SUMMARY REPOR
JACK'S SERVICE STATIO
ADEC FACILITY #177
MILE 266.5 RICHARDSON HIGHWA
DELTA JUNCTION, ALASK

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SHANNON & WILSON, INC.

GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

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31-1-11138-301

SUMMARY REPORT

JACK'S SERVICE STATION
ADEC FACILITY #1776

MILE 266.5 RICHARDSON HIGHWAY
DELTA JUNCTION, ALASKA

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1.0 INTRODUCTION

This letter summarizes our air quality monitoring work and the status of soil remediation at Jack's Service gas station facility, Mile 266.5 Richardson Highway in Delta Junction, Alaska. It includes a summary of our work at the site since our last summary report, dated July 2, 2001, through modification of the soil vapor extraction system in November of 2002. This work was conducted in general accordance with our Corrective Action Plan, dated March 1, 1998, grant request work plans funded under the Alaska Department of Environmental Conservation (ADEC) Underground Storage Tank (UST) Financial Assistance Program, and specifically Grant No. 15177631 and its amendments.

Grant #15177623 was awarded in December 1998 to support ongoing corrective action activities, including operation and maintenance (O&M) of a vapor extraction system (VES) for *in situ* treatment of hydrocarbon-contaminated soils, land-farming and monitoring of contaminated soils stockpiled at the site following 1995 UST closure activities, testing the air quality of VES vent exhaust, and evaluation of remedial effectiveness. Landfarming and VES operations are described below. System O&M included maintaining the VES wind turbine ventilators so they would continue to supply a vacuum to the VES system, and periodically collecting exhaust air hydrocarbon samples to monitor VES treatment effectiveness.

Grant #15177623 was extended to September 30, 2001, to accommodate treatment of the contaminated stockpiled soils through the summer of 2001. Grant #15177631 was awarded in April 2001 to continue corrective action at the site. Under this grant we performed tests on the VES to assess its treatment efficiency and determine whether the system would benefit from installing an electric-powered blower to increase vapor extraction efficiency. Confirmation sampling to support the decommissioning of the soil stockpile was also included in this grant.

1.1 Background

Petroleum contamination remained in subsurface soils at Jack's Service after closure of the former USTs in 1995. In June and July 1998, Shannon & Wilson installed perforated underground ventilation pipes in the former UST area and upgraded vent pipes previously installed under the dispenser island. These were connected to vertical vent stacks fitted with wind-driven turbines to create a vacuum throughout the subsurface ventilation system and draw residual volatile hydrocarbons from the subsurface soils. The locations of the vapor extraction wells and vent stacks (VS) are shown in Figure 1. The vent stacks are periodically monitored

with a photoionization detector (PID) for the relative abundance of volatiles in the exhaust air to keep track of ongoing treatment effectiveness. Samples of the exhaust air are also collected periodically and submitted to an analytical laboratory for quantitative analysis of gasoline range organics (GRO) and benzene, toluene, ethylbenzene, and xylenes (BTEX).

During the 1995 UST closure, approximately 2,700 cubic yards of contaminated soil were removed and stockpiled behind the service garage. To reduce hydrocarbon concentrations in the stockpiled soil, Shannon & Wilson implemented a landfarming soil treatment at the site beginning in the summer of 1998. A lined and bermed soil treatment cell was constructed near the original stockpile, and shallow lifts (*ca.* 14 to 18 inches) have been periodically transferred from the contaminated stockpile to the treatment cell for spreading, fertilizer addition, and rototilling to enhance microbial degradation and volatilization of hydrocarbons. The locations of the original soil stockpile and treatment cell are shown in Figure 1. Each lift was later sampled, and the samples were analyzed for the presence of diesel range organics (DRO), GRO, and BTEX. When soil analyses indicated the analyte concentrations had dropped below the most stringent ADEC soil cleanup levels, the soil was removed from the treatment cell and placed elsewhere on the property for future use as backfill.

In May 2000, Copper Valley Enterprises (CVE) removed the fourth, treated soil lift from the treatment cell. In June 2000, half the soil remaining in the soil stockpile was moved to the treatment cell, and both piles were fertilized and rototilled. Both soil piles were field-screened with a PID in October 2000; these observations led us to wait longer before decommissioning either the treatment cell or stockpile soils. No additional fertilizer was added, and no confirmation samples were collected at that time.

As noted in our last summary report (*Summary Report, Jack's Service, Mile 266.5 Richardson Highway, Delta Junction, Alaska, Facility #1776*), dated July 2, 2001, one soil lift remained in the soil stockpile in May 2001. At that time the soils in both the stockpile and treatment cell were again subjected to PID screening, and the decision was made to continue the landfarming operations (i.e., re-fertilize and rototill both piles). Treatment confirmation samples were collected from the treatment cell in July of 2001.

We report here the field activities at the site since July 2001, as well as the analytical results for samples collected from the treatment cell soils in mid-July 2001 (subsequently removed and stored elsewhere on the site), as well as results from later-treated stockpile and treatment cell soils. In addition, we present the qualitative (PID) and quantitative (GRO/BTEX) results from

wind-driven VES vent stack exhaust, air samples collected from the site through November 2002, when an electric-powered blower was added to the VES in an attempt to increase the removal rate of hydrocarbons from subsurface soils.

2.0 FIELD ACTIVITIES

Several visits were made to Jack's Service Station between July 2001 and November 2002. Site activities during this period included:

Activities	Dates
collecting soils from the treatment cell for PID screening	July 2001; August 2002
collecting soils from the contaminated soil stockpile for PID screening	July 2001; August 2002
collecting soils from the treatment cell for laboratory	July 2001; August 2002
collecting soils from the contaminated soil stockpile for laboratory analysis	August 2002
landfarming treatment of original contaminated soil stockpile soils	July 2001; September 2001; November 2002 (tilling only)
landfarming of treatment cell soils	September,2001; November 2002 (tilling only)
transferring soil from the original contaminated stockpile to the treatment cell	September 2001
removing treated soil from treatment cell;	July, 2001; November 2002
sampling water supply	August 2002
qualitative sampling of the VES exhaust air	July, October, and November 2001; March 2002
quantitative sampling of the VES exhaust air	November 2001; March 2002
installing weather and VES monitoring equipment at the site	July 2001
installing an electric blower for the VES.	November 2002

2.1 Contaminated Soil Treatment and Sampling

As noted above, in June of 2000, half the soil remaining in the soil stockpile was moved to the treatment cell, and both piles were fertilized and rototilled. In October of 2000 and May of 2001 the soils in both the treatment cell and stockpile were subjected to PID screening; both piles were re-fertilized and rototilled in May 2001. Treatment confirmation samples were collected from the treatment cell in July 2001, leading to removal of those soils from the treatment cell for storage elsewhere on the property. The soil remaining in the stockpile was again divided in

September 2001, with half being placed into the treatment cell; both groups of soil were again fertilized and tilled at that time.

Treatment confirmation samples were collected from the newly placed and treated treatment cell soils in August 2002, as discussed below. The results from this set of treated treatment cell soil samples indicated the hydrocarbon concentrations were below ADEC soil cleanup levels. In November 2002 these treated soils were removed from the treatment cell and stored elsewhere on the property, and a portion of the soil remaining in the original stockpile location was placed into the treatment cell; both soil piles were re-tilled without addition of fertilizer at that time.

2.1.1 Treatment Cell Sampling

On July 12, 2001, soils that had been placed in the treatment cell in June 2000 were field-screened with a PID at nine locations. Using a hand shovel, shallow holes were dug about 12 inches deep in the soil, and a small quantity of soil was collected and placed in a resealable plastic bag. The soil in the bag was agitated, and the PID probe was then inserted to measure the relative abundance of volatile hydrocarbons in the bag's headspace. Five samples, plus a duplicate for quality control (QC) purposes, were collected from areas in the cell exhibiting higher PID measurements; these were submitted to CT&E Environmental Services, Inc. (CT&E) for determination of DRO, GRO, and BTEX concentrations. In addition, a soil trip blank was submitted for analysis of GRO and BTEX. DRO concentrations were measured by Method AK102, GRO were measured by AK101, and BTEX were determined by EPA Method 8021B. The PID and analytical sample locations are shown in Figure 2.

Analytical data from the July 12, 2001, treatment cell sampling event (Section 3.0 Results) indicated the hydrocarbon concentrations had fallen below ADEC soil cleanup levels, and they were subsequently removed and stored elsewhere on the site. In September 2001, CVE divided the remaining stockpiled soil between the treatment cell and original stockpile, and re-fertilized and tilled both soils.

On August 7, 2002, we returned to the site to sample the treatment cell soils. PID measurements were taken, as described above, from 24 locations. Based on the PID measurements, four soil samples plus a QC duplicate were collected for laboratory hydrocarbon analysis. The samples were submitted to CT&E for analysis of DRO, GRO, and BTEX by the methods described above, and the trip blank was submitted for analysis of GRO and BTEX. The August 2002 PID measurement and soil sampling locations in the treatment cell are shown in Figure 3.

2.1.2 Soil Stockpile Sampling

As noted above, the soils in the contaminated stockpile had been treated by fertilizing and tilling in June 2000 and field-screened with a PID in October 2000. Following additional field-screening measurements in May 2001, the soil stockpile was again fertilized and tilled.

On July 12, 2001, PID measurements were taken in the stockpile at nine locations. Based on the high PID measurements at that time, we decided to re-fertilize and re-till the stockpile. After the treatment cell soils from the June 2000 stockpile transfer had been treated and disposed on the site in September 2001, half of the remaining soil in the stockpile was moved to the treatment cell, as described above. The soils remaining in the original stockpile location were again fertilized and tilled in September 2001.

On August 7, 2002, we field screened soils in the original stockpile at several locations. Based on the field screening results, we collected five samples plus a duplicate from the locations with the highest PID measurements for laboratory determination of hydrocarbon concentrations. The samples were submitted to CT&E for analysis of DRO, GRO, and BTEX by the same methods used for the treatment cell soils. The August 2002 PID measurement and analytical sample locations in the stockpile are shown in Figure 3.

2.2 Water Well Sampling

On August 7, 2002, we collected two samples from the tap in the restroom sink at Jack's Service Station for determination of aqueous volatile organic compound (VOC) concentrations and 1,2-dibromoethane (also known as ethylene dibromide, or EDB). The water was allowed to run at a high flow rate for five minutes until the water temperature had stabilized at 41°F. The water flow was then reduced to avoid potential loss of volatile compounds, and the samples were collected into containers supplied by CT&E. The samples were placed in a cooler and kept chilled until they were submitted to CT&E for analysis of VOC concentrations by EPA Method 8260, and EDB concentrations by EPA Method 504.1.

2.3 Vapor Extraction System

2.3.1 Qualitative Monitoring

On July 12, 2001, we visited the site to monitor the volatile hydrocarbon concentrations in each of the eight VES vent stacks (Figure 1). Each vent stack is equipped with a sampling port about 4 feet above the ground, through which air samples may be collected and into which the probe of a PID may be inserted. A Photovac 2020 PID was used to measure the relative

abundance of volatile compounds in the vent stacks by inserting its probe into a sampling port and waiting for the PID reading to stabilize over the course of about one minute. The PID measurement was then recorded and the sample port closed. Prior to monitoring the vent stack exhaust, the PID was calibrated with a 100 parts per million (ppm) isobutylene-in-air standard.

PID measurements were taken from each of the vent stacks again on October 29 and November 29, 2001, and on March 22, 2002.

2.3.2 Analytical Sampling

On November 29, 2001, and March 22, 2002, air samples for laboratory analysis were collected from the vent stacks exhibiting the highest PID measurements. Laboratory-prepared gas sampling canisters were used to collect the analytical samples. Two types of canisters were used; one type had a valve at each end, and the other type had only one valve. Sampling using the two-valve canister involved connecting short lengths of Tygon™ tubing to each of the canister's valves, with one tubing length inserted into the vent stack sampling port, and the other tubing length attached to a small electric vacuum pump. Sampling was accomplished by opening both sampling canister valves, turning on the vacuum pump, and drawing the air sample from the vent stack into the sample canister. The canister valves were then closed, sealing the air sample inside. The one-valve canisters were received already evacuated, and samples were retrieved from the vent stack by connecting the Tygon™ tubing to the valve, inserting the other end of the tubing into the vent stack sampling port, and opening the canister's valve. Upon opening the canister's valve, the sample was drawn into the canister by its vacuum; the valve was then closed to seal the sample inside.

Three vent stack samples (VS #2, #6, and #8) were collected during the November 2001 visit, and two samples (VS #6 and #8) were collected in March 2002. The samples were submitted to CT&E for laboratory analysis of GRO and BTEX by CT&E-modified EPA Methods 8015 and 8020.

2.3.3 Instrumentation

On July 16, 2001, we installed a weather monitoring system with automated data logger (Davis Weather Monitor™) at the gas station to collect wind speed, wind direction, temperature, and barometric pressure data. In addition, a micromanometer with data logger (DP-Calc™) was installed in one of the VES vent stacks to monitor the influence of the weather on vent stack exhaust behavior. This instrumentation was installed with the goal of documenting the duration

and intensity of wind events at the site, and correlating this with the flow of exhaust air from the vent stack. The data loggers have the capacity to store over 1,000 readings, and weather and vent stack data can be downloaded to a computer every several weeks.

Weather and vent stack data were downloaded to a portable computer on several occasions following installation of the monitoring equipment. The results of the remote weather and vent stack monitoring are discussed below.

Based on a review of the PID data obtained from the vent stacks over time (see Results and Discussion, below), it was our opinion the wind-driven VES was generally effective at hydrocarbon removal at some of the site locations and ineffective at others. We therefore procured a mobile one-horsepower regenerative blower, which can be installed on individual VES vent stacks in an attempt to increase the rate of hydrocarbon removal above that provided by the wind-driven vent stack turbines. The blower was initially installed on vent stack VS #1 on November 8, 2002. Sampling and other field activities that occurred following the blower installation will be described and discussed in our next summary report.

3.0 RESULTS

3.1 Contaminated Soil

Hydrocarbon concentration data for the samples collected from the treatment cell and from the treated soils in the stockpile are presented in Table 1.

3.1.1 Treatment Cell

Soils transferred from the original contaminated stockpile to the treatment cell in June of 2000 were sampled on July 12, 2001; the sample locations are presented in Figure 2. GRO and BTEX were not detected at concentrations above the laboratory practical quantitation limit (PQL), and DRO concentrations for these samples ranged from 27.8 mg/kg to 51.0 mg/kg (Table 1). As none of these samples contained hydrocarbons at concentrations above the most stringent ADEC soil cleanup levels (i.e., Method 2, migration to groundwater [MTG] pathway), they were removed from the treatment cell and placed elsewhere on the property for future use.

Soils transferred to the treatment cell in September of 2001 were sampled on August 8, 2002; the sample locations are presented in Figure 3. GRO concentrations in these samples ranged from less than the PQL to 3.62 mg/kg, and DRO ranged from 73.7 to 171 mg/kg (Table 1). Benzene concentrations ranged from less than its PQL to 0.0185 mg/kg, toluene ranged from below its PQL to 0.0645 mg/kg, and xylenes ranged from below the PQL to 0.146 mg/kg; ethylbenzene was not detected at a concentration above the PQL (Table 1). As these soils were below the ADEC MTG soil cleanup level, they were subsequently removed from the treatment cell in November 2002 and moved elsewhere on the property for future use.

3.1.2 Soil Stockpile

Samples collected from the soil stockpile on August 7, 2002, had been treated by fertilizing and tilling in June 2000 and May, July, and September 2001, though the volume of soil treated in the original stockpile location was reduced by transferring a portion to the treatment cell in September 2001. The August 2002 sample locations in the stockpile are shown in Figure 3. GRO concentrations in these samples ranged from 5.36 to 217 mg/kg, and DRO ranged from 70.9 to 250 mg/kg (Table 1). Benzene ranged from less than its PQL to 0.334 mg/kg, toluene from less than its PQL to 1.90 mg/kg, ethylbenzene from less than its PQL to 0.871 mg/kg, and xylenes from below the PQL to 27.7 mg/kg (Table 1). As some of these soils exceeded the ADEC soil cleanup levels, they were distributed between the treatment cell and original stockpile location and re-tilled without addition of fertilizer in November 2002.

