanks, AK 99709-3643

Report: Environmental Management Plan
Tanana Airport Facility and Community
Tanana, Alaska

Drawing: Tanana Airport Former Quarter's Area
Property Ownership Detail

Date: June 16, 2009	Scale: 1"=80'	Fig. No. 3
File Name: F3 Tanana	Project No.: 005.0065.09006	

APPENDIX A

FIELD NOTES

David Puchrik w/
Tamara Cardona-Marek

Tanana Environmental Management visit 6/15/09

1100 Arrive in Tanana.

1120 meet w/ Cynthia

She says Bear Creek, FAA sites are known w/ contamination

The well only draws water between March and April from the river when the well gets low water. Apparently there is a drum storage/hole in ground near ~~city~~ village water well (east of well)

Well water is sent to laundromat and treated. This is the only filling station. Tanana Gas Company apparently is the only place w/ UST'S. The rest are AST.

- People were told (5 years ago) to bring contamination sources to landing. It sat @ landing for 5 years, and likely made some contamination. It was supposed to be shipped off.

Bear - City Manager

Kathleen - Village

Money comes from Denali

Village Safe water does most projects. There is big concern over sewer/water installations. They put water and sewer in same box into houses. Sewer vents freeze up during winter.

Dons video no longer exists, but fuel was →

6/15/09

Stored and dispensed there. There are only two dispensing stations — Dale and Cindy's and Tanana Gas Company.

1300 Meet with Don. He says the well pumped dry and sucked contamination that direction from an old fuel supply company present during the 50's. 55 gallon drums of fuel. This is the location of the hole in the ground.

1330 Arrive @ Tanana Power Company Appears to be stained soil @ site. Purchased power company 1968-70?

1340 Take tour w/ Don

Albert Alley - Bulk Facilities, Cogehill

At airport - 3 railroad gasoline cars are buried.

1400 Meet w/ Kathleen (From Flood)

Flood silts on road, outhouses get knocked over, Fuel tanks got knocked down, The Circle area got hit hardest.

Kathleen feels that the power company is responsible for contamination in that area. A trench was open where strong diesel odors were observed. Area has been since covered. Apparently a tank farm was @ the power company.

Compound next to Tribal hall had a large tank farm w/ many spills.
White Alice sites used to oil roads w/ PCB oil.
Military old landfill has not been cleaned up.
Kathleen is concerned about remaining FAA building. They bid out their bldgs. instead of decommissioning them.
July 6 asbestos cleanup at 3 bldgs.
Kathleen is also concerned about PCB's in the ground water and feels that no one else is.
In the fall the sewage lagoon dumps sewage into the Yukon river. This is a big concern w/ subsistence fishing.
American Creek/Fish lake area (mining)
Kathleen says they sample soil and water there every couple years. She says there are hits of mercury but does not know if they were above cleanup levels. She will ~~fax~~ report to Tamara. She claims there was a fish die off.
Texas creek (1960's) State had exploration site. Debris/barrels still remain. 45 miles up on Yukon river

Barging docking occurred @ well. Fuel offloading. ~~The~~ Front Street was heavily oiled in the past ~
Fort Gibbons 1899-1930's occupied Tanana area.

There was a large tank farm in the gravel pond area East of town -
1600 We take Tour with Katherine and look @ sites.
1700 FINISH tour, talk to Charlie with Toogha water company. We will meet with him Tuesday @ 0800.

0930 6/16/09
HEAD TO TALK TO Charlie @ water treatment laundry facility, Goes over system - water goes Through potassium for iron, manganese, then chlorinated, then polymer treated, floculated, moved through multimedia filter @ 18 gallons per minute Then through activated carbon tank to a final 2,000 gallon chlorinated tank
Daily tests for chlorine and turbidity
Bimonthly DEC Testing raw water testing. They send it to Analytica.
LT2 testing. Benzene is tested every other year only for raw water.

He isn't there. we talk to Dennis

(DP/TCM)

For contaminant testing results. It seems best to contact Analytica directly. —

1015 Charlie arrives we talk to him about testing. He also claims Fort Gibbons used to have a gasoline tank farm across the road from the well. —

Lester Earhart has well. Power company has well. Donald Johnson has a secondary well. School has a bad well.

1045 Back a Dale and Cinthia's. Tamara tries to find out when plane is coming. We talk to Cynthia about other people to talk to in town. Bear Ketzler, Julie Roberts, Mark. Hagland aren't in the village @ this time. We head out to take pictures and GPS sites. ~~We~~ I will drop of Tamara at airport. Dennis w/ Tooghra drops by well when Tamara and I are looking at it. He said the well house is the old well. The new well (well #3) is outside of the well house. He says the surface water is collected from 250' away from shore. —

Take pictures/GPS drums in low lying area caddy corner from Tooghra Well #3. (New well) Apparently this used to be a hotel/saloon. —

Go back to former Tanana Power company and GPS

(PP) 6

There is stained soil @ site. It smells like strong diesel. Stain was 5x10'.
1215 HEAD TO Airport to drop off Tamara.
1320 HEAD TO OLD TRAIN CARS At end of Runway. They are buried fuel carriers. There are 3 15,000 gallons fuel tanks from railroad cars buried @ end of runway. There is also an old dispenser. Took photos GPS. While @ airstrip go gps 780.38.008, and 780.38.001.
1400 Call Carl for update
1430 Back out GPS and photos
Visit Don's video. There is no store/just someone's house. No evidence of former dispensing station. Just some drums.
1500 Go to ~~garage/shop~~ new power plant PP and gps and take photos. It is locked. There is some stained soil on the ground. Go behind new power plant area. → in front of bldg. There is a lot of heavy equipment behind the city shop/garage. 2 very large excavators, dumptrucks, bulldozer, water truck Behind power company is the old fill tanks that used to sit in the water. It got filled with no vapor release and blew up in the water 10000 g?

1515 Arrive at City Shop Garage. Everything seems pretty clean. Some small stains on soil around shop but nothing real bad. GPS/Photograph. ——

1530 drive out to landfill gps/photo It appears well maintained w/ storage areas for batteries/oils etc. ——

Look for landfarm. Possible landfarm far out next to FAA area. Not sure. There is also a possibility that the landfarm is adjacent to the landfill. I gps both. ——

1600 I believe I have found actual landfarm. It is GPS'd as LFarm2. There is plastic underneath all of it w/ stained soil and drums of stained soil above the liner. Does not appear well maintained. ——

The rear tire is going flat. Go back to Dale and Cynthia's to get it repaired ——.

1630 Borrow Mule GPS other dispensing station Tanana Gas Co. ——

GPS'd stockpile near old well near Tanana Gas Co. dispenser. ——

GPS school and health center. School has a new tank on side of building ——

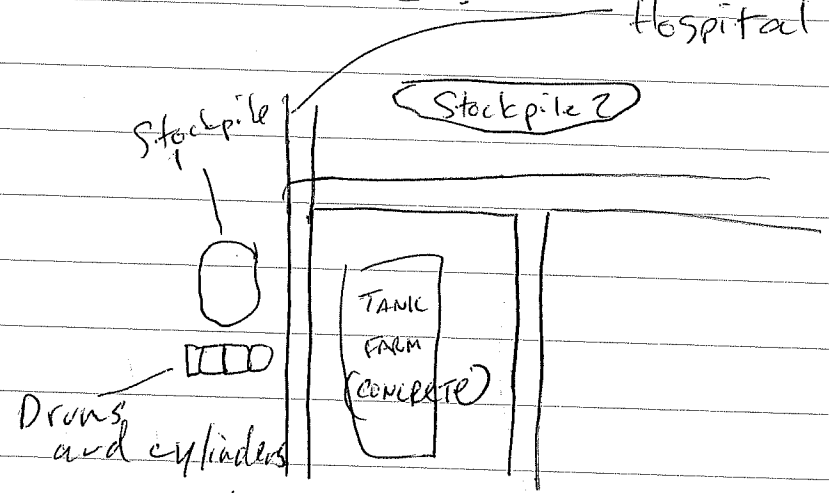
(DP) 8

6/14

The health center is shut down. A new health center is open a block east of big building.

There is no evidence of contamination @ school or health center.

Go to IHS ~~tank~~ farm area area and gps location plus other areas of concern in area.



GPS

1720 GPS / Photo ADOT + PF Maintenance shop

No signs of contamination / Shut down

1730 GPS / photo FAA Former Quarters Area and BLM/AK Fire Service Housing Complex

FAA FQA

BLM AK FSHC

The former Quarters area has what appears to be soil staining and large areas with no vegetation. There are no structures present in either of these areas

1745 Goto a former store location where Kathleen indicated a possible

(DP)

source of contamination. (on map). GPS and photograph. There is no evidence of contamination.

1800 Back @ Dale & Cynthias. Dinner

1830 Head out to look for more sites near village well. (Tooghee) Nothing new is found. Inspect both dispensers of fuel. They appear to be brand new. Flood? There is zero evidence of soil staining at either dispenser. Nor is there leaks in the hoses. Tanana Commercial Co. (Dale/Cynthia) have above-ground lines from tank to dispenser that are in good shape. Tanana Gas Co. has below ground lines running to UST's.

NOTE: The flood may have erased evidence of contamination in many areas along the shoreline. Everything appears clean. ~~It~~ DP New dirt/material was likely brought in to redo ~~the~~ DP Front St. after the flood.

1930 Back @ DEC.

(David Pschirke)

6/17/09

0900 Head to tribal hall to review records. Before I get there, I go to GPS Sewage output location on River. I run into Mike Anden. He provides a lot of good information.

#1 In 1966 or 67, caddy corner (across street) (GPS'd) was a 55-gallon drum storage area. Over 200 drums of high octane gasoline was stored here for the white Alice sites. Mike said him and his friend were kids and loading drums and stacking them with a fork lift. Two 55-gallon drums (110 gallons) were punctured with the forks and fuel was spilled to land.

#2 He said there were two large tanks @ white Alice location near gravel ponds. During removal of the tanks Instead of purging remaining estimated 2,000 gallons, the operator of heavy equipment just tipped the tank over ~~spilling~~ DP emptying entire contents of either diesel or gasoline fuel.

#3 At the former tank farm location behind the hospital, there were three large tanks 10,000g? and one smaller tank. Mike remembers watching fuel spill over containment dikes when he was younger. Note: This is a huge containment area. Operator error. —
0945 At village office. Look through documents. I see Department of Interior report stating soil samples were collected on road for pcb's and negative results was the detection. Talk to Kathleen. She says Paul Earhart has good info Paul Earhart 7258 He was in her position before hers She is going to have him contact me and provide me with the rest of the Tidolphi report. I asked about talking to some elders. She said most of them are not here after flood and funerals.
1030 I check my list of action items and go gps the old washeteria. —
There are two 55-gallon (empty) drums on side of building near a 10,830-gallon train fuel tank which is behind locked fences. I take photographs. No soil staining is observed however a fuel odor in area was noticed.

(DP)

Talk to worker @ Power company. He says there are two dispensing locations: One at power company, a loading dock containment for fuel trucks, and one at city shop for heavy equipment. GPS both locations. He tells me bulk tank facilities and tank number and volumes. (Next page)

1130 Head back to Tribal Hall to find out volumes of tanks there. ———

There is not too much good info ~~for~~ UST's at Tribal Hall. List is on page 14. ———

1200 Head back to Tan. Com. Co. Pay for accomodations. ———

1230 Standby @ airport ———

(DP) conversation w/ power company

Power Company

8 ~~to~~ 25,000-gallon diesel

2 compartment 25,000 diesel

These are community tanks

1 4,000 gallon city dispenser pump

1 empty 25,000 contingency tank

School, city, tribal, Dale Tana; Alascom VS

Alascom New setup (remotely monitored)

1 tank

School 1 5,000-g double walled

1 1,000 g tank d/w

(DOT) State 2 double-walled 5,000 gallon diesel

Tanana Gas 3 10,000 g buried (UST'S) gasoline

Hospital (new) 1994 5 buried (UST'S) heating oil

- 1 AST.

Hamwopper ~~-~~ 20 people in town

18 feet is maximum dig depth.

They do have manpower to do remedial work

APPENDIX B

PHOTO LOG

Photographic Log

Photograph 1: The red well house in the picture is the location of the Tanana City Drinking Water Well site. The new Toogha well (Well #3), the current drinking water source, is located in the box in the lower right hand corner of the photograph.

Photograph 2: The old well house is also the location where sewage from the sewage lagoon is pumped into the Yukon River during fall months of the year.

Photograph 3: Surface water collection hose. This hose collects surface water for the village during low water months.

Photograph 4: The new water treatment and laundry facility.

Photograph 5: Drums and Debris in Swale site of environmental concern. This site is adjacent to the former Fort Gibbon Tank Farm and former Front Street Drum Storage Area.

Photograph 6: Tanana Power Company known contaminated site.

Photograph 7: Soil staining with odor at the *Tanana Power Company* known contaminated site.

Photograph 8: The fuel dispenser located at Tanana Commercial Company.

Photograph 9: The dispenser at Tanana Gas Company Fuel Station site of environmental concern.

Photograph 10: Expanded drum above UST's at the Tanana Gas Company Fuel Station site of environmental concern.

Photograph 11: Old pump which fueled the Former Fort Gibbon Wood Stave Tank Farm site of environmental concern.

Photograph 12: Tank farm at the Tanana Power Company site of environmental concern.

Photograph 13: City Shop/Garage site of environmental concern.

Photograph 14: Tanks and drums at the City Shop/Garage site of environmental concern..

Photograph 15: IHS Tanana Health Center contaminated site former tank farm.

Photograph 16: Large stockpile located north of the former tank farm at the IHS Tanana Health Center.

Photograph 17: Large stockpile located west of the former tank farm at the IHS Tanana Health Center.

Photograph 18: Drum/cylinder storage at the IHS Tanana Health Center.

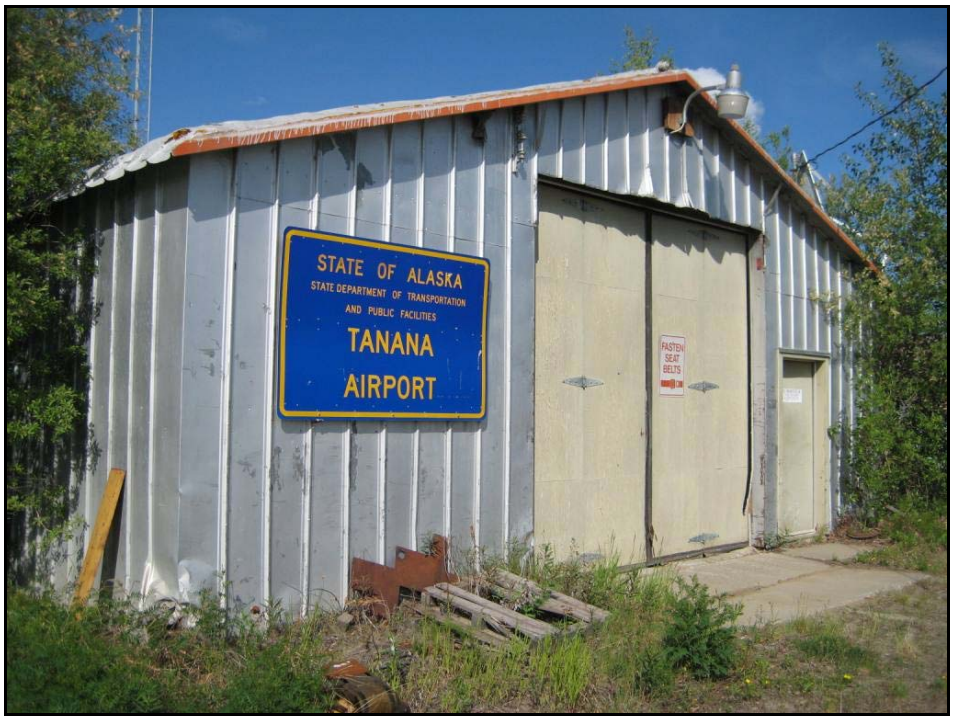
Photograph 19: Land-farming area near landfill.

Photograph 20: 10,000 gallon train-car fuel tank used for heating the Former Washeteria site of environmental concern.

Photograph 21: Second Avenue Drum Storage Area site of environmental concern.

Photograph 22: This dispensing unit formerly drew fuel from the Buried Rail Cars site of environmental concern.

Photograph 23: Manhole to one of the Buried Rail Cars site of environmental concern.



Photograph 24: ADOT&PF Tanana Maintenance Shop

Photograph 25: Former location of BLM/AK Fire Service Housing Complex Tanana.

Photograph 26: Former location of FAA Tanana Station.

Photograph 27: IHS Tanana Building 303.

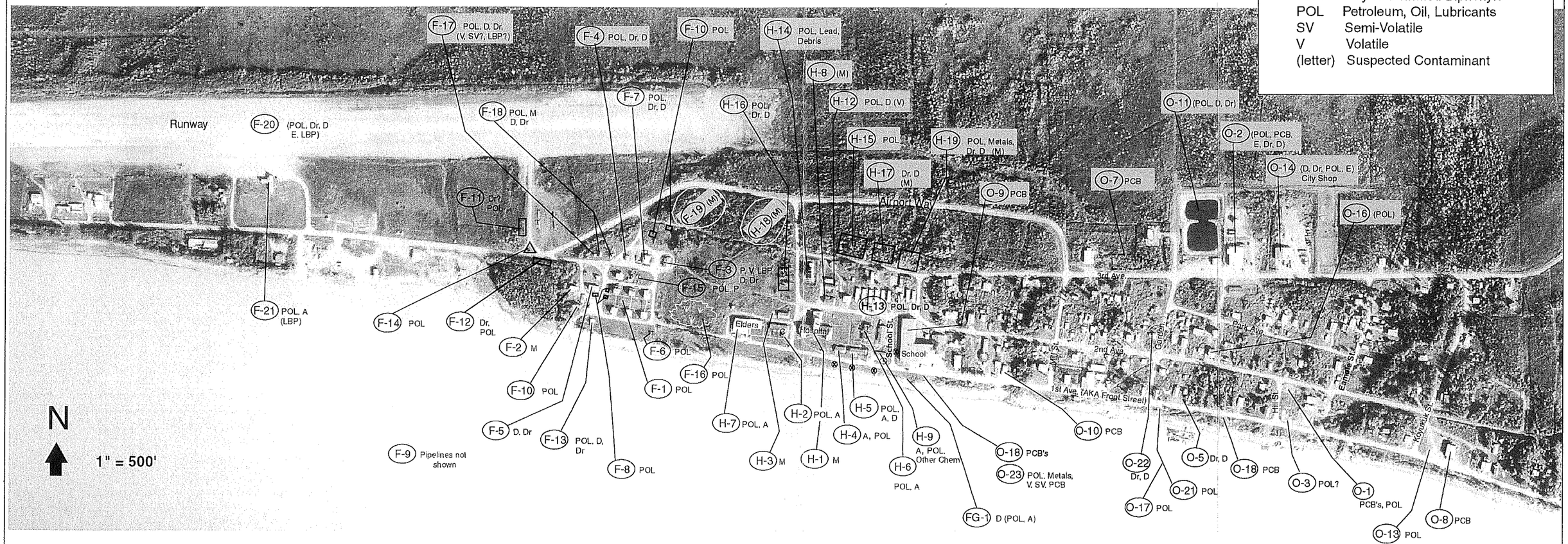
APPENDIX C

2002 RIDOLFI ENGINEERS INC. CONTAMINATION ASSESSMENT REPORT EXCERPT

LEGEND

⊗ Inactive Well
⊙ Active Well

A	ACM
D	Debris
Dr	Drums
E	Electrical Equipment
M	Multiple Contaminants
LBP	Lead-Based Paint
PCB	Poly Chlorinated Biphenyls
POL	Petroleum, Oil, Lubricants
SV	Semi-Volatile
V	Volatile
(letter)	Suspected Contaminant



RIDOLFI ENGINEERS Inc.

