#### UTICA MINE CAMP SITE CHARACTERIZATION REPORT

Prepared for

#### NANA REGIONAL CORPORATION

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Prepared by

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#### **EXECUTIVE SUMMARY**

This report summarizes a Site Characterization including a Hazardous Materials Survey conducted by Travis/Peterson Environmental Consulting, Inc. (TPECI). The old Utica Mine camp site is located 20 miles southwest of Deering, Alaska in the Northwest Arctic Borough, Latitude 66° 04' 32" N, Longitude 162° 43' 02" W. The former mine encompasses approximately seven miles along the Inmachuk River drainage (Figure 1).

**Site History:** According to SLR International Corp. (SLR), placer mining was accomplished at the Utica Mine using hydraulic mining, shoveling, drifting, and dredging. Once the Fairhaven Ditch (a viaduct) was completed, Imuruk Lake provided hydraulic head to support placer mining operations. Placer mining operated along a seven mile stretch of the Inmachuk River drainage for over 40 years until World War II. After the war, placer mining was intermittent through the 1960's. GEM mined the area from the 1960s to about 1980 (SLR, 2005).

NANA is the current owner of the property, which it received from the United States pursuant to the Alaska Native Claims Settlement Act. The roads at the site are owned by the State of Alaska.

According to the Phase I Environmental Site Assessment (ESA) performed by SLR, the entire seven mile stretch of the Inmachuk River drainage located within the Utica Mine was heavily placer mined from 1900 until about 1980 (SLR, 2005). Limited surface soil sampling conducted by SLR personnel indicated elevated concentrations of heavy metals including mercury, arsenic, lead, and petroleum, oil, and lubricants (POLs) in some parts of the Utica Mine camp and the four dump sites.

**Geologic Setting:** The geology of the upper Inmachuk basin has been described by Herreid (1966). According to Herreid, the granitic rocks on the Seward Peninsula are considered to be of Mesozoic age. The granitic rocks intrude an older package of metamorphosed sedimentary rocks (schist) and limestone (marble). Lithologic contacts are folded on both minor and major scales, with the axial planes of folds often having moderate dips.

Mineral deposits containing lead, zinc, copper, and other metallic minerals are known to be present within the Inmachuk River drainage. Herreid (1966) reports anomalous lead values within stream sediments over a seven mile distance of the Inmachuk River below the mineral occurrences in Hannum Creek and the Pinell River.

Within the stream sediment progressively decreasing lead anomalies for seven miles were noted below Hannum Creek and the Pinnell River. Tin anomalies were also noted associated with the Hannum Creek deposit which is partially within the Inmachuk River basin. Cinnabar, arsenic, and mercury may also be present. Brooks (1907).

The placer gold that has been mined from the Inmachuk River drainage represents the erosion product of a former lode gold system that was emplaced within this

geologic/geographic province. Lode gold systems characteristically include highly anomalous levels of mercury, lead and arsenic. The mercury mineral, cinnabar, was recovered from dredge concentrates from the Inmachuk River. Cadmium, although not as commonly associated with gold systems, is rarely absent from mineral deposits of lead. There are numerous documented lead deposits within the Inmachuk drainage (e.g. Hannum Creek, Cunningham Creek, etc.)

**Site Reconnaissance:** TPECI personnel conducted a site reconnaissance following the procedures outlined by the American Society for Testing and Materials Standard E-1527-00. The site reconnaissance was conducted on June 27 and 28, 2007 and included a thorough inspection and inventory of each structure and piece of equipment at the site. Soil samples were collected within the camp for mercury and other metals, petroleum hydrocarbons, and polychlorinated biphenyls (PCBs).

**Conclusions and Recommendations:** Soil sample results indicate discrete areas of petroleum-related and mercury contamination within the industrial section of the camp. This section of the camp includes the machinist shop, gold house, electrical/carpenter shop, power generating shed, and an old tin shed used to store fuel oil located at the south end of the camp near the parts dump. Arsenic was detected in all sampling locations, and TPECI personnel surmise that the widespread occurrence of arsenic is indicative of the natural background levels.

The bunkhouse areas, located uphill from the industrial area, appeared free from environmental degradation. TPECI personnel gathered about ninety (90) empty and partially empty 5-gallon fuel cans and placed them in the tin fuel storage shed. There is a parts washer located in the main bay of the machinist shop. Its liquid contents were transferred into a 55-gallon drum and labeled. Based on sampling results, this drum contains mostly diesel range organic (DRO) compounds. This drum and others containing fluids will need to be over packed and hauled off site for disposal during the 2008 mine camp cleanup.

The discrete areas of contamination are limited to (1) mercury-impacted soil beneath and behind the former gold house; and (2) fuel-impacted soils within and surrounding the machinist shop. The lead-contaminated soil must be excavated, packed into drums, and disposed as RCRA hazardous waste. The POL-contaminated soil must be excavated and disposed of in accordance with applicable regulations. All heavy equipment had the fluids drained and captured in September 2007. All additional cleanup work will be completed in the summer of 2008.

The buildings and some of the equipment in the camp date to the early 1900's and may have historic value. As a courtesy, the State of Alaska Historic Preservation office should be contacted prior to demolition or removal of any structures at the site.

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#### **1.0 INTRODUCTION**

Travis/Peterson Environmental Consulting, Inc. (TPECI) performed a Site Characterization of the Utica Mine camp located at approximately 66° 04' 32" N latitude, and 162° 43' 02" W longitude in the Northwest Arctic Borough, Alaska (Figure 1). The camp is about 20 miles south of Deering, Alaska.

The scope of work for this survey included:

- Geochemical assessment of soils within the camp area;
- Quantification and containment of fluids (Petroleum, oil, and lubricants (POLs)) on site;
- Identification and quantification of all remaining process reagents;
- Identification and quantification of the extent of any spilled or spent process reagents or POLs;
- Identification and quantification of asbestos containing materials within the 23 remaining structures;
- Identification and quantification of lead based paint in any structures or equipment; and
- Identification and quantification of the structural integrity of the 23 remaining structures for demolition purposes.

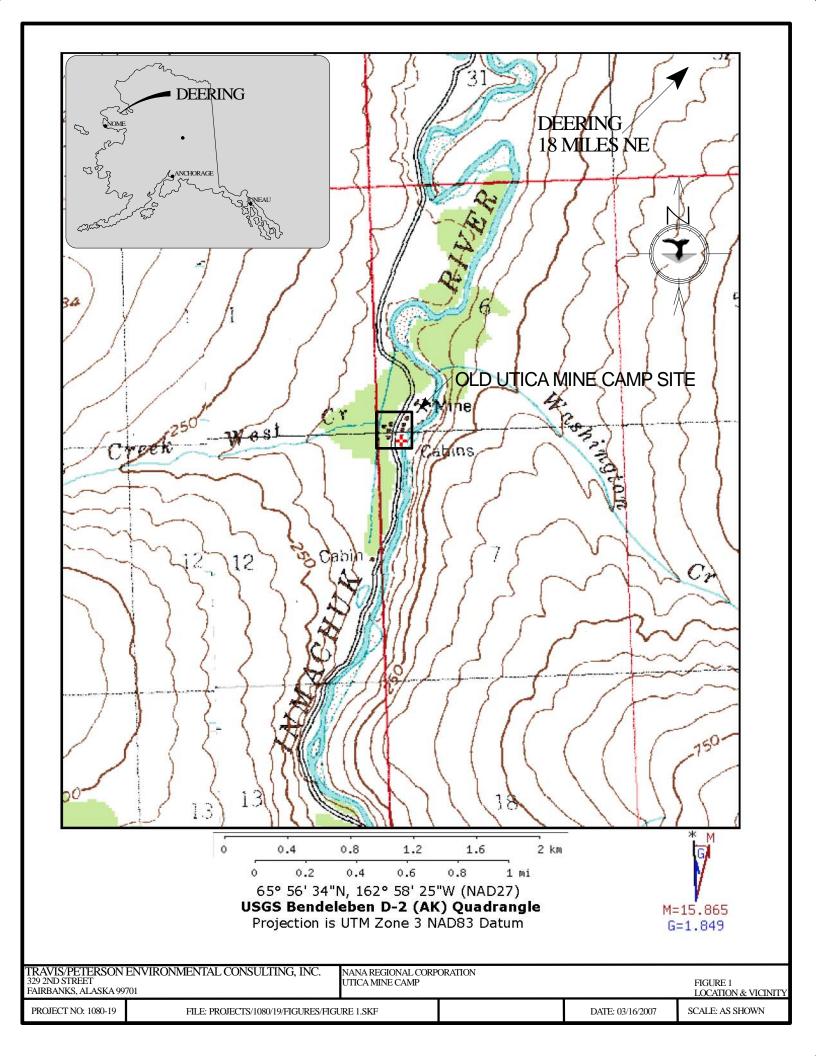
Environmental impairment of a property may result from activities such as illegal or unreported dumping or spilling of hazardous waste materials. The presence of contaminants at a property may not always be apparent, and the completion of a Hazardous Materials Survey cannot guarantee that contamination does not exist. The scope of services executed for this project comprises a detailed survey for asbestos, lead paint, or other conditions or potential hazards.

This report has been prepared for the exclusive use of NANA Regional Corporation, Inc. (NANA) and their agents in accordance with generally accepted professional consulting practices. No warranty, expressed or implied, is made. The findings contained herein are relevant to the date of TPECI's site visit and should not be relied upon to represent conditions at a later date.

In the event that changes in the nature, usage, or layout of the site or nearby properties are made, the conclusions and recommendations contained in this report may not be valid. If additional information becomes available, it should be provided to TPECI so that the original conclusions and recommendations can be modified as necessary.

### 2.0 SITE DESCRIPTION

The old Utica Mine camp is set up in the typical manner of mine camps of the early 1900's. The camp sits above the west bank of the Inmachuk River. The main industrial and processing area of the camp is situated downhill from the residential portion (Figure 2). Most of the environmental impacts documented within the camp are confined to this industrial zone. All bunkhouses are located uphill of the industrial area.



#### 3.0 SITE HISTORY

According to SLR, placer mining was accomplished at the old Utica Mine site using hydraulic mining, shoveling, drifting, and dredging. Once the Fairhaven Ditch (a viaduct) was completed, Imuruk Lake provided hydraulic head to support placer mining operations. Placer mining operated along a seven mile stretch of the Inmachuk River drainage for over 40 years until World War II. After the war, placer mining was intermittent through the 1960's. GEM mined the area from the 1960's to about 1980 (SLR, 2005).

NANA is the current owner of the property, which it received from the United States government pursuant to the Alaska Native Claims Settlement Act. The roads at the site are owned by the State of Alaska.

SLR personnel conducted limited surface soil sampling during the summer of 2005. Sample results indicated elevated concentrations of heavy metals including mercury, arsenic, lead, and POLs in some parts of the Utica Mine camp and the four dump sites.

#### 3.1 <u>PERSONAL INTERVIEWS</u>

During the site inspection, Mr. Gilbert Barr, resident of Deering, accompanied TPECI personnel to the mine and provided valuable historic information and assistance during field work.

#### 3.2 <u>GEOLOGIC SETTING</u>

The geology of the upper Inmachuk basin has been described by Herreid (1966). According to Herreid, the granitic rocks on the Seward Peninsula are considered to be of Mesozoic age. The granitic rocks intrude an older package of metamorphosed sedimentary rocks (schist) and limestone (marble). Lithologic contacts are folded on both minor and major scales, with axial planes of folds often having moderate dips.

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Within the stream sediment progressively decreasing lead anomalies for seven miles were noted below Hannum Creek and the Pinnell River. Tin anomalies were also noted associated with the Hannum Creek deposit which is partially within the Inmachuk River basin. Cinnabar, arsenic, and mercury may also be present. Brooks (1907).

The placer gold that has been mined from the Inmachuk River drainage represents the erosion product of a former lode gold system that was emplaced within this geologic/geographic province. Lode gold systems characteristically include anomalously high levels of mercury, lead and arsenic. The mercury mineral, cinnabar, was recovered from dredge concentrates from the Inmachuk River. Cadmium, although not as

commonly associated with gold systems, is rarely absent from mineral deposits of lead. There are numerous documented lead deposits within the Inmachuk drainage, e.g. Hannum Creek, Cunningham Creek etc.)

#### 4.0 SITE RECONNAISSANCE

TPECI personnel conducted a site reconnaissance to inventory potentially hazardous materials within the camp and buildings and to visually inspect the two dump sites near the camp. The site reconnaissance was conducted on June 27 and 28, 2007.

TPECI personnel inspected each structure in the camp for integrity, safety, and environmental hazards. Each piece of equipment in the camp area was also inspected for the presence of hydraulic fluids, oil, and fuel.

#### 4.1 <u>BUILDINGS</u>

#### 4.1.1 Camp Industrial Area

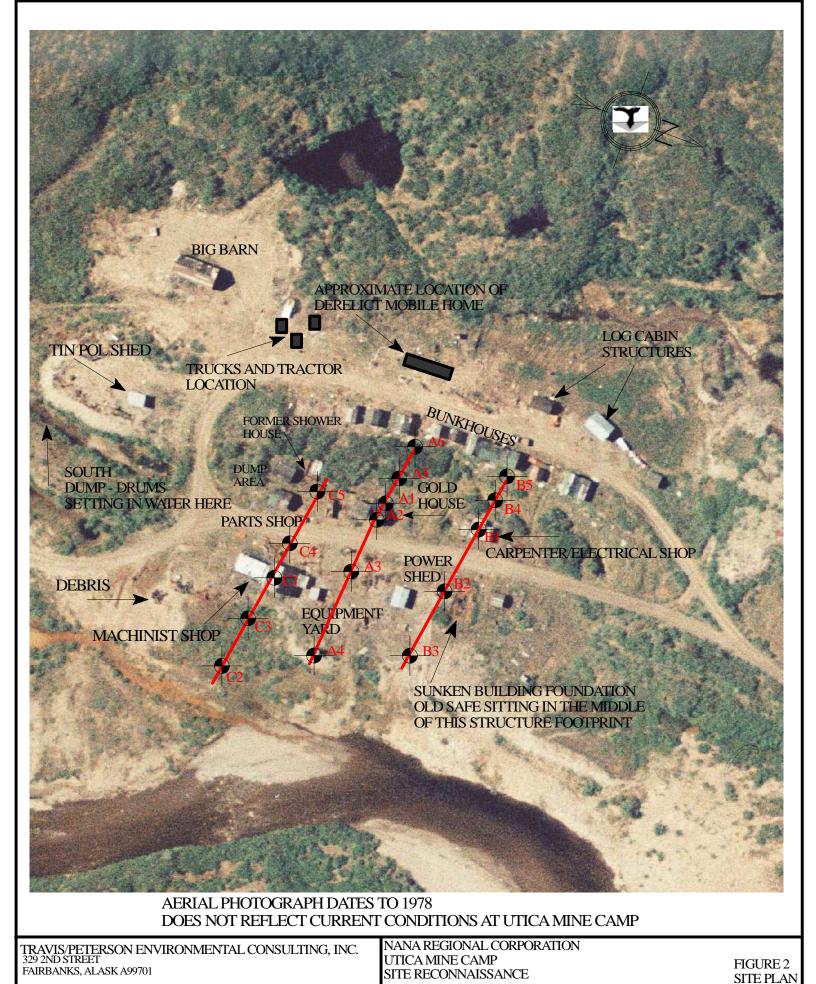
The industrial area includes a machinist shop of wood construction that consists of three shop bays (Figure 2). The main bay of the shop is 30 feet by 30 feet. POL soil staining was prevalent throughout the shop areas and will need to be excavated and treated.

TPECI personnel also observed a parts washer made from a 55-gallon drum on a stand. The parts washer was full of oily liquid. These fluids were sampled and analyzed for petroleum hydrocarbons and volatile organic compounds. Analytical results are presented in Table 4.

TPECI transferred the liquids from the parts washer into a 55-gallon drum found outside the shop. The drum appeared in good condition. TPECI labeled the drum and stored it inside the machinist shop.

TPECI personnel estimated 15 to 20 cubic yards of contaminated soil existed within and surrounding the machinist shop. During collection of a soil sample from underneath the parts washer, TPECI personnel noted that the soil was impacted within the top 12 inches when sampling down to 20-24 inches below the soil surface using a hand auger. The heavier staining appeared confined to the top foot of soil.

The gold house was situated west of the gravel roadway from the machinist shop. This building was in disrepair. TPECI personnel recommend demolishing the structure following removal of all equipment, to enable complete cleanup of contaminated soil beneath and surrounding the building.



				DIIDIDI L
PROJECT NO.: 1080-19	FILE: PROJECTS/1080/19/F	IGURES/FIGURE 2.SKF	DATE: 08/03/2007	SCALE: AS SHOWN

Soil samples collected underneath the floor boards and behind the structure indicated high concentrations of mercury (1,570 mg/kg), lead (13,600 mg/kg), arsenic (755 mg/kg), and DRO (2,050 mg/kg). These values exceeded ADEC soil cleanup levels (Tables 4 and 5). Using the 20-times rule, mercury and lead may qualify as a RCRA waste. Because of the potential RCRA waste issues, TCLP testing was performed for lead, mercury, and arsenic on sample number A-5. TCLP arsenic was non-detect, mercury was 0.0038 mg/L, and lead was 114 mg/L. None of the metals, except lead, exceeded EPA RCRA levels. The RCRA action level for lead is 5 mg/L therefore the soil must be drummed and shipped off-site as hazardous waste by a certified handler.

Inside the gold house is a Denver Equipment Co. Gardner-Denver ball mill (Appendix A). TPECI personnel observed no evidence of balls or rods within or near the mill. TPECI personnel presumed that these items were taken from the site. Field personnel also presumed that the mill was originally used to crush ore for assay rather than production purposes. This assumption is based on the fact that crushing and grinding equipment was bench scale and not production scale. The presence of mercury in high concentrations in barren spoils outside the back of the building bolsters the theory that lode assay occurred at the site.

TPECI personnel estimated that approximately five to ten yards of heavy-metal contaminated soil must be excavated, drummed, and removed from the gold house. This building will need to be demolished prior to soil excavation. The soil samples collected from this location were reanalyzed at Test America analytical laboratories for toxic characteristic leach procedure (TCLP) arsenic, lead, and mercury to determine if the contaminant concentrations within the soil qualify as RCRA hazardous waste. The results of this analysis indicate the lead (114 mg/L) is the only heavy metal in high enough concentrations to make the contaminated soil RCRA hazardous waste. Arsenic was non-detect and mercury was detected at a concentration of 0.00388 mg/L which is below the cut off for RCRA hazardous waste. Further, the low TCLP results indicate that mercury is bound in the soil matrix and is not readily transported in solution.

An electrical/carpenter shop was located north of the gold house. TPECI personnel inspected this shop and found a broken bag of what looked like friable asbestos. A sample of this material was collected and analyzed. Sampling results are listed in Table 6. Chrysotile material (asbestos) was detected in the sample. It must be properly disposed. All applicable requirements under state and federal law, including 40 C.F.R. Part 61, 29 C.F.R. Part 1910.1001, and 18 AAC Chapter 60 will be followed in handling and disposing of this material. This structure is also in disrepair and should be demolished for safety reasons.

To the south of the electrical/carpenter shop and gold house was the parts storage shop. Upon inspection, TPECI personnel noticed the interior of the shop was full of miscellaneous parts for vehicles and equipment. The parts were stored in wood bins that were built into the structure. The building was 20 feet by 20 feet and made of wood. TPECI personnel estimated that there is approximately one cubic yard of metal debris in the building. Some of the parts may be salvageable.

A small metal shed was at the south end of the mine camp. TPECI personnel refer to it as the tin POL shed. The wood floor boards in the shed were heavily stained from petroleum hydrocarbons. There were a few five-gallon "Chevron" fuel cans located inside and immediately outside the building. A soil sample was collected from beneath the floor boards (Table 4).

Concentrations of DRO were detected in the soil sample; however, they were below ADEC soil cleanup levels. TPECI personnel noted that upon breaking through the floor board to obtain the sample, the soil appeared relatively free of petroleum staining. The ground surface immediately in front of the shed was heavily stained and will need to be treated (Appendix A).

During the site reconnaissance, TPECI personnel noticed the "Chevron" cans spread throughout the entire camp. Some of the cans were full or partially full, many were empty. Upon completion of the site reconnaissance, TPECI personnel and Mr. Gilbert Barr drove through the camp and collected the five-gallon cans and placed them inside the POL shed for temporary storage. TPECI personnel counted 92 five-gallon cans in the shed.

### 4.1.2 Camp Residential Area

TPECI considers the portion of the mine camp located uphill from the gold house and machinist shops as the residential area (Figure 2). It contains bunkhouses, shower, outhouses and a building with a kitchen/mess hall. Most of the structures dated to the early 1900's. However, there was a large mobile home present. This trailer is structurally unsafe. TPECI believes it does not have historical significance and needs to be demolished.

Most of the bunkhouses are structurally sound except the kitchen/mess hall building. Two of the bunkhouses, located on the north end of the camp, are of log construction and appear in good shape.

Many of the structures contain personal effects from the last inhabitants of the camp along with miscellaneous items such as a washing machine, furnace, oil heaters, snow machine batteries, and bed frames. Several five-gallon fuel cans were removed from this area of the camp and placed in the POL shed for temporary storage. Several drums were noted outside many of these buildings. Some had liquid contents and will need to be over-packed and hauled off site for disposal.

The following table summarizes the structures inspected by TPECI personnel and their condition. Some structures will need to be demolished to complete cleanup of contaminated soil underneath and behind the buildings. Some structures, such as the mobile home, must be demolished because they present a potential safety hazards.