3.1.3 Soil Sample Quality Control

Quality Control (QC) procedures for this project included the analysis of a duplicate sample pair, and a soil trip blank for each treatment cell and stockpile sampling event. The QC samples were analyzed to assess the precision of the laboratory's analytical procedures and the potential for sample cross-contamination during storage and handling.

Duplicate precision may be expressed as a relative percent difference (RPD). If one or more of the analytical results are reported to not exceed the laboratory PQL, the RPD is not calculable. The RPDs for the duplicate samples (*911-71202-B8* and *911-71202-B10*) from the July 2001 treatment cell sampling event were not calculable for GRO or BTEX; for DRO the RPD was less than one percent. The RPDs for the duplicates (*11068-080702-BCH1* and *11068-080702-BCJ1*) from the August 2002 treatment cell sampling event were not calculable for GRO or the BTEX analytes; the DRO RPD was 29 percent. These RPDs were within our acceptable limits of ±50 percent for soil samples.

The RPDs for the replicates (*11068-080702-SPB3* and *11068-080702-SPE3*) from the August 2002 contaminated soil stockpile sampling event were 39 percent for DRO, 75 percent for GRO, and ranged from 63 to 96 percent for the BTEX analytes. We do not know why the GRO and BTEX RPDs exceeded our acceptable limits for soil RPDs, though soil heterogeneity may be responsible. For the purposes of evaluating the need for further soil stockpile treatment, we used the higher of the two replicate analyte concentrations for these samples. As these soils were subsequently divided and treated in both the original stockpile location and in the treatment cell, this QC anomaly does not affect the overall utility of the soil data, and the analytical results are acceptable for the purposes of this study.

No target analytes were detected in the soil trip blanks, indicating no sample cross-contamination likely occurred during sample handling or transport to the analytical laboratory.

Laboratory QC included the procedures outlined in CT&E's ADEC-approved standard operating procedures documentation. As presented in the laboratory report's QC data sheets (attached), the majority of the laboratory QC parameters fell within CT&E's acceptable limits. Exceptions are tabulated below:

Sample	Remark
911-71201-B6	DRO – Surrogate recoveries outside controls due to matrix interference.
11068-080702-BCJ1	DRO – Surrogate is outside QC goals (biased high) due to hydrocarbon interference. Sample results should not be affected.
11068-080702-BCH1	GRO/BTEX – DFB surrogate recovery is biased low; sample was run twice for confirmation. Results may be biased low.
11068-080702-BCH2	GRO/BTEX – DFB surrogate recovery is biased low; sample was run twice for confirmation. Results may be biased low.

These laboratory QC anomalies generally should not affect the utility of the soil analytical data, with the possible exception of the low surrogate recoveries for samples *11068-080702-BCH1* and *11068-080702-BCH2*. The GRO/BTEX results may be biased low in these samples; however, the field duplicate of *11068-080702-BCH1* (*11068-080702-BCJ1*; Table 1) yielded analytical results similar to its replicate, suggesting the reported data are accurate. Overall, it is our opinion the data are acceptable quality for the purposes of this report.

3.2 Water Well

The results for the water samples collected from the restroom sink at Jack's Service Station on August 7, 2002, are presented in Table 2. No VOC analytes, including BTEX, were detected at concentrations above their respective PQLs in these samples. In addition, EDB was not detected in the sample submitted for that analysis.

3.2.1 Water Sample Quality Control

QC for the water sampling included the analysis of a duplicate sample pair (*11068-080702-W1* and *11068-080702-W2*) and water trip blank. No sample duplicate RPD could be calculated for any VOC analyte, as none was above its laboratory PQL. The trip blank was not found to contain any VOC analyte or EDB, indicating no sample cross-contamination occurred during sample storage or transport to the laboratory.

Laboratory QC included the procedures outlined in CT&E's ADEC-approved standard operating procedures documentation. No laboratory anomalies were reported for these analyses.

3.3 Vapor Extraction System

The historical results from our PID screening of VES vent stack exhaust are presented in Table 3, along with the air temperature at the time of sampling and estimated windspeed. In addition, we have included the historical results from our periodic laboratory analyses for exhaust air concentrations of GRO and BTEX. The PID measurement data from all vent stacks were lowest during the March 2002 sampling event, when the wind was calm (Table 3). The highest PID measurements during the period from July 2001 through March 2002 were generally taken from vent stack VS #2, #5, #6, and #8 (Table 3). A statistical analysis (Mann-Kendall nonparametric trend analysis) of vent stack PID measurements taken since the VES system was installed in 1998 indicates that volatile hydrocarbon concentrations have been decreasing significantly ($p < 0.05$) in VS #1, #2, and #4. PID measurements also appear to be decreasing over time in VS #3 and #5, though the level of statistical significance ($p \cong 0.08$) suggests a weaker trend. No statistically significant decreases are apparent in PID measurements taken from VS #6, #7, and #8 ($p > 0.2$).

The results of laboratory volatile hydrocarbon analyses conducted on the VES exhaust air samples collected in November 2001 and March 2002 are presented in Table 4. Benzene concentrations in the three November samples were 5.22 ppm volume (i.e., cubic centimeters per cubic meter) in VS #2, 25.8 ppm in VS #6, and 51.1 ppm in VS #8. Toluene, ethylbenzene, and xylenes also were detected these samples (Table 4).

In the March 2002 samples, GRO were detected at 1540 ppm in VS #6 and at 330 ppm in VS #8. Benzene was detected at 89.7 ppm in the VS #6 exhaust and at 2.58 in the VS #8 exhaust. The other BTEX analytes were also detected in these samples (Table 4).

3.3.1 Air Sample Quality Control

QC for the air sampling included the procedures outlined in CT&E's ADEC-approved standard operating procedures documentation. No laboratory anomalies were reported for these analyses.

4.0 DISCUSSION

4.1 Soil

The results of the treatment cell and stockpile sampling indicate the soil treatment has generally been successful at reducing hydrocarbon concentrations in the contaminated soil. As noted above, the soils transferred from the stockpile to the treatment cell in September 2001 were removed from the stockpile for on-site storage in November of 2002. At that time, half the soil remaining in the original stockpile was placed in the treatment cell, and both piles were re-tilled. Assuming the soil treatment used thus far (i.e., spreading, tilling, and/or fertilizer addition) remains effective, contaminant levels should continue to decrease over time. At this time there is no evidence to indicate that continued periodic treatment of these soils will fail to achieve ADEC soil cleanup levels.

4.2 Water

The samples collected from the restroom tap at Jack's Service Station indicate that the residual soil contamination in the former UST locations has not affected groundwater quality in the area. The native soils generally consist of fine-grained silts, and the depth to the groundwater is approximately 60 to 100 feet below the ground surface (bgs). Previous work at the site identified the presence of a dense confining layer approximately 35 feet bgs, which likely serves to retard the downward migration of contaminants. In addition, the site is paved with asphalt, substantially reducing the volume of water infiltrating through the contaminated soils to groundwater.

4.3 Air

The results of the PID measurement trend analysis indicate the volatile hydrocarbon concentrations in vent stacks VS #1, #2, #3, #4 and #5 have generally been decreasing since the VES system was installed in 1998. These stacks vent the soil vapors from horizontal piping and vertical vapor extraction wells generally placed in excavation backfill (Figure 1). The vent stacks showing no significant evidence of decreasing trends in exhaust hydrocarbon concentrations (i.e., VS #6, #7, and #8) are connected to vertical extraction wells placed in native soils adjacent to the former UST excavation between Jack's Service garage and Jack's Liquor Store (Figure 1). As the subsurface at these locations contains fine-grained material, it is likely the tight soils there restrict the extraction of soil vapors at a high rate.

The weather station and vent stack monitoring instrumentation indicated that, at the moderate wind speeds (i.e., 5 to 15 miles per hour; mph) common in Delta Junction, the vent stack wind-driven turbines appear to operate at or near their design capacity (*ca.* 145 cubic feet per minute). Winds higher than about 15 mph will not achieve higher air flow rates. While the wind speed does vary substantially in Delta Junction, our autumn 2001 data indicate that it is frequently windy, and wind speeds are commonly above 5 mph. The presence of detectable hydrocarbons in the vent stacks (both PID and laboratory data) irrespective of the wind speed at the time of measurement demonstrates that the VES continues to remove hydrocarbons from the subsurface soils at the site.

Due to the apparent absence of decreasing trends in vent stack exhaust hydrocarbon concentrations in VS #6, #7, and #8, and the limit in the volume of air the wind-driven vent stack turbines can move, we installed an electric-powered blower on the VES in November 2002. We have attached the blower to one of these vent stacks and are periodically moving it from one to another stack to try to increase the rate of hydrocarbon vapor extraction. Details relating to the operation and maintenance of the powered component of the VES will be presented in our next summary report.

5.0 LIMITATIONS

This report contains soil, water, and air data regarding hydrocarbon and VOC concentrations in the media sampled. The conclusions we have presented in this report are based on the sampling and analysis that we performed. They should not be construed as a guarantee of the soil and groundwater quality at the site. In addition, conclusions cannot be drawn on the presence or absence of contaminants for which laboratory analyses were not run. Changes in site conditions can occur with time because of natural forces or human activity. The data presented in this report should be considered representative only of the time the data were collected.

Subsurface explorations and testing identify actual subsurface conditions only at those points where samples are taken, at the time they are taken. Actual conditions at other locations of the project site, including those inferred to exist between the sample points, may differ significantly from conditions that exist at the sampling locations. The passage of time or intervening causes may change the actual conditions at the sampling locations as well.

Interpretations and recommendations made by Shannon & Wilson are based solely upon information available to Shannon & Wilson at the time the interpretations and recommendations are made.

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We trust this information is sufficient for the purposes of reporting on activities at Jack's Service Station. If you have any questions or comments, please call us to discuss them.

TABLE 1
Jack's Service Station
Soil Sample Results

Location	Sample Date	Sample Number	GRO (mg/kg)	DRO (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	p&m-Xylenes (mg/kg)	o-Xylene (mg/kg)
Treatment Cell	7/12/01	911-71201-B1	<4.00	27.8	<0.0200	<0.0799	<0.0799	<0.0799	0.130
Treatment Cell	7/12/01	911-71201-B2	<4.53	37.9	<0.0226	<0.0906	<0.0906	<0.0906	<0.0906
Treatment Cell	7/12/01	911-71201-B6	<4.24	51.0	<0.0212	<0.0848	<0.0848	<0.0848	<0.0848
Treatment Cell	7/12/01	911-71201-B7	<3.46	33.5	<0.0173	<0.0693	<0.0693	<0.0693	<0.0693
Treatment Cell	7/12/01	911-71201-B8	<3.38	33.5	<0.0169	<0.0675	<0.0675	<0.0675	<0.0675
Treatment Cell	7/12/01	911-71201-B10 [a]	<3.56	33.4	<0.0178	<0.0712	<0.0712	<0.0712	<0.0712
Soil Stockpile	08/07/02	11068-080702-SPA1	7.59	70.9	<0.0206	<0.0823	<0.0823	0.0856	<0.0823
Soil Stockpile	08/07/02	11068-080702-SPA2	5.36	119	<0.0215	<0.0861	<0.0861	<0.0861	<0.0861
Soil Stockpile	08/07/02	11068-080702-SPB1	11.8	159	0.0270	0.163	<0.0882	0.211	<0.0882
Soil Stockpile	08/07/02	11068-080702-SPB2	74.4	250	0.0811	0.937	0.370	0.243	1.62
Soil Stockpile	08/07/02	11068-080702-SPB3	98.6	188	0.117	0.675	0.368	7.35	6.34
Soil Stockpile	08/07/02	11068-080702-SPE3 [b]	217	126	0.334	1.90	0.871	15.5	12.2
Treatment Cell	08/07/02	11068-080702-BCH1	<3.20	171	<0.0160	0.0645	<0.0641	0.146	<0.0641
Treatment Cell	08/07/02	11068-080702-BCJ1 [c]	3.62	128	<0.0181	<0.0723	<0.0723	<0.0723	<0.0723
Treatment Cell	08/07/02	11068-080702-BCH2	<2.95	88.4	0.0185	<0.0590	<0.0590	<0.0590	<0.0590
Treatment Cell	08/07/02	11068-080702-BCG3	<3.08	73.7	<0.0154	<0.0617	<0.0617	<0.0617	<0.0617
Treatment Cell	08/07/02	11068-080702-BCG4	<3.10	135	<0.0155	<0.0620	<0.0620	<0.0620	<0.0620

Notes:

< - Analyte reported less than the practical quantitation limit shown

na - not analyzed

[a] Duplicate of 911-71201-B8

[b] Duplicate of 11068-080702-SPB3

[c] Duplicate of 11068-080702-BCH1

TABLE 2
Jack' Service Station
Drinking Water Sample Results

Location	Sample Number	Benzene [1] (µg/L)	Toluene [1] (µg/L)	Ethylbenzene [1] (µg/L)	p&m-Xylenes [1] (µg/L)	o-Xylene [1] (µg/L)	Ethylene dibromide [2] (µg/L)
Restroom sink	11068-080702-W1	<0.500	<1.00	<1.00	<2.00	<1.00	<0.0199
Restroom sink	11068-080702-W2	<0.500	<1.00	<1.00	<2.00	<1.00	na

Notes:
Samples were collected August 7, 2002
[1] No EPA Method 8260 analyte was detected above its practical quantitation limit (PQL)
[2] Ethylene dibromide (also known as 1,2 dibromoethane) was determined by EPA Method 504.1
< - Analyte reported less than the PQL shown
na - not analyzed

Table 3
Jack's Service Station
Soil Vapor Extraction System Monitoring Results

Vent Stack (VS)	Date	Air Temperature (° F)	Estimated Wind Speed (mph)	PID (ppm)	Method 8015M/8021B*				
					GRO (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Total Xylenes (ppm)
VS-1	31-Jul-98	78	<5	1180					
	25-Aug-98	78	15-20	1152					
	25-Sep-98	50	<5	900					
	27-Nov-98	-5	10-15	611					
	6-Jan-99	-15	<1	0					
	11-Mar-99	22	10-15	235					
	3-Jun-99	55	10	460					
	1-Oct-99	33	10-15	602					
	21-Dec-99	40	<30	470	445	9.77	14.8	0.99	5.92
	29-Mar-00	27	<30	403					
	7-Jun-00	75	20-25	46					
	4-Oct-00	40	<5	509					
	18-May-01	45	5-10	221					
	12-Jul-01	81	5-10	197					
	29-Oct-01	4	<5	101					
	29-Nov-01	0	15-25	180	na	5.22	5.01	<0.58	6.78
	22-Mar-02	30	<5	12.9					
VS-2	31-Jul-98	78	<5	1307					
	25-Aug-98	78	15-20	1602					
	25-Sep-98	50	<5	1580	<20	<0.78	<0.66	<0.58	<1.34
	27-Nov-98	-5	10-15	1040					
	6-Jan-99	-15	<1	8	62.1	<0.78	1.93	<0.58	3.65
	11-Mar-99	22	10-15	858	577	11.2	9.56	<0.58	4.09
	3-Jun-99	55	10	530	527	11.0	10.3	0.790	9.35
	1-Oct-99	33	10-15	1110	634	12.9	15.3	0.930	9.82
	21-Dec-99	40	<30	330					
	29-Mar-00	27	<30	644	654	9.73	14.6	1.70	28.12
	7-Jun-00	75	20-25	335	422	6.31	11.6	1.52	26.37
	4-Oct-00	40	<5	631	155	2.33	2.56	<0.58	2.07
	18-May-01	45	5-10	399	285	5.44	5.43	<0.58	5.03
	12-Jul-01	81	5-10	410					
	29-Oct-01	4	<5	428					
	29-Nov-01	0	15-25	380					
	22-Mar-02	30	<5	22.2	1540	89.7	130	7.44	38.8

