

September 14, 1999

Alaska Dept. of Environmental Conservation
Division of Spill Prevention and Response
Storage Tank Program
43335 Kalifornsky Beach Rd, Suite 11
Soldotna, Alaska 99669

Attention: Mr. Colin Basye, Engineering Associate

Subject: Stockpile Remedial Action Report

Reference: Kenai Airport Fuel Service, UST Facility ID # 2187
ADEC Reckey # 90230026801

RECEIVED

SEP 16 1999

Department of
Environmental Conservation
KDO

Segregate Stockpile and Cleanup Liner

On June 19 and 21, 1999, the stockpile containing 600-plus cubic yards of contaminated soil was field screened and the soil was placed in two separate piles at the site (Photos 1-3). The soil was excavated during the removal of UST's at this facility in October 1993. Approximately 420 cubic yards of the soil was placed in the clean "treated" stockpile, and approximately 220 cubic yards was placed in the "contaminated" stockpile on the gravel access driveway west of the stockpile. The work generally followed the plan presented to the department on June 15, 1999, except soil was not segregated into a "potentially" clean pile and soils were not placed back on the stockpile liner.

Soil directly above the liner was field screened, and elevated PID readings were detected on the east side near the center. The stockpile liner was removed and the liner footprint was field screened (photo 3). Field tests indicated that soil under the west half of the liner met the ADEC cleanup levels—there was little odor and PID readings were 1 to 11 ppm. However, fuel odor and elevated PID readings (60 to 2170 ppm) were detected beneath some of the eastern half of the liner. A yellow, 30 mil thick (estimated), polyethylene-coated liner was discovered about one foot below the east half of the stockpile liner. About 40 to 50 cubic yards of soil between the two liners had fuel odor or elevated PID levels, was removed, and placed in the contaminated stockpile. Ten soil samples were collected under the yellow liner, in the area where the highest PID readings were detected above the liner, and no evidence of contamination was detected. Sampling plans showing the PID results are attached.

We asked Dan Pitts about the yellow liner. He said the liner was placed to provide spill containment for an aboveground tank installation which was not used. The tanks were eventually removed, the liner was left in place. To his knowledge, no fuel was ever stored or spilled where the yellow liner was located.

Sample and Dispose of Treated Soil

As proposed in our June 29, 1999 letter to the department, on June 22, 1999 we collected samples for field screening and laboratory analysis from the 420 cubic yards of "treated" soil. All samples were analyzed for BTEX, gas and diesel range organics. The field screen sample (location 22 at 2') with the highest PID reading was also analyzed for additional volatile organic compounds. Analytical results show that the soil meets department cleanup levels which apply to this site. Results are summarized in Table 1. Facsimiles of the laboratory analysis reports were submitted to the department with our June 29th letter. The original analysis and data reports are attached to this report.

Table 1 – Post-Treatment Stockpile Sample Results (ppm)

Sample ID	Location	PID	GRO	DRO	Benzene	Toluene	E'benz	Xylenes
KAFS99-6	2 at 4'	66	5	206	<.012	<.05	<.05	<0.1
KAFS99-7	14 at 2'	140	4	96	<.013	<.05	<.05	<0.2
KAFS99-8	16 at 2'	58	2	21	<.011	<.05	<.05	<0.1
KAFS99-9	19 at 2'	133	4	63	<.013	<.05	<.05	<0.2
KAFS99-10	21 at 2'	118	2	63	<.012	.05	<.05	.16
KAFS99-11	22 at 2'	142	3	91	<.01	<.04	<.04	0.3
KAFS99-12	Fld Dupl #11	142	4	NT	.01	<.04	<.04	0.3
KAFS99-13	Trip Blank	NT	<3	NT	<.013	<.05	<.05	<0.1
Cleanup Levels			300	250	0.5	5.4	5.5	78

On July 30th, the department approved our request to spread the treated soil. On August 8th, the contractor spread one-third of the clean soil to widen the east side of the access driveway. The remainder of the clean soil was left in the pile at the site.