Tribal Village of Tanana
Tanana Tribal Council

Figure 2

Village Sites of Concern

Compilation of Environmental Information for Sites of Concern In and Around Tanana, Alaska

Site No.	Name	Involved Agency or Other Party(ies)	Site Description	General Site History	Known or Potential Contaminants of Concern	Site Hazards	Impacted Media / Resources	Data / References
FAA Facility Sites								
Living Quarters Area								
	Living Quarters Area	FAA	The FAA Living Quarters are located about 0.25 miles west of the Village of Tanana, and south of the current runway. The FAA Facility presently includes 40 of the original 1650 acres and about 18 structures.	The FAA involvement in Tanana began in 1941, when Fort Gibbon was turned over to the then Civil Aeronautics Administration. The Living Quarters has 18 buildings, of which FAA currently owns 10, the State owns three, and the USDOI, BLM owns 2. USTs, and ASTs were remediated in 1997; petroleum contaminated soils have been stockpiled onsite for further action. A recent Release Investigation determined a southwesterly trending ground water plume with DRO and Benzene beneath a majority of the living quarters area. The report concluded that it was likely that hydrocarbon contamination from this area was reaching the Yukon River.	Known: DRO, Benzene, BTEX, LBP, ACM, PAH	Wide spread debris, electrical and generator equipment, drums, barrels and tanks	Soils, ground water, surface water, vegetation stressed and "spotty"	8,9,10
	Ground water	FAA	As a part of (10), 22 groundwater probes were installed in the Living Quarters area; Six probes encountered free product; DRO, Benzene and Xylene were encountered in all probes with valid results; exceedences of ADEC standards for Benzene and DRO were clustered around the area between Building 205 (shop area) and the State Garage; and the "pipe tee-zone" near the old tank farm (near the current soil piles). The plume extends to about 25 to 30 feet bgs, covers most of the site & flows generally southwest towards the River; the report concludes that a pathway to the River is likely.		Known: DRO, BTEX	No visible seeps	ground water, surface water	10
F-1	Living Quarters Bldgs 100 - 105 (FAA site Nos: 15-B-4, 15-B-5, 15-B-6, 15-B-017, 15-018, 15-B-8)	FAA	Six-Single family residences located on the southeast corner of the Compound.	These home-heating fuel tanks were originally installed in 1961, and were decommissioned in 1997. *Bldg 100* - VS above ADEC for DRO; 5 CY soils stockpiled NE of 100 / *Bldg 101* - VS above ADEC for DRO, west floor;15 CY soils stockpiled NE of 101; Lead-based paint sample taken, results not reported / *Bldg 102* - VS above ADEC for DRO; ~55 CY soils stockpiled S of 102/ *Bldg 103* - ~20 CY soils stockpiled W of 103 VS below ADEC / *Bldg 104* - VS above ADEC for DRO; ~80 CY soils stockpiled S of 104/ *Bldg 105* - VS above ADEC for DRO; 25 CY soils stockpiled SW of 105. Some sample QA issues noted. (10) indicated DRO, BTEX>ADEC for Bldg 102 to 25 ft bgs,	Known: DRO, BTEX	Widespread debris, electrical and other equipment, barrels and tanks, potential ACM, LBP	ground water, soils, surface water, vegetation	8,9, 10

Compilation of Environmental Information for Sites of Concern In and Around Tanana, Alaska

Site No.	Name	Involved Agency or Other Party(ies)	Site Description	General Site History	Known or Potential Contaminants of Concern	Site Hazards	Impacted Media / Resources	Data / References
F-2	Engine Generator Building (600) (FAA Site Nos 15-B-09 and 15-B-10)	FAA	This is a small bright red building located at the west end of the compound. The door is open; equipment remains in place, oil present on floor, slight diesel odor; paint peeling, and soil staining noted on south and west sides of building. Mapping in (9) indicates drum storage on northwest side of building, and stressed vegetation on west side of building.	The tanks at this structure were originally installed in 1961. The two AST's were decommissioned in 1997; about 20 CY of contaminated soil was stockpiled north of Building 300 for future remediation. Additional soil staining noted to be addressed under actions related to fuel tank farm and distribution pipeline. (9) indicated drum storage area north of building sampled for lead; low levels of lead indicated in soil; other soil analyses may be warranted to determine impacts of drum content. Spill area west of 600 indicated DRO & BTEX to 7 Ft bgs; (10) indicated DRO and BTEX >ADEC to 25 ft bgs.	DRO, BTEX (highest DRO concentrations id'ed in LQ area)	Widespread debris, electrical and other equipment, barrels and tanks, potential ACM, LBP	ground water, surface water, soils, spotted vegetation present	8,9,10
F-3	Shop Building 205 (FAA Site 15-B-1 & 15-B-2)	FAA	The Shop Building is located at the eastern end of the Living Quarters area, it is a metal building surrounded by debris, equipment, tanks, and drums. Strong petroleum smell near northwest corner of site. Stressed vegetation noted on west side of structure. There is a small old log cabin located north of Building 205 with associated debris.	The tanks were originally installed in 1961. Two UST's were decommissioned in 1997; one near building (15-B-2) had 40 CY contaminated materials stockpiled next to Building 205 (8); not all contaminated soils removed due to building foundation; another tank by gas pump(15-B-1) had approximately 60 CY removed and stockpiled between Bldgs 100 and 105; not all soil removed due to power pole near east side of excavation. ~20 CY contaminated soils were later removed from this site and relocated to"long-term stockpile north of Building 204(9). Data QA Problems noted for soil samples. Red paint chips sampled from this structure indicated 233,000 ppm lead; chips were collected and removed from soil in 1997. Work in (10) indicated both DRO & BTEX cleanup standards exceeded to depths of 20 feet bgs. August field effort indicated several drums, some marked as "transformer oil".	Known: Cleanup verification sampling indicated low DRO, BTEX in UST pit 1(gas pump); pit 2 had DRO levels > ADEC clean-up; backfilled with clean fill; no known sampling of stockpiles; later sampling indicated DRO & BTEX in excess of ADEC cleanup standards; VOC's also detected. Potential: PCB's ?	Debris, Drums, Tanks, stained soils, LBP	ground water, soils, adjacent wetlands resources; active well noted within 4,000 feet	8,9, 10
F-4	Cold Storage Building (204) (FAA Site No.15-B-3)	FAA	The Cold Storage Building is located north of the Living Quarters area, and west of the State of Alaska Garage.	Text missing from resources - One page indicated DRO; (10) indicated fuel odors during drilling, but ND for DRO & BTEX	Known: DRO; Potential: BTEX? (Conflicting/missing data)	tanks, drums, debris	groundwater, surface water, soils, vegetation	8,9,10
F-5	Community Service Facility (COMSERFAC) (300) (FAA Site No 15-B-7)	FAA	The COMSERFAC is located in the center of the site between the Engine generator building, and the living quarters	This tank was originally installed inside the building in 1961 and was decommissioned in 1997; about 20 CY of contaminated soil was stockpiled north of Building 300 for future remediation.	Known: verification sampling indicated DRO below ADEC clean-up; backfilled with clean fill; no known sampling of stockpile	tanks, drums, debris	groundwater, surface water, soils, vegetation	8,9

Compilation of Environmental Information for Sites of Concern In and Around Tanana, Alaska

Site No.	Name	Involved Agency or Other Party(ies)	Site Description	General Site History	Known or Potential Contaminants of Concern	Site Hazards	Impacted Media / Resources	Data / References
F-6	Water treatment and pumphouse building site(602) (FAA Site No 15-B-12)	FAA	This building was located south and east of the living quarters buildings along the river bank. The building has been demolished, and the AST decommissioned in 1997	This tank was originally installed in 1961 and was decommissioned in 1997; no verification sampling; about 5 CY soils removed and stockpiled at an undisclosed location; to be addressed with pipeline.	Known: DRO, BTEX,no known sampling of stockpile	No visible debris remaining	ground water, surface water, soils, vegetation	8,9
F-7	State Garage	ADEC/ ADOTPF	The State Garage is located due west of the Shop Building 205. This is a metal structure, with plentiful debris, drums, and stained soils. There is no other mention of this site in available literature and no site history or related sampling data. Based upon data from adjacent properties with similar uses additional characterization may be warranted.	The Fuel Pipeline was not removed from this site during 1997 FAA Decommissioning project due to access issues, and amount of metal debris onsite; additional sampling in (10) indicated that the soil was contaminated with DRO in excess of ADEC cleanup standards to 25 feet bgs; Some of the highest DRO concentrations found were located between this site and the 205 bldg.	Known: DRO, BTEX, POL	debris, potential drums, ACM	ground water, surface water, soils, vegetation	8,9, 10
F-8	AST Tank Farm (FAA Site Nos, 15-B-014, 15-B-013, 15-B-016)	FAA	The Tank Farm consisted of three diesel ASTs: 15-B-014:15,000 gallon capacity; 15-B-015: 20,000 gallon capacity; 15-B-014:15,000 gallon capacity. These three tanks were originally located so that the westernmost tank was about 81 feet south of the generator building 600.	These tanks were decommissioned in 1997. One sample was obtained from the bottom of the center of each excavation; the sample from the center tank had DRO concentrations in excess of ADEC cleanup standards; no soils were removed. (10) indicated slight heavy fuel odors during drilling to 25 ft, but soil DRO concentrations >ADEC cleanup only to 10 feet.	Known:DRO; Potential: BTEX?	No visible stains remaining, although vegetation appears stressed	ground water, surface water, soils, vegetation	8,9, 10
F-9	Fuel Pipelines (FAA Site Nos: SQ, east pipeline, North pipeline and North 1&2 Pipeline)	FAA	Approximately 1,535 LF of 1- and 2-inch diameter fuel pipeline was used to connect the UST's and ASTs in the Living Quarters with the Tank Farm	This pipe line was decommissioned in 1997 with many of the USTs and ASTs. Approximately 600 CY of contaminated soil was reportedly excavated and stockpiled for future remediation; however, the location of the stockpiles was not provided. Sample QA Problems noted. (10) indicates DRO>ADEC cleanup to depths of 10 feet bgs for pipeline S. of bldgs 103, 104 & 105 and north of bldg 100 to depth of 25 feet bgs; DRO >ADEC cleanup for pipelines north of state garage and Shop Building 205 to depths of 25 ft bgs; T-area east of tank farm exceeded ADEC cleanup concentrations for both DRO and BTEX to 30 ft bgs.	Known: DRO, BTEX	Not observed	ground water, soils, vegetation	8,9, 10

Compilation of Environmental Information for Sites of Concern In and Around Tanana, Alaska

Site No.	Name	Involved Agency or Other Party(ies)	Site Description	General Site History	Known or Potential Contaminants of Concern	Site Hazards	Impacted Media / Resources	Data / References
F-10	Soil Stockpiles	FAA	In 1997, contaminated soil from AST & UST Decommission operations was consolidated into several covered stockpiles near the center of the Living Quarters buildings. There are three stockpiles with several hundred CY of petroleum contaminated soils placed between them. This soil was to be remediated by landfarming in 1998; to date, this has not been accomplished. Higher concentrations of DRO and Benzene are located in proximity of these piles (10); it is not known whether this is due to prior landuses before stockpiling, or from the stockpiles themselves. There is a sheen present in puddles along toe of piles; stressed (spotty) vegetation is prevalent in the areas around the piles.		Known: DRO, BTEX	physical access hazard	groundwater, surface water, soils, vegetation	8, 9, 10
F-11	Drum Storage Site #1	FAA	Site mapping in the UST Decommissioning Assessment (8) indicates the Drum Storage #1 site located north of Airport Way on the west side of the access road to the runway. There is no other mention in FAA literature concerning this site, and no known site history or related sampling data. Characterization may be warranted based on prior site use for drum storage.		Potential: DRO? BTEX? POL?	drums, debris remain at this site	groundwater, surface water, soils, vegetation	8
F-12	Drum Storage Site #2	FAA	Site mapping in the UST Decommissioning Assessment (8) indicates the Drum Storage #2 site located south of Airport Way, just south of the intersection of Airport Way and Tanana Road. There is no other mention in FAA literature concerning this site, and no known site history or related sampling data. Characterization may be warranted based on prior site use for drum storage. This site is shown draining to surface water.		Potential: DRO? BTEX? POL?	drums, debris remain at this site	groundwater, surface water, soils, vegetation	8
F-13	Recreation/Storage Building 030 (FAA Site No 15-B-11)	FAA	This building was located due south of the living quarters buildings. Subsequent to 1997 Decommissioning Assessment, this building has been demolished, and the UST decommissioned however, drums and debris remain present at this site	The UST was decommissioned in 1997; verification sampling indicated DRO and BTEX below ADEC cleanup levels; clean backfill; ~45 CY of contaminated soil and 15 CY of clean soil were removed and stockpiled west of building 030; this soil is no longer present at this location. (10) indicated soil contamination with DRO>ADEC cleanup to depths of 25 ft bgs.	Known: DRO, BTEX	drums, debris remain at this site	ground water, surface water, vegetation	8,9, 10
F-14	State of Alaska (SOA) Vehicle Fueling Station	FAA/ ADEC/ ADOTPF	The State of Alaska Vehicle fueling station was located north of Airport Way in a triangle-shaped island at the juncture of the runway access road with Airport Way and the road to Tanana.	It is not known how long this facility has been there; the gasoline AST was installed in 1943 and decommissioned by the FAA in 1997; however verification sampling indicated DRO above ADEC cleanup levels; clean backfill; 8 CY were taken to soil stockpile north east of Building 100.	Known: DRO, BTEX	Not observed	ground water, soils, stressed vegetation	8,9
F-15	Greenhouse (FAA Site No 15-B-13)	FAA	This building was located due north of the living quarters. Prior to being the greenhouse site; another structure (Building 107) was located on the same site. It is assumed that the greenhouse was used for horticulture; no information concerning former site use was available.	Both the greenhouse, and the preceeding Building 107 have been demolished, and the UST decommissioned in 1997; however verification sampling indicated DRO in excess ADEC cleanup levels; clean backfill; ~35 CY of contaminated soil was stockpiled east of Greenhouse.(10) indicates DRO >ADEC cleanup to depths of 25 ft bgs at this location.	Known:DRO; Potential: fertilizers? Pesticides?	Not observed	ground water, soils, vegetation	8,9, 10

Compilation of Environmental Information for Sites of Concern In and Around Tanana, Alaska

Site No.	Name	Involved Agency or Other Party(ies)	Site Description	General Site History	Known or Potential Contaminants of Concern	Site Hazards	Impacted Media / Resources	Data / References
F-16	Southeast Wetlands	FAA/HIS	Site mapping in the UST Decommissioning Assessment (8) indicates a small wetlands located at the southeast end of the Living Quarters area, with a portion of the surface water flow directed to this location. There is no other mention in FAA or IHS literature concerning this site, and no known site history or related sampling data. Characterization may be warranted based on similar site usage.		Potential DRO? RRO? BTEX? POL?	Potential debris, drums, ACM, or electrical equipment	ground water, surface water, wetlands vegetation	8
F-17	Paint House	ADEC/ ADOTPF	The paint house is located due west of the BLM Storage building 202. This is a smaller composite structure, with plentiful debris, drums, and stained soils. There is no other mention of this site in available literature and no site history or related sampling data. Based upon data from adjacent properties with similar uses additional characterization may be warranted.		Potential: VOC's? SVOC's? POL? LBP?	debris, potential drums, ACM	ground water, surface water, soils, vegetation	8,9
F-18	BLM Building (s) (FAA Site Nos 15-B-006 & Quarters, Building 207t)	FAA/ DOI-BLM	The BLM building 106 is located north of the Living Quarters, and west of the former greenhouse site. Building 207 is located due west and across the drive from 106.	The original UST for 106 was decommissioned in 1997; about 60 CY of contaminated soil was stockpiled south of the building. Confirmation sampling indicated DRO in excess of ADEC cleanup standards, and BTEX at 14 feet bgs. (10) also indicated DRO concentrations> ADEC in SW corner of this building to depths of 25 feet.	Known: DRO, BTEX	Potential debris, ACM, LBP	Groundwater, surface water, soils, vegetation	8,9, 10
F-19	Former Landfill Site	Shown on FAA mapping; Geophysical done as part of IHS study	There is a former landfill site indicated at the northeast corner of the FAA Living Quarters area. The history of this facilty is not known. There is no other mention in FAA literature concerning this dump; In (14) geophysical work was performed on a dump due west of the IHS Property; strong anomalies indicated the likely presence of a volume of metallic debris at this site; however as it was not part of the IHS study; no further characterization work was performed.		Potential SVOC, VOC, DRO, RRO, GRO, BTEX, Oils, Hazardous constituents	snowmobiles, drums, boats, misc debris, potential ACM	Groundwater, surface water, soils, vegetation	8, 14, (26)
Airport Area								
F-20	Airport Runway	FAA/ADOTPF	Site mapping in the UST Decommissioning Assessment (8) indicates the airport runway site located at approximately 1.0 mile north and west of the living quarters area. There is no other mention in FAA literature concerning this site, and no available site history or related sampling data. Characterization may be warranted based on similar site usage as well as current uses related to fuel unloading.		Potential DRO? GRO? BTEX? POL? Pesticides?	Potential LBP, debris, ACM, Electrical equipment	groundwater, surface water, soils, vegetation	8,31
F-21	FAA Flight Service Station (FSS Building 400) (FAA Site 15-C-1)	FAA	The Flight Service Station is located at the end of the runway which is about 1/2 mile west of Living Quarters area.	It is not known how long this facility has been there; the UST was constructed in 1961 and decommissioned in 1997; however verification sampling indicated DRO and BTEX above ADEC cleanup levels along the south wall; clean backfill; ~ 60 CY were removed and stockpiled east of the structure for future remediation.	Known: DRO, BTEX	Potential debris, drums, ACM, electrical equipment, and or lead based paint	groundwater, soils, vegetation	8,9, 10
F-22	Airport Landfill Site (s)	Shown on FAA mapping of airport facilities	History of this site is not known. Site mapping of the airport included in the 1994 Geotechnical Report for the Airport shows a landfill site located at the corner of R24W Sections 11, 12, 13 and 14, about a mile west of the runway, possibly coincident with the VORTAC Facility. There is no other mention in FAA literature concerning this dump. Mapping on an aerial photograph included in (32) indicates this landfill, and the location of a "probable former dump." Characterization may be warranted based upon similar site usage.		Potential: SVOC? VOC? DRO? RRO? GRO? BTEX? Pesticides? Oils? Hazardous constituents?	Potential drums, debris, lubricants, de-icing materials	Groundwater, surface water, soils, vegetation	(26) 31, 32