* CT&E modified EPA Method 8015/8020

Table 3
Jack's Service Station
Soil Vapor Extraction System Monitoring Results

Vent Stack (VS)	Date	Air Temperature (° F)	Estimated Wind Speed (mph)	PID (ppm)	Method 8015M/8021B*				
					GRO (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Total Xylenes (ppm)
VS-3	31-Jul-98	78	<5	481					
	25-Aug-98	78	15-20	235					
	25-Sep-98	50	<5	5					
	27-Nov-98	-5	10-15	165					
	6-Jan-99	-15	<1	0					
	11-Mar-99	22	10-15	129					
	3-Jun-99	55	10	40					
	1-Oct-99	33	10-15	244					
	21-Dec-99	40	<30	35					
	29-Mar-00	27	<30	177					
	7-Jun-00	75	20-25	21					
	4-Oct-00	40	<5	189					
	18-May-01	45	'5-10	6					
	12-Jul-01	81	5-10	79					
	29-Oct-01	4	<5	76					
	29-Nov-01	0	15-25	49					
	22-Mar-02	30	<5	4.1					
VS-4	31-Jul-98	78	<5	137					
	25-Aug-98	78	15-20	79					
	25-Sep-98	50	<5	170					
	27-Nov-98	-5	10-15	149					
	6-Jan-99	-15	<1	0					
	11-Mar-99	22	10-15	148					
	3-Jun-99	55	10	120					
	1-Oct-99	33	10-15	60					
	21-Dec-99	40	<30	90					
	29-Mar-00	27	<30	191					
	7-Jun-00	75	20-25	8					
	4-Oct-00	40	<5	54					
	18-May-01	45	5-10	104	24.3	<0.78	0.82	<0.58	1.51
	12-Jul-01	81	5-10	36					
	29-Oct-01	4	<5	42					
	29-Nov-01	0	15-25	38					
	22-Mar-02	30	<5	14.1					

* CT&E modified EPA Method 8015/8020

Table 3
Jack's Service Station
Soil Vapor Extraction System Monitoring Results

Vent Stack (VS)	Date	Air Temperature (° F)	Estimated Wind Speed (mph)	PID (ppm)	Method 8015M/8021B*				
					GRO (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Total Xylenes (ppm)
VS-5	31-Jul-98	78	<5	>2000					
	25-Aug-98	78	15-20	>2000					
	25-Sep-98	50	<5	305	<20	<0.78	<0.66	<0.58	2.95
	27-Nov-98	-5	10-15	998					
	6-Jan-99	-15	<1	136					
	11-Mar-99	22	10-15	1653					
	3-Jun-99	55	10	1200	209	14.5	25.3	1.85	9.22
	1-Oct-99	33	10-15	1727					
	21-Dec-99	40	<30	480					
	29-Mar-00	27	<30	650					
	7-Jun-00	75	20-25	8					
	4-Oct-00	40	<5	1528	936	61	94.7	6.7	28
	18-May-01	45	5-10	42					
	12-Jul-01	81	5-10	1291					
	29-Oct-01	4	<5	1332					
	29-Nov-01	0	15-25	920					
	22-Mar-02	30	<5	83.1					
VS-6	31-Jul-98	78	<5	1161					
	25-Aug-98	78	15-20	>2000					
	25-Sep-98	50	<5	6					
	27-Nov-98	-5	10-15	414					
	6-Jan-99	-15	<1	223	67.7	<0.78	2.21	0.680	3.91
	11-Mar-99	22	10-15	>2000	2080	154	145	4.23	20.7
	3-Jun-99	55	10	120					
	1-Oct-99	33	10-15	1750	1750	73.6	98.8	2.88	27.22
	21-Dec-99	40	<30	740	66.7	2.47	5.23	<0.58	2.21
	29-Mar-00	27	<30	1492	789	53.1	86.1	5.72	31.59
	7-Jun-00	75	20-25	1291	1590	5.67	170	13.8	80.3
	4-Oct-00	40	<5	1116					
	18-May-01	45	5-10	26					
	12-Jul-01	81	5-10	1612					
	29-Oct-01	4	<5	1640					
	29-Nov-01	0	15-25	1380	na	25.8	17.8	<0.58	2.91
	22-Mar-02	30	<5	130	330	2.58	38.6	3.13	19.1

* CT&E modified EPA Method 8015/8020

Table 3
Jack's Service Station
Soil Vapor Extraction System Monitoring Results

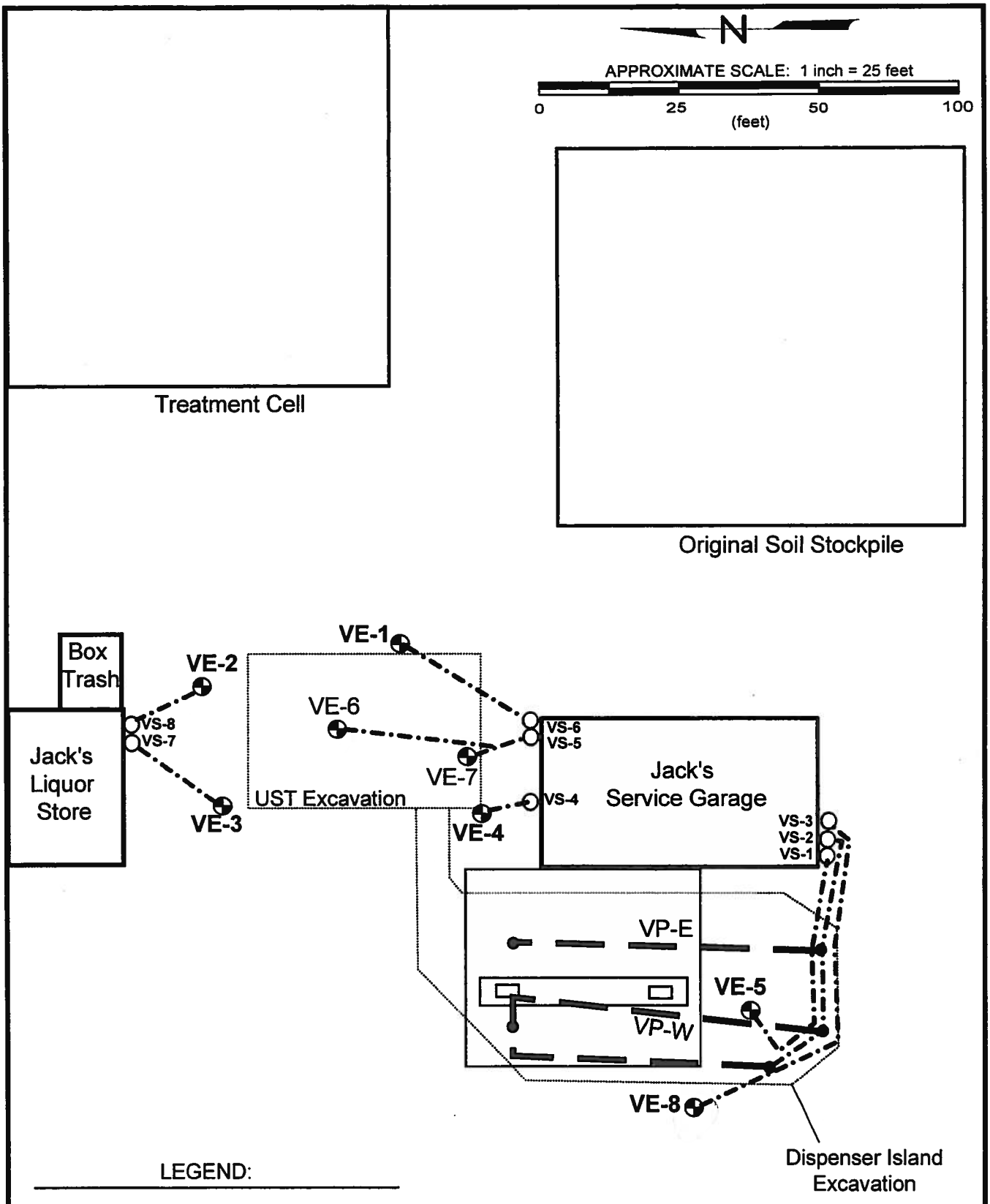
Vent Stack (VS)	Date	Air Temperature (° F)	Estimated Wind Speed (mph)	PID (ppm)	Method 8015M/8021B*				
					GRO (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Total Xylenes (ppm)
VS-7	31-Jul-98	78	<5	97					
	25-Aug-98	78	15-20	112					
	25-Sep-98	50	<5	13	32.9	2.19	2.54	<0.58	<1.16
	27-Nov-98	-5	10-15	34					
	6-Jan-99	-15	<1	0					
	11-Mar-99	22	10-15	107					
	3-Jun-99	55	10	10					
	1-Oct-99	33	10-15	75					
	21-Dec-99	40	<30	40					
	29-Mar-00	27	<30	126					
	7-Jun-00	75	20-25	41					
	4-Oct-00	40	<5	92					
	18-May-01	45	5-10	26					
	12-Jul-01	81	5-10	63					
	29-Oct-01	4	<5	53					
	29-Nov-01	0	15-25	80					
	22-Mar-02	30	<5	5.1					
VS-8	31-Jul-98	78	<5	1168					
	25-Aug-98	78	15-20	998					
	25-Sep-98	50	<5	3					
	27-Nov-98	-5	10-15	175					
	6-Jan-99	-15	<1	0	92.5	<0.78	4.54	1.12	6.66
	11-Mar-99	22	10-15	465	253	20.9	27.5	1.27	6.80
	3-Jun-99	55	10	170	<20	1.21	1.22	<0.58	<1.16
	1-Oct-99	33	10-15	412	417	32.2	49.9	3.02	18.95
	21-Dec-99	40	<30	270					
	29-Mar-00	27	<30	462	298	27	38.6	2.06	12.18
	7-Jun-00	75	20-25	483	508	37.7	64.4	6.58	35.1
	4-Oct-00	40	<5	525	568	41.7	61.3	4.13	19.62
	18-May-01	45	5-10	83	<20	<0.78	<0.66	<0.58	<1.16
	12-Jul-01	81	5-10	654					
	29-Oct-01	4	<5	566					
	29-Nov-01	0	15-25	805		51.1	47.6	1.71	7.11
	22-Mar-02	30	<5	32.7					

* CT&E modified EPA Method 8015/8020

TABLE 4
Jack's Service Station
Soil Vapor Extraction Exhaust Sample Results

Location	Sample Date	Sample Number	GRO (ppm)[a]	Benzene (ppm)[a]	Toluene (ppm)[a]	Ethylbenzene (ppm)[a]	p&m-Xylenes (ppm)[a]	o-Xylene (ppm)[a]	PID Measurement (ppm)[b]
Vent stack #2	11/30/01	11096-113001-2	na	5.22	5.01	<0.580	4.20	2.58	380
Vent stack #6	11/30/01	11096-113001-6	na	25.8	17.8	<0.580	2.18	0.730	1380
Vent stack #8	11/30/01	11096-113001-8	na	51.1	47.6	1.71	5.40	1.71	805
Vent stack #6	3/22/02	1068-032202-6	1540	89.7	130	7.44	29.4	9.36	130
Vent stack #8	3/22/02	1068-032202-8	330	2.58	38.6	3.13	14.1	4.99	32.7

Notes:
[a] ppm = parts per million by volume (1 ppm = 1 cm^3/m^3; 1 ppm benzene = 3.19 mg/m^3)
[b] ppm = parts per million by volume, as isobutylene
< - Analyte reported less than the practical quantitation limit shown
na - not analyzed



Jack's Service Station
Delta Junction, Alaska

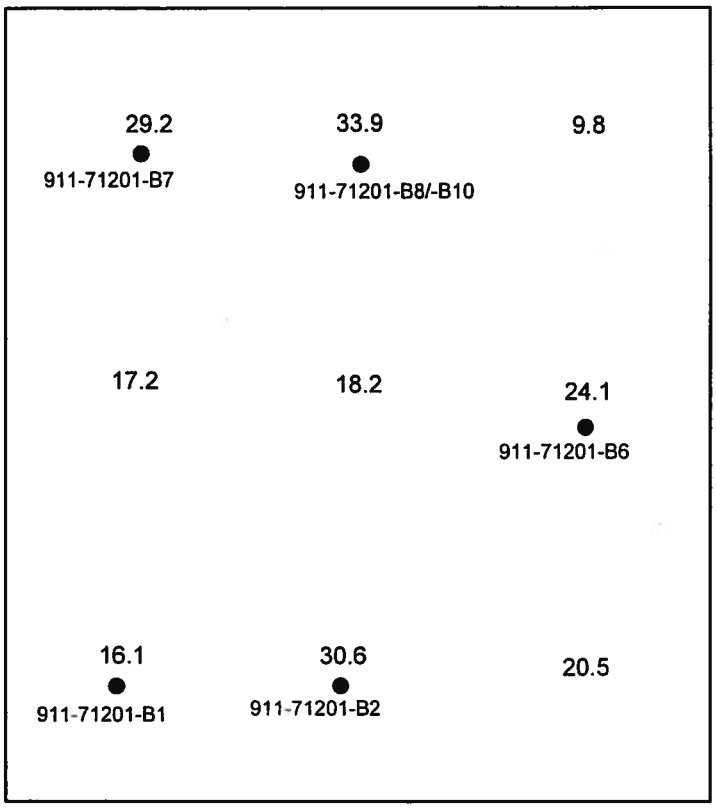
PASSIVE VAPOR EXTRACTION SYSTEM, STOCKPILE AND TREATMENT CELL LOCATIONS

March 2003 31-1-11138-301

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

Figure 1

Soil Treatment Cell



N

LEGEND:

55 - Field Screening Location (measurement in ppm)

● - Soil Sample Location

Samples collected July 12, 2001.