Treat and Dispose of Contaminated Soil

On July 8, 1999, Rozak Excavating loaded the contaminated soil into dump trucks, 24 loads total (360 tons), and hauled the soil to the Soil Processing Inc. remediation facility on Kalifornsky Beach Road. Field screen samples were collected from the driveway beneath the stockpile to ensure all the contaminated soil was removed (sampling plan attached). Liner and cover material were also cleaned, loaded into a dump truck, and hauled to the Central Peninsula Baling Facility. After the soil was thermally remediated, Crowfalls Environmental & Consulting collected samples for field screening and for laboratory analysis by Analytica Alaska Inc. On July 14th, we received a copy of Analytica's sample report showing all concentrations were below the method detection levels.

On July 15th, Rozak Excavating hauled the treated soil back to Kenai Airport Fuel Service. The soil was spread between the access road and fence, which includes the area where the stockpile had been. A copy of Crowfalls Environmental post-remediation sampling report, including laboratory analytical results, is attached.

Conclusions

The 600-plus cubic yards of contaminated soil excavated and stockpiled during closure of the USTs in October 1993, as well as 40 to 50 cubic yards of contaminated soil cleaned up at the stockpile site, have been characterized and remediated in accordance with plans approved by ADEC. Analytical results confirm the treated soil meets the applicable ADEC cleanup levels, and no further action is required.

Closure

I certify, except as specifically noted in this report, that all statements and data appearing in this report are in conformance with work plans approved by the department or with the provisions of the UST Procedures Manual.

Prepared by,



Ronald T. Rozak, PE
Principal Investigator



cc: Dan Pitts

- Attachments:
- A. Photographs
 - B. Stockpile Liner—Field Sampling Plans & Records
 - C. Clean Soil Pile—Field Sampling Plan & Record, Laboratory Analysis Report
 - D. Contaminated Soil Pile—Haul Record, Sampling Plan and Record
 - E. Post-Remediated Soil—Field Sampling Report & Analysis Results



View southeast. Field screening soil in 600-700 cubic yard stockpile and placing in contaminated pile (on left) or clean pile (on right).



View to west. Cleaning soil off stockpile liner.



View to east. After stockpile segregated and bottom liner removed.
Field screen locations under west portion of pile shown.



View to east. After stockpile liner removed and contaminated soil cleaned off heavy yellow liner under east end of stockpile.

Office

Shed

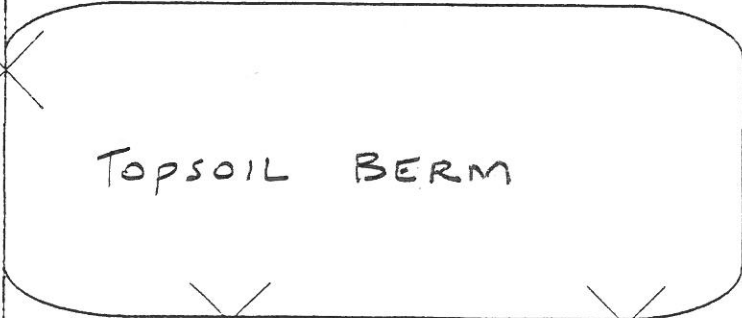
XFMR Pad



PID Value, ppm
3"-6" ABOVE
LINER

1	2	1	
2	5	23	12
10	50	8	
13	45	8	
6	43	6	
3	530	+25	
4	107	35	
5	110	25	
836	38	5	
<5	28	<5	
<5	<5	<5	