# TABLE 1UTICA MINE CAMP STRUCTURES

STRUCTURE	LOCATION	CONSTRUCTION	CONDITION	DEMOLISH Y/N
Machinist shop	Lower camp	Wood frame, three bays, main is 30x30 feet	Fair-good	N
Gold house	Lower camp		poor	Y, for soil cleanup and safety purposes
Parts building	Lower camp	Wood frame, 20 x20 feet	good	N
Electrical shop	Lower camp	Wood frame, 30 x12 feet	fair	Y, for cleanup purposes
Generator shed (power house)	Lower camp	Wood-tin,	good	Can be moved rather than demolished
Tin POL shed	South end of camp	2x4 and tin, small building	fair	Can be moved rather than demolished
Big barn	South end of camp, uphill	Wood frame	Good, contains miscellaneous non- hazardous items inside.	Ν
Camp Residenti	al Structure Inventory	- Heading South to Nort	th, beginning along eas	st side of road.
Bldg 1. Bunkhouse	Upper camp	Wood frame	fair	N
Bldg. 2 Bunkhouse	Upper camp	Wood frame, labeled "Hotel Coomuck"	Fair, snow machine battery inside	Ν
Bldg. 3 Bunkhouse	Upper camp	Wood frame	Fair, heater present inside	N
Bldg. 4 Bunkhouse	Upper camp	Wood frame with plywood	fair	N
Bldg. 5 Bunkhouse	Upper camp	Wood frame	Fair, wash machine, furnace, ironing board, and kerosene heater present	Ν
Bldg. 6 Bunkhouse	Upper camp	Wood frame, Bunkhouse addition	ACMs sample collected here from wallboard	Ν
Bldg. 7 Bunkhouse/kitchen	Upper camp	Wood frame	Fair, Freezer, sink, range hood, cabinets, bed frame, table, woodstove. Drums outside bldg.	Ν
Bldg. 8 Log cabin	Upper camp	Log cabin with wood floor	Good, sink, cabinets.	Ν
Bldg. 9 Log cabin	Upper camp	Log cabin with wood floor	Good, old mattress inside	Ν
Bldg. 10 Bunkhouse	Upper camp	Wood frame	Fair, labeled "Villa Ductape"	N
Bldg. 11 Bunkhouse	Upper camp	Wood frame	Fair, with outhouse in back and empty steel tank setting next to it.	Ν
Bldg. 12 Bunkhouse	Upper camp	Wood frame	Fair, old tank inside bldg, drums setting outside	N
Bldg. 13 Trailer	Upper camp	Mobile home-modern	derelict	Y
Bldg. 14 Bunkhouse	North of camp, along the road	Wood frame	Good, belonged to Elmer Thomas. Anthracite stove lying outside.	N

#### 4.2 <u>HEAVY EQUIPMENT</u>

As part of the site reconnaissance, TPECI personnel inventoried all heavy equipment, drums and miscellaneous metal debris at the site. The following list includes all heavy equipment located in the equipment yard next to the machinist shop and equipment located inside buildings that need to have fluids drained and captured as part of the site cleanup efforts.

MAKE	MODEL	GENERAL DESCRIPTION	HYDRAULICS/OIL Y/N	BATTERIES LEAD-ACID Y/N	DRAIN FLUIDS Y/N
Caterpillar	D-7	1950's era	Y	N	Y
Military	6 X 6	Next to D-7	N	N	N
Gen-Set		generator	Y	Y	Y
Caterpillar	motor	diesel	Y	Ν	Y
Caterpillar	motor	Skid mounted	Y	Ν	Y
Caterpillar	motor	Equipment motor	Y	Ν	Y
Caterpillar	PU#9J259	pump	Y	Ν	Y
Caterpillar	D6 or 7	1947 bulldozer	Y	Ν	Y
John Deere	tractor	#40, track mounted	Y	Y	Y
Trucks	1960-70's era	Pickup trucks	Y	Y	Y
John Deere 440	Serial No. 444425	Backhoe	Y	Y	Y
Caterpillar	D-7	Dozer with winch	Y	Y	Y
1940's	Dump truck		Y	N	Y

TABLE 2EQUIPMENT YARD INVENTORY LIST

# TABLE 3 MACHINIST SHOP EQUIPMENT INVENTORY LIST

MAKE	GENERAL DESCRIPTION	HYDRAULICS/OIL Y/N	LOCATION	BATTERIES LEAD-ACID Y/N	DRAIN FLUIDS Y/N
Greaves & Klusman	Bed lathe, in excess of one ton in weight, 12 feet long, stained soil beneath.	This equipment is inert, however metal shavings and machine oil in tray were observed.	Main shop bay.	N	Y
Rodgers Hydraulics, Inc.	Hydraulic press, in excess of one ton in weight, stained soil beneath.	This equipment is inert however hydraulics are present. See photo log.	Main shop bay.	N	Y
Deutz diesel	Air diesel compressor, model no. 6422801, 1092/02	See photo log.	Back shop extension (12' by 30')	N	Y

#### 4.3 <u>FUEL STORAGE TANKS</u>

No underground storage tanks were observed on site during the reconnaissance. One above ground storage tank was observed in the bunkhouse section of the camp (Appendix A). It looked intact and there was no evidence of leaks at the site of the tank. Heavy equipment throughout the camp has had fuel stored in fuel tanks for several years. TPECI personnel observed some ground surface staining beneath several pieces of heavy equipment that will need to be remediated.

#### 4.4 <u>CHEMICAL MATERIALS</u>

Petroleum hydrocarbons were noted in the machinist shop parts washer. Fuel oil staining on the ground in several areas throughout the camp was also observed. There were some old broken lead acid batteries on the ground on the west side of the machinist shop.

#### 4.5 <u>REFUSE AND DEBRIS</u>

Clothing, lead-acid batteries, 5-gallon Chevron fuel cans, drums and metal debris were present throughout the camp and within each structure. There are at least three areas that have been used for disposal. These areas were inspected and appeared to contain metal debris that was largely inert (all accessible drums in the landfills were inspected for contents). TPECI recommends that all refuse and inert metal debris be consolidated and placed into a single permitted monofill on site.

#### 4.6 <u>SITE DRAINAGE</u>

The area within and surrounding the camp is hilly. The mine camp is situated on a hill slope that drains east toward the Inmachuk River.

#### 4.7 SOIL AND WATER ANALYTICAL RESULTS

SAMPLE ID	DATE	MATRIX	DRO	RRO	GRO	Bz	TOL	ЕТВ	XYL
ADEC Soil Cleanup level*	mg/kg	SOIL	200	2,000	100	200	27,400	13,700	274,000
F-1	06/27/07	Soil	2,080	N/A	ND	ND	ND	ND	ND
C-1	06/27/07	Soil	ND	N/A	ND	ND	ND	ND	ND
POL Shed	06/27/07	Soil	176	N/A	ND	ND	ND	ND	ND
PH	06/27/07	Soil	5,230	2,520	N/A	N/A	N/A	N/A	N/A
Trip Blank	06/27/07	Soil	N/A	N/A	ND	ND	ND	ND	ND
SAMPLE ID	DATE	MATRIX	DRO	GRO	Bz	Acetone	Methylene Chloride	Chloroethane	Chloromethane
ADEC MCL	mg/L	WATER	1.5	1.3	0.005	3.65	0.005	0.29**	0.066**

TABLE 4 SOIL/WATER SAMPLING RESULTS FOR PETROLEUM, OIL, AND LUBRICANTS AND VOLATILE ORGANIC COMPOUNDS

PW	06/27/07	water	545	ND	ND	.147	0.0038	0.0037	0.0054
Notes:									
<b>BOLD</b> – bold lettering indicates analyte detected above ADEC cleanup levels									
F-1 - sample collected behind gold house									
C-1 – fuels sa	ample collect	ed at transect C	location	1					
POL shed- sa	imple collecte	ed from underne	ath the fl	oorboards	in the tin	shed located	l at the south en	d of camp	
		m fluids found							
PH - sample	collected from	m within the for	mer powe	er generat	or house,	no polychlor	inated biphenyl	s detected in this s	ample.
DRO - diese	l range organi	ic compounds							
GRO - gasol	ine range org	anic compound	3						
Bz – benzene	2								
TOL - toluer	ne								
ETB – ethylb	enzene								
XYL - total x	ylenes								
ND – analyte	not detected								
N/A- analysis not performed									
MCL – maximum contaminant level for groundwater									
* - indicates	the ADEC so	il cleanup levels	s for the A	Arctic Zon	e ** - ir	dicates ADI	EC calculated cl	eanup level-not pu	ıblished

SAMPLE ID	DATE	AS	BA	CD	CR	РВ	HG	SE	AG
ADEC Soil Cleanup Levels*	mg/Kg	8.0	9,600	140	410	400	26	680	680
A-1	06/27/07	15.5	80	ND	16.1	18.6	0.712	ND	ND
A-2	06/27/07	36.5	47.9	ND	12.6	25.9	4.06	0.666	ND
A-3	06/27/07	33.1	41.8	0.662	20.1	26.4	0.197	ND	ND
A-4	06/27/07	106	75.3	ND	19.3	20.4	0.145	0.739	ND
A-5**	06/27/07	755	108	1.92	37.8	13,600	1,570	4.12	27.6
A-6	06/27/07	14	254	ND	39.3	15.9	2.63	ND	ND
B-1	06/27/07	27.6	66.2	0.742	24.2	20.4	1.43	0.706	ND
B-2	06/27/07	18.3	83.2	0.614	15.8	60.2	4.26	0.638	ND
B-3	06/27/07	29.1	43.7	0.557	14.6	25.3	ND	ND	ND
B-4	06/27/07	19.7	66.5	ND	15.4	25.3	14.8	0.744	ND
B-5	06/27/07	11.4	101	ND	14.9	7.32	0.132	ND	ND
C-1	06/27/07	38.3	60.4	0.616	11.6	12.5	0.109	0.996	ND
C-2	06/27/07	25.6	40.1	ND	10.1	6.88	ND	ND	ND
C-3	06/27/07	22.1	86.9	ND	14.1	18.9	0.142	0.584	ND
C-4	06/27/07	14.3	279	ND	33.8	31.4	0.375	ND	ND
C-5	06/27/07	22.3	51.8	ND	14.7	7.86	ND	1.07	ND
NOTES: AS – Arsenic BA- Barium	* - Denotes Cleanup levels used are from Table B1, Arctic Zone, Ingestion. ** - Denotes the sample taken behind the camp gold house in spoils pile.								

#### TABLE 5 SOIL SAMPLING RESULTS FOR METALS

CD- Cadmium

PB- Lead

- CR- Chromium
- HG Mercury
- AG- Silver
- SE- Selenium ND – analyte not detected

#### 4.8 **ELECTRICAL UTILITIES AND TRANSFORMERS**

A few old transformers were found near and next to the former electrical generating shed. TPECI recorded the make and model of each transformer and researched whether PCBs The research showed the transformers contained PCBs when were used in them. manufactured. All transformers appeared dry. Soil sample PH (Table 4) was collected from within the former power shed and analyzed for PCBs. No PCBs were detected in this sample.

#### 4.9 <u>SURFACE VEGETATION</u>

Vegetation within the camp was consistent with the surrounding hillsides and consisted mainly of grasses, willows and dwarf shrubs and forbs. No vegetation was growing within the spoils pile behind the gold house likely due to high concentrations of heavy metals in this material.

#### 4.10 ADJOINING PROPERTIES

All adjoining property was undeveloped and mining impacts are limited to the Utica claim block.

#### 5.0 BUSINESS ENVIRONMENTAL RISK CONSIDERATIONS

#### 5.1 <u>ASBESTOS-CONTAINING MATERIALS</u>

The wiring in the buildings was sampled and analyzed for asbestos-containing materials (ACMs) in the wire coating. All wiring samples were non-detect for ACMs. There was a bag of powdery fibrous material located in the electrical/carpentry shop across the path from the machinist shop. This material and a solid silver-gray pad (possible break pad) were analyzed for ACMs. Analytical results are presented in the following table.

SAMPLE ID	SAMPLE LAYERS	DATE	Asbestos (% Detected)						
AS-1 Loose asbestos from carpenter shop and solid brake pad item	Black non-fibrous material	06/27/07	ND						
AS-1	Brown semi-fibrous material	06/27/07	5% Chrysotile						
AS-1	Composite asbestos content	06/27/07	3% Asbestos						
AS-1	Composite non-asbestos content	06/27/07	20% Cellulose						
AS-2 Wiring insulation-brown	Wire coating	06/27/07	ND						
AS-2	Composite-asbestos content	06/27/07	ND						
AS-2	Composite-non-asbestos content	06/27/07	40% Cellulose						
AS-3 Wiring insulation-black.	Wire coating	06/27/07	ND						
AS-3	Composite-asbestos content	06/27/07	ND						
AS-3	Composite-non-asbestos content	06/27/07	25% Cellulose						
AS-4 Wallboard from bunkhouse.	Paint	06/27/07	ND						
AS-4	Brown ceiling tile	06/27/07	ND						
AS-4	Composite-asbestos content	06/27/07	ND						
AS-4	Composite-non-asbestos content	06/27/07	95% Cellulose						

TABLE 6Building Materials Samples

### 5.2 LEAD-BASED PAINT

No sources of lead based paint were observed during the site reconnaissance. Most of the buildings on site were wood frame construction and were not painted. The only potential source for lead based paint would be the old equipment. Lead acid batteries were observed stored on the ground next to the machinist shop. These will need to be removed and placed into a fish tote and shipped to a recycling facility. The soil beneath the batteries will need to be sampled and may need to be handled as RCRA hazardous waste depending on the concentrations of lead in the soil.

#### 5.3 HISTORIC CONTAMINATION

Known historic contamination at the site includes fuel related contamination, which was evidenced by surface staining and corroborated by the presence of a large number of fuel cans and drums littering the property. In addition, there is a high concentration of mercury in the spoils pile located outside the gold house. TPECI personnel noted during sampling that little to no vegetation was growing in this spoils pile.

#### 6.0 IMPACTED MEDIA

Impacted media is limited to the soil affected by petroleum hydrocarbon and mercury contaminants in the camp area. Groundwater impacts are unknown but considered unlikely due to shallow penetration of mobile contaminants (i.e. petroleum).

#### 7.0 EXPOSURE ROUTES

TPECI identified ingestion, inhalation, and dermal contact as potential exposure routes. The primary onsite exposure routes at this location are contaminated surface and subsurface soils. Potentially, excavation of soils may also result in dermal and inhalation exposure. There are no known or potential offsite migration pathways.

#### 8.0 IMPACT LOCATION

Based on TPECI site investigations, the contaminants of concern are confined on site. Subsurface investigations proved that the contaminants have not spread off site.

#### 9.0 POTENTIAL RECEPTORS

Potential receptors to mercury, lead, arsenic, and petroleum-related contamination include visitors to the site, any future demolition or environmental contractors working at the site during cleanup and any resident animals that could come into contact with contaminated soil beneath and behind the gold house.

#### **10.0 CONCLUSIONS AND RECOMMENDATIONS**

Upon completion of the site reconnaissance and associated soil sampling, TPECI personnel concluded that any gross contamination related to the mining and general operation of the camp is confined to discrete areas and has not migrated off-site.

Petroleum-related impacts to soil are evident in the machinist shop located close to the river. TPECI estimates approximately 15 to 20 cubic yards of contaminated soil must be excavated and treated. Other areas of petroleum contamination appear confined to the tin POL shed located at the south end of the camp near the dump site. More than twenty (20) 55-gallon drums were noted within and near the camp and dump areas. All of these drums will need to be removed. Some of them must be over-packed and hauled off site for disposal. Approximately one dozen of the drums had unknown liquid contents in them.

Ninety-two 5-gallon fuel cans were removed from the camp area and consolidated into the tin POL shed. Obvious soil staining was observed at the entrance to this shed. This contaminated soil will need to be excavated, and treated. TPECI personnel estimated up to one 55-gallon drum (approximately 0.3 cubic yards) of contaminated material at this location.

Sampling within and behind the gold house indicated that mercury, arsenic, lead, and DRO compounds are present in the soil above ADEC cleanup standards. The soil beneath and surrounding this structure should be excavated, drummed, and hauled off site for disposal.

Only one sample from the transects exceeded the standard for mercury. TCLP test results indicated that lead is the only analyte above the EPA action levels for RCRA hazardous waste. The contaminated material beneath and behind the gold house will need to be excavated, drummed, and hauled off site by a certified RCRA hazardous materials handler, for proper disposal.

The only metal consistently detected throughout the sampling transects above ADEC soil cleanup levels was arsenic. Background concentrations of heavy metals like arsenic are common throughout mining districts like the Bendeleben quadrangle (USGS ARDF, 2007).

The overall condition of the camp is characterized by the presence of scrap metal, machinery, and parts abandoned since mining ceased in this valley. TPECI personnel recommend obtaining a one-time use landfill permit from the ADEC to dispose of scrap metal, crushed vehicles and structures, and any other non-toxic waste material at the site. All asbestos containing materials, soil contaminated with petroleum or mercury, fuel and hydraulic oils, and lead-acid batteries will need to be properly contained and disposed off site.

#### **11.0 REFERENCES**

- Barr, Gilbert, 2007. Personal communications during site reconnaissance between Mr. Barr and TPECI personnel; Eddie Packee, Senior Scientist, and Melissa Shippey, Staff Scientist, TPECI. June 28, 2007.
- Brooks, Alfred H. <u>Mineral Resources of Alaska</u>. Washington: Government Printing Office, 1908.
- Herreid, G. <u>The Geology and Geochemistry of the Inmachuk River Map Area, Seward</u> <u>Peninsula, Alaska.</u> Geologic Report No. 23. State of Alaska, Department of Natural Resources, 1966
- SLR, 2005. SLR International Corp., Phase I Environmental Site Assessment With Limited Site Characterization, Former Utica Mine Site, Inmachuk River, Alaska. Site Characterization Summary Report. June, 2005.
- USGS, 2007. <u>Alaska Resource Data File Bendeleben Quadrangle.</u> Open-File Report Number 99-332. United States Geologic Survey, 2007.

**APPENDIX** A

# PHOTOGRAPHIC LOG

Photo 1:
Utica Mine Camp. Machinist shop in background to the right of equipment yard. CAT bulldozer is sitting in front of the machinist shop. View is to the north east.
Photo 2:
View of machinist shop with equipment yard in foreground. Picture taken looking to the south.
Photo 3:
Miscellaneous equipment parts in foreground with John Deere #40 tractor in background. View is looking to the southwest with machinist shop to the left.

Photo 4:
The metal building on the right is the power generating shed. Miscellaneous equipment in foreground and the living quarters are located uphill of the industrial part of the mine camp in the background.
Photo 5:
The Elmer Thomas cabin which is located en route to (a few hundred yards from) the main camp.
Photo 6:
Dredge buckets located at south dump along with other miscellaneous debris.

Photo 7:
Miscellaneous debris at south end of mine camp including an old truck body.
Photo 8: Approximately 20 cubic yards of miscellaneous metal parts and debris located at camp south end dump area. This dump is located in front of a small pond that has drums sitting in the water.
Photo 9: Soil sampling location inside gold house. Sample number A-2.

Photo 10: Soil sampling in spoils pile behind gold house. Sample number A-1
Photo 11: Soil sample location B-5, uphill and behind the electrical/carpenter shop.
Photo 12: Soil sampling at lead acid battery pile to the north of the machinist shop. Sample number A-3.

 Photo 13:
Soil sample location B-5. Located uphill from industrial area.
Photo 14: Soil sample location C-4.
Photo 15: Soil sample location C-5.

Photo 16:
Ball mill located approximately 1 mile from the Utica Mine camp.
Photo 17:
Ball mill different view.

**APPENDIX B** 

LABORATORY ANALYTICAL REPORT



August 10, 2007

Melissa Shippey Travis/Peterson Environmental Consulting 329 2nd Street Fairbanks, AK 99701

RE: Utica Mine

Enclosed are the results of analyses for samples received by the laboratory on 07/03/07 16:25. The following list is a summary of the Work Orders contained in this report, generated on 08/10/07 15:57.

If you have any questions concerning this report, please feel free to contact me.