APPROXIMATE SCALE: 1 inch = 20 feet

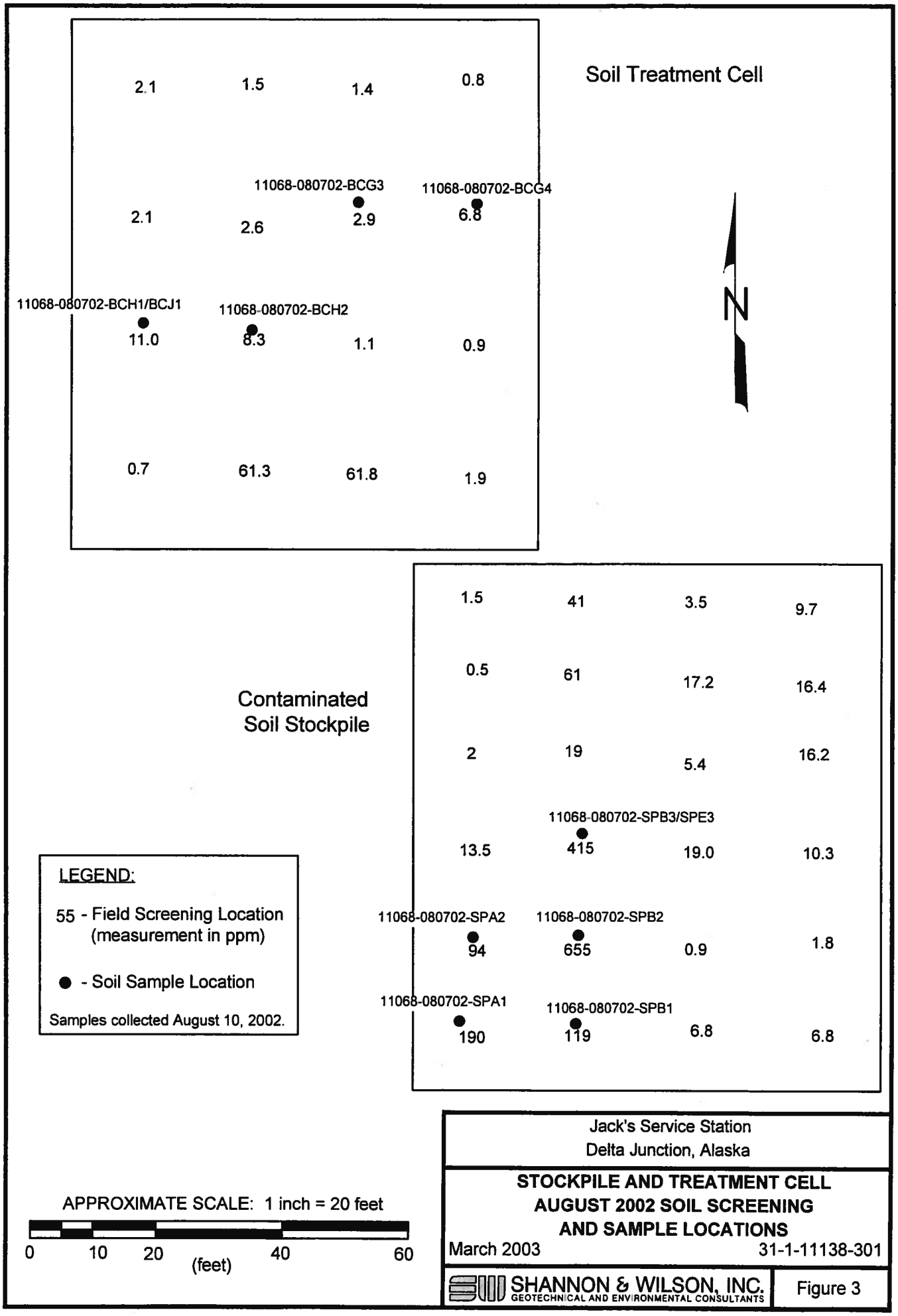
0 10 20 40 60
(feet)

Jack's Service Station
Delta Junction, Alaska

JULY 2001
TREATMENT CELL SAMPLE LOCATIONS
March 2003 31-1-11138-301

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

Figure 2


Soil Treatment Cell
2.1
1.5
1.4
0.8
11068-080702-BCG3
11068-080702-BCG4
2.1
2.6
2.9
6.8
11068-080702-BCH1/BCJ1
11068-080702-BCH2
11.0
8.3
1.1
0.9
0.7
61.3
61.8
1.9
N
Contaminated
Soil Stockpile
1.5
41
3.5
9.7
0.5
61
17.2
16.4
2
19
5.4
16.2
11068-080702-SPB3/SPE3
13.5
415
19.0
10.3
11068-080702-SPA2
11068-080702-SPB2
94
655
0.9
1.8
11068-080702-SPA1
11068-080702-SPB1
190
119
6.8
6.8
LEGEND:
55 - Field Screening Location (measurement in ppm)
● - Soil Sample Location
Samples collected August 10, 2002.
APPROXIMATE SCALE: 1 inch = 20 feet
0
10
20
40
60
(feet)
Jack's Service Station
Delta Junction, Alaska
STOCKPILE AND TREATMENT CELL
AUGUST 2002 SOIL SCREENING
AND SAMPLE LOCATIONS
March 2003
31-1-11138-301
SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
Figure 3

APPENDIX A

CT&E Laboratory Reports

CTE Environmental Services
Alaska Division
Laboratory Data Report

Project: Jack's Service Biocell

Client: Shannon & Wilson-Fairbanks

CTE Work Order: 1014017

Contents:

Chain of Custody
Quality Control Summary Forms

Note:

Unless otherwise noted, all quality assurance/quality control criteria is in compliance with the proper regulatory authority and/or CTE's Quality Assurance Program Plan.

Case Narrative

Customer: SHANFBK **Shannon & Wilson-Fairbanks**

Project: 1014017 **Jack's Service Biocell**

1014017001 PS

DRO - Unknown hydrocarbon with several peaks.

1014017002 PS

DRO - Unknown hydrocarbon with several peaks.

1014017003 PS

DRO - Unknown hydrocarbon with several peaks.

DRO - Surrogate recovery is outside controls due to matrix interference.

1014017004 PS

DRO - Unknown hydrocarbon with several peaks.

1014017005 PS

DRO - Unknown hydrocarbon with several peaks.

1014017006 PS

DRO - Unknown hydrocarbon with several peaks.

378490 LCS

DRO LCS/LCSD - Surrogate is biased high due to interference by method required petroleum spike.

378491 LCSD

DRO LCS/LCSD - Surrogate is biased high due to interference by method required petroleum spike.

CHAIN OF CUSTODY RECORD

1014017

CT&E Environmental Services Inc.
Laboratory Division

(1)

CLIENT: Shannon & Wilson, Inc.

CONTACT: Dennis Filler PHONE NO: ( ) 479-0600

PROJECT: Jack's Service SITE: Riocell

REPORTS TO: Dennis Filler FAX NO: ( ) 479-5691

INVOICE TO: Jason Wele - LeFaux P.O. NUMBER:

CT&E Reference:

PAGE 1 OF 1

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No. CONTAINERS	SAMPLE TYPE C = COMP G = GRAB	Preservatives Used: MeOH	(3) Analysis Required: GRO/BTEX	DRO	REMARKS
1	911 - 71201 - B1	July 12, 2001	11.52a	2	2	G		✓	✓	
2	911 - 71201 - B2		12:12p	2	2	G		✓	✓	
3	911 - 71201 - B4		12:32p	2	2	G		✓	✓	
4	911 - 71201 - B7		12:41p	2	2	G		✓	✓	
5	911 - 71201 - B8		1:04p	2	2	G		✓	✓	
6	911 - 71201 - B10		1:20p	2	2	G		✓	✓	
7	Trip Blank			2	1					

(5)

	Date	Time	
Collected/Relinquished By: (1)	7/13/01	10:50a	Received By:
Relinquished By: (2)	7/13/01	16:45	Received By:
Relinquished By: (3)			Received By:
Relinquished By: (4)	7/16/01	0815	Received For Laboratory By:

(4)

Shipping Carrier: HAND

Shipping Ticket No:

Samples Received Cold? (Circle) YES NO

Temperature °C: 5.5°C

Data Deliverables Required

Level I Level II Level III

Chain of Custody Seal: (Circle)

INTACT BROKEN ABSENT

Requested Turnaround Time and Special Instructions:

200 W. Potter Drive **Anchorage, AK 99518** Tel: (907) 562-2343 Fax: (907) 561-5301
3180 Peger Road **Fairbanks, AK 99701** Tel: (907) 474-8656 Fax: (907) 474-9685

White - Retained by Lab (Project File) Yellow - Returned with Report Pink - Retained by Sampler

CT&E Environmental Services Inc.

SAMPLE RECEIPT FORM

CT&E WO#: 1014017

Yes	No		
	✓	Are samples **RUSH**, priority, or *within 72 hrs.* of **hold time**?	
		If yes have you done *e-mail notification*?	
	✓	Are samples *within 24 hrs.* of **hold time** or **due date**?	
		If yes, have you *spoken with* Supervisor?	
	✓	Are there any **problems** (e.g., ids, analyses)?	
✓		Were samples preserved correctly and pH verified?	
		Has Project Manager been notified of problems?	
✓		Is this an ACOE / AFCEE / (ADEC) project?	
✓		Will a **data package** be required?	LEVEL F
		If this is for PWS, provide **PWSID.**	
	✓	Is there a **quote** for this project?	
	✓	Will courier charges apply?	

Completed by (sign): _____ (print): William T. Ahlgren

Due Date: 7/20/01
Received Date/Time: 7-13-01
Received Temperature: 5.5°C
Matrix of each Sample:
2 " " 1-7
" "
" "
2 Trip Blank #7
BMS/BMSD
Additional Sample Remarks:
Extra Sample Volume?
Limited Sample Volume?
✓ Field pres'd for volatiles?
Field-filtered for dissolved ____?
Lab-filtered for dissolved ____?
Ref Lab required? ____
Notes:

*********The following *must* be completed for *all* ACOE & AFCEE: *********

Yes	No		
		Is received temperature 4 ± 2°C? Temp:	
		Thermometer used:	
		Was there an airbill, etc.? Note #:	
		Was cooler sealed with custody seals? Fax'd to COE?	
		# / where:	
		Were seals intact upon arrival?	
		Was there a COC with cooler?	
		Was the COC filled out properly?	
		Did the COC indicate ACOE / AFCEE project? (if applicable)	
		Did the COC and samples correspond?	
		Were all samples packed to prevent breakage?	
		packing material:	
		Were all samples unbroken and clearly labeled?	
		Were all samples sealed in separate plastic bags?	
		Were all bottles for volatiles free of headspace?	
		Were correct container / sample sizes submitted?	
		Is sample condition good?	
		Was client notified of problems? (specify below)	

# of each Container Received:

____	950 ml amber unpres'd
____	950 ml amber w / HCl
____	500 ml amber w / H_2SO_4
____	1L cubies unpres'd
____	1L cubies w / HNO_3
____	1L cubies w / H_2SO_4
____	1L cubies w / NaOH + ZnAc
____	120 ml coli bottles
____	60 ml Nalgene
6	8 oz amber unpres'd
____	4 oz amber unpres'd
7	4 oz w / septa w / MeOH
____	40 ml vials w / HCl
____	Other (specify) ____
____	Other (specify) ____

Individual contacted: _____
Date / Time: _____ Phone / Fax: _____

Log-in proofed by: _____

TO BE COMPLETED IN ANCHORAGE UPON ARRIVAL FROM FAIRBANKS:
DATE / TIME: 7/16/01 0815 **COOLER TEMP:** 4.3°C
CUSTODY SEALS INTACT: YES / NO **# / WHERE:** 2 front
COMPLETED BY (INITIAL): _____

CT&E Environmental Services Inc.
Laboratory Division

Laboratory Analysis Report

200 W. Potter Drive
Anchorage, AK 99518-1605
Tel: (907) 562-2343
Fax: (907) 561-5301
Web: http://www.cteesi.com

Dennis Filler
Shannon & Wilson-Fairbanks
2055 HILL ROAD
Fairbanks, AK 99709

Work Order:	1014017
	Jack's Service Biocell
Client:	Shannon & Wilson-Fairbanks
Report Date:	July 25, 2001

Enclosed are the analytical results associated with the above workorder.

As required by the state of Alaska and the USEPA, a formal Quality Assurance/Quality Control Program is maintained by CT&E. A copy of our Quality Control Manual that outlines this program is available at your request.

Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth in our Quality Assurance Program Plan.

If you have any questions regarding this report or if we can be of any other assistance, please call your CT&E Project Manager at (907) 562-2343.

The following descriptors may be found on your report which will serve to further qualify the data.

U	Indicates the analyte was analyzed for but not detected.
F	Indicates an estimated value that falls below PQL, but is greater than the MDL.
B	Indicates the analyte is found in the blank associated with the sample.
*	The analyte has exceeded allowable limits.
GT	Greater Than
D	Secondary Dilution
LT	Less Than
!	Surrogate out of range

CT&E Environmental Services Inc.

CT&E Ref.#	1014017001	**Client PO#**	
Client Name	Shannon & Wilson-Fairbanks	**Printed Date/Time**	07/25/2001 9:59
Project Name/#	Jack's Service Biocell	**Collected Date/Time**	07/12/2001 11:52
Client Sample ID	911-71201-B1	**Received Date/Time**	07/13/2001 10:50
Matrix	Soil/Solid	**Technical Director**	**Stephen C. Ede**
Ordered By		**Released By**	Shawn Poston

Sample Remarks:

DRO/RRO - Unknown hydrocarbon with several peaks.

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Solids								
Total Solids	91.3	0.00	%	SM20 2540G			07/17/01	DMR
Volatile Fuels Department								
Gasoline Range Organics	4.00 U	4.00	mg/Kg	AK101/8021B		07/12/01	07/22/01	RMV
Benzene	0.0200 U	0.0200	mg/Kg	AK101/8021B		07/12/01	07/22/01	RMV
Toluene	0.0799 U	0.0799	mg/Kg	AK101/8021B		07/12/01	07/22/01	RMV
Ethylbenzene	0.0799 U	0.0799	mg/Kg	AK101/8021B		07/12/01	07/22/01	RMV
P & M -Xylene	0.0799 U	0.0799	mg/Kg	AK101/8021B		07/12/01	07/22/01	RMV
o-Xylene	0.130	0.0799	mg/Kg	AK101/8021B		07/12/01	07/22/01	RMV
Surrogates								
1,4-Difluorobenzene <Surr>	87.7		%	AK101/8021B	60-120	07/12/01	07/22/01	RMV
4-Bromofluorobenzene <Surr>	96.8		%	AK101/8021B	50-150	07/12/01	07/22/01	RMV
Semivolatile Organic Fuels Department								
Diesel Range Organics	27.8	10.7	mg/Kg	AK102 DRO		07/17/01	07/18/01	MCM
Surrogates								
5a Androstane <surr>	135		%	AK102 DRO	50-150	07/17/01	07/18/01	MCM

CT&E Environmental Services Inc.

CT&E Ref.#	1014017002	**Client PO#**	
Client Name	Shannon & Wilson-Fairbanks	**Printed Date/Time**	07/25/2001 9:59
Project Name/#	Jack's Service Biocell	**Collected Date/Time**	07/12/2001 12:12
Client Sample ID	911-71201-B2	**Received Date/Time**	07/13/2001 10:50
Matrix	Soil/Solid	**Technical Director**	**Stephen C. Ede**
Ordered By		**Released By**	Shawn Paton

Sample Remarks:

DRO - Unknown hydrocarbon with several peaks.

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Solids								
Total Solids	90.8	0.00	%	SM20 2540G			07/17/01	DMR
Volatile Fuels Department								
Gasoline Range Organics	4.53 U	4.53	mg/Kg	AK101/8021B		07/12/01	07/22/01	RMV
Benzene	0.0226 U	0.0226	mg/Kg	AK101/8021B		07/12/01	07/22/01	RMV
Toluene	0.0906 U	0.0906	mg/Kg	AK101/8021B		07/12/01	07/22/01	RMV
Ethylbenzene	0.0906 U	0.0906	mg/Kg	AK101/8021B		07/12/01	07/22/01	RMV
P & M -Xylene	0.0906 U	0.0906	mg/Kg	AK101/8021B		07/12/01	07/22/01	RMV
o-Xylene	0.0906 U	0.0906	mg/Kg	AK101/8021B		07/12/01	07/22/01	RMV
Surrogates								
1,4-Difluorobenzene <Surr>	91.2		%	AK101/8021B	60-120	07/12/01	07/22/01	RMV
4-Bromofluorobenzene <Surr>	79.5		%	AK101/8021B	50-150	07/12/01	07/22/01	RMV
Semivolatile Organic Fuels Department								
Diesel Range Organics	37.9	11.0	mg/Kg	AK102 DRO		07/17/01	07/18/01	MCM
Surrogates								
5a Androstane <surr>	127		%	AK102 DRO	50-150	07/17/01	07/18/01	MCM

CT&E Environmental Services Inc.

CT&E Ref.#	1014017003	**Client PO#**	
Client Name	Shannon & Wilson-Fairbanks	**Printed Date/Time**	07/25/2001 9:59
Project Name/#	Jack's Service Biocell	**Collected Date/Time**	07/12/2001 12:22
Client Sample ID	911-71201-B6	**Received Date/Time**	07/13/2001 10:50
Matrix	Soil/Solid	**Technical Director**	**Stephen C. Ede**
Ordered By		**Released By**	Shawn Poston

Sample Remarks:

DRO - Unknown hydrocarbon with several peaks.
DRO - Surrogate recoveries outside controls due to matrix interference.