ACCESS DRIVEWAY



TOPSOIL BERM

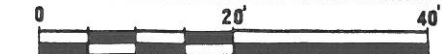
0900

CAL. MT HL2000 = 98.5 ppm

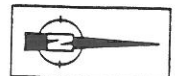
1030-1230

FIELD SCREEN ABOVE STOCKPILE LINER

STOCK PILE LINER SAMPLING
KENAI AIRPORT FUEL SERVICE



6-21-99
RTROZAK



B.1

Office

Shed

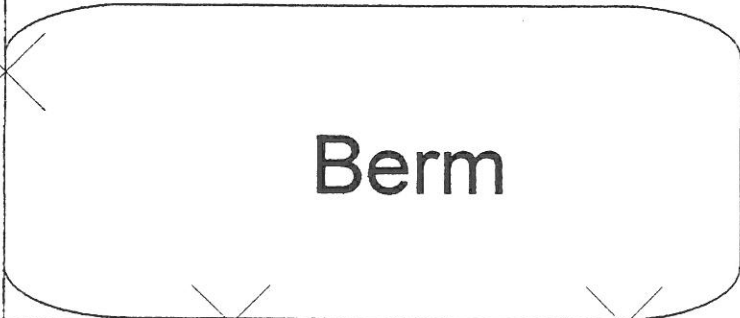
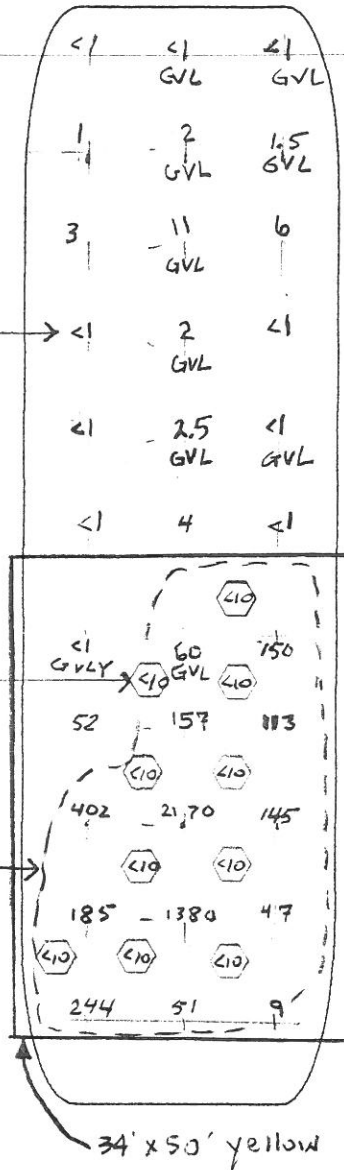
XFMR Pad



Field screen 3.6" below block 20 mil-HDPE liner.

Field screen locations 3.6" below extra-heavy yellow liner

Removed All soil this area - put in cont. pile = 40 cy (est)

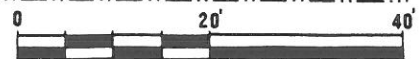


0900 Calibrated MTHL2000 PID

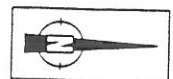
1440-1550 FIELD SCREEN 3-6" UNDER STOCKPILE LINER

1650-1715 FIELD SCREEN 3-6" UNDER YELLOW LINER

KENAI AIRPORT FUEL SERVICE STOCKPILE LINER SAMPLING



6-21-99
RTROZAK



B.2

ROZAK ENGINEERING

Civil, Construction & Environmental Consulting

P.O. Box 350

Kenai, Alaska 99611

(907) 283-5640

Fax (907) 283-0747

June 29, 1999

Alaska Dept. of Environmental Conservation
Division of Spill Prevention and Response
Storage Tank Program
Kenai Area Office
43335 Kalifornsky Beach Rd, Suite 11
Soldotna, Alaska 99669

Fax (907) 262-2294

Attn: Mr. Colin Basye, Engineering Associate

Subject: Approval to Spread Treated Soil
Facility: Kenai Airport Fuel Service, UST Facility ID # 2187
ADEC Reckey # 90230026801

On behalf of Mr. Dan Pitts, department approval is requested to spread a portion of the treated soil at the UST facility. On June 19 and 21, 1999, we field screened the 600 cubic yards of contaminated soil while an excavator disassembled the stockpile. Approximately 420 cubic yards of the soil had PID readings less than 100 ppm. This "treated" soil was placed in a pile south of the stockpile, see attached plan.

On June 22nd we collected 44 field screen samples from the soil pile at 22 locations, at 2 ft and 4 ft depths. Most of the PID values were less than 50 ppm; six were 51-100 ppm, four were 101-150. We also run Dexsil PetroFLAG tests on 10 of the field screen samples to evaluate for middle distillate or weathered hydrocarbons; readings were relatively low, 89 to 270 ppm. After evaluating the field screen results, we collected samples from the six locations having the highest PID and/or PetroFLAG readings, and sent them to CT&E for analysis of DRO, GRO, and BTEX. Location #22 had the highest PID reading, so it was also analyzed for volatile organics. Analysis results (attached) show all of the parameters are less than the soil cleanup levels for this site (Table 3 in our Corrective Action Work Plan, May 27, 1999).