<u>Work Order</u> BQG0070 <u>Project</u> Utica Mine ProjectNumber 1080-19

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SEATTLE, WA 11720 NORTH CREEK PKWY N, SUITE 400 BOTHELL, WA 98011-8244 PH: (425) 420.9200 FAX: (425) 420.9210

Travis/Peterson Environmental Consulting	Project Name:	Utica Mine	
329 2nd Street	Project Number:	1080-19	Report Created:
Fairbanks, AK 99701	Project Manager:	Melissa Shippey	08/10/07 15:57

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	
AS-1	BQG0070-01	Other dry	06/27/07 17:46	07/03/07 16:25	
AS-2	BQG0070-02	Other dry	06/27/07 20:30	07/03/07 16:25	
AS-3	BQG0070-03	Other dry	06/27/07 21:00	07/03/07 16:25	
AS-4	BQG0070-04	Other dry	06/27/07 21:30	07/03/07 16:25	
A-1	BQG0070-05	Soil	06/27/07 16:21	07/03/07 16:25	
A-2	BQG0070-06	Soil	06/27/07 16:30	07/03/07 16:25	
A-3	BQG0070-07	Soil	06/27/07 16:43	07/03/07 16:25	
A-4	BQG0070-08	Soil	06/27/07 16:47	07/03/07 16:25	
A-5	BQG0070-09	Soil	06/27/07 16:56	07/03/07 16:25	
A-6	BQG0070-10	Soil	06/27/07 17:06	07/03/07 16:25	
B-1	BQG0070-11	Soil	06/27/07 17:23	07/03/07 16:25	
B-2	BQG0070-12	Soil	06/27/07 18:15	07/03/07 16:25	
B-3	BQG0070-13	Soil	06/27/07 18:25	07/03/07 16:25	
B-4	BQG0070-14	Soil	06/27/07 18:40	07/03/07 16:25	
B-5	BQG0070-15	Soil	06/27/07 18:46	07/03/07 16:25	
C-1	BQG0070-16	Soil	06/27/07 19:04	07/03/07 16:25	
C-2	BQG0070-17	Soil	06/27/07 19:15	07/03/07 16:25	
C-3	BQG0070-18	Soil	06/27/07 19:23	07/03/07 16:25	
C-4	BQG0070-19	Soil	06/27/07 19:30	07/03/07 16:25	
C-5	BQG0070-20	Soil	06/27/07 19:35	07/03/07 16:25	
P.H.	BQG0070-21	Soil	06/27/07 20:15	07/03/07 16:25	

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Travis/Peterson Environmental Consulting	Project Name:	Utica Mine	
329 2nd Street	Project Number:	1080-19	Report Created:
Fairbanks, AK 99701	Project Manager:	Melissa Shippey	08/10/07 15:57

Total Metals by EPA 6000/7000 Series Methods TestAmerica - Seattle, WA											
Analyte		Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
BQG0070-05	(A-1)		Soil			Samp	led: 06/2	27/07 16:21			
Arsenic		EPA 6020	15,5		0,551	mg/kg dry	lx	7G06021	07/06/07 13:14	07/09/07 22:56	
Barium		36	80.0		5,51	٦	18		п	UF.	
Cadmium		U	ND		0.551	"	19	Ð	в	P	
Chromium		t)	16,1		0.551	n	ų	v	ъ	P	
Lead		v	18.6		0.551	•	ч	"	н	07/11/07 21:50	
Mercury		EPA 7471A	0.712		0.110	W	н	7G12057	07/12/07 17:21	07/13/07 15:21	
Selenium		EPA 6020	ND		0.551	44	н	7G06021	07/06/07 13:14	07/09/07 22:56	
Silver		Π	ND		0.551	e	п	n		'n	
BQG0070-06	(A-2)		Soi	l		Samp	led: 06/2	27/07 16:30			
Arsenic		EPA 6020	36.5		0.524	mg/kg dry	İx	7G06021	07/06/07 13:14	07/09/07 23:02	
Barium		n	47.9		5.24	D	n	u	u	ы	
Cadmium		н	ND		0.524	n	н				
Chromium		u	12.6		0.524	4	ч		U	U U	
Lead		ų	25.9		0.524	9	н	в	п	07/11/07 21:56	
Mercury		EPA 7471A	4.06		0.529	4	5x	7G12057	07/12/07 17:21	07/13/07 16:36	
Selenium		EPA 6020	0.666		0.524	u	1x	7G06021	07/06/07 13:14	07/09/07 23:02	
Silver		w	ND		0.524	ri		u	в		
BQG0070-07	(A-3)		Soi	l		Sampled: 06/27/07 16:43					
Arsenic		EPA 6020	33.1		0.586	mg/kg dry	1x	7G06021	07/06/07 13:14	07/09/07 23:08	
Barium		u .	41.8		5.86	в	U	15	U	4	
Cadmium		u	0.662		0,586	n			P	ы	
Chromium		u	20.1	_	0.586	n		4	u.	F	
Lead		IT.	26.4		0.586	н		υ		07/11/07 22:02	
Mercury		EPA 7471A	0,197	a	0.104	P		7G12057	07/12/07 17:21	07/13/07 16:02	
Selenium		EPA 6020	ND	+	0.586	9	n	7G06021	07/06/07 13:14	07/09/07 23:08	
Silver		10	ND		0,586	v	a	n	b	P	
BQG0070-08	(A-4)		Soi	ł		Samp	led: 06/.	27/07 16:47			
Arsenic		EPA 6020	106		0.660	mg/kg dry	lx	7606021	07/06/07 13:14	07/09/07 23:14	
Barium		10	75.3		6.60	u	0	u	u.		
Cadmium			ND		0.660	n	0		u	a	
Chromium		u	19.3		0.660		n	в	ŧ	14	
Lead		11	20.4		0.660	u	R	п	u	07/11/07 22:19	
Mercury		EPA 7471A	0.145		0,128	30	н	7G12057	07/12/07 17:21	07/13/07 15:29	
Selenium		EPA 6020	0.739		0.660	u	u	7G06021	07/06/07 13:14	07/09/07 23:14	
Silver			ND		0.660	1				р	

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<b>Travis/Peterson Environmental Consulting</b> 329 2nd Street Fairbanks, AK 99701			Project Nu	Project Name: Utica Mine Project Number: 1080-19 Project Manager: Melissa Shippey					Report Created: 08/10/07 15:57	
	Tot	al Metals I	oy EPA ( TestAmeric			es Met	hods			
Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
BQG0070-09 (A-5)		Soi	1		Samı	oled: 06/2	7/07 16:56			
Barium	EPA 6020	108		5.47	mg/kg dry	1x	7G06021	07/06/07 13:14	07/09/07 23:20	
Cadmium	11	1.92	·	0.547	31	a	14	łu.	FF	
Chromium	11	37.8		0.547	a	и	и	ч	**	
Mercury	EPA 7471A	1570		174	a	1500x	7G12057	07/12/07 17:21	07/13/07 17:13	
Selenium	EPA 6020	4.12		0.547	Ð	1x	7G06021	07/06/07 13:14	07/09/07 23:20	
llver	v	27,6		0.547	n	п		и	п	
BQG0070-09RE1 (A-5)		Soi	1		Samp	oled: 06/2	7/07 16:56			
Arsenic	EPA 6020	755		27.3	mg/kg dry	50x	7G06021	07/06/07 13:14	07/11/07 22:25	
Lead	U	13600	—	54,7	Ð	100x	в	p.	07/12/07 06:03	
BQG0070-10 (A-6)		Soi	1		Samp	oled: 06/2	7/07 17:06			
Arsenic	EPA 6020	14.0		1.04	mg/kg dry	lx	7G06021	07/06/07 13:14	07/09/07 23:26	
Barium	a	254		10.4		u	n	æ	4	
Cadmium	n	ND	·•	1.04	ų	н	n	e	38	
Chromium	u	39,3		1.04	U	1è	н	¢r.	a	
Lead		15,9		1.04	ય	r	9		07/11/07 22:31	
Mercury	EPA 7471A	2.63	$\leftarrow$	2.17	v	10x	7G12057	07/12/07 17:21	07/13/07 16:44	
Selenium	EPA 6020	ND	<b>⊷</b> →	1.04	п	lx	7G06021	07/06/07 13:14	07/09/07 23:26	
Silver	я	ND		1.04	IT	स	a	9	a	
BQG0070-11 (B-1)		Soi	1		Samp	oled: 06/2	7/07 17:23			
Arsenic	EPA 6020	27.6		0.515	mg/kg dry	Ix	7G06021	07/06/07 13:14	07/09/07 23:31	
Barium	М	66.2		5.15			3F	u	Ð	
Cadmium	9	0.742		0.515	P	n	ų	ш	F	
Chromium	1	24.2		0.515	"	u	в	1	"	
Lead	9	20.4		0.515	"	u	в	u	07/11/07 22:37	
fercury	EPA 7471A	1.43		0.561	87	5x	7G12057	07/12/07 17:21	07/13/07 16:46	
Selenium	EPA 6020	0,706		0.515	n	lx	7G06021	07/06/07 13:14	07/09/07 23:31	
Silver	บ	ND		0.515	D		15	•		

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EPA 6020

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Travis/Peterson Enviro 329 2nd Street Fairbanks, AK 99701		•	ect Name: Utica Mine ect Number: 1080-19 ect Manager: Melissa Shippey					Report Created: 08/10/07 15:57		
	Tot	al Metals I T	by EPA ( TestAmeric			es Met	hods			
Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
BQG0070-12 (B-2)		Soi	1		Sampled: 06/27/07 18:15					
Arsenic	EPA 6020	18.3		0.608	mg/kg dry	lx	7G06021	07/06/07 13:14	07/09/07 23	:49
Barium	n	83.2	_	6.08		u		"	4	
Cadmium	0	0.614	·	0.608	۳	"	"			
Chromium	Ð	15.8		0.608		v	•	u		
Lead	ł	60.2		0.608		n	h	ч	07/11/07 22	:43
Mercury	EPA 7471 A	4,26		1.20	8	10x	7G12057	07/12/07 17:21	07/13/07 16	:49

1.20

0.608

0.608

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в

lx

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7G06021

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07/06/07 13:14

8

BQG0070-13 (B	-3)	Soil		Samp	led: 06/2	7/07 18:25		
Arsenie	EPA 6020	29.1	 0,489	mg/kg dry	1x	7G06021	07/06/07 13:14	07/09/07 23:55
Barium	м	43.7	 4.89	U		a	łi.	n
Cadmium	а	0.557	 0.489	h	u	tu	źi.	17
Chromium	8	14.6	 0.489	ы		0	n	π
Lead	11	25.3	 0.489	8		n	1	07/11/07 22:49
Mercury	EPA 7471A	ND	 0.106			7G12057	07/12/07 17:21	07/13/07 16:05
Selenium	EPA 6020	ND	 0.489		a	7G06021	07/06/07 13:14	07/09/07 23:55
Silver	11	ND	 0,489	u	u.	n	u	P

BQG0070-14 (B-4)		Soil			Samp	led: 06/2	27/07 18:40		
Arsenic	EPA 6020	19.7		0,595	mg/kg dry	1x	7G06021	07/06/07 13:14	07/10/07 00:13
Barium	u	66.5		5.95	η		69	ti	
Cadmium	đ	ND		0,595	٣		n	u	P
Chromium	ų	15.4	_	0.595	D	n		η	U
Lead	ų	25,3		0,595	и		r	ti i	07/11/07 22:55
Mercury	EPA 7471A	14.8		1.27	п	10x	7G12057	07/12/07 17:21	07/13/07 17:02
Selenium	EPA 6020	0.744		0.595	u	1x	7606021	07/06/07 13:14	07/10/07 00:13
Silver	м	ND	••	0.595		u	R.	42	e.
BQG0070-15 (B-5)		Soil			Samp	led: 06/2	27/07 18:46		
Arsenic	EPA 6020	11.4		0.617	mg/kg dry	lx	7G06021	07/06/07 13:14	07/10/07 00:19
Barium	u	101		6.17		"	r	D.	u
Cadmium	и	ND		0.617	۳		9	ų	4
Chromium	v	14.9		0.617	н	u	u	u.	n
Lead	9	7.32		0.617	η	v	R.	b?	07/11/07 23:01
Mercury	EPA 7471A	0.132		0.117	н	Ð	7G12057	07/12/07 17:21	07/13/07 16:10
Selenium	EPA 6020	ND		0.617		ø	7606021	07/06/07 13:14	07/10/07 00:19
Silver	n	ND		0.617		v	rr.		

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Mercury

Selenium

Silver

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07/09/07 23:49

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329 2nd Street	Project Number:	1080-19	Report Created:
Fairbanks, AK 99701	Project Manager:	Melissa Shippey	08/10/07 15:57

Total Metals by EPA 6000/7000 Series Methods TestAmerica - Seattle, WA											
Analyte		Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
BQG0070-16	(C-1)		Soi	il		Samp	led: 06/2	27/07 19:04			
Arsenic		EPA 6020	38,3	•	0.535	mg/kg dry	łx	7G06021	07/06/07 13:14	07/10/07 00:25	
Barium		ú	60,4	••	5.35				ก	6	
Cadmium		K.	0.616		0.535	e	n		n		
Chromium		н	11.6		0.535	"	n	n	n		
Lead		н	12,5		0.535	u	ч '	n	a	07/11/07 23:07	
Mercury		EPA 7471A	0.109	·	0.0956	u	น	7G12057	07/12/07 17:21	07/13/07 16:12	
Selenium		EPA 6020	0.996		0.535	r	บ	7G06021	07/06/07 13:14	07/10/07 00:25	
Silver		n	ND	••	0.535	u	"		n		
BQG0070-17	(C-2)		Soi			Samp	led: 06/2	7/07 19:15			
Arsenic		EPA 6020	25.6	••	0.550	mg/kg dry	lx	7G06021	07/06/07 13:14	07/10/07 00:31	
Barium		п	40.1		5.50	u	п		ĸ	9	
Cadmium		v	ND	<b>→</b>	0.550		н	tr	18	4	
Chromium		n	10.1		0,550	15	IT	Ŧ	н	a	
lead		n	6.88	••	0.550	u.	4	7	в	07/11/07 23;12	
Mercury		EPA 7471A	ND		0.0975	v	u	7G12057	07/12/07 17:21	07/13/07 16:15	
Selenium		EPA 6020	ND	•	0.550	4	a	7G06021	07/06/07 13:14	07/10/07 00:31	
Silver		4	ND		0.550	u	u	u	47	4	
3QG0070-18	(C-3)		Soi	l		Samp	led: 06/2	7/07 19:23			
Arsenic		EPA 6020	22.1		0.578	mg/kg dry	lx	7G06021	07/06/07 13:14	07/10/07 00:37	
Barium		u.	86.9		5.78	9	86	0	12	D	
Cadmium		п	ND		0.578	h	u.	IS.		n	
Chromium		u	14.1	·	0.578	u.	T)	lr.	u:	9	
.ead		U.	18.9		0.578	۹۲.	π	h	tr tr	07/11/07 23:30	
lercury		EPA 7471A	0.142		0.117			7G12057	07/12/07 17:21	07/13/07 16:17	
Selenium		EPA 6020	0,584	·	0.578	н	u	7G06021	07/06/07 13:14	07/10/07 00:37	
Silver		B	ND		0.578	n	ta	a	2	ų	
BQG0070-19	(C-4)		Sol	l		Samp	led: 06/2	7/07 19:30			
rsenic		EPA 6020	14.3		0.735	mg/kg dry	1x	7G06021	07/06/07 13;14	07/10/07 00:43	
Cadmium		h	ND	••	0,735	н	u	n		n;	
hromium		u.	33.8		0.735	6		n	9		
ead			31,4		0.735	w	и		۹£	07/11/07 23:36	
lercury		EPA 7471A	0.375		0.148	6	n	7G12057	07/12/07 17:21	07/13/07 16:20	
Selenium		EPA 6020	ND		0.735	n	13	7G06021	07/06/07 13:14	07/10/07 00:43	
Silver		IF	ND		0.735		a		u .	41	

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Travis/Peterson Environmental Consulting	Project Name:	Utica Mine	
329 2nd Street	Project Number:	1080-19	Report Created:
Fairbanks, AK 99701	Project Manager:	Melissa Shippey	08/10/07 15:57

Total Metals by EPA 6000/7000 Series Methods TestAmerica - Seattle, WA										
Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
BQG0070-19RE1 (C-4)		Soil				oled: 06/2	27/07 19:30			
Barium	EPA 6020	279		14.7	mg/kg dry	2x	7G06021	07/06/07 13:14	07/11/07 23:42	
BQG0070-20 (C-5)		Soil			Samp	led: 06/2	27/07 19:35			
Arsenic	EPA 6020	22,3	_	0.535	mg/kg dry	lx	7G06021	07/06/07 13:14	07/10/07 01:00	
Barium	11	51,8		5,35	a	31	η	u.	r	
Cadmium	п	ND		0,535	n	n	ч	н	Р	
Chromium	11	14.7		0.535	11	v	n	n	ч	
Lead	v	7.86		0.535	a			"	07/11/07 23:48	
Mercury	EPA 7471A	ND		0.0983	ч	el.	7G12057	07/12/07 17:21	07/13/07 16:22	
Selenium	EPA 6020	1.07	• <b>-</b>	0.535	v	н	7G06021	07/06/07 13:14	07/10/07 01:00	
Silver	ıt	ND		0.535	11	ħ	P	a		

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Blake T. Meinert, Project Manager



Travis/Peterson Environmental Consulting	Project Name:	Utica Mine	
329 2nd Street	Project Number:	1080-19	Report Created:
Fairbanks, AK 99701	Project Manager:	Melissa Shippey	08/10/07 15:57

TCLP Metals by EPA 1311/6000/7000 Series Methods TestAmerica - Seattle, WA											
Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes	
BQG0070-09 (A-5)		Soi	Soil			Sampled: 06/27/07 16:56					
Arsenic	EPA 6010B	ND	_	1.00	mg/l	1x	7H07028	08/07/07 11:15	08/07/07 17:12		
Lead	r.	114		1.00	4	Đ		ır	at .		
Mercury	EPA 7470A	0.00388		0.00250	ų	B.	7H07038	08/07/07 12:42	08/08/07 12:47	F	

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Travis/Peterson Environmental Consulting	Project Name:	Utica Mine	
329 2nd Street	Project Number:	1080-19	Report Created:
Fairbanks, AK 99701	Project Manager:	Melissa Shippey	08/10/07 15:57

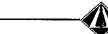
#### Polychlorinated Biphenyls by EPA Method 8082 TestAmerica - Seattle, WA

Analyte		Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
BQG0070-21	(P.H.)		Soi	1		Sampl	led: 06/2	27/07 20:15			R
Aroclor 1016		EPA 8082	ND		556	ug/kg dry	20x	7G10029	07/10/07 12:24	07/17/07 18:04	
Aroclor 1221		σ	ND		1110	11	11	u	9	P	
Aroclor 1232			ND		556	11	a	H	u	ĸ	
Aroclor 1242		11	ND		556	5	n	٥		r	
Aroclor 1248		U	ND		556	n	U	ø	h	u	
Aroclor 1254			ND		556	tr	"	и		PT	
Aroclor 1260		0	ND		556	e	н	n	•	n	
Aroclor 1262		<b>n</b>	ND		556	8	u	ų	п	п	
Aroclor 1268		в	ND		556	n	n	*	н	27	
Surrogate(s):	TCX			95.6%		39 - 139 %	N				
	Decachlorobiphenyl			82.7%		33 - 163 %				~	Z

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Travis/Pet 329 2nd St Fairbanks,	reet	nental Consulting		Project Na Project Na Project M	шрег.	Utica N 1080-19 Melissa				Report 0 08/10/0	
		Physic	al Parame T	t <b>ers by</b> A			EPA N	lethods			
Analyte		Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
BQG0070-05	(A-1)		Soil			Sam	pled: 06/2	27/07 16:21			
Dry Weight		BSOPSPL003R0 8	91.7	_	1.00	%	lx	7G13060	07/13/07 21:02	07/16/07 00:00	
BQG0070-06	(A-2)		Soil			Sam	pled: 06/2	:7/07 16:30			
Dry Weight		BSOPSPL003R0 8	90.9		1.00	%	lx	7G13060	07/13/07 21:02	07/16/07 00:00	
BQG0070-07	(A-3)		Soil			Sam	pled: 06/2	7/07 16:43			
Dry Weight		BSOPSPL003R0 8	88.9		1.00	%	1x	7G13060	07/13/07 21:02	07/16/07 00:00	.v
BQG0070-08	(A-4)		Soil			Sam	pled: 06/2	7/07 16:47			
Dry Weight		BSOPSPL003R0 8	81.4		1.00	%	lx	7G13060	07/13/07 21:02	07/16/07 00:00	
BQG0070-09	(A-5)		Soil			Sam	pled: 06/2	7/07 16:56			
Dry Weight		BSOPSPL003R0 8	86,3		1.00	%	İx	7G13060	07/13/07 21:02	07/16/07 00:00	
BQG0070-10	(A-6)		Soil			Sam	pled: 06/2	7/07 17:06			
Dry Weight		BSOPSPL003R0 8	46.8		1.00	96	lx	7G13060	07/13/07 21:02	07/16/07 00:00	
BQG0070-11	(B-1)		Soil			Sam	pled: 06/2	7/07 17:23			
Dry Weight		BSOPSPL003R0 8	91.5		1.00	%	1x	7G13060	07/13/07 21:02	07/16/07 00:00	
BQG0070-12	(B-2)		Soil			Sam	pled: 06/2	7/07 18:15			
Dry Weight		BSOPSPL003R0 8	81,4		1.00	%	1x	7G13060	07/13/07 21:02	07/16/07 00:00	
BQG0070-13	(B- <b>3</b> )		Soil			Sam	pled: 06/2	7/07 18:25			
Dry Weight		BSOPSPL003R0 8	93.0		1.00	%	1x	7G13060	07/13/07 21:02	07/16/07 00:00	
BQG0070-14	(B-4)		Soil			Sam	oled: 06/2	7/07 18:40			
Dry Weight	· · · · · · · · · · · · · · · · · · ·	BSOPSPL003R0 8	78.5		1.00	%	lx	7G13060	07/13/07 21:02	07/16/07 00:00	
BQG0070-15	(B-5)		Soil			Sam	oled: 06/2	7/07 18:46			

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Blake T. Meinert, Project Manager



<b>Travis/Pet</b> 329 2nd Str Fairbanks, 7	eet	nental Consulting		Project Na Project Nu Project Ma	unber:	Utica I 1080-19 Melissa				-	t Created: /07 15:57
		Physic	al Parame	ters by A estAmeric			ÆPA N	Iethods			
Analyte		Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
BQG0070-15	(B-5)		Soi	I		Sam	pled: 06/2	27/07 18:46			
Dry Weight		BSOPSPL003R0 8	77.1		1.00	96	lx	7G13060	07/13/07 21:02	07/16/07 00:00	
BQG0070-16	(C-1)		Soi	1		Sam	pled: 06/2	27/07 19:04			
Dry Weight		BSOPSPL003R0 8	93,4		1.00	%	lx	7G13060	07/13/07 21:02	07/16/07 00:00	
BQG0070-17	(C-2)		Soi	I		Sam	pled: 06/2	27/07 19:15			
Dry Weight		BSOPSPL003R0 8	93.8		1.00	9/5	lx	7G13060	07/13/07 21:02	07/16/07 00:00	
BQG0070-18	(C-3)		Soi	I		Sam	pled: 06/2	27/07 19:23			
Dry Weight		BSOPSPL003R0 8	90.1		1.00	%	lx	7G13060	07/13/07 21:02	07/16/07 00:00	
BQG0070-19	(C-4)		Soi	l		Sam	pled: 06/2	27/07 19:30			
Dry Weight		BSOPSPL003R0 8	66.7		1.00	%	lx	7G13060	07/13/07 21:02	07/16/07 00:00	
BQG0070-20	(C-5)		Soil	l		Sam	pled: 06/2	7/07 19:35			
Dry Weight		BSOPSPL003R0 8	89,8		1.00	%	1x	7G13060	07/13/07 21:02	07/16/07 00:00	
BQG0070-21	(P.H.)		Soil	l		Sam	pled: 06/2	7/07 20:15			
Dry Weight		BSOPSPL003R0	90.9		1.00	96	lx	7G13060	07/13/07 21:02	07/16/07 00:00	

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Blake T. Meinert, Project Manager





Travis/Peterson Environn	ental Consultin	ng	I	Project Na	me:	Utica M	line							
329 2nd Street				Project Nu		1080-19							Report Crea	ted:
Fairbanks, AK 99701			1	Project Ma	mager:	Melissa	Shippey						08/10/07 1:	
• •				-	_									
	Total Metal	s by EPA 600	0/7000 Se	eries Mo	ethods -	Labora	tory Qu	ality Co	ontrol	Results	3			
					- Seattle,		-	-						
QC Batch: 7G06021	Soil Pre	paration Metho	d: EPA	3050B										
Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (7G06021-BLK1)								Extr	acted:	07/06/07 13	:14			
Cadmium	EPA 6020	ND		0.500	mg/kg wet	İx		••	**			1	07/09/07 21:51	
Selenium	e.	ND		0.500		•	••						n	
Lead	v	ND		0.500	n							••	07/12/07 05:57	
Chromium		ND	•••	0.500			••					1	07/09/07 21:51	
Barium	8	ND	•••	5.00	4	в							н	
Arsenic	и	ND		0.500	9	8							17	
Silver	a	ND		0.500	"								13	
LCS (7G06021-BS1)								Extra	acted:	07/06/07 13	:14			
Arsenio	EPA 6020	42.6		0.500	mg/kg wet	łx		40.0	107%	(80-120)		(	07/09/07 21:57	
Barium	e	42.9		5.00	U				107%	h			u	
Selenium	ť	42.9		0.500	н	6	~	H	107%	e.			u	
Chromium	в	41.7	•	0.500	u		••		104%	ø			n	
Silver	ы	41.6	•	0.500			••		104%	ч				
Lead	b	40.2		0.500	u				101%	1		(	07/11/07 20:39	
Cedmium	1	42.7		0.500	u	н			107%	B.		(	07/09/07 21:57	