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Solids								
Total Solids	92.8	0.00	%	SM20 2540G			07/17/01	DMR
Volatile Fuels Department								
Gasoline Range Organics	4.24 U	4.24	mg/Kg	AK101/8021B		07/12/01	07/22/01	RMV
Benzene	0.0212 U	0.0212	mg/Kg	AK101/8021B		07/12/01	07/22/01	RMV
Toluene	0.0848 U	0.0848	mg/Kg	AK101/8021B		07/12/01	07/22/01	RMV
Ethylbenzene	0.0848 U	0.0848	mg/Kg	AK101/8021B		07/12/01	07/22/01	RMV
P & M -Xylene	0.0848 U	0.0848	mg/Kg	AK101/8021B		07/12/01	07/22/01	RMV
o-Xylene	0.0848 U	0.0848	mg/Kg	AK101/8021B		07/12/01	07/22/01	RMV
Surrogates								
1,4-Difluorobenzene <Surr>	91		%	AK101/8021B	60-120	07/12/01	07/22/01	RMV
4-Bromofluorobenzene <Surr>	81.2		%	AK101/8021B	50-150	07/12/01	07/22/01	RMV
Semivolatile Organic Fuels Department								
Diesel Range Organics	51.0	10.9	mg/Kg	AK102 DRO		07/17/01	07/18/01	MCM
Surrogates								
5a Androstane <surr>	162 !		%	AK102 DRO	50-150	07/17/01	07/18/01	MCM

CT&E Environmental Services Inc.

CT&E Ref.#	1014017004	**Client PO#**	
Client Name	Shannon & Wilson-Fairbanks	**Printed Date/Time**	07/25/2001 9:59
Project Name/#	Jack's Service Biocell	**Collected Date/Time**	07/12/2001 12:41
Client Sample ID	911-71201-B7	**Received Date/Time**	07/13/2001 10:50
Matrix	Soil/Solid	**Technical Director**	**Stephen C. Ede**
Ordered By		**Released By**	Shawn Poston

Sample Remarks:
DRO - Unknown hydrocarbon with several peaks.

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Solids								
Total Solids	93.1	0.00	%	SM20 2540G			07/17/01	DMR
Volatile Fuels Department								
Gasoline Range Organics	3.46 U	3.46	mg/Kg	AK101/8021B		07/12/01	07/22/01	RMV
Benzene	0.0173 U	0.0173	mg/Kg	AK101/8021B		07/12/01	07/22/01	RMV
Toluene	0.0693 U	0.0693	mg/Kg	AK101/8021B		07/12/01	07/22/01	RMV
Ethylbenzene	0.0693 U	0.0693	mg/Kg	AK101/8021B		07/12/01	07/22/01	RMV
P & M -Xylene	0.0693 U	0.0693	mg/Kg	AK101/8021B		07/12/01	07/22/01	RMV
o-Xylene	0.0693 U	0.0693	mg/Kg	AK101/8021B		07/12/01	07/22/01	RMV
Surrogates								
1,4-Difluorobenzene <Surr>	92		%	AK101/8021B	60-120	07/12/01	07/22/01	RMV
4-Bromofluorobenzene <Surr>	67.6		%	AK101/8021B	50-150	07/12/01	07/22/01	RMV
Semivolatile Organic Fuels Department								
Diesel Range Organics	33.5	10.6	mg/Kg	AK102 DRO		07/17/01	07/18/01	MCM
Surrogates								
5a Androstane <surr>	125		%	AK102 DRO	50-150	07/17/01	07/18/01	MCM

CT&E Environmental Services Inc.

CT&E Ref.#	1014017005	**Client PO#**	
Client Name	Shannon & Wilson-Fairbanks	**Printed Date/Time**	07/25/2001 9:59
Project Name/#	Jack's Service Biocell	**Collected Date/Time**	07/12/2001 13:04
Client Sample ID	911-71201-B8	**Received Date/Time**	07/13/2001 10:50
Matrix	Soil/Solid	**Technical Director**	**Stephen C. Ede**
Ordered By		**Released By**	Shawn Paxton

Sample Remarks:

DRO - Unknown hydrocarbon with several peaks.

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Solids								
Total Solids	94.2	0.00	%	SM20 2540G			07/17/01	DMR
Volatile Fuels Department								
Gasoline Range Organics	3.38 U	3.38	mg/Kg	AK101/8021B		07/12/01	07/22/01	RMV
Benzene	0.0169 U	0.0169	mg/Kg	AK101/8021B		07/12/01	07/22/01	RMV
Toluene	0.0675 U	0.0675	mg/Kg	AK101/8021B		07/12/01	07/22/01	RMV
Ethylbenzene	0.0675 U	0.0675	mg/Kg	AK101/8021B		07/12/01	07/22/01	RMV
P & M -Xylene	0.0675 U	0.0675	mg/Kg	AK101/8021B		07/12/01	07/22/01	RMV
o-Xylene	0.0675 U	0.0675	mg/Kg	AK101/8021B		07/12/01	07/22/01	RMV
Surrogates								
1,4-Difluorobenzene <Surr>	90.9		%	AK101/8021B	60-120	07/12/01	07/22/01	RMV
4-Bromofluorobenzene <Surr>	94.9		%	AK101/8021B	50-150	07/12/01	07/22/01	RMV
Semivolatile Organic Fuels Department								
Diesel Range Organics	33.5	10.5	mg/Kg	AK102 DRO		07/17/01	07/18/01	MCM
Surrogates								
5a Androstane <surr>	132		%	AK102 DRO	50-150	07/17/01	07/18/01	MCM

CT&E Environmental Services Inc.

CT&E Ref.#	1014017006	**Client PO#**	
Client Name	Shannon & Wilson-Fairbanks	**Printed Date/Time**	07/25/2001 9:59
Project Name/#	Jack's Service Biocell	**Collected Date/Time**	07/12/2001 13:20
Client Sample ID	911-71201-B10	**Received Date/Time**	07/13/2001 10:50
Matrix	Soil/Solid	**Technical Director**	**Stephen C. Ede**
Ordered By		**Released By**	Shawn Poston

Sample Remarks:

DRO - Unknown hydrocarbon with several peaks.

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Solids								
Total Solids	95.8	0.00	%	SM20 2540G			07/17/01	DMR
Volatile Fuels Department								
Gasoline Range Organics	3.56 U	3.56	mg/Kg	AK101/8021B		07/12/01	07/22/01	RMV
Benzene	0.0178 U	0.0178	mg/Kg	AK101/8021B		07/12/01	07/22/01	RMV
Toluene	0.0712 U	0.0712	mg/Kg	AK101/8021B		07/12/01	07/22/01	RMV
Ethylbenzene	0.0712 U	0.0712	mg/Kg	AK101/8021B		07/12/01	07/22/01	RMV
P & M -Xylene	0.0712 U	0.0712	mg/Kg	AK101/8021B		07/12/01	07/22/01	RMV
o-Xylene	0.0712 U	0.0712	mg/Kg	AK101/8021B		07/12/01	07/22/01	RMV
Surrogates								
1,4-Difluorobenzene <Surr>	88.6		%	AK101/8021B	60-120	07/12/01	07/22/01	RMV
4-Bromofluorobenzene <Surr>	89.6		%	AK101/8021B	50-150	07/12/01	07/22/01	RMV
Semivolatile Organic Fuels Department								
Diesel Range Organics	33.4	10.6	mg/Kg	AK102 DRO		07/17/01	07/18/01	MCM
Surrogates								
5a Androstane <surr>	132		%	AK102 DRO	50-150	07/17/01	07/18/01	MCM

CT&E Environmental Services Inc.

CT&E Ref.#	1014017007	**Client PO#**	
Client Name	Shannon & Wilson-Fairbanks	**Printed Date/Time**	07/25/2001 9:59
Project Name/#	Jack's Service Biocell	**Collected Date/Time**	07/12/2001 0:00
Client Sample ID	Trip Blank	**Received Date/Time**	07/13/2001 10:50
Matrix	Soil/Solid	**Technical Director**	**Stephen C. Ede**
Ordered By		**Released By**	Shawn Preston

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Solids								
Total Solids	100	0.00	%	SM20 2540G			07/17/01	DMR
Volatile Fuels Department								
Gasoline Range Organics	0.0683 U	0.0683	mg/Kg	AK101/8021B		07/12/01	07/22/01	RMV
Benzene	0.000341 U	0.000341	mg/Kg	AK101/8021B		07/12/01	07/22/01	RMV
Toluene	0.00137 U	0.00137	mg/Kg	AK101/8021B		07/12/01	07/22/01	RMV
Ethylbenzene	0.00137 U	0.00137	mg/Kg	AK101/8021B		07/12/01	07/22/01	RMV
P & M -Xylene	0.00137 U	0.00137	mg/Kg	AK101/8021B		07/12/01	07/22/01	RMV
o-Xylene	0.00137 U	0.00137	mg/Kg	AK101/8021B		07/12/01	07/22/01	RMV
Surrogates								
1,4-Difluorobenzene <Surr>	90.6		%	AK101/8021B	60-120	07/12/01	07/22/01	RMV
4-Bromofluorobenzene <Surr>	89.8		%	AK101/8021B	50-150	07/12/01	07/22/01	RMV

CT&E Environmental Services Inc.

CT&E Ref.#	378492 Method Blank	**Printed Date/Time**	07/26/2001 9:00
Client Name	Shannon & Wilson-Fairbanks	**Prep Batch**	
Project Name/#	Jack's Service Biocell	**Method**	
Matrix	Soil/Solid	**Date**	

QC results affect the following production samples:

1014017001, 1014017002, 1014017003, 1014017004, 1014017005, 1014017006, 1014017007

Parameter	Results	PQL	Units	Analysis Date	Init
Solids					
Total Solids	100	0.00	%	07/17/01	DMR

Batch SPT 3915
Method SM20 2540G
Instrument

F-701

CT&E Environmental Services Inc.

CT&E Ref.#	378493 Duplicate	**Printed Date/Time**	07/26/2001 9:00
Client Name	Shannon & Wilson-Fairbanks	**Prep Batch**	
Project Name/#	Jack's Service Biocell	**Method**	
Original	1014183002	**Date**	
Matrix	Soil/Solid		

QC results affect the following production samples:
1014017001, 1014017002, 1014017003, 1014017004, 1014017005, 1014017006, 1014017007

Parameter	Original Result	QC Result	RPD	RPD Limits	Analysis Date	Init
Solids						
Total Solids		82.2	0	(< 20)	07/17/01	DMR
Batch SPT 3915						
Method SM20 2540G						
Instrument						

F-701

CT&E Environmental Services Inc.

CT&E Ref.#	379973 Method Blank	**Printed Date/Time**	07/26/2001 9:00
Client Name	Shannon & Wilson-Fairbanks	**Prep Batch**	VXX 7963
Project Name/#	Jack's Service Biocell	**Method**	
Matrix	Soil/Solid	**Date**	07/24/2001

QC results affect the following production samples:

1014017001, 1014017002, 1014017003, 1014017004, 1014017005, 1014017006, 1014017007

Parameter	Results	PQL	Units	Analysis Date	Init
Volatile Fuels Department					
Gasoline Range Organics	2.50 U	2.50	mg/Kg	07/22/01	RMV
Benzene	0.0125 U	0.012	mg/Kg	07/22/01	RMV
Toluene	0.0500 U	0.050	mg/Kg	07/22/01	RMV
Ethylbenzene	0.0500 U	0.050	mg/Kg	07/22/01	RMV
P & M -Xylene	0.0500 U	0.050	mg/Kg	07/22/01	RMV
o-Xylene	0.0500 U	0.050	mg/Kg	07/22/01	RMV

Batch VFC 4712
Method AK101/8021B
Instrument HP 5890 Series II PID+FID VCA

CT&E Environmental Services Inc.

CT&E Ref.#	379974 Lab Control Sample	**Printed Date/Time**	07/26/2001 9:00
	379975 Lab Control Sample Duplicate	**Prep Batch**	VXX 7963
Client Name	Shannon & Wilson-Fairbanks	**Method**	
Project Name/#	Jack's Service Biocell	**Date**	07/24/2001
Matrix	Soil/Solid		

QC results affect the following production samples:

1014017001, 1014017002, 1014017003, 1014017004, 1014017005, 1014017006, 1014017007

Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date	Init
Toluene	LCS	3.45	99	(80-120)			3.5 mg/Kg	07/22/01	RMV
	LCSD	3.41	98		1	(< 20)	3.5 mg/Kg	07/22/200	RMV
Benzene	LCS	0.799	101	(80-120)			0.793 mg/Kg	07/22/01	RMV
	LCSD	0.793	100		1	(< 20)	0.793 mg/Kg	07/22/200	RMV
Ethylbenzene	LCS	0.605	108	(80-120)			0.561 mg/Kg	07/22/01	RMV
	LCSD	0.601	107		1	(< 20)	0.561 mg/Kg	07/22/200	RMV
P & M -Xylene	LCS	2.05	102	(80-120)			2.01 mg/Kg	07/22/01	RMV
	LCSD	2.03	101		1	(< 20)	2.01 mg/Kg	07/22/200	RMV
o-Xylene	LCS	0.787	104	(80-120)			0.758 mg/Kg	07/22/01	RMV
	LCSD	0.773	102		2	(< 20)	0.758 mg/Kg	07/22/200	RMV
Gasoline Range Organics	LCS	19.9	88	(60-120)			22.5 mg/Kg	07/22/01	RMV
	LCSD	19.8	88		0	(< 20)	22.5 mg/Kg	07/22/200	RMV

Batch VFC 4712
Method AK101/8021B
Instrument HP 5890 Series II PID+FID VCA

CT&E Environmental Services Inc.

CT&E Ref.#	378489 Method Blank	**Printed Date/Time**	07/26/2001 9:00
Client Name	Shannon & Wilson-Fairbanks	**Prep Batch**	XXX 8786
Project Name/#	Jack's Service Biocell	**Method**	
Matrix	Soil/Solid	**Date**	07/17/2001

QC results affect the following production samples:

1014017001, 1014017002, 1014017003, 1014017004, 1014017005, 1014017006

Parameter	Results	PQL	Units	Analysis Date	Init
Semivolatile Organic Fuels Department					
Diesel Range Organics	10.0 U	10.0	mg/Kg	07/18/01	MCM
Residual Range Organics GC	20.0 U	20.0	mg/Kg	07/18/01	MCM

Batch XFC 5133
Method AK102/103
Instrument HP 5890 Series II FID SV C F

CT&E Environmental Services Inc.

CT&E Ref.#	378490 Lab Control Sample	**Printed Date/Time**	07/26/2001 9:00
	378491 Lab Control Sample Duplicate	**Prep Batch**	XXX 8786
Client Name	Shannon & Wilson-Fairbanks	**Method**	
Project Name/#	Jack's Service Biocell	**Date**	07/17/2001
Matrix	Soil/Solid		

QC results affect the following production samples:

1014017001, 1014017002, 1014017003, 1014017004, 1014017005, 1014017006

Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date	Init
Residual Range Organics GC	LCS	136	82	(60-120)			167 mg/Kg	07/18/01	MCM
	LCSD	134	80		2	(< 20)	167 mg/Kg	07/18/200	MCM
Diesel Range Organics	LCS	147	88	(75-125)			167 mg/Kg	07/18/01	MCM
	LCSD	138	83		7	(< 20)	167 mg/Kg	07/18/200	MCM

Batch XFC 5133
Method AK102/103
Instrument HP 5890 Series II FID SV C F

CT&E Environmental Services Inc.

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Sheldon Shaw
Shannon & Wilson-Fairbanks
2055 Hill Rd
Fairbanks, AK 99709

Work Order:	1024285
	Jack's Service
Client:	Shannon & Wilson-Fairbanks
Report Date:	August 21, 2002

Enclosed are the analytical results associated with the above workorder.

As required by the state of Alaska and the USEPA, a formal Quality Assurance/Quality Control Program is maintained by CT&E. A copy of our Quality Control Manual that outlines this program is available at your request.

Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth in our Quality Assurance Program Plan.

If you have any questions regarding this report or if we can be of any other assistance, please call your CT&E Project Manager at (907) 562-2343.

The following descriptors may be found on your report which will serve to further qualify the data.

U	Indicates the analyte was analyzed for but not detected.
F	Indicates an estimated value that falls below PQL, but is greater than the MDL.
B	Indicates the analyte is found in the blank associated with the sample.
*	The analyte has exceeded allowable limits.
GT	Greater Than
D	Secondary Dilution
LT	Less Than
!	Surrogate out of range

CT&E Environmental Services Inc.