Rozak Excavating & Construction will spread about 100 cubic yards of the soil to provide a level work pad along the south side of the access drive for loading the contaminated soil to be transported to Soil Processing, Inc. Rozak Engineering will oversee the work.

Prepared by,

Approved by,



Ronald T. Rozak, PE
Principal Investigator



Colin J. Basye
Engineering Associate
ADEC

cc: Dan Pitts

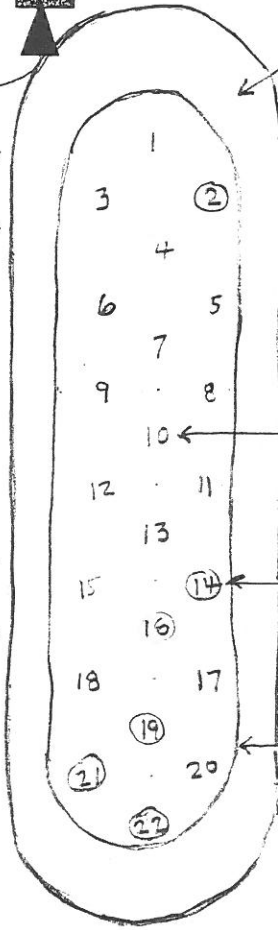
C.

Office

Shed

XFMR Pad

400-450 CY TREATED SOIL PILE



FIELD SCREEN SAMPLE

LAB SAMPLE

TOP
TOE

FORMER 600+ CY STOCKPILE

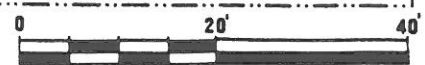
CHAIN LINK FENCE

ACCESS DRIVEWAY

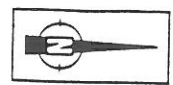
TOPSOIL BERM

GATE

PLAN SAMPLE - TREATED SOIL PILE
KENAI AIRPORT FUEL SERVICE



6.22.99
RT Rozak



C.

SAMPLING RECORD

PROJECT CONTAMINATED SOIL REMEDIATION
REKEY # 90230026801

DATE June 22, 1993 (TUE.)

LOCATION KENAI AIRPORT FUEL SERVICE
STACKPILE ON LOT 4, BLK 1, FBO Subd.

WEATHER 10-15 mph
High Overcast

RECORDED BY Ron Rozak

67 °F 1230 AM _____ °F _____ PM

INSTRUMENT Microtip HL 2000 Calibrated Checked Cal.
 TEI 580 B 98,9 e 1300

Notes: PID categories are: (C)= cold, or (W)= warm. (H)= Dextil Petro-PLAG soil extraction test results

TIME/DATE	SAMPLE	LOCATION	DEPTH	DESCRIPTION	HC ODOR			PID (ppm)		
					N	C	H	C	W	H
1250		1	2	Sand	X			C		4
			4	"Sweet" HC odor		X		C		32
	KAFS-99 1600 -6	2	2			X		C		24
			(4)			X		C		66
		3	2			X		C		270
			4			X		C		32
		4	2			X		C		29
			4			X		C		30
		5	2			X		C		34
			4			X		C		18
		6	2			X		C		46
1320			4			X		C		33
			4			X		C		31
		7	2			X		C		31
			4			X		C		26
		8	2			X		C		24
			4			X		C		30
		9	(2)			X		C		48
										106
1335			4			X		C		23

SAMPLING RECORD

SAMPLE "TREATED" SOIL PILE
 PROJECT CONTAMINATED SOIL REMEDIATION
REKEY # 90230026801

DATE June 22, 1993 (TUE.)

LOCATION KENAI AIRPORT FUEL SERVICE
STACKPILE ON LOT 4, BLK 1, FBO Subd.