Duplicate (7G06021-DUP1)				QC Sourc	e: BQG0070-	05		Ext	racted: 0	7/06/07 1	3:14		
Cadmium	EPA 6020	ND		0.568	mg/kg dry	1x	ND		••		50.1% (30)	07/09/07 22:15	R4
Lead	v	170		0.568	n		18.6	•			161% "	07/11/07 21:09	R3
Selenium	Ð	ND		0.568	Ľ	v	NÐ	••			33,4% "	07/09/07 22:15	R4
Silver	P	ND	••••	0.568	n	Đ	ND				147% (50)	c)	R4
Chromium		18,6	•••	0.568	n,	Ð	16.1				14.4% (30)	12	
Arsenic	и	23.7	••	0.568	n	8	15.5		-		42.0% "	11	R3
Barium	н	91.3		5.68	n	۳	80.0				13.2% *	u .	
	н				n	P						μ	R3

Matrix Spike (7G06021-MS1)				QC Sourc	e: BQG0070-	05		Ext	racted:	07/06/07 13:1	4			
Selenium	EPA 6020	46.4	•••	0.574	mg/kg dry	lx	0.369	45.9	100%	(61-120)			07/09/07 22:09	
Cadmium	a	47,5	•••	0.574	11	ħ	0.187	и	103%	(80-120)	••	••	tt	
Lead	6	144		0.574	u	в	18.6	ų	274%	(29-166)			07/11/07 20:51	M1
Chromium	6	63.1	••	0.574	u.	ν	16.1	**	102%	(30-163)			07/09/07 22:09	
Barium		140		5.74	v	e	80.0	P	130%	(20-160)			v	
Silver	u.	44.9	•••	0.574	P	U	0.0826	v	97.7%	(54-126)		••	ŧ.	
Arsenic	•	62.5		0.574	ŧ	0	15.5	6	102%	(57-125)				

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Blake	T.	Meinert.	Project	Manager



Travis/Peterson Environmental Consulting	Project Name:	Utica Mine	
329 2nd Street	Project Number:	1080-19	Report Created:
Fairbanks, AK 99701	Project Manager:	Melissa Shippey	08/10/07 15:57

#### Total Metals by EPA 6000/7000 Series Methods - Laboratory Quality Control Results TestAmerica - Seattle, WA

QC Batch: 7G06021 Soil Preparation Method: EPA 3050B

Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
			QC Source:	BQG0070-0	5		Extr	acted:	07/06/07 13:	14			
EPA 6020	0.134			ug/ml	lx	0.0293	0.100	104%	(75-125)	••	••	07/09/07 22:03	
	0,106	•		ų	¥	0.000340	π	106%	11	••	_	ŋ	
a	0.254				a	0.145	17	109%		••		н	
	0.131	***		v	e	0.0338	17	97.1%	u			07/11/07 20:45	
	0.136				6	0.0282	0.0995	109%	5			07/09/07 22:03	
ų	0.101			U		0.000150	0.100	101%	æ			σ	
ų	0.105			P		0.000670	ų	104%	ut.		••	8	
	EPA 6020 " " "	EPA 6020 0.134 " 0.106 " 0.254 " 0.131 " 0.136 " 0.101	EPA 6020 0.134 " 0.106 " 0.254 " 0.131 " 0.136 " 0.101	QC Source: EPA 6020 0.134 " 0.106 " 0.254 " 0.131 " 0.136 " 0.101	QC Source:         BQG0070-0           EPA 6020         0.134          ug/ml           "         0.106          "           "         0.254          "           "         0.131          "           "         0.131          "           "         0.136          "           "         0.136          "	QC Source:         BQG0070-05           EPA 6020         0.134          ug/ml         1x           "         0.106          "         "           "         0.254          "         "           "         0.131          "         "           "         0.136          "         "           "         0.136          "         "	Participation         Result         Participation         Result           QC Source:         BQG0070-05           EPA 6020         0.134          ug/ml         1x         0.0293           "         0.106          "         "         0.000340           "         0.254          "         "         0.145           "         0.131          "         "         0.0338           "         0.136          "         "         0.0282           "         0.101          "         "         0.000150	QC Source:         BQG0070-05         Result         Amt           EPA 6020         0.134          ug/ml         1x         0.0293         0.100           "         0.106          "         "         0.000340         "           "         0.2554          "         "         0.145         "           "         0.131          "         "         0.0338         "           "         0.136          "         "         0.0282         0.0995           "         0.101          "         "         0.000150         0.100	Method         Result         MRL         Diffs         Diff         Result         Amt         REC           QC Source:         BQG0070-05         Extracted:           EPA 6020         0.134          ug/ml         1x         0.0293         0.100         104%           "         0.106          "         "         0.000340         "         106%           "         0.254          "         "         0.0338         "         97.1%           "         0.131          "         "         0.0338         "         97.1%           "         0.136          "         "         0.0282         0.0995         109%           "         0.136          "         "         0.000150         0.100         101%	QC Source:         BQG0070-05         Extracted:         07/06/07 13:           EPA 6020         0.134          ug/ml         1x         0.0293         0.100         104% (75-125).           "         0.106          "         "         0.000340         "         106% "           "         0.254          "         "         0.145         "         109% "           "         0.131          "         "         0.0338         "         97.1% "           "         0.136          "         "         0.0282         0.0995         109% "           "         0.136          "         "         0.0282         0.0995         109% "           "         0.136          "         "         0.0282         0.0995         109% "	Result         Amt         REC         Charles/         RPD           QC Source:         BQG0070-05         Extracted:         07/06/07 13:14           EPA 6020         0.134          ug/ml         1x         0.0293         0.100         104%         (75-125)            "         0.106          "         "         0.000340         "         106%         "            "         0.254          "         "         0.145         "         109%         "            "         0.131          "         "         0.0338         "         97.1%         "            "         0.136          "         "         0.0282         0.0995         109%         "            "         0.136          "         "         0.0282         0.0995         109%         "            "         0.101          "         "         0.000150         0.100         101%         "	QC Source:         BQG0070-05         Extracted:         07/06/07 13:14           EPA 6020         0.134          ug/ml         1x         0.0293         0.100         104% (75-125)             "         0.106          "         0.000340         "         106% "             "         0.131          "         0.145         "         109% "             "         0.131          "         0.0338         "         97.1% "             "         0.136          "         0.0282         0.0995         109% "             "         0.136          "         0.0282         0.0995         109% "	QC Source:         BQG0070-05         Extracted:         07/06/07 13:14           EPA 6020         0.134          ug/ml         1x         0.0293         0.100         104%         (75-125)           07/09/07 22:03           "         0.106          "         "         0.000340         "         106%         "          "         07/09/07 22:03           "         0.254          "         "         0.145         "         106%         "          "           "         0.131          "         "         0.0338         "         97.1%         "          07/11/07 20:45           "         0.136          "         "         0.0282         0.0995         109%         "          07/09/07 22:03           "         0.136          "         "         0.0282         0.0995         109%         "          07/09/07 22:03           "         0.101          "         "         0.000150         0.100         101%          "         07/09/07 22:03

QC Batch: 7G12057	Soil Pre	paration Met	hod: EPA	7471A								
Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike % Amt REC	(Limits) % RPD	(Limit	is) Analyzed	Notes
Blank (7G12057-BLK1)								Extracted:	07/12/07 17:21			
Mercury	EPA 7471A	ND		0.100	mg/kg wet	1x		**		÷	07/13/07 14:56	
LCS (7G12057-BS1)								Extracted:	07/12/07 17:21			
Mercury	EPA 7471A	0.720		0.100	mg/kg wet	lx		0.667 108%	(80-120)	••	07/13/07 14:58	
LCS Dup (7G12057-BSD1)		•						Extracted:	07/12/07 17:21			
Mercury	EPA 7471A	0.689		0,100	mg/kg wet	lx		0.667 103%	(80-120) 4.48	% (20)	07/13/07 15:01	
Duplicate (7G12057-DUP1)				QC Source	e: BQG0067-	23		Extracted:	07/12/07 17:21			
Mercury	EPA 7471A	ND		0.122	mg/kg dry	lx	0.165		76.0	% (30)	07/13/07 15:06	R.1
Matrix Spike (7G12057-MS1)				QC Source	e; BQG0067-	23		Extracted:	07/12/07 17:21			
Mercury	EPA 7471A	1.02		0.129	mg/kg dry	1x	0.165	0.859 100%	(70-130)		07/13/07 15:03	

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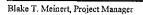
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Travis/Peterson Environm	ental Consulti	ng		Project Nat		Utica ]								
329 2nd Street Fairbanks, AK 99701				Project Nu Project Ma		1080-1 Melissa	9 1 Shippey						Report Cre 08/10/07 1	
	TCLP Metals	oy EPA 131	1/6000/70	00 Series	Method	s - Lal	oratory	Onality	v Cor	trol Res	ults			
		• 		stAmerica				Zunni		ni of ites	<b>u</b> it3			
QC Batch: 7H07028	TCLP P	reparation M	fethod: H	EPA 3010A	TCLP									
Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (7H07028-BLK1)										08/07/07 1	1:15			
Lead	EPA 6010B	ND		1.00	mg/l	lx	-	••					08/07/07 16:27	
Arsenic	บ	ND		1.00	et.	R				-	••		n	
LCS_(7H07028-BS1)								Extr	acted:	08/07/07 11	:15			
Lead	EPA 6010B	55.1		1.00	mg/l	İx		50.0	110%	(80-120)	••	-	08/07/07 16:47	
Arsenic	ų	54.2		1.00				ė	108%	и	••		P	
Duplicate (7H07028-DUP1)				QC Source;	BQG007	0-09		Extr	acted:	08/07/07 11	:15			
Arsenic	EPA 6010B	ND		1.00	mg/l	1x	ND				NR	(20)	08/07/07 17:06	1
Lead	U U	117	•••	1.00	W	в	114		••		2.78%		u	
Matrix Spike (7H07028-MS1)				QC Source:	BOG0070	0-09		Extra	acted	08/07/07 11	+15			
Lead	EPA 6010B	169	•	1.00	mg/l	İx	114	50.0	111%	(80-120)			08/07/07 16:53	
Arsenic	r	52.0	••	1.00	"		ND	ч	104%	ч		••		
Post Spike_(7H07028-PS1)				QC Source:	BOG0070	209		Fate	a ctade	08/07/07 11	.15			
Arsenic	EPA 6010B	5.04		<u> </u>	ug/ml	İx	0.00600	5.00	101%	(0-200)			08/07/07 17:00	
Lead	ŀ	16.2			u	٩	11.4		96.2%	6		-	11	
QC Batch: 7H07038	TCLP P	reparation M	ethod: E	PA 7470A	TCLP									
Analyte	Method	Result	MÐL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (7H07038-BLK1)										08/07/07 12	:42	·······		
Aercury	EPA 7470A	ND	•••	0.00250	mg/l	tx			••			(	8/08/07 12:17	
Blank (7H07038-BLK2)														
Mercury	EPA 7470A	ND		0.00250	mg/l	İx		Extra	cied:	08/07/07 12	:42		0/00/07 10 10	
					<u>s</u> , .			-				(	8/08/07 12:19	
Blank (7H07038-BLK3)								Extra	cted:	08/07/07 12:	42			
Aercury	EPA 7470A	ND		0.00250	mg/l	lx		••				0	8/08/07 12:21	
LCS (7H07038-BS1)								Extra	cted:	08/07/07 12:	42			
fercury	EPA 7470A	0.0130	•••	0.00250	mg/l	1x	**	0.0125	104%	(80-120)		C	8/08/07 12:24	
.CS Dup (7H07038-BSD1)								Fatas		0.0.0.7 (0.7 1.5.	42			
Aercury	EPA 7470A	0.0134		0.00250	mg/l	Ix		0.0125		(80-120)	-12 2.75%	(20) 0	8/08/07 12:26	
										(		(23) 0		
Duplicate (7H07038-DUP1)				QC Source:	BQG0574	-01		Extra	cted:	08/07/07 12:	42			
estAmerica - Seattle, WA							The r	results in the	s report	analy to the	umples -	ashred in a	ccordance with th	a chair
Eleke Maint	_						of	custody doc	ument.	this analytica	l report s	hall not be a	eproduced except pproval of the lab	in full,







Travis/Peterson Environm 329 2nd Street Fairbanks, AK 99701	aental Consult	ing	F	Project Name Project Numb Project Manaj	er:	Utica M 1080-19 Melissa							Report Crea 08/10/07 1	
	TCLP Metals	by EPA 1311		) Series M America - S			oratory	Quality	Con	trol Res	ults			
QC Batch: 7H07038	TCLP	Preparation M	lethođ: EF	PA 7470A 1	CLP									
Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Duplicate (7H07038-DUP1)				QC Source: 1	BQG0574	-01		Extra	acted:	08/07/07 12	2:42			

Мегсшу	EPA 7470A	ND	 0.00250	mg/i	tx	ND	+-	·		(20)	08/08/07 12:31	R4
Matrix Spike (7H07038-MS1)			QC Source	: BQG0574	-01		Extracte	d: 08/07/07 12:	42			
Mercury	EPA 7470A	0.0141	 0.00250	mg/l	lx	ND	0.0125 113	% (75-125)			08/08/07 12:29	

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	erson Environme	ntal Consult	ing		Project N	ame:	Utica M	line							
329 2nd St					Project Ni	umber:	1080-19	)						Report Create	ed:
Fairbanks,	AK 99701				Project M	anager:	Melissa	Shippey						08/10/07 15	:57
		Polychlorit	ated Biph		PA Metho estAmerica			atory Qu	ality (	Contro	l Result	ts			
QC Bate	h: 7G10029	Soil Pr	eparation N	lethod: El	PA 3550B										
Analyte		Method	Result	MDL	* MRL	Units	Dil	Source Result	Spike Amt	REC	(Limits)	% RPD	(Limits)	Analyzed	Note
Blank (7G10)	29-BLK2)								Ext	racted:	07/10/07 12	2:24			
Arocler 1016 [2C]		EPA 8082	ND		25.0	ug/kg w <del>e</del> t	1x				-		(	07/14/07 15:34	
Aroclor 1221		n	NÐ		50.0	•	u	••			••			u	
Aroclor 1232		w	ND		25.0	u	0				••			н	
Aroclor 1242		ъ	ND	•	25.0	a	u	••						u	
Areclor 1248		a	ND	•-•	25,0	e	9					-		ν	
troclor 1254		it	ND		25.0		٥						••	b	
troclor 1260		Ŀ	ND		25.0	r	н						••	D	
roclor 1262			ND		25.0	n	n					••			
Aroclor 1268		и	ND		25.0	u	8		••		•-	••		Ð	
Surrogate(s):	тсх		Recovery:	102%	L	imits: 39-139	% "							07/14'07 15:34	
	Decachlorobiphenyl			103%		33-16	3% "								
LCS (7G1002	9-BS2)								Ext	racted:	07/10/07 12	2:24			
voclor 1016		EPA 8082	84.1		25.0	ug/kg wet	lx		83.3	101%	(54-125)			07/16/07 16:12	
roclor 1260		a	84.3		25.0	1	4		n	101%	(58-128)		`	•	
Surrogate(s):	TCX		Recovery:	95.9%		imits; 39-139					/			07/16 07 16:12	
0 (7)	Decachlorobiphenyl			94.3%	2.	33-16								π	
atrix Spike	(7G10029-MS2)				QC Source	e: BQG0121	-01		Ext	acted:	07/10/07 12	2:24			
roclor 1016		EPA 8082	84.9		23.7	ug/kg dry	1x	ND	79.1	107%	(47-134)	••	(	07/16/07 17:05	
roclor 1260		'n	87.7		23.7	ч	ч	9.97	U	98.3%	(22-171)		••		
Surrogate(s):	тсх		Recovery:	98.2%	L	imits: 39-139	% "							07/16 07 17:05	
	Decachlorobiphenyl		-	93.9%		33-16.								a	
atrix Spike D	up (7G10029-MS	D2)			QC Source	:: BQG0121	-01		Extr	acted:	07/10/07 12	::24			
roclor 1016		EPA 8082	81.6	•	24.0	ug/kg dry	lx	ND	80.I	102%	(47-134)		i (35) (	07/16/07 17:23	
troclor 1260		8	88.5	•••	24.0	υ	"	9.97	4	98.0%	(22-171)		• •		
Surrogate(s):	тсх		Recovery:	94.3%	L	mits: 39-139	% "				. ,			07/16/07 17:23	
	Decachlorobiphenyl			90.6%		33-16:	3% <b>"</b>							tr	

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Extracted: 07/13/07 21:02

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07/16/07 00:00

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Travis/Peterson Environt 329 2nd Street Fairbanks, AK 99701	nental Consulti	ing	F	Project Naπ Project Nuπ Project Man	iber:	Ut <b>ica N</b> 1080-19 Melissa							Report Cre 08/10/07	
	Physical Para	meters by AF		I/EPA N America -			oratory (	Quality	Con	irol Re	sults	unnere .		
QC Batch: 7G13060	Soil Pro	eparation Meth	od: Dry	Weight										
Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits	) % RPD	(Limits)	Analyzed	Notes

Blank (7G13060-BLK1)

Dry Weight

BSOPSPL00 3R08 100

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1.00 %

1x

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# <u>TestAmerica</u>

#### THE LEADER IN ENVIRONMENTAL TESTING

Travis/Peterson Environmental Consulting	Project Name:	Utica Mine	
329 2nd Street	Project Number:	1080-19	Report Created:
Fairbanks, AK 99701	Project Manager:	Melissa Shippey	08/10/07 15:57

#### Notes and Definitions

#### Report Specific Notes:

A-01	-	This peak was not included in the average of the Aroctor.
C8	-	Calibration Verification recovery was above the method control limit for this analyte. A high bias may be indicated.
HI	-	Sample analysis performed past the method-specified holding time per client's approval.
M1	-	The MS and/or MSD were above the acceptance limits due to sample matrix interference. See Blank Spike (LCS).
R3	-	The RPD exceeded the acceptance limit due to sample matrix effects.
R4	-	Due to the low levels of analyte in the sample, the duplicate RPD calculation does not provide useful information.
RL1	-	Reporting limit raised due to sample matrix effects.
Z3	-	The sample required a dilution due to the nature of the sample matrix. Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.
Laborator	ry Re	porting Conventions:
DET		Analysis DETERMENTED at an already the Description in the intervention of a linear state of the

#### DET - Analyte DETECTED at or above the Reporting Limit. Qualitative Analyses only.

ND - Analyte NOT DETECTED at or above the reporting limit (MDL or M
---

- NR/NA \_ Not Reported / Not Available
- dry Sample results reported on a Dry Weight Basis. Results and Reporting Limits have been corrected for Percent Dry Weight.
- wet Sample results and reporting limits reported on a Wet Weight Basis (as received). Results with neither 'wet' nor 'dry' are reported on a Wet Weight Basis.
- RPD RELATIVE PERCENT DIFFERENCE (RPDs calculated using Results, not Percent Recoveries).
- MRL METHOD REPORTING LIMIT. Reporting Level at, or above, the lowest level standard of the Calibration Table.
- MDL\* METHOD DETECTION LIMIT. Reporting Level at, or above, the statistically derived limit based on 40CFR, Part 136, Appendix B. \*MDLs are listed on the report only if the data has been evaluated below the MRL. Results between the MDL and MRL are reported as Estimated Results.
- Dil Dilutions are calculated based on deviations from the standard dilution performed for an analysis, and may not represent the dilution found on the analytical raw data.
- Reporting Reporting limits (MDLs and MRLs) are adjusted based on variations in sample preparation amounts, analytical dilutions and percent solids, where applicable.