Compilation of Environmental Information for Sites of Concern In and Around Tanana, Alaska

Site No.	Name	Involved Agency or Other Party(ies)	Site Description	General Site History	Known or Potential Contaminants of Concern	Site Hazards	Impacted Media / Resources	Data / References
F-23	Very-high Frequency Omnidirectional-Range Tactical Air Navigation (VORTAC) (FAA Site 15-A-1)	FAA	The VORTAC is located approximately one mile west of the end of the runway. The facility includes a building, and VORTAC equipment, and new fuel tank.	The original UST was decommissioned in 1997; about 2 CY of contaminated soil was stockpiled south of the building and then transported to the soil stockpile between Buildings 100 and 105. This facility remains active, and is the site proposed for "landfarming" contaminated soils.	Known: verification sampling indicated low levels of DRO, BTEX in UST pit (below clean-up levels); no known sampling of stockpile location;	Potential LBP, debris, ACM, Electrical equipment	ground water, soils	8,9, 10
F-24	DF Facility	FAA	Site mapping in the UST Decommissioning Assessment (8) indicates the DF Facility site located south of the Runway, approximately2.0 miles west of the living quarters area. There is no other mention in FAA literature concerning this site, and no known site history or related sampling data. Characterization may be warranted based on similar site usage.		Potential: DRO?BTEX? POL?LBP?	Potential LBP, debris, ACM, Electrical equipment	groundwater, surface water, soils, vegetation	8
F-25	Non-Directional Beacon Facility (NDB) Facility	FAA	Site mapping in the UST Decommissioning Assessment (8) indicates the DF Facility site located south of the Runway, approximately 1.0 mile west of the living quarters area. There is no other mention in FAA literature concerning this site, and no known site history or related sampling data. Characterization may be warranted based on similar site usage.		Potential: DRO?BTEX? POL?LBP?	Potential LBP, debris, ACM, Electrical equipment	groundwater, surface water, soils, vegetation	8
F-26	VASI Facility	FAA	Site mapping in the UST Decommissioning Assessment (8) indicates the VASI Facility site located at the west end of the runway, approximately 1.0 mile north and west of the living quarters area. There is no other mention in FAA literature concerning this site, and no known site history or related sampling data. Characterization may be warranted.		Potential: DRO? BTEX? POL?	Potential LBP, debris, ACM, Electrical equipment	groundwater, surface water, soils, vegetation	8
Fort Gibbon Sites								
FG-1	Old Fort Gibbon (FUDS Site No. F10AK0105)	U.S.Army (FUDS) / IHS/ (DoD NAETS includes FAA and AK Dept of Transportation and Public Facilities)	An original 22 acre site located along the bank of the Yukon River; Current debris includes large steel tank with manufacturers plates from 1940, rifles, and other assorted debris, concrete foundations within River Bank	Fort Gibbon was originally constructed by the Army in 1899 and served as a telegraph station from 1901 to 1925, and later as a U.S. Army Signal Corps Station through 1941. The Fort was transferred to the Civil Aeronautics Administration (Pre-FAA) in 1941. The current surface facilities for IHS are located on top of the old fort.	Potential: POL? Solvents? Asbestos?	Debris; old fuel lines, tanks with/without product	Soils, ground water, potentially surface water in the river itself	20, 23
FG-2	WAM CATS Telegraph Wire (FUDS Site No. F10AK0105, TCC Site N0. TAL FY99-008)	U.S. Army/ FUDS	Telegraph wire surrounding Tanana on North bank of River, 1 mi outside of town, both east & west	Installed as part of WAMCATS communication system prior to World War II. Portions of the wire remain, some has fallen. Reports of people, vehicles getting caught in downed wire	NA	physical hazard, debris	Humans & wildlife	20, 23
IHS Facility Sites (AKA Old Hospital Site/ Public Hospital Site/AANHS Hospital Site)								

Compilation of Environmental Information for Sites of Concern In and Around Tanana, Alaska

Site No.	Name	Involved Agency or Other Party(ies)	Site Description	General Site History	Known or Potential Contaminants of Concern	Site Hazards	Impacted Media / Resources	Data / References
H-1	Hospital (Bldg 301))	PHS, IHS	The Hospital is a large tee-shaped structure located in the middle of the 11 acre public health service site. The hospital is located between First and Second avenues, due east of the Tribal offices. It is a yellow , two story wooden structure that presently is boarded up to prevent public access. There is a platform at the rear of the structure that contains several labeled drums, and compressed gas cylinders. Friable asbestos has been identified within the structure, and flooring; LBP on the walls	St. James Hospital was constructed as part of the St. James Mission sometime between 1887 and 1900. The Hospital property was incorporated into the Fort Gibbon compound by the U.S. Army in 1899. In 1923, the Hospital was transferred to the BIA. The present hospital structure was constructed in 1949, and administration was transferred to the U.S. Public Health Service in the 1950's who operated a regional health facility. The hospital closed in 1982. In 1985, management of the site was turned over to the TCC.	Known: ACM, LBP,GRO, DRO, BTEX, TRPH	drums, gas cylinders, physical hazards to those who enter structure	Soils, groundwater,	12, 15, 29
H-2	Tribal Offices (Bldg 302)	PHS/IHS/TTC	The Tribal offices are located west of the Old Hospital Building and north of First Avenue in a one-story structure that was one part of the hospital complex. DRO in the vicinity of the tank has been identified; ACM has been identified in the flooring materials, the crawl space and boiler room for this facility.		Known: ACM, DRO, TRPH	drums	soils, groundwater	12, 14, 29
H-3	Generator Building (Bldg 303)	PHS/IHS	The Generator Building is located north of the Tribal Offices. Several tanks, and drums are located north of this building, with soil staining. Diesel spillage has been noted within the structure beneath the generator. (12) Transformers north of this facility may have PCB's. ACM has been identified within the cement asbestos board, and used as pipe insulation.		Known: ACM, PCB's, DRO, GRO, BTEX, PAH, lead	drums, debris, AST	ground water, surface water, soils	12, 29
H-4	Building 305 (clinic housing)	PHS/IHS/TTC	Building 305 is located west of the Clinic office and north of First Avenue in a one-story structure that was once part of the hospital complex. DRO in the vicinity of the tank has been identified; ACM has been identified on flooring, and on piping in the crawl space for this facility. Radon sampling in 1999 indicated a radon concentration just over the action level; re-testing was recommended.		Known: ACM, Radon, DRO	minor debris	ground water, soils	12, 15, 17, 30
H-5	Clinic Housing/Office (Building 311)	PHS/IHS/TTC	Building 311 is located due west of the water plant, and north of First Avenue in a one-story structure that was once part of the hospital complex. It presently serves as clinic offices. (14) Surface and subsurface samples near underground fuel lines near this structure had mixed DRO and GRO >ADEC cleanup standards to depths of 5 ft bgs. (29) ACM was identified in pipe insulation and on the heat exchanger.		Known: ACM, GRO, DRO, BTEX, TRPH	Potential woodstave sewer pipe	ground water, soils	12, 29, 30
H-6	Building 312 (residential)	PHS/IHS/TTC	Building 312 is located due west of the clinic and south of Second Avenue in a one-story structure that was once part of the hospital complex. (14) Surface and subsurface samples near this structure had mixed DRO >ADEC cleanup standards to depths of 5 ft bgs . (29) ACM was identified on the pipe insulation, the flooring and on the heat exchanger.		Known: ACM, GRO, DRO, BTEX, TRPH	drums, minor debris	ground water, soils	12, 14, 29
H-7	Elders Residence (Bldg 313)	PHS/IHS/TTC	The Elders Residence is located east of the Tribal Offices and north of First Avenue in a one-story structure that was once part of the hospital complex. DRO in the vicinity of the tank has been identified; ACM has been identified in flooring for this facility.		Known: DRO, ACM	NA	likely stable unless disturbed	12, 29
H-8	Maintenance Building (Bldg 314)	PHS/IHS	The Maintenance building is located north of the hospital, north of Second Avenue. The building serves as a vehicle storage and maintenance area and has five floor drains which may have allowed the release of diesel, gasoline, lubricants, solvents, or metals. (14) Floor drain samples indicated elevated concentrations of DRO,RRO, BTEX iron, lead and arsenic. (29) ACM was identified in asbestos cement board in this building.		Known: ACM, BTEX, GRO, DRO, TPRH, lubricants, solvents, metals: lead, iron, arsenic	debris, tanks, drums, floor drains!	ground water surface water, soils vegetation	12, 14, 29

Compilation of Environmental Information for Sites of Concern In and Around Tanana, Alaska

Site No.	Name	Involved Agency or Other Party(ies)	Site Description	General Site History	Known or Potential Contaminants of Concern	Site Hazards	Impacted Media / Resources	Data / References
H-9	Water Plant (Building 315)	PHS/IHS/TTC/Too'gh a, Inc	This building is located at the southeast corner of the IHS complex, across from the School, and north of First Avenue. The well is located south of the structure; the structure houses three - 20,000 gallon water tanks; water is chlorinated, but not fluoridated, nor softened to reduce calcium.	The building was part of the original hospital complex, however the well is fairly new. The old well was abandoned in 1960 due to contamination. (14) Surface and subsurface samples>ADEC cleanup standards for DRO to depths of 5 ft bgs. (29) ACM was identified in cement asbestos board in this building.	Known: ACM, trace amounts of DRO,GRO, Benzene; Potential: other water treatment chemicals?	woodstave pipe	ground water surface water, soils vegetation	14, 29, 30
H-10	Public Health Clinic (Building 316)	PHS/IHS/TTC	The Public Health Clinic is located on north of the Water Plant and across from the School, just south of Second Avenue. The clinic was once part of the Hospital Complex, but was initiated for a community Health Facility in 1985. In the 1960s, an onsite petroleum tank ruptured, spilling about 50,000 gallons of fuel and contaminating a nearby well. In addition, waste oil from various sources was stockpiled in a mobile tank behind this facility and used for dust abatement on the village roads. There is conflicting information concerning the potential for PCB's in this oil mixture. This practice was ceased in near 1980. (14) Surface and subsurface samples>ADEC cleanup standards for DRO to depths of 5 ft bgs. (29) ACM has been identified on the fire door to the boiler room for this facility.		Known: BTEX, GRO, DRO; Potential: PCBs?	ACM, drums, debris	groundwater soils, surface water, vegetation	14
H-11	Incinerator Building (Bldg 321)	PHS/IHS	The Incinerator is located east of the Garage, and north of Second Avenue in a large metal structure that was once part of the hospital complex. There are numerous drums, dog sleds, tanks, fittings containing ACM, two BIA boats, and other debris located behind this building. There is also concern related to potential constituents of the sludge in the incinerator. (14) Surface and subsurface samples near underground fuel lines near this structure had mixed DRO and GRO >ADEC cleanup standards to depths of 5 ft bgs. (29) ACM was identified in pipe insulation and on the heat exchanger.		Known: DRO; Potential: other toxic burn products?	drums, debris, ACM	groundwater soils, surface water, vegetation	12, 14
H-12	Building 323 (Paint Storage)	PHS/IHS	The Paint Storage is located south of Stockpile No. 1, and south of Third Ave in a small metal structure that was once part of the hospital complex. There are a few drums, and other debris located behind this building. Due to prior building use, Characterization may be warranted.		Known: DRO; Potential: BTEX? VOC?	Debris	groundwater soils, surface water, vegetation	12
H-13	BLM Trailers	IHS, BLM	The BLM trailers are located due east of School street, and north of Second Avenue. There is one trailer inside the current northeast edge of the IHS Property, and additional 5 trailers (residences) located just west of this trailer that are all located due east of the incinerator building. These trailers are currently used by BLM. Many of these trailers have AST's that have leaked at some time in the past, as evidenced by soil contamination and staining beneath some of them.	It is not known when the trailers were installed. While these residences are mostly located outside of the current PHS property, they are within the Pre-1985 IHS site boundary. The fuel distribution lines and several AST's were removed from this area in fall, 1994. (14) Surface and subsurface samples>ADEC cleanup standards for DRO to depths of 5 ft bgs for trailer east of Building 321.	Known: DRO, BTEX	Debris, drums	ground water surface water, soils vegetation	4, 12

Compilation of Environmental Information for Sites of Concern In and Around Tanana, Alaska

Site No.	Name	Involved Agency or Other Party(ies)	Site Description	General Site History	Known or Potential Contaminants of Concern	Site Hazards	Impacted Media / Resources	Data / References
H-14	Tank Farm and Pipeline (TA01)	PHS/IHS	The tank farm consists of nine steel AST's with a total capacity of 180,000 gallons . Tanks sit on a concrete foundation surrounded by a 4-foot earth berm lined with a hyperlon liner. (15) indicates that the liner may have been damaged. An underground steel pipeline leads from this facility to a fill-port on the river. Fuel from this system was piped to the facilities within the hospital compound.	It is not known when the tank farm was initially constructed. However, there are reports of a fuel leak that occurred in the 1980' s when the tanks were being filled. Much of the diesel was released from the berm and not recovered. Since 1992, most fuel to the island is transported to Tanana via air, and trucks to the various onsite AST's and USTs; the steel tanks within the tank farm are used to store excess fuel, and are largely empty. With the exception of the fuel fill pipeline to the river, the fuel distribution pipeline was removed in fall, 1994. (14) Surface and subsurface samples>ADEC cleanup standards for DRO to depths of 15 ft bgs.	Known: Lead, BTEX, GRO, DRO, TRPH	Debris	ground water surface water, soils vegetation	12, 14, 15
H-15	North Contaminated Soil Stockpile (Stockpile No.1)	PHS/IHS	The North Contaminated Stockpile is located in a chain-link fenced enclosure between Third Avenue and Airport Road. Mapping in (4) indicates that the area currently occupied by Stockpile No. 1 was formerly used for drum storage. It is not known whether this site has been characterized for impacts from this use. During 1994-1995, the IHS contracted with the USACE to decommission several UST's and AST's within the hospital complex. During this action, about 900 CY of fuel contaminated soils were removed; 470 CY of the more heavily contaminated materials placed in Stockpile No. 1		Known: BTEX, GRO, DRO	pre-existing drums, or debris	ground water surface water, soils, vegetation	12, 15, 17, 30
H-16	West Contaminated Soil Stockpile (Stockpile No. 2)	PHS/IHS	The West Contaminated Stockpile is located in an open lot due west of the Tank Farm, between Second and Third Avenue. Mapping in (4) indicates that the area currently occupied by Stockpile No. 2 was formerly used for compressed gas storage. It is not known whether this site has been characterized for impacts from this use. During 1994-1995, the IHS contracted with the USACE to decommission several UST's and AST's within the hospital complex. During this action, about 332 CY of the less heavily contaminated materials were placed in Stockpile No. 2		Known: BTEX, GRO, DRO	Physical access, debris, pre-existing gas cylinders	ground water surface water, soils vegetation	12, 15, 30
H-17	Unfenced Soil Stockpile	PHS/IHS	Another smaller unfenced soil stockpile was identified during field efforts of August 2002. This pile is located in an open lot due east of Stockpile No. 1. Data concerning this stockpile were not available, but it may be addressed in closure documents concerning the tank removals. As documentation indicates that 900 CY were removed, and SPACE documents for Stockpile 1 & 2 indicate a total of 730 CY; the remaining 170 CY may have been placed in this pile. The site also includes an AST, an old vehicle, and substantial debris.		Potential BTEX? DRO? GRO?	physical access, drums, AST, debris	ground water surface water, soils vegetation	REI Field
H-18	Former Solid Waste Dump	PHS/IHS	The former solid waste dump is located at the northwestern portion of the IHS site, north of Third Avenue; it is largely vegetated with grasses and alder, and there is little surface debris to indicate former use. The center of this area is mounded and lightly vegetated with grasses and some alder. Some roofing shingles were identified at this location. The history of this dump is not well-documented; however, numerous local reports indicate its use by the hospital to dispose of solid waste. (Note, the eastern edges of this dump are also noted on FAA documents.)		Potential: VOC? SVOC? ACM? POL? BTEX? Metals?	drums, debris	ground water surface water, soils vegetation	14, 17

Compilation of Environmental Information for Sites of Concern In and Around Tanana, Alaska

Site No.	Name	Involved Agency or Other Party(ies)	Site Description	General Site History	Known or Potential Contaminants of Concern	Site Hazards	Impacted Media / Resources	Data / References
H-19	Former Hospital Hazmat Dump	PHS/IHS	The hazardous materials dump is located at the northeastern portion of the IHS site, north of Third Avenue; it is largely vegetated with grasses and alder, and there is little surface debris to indicate former use. The history of this dump is not well-documented; however, numerous local reports indicate its use by the hospital to dispose of hazardous materials including drums of hazardous chemicals, and potential sharps and other medical waste. (17) Two soil samples were obtained from the southern edge of this site in 2001 (one at surface and one at 5 feet bgs); results indicated pesticides, SVOC's, DRO, RRO and metals including arsenic, barium, aluminum, iron, manganesium, mercury (0.078 mg/kg) and antimony; VOC was not analyzed. PCB's and organochloride pesticides were identified in sample results but not discussed.		Known: RRO, DRO, PCB's, SVOC, pesticides, metals(arsenic, antimony, mercury (tr)); Potential VOC? other hazardous materials?	tank, surface metal debris	ground water surface water, soils vegetation	17
H-20	Ground Water	Too'hga, Inc, IHS, ADEC, USEPA	There are 5 drinking wells located in the hospital complex; 3 are inactive, 1 is permanently abandoned, and one serves as the current water supply. A total of 14 monitor wells have been installed to support groundwater characterization efforts. (14) Free product in MW 6, 13, and 14; MW-1,3,6,9, 13,14 exceeded cleanup guidance for GRO, DRO, BTEX, VOC's and PAH.(20) indicated low levels of same contaminants in all monitor wells except 2; (14) estimated 5 foot thick zone of contamination, with about 183,500 gallons. (14) Wells A&C lead > guidance; however, based on unfiltered samples (12) Well C - GRO, Toluene, lead; *PHS supply well* ; (14) Well D - no petroleum 1992 (Hazcon); 1997 - Well D exceeds guidance for manganese; also detected DRO and trichlorofluoromethane and metals, but at low concentrations. (17) (2001)Antimony detected above EPA MCL. (4) indicates Benzene above MCLs		DRO, BTEX, GRO, PAH, lead, VOC's (MW6, 13, 14), PAH's (MW3,13,14),toluene (well C),Trichloro-fluoromethane, antimony, Benzene	NA - abandoned wells	ground water surface water, soils vegetation	1, 2, 4, 14, 15, 17, 18, 20, 27
Rampart Dam								
R-1	Texas Creek Camp (FUDS No. F10AK0991; TCC Site No. TAL-FY99-001)	USACE	The Texas Creek Camp site is located on the south bank of the Yukon River about 35 miles upstream of Tanana, at the mouth of Texas Creek	This is a traditional fish camp site; and was used for the Rampart Dam geophysical investigation performed from 1961 to 1963; numerous field support equipment, and facilities were abandoned in place.	Potential ACM? DRO? RRO? BTEX?	4-1000 gal tanks, 24 drums, bldg debris	soils, ground water, surface water	20, 23
R-2	North Camp (FUDS No. F10AK0991; TCC Site No. TAL-FY99-003)	USACE	The North Camp site is located on the north bank of the Yukon River about 35 miles upstream of Tanana.	This is a traditional fish camp site; and was used for the Rampart Dam geophysical investigation performed from 1961 to 1963; numerous field support equipment, and facilities were abandoned in place.	Potential ACM? DRO? RRO? BTEX?	potential for drums, debris	soils, ground water, surface water	20, 23
R-3	Jordan Creek Camp (FUDS No. F10AK0991; TCC Site No. TAL-FY99-002)	USACE	The Jordan Creek Camp site is located at the mouth of Jordan Creek at the confluence with the Yukon River about 30 miles upstream of Tanana.	This is a traditional fish camp site; and was used for the Rampart Dam geophysical investigation performed from 1961 to 1963; numerous field support equipment, and facilities were abandoned in place.	Potential ACM? DRO? RRO? BTEX?	potential for drums, debris	soils, ground water, surface water	20, 23
R-4	Old Heliport (FUDS No. F10AK0991; TCC Site No. TAL-FY99-001)	USACE	The Old Heliport site is located on the south bank of the Yukon River about 30 miles upstream of Tanana.	This is a traditional fish camp site; and was used for the Rampart Dam geophysical investigation performed from 1961 to 1963; a gravel helicopter pad, and fueling station was located here.	Potential ACM? DRO? RRO? BTEX?	potential for drums, debris	soils, ground water, surface water	20, 23
U.S. Airforce Sites (Includes Bear Creek Radio Relay Site)								