CT&E Ref.#	1024285001	**All Dates/Times are Alaska Standard Time**	
Client Name	Shannon & Wilson-Fairbanks	**Printed Date/Time**	08/21/2002 15:41
Project Name/#	Jack's Service	**Collected Date/Time**	08/07/2002 11:20
Client Sample ID	11068-080702-SPA1	**Received Date/Time**	08/07/2002 16:35
Matrix	Soil/Solid	**Technical Director**	**Stephen C. Ede**
Ordered By		**Released By**	Stephen C. Ede

Sample Remarks:

DRO - The pattern is consistent with a weathered middle distillate.

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Solids								
Total Solids	87.2		%	SM20 2540G			08/12/02	CAR
Volatile Fuels Department								
Gasoline Range Organics	7.59	4.11	mg/Kg	AK101/8021B		08/07/02	08/12/02	PFL
Benzene	0.0206 U	0.0206	mg/Kg	AK101/8021B		08/07/02	08/12/02	PFL
Toluene	0.0823 U	0.0823	mg/Kg	AK101/8021B		08/07/02	08/12/02	PFL
Ethylbenzene	0.0823 U	0.0823	mg/Kg	AK101/8021B		08/07/02	08/12/02	PFL
P & M -Xylene	0.0856	0.0823	mg/Kg	AK101/8021B		08/07/02	08/12/02	PFL
o-Xylene	0.0823 U	0.0823	mg/Kg	AK101/8021B		08/07/02	08/12/02	PFL
Surrogates								
1,4-Difluorobenzene <Surr>	91.2		%	AK101/8021B	89-118	08/07/02	08/12/02	PFL
4-Bromofluorobenzene <Surr>	111		%	AK101/8021B	50-150	08/07/02	08/12/02	PFL
Semivolatile Organic Fuels Department								
Diesel Range Organics	70.9	22.5	mg/Kg	AK102 DRO		08/12/02	08/13/02	DS
Surrogates								
5a Androstane <surr>	116		%	AK102 DRO	50-150	08/12/02	08/13/02	DS

CT&E Environmental Services Inc.

CT&E Ref.#	1024285002
Client Name	Shannon & Wilson-Fairbanks
Project Name/#	Jack's Service
Client Sample ID	11068-080702-SPB1
Matrix	Soil/Solid
Ordered By	

All Dates/Times are Alaska Standard Time

Printed Date/Time	08/21/2002 15:41
Collected Date/Time	08/07/2002 11:30
Received Date/Time	08/07/2002 16:35
Technical Director	Stephen C. Ede
Released By	Stephen C. Ede

Sample Remarks:

DRO - The pattern is consistent with a weathered middle distillate.

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Solids								
Total Solids	85.5		%	SM20 2540G			08/12/02	CAR
Volatile Fuels Department								
Gasoline Range Organics	11.8	4.41	mg/Kg	AK101/8021B		08/07/02	08/12/02	PFL
Benzene	0.0270	0.0220	mg/Kg	AK101/8021B		08/07/02	08/12/02	PFL
Toluene	0.163	0.0882	mg/Kg	AK101/8021B		08/07/02	08/12/02	PFL
Ethylbenzene	0.0882 U	0.0882	mg/Kg	AK101/8021B		08/07/02	08/12/02	PFL
P & M -Xylene	0.211	0.0882	mg/Kg	AK101/8021B		08/07/02	08/12/02	PFL
o-Xylene	0.0882 U	0.0882	mg/Kg	AK101/8021B		08/07/02	08/12/02	PFL
Surrogates								
1,4-Difluorobenzene <Surr>	93.8		%	AK101/8021B	89-118	08/07/02	08/12/02	PFL
4-Bromofluorobenzene <Surr>	115		%	AK101/8021B	50-150	08/07/02	08/12/02	PFL
Semivolatile Organic Fuels Department								
Diesel Range Organics	159	22.8	mg/Kg	AK102 DRO		08/12/02	08/13/02	DS
Surrogates								
5a Androstane <surr>	85.3		%	AK102 DRO	50-150	08/12/02	08/13/02	DS

CT&E Environmental Services Inc.

CT&E Ref.#	1024285003	**All Dates/Times are Alaska Standard Time**	
Client Name	Shannon & Wilson-Fairbanks	**Printed Date/Time**	08/21/2002 15:41
Project Name/#	Jack's Service	**Collected Date/Time**	08/07/2002 11:40
Client Sample ID	11068-080702-SPB2	**Received Date/Time**	08/07/2002 16:35
Matrix	Soil/Solid	**Technical Director**	**Stephen C. Ede**
Ordered By		**Released By**	Stephen C. Ede

Sample Remarks:

DRO - The pattern is consistent with a weathered middle distillate.

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Solids								
Total Solids	84.8		%	SM20 2540G			08/12/02	CAR
Volatile Fuels Department								
Gasoline Range Organics	74.4	6.59	mg/Kg	AK101/8021B		08/07/02	08/12/02	PFL
Benzene	0.0811	0.0329	mg/Kg	AK101/8021B		08/07/02	08/12/02	PFL
Toluene	0.937	0.132	mg/Kg	AK101/8021B		08/07/02	08/12/02	PFL
Ethylbenzene	0.370	0.132	mg/Kg	AK101/8021B		08/07/02	08/12/02	PFL
P & M -Xylene	0.243	0.132	mg/Kg	AK101/8021B		08/07/02	08/12/02	PFL
o-Xylene	1.62	0.132	mg/Kg	AK101/8021B		08/07/02	08/12/02	PFL
Surrogates								
1,4-Difluorobenzene <Surr>	90.6		%	AK101/8021B	89-118	08/07/02	08/12/02	PFL
4-Bromofluorobenzene <Surr>	120		%	AK101/8021B	50-150	08/07/02	08/12/02	PFL
Semivolatile Organic Fuels Department								
Diesel Range Organics	250	23.4	mg/Kg	AK102 DRO		08/12/02	08/13/02	DS
Surrogates								
5a Androstane <surr>	86.1		%	AK102 DRO	50-150	08/12/02	08/13/02	DS

CT&E Environmental Services Inc.

CT&E Ref.#	1024285004	All Dates/Times are Alaska Standard Time	
Client Name	Shannon & Wilson-Fairbanks	Printed Date/Time	08/21/2002 15:41
Project Name/#	Jack's Service	Collected Date/Time	08/07/2002 11:50
Client Sample ID	11068-080702-SPB3	Received Date/Time	08/07/2002 16:35
Matrix	Soil/Solid	Technical Director	Stephen C. Ede
Ordered By		Released By	Stephen C. Ede

Sample Remarks:

DRO - The pattern is consistent with a weathered middle distillate.
DRO - The pattern is consistent with a weathered gasoline.

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Solids								
Total Solids	80.0		%	SM20 2540G			08/12/02	CAR
Volatile Fuels Department								
Gasoline Range Organics	98.6	6.04	mg/Kg	AK101/8021B		08/07/02	08/12/02	PFL
Benzene	0.117	0.0302	mg/Kg	AK101/8021B		08/07/02	08/12/02	PFL
Toluene	0.675	0.121	mg/Kg	AK101/8021B		08/07/02	08/12/02	PFL
Ethylbenzene	0.368	0.121	mg/Kg	AK101/8021B		08/07/02	08/12/02	PFL
P & M -Xylene	7.35	0.121	mg/Kg	AK101/8021B		08/07/02	08/12/02	PFL
o-Xylene	6.34	0.121	mg/Kg	AK101/8021B		08/07/02	08/12/02	PFL
Surrogates								
1,4-Difluorobenzene <Surr>	92.8		%	AK101/8021B	89-118	08/07/02	08/12/02	PFL
4-Bromofluorobenzene <Surr>	110		%	AK101/8021B	50-150	08/07/02	08/12/02	PFL
Semivolatile Organic Fuels Department								
Diesel Range Organics	188	24.6	mg/Kg	AK102 DRO		08/12/02	08/13/02	DS
Surrogates								
5a Androstane <surr>	117		%	AK102 DRO	50-150	08/12/02	08/13/02	DS

CT&E Environmental Services Inc.

CT&E Ref.#	1024285005	**All Dates/Times are Alaska Standard Time**	
Client Name	Shannon & Wilson-Fairbanks	**Printed Date/Time**	08/21/2002 15:41
Project Name/#	Jack's Service	**Collected Date/Time**	08/07/2002 12:00
Client Sample ID	11068-080702-SPE3	**Received Date/Time**	08/07/2002 16:35
Matrix	Soil/Solid	**Technical Director**	**Stephen C. Ede**
Ordered By		**Released By**	Stephen C. Ede

Sample Remarks:

DRO - The pattern is consistent with a weathered middle distillate.
DRO - The pattern is consistent with a weathered gasoline.

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Solids								
Total Solids	82.2		%	SM20 2540G			08/12/02	CAR
Volatile Fuels Department								
Gasoline Range Organics	217	42.0	mg/Kg	AK101/8021B		08/07/02	08/13/02	PFL
Benzene	0.334	0.0210	mg/Kg	AK101/8021B		08/07/02	08/12/02	PFL
Toluene	1.90	0.0839	mg/Kg	AK101/8021B		08/07/02	08/12/02	PFL
Ethylbenzene	0.871	0.0839	mg/Kg	AK101/8021B		08/07/02	08/12/02	PFL
P & M -Xylene	15.5	0.0839	mg/Kg	AK101/8021B		08/07/02	08/12/02	PFL
o-Xylene	12.2	0.839	mg/Kg	AK101/8021B		08/07/02	08/13/02	PFL
Surrogates								
1,4-Difluorobenzene <Surr>	103		%	AK101/8021B	89-118	08/07/02	08/12/02	PFL
4-Bromofluorobenzene <Surr>	102		%	AK101/8021B	50-150	08/07/02	08/12/02	PFL
Semivolatile Organic Fuels Department								
Diesel Range Organics	126	24.3	mg/Kg	AK102 DRO		08/12/02	08/13/02	DS
Surrogates								
5a Androstane <surr>	114		%	AK102 DRO	50-150	08/12/02	08/13/02	DS

CT&E Environmental Services Inc.

CT&E Ref.#	1024285006	**All Dates/Times are Alaska Standard Time**	
Client Name	Shannon & Wilson-Fairbanks	**Printed Date/Time**	08/21/2002 15:41
Project Name/#	Jack's Service	**Collected Date/Time**	08/07/2002 12:10
Client Sample ID	11068-080702-SPA2	**Received Date/Time**	08/07/2002 16:35
Matrix	Soil/Solid	**Technical Director**	**Stephen C. Ede**
Ordered By		**Released By**	Stephen C. Ede

Sample Remarks:

DRO - The pattern is consistent with a weathered middle distillate.

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Solids								
Total Solids	87.7		%	SM20 2540G			08/12/02	CAR
Volatile Fuels Department								
Gasoline Range Organics	5.36	4.31	mg/Kg	AK101/8021B		08/07/02	08/12/02	PFL
Benzene	0.0215 U	0.0215	mg/Kg	AK101/8021B		08/07/02	08/12/02	PFL
Toluene	0.0861 U	0.0861	mg/Kg	AK101/8021B		08/07/02	08/12/02	PFL
Ethylbenzene	0.0861 U	0.0861	mg/Kg	AK101/8021B		08/07/02	08/12/02	PFL
P & M -Xylene	0.0861 U	0.0861	mg/Kg	AK101/8021B		08/07/02	08/12/02	PFL
o-Xylene	0.0861 U	0.0861	mg/Kg	AK101/8021B		08/07/02	08/12/02	PFL
Surrogates								
1,4-Difluorobenzene <Surr>	90.7		%	AK101/8021B	89-118	08/07/02	08/12/02	PFL
4-Bromofluorobenzene <Surr>	102		%	AK101/8021B	50-150	08/07/02	08/12/02	PFL
Semivolatile Organic Fuels Department								
Diesel Range Organics	119	22.7	mg/Kg	AK102 DRO		08/12/02	08/13/02	DS
Surrogates								
5a Androstane <surr>	144		%	AK102 DRO	50-150	08/12/02	08/13/02	DS

CT&E Environmental Services Inc.

CT&E Ref.#	1024285007	**All Dates/Times are Alaska Standard Time**	
Client Name	Shannon & Wilson-Fairbanks	**Printed Date/Time**	08/21/2002 15:41
Project Name/#	Jack's Service	**Collected Date/Time**	08/07/2002 13:30
Client Sample ID	11068-080702-BCJ1	**Received Date/Time**	08/07/2002 16:35
Matrix	Soil/Solid	**Technical Director**	Stephen C. Ede
Ordered By		**Released By**	Stephen C. Ede

Sample Remarks:

DRO - Surrogate is outside QC goals (biased high) due to hydrocarbon interference. Sample results should not be affected.
DRO - The pattern is consistent with a weathered middle distillate.

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Solids								
Total Solids	86.7		%	SM20 2540G			08/12/02	CAR
Volatile Fuels Department								
Gasoline Range Organics	3.62 U	3.62	mg/Kg	AK101/8021B		08/07/02	08/12/02	PFL
Benzene	0.0181 U	0.0181	mg/Kg	AK101/8021B		08/07/02	08/12/02	PFL
Toluene	0.0723 U	0.0723	mg/Kg	AK101/8021B		08/07/02	08/12/02	PFL
Ethylbenzene	0.0723 U	0.0723	mg/Kg	AK101/8021B		08/07/02	08/12/02	PFL
P & M -Xylene	0.0723 U	0.0723	mg/Kg	AK101/8021B		08/07/02	08/12/02	PFL
o-Xylene	0.0723 U	0.0723	mg/Kg	AK101/8021B		08/07/02	08/12/02	PFL
Surrogates								
1,4-Difluorobenzene <Surr>	90		%	AK101/8021B	89-118	08/07/02	08/12/02	PFL
4-Bromofluorobenzene <Surr>	88.1		%	AK101/8021B	50-150	08/07/02	08/12/02	PFL
Semivolatile Organic Fuels Department								
Diesel Range Organics	128	22.4	mg/Kg	AK102 DRO		08/12/02	08/13/02	DS
Surrogates								
5a Androstane <surr>	168 !		%	AK102 DRO	50-150	08/12/02	08/13/02	DS

CT&E Environmental Services Inc.

CT&E Ref.#	1024285008	**All Dates/Times are Alaska Standard Time**	
Client Name	Shannon & Wilson-Fairbanks	**Printed Date/Time**	08/21/2002 15:41
Project Name/#	Jack's Service	**Collected Date/Time**	08/07/2002 13:40
Client Sample ID	11068-080702-BCH1	**Received Date/Time**	08/07/2002 16:35
Matrix	Soil/Solid	**Technical Director**	Stephen C. Ede
Ordered By		**Released By**	Stephen C. Ede

Sample Remarks:

GRO/BTEX - DFB surrogate recovery is biased low; sample was run twice for confirmation. Results may be biased low.
DRO - The pattern is consistent with a weathered middle distillate.

Parameter	Results		PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Solids									
Total Solids	86.4			%	SM20 2540G			08/12/02	CAR
Volatile Fuels Department									
Gasoline Range Organics	3.20 U		3.20	mg/Kg	AK101/8021B		08/07/02	08/13/02	PFL
Benzene	0.0160 U		0.0160	mg/Kg	AK101/8021B		08/07/02	08/13/02	PFL
Toluene	0.0645		0.0641	mg/Kg	AK101/8021B		08/07/02	08/13/02	PFL
Ethylbenzene	0.0641 U		0.0641	mg/Kg	AK101/8021B		08/07/02	08/13/02	PFL
P & M -Xylene	0.146		0.0641	mg/Kg	AK101/8021B		08/07/02	08/13/02	PFL
o-Xylene	0.0641 U		0.0641	mg/Kg	AK101/8021B		08/07/02	08/13/02	PFL
Surrogates									
1,4-Difluorobenzene <Surr>	81	!		%	AK101/8021B	89-118	08/07/02	08/13/02	PFL
4-Bromofluorobenzene <Surr>	98.7			%	AK101/8021B	50-150	08/07/02	08/13/02	PFL
Semivolatile Organic Fuels Department									
Diesel Range Organics	171		23.0	mg/Kg	AK102 DRO		08/12/02	08/13/02	DS
Surrogates									
5a Androstane <surr>	86.1			%	AK102 DRO	50-150	08/12/02	08/13/02	DS

CT&E Environmental Services Inc.