WEATHER 10-15 mph
Bright O'cast

RECORDED BY Ron ROZAK

____ °F ____ AM ____ °F ____ PM

INSTRUMENT Microtip HL 2000 Calibrated Checked Cal.
 TEI 580 B 98.9 @ 1300

Note: PID categories are: (C)= cold, or (W)= warm, (H)= Oexsil Petro-RAG soil extraction test results

TIME/DATE	SAMPLE	LOCATION	DEPTH	DESCRIPTION	HC ODOR		PID (ppm)
					NONEL	I M H	
1340		10	2		X	C	37
			4		X	C	44 158
		11	(2)		X	C	65 110
			4		X	C	31
		12	2		X	C	38
			4		X	C	23
		13	2		X	C	43
			4		X	C	38
1355 1605	KAFS-99 -7	14	(2)		X	C	140 157
			4		X	C	24
		15	2		X	C	23
			4		X	C	22
	KAFS-99 1610 -8	16	(2)		X	C	58 90
			4		X	C	25
1410		17	2		X	C	28
			4		X	C	30
		18	2		X	C	47
			(4)		X	C	85

PetroFLAG™ Hydrocarbon Test Kit - Field Data

PetroFLAG is a trademark of Dexsil corporation.
1-800-854-7272 FAX 907-283-0747

Date: 6-22-99

Calibration Time/Date: 1355 / 6-22-99

Operator: K. HOLLINGSWORTH

Calibration Temperature: 23.9°C

Location: TREATED SOIL PILE
KAFS UST FACILITY

No.	Sample ID	Weight	Time/Date	Reading (ppm)	DF ¹	RF ²	Actual (ppm)	Comments
1	BLANK	0	1355	0	1	5		<u>PID</u>
2	STANDARD	0		1000	1	5		—
3	1 at 4'	10g		117	1	5		32
4	2 at 4'	10g		270	1	5		66
5	9 at 2'	10g		106	1	5		43
6	10 at 4'	10g		158	1	5		44
7	11 at 2'	10g		110	1	5		65
8	14 at 2'	10g		157	1	5		140
9	16 at 2'	10g		90	1	5		53
10	19 at 2'	10g		104	1	5		133
11	21 at 2'	10g	✓	97	1	5		118
12	22 at 2'	10g	1410	89	1	5		142
13								
14								
15								
16								
17								
18								
19								
20								

¹DF = Dilution Factor, e.g., for 5 gram soil sample DF=10g/5g=2, and actual concentration equals reading times DF (reading (ppm) x DF = actual concentration).

²RF = Response Factor, selected for the hydrocarbon contamination at the site.

ROZAK ENGINEERING

Civil, Construction & Environmental Consulting

P.O. Box 350

Kenai, Alaska 99611

(907) 283-5640

Fax (907) 283-0747

June 25, 1999

Alaska Dept. of Environmental Conservation
 Division of Spill Prevention and Response
 Storage Tank Program
 Kenai Area Office
 43335 Kalifornsky Beach Rd, Suite 11
 Soldotna, Alaska 99669

Fax (907) 262-2294

RECEIVED

JUN 25 1999

 Department of
 Environmental Conservation
 ADEC

Attn: Mr. Colin Basye, Engineering Associate

Subject: Approval to Move and Treat Contaminated Soil
 Facility: Kenai Airport Fuel Service, UST Facility ID # 2187
 ADEC Reckey # 90230026801

On behalf of Mr. Dan Pitts, department approval is requested to move approximately 225-250 cubic yards of gasoline contaminated soil from the UST facility to Soil Processing, Inc's Thermal Soil Remediation Facility at the former UAA/MAPTS Fire Training Center. On June 19 and 21, 1999, we field screened the contaminated soil while an excavator disassembled the stockpile. Approximately 175-200 cubic yards of the soil had PID readings greater than 100 ppm. We placed this "contaminated" soil on the access road north of the stockpile. When we field screened under the liner, another 50 cubic yards of soil with PID >100 ppm was excavated and added to the contaminated soil pile. We covered the pile with 6-mil reinforced polyethylene.

Rozak Excavating & Construction will haul the contaminated soil in end dump trucks, covered with a tarp during transit. The hauling is scheduled for next Wednesday, June 30th, but will depend on remediation of soil currently at SPI's facility. Rozak Engineering will oversee the soil moving to ensure no contaminated material is left on the access road and all of the material is delivered to the treatment facility.