Compilation of Environmental Information for Sites of Concern In and Around Tanana, Alaska

Site No.	Name	Involved Agency or Other Party(ies)	Site Description	General Site History	Known or Potential Contaminants of Concern	Site Hazards	Impacted Media / Resources	Data / References
AF-1	Bear Creek Containment (FUDS Property ID No. F10AK0059; TCC Site No. TAL-FY99-007	USAF 611th CES	The Bear Creek Radio Relay Station (RRS) is located about 6 to 7 miles north east of the Village of Tanana on the White Alice Road. The 116 acre facility is presently undergoing remediation by the USAF under the Clean-Sweep Program. While some vegetation has developed on the cap, portions of the site remain without vegetation. Several piles of very poorly graded silty soil have been brought on-site; no vegetation is present on the new soil.	The Bear Creek Radio Relay Station (RRS) was constructed in 1956-1957 as a part of the original White Alice Communication Sites (WACS) network. This system was phased out in the 1970's. In 1997(check date), the USAF began remediation under the Clean-Sweep Program. All structures, equipment and soils have reportedly been removed, and placed in a central containment; there is differential settlement noted, and portions of the containment have eroded exposing metal debris; there is no monitoring of ground or surface water from this facility. There is no monitoring of ground or surface water from this facility.	Known: PCB's, DRO, GRO, RRO, BTEX, ACM, Metals	eroding cover, metal debris; no monitoring wells	soils, ground water, surface water, air (from wind-blown dust from unvegetated portions of site & uncovered soil stockpiles)	20, 21,23, 28
AF-2	Bear Creek RRS - Fuel storage area (Part of FUDS Property ID No. F10AK0059; TCC Site No. TAL-FY99-007)	USAF 611th CES	The Former fuel storage area is located north of the site access road into the RRS site, along the northeast edge of the site; this area has not revegetated and corner stakes remain. The area was formerly used for fuel storage and contained two large tanks that were removed with the Clean Sweep operation.		Potential DRO? RRO? BTEX? POL?	no vegetation; no monitoring wells	soils, ground water, surface water	RI Field
AF-3	Bear Creek borrow pit (Part of FUDS Property ID No. F10AK0059)	USAF 611th CES	The borrow pit is located about 1,800 feet south and west of the main portion of the RRS site. It is a relatively small area. The pit area has not revegetated; there are buried drums and other debris around the perimeter of the site.	The borrow pit was used to support 1985 site clean-up activities; however; USAF documents indicate that backfill back into the borrow area may have been conducted using PCB-contaminated soils; the site may have also been used as a staging area for drums from past investigations; misc. were also dumped.	Potential DRO? POL? PCBs? DDT?	semi-buried metal debris, drums	groundwater, surface water, soils; Note: alders in vicinity of drums had blistered leaves.	RI Field
AF-4	Quarry (Part of FUDS Property ID No. F10AK0059)	USAF 611th CES	The Quarry is located east of the Village of Tanana on the north bank of the Yukon River	The Quarry was used by the USAF to provide earth and rock materials for fills, roads and other earthworks necessary for the construction & maintenance of the Bear Creek RRS	Potential DRO? BTEX? DDT?	metal debris, drums	ground water, surface water, soils	26, 28
AF-5	POL site (Part of FUDS Property ID No. F10AK0059; TCC Site No. TAL-FY99-007)	USAF 611th CES	The Petroleum, Oils and Lubricant (POL) Site is located at the eastern edge of the Village of Tanana at the corner of First Avenue and the White Alice Road. This site was used by the USAF to unload fuels from barges and store them for transport to the Bear Creek RRS.	It is not known when this facility was originally constructed. The POL site originally contained a 16,500 gal gasoline AST, and a 3,000 BBL Fuel Oil AST within bermed enclosure. The tanks were removed, and site was remediated in 1996. There are monitor wells within the contaminated area; no data thus far provided to assess effectiveness of clean-up. Limited vegetation observed.	Potential DRO? RRO? BTEX? POL?	potential for drums, debris, portions of fuel line may still be in riverbank	ground water, surface water, soils, vegetation; human health exposure (near residential area)	20, 21, 23, 28
AF-6	Barrel Storage Area (Part of FUDS Property ID No. F10AK0059)	USAF 611th CES	The Barrel Storage area was located on the north side of the access road to the Bear Creek Site, northeast of the Equipment Building.	The site may have been used for flammable liquid storage, or barrel dumps. Vegetation is currently limited in this area	Potential: DRO? RRO? BTEX? Pesticides? Solvents? VOC? SVOC?	potential for drums, debris, portions of fuel line may still be in riverbank	ground water, surface water, soils, vegetation limited	28
AF-7	Trash Dump	USAF 611th CES	Within the Bear Creek Site, a small Trash Dump was located on the east side of the access road, south and east of the Equipment Building and about 50 feet east of the shop.	The site was observed during 1985 clean-up activities to have contained waste metal, discarded 55-gallon drums, cans and metal debris. This site has been covered with vegetation.	Potential: DRO? RRO? BTEX? Metals? Pesticides? Solvents? VOC? SVOC?	potential for drums, debris, portions of fuel line may still be in riverbank	ground water, surface water, soils, vegetation limited	28

Compilation of Environmental Information for Sites of Concern In and Around Tanana, Alaska

Site No.	Name	Involved Agency or Other Party(ies)	Site Description	General Site History	Known or Potential Contaminants of Concern	Site Hazards	Impacted Media / Resources	Data / References
AF-8	Thompson Yard (AKA Carlson Yard) (Part of FUDS Property ID No. F10AK0059; TCC Site No. TAL-FY99-006)	USAF 611th CES	This residence is located about 2.5 miles north and east of Tanana on the east side of White Alice Road. This facility is listed on the Bear Creek, TCC, and DoD data bases incorrectly as "Carlson Yard".	This abandoned residence was the home of the deceased Chief of Maintenance for the White Alice site; drums and containers with military markings are present throughout the yard. There have been 100-150 drums, cases of 5-gal & 1 gal petroleum and pesticides, and at least 2 bunkers that formerly held dynamite identified at this property. It is not known if the ordnance has been removed; there are also misc vehicles & debris.	Potential: ACM? DRO? RRO? BTEX? Pesticides? SVOC?	Drums, petroleum and pesticides containers, ordnance; misc vehicles & debris	Potential impacts to soils, ground water, surface water	20, 21, 23
AF-9	Charley Allotment (Part of FUDS Property ID No. F10AK0059; TCC Site No. TAL-FY99-005)	USAF 611th CES	This residence is located about 2.5 miles north and east of Tanana on the west side of White Alice Road	There are about 20 drums in this yard bearing military markings.	Potential DRO? GRO? RRO? BTEX?	20 drums, misc debris	Potential impacts to soils, ground water, surface water	20, 21, 23
Other Sites								
O-1	Old Power Plant, Lot 10, Block 8	Tanana Power Company, Tozitna Limited	The Old Power Plant is located east of Hill Street between First and Second Avenues. This site was listed in a compilation of sites identified by ADEC that should be included in an area-wide assessment related to Benzene contamination of groundwater.	The history of this site is not well documented. The original Power Plant was located on this site. The Power Plant was relocated to it's present location north of Third Avenue within the last five years. The old power plant structure has been removed. The site is largely unvegetated, there is some debris including drums and concrete foundations. There is some soil staining, and (13) indicated PCB's in three separate samples.	Known: DRO, GRO, BTEX, PCB's	drums, debris	Soils, ground water, vegetation	4, 13.25
O-2	Power Generation Facility North of Third Ave	Tanana Power Company, Tozitna Limited	The new power plant is located north of Third Avenue, and east of Garden Avenue. This site was listed in a compilation of sites identified by ADEC that should be included in an area-wide assessment related to Benzene contamination of groundwater.		Potential: DRO? GRO? BTEX? PCB's?	drums, debris, electrical	Soils, ground water, vegetation	4, 25
O-3	Oil Transfer Line	Tanana Power Company, Tozitna Limited	It is not certain where this site is located, nor is the site history documented; it is thought to extend from the riverbank to the Old Power Plant site. This site was listed in a compilation of sites identified by ADEC that should be included in a area-wide assessment related to Benzene contamination of groundwater.		Potential: DRO? GRO? BTEX?		Soils, ground water, vegetation	4
O-5	Burns Property	Private Property owner	This site is located north of First Avenue, and three lots east of Garden Street. The site appears to contain a wooden structure with a circa 1900's-type store front that has collapsed into a pit. Inside the pit along with the wood debris are numerous rusted drums (many with distended ends), and other metal debris.		Potential: DRO? RRO? BTEX? POL?	at least 20 drums, Misc debris	soils, ground water, surface water	25, RI Field
O-6	Nicolia Property (TCC Site No. TAL FY-00-009	USAF 611th	This native allotment is located along the north bank of the Yukon River near Sixteen mile Island	Drums bearing labeling Eilson AFB 1958 appear to have been transported to this site via river floodwaters	Known: glycol	drums, debris	soils, ground water, surface water	23
O-7	City Laundromat	Too'gha, Inc	The new laundramat is located north of Third Avenue, and east of Garden Avenue. This location is being used by the community as a source of clean drinking water. However (13) indicated potential PCB contamination in front of this building and this site was also listed in a compilation of sites identified by ADEC that should be included in an area-wide assessment related to Benzene contamination of groundwater.		Known: PCB; Potential DRO? BTEX?	minor debris	soils, ground water	4,19

Compilation of Environmental Information for Sites of Concern In and Around Tanana, Alaska

Site No.	Name	Involved Agency or Other Party(ies)	Site Description	General Site History	Known or Potential Contaminants of Concern	Site Hazards	Impacted Media / Resources	Data / References
O-8	Village Community Center		This site is located north of First Avenue, and east of Koyukuk Street. It is a fairly large wooden one-to two story structure with a large parking lot due west. (13) Soil sampling in the vicinity of this structure indicated PCB's.		Known: PCB's		soils, ground water	13
O-9	School		The School is a fairly new facility that has been constructed east of School Street (and the IHS compound), between First and Second Avenues. Sampling by (13) indicated PCB's in the soils in front of the structure; this was confirmed by sampling of the soils by the culvert below the school in (17) that also indicated low levels of mercury. (17) also indicated the presence of DRO & GRO in these soils.		Known: PCB's, DRO, RRO, mercury (See O-23)	minor debris	soils, ground water, human health exposure	13, 17
O-10	Front Street in front of Terry's Store	Private Property owner	This site is located north of First Avenue (also locally referred to as "Front Street), and a couple of lots west of Mill Street. It is a one story structure with a parking area in front of the store. Sampling by (13) indicated PCB's in the soils in front of the structure. This site was also listed in a compilation of sites identified by ADEC that should be included in an area-wide assessment related to Benzene contamination of groundwater.		Known: PCB's; Potential: DRO? BTEX?	minor drums and debris	Soils, ground water, surface water, vegetation	13
O-11	Wastewater Treatment Lagoon	Too'gha	The Wastewater treatment lagoon is located north of Third Avenue, and east of Garden Avenue. This site was identified by staff in the Draft area plan as having potential contamination. The site was also listed in a compilation of sites identified by ADEC that should be included in an area-wide assessment related to Benzene contamination of groundwater.		Potential: DRO? GRO? BTEX? POL?	debris, drums, Potential electrical equipment	soils, ground water, surface water	4,25
O-12	Coghill Yard	Unknown	The Coghill Yard is located east of East Street. Historically this yard contained large tanks for fuel transfer to/from barges, and is thought to be one of two sites used by the AK Railroad. Very little documentation is available concerning this site. Field reconnaissance indicated a few drums and debris, some degree of soil staining, and some strange, light weight (almost volcanic-like) structural blocks. Characterization may be warranted based upon prior land use.		Potential: DRO? GRO? BTEX?	drums, debris	soils, ground water, surface water, vegetation	4, 25, 26
O-13	Alaska Railroad Tank site	Disputed; AK RR, Yutana Bargelines, AK	The Alaska Railroad Tank site is located in Block 11, Lot 7, just north of First Avenue, and east of Koukuk Street. Until the 1960's, this site held a pump house and two large wood stave tanks with capacity of 2,500 barrels each. The tanks were used in support of barge operations. Current ownership is debated; from 1955-1975, Alaska Railroad contractacted with Yutana Bargelines; however, there are also several letters to the file indicating a fire, and property transfer back to the state that occurred in the early 1960's. Presently the site holds some debris, and light vegetation. Characterization may be warranted based upon prior land use.		Potential DRO? GRO? BTEX?	debris	soils, groundwater, surface water	5,6,11, 25
O-14	City Shop North of Third Avenue	City of Tanana	The City Shop is located north of Third Avenue, and east of Garden Avenue, next to the wastewater lagoon. This site was identified by staff in the Draft area plan as having potential contamination. The site was also listed in a compilation of sites identified by ADEC that should be included in an area-wide assessment related to Benzene contamination of groundwater.		Potential:DRO? GRO? POL? BTEX?	debris, drums, Potential electrical equipment	soils, ground water, surface water	4, 25
O-15	BLM - Lot 3, USS 4104	BLM/IHS	This site location is unknown as the property reference provided does not agree with area plat information. The site was also listed in a compilation of sites identified by ADEC that should be included in an area-wide assessment related to Benzene contamination of groundwater.		Potential DRO? GRO? BTEX?	not known	soils, ground water, surface water	4

Compilation of Environmental Information for Sites of Concern In and Around Tanana, Alaska

Site No.	Name	Involved Agency or Other Party(ies)	Site Description	General Site History	Known or Potential Contaminants of Concern	Site Hazards	Impacted Media / Resources	Data / References
O-16	City Fire Station	City of Tanana	The City Fire Station is located north of Second Avenue, and east of Garden Avenue. Site history is not well-documented. The site was listed in a compilation of sites identified by ADEC that should be included in an area-wide assessment related to Benzene contamination of groundwater.		Potential DRO? GRO? BTEX?	not known	Soils, ground water, vegetation	4
O-17	Water Well	Too'gha	There is a red well-house and well located south of First Avenue, west of Mill Street. The well is signed as if it were active. There is a containment for an AST due west of this well-house, that has no tank, but may have contaminated soils. This well is across the street from the Tozitna Tank Farm and fuel pump facility. If this well is currently used as a water source, characterization may be warranted based upon proximity of fuel sources.		Potential DRO? GRO? BTEX? LBP?		ground water, surface water	RI Field
O-18	PCB's on roadways	USAF 611th CES	There is conflicting documentation concerning the use of and presence of PCB's on the local roadways. Several local sources indicate the historic use of waste oil, possibly containing PCB's on the roadways for dust abatement. Apparently, during the 1950's and 1960s, mixed waste oil was obtained from the USAF, was stockpiled in a tank behind the health center, and was spread on the roadways for dust abatement. This practice was ceased in 1980. In 1984, the USAF provided the Mayor with verbal information indicating the presence of PCB's in the waste oil tank and equipment, and near the laundramat; however, no data was provided. In 1994, a field assessment was made of several locations within the village using a 1 ppm screening threshold. Based upon the results of this screening effort, many later studies have indicated that there are no PCB's. The field analyses indicated PCB's in the roadways in front of Terry's Store, at the Old Power Plant, near the village community center, and in front of the school; however this study did not include testing behind the health center where the material was stored. Laboratory results co		PCB's		human health impacts, potential for soils, groundwater impacts; conflicting information provided on nature and extent of contamination	12, 13, 16, 17, 20, 24, 25
O-19	Alaska-Siberian Airbase (Lend-lease facility)	U.S. Army/ FUDS	This site is located along the north bank of the river east of the Village; Use was discontinued in the 1940's, but the runway still appears in aerial photographs of the area.	The airbase was used as part of a series of refueling points used to ferry aircraft to Russia, within the Army's Aircraft Lend-Lease program; the unpaved airstrip was used during World War II.	Potential: DRO? RRO? BTEX? POL?, Pesticides? de-icing fluids?	potential for drums, debris	potential for impacts to soils, groundwater	23, 25
O-20	Sunshine Subdivision - Lake Oscar	Multiple private property owners	This lake is located in the center of a residential subdivision located due east of Tanana on the White Alice Road; It was originally part of a localized wet area	The lake was filled in after subdivision constructed due to mosquitoes and other concerns;	Potential: household hazardous waste within lake sediments	potential for drums, debris	potential for impacts to soils, ground water, surface water	25
O-21	Tozitna Fuel Tank Farm	Tozitna	There is an underground fuel tank farm located north of First Avenue, west of Mill Street. There is venting, but no apparent ground water monitoring.		Potential DRO? GRO? BTEX?		potential for impacts to soils, groundwater, surface water	RI field
O-22	Gas Canister storage area	Not Known	There is a fenced compressed gas canister storage area located north of First Avenue, on the west side of Mill Street. All canisters appear to be appropriately secured and tagged and are on wood pallets. There are several drums located along the outside of the north fence at this location. Characterization may be warranted based upon landuse.		Potential: DRO? GRO? other materials?	drums	potential for impacts to soils, groundwater, surface water	RI Field

Compilation of Environmental Information for Sites of Concern In and Around Tanana, Alaska