CT&E Ref.#	1024285009	**All Dates/Times are Alaska Standard Time**	
Client Name	Shannon & Wilson-Fairbanks	**Printed Date/Time**	08/21/2002 15:41
Project Name/#	Jack's Service	**Collected Date/Time**	08/07/2002 13:50
Client Sample ID	11068-080702-BCH2	**Received Date/Time**	08/07/2002 16:35
Matrix	Soil/Solid	**Technical Director**	**Stephen C. Ede**
Ordered By		**Released By**	Stephen C. Ede

Sample Remarks:

GRO/BTEX - DFB surrogate recovery is biased low; sample was run twice for confirmation. Results may be biased low.
DRO - The pattern is consistent with a weathered middle distillate.

Parameter	Results		PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Solids									
Total Solids	87.7			%	SM20 2540G			08/12/02	CAR
Volatile Fuels Department									
Gasoline Range Organics	2.95 U		2.95	mg/Kg	AK101/8021B		08/07/02	08/13/02	PFL
Benzene	0.0185		0.0148	mg/Kg	AK101/8021B		08/07/02	08/13/02	PFL
Toluene	0.0590 U		0.0590	mg/Kg	AK101/8021B		08/07/02	08/13/02	PFL
Ethylbenzene	0.0590 U		0.0590	mg/Kg	AK101/8021B		08/07/02	08/13/02	PFL
P & M -Xylene	0.0590 U		0.0590	mg/Kg	AK101/8021B		08/07/02	08/13/02	PFL
o-Xylene	0.0590 U		0.0590	mg/Kg	AK101/8021B		08/07/02	08/13/02	PFL
Surrogates									
1,4-Difluorobenzene <Surr>	85.7	!		%	AK101/8021B	89-118	08/07/02	08/13/02	PFL
4-Bromofluorobenzene <Surr>	84.2			%	AK101/8021B	50-150	08/07/02	08/13/02	PFL
Semivolatile Organic Fuels Department									
Diesel Range Organics	88.4		22.7	mg/Kg	AK102 DRO		08/12/02	08/13/02	DS
Surrogates									
5a Androstane <surr>	78.9			%	AK102 DRO	50-150	08/12/02	08/13/02	DS

CT&E Environmental Services Inc.

CT&E Ref.#	1024285010	**All Dates/Times are Alaska Standard Time**	
Client Name	Shannon & Wilson-Fairbanks	**Printed Date/Time**	08/21/2002 15:41
Project Name/#	Jack's Service	**Collected Date/Time**	08/07/2002 14:00
Client Sample ID	11068-080702-BCG4	**Received Date/Time**	08/07/2002 16:35
Matrix	Soil/Solid	**Technical Director**	**Stephen C. Ede**
Ordered By		**Released By**	Stephen C. Ede

Sample Remarks:

DRO - The pattern is consistent with a weathered middle distillate.

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Solids								
Total Solids	87.2		%	SM20 2540G			08/12/02	CAR
Volatile Fuels Department								
Gasoline Range Organics	3.10 U	3.10	mg/Kg	AK101/8021B		08/07/02	08/12/02	PFL
Benzene	0.0155 U	0.0155	mg/Kg	AK101/8021B		08/07/02	08/12/02	PFL
Toluene	0.0620 U	0.0620	mg/Kg	AK101/8021B		08/07/02	08/12/02	PFL
Ethylbenzene	0.0620 U	0.0620	mg/Kg	AK101/8021B		08/07/02	08/12/02	PFL
P & M -Xylene	0.0620 U	0.0620	mg/Kg	AK101/8021B		08/07/02	08/12/02	PFL
o-Xylene	0.0620 U	0.0620	mg/Kg	AK101/8021B		08/07/02	08/12/02	PFL
Surrogates								
1,4-Difluorobenzene <Surr>	89.6		%	AK101/8021B	89-118	08/07/02	08/12/02	PFL
4-Bromofluorobenzene <Surr>	87.3		%	AK101/8021B	50-150	08/07/02	08/12/02	PFL
Semivolatile Organic Fuels Department								
Diesel Range Organics	135	22.8	mg/Kg	AK102 DRO		08/12/02	08/13/02	DS
Surrogates								
5a Androstane <surr>	81.7		%	AK102 DRO	50-150	08/12/02	08/13/02	DS

CT&E Environmental Services Inc.

CT&E Ref.#	1024285011	**All Dates/Times are Alaska Standard Time**	
Client Name	Shannon & Wilson-Fairbanks	**Printed Date/Time**	08/21/2002 15:41
Project Name/#	Jack's Service	**Collected Date/Time**	08/07/2002 14:10
Client Sample ID	11068-080702-BCG3	**Received Date/Time**	08/07/2002 16:35
Matrix	Soil/Solid	**Technical Director**	**Stephen C. Ede**
Ordered By		**Released By**	Stephen C. Ede

Sample Remarks:

DRO - The pattern is consistent with a weathered middle distillate.

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Solids								
Total Solids	87.4		%	SM20 2540G			08/12/02	CAR
Volatile Fuels Department								
Gasoline Range Organics	3.08 U	3.08	mg/Kg	AK101 GRO		08/07/02	08/14/02	PFL
Benzene	0.0154 U	0.0154	mg/Kg	BTX SW846-8021B		08/07/02	08/14/02	JLB
Toluene	0.0617 U	0.0617	mg/Kg	BTX SW846-8021B		08/07/02	08/14/02	JLB
Ethylbenzene	0.0617 U	0.0617	mg/Kg	BTX SW846-8021B		08/07/02	08/14/02	JLB
P & M -Xylene	0.0617 U	0.0617	mg/Kg	BTX SW846-8021B		08/07/02	08/14/02	JLB
o-Xylene	0.0617 U	0.0617	mg/Kg	BTX SW846-8021B		08/07/02	08/14/02	JLB
Surrogates								
1,4-Difluorobenzene <Surr>	92.7		%	BTX SW846-8021B	89-118	08/07/02	08/14/02	JLB
1,4-Difluorobenzene <Surr>	92.7		%	AK101 GRO	75-120	08/07/02	08/14/02	PFL
4-Bromofluorobenzene <Surr>	73.2		%	BTX SW846-8021B	50-150	08/07/02	08/14/02	JLB
4-Bromofluorobenzene <Surr>	73.2		%	AK101 GRO	50-150	08/07/02	08/14/02	PFL
Semivolatile Organic Fuels Department								
Diesel Range Organics	73.7	22.7	mg/Kg	AK102 DRO		08/12/02	08/13/02	DS
Surrogates								
5a Androstane <surr>	85.1		%	AK102 DRO	50-150	08/12/02	08/13/02	DS

CT&E Environmental Services Inc.

CT&E Ref.#	1024285013	**All Dates/Times are Alaska Standard Time**	
Client Name	Shannon & Wilson-Fairbanks	**Printed Date/Time**	08/21/2002 15:41
Project Name/#	Jack's Service	**Collected Date/Time**	08/07/2002 14:30
Client Sample ID	11068-080702-W1	**Received Date/Time**	08/07/2002 16:35
Matrix	Water (Surface, Eff., Ground)	**Technical Director**	Stephen C. Ede
Ordered By		**Released By**	Stephen C. Ede

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Gas Chromatography/Mass Spectroscopy								
Dichlorodifluoromethane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Chloromethane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Vinyl chloride	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Bromomethane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Chloroethane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Trichlorofluoromethane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
1,1-Dichloroethene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Methylene chloride	0.00500 U	0.00500	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Carbon disulfide	0.00200 U	0.00200	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
trans-1,2-Dichloroethene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
1,1-Dichloroethane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
2,2-Dichloropropane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
cis-1,2-Dichloroethene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
2-Butanone (MEK)	0.0100 U	0.0100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Bromochloromethane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Chloroform	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
1,1,1-Trichloroethane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Carbon tetrachloride	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
1,1-Dichloropropene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Benzene	0.000500 U	0.000500	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Trichloroethene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
1,2-Dichloropropane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Dibromomethane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Bromodichloromethane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
2-Chloroethyl Vinyl Ether	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
cis-1,3-Dichloropropene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Toluene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
trans-1,3-Dichloropropene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
1,1,2-Trichloroethane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Tetrachloroethene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
1,3-Dichloropropane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Dibromochloromethane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH

CT&E Environmental Services Inc.

CT&E Ref.#	1024285013	**All Dates/Times are Alaska Standard Time**	
Client Name	Shannon & Wilson-Fairbanks	**Printed Date/Time**	08/21/2002 15:41
Project Name/#	Jack's Service	**Collected Date/Time**	08/07/2002 14:30
Client Sample ID	11068-080702-W1	**Received Date/Time**	08/07/2002 16:35
Matrix	Water (Surface, Eff., Ground)	**Technical Director**	**Stephen C. Ede**
Ordered By			

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Gas Chromatography/Mass Spectroscopy								
1,2-Dibromoethane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Chlorobenzene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
1,1,1,2-Tetrachloroethane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Ethylbenzene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
P & M -Xylene	0.00200 U	0.00200	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
o-Xylene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Styrene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Bromoform	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Isopropylbenzene (Cumene)	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Bromobenzene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
1,1,2,2-Tetrachloroethane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
1,2,3-Trichloropropane	0.00200 U	0.00200	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
n-Propylbenzene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
2-Chlorotoluene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
4-Chlorotoluene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
1,3,5-Trimethylbenzene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
tert-Butylbenzene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
1,2,4-Trimethylbenzene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
sec-Butylbenzene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
1,3-Dichlorobenzene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
4-Isopropyltoluene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
1,4-Dichlorobenzene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
1,2-Dichlorobenzene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
n-Butylbenzene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
1,2-Dibromo-3-chloropropane	0.00200 U	0.00200	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
1,2,4-Trichlorobenzene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Hexachlorobutadiene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Naphthalene	0.00200 U	0.00200	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
1,2,3-Trichlorobenzene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
4-Methyl-2-pentanone (MIBK)	0.0100 U	0.0100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
2-Hexanone	0.0100 U	0.0100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
1,2-Dichloroethane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Surrogates								

CT&E Environmental Services Inc.

CT&E Ref.#	1024285013
Client Name	Shannon & Wilson-Fairbanks
Project Name/#	Jack's Service
Client Sample ID	11068-080702-W1
Matrix	Water (Surface, Eff., Ground)
Ordered By	

All Dates/Times are Alaska Standard Time

Printed Date/Time	08/21/2002 15:41
Collected Date/Time	08/07/2002 14:30
Received Date/Time	08/07/2002 16:35
Technical Director	**Stephen C. Ede**

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Gas Chromatography/Mass Spectroscopy								
Dibromofluoromethane <surr>	105		%	SW846-8260B	85-118	08/15/02	08/14/02	MAH
1,2-Dichloroethane-D4 <surr>	106		%	SW846-8260B	68-130	08/15/02	08/14/02	MAH
4-Bromofluorobenzene <Surr>	106		%	SW846-8260B	75-131	08/15/02	08/14/02	MAH
Toluene-d8 <surr>	104		%	SW846-8260B	76-120	08/15/02	08/14/02	MAH
EDB+DBCP by Microextraction								
1,2-Dibromo-3-chloropropane	0.0199 U	0.0199	ug/L	EPA 504		08/13/02	08/13/02	WAA
1,2-Dibromoethane	0.0199 U	0.0199	ug/L	EPA 504		08/13/02	08/13/02	WAA
Surrogates								
1,3-Dichlorobenzene (Surr)	116		%	EPA 504	27-156	08/13/02	08/13/02	WAA

CT&E Ref.#	1024285013	**All Dates/Times are Alaska Standard Time**	
Client Name	Shannon & Wilson-Fairbanks	**Printed Date/Time**	08/21/2002 15:41
Project Name/#	Jack's Service	**Collected Date/Time**	08/07/2002 14:30
Client Sample ID	11068-080702-W1	**Received Date/Time**	08/07/2002 16:35
Matrix	Water (Surface, Eff., Ground)	**Technical Director**	**Stephen C. Ede**
Ordered By			

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Gas Chromatography/Mass Spectroscopy								
Dibromofluoromethane <surr>	105		%	SW846-8260B	85-118	08/15/02	08/14/02	MAH
1,2-Dichloroethane-D4 <surr>	106		%	SW846-8260B	68-130	08/15/02	08/14/02	MAH
4-Bromofluorobenzene <Surr>	106		%	SW846-8260B	75-131	08/15/02	08/14/02	MAH
Toluene-d8 <surr>	104		%	SW846-8260B	76-120	08/15/02	08/14/02	MAH
EDB+DBCP by Microextraction								
1,2-Dibromo-3-chloropropane	0.0199 U	0.0199	ug/L	EPA 504		08/13/02	08/13/02	WAA
1,2-Dibromoethane	0.0199 U	0.0199	ug/L	EPA 504		08/13/02	08/13/02	WAA
Surrogates								
1,3-Dichlorobenzene (Surr)	116		%	EPA 504	27-156	08/13/02	08/13/02	WAA

CT&E Environmental Services Inc.

CT&E Ref.#	1024285014
Client Name	Shannon & Wilson-Fairbanks
Project Name/#	Jack's Service
Client Sample ID	11068-080702-W2
Matrix	Water (Surface, Eff., Ground)
Ordered By	

All Dates/Times are Alaska Standard Time

Printed Date/Time	08/21/2002 15:41
Collected Date/Time	08/07/2002 14:40
Received Date/Time	08/07/2002 16:35
Technical Director	Stephen C. Ede
Released By	Stephen C. Ede

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Gas Chromatography/Mass Spectroscopy								
Dichlorodifluoromethane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
Chloromethane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
Vinyl chloride	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
Bromomethane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
Chloroethane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
Trichlorofluoromethane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
1,1-Dichloroethene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
Methylene chloride	0.00500 U	0.00500	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
Carbon disulfide	0.00200 U	0.00200	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
trans-1,2-Dichloroethene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
1,1-Dichloroethane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
2,2-Dichloropropane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
cis-1,2-Dichloroethene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
2-Butanone (MEK)	0.0100 U	0.0100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
Bromochloromethane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
Chloroform	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
1,1,1-Trichloroethane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
Carbon tetrachloride	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
1,1-Dichloropropene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
Benzene	0.000500 U	0.000500	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
Trichloroethene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
1,2-Dichloropropane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
Dibromomethane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
Bromodichloromethane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
2-Chloroethyl Vinyl Ether	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
cis-1,3-Dichloropropene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
Toluene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
trans-1,3-Dichloropropene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
1,1,2-Trichloroethane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
Tetrachloroethene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
1,3-Dichloropropane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
Dibromochloromethane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH

CT&E Environmental Services Inc.

CT&E Ref.#	1024285014
Client Name	Shannon & Wilson-Fairbanks
Project Name/#	Jack's Service
Client Sample ID	11068-080702-W2
Matrix	Water (Surface, Eff., Ground)
Ordered By	

All Dates/Times are Alaska Standard Time

Printed Date/Time	08/21/2002 15:41
Collected Date/Time	08/07/2002 14:40
Received Date/Time	08/07/2002 16:35
Technical Director	**Stephen C. Ede**

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Gas Chromatography/Mass Spectroscopy								
1,2-Dibromoethane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
Chlorobenzene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
1,1,1,2-Tetrachloroethane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
Ethylbenzene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
P & M -Xylene	0.00200 U	0.00200	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
o-Xylene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
Styrene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
Bromoform	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
Isopropylbenzene (Cumene)	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
Bromobenzene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
1,1,2,2-Tetrachloroethane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
1,2,3-Trichloropropane	0.00200 U	0.00200	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
n-Propylbenzene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
2-Chlorotoluene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
4-Chlorotoluene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
1,3,5-Trimethylbenzene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
tert-Butylbenzene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
1,2,4-Trimethylbenzene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
sec-Butylbenzene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
1,3-Dichlorobenzene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
4-Isopropyltoluene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
1,4-Dichlorobenzene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
1,2-Dichlorobenzene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
n-Butylbenzene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
1,2-Dibromo-3-chloropropane	0.00200 U	0.00200	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
1,2,4-Trichlorobenzene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
Hexachlorobutadiene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
Naphthalene	0.00200 U	0.00200	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
1,2,3-Trichlorobenzene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
4-Methyl-2-pentanone (MIBK)	0.0100 U	0.0100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
2-Hexanone	0.0100 U	0.0100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
1,2-Dichloroethane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
Surrogates								

CT&E Environmental Services Inc.