Prepared by,



Ronald T. Rozak, PE
 Principal Investigator

Approved by,



Colin J. Basye
 Engineering Associate
 ADEC

cc: Dan Pitts

D.

HAUL RECORD - Soil Processing Inc.

PROJECT KENAI AIRPORT FUEL SERVICE DATE 7-8-99
 WORK ITEM CONTAMINATED SOIL TREATMENT & DISPOSAL

SPI JOB # 99- _____ ADEC Reckey # 90230026801

SOURCE KENAI AIRPORT FUEL SERVICE
 DESTINATION SOIL PROCESSING INC. - THERMAL TREATMENT FACILITY
 CONTRACTOR ROZAK EXCAVATING & CONSTR.

TRUCK <u>5871 CV</u>		TRUCK _____		TRUCK _____	
MFGR: <u>PETERBILT</u>		MFGR: <u>FORD</u>		MFGR: _____	
DRIVER: <u>JOHN BLACKWELL</u>		DRIVER: <u>SCOTT PAGE</u>		DRIVER: _____	
LOAD	DUMP	LOAD	DUMP	LOAD	DUMP
0900		1050			
0950		1140			
1040		1220			
1135		1300			
1225		1345			
1305		1430			
1355		1510			
1445		1550			
1530		1635			
1610		1710			
1655		1755			
1740					
1825					
TOTAL <u>13 LOADS</u>		TOTAL <u>11 LOADS</u>		TOTAL _____	

I certify that all materials hauled from the source were delivered to the destination recorded above.

<u>JOHN BLACKWELL</u> DRIVER NAME (PRINT)	_____ SIGNATURE	<u>6436033</u> CDL NUMBER
<u>SCOTT PAGE</u> DRIVER NAME (PRINT)	_____ SIGNATURE	<u>6551319</u> CDL NUMBER
_____ DRIVER NAME (PRINT)	_____ SIGNATURE	_____ CDL NUMBER

I certify all the loads recorded were delivered by these trucks to the above destination.

<u>R. T. ROZAK</u> INSPECTOR NAME (PRINT)	<u>R. T. Rozak</u> SIGNATURE	<u>Rozak Engineering</u> ORGANIZATION
----------------------------------------------	---------------------------------	------------------------------------------

Office

Shed

XFMR Pad

CHAIN LINK FENCE

"CLEAN" SOIL PILE

FORMER GOOT SY STOCKPILE

FIELD SCREEN SAMPLE

DRIVEWAY

CONTAMINATED SOIL PILE

15
14
13
12
11
10
9
8
7
6
5
4
3
2
1

98'

77'

23'

TOPSOIL BERM

ACCESS

38'

GATE

PLAN

SAMPLE UNDER CONTAMINATED SOIL PILE
KENAI AIRPORT FUEL SERVICE



JULY 8-9, 1999
RTROZAK



D.

SAMPLING RECORD

PROJECT CONTAMINATED SOIL FILE CLEANUP PAGE (FRI)
REKEY # 90230026801 DATE July 9, 1999 (THUR.)
 LOCATION KENAI AIRPORT FUEL SERVICE WEATHER OVERCAST
BELOW STOCKPILE ON LOT 4, BLK I, FBO Subd.
 RECORDED BY K. HOLLINGSWORTH ____ °F ____ AM ____ °F ____ PM
 INSTRUMENT Microtip HL 2000 Calibrated Checked Cal.
 TEJ 580 B 99 at 1330 Note: PID categories are: (C)= cold, or (W)= warm. (H)= Dexsil PetroPac soil extraction test results

TIME/DATE	SAMPLE	LOCATION	DEPTH	DESCRIPTION	HC ODOR			PID (ppm)
					NONEL	M	H	
7-8-99 1320		1	3'	Sample foot print under contam. GW soil piled on drive	X			0
		2	.3	GW	X			5
		3	.3	SAND	X			3
↓ 1327		4	.3	GW	X			4
7-9-99 1910		5	.3	SANDY GRAVEL	X			3
		6	.2	GRAVEL	X			3
		7	.2	GRAVELY SAND	X			2
		8	.2	SANDY GRAVEL	X			7
		9	.2	GRAVEL	X			5
		10	.2	GRAVEL	X			4
		11	.2	SANDY GRAVEL	X			6
		12	.2	SANDY GRAVEL	X			5
		13	.2	SAND	X			42
		14	.2	SANDY GRAVEL	X			7
↓ 1330		15	.2	GRAVEL	X			2
1940		13-2	.4	AFTER REMOVE 2" SAND SANDY GRAVEL	X			5

D.