Site No.	Name	Involved Agency or Other Party(ies)	Site Description	General Site History	Known or Potential Contaminants of Concern	Site Hazards	Impacted Media / Resources	Data / References
O-23	Fuel Port South of School	Not Known	There is a fuel port located on the south side of First Avenue, near the center of the school. This port is signed, and there is a heavy petroleum smell at this location. Below this port, there is a basin, apparently placed to catch spillage; there is a mix of water and product in this basin. Recent sampling conducted for EPA at this location in (17) indicated: mercury (0.14 mg/kg), 2-Methylnaphthalene, pyrene, benzo(a) anthracene, and bis(2-Ethylhexl)Phthalate, DRO, RRO, potential PCB's & Organochloride pesticides*		Known: mercury, DRO, RRO, PCB's & Organo- chloride pesticides*	NA	human health impacts, potential for soils, groundwater surface water;	17, RI field
	Yukon River surface water and sediments		During 1997 effort, 7 surface water samples from the River were analyzed for GRO, DRO, and VOCs. (14) Samples indicated metals (antimony) at concentrations up to 57 ug/L; however these results are thought to be attributed to blank contamination. Note that most of the results were qualified as having been estimated with unknown bias by the lab. During 1997 effort, 7 riverbank samples were analyzed for GRO, RRO, DRO, VOC's and BNA. (14) Samples indicated metals (arsenic and barium) above cleanup standards, and traces of GRO, DRO, RRO, acetone, and diethylphlalate below cleanup levels. Note that most of the results were qualified as having been estimated with unknown bias by the lab.		metals: arsenic, barium, antimony	NA	surface water and aquatic life	14

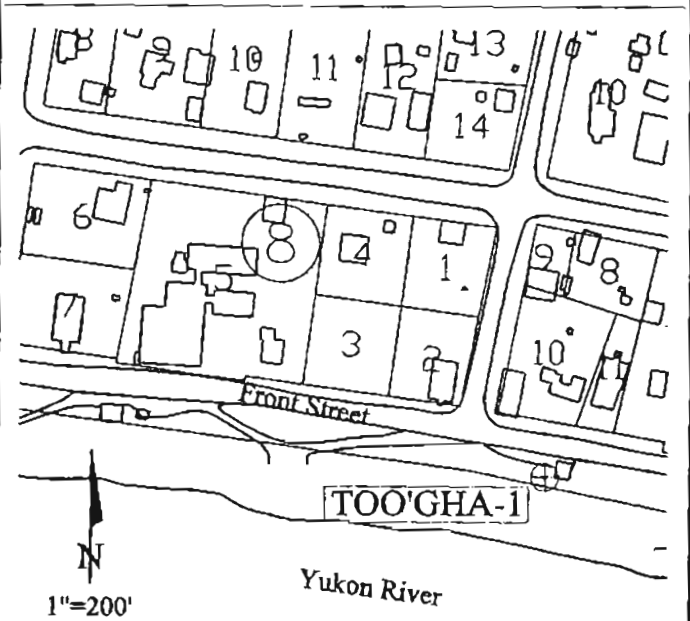
APPENDIX D

CITY DRINKING WATER WELL DRILL LOG

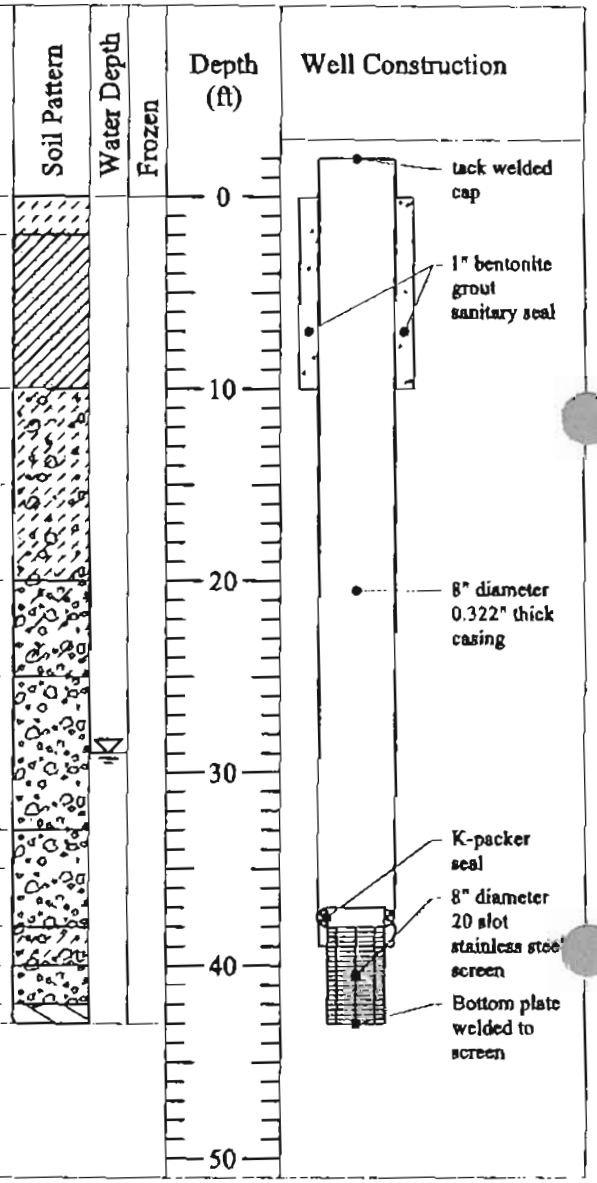
WELL LOG TOO'GHA-1

Project:	Too'gha Water Source		
Location:	Tanana, Alaska		
Site:	Adjacent to existing city well		
Date:	27/28 June 1998		
Client:	Too'gha Inc.		
Engineer:	Eric Gropp PE , Montgomery Watson		
Driller:	Alpine Drilling		
Rig Type:	Air Rotary		
Boring Size:	8"	Elevation:	96 ft

Site Map

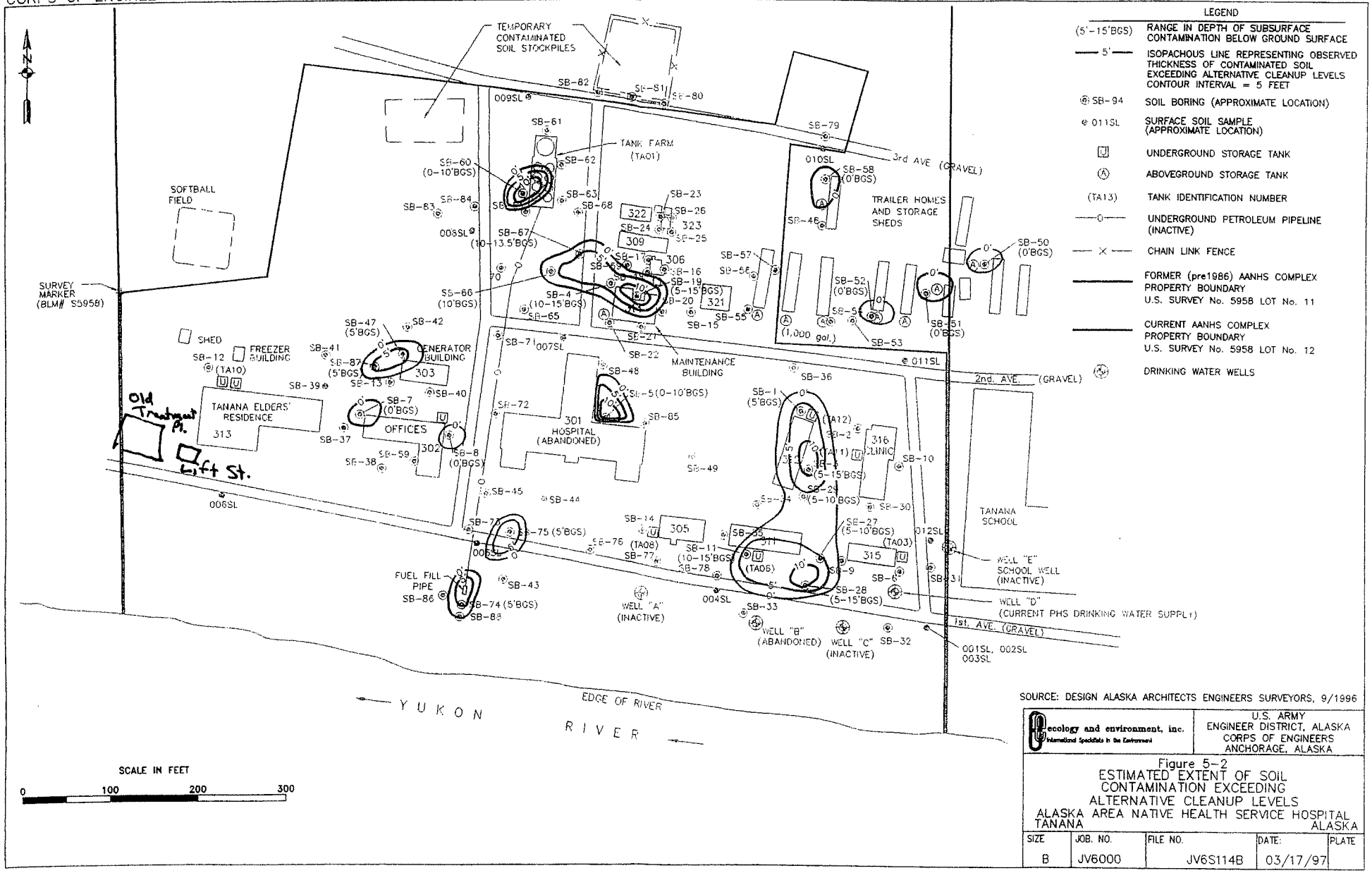


% Gravel	% Sand	% Fines	Max. Size (in)	Soil Class	Soil Description
					Silty sand
0	50	50	-	ML	Brown Sandy Silt, dry
30	40	30	1/4"	SM	Silty Sand with Gravel, dry
30	50	20	1/2	SM	Silty Sand with Gravel, dry
50	40	10	1/4	GW-GM	Well Graded Gravel with silt and sand, dry
80	20	0	1-1/2	GW	Well Graded Gravel with sand, moist
95	5	0	1	GW	Well Graded Gravel, moist
95	5	0	3/4	GW	Well Graded Gravel, water bearing
90	5	5	1 3/4	GW	Well Graded Gravel with trace silt and sand
35	65	0	3/4	SW	Well Graded Sand with gravel, significant water production
					Bedrock
					Bottom of hole



APPENDIX E

IHS ENVIRONMENTAL ASSESSMENT REPORT EXCERPT



SOURCE: DESIGN ALASKA ARCHITECTS ENGINEERS SURVEYORS, 9/1996

ecology and environment, inc. International Specialists in the Environment

U.S. ARMY ENGINEER DISTRICT, ALASKA CORPS OF ENGINEERS ANCHORAGE, ALASKA

Figure 5-2
ESTIMATED EXTENT OF SOIL CONTAMINATION EXCEEDING ALTERNATIVE CLEANUP LEVELS
ALASKA AREA NATIVE HEALTH SERVICE HOSPITAL
TANANA ALASKA

SIZE	JOB. NO.	FILE NO.	DATE:	PLATE
B	JV6000	JV6S114B	03/17/97	

PROPOSED EXTENT OF SOIL TO BE REMEDIATED (3 FEET DEEP) - PHASE 3

AREAL EXTENT OF CONTAMINATED SOIL EXCEEDING ALTERNATIVE CLEANUP LEVELS = 47,000 SQ. FT.

TABLE ES-1
SUMMARY OF ENVIRONMENTAL ASSESSMENT FINDINGS, TANANA HEALTH CENTER INSTALLATION, TANANA, ALASKA

Continued

Finding Number	Finding Class	Condition	Regulatory Basis	Recommendation	Total Cost (Capital & Recurring)
T-003*	IV	Building 301 (Former Hospital) is known to contain friable asbestos. The building is not adequately secured to prevent unauthorized access, and adequate warning signs are not posted. The building is still in use for storage of camping supplies.	EO 12088, Section 1-1	Remove stored materials and do not use the building. The Building should be secured with locks and post appropriate warning signs until the building can be demolished and removed from the site.	$366,011
T-004	IV	Building 301 was constructed in the 1940's. It is possible that the building contains lead based paint, which was widely in use prior to 1978.	GMP	Conduct a lead based paint survey.	$10,833
T-005	IV	Building 316 was constructed in 1968 and renovated in 1983. It is possible that the building contains lead based paint, which was widely in use prior to 1978.	GMP	Conduct a lead based paint survey.	$2,519
T-006	IV	Building 315 was constructed in 1974. It is possible that the building contains lead based paint, which was widely in use prior to 1978.	GMP	Conduct a lead based paint survey.	$1,863
T-007	IV	Building 313 consists of an original building constructed in 1960 and an addition constructed in 1984. It is possible that the original building contains lead based paint, which was widely in use prior to 1978.	GMP	Conduct a lead based paint survey.	$2,191
T-008	IV	Building 312 was constructed in 1958. It is possible that the building contains lead based paint, which was widely in use prior to 1978.	GMP	Conduct a lead based paint survey.	$1,863
T-009	IV	Building 311 was constructed in 1958. It is possible that the building contains lead based paint, which was widely in use prior to 1978.	GMP	Conduct a lead based paint survey.	$1,863
T-010	IV	Building 305 was constructed in 1943. It is possible that the building contains lead based paint, which was widely in use prior to 1978.	GMP	Conduct a lead based paint survey.	$1,863
T-011	IV	Building 303 was constructed in 1966. It is possible that the building contains lead based paint, which was widely in use prior to 1978.	GMP	Conduct a lead based paint survey.	$1,863
T-012	IV	Building 302 was constructed in 1951. It is possible that the building contains lead based paint, which was widely in use prior to 1978.	GMP	Conduct a lead based paint survey.	$1,725
WASTEWATER					
There are no findings in this protocol area.					

Key: NA = Not Applicable
* = Corrective action for this finding has been undertaken by the facility, or the facility has commented on this finding. See the "Discussion/Comments" section on the corresponding finding sheet in Section 5.

TABLE ES-1
SUMMARY OF ENVIRONMENTAL ASSESSMENT FINDINGS, TANANA HEALTH CENTER INSTALLATION, TANANA, ALASKA

Continued

Finding Number	Finding Class	Condition	Regulatory Basis	Recommendation	Total Cost (Capital & Recurring)
P-006	I	The tank farm north of Building 301 contains nine ASTs with a total oil storage capacity of 182,000 gallons. The tanks are not currently in use, but they have not been decommissioned and may be used in the future. The facility does not have a Spill Prevention Control and Countermeasures (SPCC) Plan, which is required of facilities with aboveground oil storage capacity greater than 1,320 gallons.	40 CFR 112.3	Prepare and implement an SPCC Plan.	$12,397
POLLUTION PREVENTION					
There are no findings in this protocol area.					
SOLID WASTE MANAGEMENT					
SW-001*	IV	Solid waste is transported from the facility to a local disposal site. The disposal site is not a permitted landfill.	E.O. 12088, Section 1-1	Maintain a log of the amount and type of refuse transported to the disposal site for future liability reasons.	NA
STORAGE TANK MANAGEMENT					
ST-001*	IV	Two USTs are located on the north side of Building 313. The fill port for the tank located to the east is missing its cap. The fill port for the other tank is not locked to prevent unauthorized filling.	40 CFR 280.30 (a)	Locate the missing fill port cap. Secure both fill port caps with locks.	NA
ST-002*	IV	The UST located adjacent to Building 312 does not have a cap on its fill port. The tank should have a cap that can be locked to prevent unauthorized filling.	40 CFR 280.30 (a)	Locate the missing fill port cap. Secure the fill port cap with a lock.	NA
ST-003*	IV	The fill port for the UST located adjacent to Building 302 is not locked to prevent unauthorized filling.	40 CFR 280.30 (a).	Secure the fill port cap with a lock.	NA
ST-004*	IV	The fill port for the UST located adjacent to Building 315 is not locked to prevent unauthorized filling. The overfill containment structure contained approximately one quart of fuel that was not drained back into the tank after filling.	40 CFR 280.30 (a).	Secure the fill port cap with a lock. Fuel in the overfill port was drained back into the tank during the site visit.	NA
ST-005	I	The containment dike for the tank farm north of Building 301 consists of an earthen berm with a hypalon lining. The lining was punctured during previous sampling events and is no longer considered an in tact means of secondary containment. In addition, the tanks have not been tested for integrity and do not meet American Petroleum Institute standards for seismic stability.	40 CFR 112.7(e)(2)(ii)	Repair the hypalon lining for the tank farm. Test tanks for integrity. Install seismic anchoring cables.	$1,437,500
TOXIC SUBSTANCES					
T-001*	IV	A bank of transformers located on the north side of Building 303 is not labeled as to its PCB content.	40 CFR 761 and 761.45	Contact the local utility company to determine whether the transformers contain PCBs. Request that the transformers be labeled accordingly.	NA
T-002*	I	Suspected asbestos containing materials (ACMs) were found throughout the complex at locations that correspond to where ACMs were positively identified in an asbestos survey conducted in 1989 (e.g., boiler tank insulation and piping insulation in the basements of Buildings 301, 302, 305 and 311). In Building 302, the suspected ACM is in poor condition, and it is possible that asbestos fibers are being released into the air. It appears that the facility has not abated ACM previously identified as a health hazard because of its poor condition, and it does not have an asbestos operations and maintenance plan for managing ACM	EO 12088, Section 1-1	Restrict access to mechanical areas where ACM is located. Label all ACM. Hire certified personnel to remove friable ACM. Develop an asbestos operations and maintenance plan if it is decided to leave non-friable ACM in place.	$963,240