Electronic - Electronic Signature added in accordance with TestAmerica's *Electronic Reporting and Electronic Signatures Policy*. Signature Application of electronic signature indicates that the report has been reviewed and approved for release by the laboratory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

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Page 18 of 18

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mal analyzes performed on this project. . By reinquisting surples to leatAmence, cheat agrees to pay for the across repressed on this chain of cashody form and for any additional analyses performed on this p Payment for services is due within 30 days from the date of invoice unless otherwise contracted. Sample(s) will be disposed of after 30 days unless otherwise contracted. Nete: 29 Not

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11720 North Creak Rowy N Suite 400, Bothell, WA 98011-8244 425-420-9200 FAX 420-9210

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	PETERSON ENVIRONMENTAL	VENTAL	INVOKCE TO: 329 2	2nd STREET	<b>A</b>	TURNAMOUND REQUEST	1
ţγ	STREET		FAIRS	FAILE ANKS, AK 99701	8 (	in Protection Days - Anic & Integratic And	
227	HK 9970/ FX: 455-7225	ct,	P.O. NUMBER:	1080-19			5 -
PROPECT NAME: UTICA MINE	CP4-MI		PALESSERVATIVE				J
PROJECT NUMBER: 1080 -19	-19						
SAMPLED BY: M. Shi DOWN	NU	54					
CLIENT SAMPLE DENTIFICATION	SAMPLING DATE/TIME	LINE ININI INION WL 3 W			MATRUX (W, S, O) C	# OF LOCATION / COMMENTS	N/ NCA TIS WOID
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« <i>C-1</i>	tot to/tz/	X					-16
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(1) A strain of the strain

# Laboratory Data Review Checklist

# 1. Laboratory

	C No	Comments:
	ory, was the laborato	red to another "network" laboratory or sub-contracted to an alternative performing the analyses ADEC CS approved? Comments:
iin of Custody	<u>(COC)</u>	· - · · · · · · · · · · · · · · · · · ·
a. COC info	mation completed,	signed, and dated (including released/received by)?
CrYes	C No	Comments:
@Yes	C No	Comments:
oratory Sampl	le Receipt Documen	itation
oratory Sampl	le Receipt Documen	
oratory Sampl a. Sample/co	le Receipt Documen oler temperature do	tation cumented and within range at receipt ( $4^\circ \pm 2^\circ$ C)?
oratory Sampl a. Sample/co CYes b. Sample pr	le Receipt Documen oler temperature do O No reservation acceptab	tation cumented and within range at receipt (4° ± 2° C)? Comments: le - acidified waters, Methanol preserved VOC soil (GRO, BTEX,
oratory Sampl a. Sample/co CYes b. Sample pr	le Receipt Documen oler temperature do O No	tation cumented and within range at receipt (4° ± 2° C)? Comments: le - acidified waters, Methanol preserved VOC soil (GRO, BTEX,

	O No	f acceptance range, insufficient or missing samples, etc.? Comments: N/A-
e. Data qualit	ty or usability affected? Expla	in.
		Comments: N/A
se Narrative	<b>.</b>	
a Present and	l understandable?	
C Yes	O No	Comments:
b. Discrepanc	cies, errors or QC failures ider O No	ntified by the lab? Comments:
C Yes d. What is the	∩ No e effect on data quatlity/usabil	Comments: N/A-
		Comments: Nove
annan, ag spéanger million an an an an an an an an an an an an an	₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩	
nples Results		· · · · · · · · · · · · · · · · · · ·
nples Results	lyses performed/reported as re	
nples Results		
n <u>ples Results</u> a. Correct ana C Yes	lyses performed/reported as re	equested on COC?
n <u>ples Results</u> a. Correct ana C Yes	llyses performed/reported as re O No	equested on COC? Comments:
n <u>ples Results</u> a. Correct ana C Yes b. All applica C Yés	Ilyses performed/reported as re No ble holding times met? No	equested on COC? Comments: Comments: <u>TCLP Metalle analysis requested a</u>
nples Results a. Correct ana CYes b. All applica CYes	Ilyses performed/reported as re No ble holding times met? No	equested on COC? Comments:

d. Are the reported PQLs less than the Cleanup Level or the minimum required detection level for the project? O Yes Comments: C No e. Data quality or usability affected? Explain. N/AComments: 6. <u>QC Samples</u> a. Method Blank i. One method blank reported per matrix, analysis and 20 samples? C/Yes C) No Comments: ii. All method blank results less than POL? C-Yes Comments: C No iii. If above PQL, what samples are affected? Comments: N/Aiv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined? Comments: N/AO Yes O No v. Data quality or usability affected? Explain. Comments: N/Ab. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics - One LCS/LCSD reported per matrix, analysis and 20 samples? Yes O No Comments:

ii. Metals/Inorganics - One LCS and one sample duplicate reported per matrix, analysis and 20 samples?

C Yes C No

Comments:

iii. Accuracy - All percent recoveries (%R) reported and within method or laboratory limits or project specified DQOs? (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

	O No	Comments:
	······································	
limits or p	on - All relative per roject specified DQ QC pages)	ccent differences (RPD) reported and less than method or laboratory OS? (AK Petroleum methods 20%; all other analyses see the
C-Yes	Č Ňo´	Comments:
l <u>percent</u> 7 was a v. If %R o	reconcilies com n LCS dupli RPD is outside of	L RPD's Were good except some on sample# (76) care, acceptable limits, what samples are affected? NONE
		Comments:
		·····
vi. Do the C Yes	affected samples(s) O No	have data flags? If so, are the data flags clearly defined? $N/A$ -Comments:
·····	···· · · · · · · · · ·	
vii. Data ci	uality or usability a	ffected? Explain
vii. Data qı	ality or usability a	ffected? Explain. Comments: NME
vii. Data qı	ality or usability a	
• • • • • • • • •	ality or usability a	
Surrogates - i. Are surro	Organics Only gate recoveries rep	Comments: NONE
Surrogates - i. Are surro O Yes	Organics Only gate recoveries rep O No	Comments: NonE orted for organic analyses - field, QC and laboratory samples? Comments: N/A-
Surrogates - i. Are surro O Yes	Organics Only gate recoveries rep O No	Comments: NonE orted for organic analyses - field, QC and laboratory samples? Comments: N/A-
Surrogates - i. Are surro O Yes OYCJANEC ii. Accuracy specified D	Organics Only gate recoveries rep O No <i>analyses</i> y - All percent reco	Comments: NONE
Surrogates - i. Are surro O Yes OYGANIC ii. Accuracy	Organics Only gate recoveries rep O No <i>analyses</i> y - All percent reco	Comments: NonE         Ported for organic analyses - field, QC and laboratory samples?         Comments: N/A-         Mun on Yhui C.O.C.         veries (%R) reported and within method or laboratory limts or project
Surrogates - i. Are surro O Yes OYCJANIC ii. Accuracy specified D pages)	Organics Only gate recoveries rep O No <i>anulyses</i> y - All percent reco QOs? (AK Petrolet	Comments: NOME         orted for organic analyses - field, QC and laboratory samples?         Comments: N/A-         Mun on Yhui C.O.C.         veries (%R) reported and within method or laboratory limts or projectum methods 50-150 %R; all other analyses see the laboratory report         Comments: N/A-
Surrogates - i. Are surro O Yes OYGANÀC ii. Accuracy specified D pages) O Yes	Organics Only gate recoveries rep O No <i>analyses</i> y - All percent reco QOs? (AK Petroleu O No	Comments: NomE         orted for organic analyses - field, QC and laboratory samples? Comments: N/A-         Mun on Yhui C.O.C.         veries (%R) reported and within method or laboratory limts or project um methods 50-150 %R; all other analyses see the laboratory report Comments: N/A-
Surrogates - i. Are surro O Yes OYGANÀC ii. Accuracy specified D pages) O Yes	Organics Only gate recoveries rep O No <i>anulyses</i> y - All percent reco QOs? (AK Petrolet O No ample results iwth	Comments: NOME         orted for organic analyses - field, QC and laboratory samples?         Comments: N/A         Mun on YMA C.O.C.         veries (%R) reported and within method or laboratory limts or project         um methods 50-150 %R; all other analyses see the laboratory report         Comments: N/A

ſ

			ffected? Explain. Comments: N/A
		· · ·	
W <u>ater a</u> i. O	<u>ind Soil</u>		only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): matrix, analysis and cooler? Comments: N/4
		··· · · · · · · · · · · · · · · · · ·	
	All result Yes	ts less than PQL? O No	Comments: $N/A$ -
	·	···· ··· ··· ··· ··· ···	
iii. I	fabove	PQL, what sample	es are affected? Comments: N/A
·· ·····			
iv. [	Data qua	llity or usability af	fected? Explain. Comments: N/み
		••••••••••••••••••••••••••••••••••••••	ffected? Explain. Comments: N/H-
<b>Santa a : </b>		••••••••••••••••••••••••••••••••••••••	ffected? Explain. Comments: N/H-
e. Field i. Or	Duplica	te	ffected? Explain. Comments: N/A- ed per matrix, analysis and 10 project samples? Comments:
e. Field i. Or	Duplica ne field	tte duplicate submitte	Comments: N/H- ed per matrix, analysis and 10 project samples?
e. Field i. Or O	Duplica ne field Yes	tte duplicate submitte	Comments: N/H- ed per matrix, analysis and 10 project samples?
e. Field i. Or O	Duplica ne field Yes ubmitted Yes	tte duplicate submitte GNo d blind to lab? ONo	Comments: N/H- ed per matrix, analysis and 10 project samples? Comments: Comments: N/H-
e. Field i. Or O ii. St O	Duplica ne field Yes ubmitted Yes	tte duplicate submitte GNo d blind to lab? ONo	Comments: N/H- ed per matrix, analysis and 10 project samples? Comments: Comments: N/H- comments: N/H-
e. Field i. Or O ii. St O iii. P 30%	Duplica ne field Yes ubmitted Yes	tte duplicate submitte GNO d blind to lab? ONo No	Comments: N/H- ed per matrix, analysis and 10 project samples? Comments: Comments: N/H-
e. Field i. Or O ii. St O iii. P 30%	Duplica ne field Yes ubmitted Yes Precision water,	tte duplicate submitte GNO d blind to lab? ONo n - All relative pero 50% soil)	Comments: N/H- ed per matrix, analysis and 10 project samples? Comments: Comments: N/H- comments: N/H-

f. Decontamination or Equipment Blank (if applicable)
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O Yes	O No C-Not	Applicable	
i. All result O Yes	ts less than PQL? O No	Comments:	
ii. If above	PQL, what samples	s are affected? Comments: N/A-	· · · · · · · · · · · · · · · · · · ·
iii. Data qu	ality or usability afi	fected? Explain. Comments: <i>W   A</i>	· · ·
l 7. <u>Other Data Flags/Q</u> ı	alifiers (ACOE, Al	FCEE, Lab Specific, etc.)	:
a. Defined and C Yes	appropriate? C No	Comments: $\mathcal{W}/\mathcal{A}$	
	··· ·· · · · · · · · · · · · · · · · ·		······································
Completed by: MEL	ISSA S. SHIPP	0EY	
Title: STAFF & 10	ENTIST	······	Date: 9/17/07
Report Name: BQG	0070 Utica	Mine 1080-19	Report Date: 8/10/07-
Firm: TRAVIS/P	ETERSON ENV.	RONMENTAL CONSULTING.	File Number:
Submit by E-Mail		Print Form	Resat Form



Report for:

Mr Blake Meinert Test America - Seattle 11720 North Creek Pkwy N. Suite 400 Bothell, WA 98011

Regarding: Project: BQG0070 EML ID: 313844

Date of Analysis: 07-20-2007

Approved by: how Lab Manager Dr. Kamashwaran Ramanathan

Project SOPs: Asbestos-EPA Method 600/R-93/116 (100204)

This coversheet is included with your report in order to comply with AIHA and ISO accreditation requirements.

For clarity, we report the number of significant digits as calculated; but, due to the nature of this type of biological data, the number of significant digits that is used for interpretation should generally be one or two. All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. Due to the nature of the analyses performed, field blank corrections of results is not a standard practice. The results relate only to the items tested.

EMLab P&K ("the Company") shall have no liability to the client or the client's customer with respect to decisions or recommendations made, actions taken or courses of conduct implemented by either the client or the client's customer as a result of or based upon the Test Results. In no event shall the Company be liable to the client with respect to the Test Results except for the Company's own willful misconduct or gross negligence nor shall the Company be liable for incidental or consequential damages or lost profits or revenues to the fullest extent such liability may be disclaimed by law, even if the Company has been advised of the possibility of such damages, lost profits or lost revenues. In no event shall the Company's liability with respect to the Test Results exceed the amount paid to the Company by the client therefor.

Document Number: 200091 - Revision Number: 5

#### EMLab P&K

1150 Bayhill Drive, Suite 100, San Bruno, CA 94066 (650) 829-5800 Fax (650) 829-5852 www.emlab.com

Client: Test America - Seattle C/O: Mr Blake Meinert Re: BQG0070

Date of Sampling: 06-27-2007 Date of Receipt: 07-20-2007 Date of Report: 07-20-2007

## ASBESTOS PLM REPORT: EPA METHOD 600/R-93-116

Total Samples Submitted:	4	
Total Samples Analysed:	4	
Total Samples with Composite Asbestos Value > 1%:	1	
		•

Location: BQG0070-01	Lab ID-Version‡: 1368929-1
Sample Layers	Asbestos Content
Black Non-Fibrous Material	ND
Brown Semi-Fibrous Material	5% Chrysotile
Composite Asbestos Fibrous Content:	
Composite Non-Asbestos Fibrous Content:	20% Cellulose
Sample Composite Homogeneity:	Good

#### Location: BQG0070-02

Location: BQG0070-02	Lab ID-Version‡: 1368930-1
Sample Layers	Asbestos Content
Brown Wiring Insulation	ND
Composite Asbestos Fibrous Content:	ND
Composite Non-Asbestos Fibrous Content:	40% Cellulose
Sample Composite Homogeneity:	Good

#### Location: BQG0070-03

Lab ID-Version<sup>‡</sup>: 1368931-1

Sample Layers	Asbestos Content
Black Wiring Insulation	ND
Composite Asbestos Fibrous Content:	ND
Composite Non-Asbestos Fibrous Content:	25% Cellulose
Sample Composite Homogeneity:	Good

Location: BQG0070-04	Lab ID-Version‡: 1368932-1
Sample Layers	Asbestos Content
Paint	ND
Brown Ceiling Tile	ND
Composite Asbestos Fibrous Content:	ND
Composite Non-Asbestos Fibrous Content:	95% Cellulose
Sample Composite Homogeneity:	

The results relate only to the items tested. Interpretation is left to the company and/or persons who conducted the field work. The test report shall not be reproduced except in full, without written approval of the laboratory. The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

All samples were received in acceptable condition unless otherwise noted. EMLab P&K reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified.

Inhomogenous samples are seperated into homogenous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. ‡ A "Version" greater than 1 indicates amended data.

# Laboratory Data Review Checklist

# 1. <u>Laboratory</u>

Г	CYes	C No	laboratory receive and perform all of the submitted sample analyses? Comments:
ſ			red to another "network" laboratory or sub-contracted to an alternate by performing the analyses ADEC CS approved? Comments:
2. Ch	ain of Custody	$(coc) \mathcal{D}_{a+1}$	$\pi(i) = \mu + \pi - \pi + \pi - \pi + \pi + \pi + \pi + \pi + \pi + \pi$
		P WEEL	B Work ORDER No. : BPG-0070 - C.O.C. in 4100
	a. COC Inform	nation completed, s ⊖ No	signed, and dated (including released/received by)?
Γ	alle an an an an an an an an an an an an an		
1.	h Correct an	alyses requested?	
	CYes	O No	Comments:
		<u>ана стала на консерсуи стало стала с</u>	
. <u>Lat</u>	oratory Sample	e Receipt Documen	tation
			cumented and within range at receipt (4 $^{\circ} \pm 2^{\circ}$ C)?
	€⁄Yes	O No	Comments:
	· ···	· ·····	
		servation acceptabl	le - acidified waters, Methanol preserved VOC soil (GRO, BTEX,
	C/Tes	O No	Comments:
Γ			
J	c. Sample cor	didtion documente	d - broken, leaking (Methanol), zero headspace (VOC vials)?
	C Yes	O No	Comments: N/A all were good .

	O No	Comments:	nge, insufficient or missing samples, etc N/H
······	· · · · · · · · · · · · · · · · · · ·		All we re grol-
e. Data quali	ty or usability affected? Exp	blain. <sub>N</sub> /A	0
74/74 <sup>1</sup> 4/74/74/74/74/74/74/74/74/74/74/74/74/74		Comments:	
<u>e Narrative</u>			
a. Present and	d understandable?		
C-Yés	O No	Comments:	
b. Discrepand	cies, errors or QC failures id	lentified by the la Comments:	ab?
		Contanto Ito.	, 
			None reported.
	prrective actions documente		
O Yes	O No	Comments:	NIA
d. What is the	e effect on data quatlity/usal	Ó a mana a mhai	N/A
	alyses performed/reported as	•	0C?
•	alyses performed/reported as C No	s requested on Co Comments:	0C?
a. Correct ana	•••••	•	OC?
a. Correct ana ØYes	•••••	•	OC?
a. Correct ana ØYes b. All applica	O No ble holding times met?	Comments:	OC?
a. Correct ana ØYes b. All applica ØYes	O No ble holding times met?	Comments: Comments:	N/12

d. Are the reported PQLs less than the Cleanup Level or the minimum required detection level for the project?

·····		Comments: $N/A$
e. Data qualit	ty or usability affec	cted? Explain. Comments: <i>ハ/ਮ</i> -
Samples	amples         Method Blank         i. One method blank reported per matrix, analysis and 20 samples? $\bigcirc$ Yes $\bigcirc$ No         Comments:         ii. All method blank results less than PQL? $\bigcirc$ Yes $\bigcirc$ No         Comments: $\bigwedge / / A$ .         iii. If above PQL, what samples are affected?         Comments: $\bigwedge / / A$ .         iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined? $\bigcirc$ Yes $\bigcirc$ No         Comments: $\bigwedge / / A$ .         iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined? $\bigcirc$ Yes $\bigcirc$ No         Comments: $\bigwedge / / A$ .         v. Data quality or usability affected? Explain.         Comments: $\bigwedge / / A$ .         Laboratory Control Sample/Duplicate (LCS/LCSD)         i. Organics - One LCS/LCSD reported per matrix, analysis and 20 samples? $\checkmark / A$ .         ii. Metals/Inorganics - One LCS and one sample duplicate reported per matrix, analysis and 20 samples?         iii. Metals/Inorganics - One LCS and one sample duplicate reported per matrix, analysis and 20 samples?	
a. Method Bla	ank	
i. One me OYes	thod blank reporte	
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iii. If abov	ve PQL, what samp	
· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·
iv. Do the O Yes	affected sample(s) ⊖ No	) have data flags? If so, are the data flags clearly defined? Comments: $N/A$
iv. Do the O Yes	affected sample(s) O No	) have data flags? If so, are the data flags clearly defined? Comments: N/A
 	<u>⊖</u> No	ffected? Explain.
 	<u>⊖</u> No	ffected? Explain.
୦ Yes v. Data qu	⊖ No nality or usability an	Comments: N/A ffected? Explain. Comments: N/Y
O Yes v. Data qu b. Laboratory i. Organica	⊖ No nality or usability at Control Sample/D s - One LCS/LCSE	Comments: $N/A$ ffected? Explain. Comments: $N/A$ uplicate (LCS/LCSD) 0 reported per matrix, analysis and 20 samples? Comments:
<ul> <li>○ Yes</li> <li>v. Data qui</li> <li>b. Laboratory</li> <li>i. Organica</li> <li>○ Yes</li> </ul>	্ No nality or usability at Control Sample/D s - One LCS/LCSE ্ৰেমিত	Comments: $N/A$ ffected? Explain. Comments: $N/A$ uplicate (LCS/LCSD) ) reported per matrix, analysis and 20 samples? Comments: $N/A$
<ul> <li>○ Yes</li> <li>v. Data qu</li> <li>b. Laboratory</li> <li>i. Organica</li> <li>○ Yes</li> <li>ii. Metals/</li> </ul>	্ No nality or usability at Control Sample/D s - One LCS/LCSE ্ৰেমিত	Comments: $N/A$ ffected? Explain. Comments: $N/A$ uplicate (LCS/LCSD) ) reported per matrix, analysis and 20 samples? Comments: $N/A$

iii. Accuracy - All percent recoveries (%R) reported and within method or laboratory limits or project specified DQOs? (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

C Yes	Ø No	Comments: N/A-
	oject specified DC	cent differences (RPD) reported and less than method or laboratory Os? (AK Petroleum methods 20%; all other analyses see the Comments: $N/A$ -
v. If %R or	RPD is outside of	acceptable limits, what samples are affected? Comments: MIA-
vi. Do the a C Yes	affected samples(s) _ No	have data flags? If so, are the data flags clearly defined? Comments: $N/R$ -
vii. Data qı	uality or usability a	ffected? Explain. Comments: √//升-
vii. Data qu c. Surrogates -		ffected?Explain. Comments: √//A-
c. Surrogates -	Organics Only	ffected? Explain. Comments: $N/A$ - borted for organic analyses - field, QC and laboratory samples? Comments: $N/A$ -
c. Surrogates - i. Are surro	Organics Only ogate recoveries rep	Comments: $N/A$ -
c. Surrogates - i. Are surro O Yes ii. Accurac specified D	Organics Only ogate recoveries rep No y - All percent reco	Comments: $N/A$ -
c. Surrogates - i. Are surro O Yes ii. Accurac	Organics Only ogate recoveries rep No y - All percent reco	Comments: $N/A$ ported for organic analyses - field, QC and laboratory samples? Comments: $N/A$ overies (%R) reported and within method or laboratory limts or proje
c. Surrogates - i. Are surro O Yes ii. Accurac specified D pages) O Yes	Organics Only ogate recoveries rep STNo y - All percent reco QOs? (AK Petrole O No Sample results iwth	Comments: N/A- borted for organic analyses - field, QC and laboratory samples? Comments: N/A- overies (%R) reported and within method or laboratory limts or proje um methods 50-150 %R; all other analyses see the laboratory report

	<b>V</b>	Comments: N/A-
	Volatile analyses only (GF	RO, BTEX, Volatile Chlorinated Solvents, etc.):
V <u>ater and Soil</u>	lowly repeated you wanted	
O Yes	lank reported per matrix, a c-No	Comments: X /
		Comments: No volatiles on Hus work
ii. All result	s less than PQL?	
CYes	C №	Comments: W/A-
		······································
iii. If above	PQL, what samples are aff	fected? Comments: <sub>N</sub> /A-
· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·
iv. Data qua	lity or usability affected? E	Explain. Comments: ////
		Explain. Comments: ////
Field Duplica		Comments: W/A-
Field Duplica		Explain. Comments: <u>N/A</u> atrix, analysis and 10 project samples? Comments:
Field Duplica i. One field O Yes	te duplicate submitted per ma	Comments: M/A-
Field Duplica i. One field O Yes	te duplicate submitted per ma	Comments: M/A atrix, analysis and 10 project samples? Comments:
Field Duplica i. One field O Yes ii. Submitted	tte duplicate submitted per ma ලැNo d blind to lab?	Comments: M/A- atrix, analysis and 10 project samples? Comments:
Field Duplica i. One field O Yes ii. Submitted O Yes iii. Precision	tte duplicate submitted per ma A No d blind to lab? A No	Comments: M/A- atrix, analysis and 10 project samples? Comments:
Field Duplica i. One field O Yes ii. Submitted O Yes	tte duplicate submitted per ma A No d blind to lab? A No	Comments: M/A- atrix, analysis and 10 project samples? Comments:
Field Duplica i. One field O Yes ii. Submittee O Yes iii. Precision 30% water, s	te duplicate submitted per ma A No d blind to lab? A No n - All relative percent diffe 50% soil)	Comments: $M/A$ atrix, analysis and 10 project samples? Comments: Comments: $M/A$ erences (RPD) less than specified DQOs? (Reccomended:

	f. Decontamiı	nation or E	quipment Blank (if	applicable)	
	C Yes	O No	⊘ Not Applicab	le	
	i. All resu O Yes	its less than <sub>C</sub> No	1 PQL?	Comments:	
I	ii. If abov	e PQL, wha	at samples are affec	cted? Comments: N/12-	· · · · · · · · · · · · · · · · · · ·
I	iii. Data q	uality or us	ability affected?E>	kplain. Comments: N/A	
7. <u>Other</u>	Data Flags/C	ualifiers (A	COE, AFCEE, La	b Specific. etc.)	
8	a. Defined and OYes	lappropriat GNo	e?	Comments: $\mathcal{N}/\mathcal{H}$	
	<u> </u>		· · · · · · · · · · · · · · · · · · ·		
Comple	ted by: ME	LISS/4	S. SHIPPEY		· · · · · · · · · · · · · · · · · · ·
Title:	STAFF J	CIENTS	T	······································	Date: 9/17/07
Report I	Name: Emil	ab Pik	BQG-0070	DMLID: 313844	Report Date: 7 . 20 -0 7
Firm:	TRAVIS/PE	TERSON	ENURONMENT	AC CONSULTING, INC. FI	e Number:
Subri	iit by E-Mai∏			Print Form	Reset Form



ANCHORAGE, AK 2000 W INTERNATIONAL AIRPORT ROAD, SUITE A-10 ANCHORAGE, AK 99502-1119 ph: (907) 563.9200 fax: (907) 563.9210

July 17, 2007

Melissa Shippey Travis/Peterson Environmental Consulting, Inc. FBK 329 2nd Street Fairbanks, ALASKA/USA 99701

**RE: UTICA Mine Camp** 

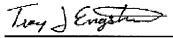
Enclosed are the results of analyses for samples received by the laboratory on 07/02/07 14:17. The following list is a summary of the Work Orders contained in this report, generated on 07/17/07 17:23.