Crowfalls Environmental & Consulting

July 20, 1999

CEC Project #9901

George Cline
Soil Processing, Inc.
207 E. Northern Lights Blvd.
Anchorage, AK 99503

Re: Kenai Air Fuel Services Post-Remediation Soil Sampling
Soil Processing Project #9911
ADEC File No. 90239910701

Dear George:

Crowfalls Environmental & Consulting was retained by Soil Processing, Inc. (SPI) to perform post remediation soil sampling for Kenai Air Fuel Services. SPI has set up a temporary processing unit at the former UAA/MAPTS Fire Training site to thermally remediate soil contaminated with petroleum hydrocarbons. This report presents the sampling results of the treated soil.

A total of 360 tons of soil was remediated. The treated soil was field screened prior to ample collection to determine the location(s) for laboratory samples. A MiniRae photoionization detector (PID), Model 2000 Plus with a 10.0 eV lamp was calibrated using 100 ppm isobutylene gas at 0900 on July 12, 1999. Grab samples for field screening were determined in the Sampling, Testing and Reporting section of the Operations Plan approved by ADEC. Ten samples were collected and read by the PID and the results are listed below. The treated soil was approximately 100° in Pile #1, 100° in Pile #2 and 120° in Pile #3 when the samples were collected. The weather was partly cloudy, 55° with 0 - 5 mph winds.

<u>Time</u>	<u>PID ID</u>	<u>Location</u>	<u>Results (ppm)</u>
Pile #1			
0907	1	Top of Pile	0.0
0909	2	East Side	0.0
0911	3	South Side	0.0
0912	4	West Side	0.0
Pile #2			
0914	5	Top of Pile	0.0
0916	6	East Side	0.0
0917	7	North Side	0.0
0918	8	SW Corner	0.0
Pile #3			
0920	9	Top of Pile	0.0
0922	10	East Side	0.0

HC2 Box 356 Soldotna, Alaska 99669 (907) 262-0998

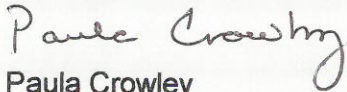
E.

Verification samples were collected from the east side, and west side of Pile #1, east side and north side of Pile #2, and the east side of Pile #3. The samples were collected approximately 18 inches into the pile.

The samples were sent to Analytica Alaska for gasoline range organics (GRO) and BTEX analyses. Diesel range organics were not present prior to remediation and therefore were not included for analysis. The analytical results are attached at the end of this report. No deviations occurred during field screening or laboratory sample collection.