TABLE ES-1
SUMMARY OF ENVIRONMENTAL ASSESSMENT FINDINGS, TANANA HEALTH CENTER INSTALLATION, TANANA, ALASKA

Continued

Finding Number	Finding Class	Condition	Regulatory Basis	Recommendation	Total Cost (Capital & Recurring)
MEDICAL WASTE					
MW-001	IV	At the time of the site visit, red-bagged biohazardous waste was found mixed with non-infectious solid waste in a clear plastic bag on the north entrance ramp of Tanana Health Center. The biohazardous waste bag was reportedly added to the clear bag of paper waste so that the paper waste would aid in the burn-barrel incineration process that takes place on site. The entrance ramp where the mixed waste was found is not protected from vermin or public access, and the biohazardous waste was not being stored in leak proof containers.	GMP	Purchase leak proof containers for the temporary storage of biohazardous waste. Store biohazardous waste in a locked room in the health center (e.g., a housekeeping closet).	$288
MW-002	I	At the time of the site visit, it was reported that biohazardous waste was removed from the Tanana Health Center and transported to the local landfill to be burned in a burn barrel by an untrained staff member in the past. This practice is contrary to Tanana Health Center policy that dictates that biohazardous waste be burned in a burn barrel on site prior to transport to the landfill. State regulations require that the biohazardous waste must be disinfected or sterilized prior to disposal at the landfill (18 AAC 60.030).	EO 12088	Autoclave biohazardous waste or sterilize it by other means before burning it. Be sure only trained personnel familiar with Tanana Health Center policies and procedures handle biohazardous waste.	$12,650
PESTICIDE MANAGEMENT					
There are no findings in this protocol area.					
PETROLEUM, OILS, AND LUBRICANTS					
P-001	IV	Numerous leaks and spills of petroleum products were noted on the floor of Building 303. Some of the larger spills were noted below the Detroit Diesel generator. Some of these leaks and spills may have reached the floor drain located on the north side of the building.	40 CFR 112.7(c) and 112.7(d)	Cleanup current spills. Move spill containment equipment available on site into the building.	NA
P-002	IV	A petroleum-contaminated soil pile is located northwest of Former Hospital (Building 301). The soil was reportedly generated from the removal of several USTs throughout the complex. The pile is partly covered with tarpulin, but approximately 20 % of the area is exposed. The exposure to the weather and rainfall may allow migration of contaminants from the soil pile. Children have reportedly used the exposed portion of the soil pile for dirt bike riding.	40 CFR 112.7(c) (2)	The tarpulin was pulled back over the exposed part of the soil pile during the site visit. Fencing may be required if security surveillance does not keep trespassers away. The soil is scheduled and funded for remediation in the next fiscal year, so no further action is recommended. Note that additional soil sampling around the soil pile may be required after remediation to ensure that contaminants did not migrate off site.	NA
P-003	IV	At the installation, there are several 55-gallon drums containing stove oil and diesel fuel recovered from a former leaking underground storage tank. The facility reportedly plans to transport the oil off site for incineration in a certified waste oil burner. It is unknown whether the oil contains constituents in concentrations that may make it a hazardous waste.	40 CFR 279.10	Test the oil to determine its "used oil classification" as described in 40 CFR 279.10 and 279.11. Arsenic 5 ppm maximum, cadmium 2 ppm maximum, chromium 10 ppm maximum, lead 100 ppm maximum, Flash point 100 F minimum and total halogens 4,000 ppm maximum. Note if the oil is not used for energy recovery different standards apply.	$569
P-004*	I	East of Building 314, a 55-gallon drum reported to contain used oil is not labeled "USED OIL." No secondary containment is provided.	40 CFR 279.22(c)	Label the drum "USED OIL." Move the drum into a storage building.	NA
P-005	IV	Drums of used oil, stove oil, and antifreeze were found at several outdoor locations throughout the grounds. Many of the drums were not labeled as to their contents.	GMP	Designate a single drum storage area. Maintain a log of additions to used oil collection drums (include staff member name, date, quantity, and source of used oil) to provide documentation that used oil drums contain only used oil. Ensure that all drums are properly labeled.	NA

TABLE ES-1
SUMMARY OF ENVIRONMENTAL ASSESSMENT FINDINGS, TANANA HEALTH CENTER INSTALLATION, TANANA, ALASKA

Continued

Finding Number	Finding Class	Condition	Regulatory Basis	Recommendation	Total Cost (Capital & Recurring)
HM-002	Other	In Building 302, approximately 30 containers of paints, stains, adhesives, sealers, etc. ranging in size from 1 quart to 5 gallons are stored on the basement stairway or on the landing at the foot of the stairs.	29 CFR 1910.106(d)(5)(f)	Move the materials to an appropriate storage area.	NA
HM-003	Other	Four compressed gas cylinders containing carbon dioxide for the fire suppression system in Building 303 are not secured to prevent falling and potential release of pressurized gas.	29 CFR 1910.101	Install bolts and chain to secure cylinders	$196
HM-004	Other	Building 303 contains several drums of materials used in the maintenance of the electrical generators. Two of the drums are open (no bung caps) and one drum is not labeled as to its contents.	29 CFR 1910.176(c).	Determine the contents of the unlabeled drum by reviewing shipping records and/or interviewing knowledgeable staff. Label the drum as to its contents. Provide bung caps and ensure that they are in place when the drums are not in use.	NA
HM-005	Other	A 55-gallon drum of DowTherm is stored along the northwest side of Building 301. The drum is stored exposed to the elements and is rusting.	29 CFR 1910.176(c).	Provide the drum with secondary containment and move it inside a storage building.	NA
HAZARDOUS WASTE MANAGEMENT					
HW-001*	IV	The incinerator in Building 321 is reportedly not in use and is not connected to a fuel source. The incinerator contains approximately 1-2 cubic yards of ash. The ash appears to have been generated from burning trash in the incinerator without actually operating the incinerator. This ash should be tested prior to disposal in the landfill.	40 CFR 261.3, 261.4(b), 261.24, 262.11	Test ash for Toxic Characteristics Leaching Procedure (TCLP) metals. Dispose of the ash as solid waste or hazardous waste based on the results of the analysis.	$748
HW-002	IV	Approximately fifteen 1-gallon cans of paint and seven 1-quart cans of paint are stored on the floor of the carpenter shop in the basement of Building 301. The basement is subject to periodic flooding. Several of the paint cans are rusty, leaking and generally in poor condition. Many appear to have released their contents. The labels on the cans have deteriorated, and paints are no longer usable. Because of the solvent and metals content in paints, the paint cans must be disposed of as hazardous waste.	40 CFR 261.3, 261.4(b), 261.24, 262.11	Dispose of the paint cans as hazardous waste. Clean up released material.	$2,013
HW-003	IV	Several 55-gallon drums are stored on and adjacent to an elevated wooden storage pad east of Building 301. Two black drums reportedly contain glycol for heating systems and three white drums reportedly contain glycol used to flush the potable water systems of the buildings at the installation when the Public Health Service abandoned the site in 1982. Four blue drums are empty. The drums are not labeled as to their contents. They also are exposed to the elements, and are all at least partially deteriorated (rusty). The contents of the white drums are assumed to be unusable.	40 CFR 261.3, 261.4(b), 261.24, 262.11	Test the contents of the three white drums to determine whether they must be disposed of as hazardous waste. Label the drums as to their contents. Move the drums inside a storage building until funding is available to dispose of them properly.	$9,315
HW-004	IV	Three 55-gallon drums are stored on the north side of Building 321. Two black drums are labeled as antifreeze (NSN 6850-00-664-1409), and one white drum has no labels. The drums are rusty, and one black drum is bulging. The product or waste in the drums is assumed to be unusable.	40 CFR 261.3, 261.4(b), 261.24, 262.11	Determine the contents of the unlabeled drum by reviewing shipping records and/or interviewing knowledgeable staff, or by analytical testing . Label the drum as to its contents. Provide all drums with secondary containment and move them inside a storage building until funding is available to dispose of them properly. Use extreme caution when handling the bulging drum.	$3,421

TABLE ES-1
SUMMARY OF ENVIRONMENTAL ASSESSMENT FINDINGS, TANANA HEALTH CENTER INSTALLATION, TANANA, ALASKA

Finding Number	Finding Class	Condition	Regulatory Basis	Recommendation	Total Cost (Capital & Recurring)
ADMINISTRATIVE REQUIREMENTS AND POLICY					
There are no findings in this protocol area.					
AIR POLLUTION CONTROL					
There are no findings in this protocol area.					
CULTURAL AND HISTORIC RESOURCE MANAGEMENT					
This protocol was not addressed in this assessment.					
DRINKING WATER MANAGEMENT					
WQ-001	I	It is unknown if lead and copper testing has been completed as required. Records of water testing results were not available for review.	40 CFR 141.80(a)(1), 40 CFR 141.80(g), 40 CFR 141.86(a)(1), 40 CFR 141.86(c), and 40 CFR 141.86(d)	Conduct a record search to locate all previous records of water quality tests. Establish a schedule for periodic testing of lead and copper as required under the Safe Drinking Water Act. Establish a filing system for maintaining records on site.	$1,466
WQ-002	I	Records of water quality test results were not readily available at the site. Records of water quality test results should be maintained on site for a minimum of 3 years so that monitoring for biological, chemical, and radiological contaminants can be verified.	40 CFR 141.23(a)	Water quality tests were obtained from the Tanana Chiefs Conference in Fairbanks, Alaska, after the site visit. It appears that water quality tests are being conducted as required by the Safe Drinking Water Act (SDWA). Detailed results were not available for review, but the summary document did not indicate that any contaminants exceeded SDWA limits. The facility should obtain detailed results of water quality tests from the past three years and establish a filing system for maintaining records on site.	NA
WQ-003	I	A 500-gallon diesel fuel UST is located on the east side of Building 315. This UST is located approximately 30 feet north of the drinking water well used to supply the facility with drinking water. The State of Alaska requires that a 100 foot separation be maintained between USTs of 500 gallons or greater and the wellhead (18 AAC 80.030).	EO 12088, Section 1-1	Contact the Alaska Department of Environmental Conservation and request a written exemption, citing that (1) the tank is newly installed and conforms to new UST regulations for construction and leak detection, and (2) the tank is just at the size limit (500 gallons) for regulation.	NA
WQ-004	IV	In Building 315, the chlorination process currently involves periodically adding chlorine directly to the water supply as it leaves the pumphouse. Thus, there is little time for mixing, and slugs of heavily chlorinated water followed by unchlorinated water may be reaching the taps. Since the water system could be classified as a Class A or B system using only groundwater as a source for the drinking water, chlorination of the system would not be required unless directed by Alaska Department of Environmental Conservation. If required by ADEC the requirements concerning chlorine include: (1) the residual chlorine concentration in water entering a distribution system is not less than 0.2 mg/L for more than four hours, and (2) the residual chlorine concentration, measure as total chlorine, combined chlorine, or chlorine dioxide, is not undetectable in more than five percent of samples each month for more than two consecutive months..	40 CFR 141.72(a)	It is recommended that the facility conduct an evaluation of the current chlorination system to determine if modifications to the system are required to ensure that the chlorination system operates properly. Modifications may take the form of installing mixing tanks so that chlorine concentrations in the water distribution line can be maintained at a constant concentration.	$15,468
HAZARDOUS MATERIALS MANAGEMENT					
HM-001	Other	Twelve small and one large compressed gas cylinders containing oxygen are stored on a loading platform located on the north side of the Tanana Health Center (Building 316). The cylinders are lying on the platform, but they are not secured by a chain to prevent accidental movement of the cylinders off the dock.	29 CFR 1910.101	Store the cylinders upright and secure them with a chain to the loading platform.	$288

APPENDIX F

COMMUNITY WELL ANALYTICAL DATA

Divison of Environmental Health

Drinking Water Program

Public Source Water Executive Summary

Derived Executive Summary Information

Source Water Assessment Report Executive Summary Data
The public water system for Tanana Health Center is a Class C water system consisting of 1 source intake(s). The water system is located in Tanana and the intake for this PWSID is a groundwater well. The wellhead received a susceptibility of "medium" and the aquifer received received a susceptibility rating of "very high". Combining these scores produces a natural susceptibility of "high" for the source.
DISCLAIMER: Information provided on this page is automatically generated from a database of Source Water Assessment information. For additional details, please view the actual Executive Summary contained in the Source Water Assessment Report.

Raw Database Information

Information from "SourceTable"							
PWSID	Name	Location	Class	Source Type	Number of Sources		
360395.001	Tanana Health Center	Tanana	C	groundwater well	1		
Information from "VA Totals"							
Wellhead	Aquifer	Bacteria/Viruses	Nitrates/Nitrites	VOC	Inorganic	SOC	OOC
10	25	50	50	50	50	28	50
Information from "Ground Water Rule"							
Aquifer Type	Formation	Hydrogeologic Barrier	Barrier Desc.	Static Water Level	Well Depth	Grouted	Screened
assume confined	gravel	N/A	approx. 34' permafrost	25.5	155	yes	yes, depth unk.

Divison of Environmental Health

Drinking Water Program

Public Source Water Executive Summary

Derived Executive Summary Information

Source Water Assessment Report Executive Summary Data
The public water system for Tanana Safewater Facility is a Class A water system consisting of 2 source intake(s). The water system is located in Tanana and the intake for this PWSID is a surface water source. The overall protection area received a susceptibility rating of "high". In addition, this water system has received a vulnerability rating of "very high" for bacteria/viruses, "very high" for nitrates/nitrites, "very high" for volatile organic chemicals, "very high" for heavy metals, "very high" for other organic chemicals, and "high" for synthetic organic chemicals.
DISCLAIMER: Information provided on this page is automatically generated from a database of Source Water Assessment information. For additional details, please view the actual Executive Summary contained in the Source Water Assessment Report.

Raw Database Information

Information from "SourceTable"							
PWSID	Name	Location	Class	Source Type	Number of Sources		
360109.001	Tanana Safewater Facility	Tanana	A	surface water source	2		
Information from "VA Totals"							
Wellhead	Aquifer	Bacteria/Viruses	Nitrates/Nitrites	VOC	Inorganic	SOC	OOC
10	25	50	50	50	50	25	50

APPENDIX G

SITE LOCATIONS COORDINATES

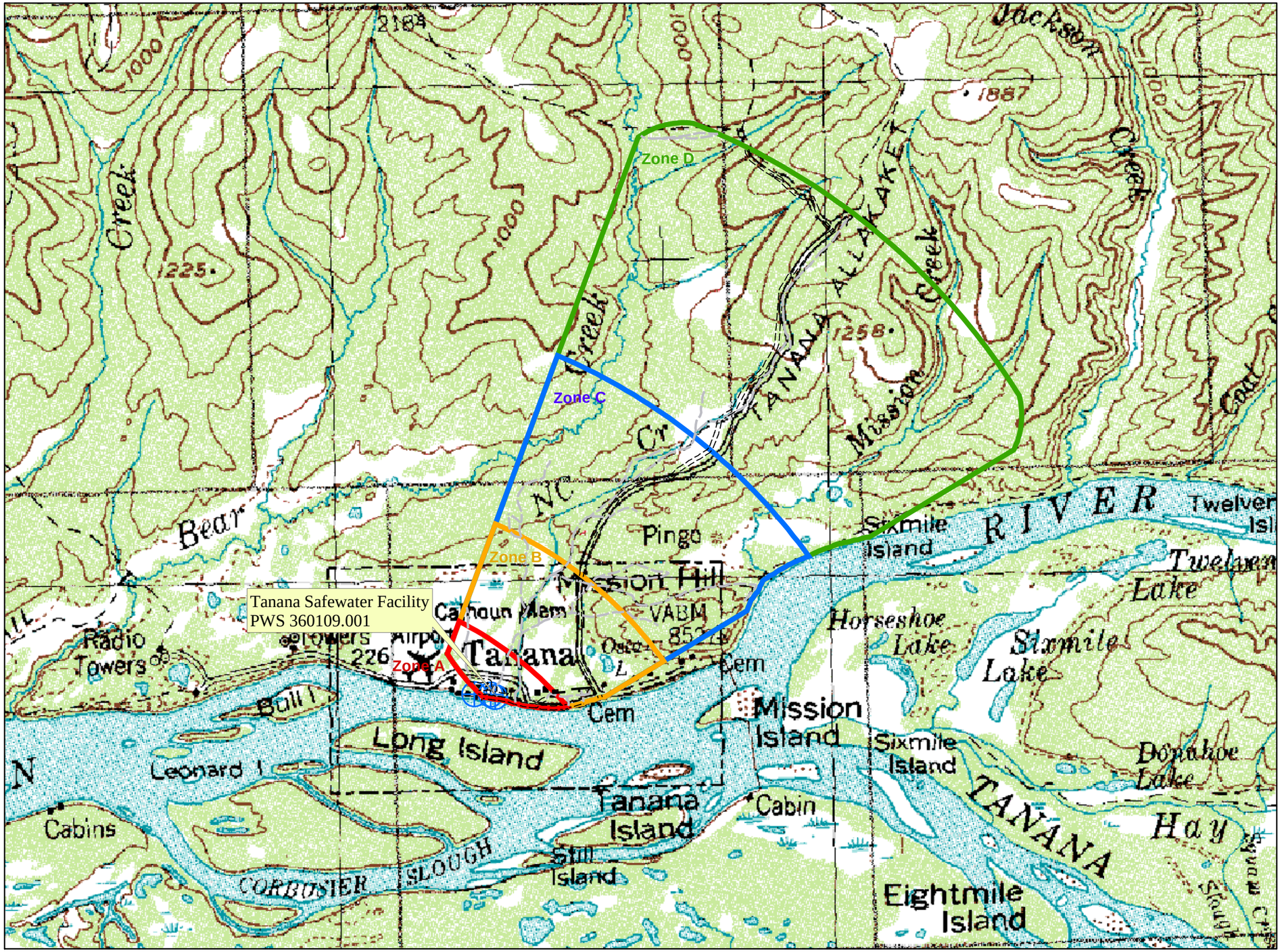
Known Contaminated Sites and Sites of Environmental Concern Location Coordinates

Site Name	Latitude	Longitude
Known Contaminated Sites		
ADOT&PF Tanana Maintenance Shop	65°10'21.07"N	152° 5'49.45"W
FAA Tanana FABLM/AK Fire Service Station	65°10'24.18"N	152° 6'56.21"W
FAA Tanana Station (Flight Service Station)	65°10'25.16"N	152° 6'35.92"W
FAA Tanana Station (Former Living Quarters)	65°10'18.45"N	152° 5'52.38"W
BLM Alaska Fire Service Tanana Station	65°10'24.18"N	152° 6'56.21"W
BLM/AK Fire Service Housing Complex Tanana	65°10'19.30"N	152° 5'52.38"W
BLM Tanana Lot 3 Former Tank Farm	65°10'9.94"N	152° 3'57.18"W
IHS Tanana Health Center	65°10'17.40"N	152° 5'29.04"W
IHS Tanana Bldg. 303	65°10'18.27"N	152° 5'33.28"W
Tanana School	65°10'16.32"N	152° 5'17.52"W
Tanana City Drinking Water Well	65°10'13.33"N	152° 4'46.20"W
Tanana Power Company	65°10'14.09"N	152° 4'31.32"W
Sites of Environmental Concern		
Buried Rail Tank Cars	65°10'25.42"N	152° 6'44.77"W
Former Washeteria	65°10'20.69"N	152° 4'40.04"W
Tanana Power Company	65°10'20.74"N	152° 4'36.43"W
City Shop / Garage	65°10'20.85"N	152° 4'31.63"W
Don’s Video	65°10'17.47"N	152° 4'34.23"W
Former Fort Gibbon Tank Farm	65°10'14.19"N	152° 4'44.68"W
Former Front Street Drum Storage Area	65°10'14.12"N	152° 4'44.38"W
Drums and Debris in Swale	65°10'13.58"N	152° 4'43.44"W
Former Fort Gibbon Wood Stave Tank Farm	65°10'11.24"N	152° 4'13.15"W
Tanana Gas Company Store	65°10'15.11"N	152° 5'5.27"W
Tanana Gas Company Fuel Station	65°10'15.12"N	152° 5'10.06"W
Second Avenue Drum Storage Area	65°10'16.72"N	152° 5'9.99"W

APPENDIX H

DEC ALASKA DRINKING WATER PROTECTION PROGRAM SOURCE WATER ASSESSMENT EXCERPT

Public Water Well System for PWS # 360109.001 Tanana Safewater Facility



LEGEND

- Public Water System Well

Hydrography/Physical

- Parcels
- Stream
- Lake or Pond
- Contours

Transportation

- Primary Route (Class 1)
- Secondary Route (Class 2)
- Road (Class 3)
- Road (Class 4)
- Road (Class 5, Four-wheel drive)