If you have any questions concerning this report, please feel free to contact me.

Work Order AQG0004 Project UTICA Mine Camp ProjectNumber 1086-19

TestAmerica - Anchorage, AK

Troy J. Engstrom, Manager



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Page 1 of 21



ANCHORAGE, AK 2000 W. INTERNATIONAL AIRPORT ROAD, SUITE A-10 AIICHORAGE, AK 99502-1119 ph: (907) 563.9200 fax: (907) 563.9210

Travis/Peterson Environmental Consulting, Inc. FBK	Project Name:	UTICA Mine Camp	
329 2nd Street	Project Number:	1086-19	Report Created:
Fairbanks, ALASKA/USA 99701	Project Manager:	Melissa Shippey	07/17/07 17:23

## ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	
P.W.	AQG0004-01	Water	06/28/07 16:00	07/02/07 14:17	
F-1	AQG0004-02	Soil	06/27/07 17:37	07/02/07 14:17	
C-1	AQG0004-03	Soil	06/27/07 19:04	07/02/07 14:17	
P.H.	AQG0004-04	Soil	06/27/07 20:16	07/02/07 14:17	
TRIP BLANK	AQG0004-05	Soil	06/28/07 22:00	07/02/07 14:17	
POL Shed	AQG0004-06	Soil	06/27/07 21:23	07/02/07 14:17	

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Travis/Peterson Environmental Consulting, Inc. FBK 329 2nd Street Fairbanks, ALASKA/USA 99701			Project N	ject Name: UTICA Mine Camp ject Number: 1086-19 ject Manager: Melissa Shippey			Report Created: 07/17/07 17:23				
		Gasoline	e Range Or Te	<b>ganics (</b> stAmerica	C6-C1	0) and B' prage, AK	ΓEX Ι	er AK10	1		
Analyte		Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
AQG0004-02	(F-1)		So	il		Samp	led: 06/2	27/07 17:37			
Gasoline Range Or	ganics	AK101 GRO/BTEX	ND		2.48	mg/kg dry	lx	7070032	07/06/07 16:16	07/08/07 19:11	
Benzene		5	ND		0.0124	I.	ą		п	22	
Toluene		u	ND		0.0248	n		н	92	н	
Ethylbenzene			ND		0.0248	v	u.	я		n	
Xylenes (total)		Ð	ND		0.0372	н		ч	н	31	
Surrogate(s):	4-BFB (FID)		<u></u>	45.9%		50 150 01					
	4-BFB (PID)			43.9% 48.9%		50 - 150 % 50 - 150 %					Z6
				10.770		JO - 1JU %				4	Z6
AQG0004-03	(C-1)		Soi	1		Sampled: 06/27/07 19:04					
Gasoline Range Org	ganics	AK101 GRO/BTEX	ND		2.80	mg/kg dry	3х	7070032	07/06/07 16:16	07/08/07 00:09	
Benzene		м	ND		0.0140	8		9		11	
Foluene		ម	ND	••	0.0280	9	v		R	V	
Ethylbenzene		v	ND		0.0280	ti i	20		v	0	
Xylenes (total)		r	ND		0.0420	U			u.	a	
Surrogate(s):	4-BFB (FID)	·····		85.9%		50 - 150 %	0				
00/1	4-BFB (PID)			82.4%		50 - 150 % 50 - 150 %	n			#/	
	,			02.970		50 - 150 %				"	
QG0004-05	(TRIP BLANK)		Soi	I		Sampl	ed: 06/2	8/07 22:00			
Gasoline Range Org	ganics	AK101 GRO/BTEX	ND		3.33	mg/kg wet	lx	7070032	07/06/07 16:16	07/09/07 04:38	
Benzene		n	ND		0.0166	н	u	15	п	14	
foluene		31	ND		0.0333	11	u		ч	v	
Ethylbenzene		ſF	ND	*****	0.0333	u		a	n	v	
Kylenes (total)		BT.	ND		0.0500	b		u	I	ы	
Surrogate(s):	a,a,a-TFT (FID)			107%							
Suiclay.	a,a,a-TFT (PID)			107% 98.4%		50 - 150 %	H D				
	·······			20.470		50 - 150 %	5			Π	
QG0004-06	(POL Shed)		Soil			Sample	ed: 06/2	7/07 21:23			
lasoline Range Org	anics	AK101 GRO/BTEX	ND		3,39	mg/kg dry	2.7x	7070032	07/06/07 16:16	07/08/07 00;42	
Benzene		h	ND		0.0169	9	8	5		a	
oluene		35	ND		0.0339	u	U				
Ithylbenzene		u u	ND		0.0339	P	"	n	π		
(ylenes (total)		n	ND		0.0508	n	u	U	u	п.	
Surrogate(s):	4-BFB (FID)			B7 347							· · · · · · · · · · · · · · · · · · ·
Sarrogare(s).	(עניז) מיומ-ד			87.3%		50 - 150 %				α	

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4-BFB (PID)

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84.2%

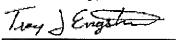
50 - 150 %



Travis/Peter 329 2nd Stree Fairbanks, Al	BK	Project Name: UTICA Mine Camp Project Number: 1086-19 Project Manager: Melissa Shippey				•	rt Created: 1/07 17:23				
to the second second second second second second second second second second second second second second second		Diese		o <b>Organic</b> stAmerica		<b>)-С25) ре</b> rage, АК	er AK	10 <b>2</b>			
Analyte		Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
AQG0004-01	(P.W.)		Wa	nter		Sampl	ed: 06/2	8/07 16:00			
Diesel Range Orga	nics	AK 102	545		39.1	mg/l	100x	7070041	07/09/07 14:51	07/10/07 12:02	RL7
Surrogate(s):	1-Chlorooctadecane			309%		50 - 150 %	n			ā	Z3
AQG0004-02	(F-1)		Soi	1		Sampl	ed: 06/2	7/07 17:37			•
Diesel Range Orga	nics	AK 102	2080		200	mg/kg dry	10x	7070028	07/06/07 13:05	07/11/07 10:47	RL7
Surrogate(s):	1-Chlorooctadecane			93.3%		50 - 150 %	#			N	
AQG0004-03	(C-1)		Sol	t		Sampl	ed: 06/2	7/07 19:04			
Diesel Range Organ	nies	AK 102	ND		20,0	mg/kg dry	Ix	7070028	07/06/07 13:05	07/09/07 18:45	
Surrogate(s):	1-Chlorooctadecane			83.4%	***	50 - 150 %	#			и	
AQG0004-04	(P.H.)		Soi	1		Sample	ed: 06/2	7/07 20:16			
Diesel Range Orga	nics	AK 102	5230		180	mg/kg dry	10x	7070028	07/06/07 13:05	07/11/07 10:47	RL7
Surrogate(s):	1-Chlorooctadecane			94.5%		50 - 150 %	π			U	
AQG0004-06	(POL Shed)		Soi	1		Sample	ed: 06/2	7/07 21:23			
Diesel Range Orga	nics	AK 102	176		20,0	mg/kg dry	lx	7070028	07/06/07 13:05	07/09/07 19:18	
Surrogate(s):	1-Chlorooctadecane			91.5%		50 - 150 %	n			R	

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Travis/Peterson Environmental Consulting, Inc. FBK	Project Name:	UTICA Mine Camp	
329 2nd Street	Project Number:	1086-19	Report Created:
Fairbanks, ALASKA/USA 99701	Project Manager:	Melissa Shippey	07/17/07 17:23

# Diesel Range Organics (C10-C25) and Residual Range Organics (C25-C36) per AK102/RRO TestAmerica - Anchorage, AK

Analyte		Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
AQG0004-04	(P.H.)		Soi	1		Sampl	led: 06/2	7/07 20:16			
Diesel Range Orga	nics	AK102/103	5230		180	mg/kg dry	10x	7070028	07/06/07 13:05	07/11/07 10:47	RL7
Residual Range Or	ganics	п	2520		450	۳	9	n	16	к	RL7
Surrogate(s):	1-Chlorooctadecane			94.5%		50 - 150 %					
	Triacontane			114%		50 - 150 %				7	

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329 2nd Stre	Travis/Peterson Environmental Consulting, Inc. FBK 329 2nd Street Fairbanks, ALASKA/USA 99701					UTICA Mine Camp 1086-19 Melissa Shippey				Report ( 07/17/0	
		Physic	eal Parame Tes	ters by A stAmerica				lethods			
Analyte		Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
AQG0004-02	(F-1)		Soi	Sampled: 06/27/07 17:37					- 11 - 11 - 11 - 11 - 11 - 11 - 11 - 1		
Dry Weight		TA-SOP	76.7		1.00	%	lx	7070030	07/06/07 15:42	07/09/07 15:47	
AQG0004-03	(C-1)		Soi	1		Sam	pled: 06/2	7/07 19:04			
Dry Weight		TA-SOP	95,1		1.00	%	lx	7070030	07/06/07 15:42	07/09/07 15:47	
AQG0004-04	(P.H.)		Soi	I		Sam	pled: 06/2	7/07 20:16			
Dry Weight		TA-SOP	93,3		1.00	%	lx	7070030	07/06/07 15:42	07/09/07 15:47	

AQG0004-06 (POL Shed)		Soil			Sam	pled: 06/2	7/07 21:23			
Dry Weight	TA-SOP	94.6	·	1.00	%	lx	7070030	07/06/07 15:42	07/09/07 15:47	

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Travis/Peterson Environmental Consulting, Inc. FBK	Project Name:	UTICA Mine Camp	
329 2nd Street	Project Number:	1086-19	Report Created:
Fairbanks, ALASKA/USA 99701	Project Manager:	Melissa Shippey	07/17/07 17:23

	Ga	soline Ran T	ge Organ estAmerica	•		er Ał	\$101			
Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
AQG0004-01 (P.W.)		W	ater		Sampl	ed: 06/2	28/07 16:00			
Gasoline Range Organics	AK101 GRO	ND	15.6	80.0	ug/l	1x	7070145	07/05/07 10:20	07/05/07 16:56	RL1
Surrogate(s): 4-BFB (FID)			86.4%		50 - 150 %	17			U	

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329 2nd Street Project Number: 1086-19 Report Crea	
Existencial ALASIA AUSA A00701 Device Management ALASIA Structure Objection of Automatic	(eđ:
Fairbanks, ALASKA/USA 99701     Project Manager:     Melissa Shippey     07/17/07 1/	1:23

		le Organic T	estAmerica			·				
Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
AQG0004-01RE1 (P.W.)		Wa	ater		Sam	Sampled: 06/28/07 16:00				RL
Acetone	EPA 8260B	147	77.6	250	ug/l	10x	7070301	07/10/07 07:28	07/10/07 18:36	1
Benzene	n	ND	0.900	10,0		U	a	•	"	
Bromobenzene	н	ND	1.00	10.0	"	"	ų		v	
Bromochloromethane	n	ND	1.80	10.0	v	v	n			
Bromodichloromethane	ĸ	ND	1.10	10.0	w	w	u			
Bromoform	8	ND	1.00	10.0	ŀ	14	"	8		
Bromomethane	n	ND	1.70	50,0	87		9			
2-Butanone (MEK)	8	ND	35,0	100	ч	u	U	ы	ár.	
n-Butylbenzene	•	ND	0.600	50.0	"	v		п	r.	
sec-Butylbenzene	n	ND	0.800	10.0			n	м	v	
tert-Butylbenzene	11	ND	0.600	10.0	•	ч		a		
Carbon disulfide	19	ND	1.40	100	н	n	"	н		
Carbon tetrachloride	a	ND	0.600	10.0	н	8	P	ч	*	
Chlorobenzene	a	ND	0.500	10.0	N	8	v	4	u	
Chloroethane	ır	3.70	1.10	10.0	łt	n	U	12	8	1
Chloroform	u.	ND	0.900	10.0	h	N		v		
Chloromethane	U	5.40	0.800	50.0	17	и	P	v		J
2-Chlorotoluene	tr	ND	0.700	10.0		n			,	
4-Chlorotoluene	n	ND	1.10	10.0	μ	u			br.	
1,2-Dibromo-3-chloropropane	ur.	ND	23.5	50.0	n	п	Þ	н	ы	
Dibromochloromethane	a	ND	0.700	10.0	Ŀ	4	e	h	в	
1,2-Dibromoethane	в	ND	1.10	10.0	11	u		а	ы	
Dibromomethane	u.	ND	1.00	10.0			r,	u	ы	
1,2-Dichlorobenzene		ND	0.700	10.0		а	r		н	
1,3-Dichlorobenzene		ND	0.600	10.0		u	r	a	ъ	
1,4-Dichlorobenzene	u	ND	1.20	10.0		"	ti	v	8	
Dichlorodifluoromethane	ii		1.10	50.0	U		в			
	н	ND	0.800		T					
1,1-Dichloroethane	η	ND	1.00	10.0			ĸ			
1,2-Dichloroethane	N	ND		10.0	a.		R			
1,1-Dichloroethene		ND	1.20	10.0				-		
cis-1,2-Dichloroethene		ND	0.900	10.0					5	
trans-1,2-Dichloroethene		ND	1.00	10.0			~			
1,2-Dichloropropane		ND	1.10	10.0						
1,3-Dichloropropane		ND	1.40	10.0			и -			
2,2-Dichloropropane		ND	0.900	10.0				3	a 	
1,1-Dichloropropene	,	ND	0.800	10.0					"	
cis-1,3-Dichloropropene	*	DN	0.900	10.0				-	4	
trans-1,3-Dichloropropene		ND	1.00	10.0			a 	6	1	
Ethylbenzene		ND	0.600	10.0		L.	4 <b>4</b>		đ	
Hexachlorobutadiene	•	ND	2.10	40.0		Π			st	
2-Hexanone		ND	36.2	100			ία.	a	e L	
Isopropylbenzene	9	ND	0.700	20.0	n		v	e	6	
p-Isopropyltoluene	er (	ND	0.600	20.0	EI	n	•	в	UF	

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	Travis/Peterson Environ	mental Consulting, Inc. FBK	Project Name:	UTICA Mine Camp	
Fairbanks ALASKA/USA 99701 Project Manager Melicsa Shippey 07/17/07/17	329 2nd Street		Project Number.	1086-19	Report Created:
	Fairbanks, ALASKA/USA	99701	Project Manager.	Melissa Shippey	07/17/07 17:23

Analyte		Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
AQG0004-01RE	1 (P.W.)			ater							RL
4-Methyl-2-pentano		EPA 8260B	ND	2.90		ug/l	10x	7070301	07/10/07 07:28	07/10/07 18:36	
Methyl tert-butyl et		P	ND ND	0.900	10.0	u gri		*****	9/10/07/07.28	1	
Methylene chloride			3.80	1.60	50.0	v		u	85		J
Naphthalene		π	ND	0.900	20.0	u	а	v	ø		u u
n-Propylbenzene		и	ND	1.00	10.0	u		r			
Styrene		a	ND	0.400	10.0		п			R	
1,1,1,2-Tetrachloroe	ethane	ų	ND	0.900	10.0	4	u	Jr.	R	ų	
1,1,2,2-Tetrachloroe			ND ND	0.800	10.0		Ð		8	ы	
Tetrachloroethene		U	אס מא	1.10	10.0	U	ų		r;	IF	
Toluene		P	ND	1.10	10.0	P		п	a	n	
1.2.3-Trichlorobenz	éné.	0	ND	1.00	10.0	v	u			и	
1,2,4-Trichlorobenz		N	ND	1.10	10.0		u	a		n	
1,1,1-Trichloroethau		n	ND	1.20	10.0		ø	U	я	11	
1,1,2-Trichloroetha		р	ND	1.30	10.0		tr	0	a	19	
Trichloroethene		a	ND	0.800	10.0	19	8	4	U	4	
Trichlorofluorometh	nane	a	ND	0.600	10.0			R		a	
1,2,3-Trichloroprop		u	ND	1.30	10.0	a	1	ŧ.		9	
1.2.4 Trimethylben		45	ND	0.800	10.0	a	a	в	в	•	
1,3,5-Trimethylbenz		в	ND	0.700	10.0	a	U	н	e e	9	
Vinyl chloride		P	ND	1.00	10.0	6	u		u	e	
o-Xylene		v	ND	0.700	10.0	UF	Ð	Ħ	ĸ	D	
m,p-Xylene			ND	2.10	20.0	P	v	ы	થ	b	
Surrogate(s):	4-BFB			90.6%		80 - 120 %	lx			P	
	1,2-DCA-d4			92.0%		80 - 120 %	н			t7	
	Dibromofluoromethane			88.8%		80 - 120 %	v			ti	
	Toluene-d8			90.0%		80 - 120 %	77				

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Travis/Peterson Environm	ental Consulti	ing, Inc. F	BK	Project N	ame:	UTIC	A Mine (	Camp						
329 2nd Street				Project N	umber:	1086-1	9						Report Creat	ted:
Fairbanks, ALASKA/USA 99	701			Project N	fanager.	Melissa	a Shippey						07/17/07 17	:23
	solino Dongo	Organica	(C( C10)	. J DTEX	7	01 1								
G.	isoline Range	Organics			- Anchorag		/anolato	ry Qua	iny C	ontrol K	esults			
QC Batch: 7070032	Soil Pre	eparation N	lethod: Ak	101 Field	l Prep									
Analyte	Method	Result	MÐL*	MRI	- Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD (	Limits)	Analyzed	Not
Blank (7070032-BLK1)								Ert	racted:	07/06/07 16	:16			
Gasoline Range Organics	AK101 GRO/BTEX	ND	•	3.33	mg/kg wet	lx							07/07/07 18:02	
Benzene	D	ND		0.0166	11	•			••			_	D	
Toluene	br	ND	•	0.0333	п	8				••			<b>B</b>	
Ethylbenzene	в	ND	•	0.0333	8	u		••					ŭ	
Xylenes (total)	ų	ND		0.0500	u.								"	
Surrogate(s): a,a,a-TFT (FID)	, <b>19 19 1</b> 9 10 10 1	Recovery;	105%		imits: 50-15(	% "				••			07/07/07 18:02	
a,a,a-TFT (PID)			96.3%		50-15	0% *								
LCS (7070032-BS1)								Extr	acted	07/06/07 16	:16			
Gasoline Range Organics	AK101 GRO/BTEX	19.9		3.33	mg/kg wet	lx			90.3%				07/07/07 16:56	
lenzene	GRO/BIEX	0.239	••••	0,0166	н	ų		0.212	113%	(73.5-120)			a	
Coluene	н	1.84		0.0333	v	ы		1.84	100%	(76.3-120)			ų	
Sthylbenzene	u.	0.384		0.0333				0.368	104%	(80-122)			Π	
Xylenes (total)	я	2.09		0.0500	w	ч		2.12	98.7%	- ,			n	
Surrogate(s): a,a,a-TFT (FID)		Recovery:	111%		imits: 60-120	% "							07/07/07 16:56	
a,a,a-TFT (PID)			106%		60-12								4	
LCS Dup (7070032-BSD1)								Extr	acted:	07/06/07 16:	:16			
Sasoline Range Organics	AK101 GRO/BTEX	19.8	***	3.33	mg∕kg wet	lx		22.0	90.0%	(60-120)	0.406%	(20) (	07/07/07 17:29	
Benzene	n	0.249		0.0166	я	a	••	0.212	117%	(73.5-120)	4.21% (	(13)	H	
Foluene		1.81		0.0333	1	r	-	1.84	98.4%	(76.3-120)			u	
Ethylbenzene	R	0.380		0.0333	n	n		0.368	103%	(80-122)	1.13% (1	•	u	
Kylenes (total)	u	2.08	•	0.0500	8			2.12	98.1%	(80-120)	0.526% (1		b	
Surrogate(s): a,a,a-TFT (FID)		Recovery:	110%	L	imits: 60-120	% =							07/07/07 17:29	
a,a,a-TFT (PID)			105%		60-120	136 =							'n	
Duplicate (7070032-DUP1)				QC Sourc	e: AQG0014	-01		Extr	acted:	07/06/07 16;	:16			
Fasoline Range Organics	AK101 GRO/BTEX	ND	***	3.09	mg/kg dry	2.25x	ND	••			19.9% (3	15.8) (	07/08/07 13:37	
Surrogate(s): a,a,a-TFT (FID)		Recovery:	82.8%	L	imits: 50-150	% "							07/08/07 13:37	
Matrix Spike (7070032-MS1)				QC Sourc	e: AQG0014	-01		Extra	acted:	07/06/07 16:	16			
Benzene	AK101 GRO/BTEX	0.770	•	0.0155	mg/kg dry	2.25x	ND	0.701	110%	(80-125)		(	07/08/07 14:10	
Foluene		0.767		0.0309	v	н	0.00333	0.671	114%	(80-130)			ч	
Ethylbenzene	n	0.803		0.0309	v	a	ND	0.674	119%	(80-138)			u	
Xylenes (total)		2.32		0.0464		u	ND	2.03	114%	(80-141)			u	