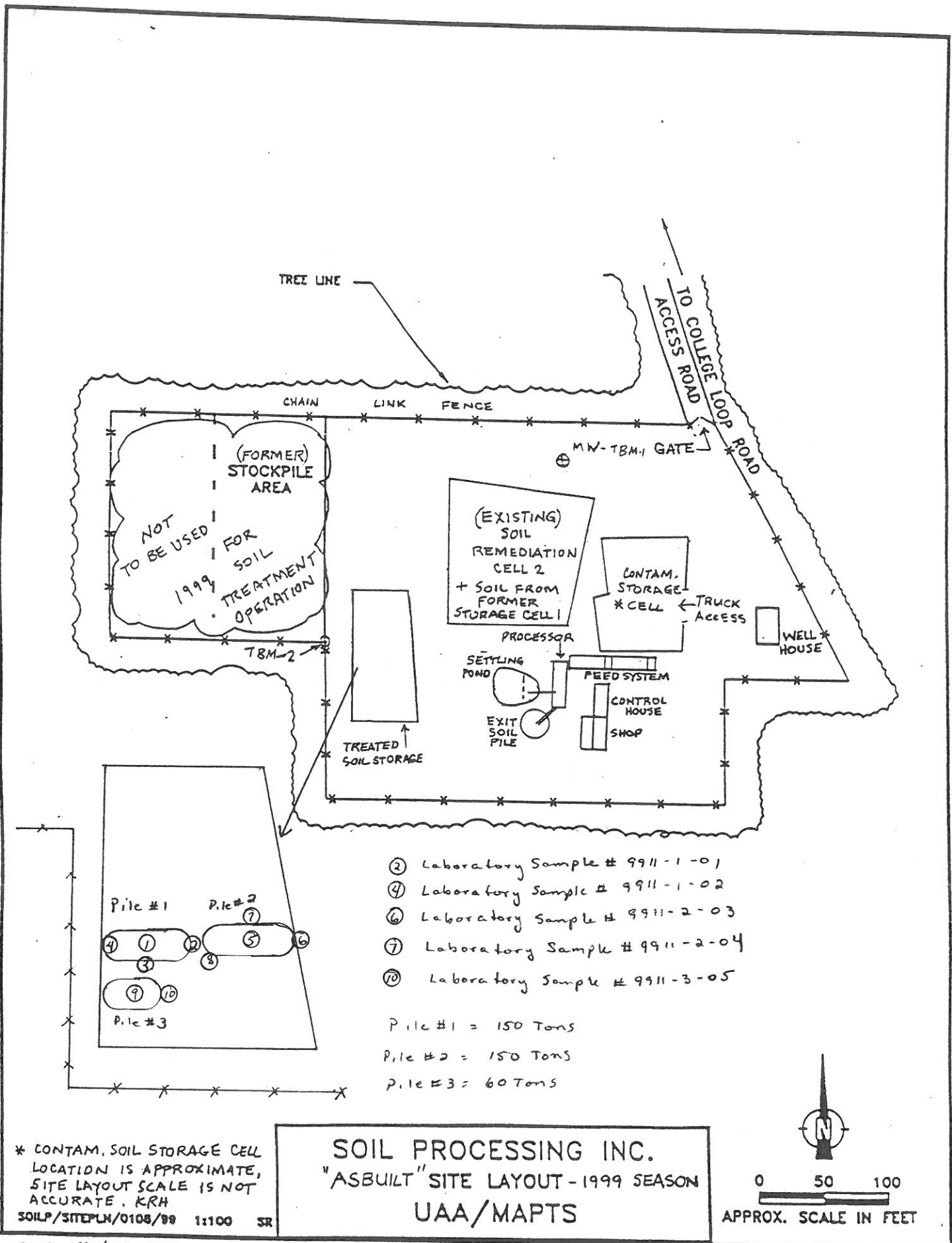
I certify that, except as specifically noted in this report, all statements and data appearing in this report are in conformance with Chapter 2 of the UST Procedures Manual. If you have any questions about this report, please call me at 262-0998.

Sincerely,



Paula Crowley
Principal
C:\SPIKAFS.rpt

c:\ADEC

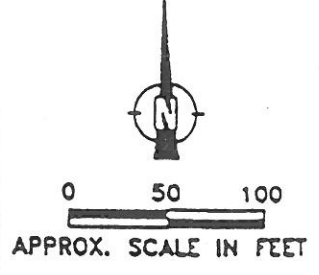


- ② Laboratory Sample # 9911-1-01
- ④ Laboratory Sample # 9911-1-02
- ⑥ Laboratory Sample # 9911-2-03
- ⑦ Laboratory Sample # 9911-2-04
- ⑩ Laboratory Sample # 9911-3-05

Pile #1 = 150 Tons
 Pile #2 = 150 Tons
 Pile #3 = 60 Tons

* CONTAM. SOIL STORAGE CELL LOCATION IS APPROXIMATE, SITE LAYOUT SCALE IS NOT ACCURATE. KRH
 SOILP/SITEPLAN/0108/99 1:100 SR

SOIL PROCESSING INC.
"ASBUILT" SITE LAYOUT - 1999 SEASON
UAA/MAPTS



REV 5/7/99 RTR
 REV 6/1/99 KRH
 REV 6/24/99 PFC

Figure