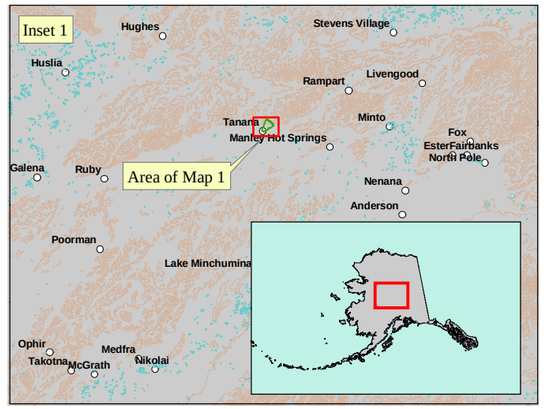
Groundwater Protection Zones

- Zone A Protection Area– Several Months Travel Time
- Zone B Protection Area– 2 Years Travel Time
- Zone C Protection Area– 5 Years Travel Time
- Zone D Protection Area– 10 Years Travel Time

Data Sources:
- Contaminant Sources, Public Water System Wells, Contours
  Alaska Department of Environmental Conservation (ADEC)
- Critical Facilities, Federal Emergency Management Agency (FEMA)

All other data:
- United States Geological Survey (USGS)
- Drinking Water Protection Areas based on "Alaska Drinking Water Protection Program - Guidance Manual for Class A Public Water Systems" published by ADEC

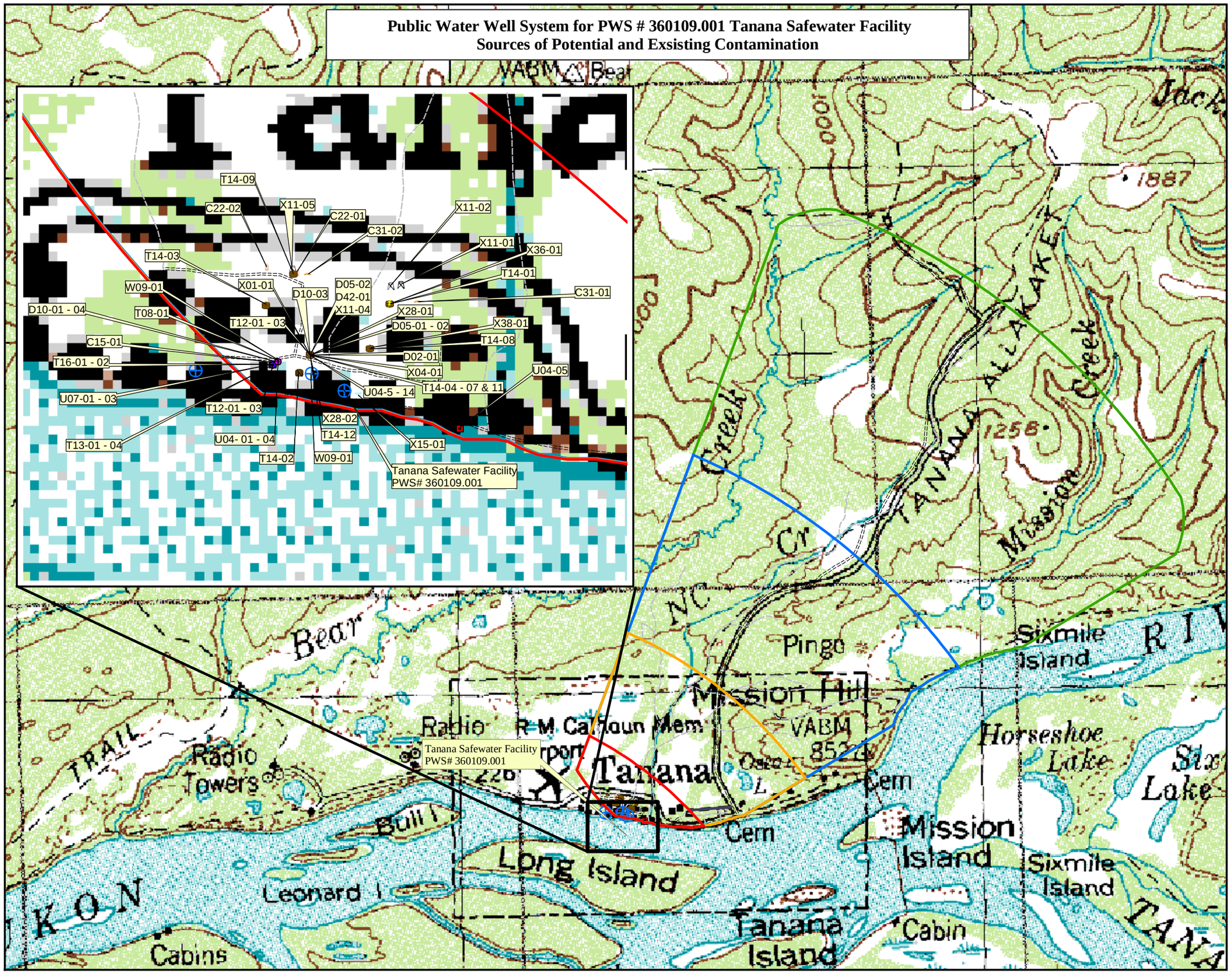
URS Corporation does not guarantee the accuracy or validity of the data provided.



0 0.5 1 2 3 4 Miles

Tanana Safewater Facility
PWS# 360109.001
Appendix A Map A

Public Water Well System for PWS # 360109.001 Tanana Safewater Facility
Sources of Potential and Exsisting Contamination



LEGEND

Public Water System Well

Hydrography/Physical

- Parcels
- Stream
- Lake or Pond
- Contours

Transportation

- Primary Route (Class 1)
- Secondary Route (Class 2)
- Road (Class 3)
- Road (Class 4)
- Road (Class 5, Four-wheel drive)

Groundwater Protection Zones

- Zone A Protection Area– Several Months Travel Time
- Zone B Protection Area– 2 Years Travel Time
- Zone C Protection Area– 5 Years Travel Time
- Zone D Protection Area– 10 Years Travel Time

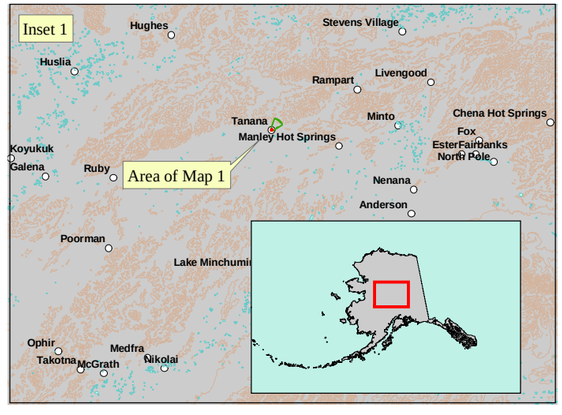
Existing or Potential Contaminant Source

- Gasoline Stations without repair shops (C15)
- Laundromats without dry cleaning (C22)
- Motor/motor vehicle repair shops (C31)
- Domestic wastewater treatment plant disposal pond (D02)
- Domestic wastewater treatment plants (D05)
- Injection Wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method) (D10)
- Injection wells (Class V) Motor Vehicle Waste Disposal Well (D42)
- Tanks, diesel (underground) (T08)
- Tanks, gasoline, underground (T12)
- Closed Tanks, gasoline (underground) (T13)
- Tanks, heating oil, non-residential, aboveground (T14)
- Tanks, heating oil nonresidential (underground) (T16)
- Contaminated sites, DEC recognized, non-Superfund, non-RCRA (U04)
- Leaking Underground Storage Tank (LUST) (U07) (lubricants or other petroleum products)
- Water supply wells (W09)
- Cemetaries (X01)
- Municipal or city parks (X04)
- Petroleum product bulk station/terminal (X11)
- Boat yards and marinas (X15)
- Pipelines (oil and gas) (X28)
- Power Generation Facility (fossil fuel) (X36)
- Firehouses (X38)

Data Sources:
- Contaminant Sources, Public Water System Wells, Contours Alaska Department of Environmental Conservation (ADEC)
- Critical Facilities, Federal Emergency Management Agency (FEMA)

All other data:
- United States Geological Survey (USGS)
- Drinking Water Protection Areas based on "Alaska Drinking Water Protection Program - Guidance Manual for Class A Public Water Systems" published by ADEC

URS Corporation does not guarantee the accuracy or validity of the data provided.



0 0.05 0.1 0.2 0.3 0.4 Miles

Tanana Safewater Facility
PWS# 360109.001
Appendix C Map C

Table 1

Contaminant Source Inventory for ***Tanana Safewater Facility***

PWSID 360109.001

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Map Number*	*Comments*
Gasoline stations (without repair shop)	C15	C15-01	A	C	TANANA GAS COMPANY
Laundromats without dry cleaning	C22	C22-01	A	C	Washeteria and Water Treatment Plant
Laundromats without dry cleaning	C22	C22-02	A	C	
Motor /motor vehicle repair shops	C31	C31-01	A	C	City Garage
Motor /motor vehicle repair shops	C31	C31-02	A	C	Bear Creek RRS Vehicle Maint Shop
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-01	A	C	Assume 10 or less sewer lines in Zone A
Domestic wastewater treatment plant disposal ponds/lagoons	D02	D02-01	A	C	
Domestic wastewater treatment plants	D05	D05-01	A	C	Sewage Lagoon
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-01	A	C	FAA - TANANA
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-02	A	C	FAA - TANANA
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-03	A	C	TANANA-AK NATIVE HEALTH CLINIC
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-04	A	C	TANANA-VSW
Pit toilets (open hole), nonresidential (one or more)	D16	D16-01	A	C	Assume 100 or less pit toilets/outhouses in Zone A
Injection wells (Class V) Motor Vehicle Waste Disposal Well	D42	D42-01	A	C	Bear Creek RRS Vehicle Maint Shop
Septic systems (serves one single-family home)	R02	R02-01	A	C	Assume 10 or less septic systems in Zone A
Tanks, heating oil, residential (above ground)	R08	R08-01	A	C	Assume 30 or less residential heating oil tanks in Zone A
Tanks, diesel (underground)	T08	T08-01	A	C	TANANA GAS COMPANY
Tanks, gasoline (underground)	T12	T12-01	A	C	TANANA GAS COMPANY
Tanks, gasoline (underground)	T12	T12-02	A	C	TANANA GAS COMPANY

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Map Number*	*Comments*
Tanks, gasoline (underground)	T12	T12-03	A	C	TANANA GAS COMPANY
Closed tanks, gasoline (underground)	T13	T13-01	A	C	Tanana Commercial
Closed tanks, gasoline (underground)	T13	T13-02	A	C	ADOTPF - TANANA AIRPORT
Closed tanks, gasoline (underground)	T13	T13-03	A	C	ADOTPF - TANANA AIRPORT
Closed tanks, gasoline (underground)	T13	T13-04	A	C	ADOTPF - TANANA AIRPORT
Tanks, heating oil, nonresidential (aboveground)	T14	T14-01	A	C	Tanana Power Company
Tanks, heating oil, nonresidential (aboveground)	T14	T14-02	A	C	Dons Video
Tanks, heating oil, nonresidential (aboveground)	T14	T14-03	A	C	Telephone Company
Tanks, heating oil, nonresidential (aboveground)	T14	T14-04	A	C	
Tanks, heating oil, nonresidential (aboveground)	T14	T14-05	A	C	
Tanks, heating oil, nonresidential (aboveground)	T14	T14-06	A	C	
Tanks, heating oil, nonresidential (aboveground)	T14	T14-07	A	C	
Tanks, heating oil, nonresidential (aboveground)	T14	T14-08	A	C	Tanana Volunteer Fire/EMS
Tanks, heating oil, nonresidential (aboveground)	T14	T14-09	A	C	
Tanks, heating oil, nonresidential (aboveground)	T14	T14-10	A	C	
Tanks, heating oil, nonresidential (aboveground)	T14	T14-11	A	C	
Tanks, heating oil, nonresidential (aboveground)	T14	T14-12	A	C	
Tanks, heating oil, nonresidential (underground)	T16	T16-01	A	C	TANANA ZONE HEADQUARTER
Tanks, heating oil, nonresidential (underground)	T16	T16-02	A	C	FAA - TANANA
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-01	A	C	Tanana City Drinking Water Well
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-02	A	C	FAA Tanana Station
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-03	A	C	Bear Creek RRS White Alice Site
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-04	A	C	Bear Creek RRS Vehicle Maint Shop

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Map Number*	*Comments*
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-05	A	C	Tanana Health Center
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-06	A	C	FAA Tanana FABLM/AK Fire Serv.F.S.
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-07	A	C	Bear Creek RRS POL Storage Area
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-08	A	C	Bear Creek Radio Relay Station
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-09	A	C	Bear Creek RRS Landfill
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-10	A	C	Bear Creek RRS Vehicle Maint Shop
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-11	A	C	BLM/AK Fire Service Housing Complex
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-12	A	C	FAA Tanana Station
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-13	A	C	Tanana Lot 3 Former Tank Farm
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-14	A	C	Tanana Power Company
Open Leaking Underground Fuel Storage Tank (LUST) Sites	U07	U07-01	A	C	TANANA ZONE HEADQUARTER
Open Leaking Underground Fuel Storage Tank (LUST) Sites	U07	U07-02	A	C	FAA - TANANA
Open Leaking Underground Fuel Storage Tank (LUST) Sites	U07	U07-03	A	C	TANANA GAS COMPANY
Water supply wells	W09	W09-01	A	C	Tanana City Drinking Water Well
Cemeteries	X01	X01-01	A	C	
Municipal or city parks (with green areas)	X04	X04-01	A	C	
Petroleum product bulk station/terminals	X11	X11-01	A	C	Bulk Fuel Storage-City
Petroleum product bulk station/terminals	X11	X11-02	A	C	Bulk Fuel Storage-Tanana Power Company
Petroleum product bulk station/terminals	X11	X11-03	A	C	Bulk Fuel Storage-Tribal Council
Petroleum product bulk station/terminals	X11	X11-04	A	C	Dons Video
Petroleum product bulk station/terminals	X11	X11-05	A	C	Waheteria
Airports	X14	X14-01	A	C	TANANA LANDING STRIP
Boat yards and marinas	X15	X15-01	A	C	Dock

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Map Number*	*Comments*
Highways and roads, dirt/gravel	X24	X24-01	A	C	Assume 1-20 roads in Zone A
Pipelines (oil and gas)	X28	X28-01	A	C	Barge to Bulk Fuel Tanks
Pipelines (oil and gas)	X28	X28-02	A	C	Barge to Bulk Fuel Tanks
Electric power generation (fossil fuels)	X36	X36-01	A	C	Tanana Power Company
Firehouses	X38	X38-01	A	C	Tanana Volunteer Fire/EMS

Table 2

Contaminant Source Inventory and Risk Ranking for Tanana Safewater Facility
Sources of Bacteria and Viruses

PWSID 360109.001

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Map Number*	*Comments*
Laundromats without dry cleaning	C22	C22-01	A	Low	C	Washeteria and Water Treatment Plant
Laundromats without dry cleaning	C22	C22-02	A	Low	C	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-01	A	Medium	C	Assume 10 or less sewer lines in Zone A
Domestic wastewater treatment plant disposal ponds/lagoons	D02	D02-01	A	High	C	
Domestic wastewater treatment plants	D05	D05-01	A	Medium	C	Sewage Lagoon
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-01	A	High	C	FAA - TANANA
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-02	A	High	C	FAA - TANANA
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-03	A	High	C	TANANA-AK NATIVE HEALTH CLINIC
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-04	A	High	C	TANANA-VSW
Pit toilets (open hole), nonresidential (one or more)	D16	D16-01	A	Medium	C	Assume 100 or less pit toilets/outhouses in Zone A
Injection wells (Class V) Motor Vehicle Waste Disposal Well	D42	D42-01	A	Low	C	Bear Creek RRS Vehicle Maint Shop
Septic systems (serves one single-family home)	R02	R02-01	A	Low	C	Assume 10 or less septic systems in Zone A
Municipal or city parks (with green areas)	X04	X04-01	A	Medium	C	
Highways and roads, dirt/gravel	X24	X24-01	A	Low	C	Assume 1-20 roads in Zone A

Table 3

Contaminant Source Inventory and Risk Ranking for Tanana Safewater Facility Sources of Nitrates/Nitrites

PWSID 360109.001

Contaminant Source Type	Contaminant Source ID	CS ID tag	Zone	Risk Ranking for Analysis	Map Number	Comments
Laundromats without dry cleaning	C22	C22-01	A	Low	C	Washeteria and Water Treatment Plant
Laundromats without dry cleaning	C22	C22-02	A	Low	C	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-01	A	Medium	C	Assume 10 or less sewer lines in Zone A
Domestic wastewater treatment plant disposal ponds/lagoons	D02	D02-01	A	High	C	
Domestic wastewater treatment plants	D05	D05-01	A	Medium	C	Sewage Lagoon
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-01	A	High	C	FAA - TANANA
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-02	A	High	C	FAA - TANANA
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-03	A	High	C	TANANA-AK NATIVE HEALTH CLINIC
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-04	A	High	C	TANANA-VSW
Pit toilets (open hole), nonresidential (one or more)	D16	D16-01	A	Medium	C	Assume 100 or less pit toilets/outhouses in Zone A
Septic systems (serves one single-family home)	R02	R02-01	A	Low	C	Assume 10 or less septic systems in Zone A
Cemeteries	X01	X01-01	A	Medium	C	
Municipal or city parks (with green areas)	X04	X04-01	A	Medium	C	
Airports	X14	X14-01	A	Low	C	TANANA LANDING STRIP
Highways and roads, dirt/gravel	X24	X24-01	A	Low	C	Assume 1-20 roads in Zone A

Table 4

Contaminant Source Inventory and Risk Ranking for Tanana Safewater Facility
Sources of Volatile Organic Chemicals

PWSID 360109.001

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Map Number*	*Comments*
Gasoline stations (without repair shop)	C15	C15-01	A	High	C	TANANA GAS COMPANY
Laundromats without dry cleaning	C22	C22-01	A	Low	C	Washeteria and Water Treatment Plant
Laundromats without dry cleaning	C22	C22-02	A	Low	C	
Motor /motor vehicle repair shops	C31	C31-01	A	Medium	C	City Garage
Motor /motor vehicle repair shops	C31	C31-02	A	Medium	C	Bear Creek RRS Vehicle Maint Shop
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-01	A	Low	C	Assume 10 or less sewer lines in Zone A
Domestic wastewater treatment plant disposal ponds/lagoons	D02	D02-01	A	Low	C	
Domestic wastewater treatment plants	D05	D05-01	A	Low	C	Sewage Lagoon
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-01	A	Low	C	FAA - TANANA
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-02	A	Low	C	FAA - TANANA
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-03	A	Low	C	TANANA-AK NATIVE HEALTH CLINIC
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-04	A	Low	C	TANANA-VSW
Pit toilets (open hole), nonresidential (one or more)	D16	D16-01	A	Low	C	Assume 100 or less pit toilets/outhouses in Zone A
Injection wells (Class V) Motor Vehicle Waste Disposal Well	D42	D42-01	A	High	C	Bear Creek RRS Vehicle Maint Shop
Septic systems (serves one single-family home)	R02	R02-01	A	Low	C	Assume 10 or less septic systems in Zone A
Tanks, heating oil, residential (above ground)	R08	R08-01	A	Medium	C	Assume 30 or less residential heating oil tanks in Zone A
Tanks, diesel (underground)	T08	T08-01	A	High	C	TANANA GAS COMPANY
Tanks, gasoline (underground)	T12	T12-01	A	High	C	TANANA GAS COMPANY