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<b>Travis/Peterson Environme</b> 329 2nd Street Fairbanks, ALASKA/USA 99		ng, Inc. FBK	1	Project Na Project Nu Project Ma	unber:	1086-19	A Mine C Shippey	amp					Report Crea 07/17/07 1	
Ga	soline Range (	Organics (C6			per AKI Anchorage		aborator	y Qual	ity C	ontrol R	lesults	5		
QC Batch: 7070032	Soil Pre	paration Meth	od: AK1	01 Field	Prep									
Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits	) Analyzed	Notes
Matrix Spike Dup (7070032-MS	SD1)			QC Source	e: AQG001.	1-01		Extr	acted:	07/06/07 16	5:16			
Benzene	AK101 GRO/BTEX	0,759		0.0155	mg/kg dry	2.25x	NÐ	0.701	108%	(80-125)	1.40%	s (18.4)	07/08/07 14:43	
Toluene	71	0.755	•••	0.0309	n		0.00333	0.671	112%	(80-130)	1,50%	6 (18)	n	
Ethylbenzene	a	0,787		0.0309	н	5	ND	0.674	117%	(80-138)	1.96%	6 (15.3)		

 Xylenes (total)
 "
 2.29
 - 0.0464
 "
 ND
 2.03
 113%
 (80-130)
 1.95%
 (13.5)

 Surrogate(s):
 a,a,a-TFT (PID)
 Recovery:
 80.8%
 Limits:
 50-150%
 "
 07.03 '07 14:43

TestAmerica - Anchorage, AK

Troy J. Engstrom, Manager







Travis/Peterson Environme 329 2nd Street Fairbanks, ALASKA/USA 99		ing, Inc. F	ВК	 	Project Na Project Na Project M	mber:	1086-19	A Mine C ) Shippey	amp					Report Create 07/17/07 17	
	Diesel Ra	nge Orgar	nics (C			K102 - L Anchorage		ory Qual	ity Co	ntrol	Results				
QC Batch: 7070028	Soil Pr	eparation M	fethod:	EPA	3545										
Analyte	Method	Result		MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits	) Analyzed	Notes
Blank (7070028-BLK1)									Ext	acted:	07/06/07 1	3:05		•	
Diesel Range Organics	AK 102	ND			20.0	mg/kg wet	Ix		-	••				07/09/07 06:58	-
Surrogate(s): I-Chlorooctadecane		Recovery:	89.1%		L	imits: 50-1509	6 "							07,09 07 06:58	
LCS (7070028-BS1)									Extr	acted:	07/06/07 13	3:05			
Diesel Range Organics	AK 102	123			20.0	mg/kg wet	1x		126	97.7%	(75-125)			07/09/07 07:31	
Surrogate(s): I-Chlorooctadecane		Recovery:	90.1%		L	imits: 60-1203	6 "	·						07/09/07 07:31	
LCS (7070028-BS2)									Extr	acted:	07/06/07 13	8:05			
Diesel Range Organics	AK 102	129			20.0	mg/kg wet	1x		126	103%	(75-125)			07/10/07 17:58	
Surrogate(s): I-Chlorooctadecane		Recovery:	88.7%		L	inits: 60-1209	ó "							07/10/07 17:58	
LCS (7070028-BS3)									F.t.	ectede	07/06/07 13	L-05			
Diesel Range Organics	AK 102	138			20.0	mg/kg wet	lx		126	110%	(75-125)			07/10/07 18:31	
Surrogate(s): I-Chlorooctadecane		Recovery:	97.5%		L	imits: 60-120?	6 "							07/10/07 18:31	
LCS Dup (7070028-BSD1)									r-+-		07/06/07 13				
Diesel Range Organics	AK 102	123			20.0	mg/kg wet	1x	••		97.4%			% (20)	07/09/07 08:04	
Surrogate(s): 1-Chlorooctadecane		Recovery:	84.2%		Li	mits: 60-120%	6 "				(			07/09/07 08:04	
Duplicate (7070028-DUP1)					008		~								
Dissel Range Organics	AK 102	ND				mg/kg dry	1x	ND	Extr	acted:	07/06/07 13		6 (20)	07/09/07 06:58	
Surrogate(s); I-Chlorooctadecane		Recovery:				mits: 50-150%						122/	v (20)	07/09/07 06:58	
M.J.J. O.J., (5050000 1501)															
Matrix Spike (7070028-MS1) Diesel Range Organics	AK 102	116				* AQG0002-		2.03			07/06/07 13			4=100/4=	
Surrogate(s): 1-Chlorooctadecane		Recovery:		•••		mg/kg dry mits: 50-150%	1x	3,93	127	88.1%	(75-125)	••	-	07/09/07 08:04	
		necosty.	33.370		L	nnis: 30-130%	0							07/09:07 08:04	
Matrix Spike Dup (7070028-MSI						: AQG0002-	19		Extr	acted:	07/06/07 13	:05			
Diesel Range Organics	AK 102	115				mg/kg dry	1x	3.93	121	91.6%	(75-125)	0,7469	% (25)	07/09/07 08:37	
Surrogate(s): 1-Chlorooctadecane		Recovery:	85.9%		Li	mits: 50-150%	/ <b>*</b>							07/09/07 08:37	

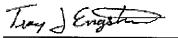
Troy J. Engstrom, Manager

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Travis/Peterson Environmental Consulting, Inc. FBK 329 2nd Street Fairbanks, ALASKA/USA 99701 Diesel Range Organics (C10-C			Project Nar Project Nur Project Mar	nber: 1ager: ]	1086-19 Melissa	Shippey						Report Crea 07/17/07 1		
	Diesei Ra	inge Organ		25) per Ak stAmerica - A			ory Qua	lity Co	ntrol	Results				
QC Batch: 7070041	Water	Preparation	1 Method:	EPA 3510										
Analyte	Method	Result	MDI	* MRL	Units	Dil	Source Result	Spike Amt	‰ REC	(Limits)	% RPD	(Limits	) Analyzed	Notes
Blank (7070041-BLK1)								Extr	acted:	07/09/07 14	:51			
Diesel Range Organics	AK 102	ND		0.500	mg/l	lx	ţ		••		••	÷	07/10/07 08:47	
Surrogate(s): I-Chlorooctadecane		Recovery:	96.2%	Lin	nits: 50-150%	; "							07/10/07 08:47	,
LCS (7070041-BS1)								Extr	acted:	07/09/07 14	:51			
Diesel Range Organics	AK 102	10.3		0.500	mg/l	lx		10.1	102%	(75-125)	••		07/10/07 09:20	
Surrogate(s): 1+Chlorooctadecane		Recovery:	109%	Lin	nits: 60-120%								07/10 07 09:20	)
LCS Dup (7070041-BSD1)								Extr	acted:	07/09/07 14	:51			
Diesel Range Organics	AK 102	10.4		0.500	mg/l	lx	-	10.1	103%	(75-125)	0.452%	6 (20)	07/10/07 09:52	
Surrogate(s): 1-Chlorooctadecane		Recovery:	108%	Lin	uits: 60-120%	7							07/10/07 09:52	?
Duplicate (7070041-DUP1)				QC Source:	AQG0013-0	1		Extr	acted:	07/09/07 14	:51			
Diesel Range Organics	AK 102	0.441		0.391	mg/l	lx	0.537			••	19.6%	(20)	07/10/07 08:47	
Surrogate(s): 1-Chlorooctadecane		Recovery:	81.7%	Lin	its: 50-150%								07/10/07 08:47	,



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329 2nd St	terson Environme reet ALASKA/USA 99		ting, Inc. F	вк		Project N Project N Project N	lumber:	1086-19	A Mine ( ) Shippey	Camp					Report Create 07/17/07 17	
Die	sel Range Organ	ics (C10-C25	) and Resi	dual R	ange C TestA	)rganic merica	s (C25-C3	6) per 2 , AK	AK102/R	RO -	Labo	oratory	Quali	ty Con	trol Results	
QC Bat	ch: 7070028	Soil Pr	eparation M	fethod	EPA	3545										<u> </u>
Analyte		Method	Result		MDL*	MRI	- Units	Dil	Source Result	Spike Amt	e % REC	(Limits)	% RPD	(Limit	s) Analyzed	Notes
Blank (70700	28-BLK1)									Fri	ractade	07/06/07 13	2.05			
Diesel Range Organ	uics	AK102/103	ND			20.0	mg/kg wet	lx							03/00/07 06:50	
Residual Range Org	ganies	ы	ND		••	50.0	9 9 V								07/09/07 06:58	
Surrogate(s):	1-Chlorooctadecane Triacontane		Recovery:	89.1% 88.2%		1	imits: 50-150% 50-150%								07/09/07 06:58 "	
LCS (707002	8-BS1)									Fat	raciado	07/06/07 13	h.n.c			
Diesel Range Organ	ics	AK102/103	123			20.0	mg/kg wet	Ix		126	97.7%				07/09/07 07:31	
Residual Range Org	anics	u	127		•	50.0	4		**	130	97.5%	(60-120)			0//09/07/07:31	
Surrogate(s):	I-Chlorooctadecane Triacontane		Recovery:	90.1% 87.9%		L	imits: 60-120% 60-1209						·		07/09 07 07:31	
LCS (7070028	3-BS2)									Frit		07/06/07 13				
Diesel Range Organ	ics	AK102/103	129			20.0	mg/kg wet	1x		126	103%	(75-125)			07/10/07 17:58	
Residual Range Org	anics	u	127		•••	50.0	9	n		130	97.7%	(60-120)			"	
Surrogate(s);	I-Chlorooctadecane Triacontane		Recovery:	88.7% 85.0%		L	imits: 60-120% 60-120%								07/10/07 17:58	
LCS (7070028	I-BS3)									Frie	antada	07/06/07 13	-0¢			
Diesel Range Organi	cs	AK102/103	138			20,0	mg/kg wet	lx		126	110%	(75-125)	.03		07/10/07 18:31	
Residual Range Orga	anics	u	140			50.0		ų		130	107%	(60-120)			°	
Surrogale(s):	I-Chlorooctadecane Triacontane		Recovery:	97.5% 94.3%		L	imits: 60-120% 60-120%								07/10/07 18:31	
LCS Dup (707	(0028-BSD1)									E-t-		07/06/07 13;	.05			
Diesel Range Organi		AK102/103	123			20.0	mg/kg wet	1x			97.4%	(75-125)		(20)	07/00/07 08-04	
Residual Range Orga	nics	n	120	-		50.0	5-5-1-1 F	u			92.5%	(60-120)	0.381% 5.29%		07/09/07 08:04	
Surrogate(s):	1-Chlorooctadecane Triacontane		Recovery;	84.2% 81.4%		Li	mits: 60-120% 60-120%	R 2	<u></u>			(	5.0070		07/09:07 08:04	·
Duplicate (707	0028-DUP1)				c	QC Source	: AQG0002-0	9		Extra	acted: 4	)7/06/07 13;	<u>ń</u> s			
Diesel Range Organi	CS	AK102/103	ND	-	-,	17.6	mg/kg dry	lx	ND				12.2%	(20)	07/09/07 06:58	
Residual Range Orga	ліся	P	ND			44.0	U U		ND				42.0%	• •	a a a a a a a a a a a a a a a a a a a	R4
Surrogate(s):	1-Chlorooctadecane Triacontane		Recovery:	82.1% 80.2%		Li	mits: 50-150% 50-150%	8 5							07/09:07 06:58	

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Travis/Peterson Environme	ental Consulti	ng, Inc. F	BK	Project Na	me: U	<b>JTIC</b>	Mine C	amp						
329 2nd Street				Project Nu	mber: 1	086-19	)						Report Created	:
Fairbanks, ALASKA/USA 99	701			Project Ma	inager: N	1elissa	Shippey						07/17/07 17:2	3
Diesel Range Organ	ics (C10-C25)	and Resid			(C25-C36 Anchorage,		AK102/R	RO -	Labo	oratory (	Quality	y Cont	rol Results	
QC Batch: 7070028	Soil Pre	eparation N	lethod; EPA	3545										
unalyte	Method	Result	MDL*	MRL	Units	Đil	Source Result	Spike Amt	% REC	(Liwits)	% RPD	(Limit	s) Analyzed	Notes
Matrix Spike (7070028-MS1)				QC Source	e: AQG0002-0	9		Estr	acted:	07/06/07 13	3:05			
Diesel Range Organics	AK102/103	116	•-•	20.0	mg/kg dry	1x	3,93	127	88.1%	(75-125)	-		07/09/07 08:04	
Residual Range Organics	v	117		50.0	u	ø	5.13	131	85.4%	(60-150)			n	
Surrogate(s): 1-Chloroocladecane Triacontane		Recovery:	85.5% 79.9%	L	imits: 50-150% 50-150%	7							07/09 07 08:04 "	
Matrix Spike Dup (7070028-MS	(D1)			QC Source	e: AQG0002-0	9		Extr	acted:	07/06/07 13	8:05			
	AK102/103	115		17.6	mg/kg dry	1x	3.93	121	91.6%	(75-125)	0,746%	6 (25)	07/09/07 08:37	
viesel Range Organics	AK102/103													
Diesel Range Organics Residual Range Organics	*	115		44.1		Ð	5.13	125	87.6%	(60-150)	1.96%	a		

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07/09/07 15:47

Travis/Peterson Environmental Consulting, Inc. FBK 329 2nd Street Fairbanks, ALASKA/USA 99701	Project Name: Project Number: Project Manager:	UTICA Mine Camp 1086-19 Melissa Shippey	Report Created: 07/17/07 17:23
	/ASTM/EPA Method TestAmerica - Anchora	's - Laboratory Quality Control Resu ge, AK	ılts
QC Batch: 7070030 Soil Preparation Method:	*** DEFAULT PRE	• • • • • • • • • • • • • • • • • • •	
Analyte Method Result M	IDL* MRL Units	Dil Source Spike % (Limits) Result Amt REC	% (Limits) Analyzed Notes

Duplicate (7070030-DUP1)		 QC Source:	AQG000	2-09		Ext	racted: (	07/06/07 1	5:42	
Dry Weight	TA-SOP	92.0	 t.00	%	lx	91.8				0.316% (25)

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<b>Travis/Peterson Environmental Consulting, Inc. FBK</b> 329 2nd Street Fairbanks, ALASKA/USA 99701			BK	Project Name Project Num Project Mana	ber:	1086-19	Mine C Shippey	Camp					Report Crea 07/17/07 1	
······································	Gasoline R	ange Org	anics (C6-C		(101 - 1	Jabora		ality Co	ontrol	Results	1			1.43
QC Batch: 7070145	Water 1	Preparatio		tAmerica - F CPA 5030B	Portland,	OR				<b></b> ""				
Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits	) Analyzed	Notes
Blank (7070145-BLK1)								Extr	acted:	07/05/07 10	1:20			
Gasoline Range Organics	AK101 GRO	ND	15.6	80.0	ug/l	1 <b>x</b>		••		••			07/05/07 12:47	
Surrogate(s): 4-BFB (FID)		Recovery:	86.7%	Limi	ts: 50-150%	6 "				-			07/05/07 12:4	7
LCS (7070145-BS1)								Estr	acted:	07/05/07 10	:20			
Gasoline Range Organics	AK101 GRO	486	15.6	80,0	ug/l	lx		500	97.2%	(60-120)			07/05/07 12:20	
Surrogate(s): 4-BFB (FID)		Recovery:	95.9%	Limi	ls: 60-120%	5 "							07/05/07 12:20	>
LCS Dup (7070145-BSD1)								Extr	acted:	07/05/07 10	:20			
Gasoline Range Organics	AK101 GRO	481	15.6	80.0	ug/l	1x		500	96.2%	(60-120)	1.03%	5 (20)	07/05/07 11:52	
Surrogate(s): 4-BFB (FID)		Recovery:	97.5%	Limit	's: 60-120%	ί u							07/05/07 11:52	?
Duplicate (7070145-DUP1)				QC Source:	PQG0024-0	3RE1		Extr	acted:	07/05/07 10	:20			
Gasoline Range Organics	AK101 GRO	45.2	15.6	80.0	ug/l	1x	47.8			-		(50)	07/05/07 14:09	
Surrogate(s): 4-BFB (FID)		Recovery:	89.9%	Limit	s: 50-150%	; •							07/05/07 14:09	)



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Troy J. Engstrom, Manager



Travis/Peterson Environmental Consulting, Inc. FBK	Project Name:	UTICA Mine Camp	
329 2nd Street	Project Number:	1086-19	Report Created:
Fairbanks, ALASKA/USA 99701	Project Manager:	Melissa Shippey	07/17/07 17:23
	•		

## Volatile Organic Compounds per EPA Method 8260B - Laboratory Quality Control Results TestAmerica - Portland, OR

QC Batch: 7070301	Water P	reparation	Method: EP	A 2020B			0							
Analyte	Method	Result	MÐL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Note
Blank (7070301-BLK1)								Extra	acted;	07/10/07 07	:28			
Acetone	EPA 8260B	ND	7.76	25.0	ug/l	1x						(	07/10/07 10:20	
Benzene	a	ND	0.0900	1.00	ø			••	••				4	
Bromobenzene	в	ND	0.100	1.00	0	a		••	••	••			a	
Bromochloromethane	"	ND	0.180	1.00		e	••			-		-	11	
Bromodichloromethane	н	ND	0.110	1.00	u.	v		•-		-	-		4	
Bromoform	u.	ND	0.100	1,00	n	R							u	
Bromomethane	ŧr	ND	0.170	5,00		Þ	-						P	
t-Butanone (MEK)		ND	3,50	10.0	н				-•			••	9	
-Butylbenzene	8	ND	0.0600	5.00	n	u		••		**	••		u	
ec-Butylbenzene	н	ND	0.0800	1.00	u	13	••	••					ų	
ent-Butylbenzene	11	ND	0.0600	1.00	ų	в	••	••					η	
Carbon disulfide	я	ND	0.140	10.0	v	в							a	
Carbon tetrachloride	а	ND	0.0600	1,00	u	n								
Thlorobenzene	a	ND	0.0500	1.00	41			••	••	••			u .	
hloroethane	a	ND	0.110	1.00	<b>6</b> 2	ч								
Chloroform	5	ND	0.0900	1.00	<b>s</b> t	u				••				
hloromethane		ND	0.0800	5.00	u.	U							η	
-Chlorotoluene	ų	ND	0.0700	1.00	u	a							P	
-Chlorotoluene	σ	ND	0.110	1.00		9	-						n	
,2-Dibromo-3-chloropropane	σ	ND	2.35	5,00		a							b	
Dibromochloromethane		ND	0.0700	1.00	н			••					ti-	
.2-Dibromoethane	8	ND	0.110	1.00	n	e							υ	
Dibromomethane		ND	0.100	1.00							_	_	n	
,2-Dichlorobenzene		ND	0.0700	1.00		v	••						п	
,3-Dichlorobenzene		ND	0.0600	1.00	8	Ð				-		-	в	
,4-Dichlorobenzene	ы	ND	0.120	1.00	8	e		_		_	-		в	
Dichlorodifluoromethane	u u	ND	0.110	5.00	н	ť		-					B	
,1-Dichloroethane	U	ND	0.0800	1.00				-					a	
,2-Dichloroethane		ND			ч	P				••				
,1-Dichloroethene	9	ND	0.100 0.120	1.00 1.00	 11				••				15	
	in a							•-		••			-	
is-1,2-Dichloroethene	9	ND	0.0900	1.00		• भ		••	•					
ans-1,2-Dichloroethene		ND	0.100	1.00	u V			••	••					
,2-Dichloropropane		ND	0.110	1.00		р 1	••	••			-			
,3-Dichloropropane		ND	0.140	1.00		р 9		••	••	••				
,2-Dichloropropane		ND	0.0900	1.00					••	••		••		
,1.Dichloropropene	-	ND	0.0800	1.00		11			••	**				
is-1,3-Dichloropropene		ND	0.0900	1.00		50	-	-	-		••		0	
rans-1,3-Dichloropropene	Ð	ND	0.100	1.00	н	ų			••		••			

TestAmerica - Anchorage, AK

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329 2nd StreetProject Number:1086-19Report Created:Fairbanks, ALASKA/USA 99701Project Manager:Melissa Shippey07/17/07 17:23	Travis/Peterson Environmental Consulting, Inc. FBK	Project Name:	UTICA Mine Camp	11777 - 1177 - 1177 - 1177 - 1177 - 1177 - 1177 - 1177 - 1177 - 1177 - 1177 - 1177 - 1177 - 1177 - 1177 - 1177
Fairbanks, ALASKA/USA 99701 Project Manager. Melissa Shippey 07/17/07 17:23	329 2nd Street	Project Number:	1086-19	Report Created:
	Fairbanks, ALASKA/USA 99701	Project Manager:	Melissa Shippey	07/17/07 17:23