Contaminant Source Inventory and Risk Ranking for Tanana Safewater Facility

Sources of Volatile Organic Chemicals

Contaminant Source Type	***Contaminant Source ID***	***CS ID tag***	***Zone***	***Risk Ranking for Analysis***	***Map Number***	***Comments***
Tanks, gasoline (underground)	T12	T12-02	A	High	C	TANANA GAS COMPANY
Tanks, gasoline (underground)	T12	T12-03	A	High	C	TANANA GAS COMPANY
Closed tanks, gasoline (underground)	T13	T13-01	A	Medium	C	Tanana Commercial
Closed tanks, gasoline (underground)	T13	T13-02	A	Medium	C	ADOTPF - TANANA AIRPORT
Closed tanks, gasoline (underground)	T13	T13-03	A	Medium	C	ADOTPF - TANANA AIRPORT
Closed tanks, gasoline (underground)	T13	T13-04	A	Medium	C	ADOTPF - TANANA AIRPORT
Tanks, heating oil, nonresidential (aboveground)	T14	T14-01	A	Low	C	Tanana Power Company
Tanks, heating oil, nonresidential (aboveground)	T14	T14-02	A	Low	C	Dons Video
Tanks, heating oil, nonresidential (aboveground)	T14	T14-03	A	Low	C	Telephone Company
Tanks, heating oil, nonresidential (aboveground)	T14	T14-04	A	Low	C	
Tanks, heating oil, nonresidential (aboveground)	T14	T14-05	A	Low	C	
Tanks, heating oil, nonresidential (aboveground)	T14	T14-06	A	Low	C	
Tanks, heating oil, nonresidential (aboveground)	T14	T14-07	A	Low	C	
Tanks, heating oil, nonresidential (aboveground)	T14	T14-08	A	Low	C	Tanana Volunteer Fire/EMS
Tanks, heating oil, nonresidential (aboveground)	T14	T14-09	A	Low	C	
Tanks, heating oil, nonresidential (aboveground)	T14	T14-10	A	Low	C	
Tanks, heating oil, nonresidential (aboveground)	T14	T14-11	A	Low	C	
Tanks, heating oil, nonresidential (aboveground)	T14	T14-12	A	Low	C	
Tanks, heating oil, nonresidential (underground)	T16	T16-01	A	Low	C	TANANA ZONE HEADQUARTER
Tanks, heating oil, nonresidential (underground)	T16	T16-02	A	Low	C	FAA - TANANA

Contaminant Source Type	Contaminant Source ID	CS ID tag	Zone	Risk Ranking for Analysis	Map Number	Comments
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-01	A	High	C	Tanana City Drinking Water Well
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-02	A	High	C	FAA Tanana Station
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-03	A	High	C	Bear Creek RRS White Alice Site
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-04	A	High	C	Bear Creek RRS Vehicle Maint Shop
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-05	A	High	C	Tanana Health Center
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-06	A	High	C	FAA Tanana FABLM/AK Fire Serv.F.S.
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-07	A	High	C	Bear Creek RRS POL Storage Area
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-08	A	High	C	Bear Creek Radio Relay Station
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-09	A	High	C	Bear Creek RRS Landfill
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-10	A	High	C	Bear Creek RRS Vehicle Maint Shop
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-11	A	High	C	BLM/AK Fire Service Housing Complex
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-12	A	High	C	FAA Tanana Station
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-13	A	High	C	Tanana Lot 3 Former Tank Farm
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-14	A	High	C	Tanana Power Company
Open Leaking Underground Fuel Storage Tank (LUST) Sites	U07	U07-01	A	High	C	TANANA ZONE HEADQUARTER

Table 4 (continued)

Contaminant Source Inventory and Risk Ranking for Tanana Safewater Facility

Sources of Volatile Organic Chemicals

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Map Number*	*Comments*
Open Leaking Underground Fuel Storage Tank (LUST) Sites	U07	U07-02	A	High	C	FAA - TANANA
Open Leaking Underground Fuel Storage Tank (LUST) Sites	U07	U07-03	A	High	C	TANANA GAS COMPANY
Petroleum product bulk station/terminals	X11	X11-01	A	Very High	C	Bulk Fuel Storage-City
Petroleum product bulk station/terminals	X11	X11-02	A	Very High	C	Bulk Fuel Storage-Tanana Power Company
Petroleum product bulk station/terminals	X11	X11-03	A	Very High	C	Bulk Fuel Storage-Tribal Council
Petroleum product bulk station/terminals	X11	X11-04	A	Very High	C	Dons Video
Petroleum product bulk station/terminals	X11	X11-05	A	Very High	C	Waheteria
Airports	X14	X14-01	A	High	C	TANANA LANDING STRIP
Boat yards and marinas	X15	X15-01	A	Low	C	Dock
Highways and roads, dirt/gravel	X24	X24-01	A	Low	C	Assume 1-20 roads in Zone A
Pipelines (oil and gas)	X28	X28-01	A	Medium	C	Barge to Bulk Fuel Tanks
Pipelines (oil and gas)	X28	X28-02	A	Medium	C	Barge to Bulk Fuel Tanks
Electric power generation (fossil fuels)	X36	X36-01	A	Medium	C	Tanana Power Company
Firehouses	X38	X38-01	A	Low	C	Tanana Volunteer Fire/EMS

Table 5

Contaminant Source Inventory and Risk Ranking for Tanana Safewater Facility

Sources of Heavy Metals, Cyanide and Other Inorganic Chemicals

PWSID 360109.001

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Map Number*	*Comments*
Gasoline stations (without repair shop)	C15	C15-01	A	Low	C	TANANA GAS COMPANY
Motor /motor vehicle repair shops	C31	C31-01	A	Medium	C	City Garage
Motor /motor vehicle repair shops	C31	C31-02	A	Medium	C	Bear Creek RRS Vehicle Maint Shop
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-01	A	Low	C	Assume 10 or less sewer lines in Zone A
Domestic wastewater treatment plant disposal ponds/lagoons	D02	D02-01	A	Low	C	
Domestic wastewater treatment plants	D05	D05-01	A	Low	C	Sewage Lagoon
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-01	A	Low	C	FAA - TANANA
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-02	A	Low	C	FAA - TANANA
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-03	A	Low	C	TANANA-AK NATIVE HEALTH CLINIC
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-04	A	Low	C	TANANA-VSW
Pit toilets (open hole), nonresidential (one or more)	D16	D16-01	A	Low	C	Assume 100 or less pit toilets/outhouses in Zone A
Injection wells (Class V) Motor Vehicle Waste Disposal Well	D42	D42-01	A	High	C	Bear Creek RRS Vehicle Maint Shop
Septic systems (serves one single-family home)	R02	R02-01	A	Low	C	Assume 10 or less septic systems in Zone A
Tanks, gasoline (underground)	T12	T12-01	A	Medium	C	TANANA GAS COMPANY
Tanks, gasoline (underground)	T12	T12-02	A	Medium	C	TANANA GAS COMPANY
Tanks, gasoline (underground)	T12	T12-03	A	Medium	C	TANANA GAS COMPANY
Tanks, heating oil, nonresidential (aboveground)	T14	T14-01	A	Low	C	Tanana Power Company
Tanks, heating oil, nonresidential (aboveground)	T14	T14-02	A	Low	C	Dons Video

Contaminant Source Type	Contaminant Source ID	CS ID tag	Zone	Risk Ranking for Analysis	Map Number	Comments
Tanks, heating oil, nonresidential (aboveground)	T14	T14-03	A	Low	C	Telephone Company
Tanks, heating oil, nonresidential (aboveground)	T14	T14-04	A	Low	C	
Tanks, heating oil, nonresidential (aboveground)	T14	T14-05	A	Low	C	
Tanks, heating oil, nonresidential (aboveground)	T14	T14-06	A	Low	C	
Tanks, heating oil, nonresidential (aboveground)	T14	T14-07	A	Low	C	
Tanks, heating oil, nonresidential (aboveground)	T14	T14-08	A	Low	C	Tanana Volunteer Fire/EMS
Tanks, heating oil, nonresidential (aboveground)	T14	T14-09	A	Low	C	
Tanks, heating oil, nonresidential (aboveground)	T14	T14-10	A	Low	C	
Tanks, heating oil, nonresidential (aboveground)	T14	T14-11	A	Low	C	
Tanks, heating oil, nonresidential (aboveground)	T14	T14-12	A	Low	C	
Tanks, heating oil, nonresidential (underground)	T16	T16-01	A	Low	C	TANANA ZONE HEADQUARTER
Tanks, heating oil, nonresidential (underground)	T16	T16-02	A	Low	C	FAA - TANANA
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-01	A	Low	C	Tanana City Drinking Water Well
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-02	A	Low	C	FAA Tanana Station
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-03	A	Low	C	Bear Creek RRS White Alice Site
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-04	A	Low	C	Bear Creek RRS Vehicle Maint Shop
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-05	A	Low	C	Tanana Health Center
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-06	A	Low	C	FAA Tanana FABLM/AK Fire Serv.F.S.

Contaminant Source Type	Contaminant Source ID	CS ID tag	Zone	Risk Ranking for Analysis	Map Number	Comments
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-07	A	Low	C	Bear Creek RRS POL Storage Area
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-08	A	Low	C	Bear Creek Radio Relay Station
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-09	A	Low	C	Bear Creek RRS Landfill
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-10	A	Low	C	Bear Creek RRS Vehicle Maint Shop
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-11	A	Low	C	BLM/AK Fire Service Housing Complex
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-12	A	Low	C	FAA Tanana Station
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-13	A	Low	C	Tanana Lot 3 Former Tank Farm
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-14	A	Low	C	Tanana Power Company
Cemeteries	X01	X01-01	A	Low	C	
Municipal or city parks (with green areas)	X04	X04-01	A	Low	C	
Petroleum product bulk station/terminals	X11	X11-01	A	Low	C	Bulk Fuel Storage-City
Petroleum product bulk station/terminals	X11	X11-02	A	Low	C	Bulk Fuel Storage-Tanana Power Company
Petroleum product bulk station/terminals	X11	X11-03	A	Low	C	Bulk Fuel Storage-Tribal Council
Petroleum product bulk station/terminals	X11	X11-04	A	Low	C	Dons Video
Petroleum product bulk station/terminals	X11	X11-05	A	Low	C	Waheteria
Airports	X14	X14-01	A	Low	C	TANANA LANDING STRIP
Boat yards and marinas	X15	X15-01	A	Low	C	Dock

Contaminant Source Inventory and Risk Ranking for
Tanana Safewater Facility
Sources of Heavy Metals, Cyanide and Other Inorganic Chemicals

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Map Number*	*Comments*
Highways and roads, dirt/gravel	X24	X24-01	A	Low	C	Assume 1-20 roads in Zone A
Pipelines (oil and gas)	X28	X28-01	A	Low	C	Barge to Bulk Fuel Tanks
Pipelines (oil and gas)	X28	X28-02	A	Low	C	Barge to Bulk Fuel Tanks
Electric power generation (fossil fuels)	X36	X36-01	A	Medium	C	Tanana Power Company
Firehouses	X38	X38-01	A	Low	C	Tanana Volunteer Fire/EMS

Table 6

Contaminant Source Inventory and Risk Ranking for Tanana Safewater Facility
Sources of Synthetic Organic Chemicals

PWSID 360109.001

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Map Number*	*Comments*
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-01	A	Low	C	Assume 10 or less sewer lines in Zone A
Domestic wastewater treatment plant disposal ponds/lagoons	D02	D02-01	A	Low	C	
Domestic wastewater treatment plants	D05	D05-01	A	Low	C	Sewage Lagoon
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-01	A	Low	C	FAA - TANANA
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-02	A	Low	C	FAA - TANANA
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-03	A	Low	C	TANANA-AK NATIVE HEALTH CLINIC
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-04	A	Low	C	TANANA-VSW
Injection wells (Class V) Motor Vehicle Waste Disposal Well	D42	D42-01	A	Low	C	Bear Creek RRS Vehicle Maint Shop
Septic systems (serves one single-family home)	R02	R02-01	A	Low	C	Assume 10 or less septic systems in Zone A
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-01	A	Low	C	Tanana City Drinking Water Well
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-02	A	Low	C	FAA Tanana Station
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-03	A	Low	C	Bear Creek RRS White Alice Site
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-04	A	Low	C	Bear Creek RRS Vehicle Maint Shop
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-05	A	Low	C	Tanana Health Center
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-06	A	Low	C	FAA Tanana FABLM/AK Fire Serv.F.S.
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-07	A	Low	C	Bear Creek RRS POL Storage Area

Contaminant Source Type	Contaminant Source ID	CS ID tag	Zone	Risk Ranking for Analysis	Map Number	Comments
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-08	A	Low	C	Bear Creek Radio Relay Station
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-09	A	Low	C	Bear Creek RRS Landfill
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-10	A	Low	C	Bear Creek RRS Vehicle Maint Shop
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-11	A	Low	C	BLM/AK Fire Service Housing Complex
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-12	A	Low	C	FAA Tanana Station
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-13	A	Low	C	Tanana Lot 3 Former Tank Farm
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-14	A	Low	C	Tanana Power Company
Open Leaking Underground Fuel Storage Tank (LUST) Sites	U07	U07-01	A	Low	C	TANANA ZONE HEADQUARTER
Open Leaking Underground Fuel Storage Tank (LUST) Sites	U07	U07-02	A	Low	C	FAA - TANANA
Open Leaking Underground Fuel Storage Tank (LUST) Sites	U07	U07-03	A	Low	C	TANANA GAS COMPANY
Cemeteries	X01	X01-01	A	Medium	C	
Municipal or city parks (with green areas)	X04	X04-01	A	Low	C	
Petroleum product bulk station/terminals	X11	X11-01	A	Low	C	Bulk Fuel Storage-City
Petroleum product bulk station/terminals	X11	X11-02	A	Low	C	Bulk Fuel Storage-Tanana Power Company
Petroleum product bulk station/terminals	X11	X11-03	A	Low	C	Bulk Fuel Storage-Tribal Council
Petroleum product bulk station/terminals	X11	X11-04	A	Low	C	Dons Video
Petroleum product bulk station/terminals	X11	X11-05	A	Low	C	Waheteria

Contaminant Source Type	Contaminant Source ID	CS ID tag	Zone	Risk Ranking for Analysis	Map Number	Comments
Airports	X14	X14-01	A	Medium	C	TANANA LANDING STRIP

Table 7

Contaminant Source Inventory and Risk Ranking for Tanana Safewater Facility
Sources of Other Organic Chemicals

PWSID 360109.001

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Map Number*	*Comments*
Gasoline stations (without repair shop)	C15	C15-01	A	Low	C	TANANA GAS COMPANY
Motor /motor vehicle repair shops	C31	C31-01	A	Medium	C	City Garage
Motor /motor vehicle repair shops	C31	C31-02	A	Medium	C	Bear Creek RRS Vehicle Maint Shop
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-01	A	Low	C	Assume 10 or less sewer lines in Zone A
Domestic wastewater treatment plant disposal ponds/lagoons	D02	D02-01	A	Low	C	
Domestic wastewater treatment plants	D05	D05-01	A	Low	C	Sewage Lagoon
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-01	A	Low	C	FAA - TANANA
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-02	A	Low	C	FAA - TANANA
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-03	A	Low	C	TANANA-AK NATIVE HEALTH CLINIC
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-04	A	Low	C	TANANA-VSW
Injection wells (Class V) Motor Vehicle Waste Disposal Well	D42	D42-01	A	Medium	C	Bear Creek RRS Vehicle Maint Shop
Septic systems (serves one single-family home)	R02	R02-01	A	Low	C	Assume 10 or less septic systems in Zone A
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-01	A	Low	C	Tanana City Drinking Water Well
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-02	A	Low	C	FAA Tanana Station
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-03	A	Low	C	Bear Creek RRS White Alice Site
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-04	A	Low	C	Bear Creek RRS Vehicle Maint Shop

Contaminant Source Type	Contaminant Source ID	CS ID tag	Zone	Risk Ranking for Analysis	Map Number	Comments
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-05	A	Low	C	Tanana Health Center
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-06	A	Low	C	FAA Tanana FABLM/AK Fire Serv.F.S.
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-07	A	Low	C	Bear Creek RRS POL Storage Area
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-08	A	Low	C	Bear Creek Radio Relay Station
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-09	A	Low	C	Bear Creek RRS Landfill
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-10	A	Low	C	Bear Creek RRS Vehicle Maint Shop
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-11	A	Low	C	BLM/AK Fire Service Housing Complex
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-12	A	Low	C	FAA Tanana Station
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-13	A	Low	C	Tanana Lot 3 Former Tank Farm
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-14	A	Low	C	Tanana Power Company
Open Leaking Underground Fuel Storage Tank (LUST) Sites	U07	U07-01	A	Low	C	TANANA ZONE HEADQUARTER
Open Leaking Underground Fuel Storage Tank (LUST) Sites	U07	U07-02	A	Low	C	FAA - TANANA
Open Leaking Underground Fuel Storage Tank (LUST) Sites	U07	U07-03	A	Low	C	TANANA GAS COMPANY
Petroleum product bulk station/terminals	X11	X11-01	A	High	C	Bulk Fuel Storage-City
Petroleum product bulk station/terminals	X11	X11-02	A	High	C	Bulk Fuel Storage-Tanana Power Company
Petroleum product bulk station/terminals	X11	X11-03	A	High	C	Bulk Fuel Storage-Tribal Council

Contaminant Source Inventory and Risk Ranking for Tanana Safewater Facility

Sources of Other Organic Chemicals

Contaminant Source Type	***Contaminant Source ID***	***CS ID tag***	***Zone***	***Risk Ranking for Analysis***	***Map Number***	***Comments***
Petroleum product bulk station/terminals	X11	X11-04	A	High	C	Dons Video
Petroleum product bulk station/terminals	X11	X11-05	A	High	C	Waheteria
Airports	X14	X14-01	A	Medium	C	TANANA LANDING STRIP
Boat yards and marinas	X15	X15-01	A	Low	C	Dock
Highways and roads, dirt/gravel	X24	X24-01	A	Low	C	Assume 1-20 roads in Zone A
Pipelines (oil and gas)	X28	X28-01	A	High	C	Barge to Bulk Fuel Tanks
Pipelines (oil and gas)	X28	X28-02	A	High	C	Barge to Bulk Fuel Tanks
Electric power generation (fossil fuels)	X36	X36-01	A	High	C	Tanana Power Company