## Volatile Organic Compounds per EPA Method 8260B - Laboratory Quality Control Results TestAmerica - Portland, OR

QC Bate	:h: 7070301	Water	Preparatio	n Method: EI	PA 5030B										
Analyte		Method	Result	MDL*	MRL	Units	Dij	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Note
<u>Blank (70703</u>	01-BLK1)								Extr	acted:	07/10/07 07	:28			
Hexachlorobutadier	e	EPA 8260B	ND	0.210	4.00	ug/l	1x						~ (	7/10/07 10:20	
2-Hexanone		L.	ND	3.62	10.0		ы	••		••					
Isopropylbenzene		4	ND	0.0700	2.00		a			·				D	
p-Isopropyltoluene			ND	0.0600	2.00	IF	v					-		в	
4-Methyl-2-pentano	ne	в	ND	0.290	5.00	н	85	•-					_	D	
Methyl tert-butyl eti	ier	u	ND	0,0900	1.00	υ	n						••	u	
Methylene chloride		μ	ND	0.160	5.00	0	W				••				
Naphthalene			ND	0.0900	2.00	6	<b>n</b> .								
1-Propylbenzene		B	ND	0.100	1.00	*					-			R	
Styrene			ND	0.0400	1.00	મ	ь	••	••					u .	
,1,1,2-Tetrachloroe	thane	11	ND	0.0900	1.00	U	9	•-		<b></b>				a	
,1,2,2-Tetrachloroe	thane	u	ND	0.0800	1.00	Ð	v			_					
Tetrachloroethene			ND	0.110	1.00	н	0	_				_	••		
Toluene		87	ND	0.110	1.00	μ							-	в	
,2,3.Trichlorobenzo	ene		ND	0,100	1.00	ti.	n	••				••		8	
,2,4-Trichlorobenzo	ene	e	NÐ	0.110	1.00	н	a								
,1,1-Trichloroethan	e	v	ND	0.120	1.00	"	۰r		••					•	
,1,2-Trichloroethan	e	•	ND	0.130	1.00	11		-	••			_		ъ	
richloroethene			ND	0.0800	1.00	9								9	
richlorofluorometh	ane	u	ND	0,0600	1.00	e	a								
,2,3-Trichloropropa	ne	er.	ND	0.130	1.00	4	R	••		••					
,2,4-Trimethylbenz	ene	н	ND	0.0800	1.00		R						-	Ð	
3,5-Trimethylbenz	ene	a	ND	0.0700	1.00	a	n								
'inyl chloride		•	NÐ	0.100	1.00	0	9						-		
-Xylene		в	ND	0.0700	1.00	Ð	9				-				
1,p-Xylene		n	ND	0.210	2.00	в	e								
Surrogate(s):	4-BFB		Recovery:	92.8%	Lími	us: 80-120%								07/10-07 10:20	
_ ••	1,2-DCA-d4			85.6%		80-120%								"	
	Dibromofluoromethane			89.0%		80-120%								v	
	Toluene-d8			89.6%		80-120%								0	

TestAmerica - Anchorage, AK

Troy J. Engstrom, Manager

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329 2nd St	ALASKA/USA 997	01			Project Nar Project Nur Project Mar	nber: nager:	1086-19 Melissa	Shippey						Report Creat 07/17/07 17	
	v	olatile Orga	nic Compo		PA Metho tAmerica -			oratory	Qualit	ty Cor	itrol Res	ults			
QC Bat	ch: 7070301	Water	Preparation	Method: I	EPA 5030B										
Analyte		Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	e % REC	(Limits)	% RPD	(Limits)	) Analyzed	Notes
LCS (707030	1-BS1)								Ext	racted:	07/10/07 07	7:28			
Benzene		EPA 8260B	19.3	0.0900	1.00	ug/l	lx		20,0	96.7%			-	07/10/07 08:28	
Chlorobenzene		a	18.9	0.0500	1.00	u I	74		м	94.3%	(80-124)		-	n	
1,1-Dichloroethene		ų	17.0	0.120	1.00	u			u	85.0%	(78-120)			в	
Toluenę		U	19.3	0.110	1.00	u	e		P	96.4%	(80-124)			u	
Trichloroethene		6	19.1	0.0800	1.00	Đ	п			95.6%	(80-132)			н	
Surrogate(s):			Recovery:	102%	Lin	nits: 80-120	26 "							07/10/07 08:28	
	1,2-DCA-d4			91.3%		80-120	736 "							π	
	Dibromofluoromethane Toluene-d8			96.2%		80-120									
	1010000-008			99.0%		80-120	)% "							5	
Matrix Spike	(7070301-MS1)				QC Source:	PQG0090-	-02		Ext	racted:	07/10/07 07	:28			
Benzene		EPA 8260B	20.2	0.0900	1.00	ug/l	1x	ND	20.0	101%	(80-124)			07/10/07 08:55	
Chlorobenzene		EI .	19,1	0.0500	1.00	н	U	ND	н	95,7%	(72.9-134)			a	
1,1-Dichloroethene		a	20,2	0.120	1.00	11	9	ND	v	101%	(79.3-127)			π	
Toluene		st.	19.7	0.110	1.00	"		0.280	9	97.3%	(79.7-131)			n	
Trichloroethene		u.	22.9	0.0800	1.00	"		2.99	P	99.6%	(68.4-130)	••		u	
Surrogate(s):	4-BFB		Recovery:	104%	Lim	its: 80-1209	% "							07/10/07 08:55	·
	I,2-DCA-d4			93.2%		80-120	% =							н	
	Dibromofluoromethane Toluene-d8			99.8%		80-120								*	
	10mene-up			102%		80-120	% "							n	
Matrix Spike I	Dup (7070301-MSD	1)			QC Source:	PQG0090-	02		Extr	acted:	07/10/07 07:	:28			
Benzene		EPA 8260B	18.7	0.0900	1.00	ug/l	lx	ND	20.0	93.6%	(80-124)	7.86%	(25)	07/10/07 09:26	
Chlorobenzene		n	18.1	0.0500	1.00	u.		ND			(72.9-134)		• •	1	
1,1-Dichloroethene		9	17.8	0.120	1.00	13	14	ND	в		(79.3-127)				
Toluene		u	18.7	0.110	1.00	u	55	0.280	8		(79.7-131)			n	
Trichloroethene		IT	20.7	0.0800	1.00	P	и	2.99	R		(68.4-130)			n.	
Surrogate(s):	<i>4-BFB</i>		Recovery:	10696	Lim	its: 80-1203	6 "							07/10'07 09:26	
	1,2-DCA-d4			94.0%		80-120	% =								
	Dibromofluoromethane Taluana de			98.2%		80-1209								a	
	Toluene-d8			100%		80-1203	% "							b	

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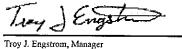
		son Environmental Consulting, Inc. FBK	Project Name:	UTICA Mine Camp	
329 2nd 8			Project Number.	1086-19	Report Created:
Fairbanks	, AI	LASKA/USA 99701	Project Manager.	Melissa Shippey	07/17/07 17:23
			Notes and Defini	iions	nan management of the second second second second second second second second second second second second second
Report S	peci	ific Notes:		· · · · · · · · · · · · · · · · · · ·	
J	-	<ul> <li>Estimated value. Analyte detected at a level less (MDL). The user of this data should be aware this</li> </ul>	than the Reporting Lin this data is of limited	it (RL) and greater than or equal to the M reliability.	ethod Detection Limit
R4	-	Due to the low levels of analyte in the sample, the			
RL1	-				
RL7	-	<ul> <li>Sample required dilution due to high concentration</li> </ul>	ons of target analyte.		
Z3	-	<ul> <li>The sample required a dilution due to the nature sample was reduced to a level where the recovery</li> </ul>	of the sample matrix. E y calculation does not p	ecause of this dilution, the surrogate spike rovide useful information.	concentration in the
Z6	-	Surrogate recovery was below acceptance limits.			
DET	-	Analyte DETECTED at or above the Reporting Lin		·	
ND	-	Analyte NOT DETECTED at or above the reportin	g limit (MDL or MRL,	as appropriate).	
NR/NA	-	Not Reported / Not Available			
dry	-	Sample results reported on a Dry Weight Basis. Re	esults and Reporting Lir	nits have been corrected for Percent Dry V	Veight.
wet	-	Sample results and reporting limits reported on a W on a Wet Weight Basis.	/et Weight Basis (as rec	eived). Results with neither 'wet' nor 'dry'	are reported
RPD	-	RELATIVE PERCENT DIFFERENCE (RPDs cal	culated using Results, n	ot Percent Recoveries).	
MRL	-	METHOD REPORTING LIMIT. Reporting Level	at, or above, the lowest	level standard of the Calibration Table.	
MDL*	-	METHOD DETECTION LIMIT. Reporting Level *MDLs are listed on the report only if the data has as Estimated Results.	at, or above, the statisti been evaluated below th	cally derived limit based on 40CFR, Part 1 ie MRL. Results between the MDL and M	36, Appendix B. IRL are reported
Dil	-	Dilutions are calculated based on deviations from the found on the analytical raw data.	he standard dilution per	formed for an analysis, and may not repres	ent the dilution
Reporting Limits	-	Reporting limits (MDLs and MRLs) are adjusted by percent solids, where applicable.	ased on variations in sar	nple preparation amounts, analytical diluti	ons and
Electronic	-	Electronic Signature added in accordance with Test	America's <i>Electronic R</i>	eporting and Electronic Signatures Policy.	

 Electronic Signature
 Electronic Signature added in accordance with TestAmerica's Electronic Reporting and Electronic Signatures Policy.

 Signature
 Application of electronic signature indicates that the report has been reviewed and approved for release by the laboratory.

 Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

TestAmerica - Anchorage, AK





ul, WA 98011-8244 425-420-9200 FAX 420-9210 mc, WA 99206-5302 509-924-9200 FAX 924-9200 mc, WA 99206-5302 509-924-9200 FAX 906-9210 mc, OR 97008-1119 907-563-9200 FAX 563-9210 mc, OR 99502-1119 907-563-9200 FAX 563-9210	Work Order # HUG NOCH	TURNAROUND REQUEST	ia Musicess Days -	Organic & langaric Analyses				OTHER Speeds	* Permanenti Represte inte than standard may inter Rush Churges.	MATRIX # OF LOCATION / TA (W.S.O) CONT. COMMENTS WO D	<i>M</i>	S		5 DR0/246	- fam						TANK WITTE		TTMAN: TTMAE	CC have a
11720 North Creek Plewy N Suite 400, Bothell, WA 98011-8244 11922 E. Firnt Ave, Spokane, WA 99206-5302 9405 SW Nimbus Ave, Beswerton, OR 97008-7145 2000 W International Aliport Rd Ste A10, Aacborage, AK 99502-1119		Petersu-	5	RK 99721	/4	L L L L L L L L L L L L L L L L L L L		VLYSES								· ·		/	/		RECEIVANE CALLUL ALLONG	ARCENTED LY:	PRINT NAME:	
	STODY REPORT	INVOICE TO: Larry	2rd 2nd	PAIRANZS,	P.O. NUMBER: 10, RO 19	PRESERVATIVE	HCI HCI	REQUESTED ANALYSES	10	1/20/ 1/20/ 1/20/ 1/20/ 1/20/ 1/28/ 1/28/						/	/		· · ·		FEREN #6990	batte:	Thes:	فعفا فجمعه او معدد الاستراب وحيثيت محينيت المعينيات المناقبة
<b>Lest America</b> Analytical testing corporation	CHAIN	QUENT / RHUIS/ PETORSON ENUIRUNNENTAL	STREE' abtu. M	FK 99%1	, MAX:	CANIP	HC			SAMPLING DATETIME DATETIME	4/28/07 4 2m X	X 255 to/tz/2	X hot to/tz/0	6/27/07 8/6m	6/25/07 1000pm						US MANDES "" TEQUIS/PETERONY		Plant	Nets: By refinentiabline samules to Trad America. clinari een
Test		A/S/MAY/ HARD	REPORT TO: 329 21 <	FAIRBANKS, AK 99701	PHONE: 455-7225 KAX:	MONDA NAME: UTICH ALINE	PROPECT NUMBER: 10,86 -19		sammer M S Million	CLIENT SAMPLE IDENTIFICATION	P.W.	F-1	/		TRIP.					au a	$\mathcal{B}\mathcal{B}$	<i></i>	PRIMT NAME: Adottoval I maares	

- of removements sentences, creat agrees to pay for the services requested on this chain of outstody form and for any additional analyses performed on this project. Payment for services is due within 30 days from the date of invoice unless otherwise contracted. Sample(s) will be disposed of after 30 days unless otherwise contracted.

<u>Test America Cool</u>	er Recei	pt Form	( de l
(Army Corps. C. WORK ORDER # ADG 1004 CLIENT: T	my S Pet	erson Envi	CT: Mine Cami
Date /Time Cooler Arrived 7 / 2/07 14:17	Coolersion	PROJEC	d Harston
	_ Cooler signe	(Print nam	
Preliminary Examination Phase: Date cooler opened: A same as date received, or /	1	•	
Cooler opened by (print) David Houston	(sign)/	Danie Har	Alu
1. Delivered by ALASKA AIRLINES Fed-Ex UPS		YNDEN LICLIEI	VT Other:
Shipment Tracking # if applicable	(include copy	of shipping papers in	file)
2. Number of Custody Seals Signed by		Date <u><b>9</b> / <b>2</b>/</u>	
Were custody seals unbroken and intact on arrival?	Yes	No	
3. Were custody papers sealed in a plastic bag?	Yes	AN0	
4. Were custody papers filled out properly (ink, signed, etc.)?	Yes	□ No	
5. Did you sign the custody papers in the appropriate place?	Yes	<b>□</b> No	•
6. Was ice used? Yes No Type of ice: blue ice Segel	ice real ice	dry ice Condi	tion of Ice: 6000
Temperature by Digi-Thermo Probe 3.2 °C There	mometer #	Rec#3	
7. Packing in Cooler: 🔀 bubble wrap 🗍 styrofoam 📋 cardboard [	Other:		
8. Did samples arrive in plastic bags?	Yes	No	
9. Did all bottles arrive unbroken, and with labels in good condition	? 🕂 Yes	[] No	
10. Are all bottle labels complete (ID, date, time, etc.)	Yes	No	1
11. Do bottle labels and Chain of Custody agree?	Yes	QN0 07/	02/07 10
12. Are the containers and preservatives correct for the tests indicate	d? X Yes		127/07@ 923 pm
13. Is there adequate volume for the tests requested?	Yes	No	noton cac
14. Were VOA vials free of bubbles?	Yes	□No 07	Contact dient
If "NO" which containers contained "head space" or bubble	es?		Client adud to
Log-in Phase:			to work order Ster Emil
Date of sample log-in $07 / 01 / 07$ Samples logged in by (print) - thunner Director	(sign)	Note 7	Jul -
1. Was project identifiable from custody papers?		Comparise 1	
<ol> <li>Do Turn Around Times and Due Dates agree?</li> </ol>	Ves Ves		
<ol> <li>Was the Project Manager notified of status?</li> </ol>	Yes Yes		
4. Was the Lab notified of status?	A Yes		
<ul><li>5. Was the COC scanned and copied?</li></ul>			
	X Yes	No	

1, strawnos AQ 60004 HUG - STH i cinar housitm 50 A • • + 5 renewood bring! ; . 66500 د. م <u>у</u>...;  $\{P_{i}\}$ ANALY ICAL TESTING COP ŝ,  $\tilde{h}_{r,\tilde{n}}$ NON

## Laboratory Data Review Checklist

## 1. Laboratory

C/Yes	O No 1	aboratory receive and perform all of the submitted sample analyses Comments:
b. If the sa laborato O Yes	mples were transferre ry, was the laboratory ANo	ed to another "network" laboratory or sub-contracted to an alternate y performing the analyses ADEC CS approved? Comments:
ain of Custody	<u>(COC)</u>	
a. COC infor	mation completed si	gned, and dated (including released/received by)?
CYes	C No	Comments:
a. Sample/coo	<u>e Receipt Documenta</u> pler temperature docu	imented and within range at receipt (4° $\pm$ 2° C)?
Cres	O No	Comments:
	eservation acceptable	- acidified waters, Methanol preserved VOC soil (GRO, BTEX, etc.)?
C/Tes	C No	Comments:
	· · · · · · · · · · · · · · ·	

	O No	Comments: See C.O.C. and scemple necey
e. Data qua	lity or usability affected? I	Explain. ND
-		Comments:
	Саналан на ундуг.	
<u>æ Narrative</u>	· · · · · · · · · · · · · · · · · · ·	
a. Present a	nd understandable?	
C Yes	O No	Comments:
	ан ан ан ан ан ан ан ан ан ан ан ан ан а	
· · · · · · · · · · · · · · · · · · ·		······································
b. Discrepa O Yes	ncies, errors or QC failure	s identified by the lab?
	GINO	Comments: No fuilieur or descrepancies
· · · · · ·		
c. Were all	corrective actions docume	nted?
OYes	O No	Comments: ///
0.0	7	
All and a second a second gap and a second second second second second second second second second second second	· · · · · · · · · · · · · · · · · · ·	
All and a second a second gap and a second second second second second second second second second second second	he effect on data quatlity/u	usability according to the case narrative?
All and a second a second gap and a second second second second second second second second second second second	he effect on data quatlity/u	
d. What is t	he effect on data quatlity/u	usability according to the case narrative?
All and a second a second gap and a second second second second second second second second second second second	he effect on data quatlity/u	usability according to the case narrative?
d. What is the second s	nalyses performed/reported	usability according to the case narrative? Comments: None. d as requested on COC?
d. What is the second s		usability according to the case narrative? Comments: None.
d. What is the second s	nalyses performed/reported	usability according to the case narrative? Comments: None. d as requested on COC?
d. What is the second s	nalyses performed/reported	usability according to the case narrative? Comments: None. d as requested on COC?
d. What is the second s	nalyses performed/reported C No cable holding times met?	usability according to the case narrative? Comments: None. d as requested on COC?
d. What is the second s	nalyses performed/reported	usability according to the case narrative? Comments: None d as requested on COC? Comments:
d. What is the second s	nalyses performed/reported C No cable holding times met?	usability according to the case narrative? Comments: None d as requested on COC? Comments:
d. What is the second s	nalyses performed/reported C No cable holding times met?	usability according to the case narrative? Comments: d as requested on COC? Comments: Comments:

d. Are the reported PQLs less than the Cleanup Level or the minimum required detection level for the project?

	C No	Comments:
e. Data quali	ty or usability affec	cted? Explain. Comments: $\sqrt{\partial}$ .
Samples		
a. Method Bl	ank	
i. One me CYes	ethod blank reporte O No	ed per matrix, analysis and 20 samples? Comments:
II. All me CYes	ethod blank results O No	Tess than FQL ? Comments:
iii. If abo	ve PQL, what sam	ples are affected? Comments: N/A-
iv. Do the O Yes	e affected sample(s ⊖ No	b) have data flags? If so, are the data flags clearly defined? Comments: $N/A$
C Yes	⊖ No	s) have data flags? If so, are the data flags clearly defined? Comments: N/A-
C Yes		s) have data flags? If so, are the data flags clearly defined? Comments: N/A-
⊖ Yes v. Data q	⊖ No juality or usability a	s) have data flags? If so, are the data flags clearly defined? Comments: N/A- affected? Explain.
⊖ Yes v. Data q b. Laboratory	⊖ No juality or usability a y Control Sample/E	s) have data flags? If so, are the data flags clearly defined? Comments: N/A- affected? Explain. Comments: N/A-
C Yes v. Data q b. Laboratory i. Organi C Yes	⊖ No Juality or usability a y Control Sample/E cs - One LCS/LCSI ⊖ No	affected? Explain. Comments: N/A- Comments: N/A- Duplicate (LCS/LCSD) D reported per matrix, analysis and 20 samples?

iii. Accuracy - All percent recoveries (%R) reported and within method or laboratory limits or project specified DQOs? (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

<b>[</b>	C'Yes	O No	Comments:
I	limits or pr	on - All relative per roject specified D QC pages) O No	ercent differences (RPD) reported and less than method or laboratory QOs? (AK Petroleum methods 20%; all other analyses see the Comments:
	v. If %R or	r RPD is outside o	of acceptable limits, what samples are affected? Comments: N/A-
	vi.Dothea CYes	affected samples( O No	s) have data flags? If so, are the data flags clearly defined? Comments: NIA-
· .			affected? Explain. Comments: $\mathcal{N}(A)$
C.		uality or usability Organics Only	Comments: $\mathcal{N}(\mathcal{A})$
c.	. Surrogates -	Organics Only	Comments: $\mathcal{N}(\mathcal{A})$
c.	. Surrogates - i. Are surro	Organics Only ogate recoveries re	Comments: $\mathcal{N}(\mathcal{A})$ eported for organic analyses - field, QC and laboratory samples?
с.	i. Are surro CY es ii. Accuracy specified D pages)	Organics Only ogate recoveries re O No y - All percent rec OQOs? (AK Petrol	Comments: MA eported for organic analyses - field, QC and laboratory samples? Comments: coveries (%R) reported and within method or laboratory limts or project leum methods 50-150 %R; all other analyses see the laboratory report
	i. Are surro CYes ii. Accurac specified D pages) CYes	Organics Only ogate recoveries re O No y - All percent rec QOS? (AK Petrol O No Web O Me sample results iwf	Comments: MA eported for organic analyses - field, QC and laboratory samples? Comments:

iv. Data quality or usab	ility affected? Explain. Comments: AFA-LUSS
Reconcery culculation of	oesnot provide useful infor mation = Sumple ADG-0004-01
	lyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.):
	ed per matrix, analysis and cooler? Comments:
6R0/BTEX analysis.	AQC0004-03
ii. All results less than l CYCs CNo	PQL? Comments:
	· · · · · · · · · · · · · · · · · · ·
iii. If above PQL, what	samples are affected? Comments: <sub>N/A</sub>
iv. Data quality or usab	lity affected? Explain. Comments: $N/\mu$
e. Field Duplicate	
i. One field duplicate su CYes C/No	bmitted per matrix, analysis and 10 project samples? Comments: No <u>duplicases_submitted for</u>
Vhis pampling even	
ii. Submitted blind to la	b?
∩ Yes ∩ No	Comments: N/A-
· · · · ·	· · · · · · · · · · · · · · · · · · · ·
iii. Precision - All relati 30% water, 50% soil)	re percent differences (RPD) less than specified DQOs? (Reccomended:
C Yes O No	Comments: N//1
· ···· · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·
iv. Data quality or usabi OYes ONo	lity affected? Comments: N/A

	f. Decontami	nation or E	quipment Blank (il	fapplicable)			
	OYes	O No	C-Not Applicat	ble		-	
[	i. All resu O Yes	lts less tha O No	n PQL?	Comments:			
I	ii. If abov	ePQL,wh	at samples are affe	cted? Comments:	N/A-	· · · · · · · · · · · · · · · · · · ·	······
!_ 	iii. Data q	uality or u	sability affected? E	xplain. Comments:	N/A-		
l 7. <u>Othe</u>	r Data Flags/C	Qualifiers (/	ACOE. AFCEE, La	ab Specific, e	<u>tc.)</u>		
	a. Defined and O Yes			Comments:		· · · · · · · · · · · · · · · · · · ·	······································
Comple	eted by: Me	TLISSA 、	S. SHIPPEY			· ··· · · · · · · · · ·	······································
Title:	STAPP J	CIENTTS	Τ			Date:	9-17-07
Report	Name: ABE	0004-	Ufica Hind	annp	1080 - 19	Report Date:	7-17-07
Firm:	TRAVIS/PE	ETERSON	I ENVIRONMEN	TAL CON.	SULTING, INC.F	ile Number:	
Subr	nit by E-Mail			Print Form			Ressi Form