CT&E Ref.#	1024285014	**All Dates/Times are Alaska Standard Time**	
Client Name	Shannon & Wilson-Fairbanks	**Printed Date/Time**	08/21/2002 15:41
Project Name/#	Jack's Service	**Collected Date/Time**	08/07/2002 14:40
Client Sample ID	11068-080702-W2	**Received Date/Time**	08/07/2002 16:35
Matrix	Water (Surface, Eff., Ground)	**Technical Director**	**Stephen C. Ede**
Ordered By			

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Gas Chromatography/Mass Spectroscopy								
Dibromofluoromethane <surr>	107		%	SW846-8260B	85-118	08/15/02	08/15/02	MAH
1,2-Dichloroethane-D4 <surr>	106		%	SW846-8260B	68-130	08/15/02	08/15/02	MAH
4-Bromofluorobenzene <Surr>	110		%	SW846-8260B	75-131	08/15/02	08/15/02	MAH
Toluene-d8 <surr>	103		%	SW846-8260B	76-120	08/15/02	08/15/02	MAH

CT&E Environmental Services Inc.

CT&E Ref.#	1024285015	**All Dates/Times are Alaska Standard Time**	
Client Name	Shannon & Wilson-Fairbanks	**Printed Date/Time**	08/21/2002 15:41
Project Name/#	Jack's Service	**Collected Date/Time**	08/07/2002 0:00
Client Sample ID	Trip Blank VOC	**Received Date/Time**	08/07/2002 16:35
Matrix	Water (Surface, Eff., Ground)	**Technical Director**	**Stephen C. Ede**
Ordered By		**Released By**	Stephen C. Ede

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Gas Chromatography/Mass Spectroscopy								
Dichlorodifluoromethane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Chloromethane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Vinyl chloride	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Bromomethane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Chloroethane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Trichlorofluoromethane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
1,1-Dichloroethene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Methylene chloride	0.00500 U	0.00500	mg/L	SW846-8260B		08/15/02	08/15/02	MAH
Carbon disulfide	0.00200 U	0.00200	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
trans-1,2-Dichloroethene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
1,1-Dichloroethane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
2,2-Dichloropropane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
cis-1,2-Dichloroethene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
2-Butanone (MEK)	0.0100 U	0.0100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Bromochloromethane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Chloroform	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
1,1,1-Trichloroethane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Carbon tetrachloride	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
1,1-Dichloropropene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Benzene	0.000500 U	0.000500	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Trichloroethene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
1,2-Dichloropropane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Dibromomethane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Bromodichloromethane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
2-Chloroethyl Vinyl Ether	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
cis-1,3-Dichloropropene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Toluene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
trans-1,3-Dichloropropene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
1,1,2-Trichloroethane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Tetrachloroethene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
1,3-Dichloropropane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Dibromochloromethane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH

CT&E Environmental Services Inc.

CT&E Ref.#	1024285015
Client Name	Shannon & Wilson-Fairbanks
Project Name/#	Jack's Service
Client Sample ID	Trip Blank VOC
Matrix	Water (Surface, Eff., Ground)
Ordered By	

All Dates/Times are Alaska Standard Time

Printed Date/Time	08/21/2002 15:41
Collected Date/Time	08/07/2002 0:00
Received Date/Time	08/07/2002 16:35
Technical Director	**Stephen C. Ede**

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Gas Chromatography/Mass Spectroscopy								
1,2-Dibromoethane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Chlorobenzene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
1,1,1,2-Tetrachloroethane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Ethylbenzene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
P & M -Xylene	0.00200 U	0.00200	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
o-Xylene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Styrene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Bromoform	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Isopropylbenzene (Cumene)	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Bromobenzene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
1,1,2,2-Tetrachloroethane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
1,2,3-Trichloropropane	0.00200 U	0.00200	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
n-Propylbenzene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
2-Chlorotoluene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
4-Chlorotoluene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
1,3,5-Trimethylbenzene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
tert-Butylbenzene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
1,2,4-Trimethylbenzene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
sec-Butylbenzene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
1,3-Dichlorobenzene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
4-Isopropyltoluene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
1,4-Dichlorobenzene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
1,2-Dichlorobenzene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
n-Butylbenzene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
1,2-Dibromo-3-chloropropane	0.00200 U	0.00200	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
1,2,4-Trichlorobenzene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Hexachlorobutadiene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Naphthalene	0.00200 U	0.00200	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
1,2,3-Trichlorobenzene	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
4-Methyl-2-pentanone (MIBK)	0.0100 U	0.0100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
2-Hexanone	0.0100 U	0.0100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
1,2-Dichloroethane	0.00100 U	0.00100	mg/L	SW846-8260B		08/15/02	08/14/02	MAH
Surrogates								

CT&E Environmental Services Inc.

CT&E Ref.#	1024285015	**All Dates/Times are Alaska Standard Time**	
Client Name	Shannon & Wilson-Fairbanks	**Printed Date/Time**	08/21/2002 15:41
Project Name/#	Jack's Service	**Collected Date/Time**	08/07/2002 0:00
Client Sample ID	Trip Blank VOC	**Received Date/Time**	08/07/2002 16:35
Matrix	Water (Surface, Eff., Ground)	**Technical Director**	**Stephen C. Ede**
Ordered By			

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Gas Chromatography/Mass Spectroscopy								
Dibromofluoromethane <surr>	103		%	SW846-8260B	85-118	08/15/02	08/14/02	MAH
1,2-Dichloroethane-D4 <surr>	100		%	SW846-8260B	68-130	08/15/02	08/14/02	MAH
4-Bromofluorobenzene <Surr>	105		%	SW846-8260B	75-131	08/15/02	08/14/02	MAH
Toluene-d8 <surr>	103		%	SW846-8260B	76-120	08/15/02	08/14/02	MAH

CT&E Environmental Services Inc.

CT&E Ref.#	1024285016	**All Dates/Times are Alaska Standard Time**	
Client Name	Shannon & Wilson-Fairbanks	**Printed Date/Time**	08/21/2002 15:41
Project Name/#	Jack's Service	**Collected Date/Time**	08/07/2002 0:00
Client Sample ID	Trip Blank EDB	**Received Date/Time**	08/07/2002 16:35
Matrix	Water (Surface, Eff., Ground)	**Technical Director**	**Stephen C. Ede**
Ordered By		**Released By**	Stephen C. Ede

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
EDB+DBCP by Microextraction								
1,2-Dibromo-3-chloropropane	0.0200 U	0.0200	ug/L	EPA 504		08/13/02	08/13/02	WAA
1,2-Dibromoethane	0.0200 U	0.0200	ug/L	EPA 504		08/13/02	08/13/02	WAA
Surrogates								
1,3-Dichlorobenzene (Surr)	90.8		%	EPA 504		08/13/02	08/13/02	WAA

CT&E Environmental Services Inc.

CT&E Ref.#	1024285017	**All Dates/Times are Alaska Standard Time**	
Client Name	Shannon & Wilson-Fairbanks	**Printed Date/Time**	08/21/2002 15:41
Project Name/#	Jack's Service	**Collected Date/Time**	08/07/2002 0:00
Client Sample ID	Trip Blank Soil	**Received Date/Time**	08/07/2002 16:35
Matrix	Soil/Solid	**Technical Director**	**Stephen C. Ede**
Ordered By		**Released By**	Stephen C. Ede

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Solids								
Total Solids	100		%	SM20 2540G			08/12/02	CAR
Volatile Fuels Department								
Gasoline Range Organics	2.53 U	2.53	mg/Kg	AK101/8021B		08/12/02	08/12/02	PFL
Benzene	0.0126 U	0.0126	mg/Kg	AK101/8021B		08/12/02	08/12/02	PFL
Toluene	0.0505 U	0.0505	mg/Kg	AK101/8021B		08/12/02	08/12/02	PFL
Ethylbenzene	0.0505 U	0.0505	mg/Kg	AK101/8021B		08/12/02	08/12/02	PFL
P & M -Xylene	0.0505 U	0.0505	mg/Kg	AK101/8021B		08/12/02	08/12/02	PFL
o-Xylene	0.0505 U	0.0505	mg/Kg	AK101/8021B		08/12/02	08/12/02	PFL
Surrogates								
1,4-Difluorobenzene <Surr>	89.8		%	AK101/8021B	89-118	08/12/02	08/12/02	PFL
4-Bromofluorobenzene <Surr>	94.5		%	AK101/8021B	50-150	08/12/02	08/12/02	PFL

CHAIN OF CUSTODY RECORD

1024285

CT&E Environmental Services Inc.
Laboratory Division

(1)

CLIENT: SHANNON & WILSON

CONTACT: SHELDON SHAW PHONE NO: (907) 479 0600

PROJECT: JACK'S SERVICE PWSID#:

REPORTS TO: SHW FAX NO: ( ) 479 5691

INVOICE TO: SHW QUOTE#

P.O. NUMBER:

CT&E Reference:

PAGE 1 OF 2

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No. CONTAINERS	SAMPLE TYPE C = COMP G = GRAB	Preservatives Used	Analysis Required (3) DRO	GRO/BTEX	REMARKS
(1) A-B	11068-080702-SPA1	8/7/02	1120	SOIL	2	G		X	X	
(2) A-B	11068-080702-SPB1	8/7/02	1130	SOIL	2	G		X	X	
(3) A-B	11068-080702-SPB2	8/7/02	1140	SOIL	2	G		X	X	
(4) A-B	11068-080702-SPB3	8/7/02	1150	SOIL	2	G		X	X	
(5) A-B	11068-080702-SPE3	8/7/02	1200	SOIL	2	G		X	X	
(6) A-B	11068-080702-SPA2	8/7/02	1210	SOIL	2	G		X	X	
(7) A-B	11068-080702-BCJ1	8/7/02	1330	SOIL	2	G		X	X	
(8) A-B	11068-080702-BCH1	8/7/02	1340	SOIL	2	G		X	X	
(9) A-B	11068-080702-BCH2	8/7/02	1350	SOIL	2	G		X	X	
(10) A-B	11068-080702-BCG4	8/7/02	1400	SOIL	2	G		X	X	

(5)

Collected/Relinquished By: (1)	Date	Time	Received By:
SHELDON R SHAW	8/7/02	1635	Melody Debenham
Relinquished By: (2)	Date	Time	Received By:
	8/8/02	930	
Relinquished By: (3)	Date	Time	Received By:
	8/9/02	915	
Relinquished By: (4)	Date	Time	Received For Laboratory By:

(4)

Shipping Carrier: Hand

Shipping Ticket No:

Temperature C: 4.7°C

Data Deliverables:

Level I Level II Level III EDD Type:

Chain of Custody Seal: (Circle)

INTACT BROKEN ABSENT

Requested Turnaround Time and Special Instructions:

200 W. Potter Drive **Anchorage, AK 99518** Tel: (907) 562-2343 Fax: (907) 561-5301
3180 Peger Road **Fairbanks, AK 99701** Tel: (907) 474-8656 Fax: (907) 474-9685

White - Retained by Lab (Project File) Yellow - Returned with Report Pink - Retained by Sampler

CHAIN OF CUSTODY RECORD

1024285

CT&E Environmental Services Inc.
Laboratory Division

(1)
CLIENT: SHANNON & WILSON, INC.
CONTACT: SHELDON SHAW PHONE NO: (907) 479-0600
PROJECT: JACK'S SERVICE PWSID#:
REPORTS TO: SHW FAX NO: ( )
INVOICE TO: SHW QUOTE# P.O. NUMBER:

CT&E Reference:

PAGE 2 OF 2

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No. CONTAINERS	SAMPLE TYPE C = COMP G = GRAB	Preservatives Used	Analysis Required (3) GRO	DRO	VOC	EDB	GRO/BTEX					REMARKS
(11) A-B	11068-080702-BLG3	8/7/02	1410	SOIL	2	G		X	X								
~~(12)~~	~~11068-080702-WATER~~	~~8/7/02~~	~~1430~~	~~H2O~~													
(13) A-I	11068-080702-W1	8/7/02	1430	H2O	9	G		X		X	X						
(14) A-C	11068-080702-W2	8/7/02	1440	H2O	3	G		~~X~~ SEE 7		X							
(15) A-C	TRIP BLANK-VOC				3					X							
(16) A-B	TRIP BLANK EDB				2						X						
(17) A	TRIP BLANK SOIL				1							X					

(5)

Collected/Relinquished By: (1)	Date	Time	Received By:
SHELDON R SHAW	8/7/02	1635	Melody Debenham
Relinquished By: (2)	Date	Time	Received By:
	8/8/02	430	
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received For Laboratory By:

(4)

Shipping Carrier:
Shipping Ticket No: Hand

Temperature C: 4.7 °C

Data Deliverables:
Level I Level II Level III EDD Type:

Chain of Custody Seal: (Circle)
INTACT BROKEN ABSENT

Requested Turnaround Time and Special Instructions:

200 W. Potter Drive **Anchorage, AK 99518** Tel: (907) 562-2343 Fax: (907) 561-5301
3180 Peger Road **Fairbanks, AK 99701** Tel: (907) 474-8656 Fax: (907) 474-9685

White - Retained by Lab (Project File) Yellow - Returned with Report Pink - Retained by Sampler

CT&E Environmental Services Inc.

SAMPLE RECEIPT FORM

CT&E WO#: 1024285

Yes	No		
	✓	Are samples **RUSH**, priority, or *within 72 hrs.* of **hold time**?	
	NA	If yes have you done *e-mail notification*?	
	✓	Are samples *within 24 hrs.* of **hold time** or **due date**?	
	NA	If yes, have you *spoken with* Supervisor?	
	✓	Archiving bottles – if required, are they properly marked?	
* ✓ (1)	✓	Are there any **problems** (e.g., ids, analyses)?	
✓		Were samples preserved correctly and pH verified?	
	NA	Has Project Manager been notified of problems?	
	✓	Is this a DOD project? (USACE, Navy, AFCEE):	
		If yes, complete page 2 of Sample Receipt Form	
	✓	Will a **data package** be required?	
	✓	If this is for PWS, provide **PWSID.**	
✓		Is there a **quote** for this project?	
	✓	Will **courier** charges apply?	
		Method of payment?	

Due Date: 8/16/02
Received Date/Time: 8/7/02 1635
Received Temperature*:
Thermometer ID: Probe A

Cooler ID	Temp Blank	Cooler Temp
1	4.7c	

Matrix of each Sample:

2	" "	1-11
1	" "	13-14
	" "	
	" "	
	" "	
1	Trip Blank	15 & 16
2	~~BMS/BMSD~~ Trip Blank	17

Completed by (sign): _____ (print): Diann Pearson

Notes:
* There is not a #12 lab no. line was deleted on COC
(1) see attached page

# of each Container Received:

	950 ml amber unpres'd
	950 ml amber w / HCl
	500 ml amber w / H_2SO_4
	1L cubies unpres'd
	1L Cubitainers w / HNO_3
	1L Cubitainers w / H_2SO_4
	1L Cubitainers w / NaOH + ZnAc
	250 mL Nalgene NaOH
	120 ml coli bottles
	60 ml Nalgene unpres'd
	60 mL Nalgene w/ H_2SO_4
11	8 oz amber unpres'd
	4 oz amber unpres'd
12	4 oz w / septa w / MeOH
12	40 ml vials w / HCl
5	40 mL ~~ascorbic acid + HCl~~ unpreserved

	Other (specify)
	Other (specify)
	Other (specify)
	Other (specify)

	Extra Sample Volume?
	Limited Sample Volume?
✓	Field pres'd for volatiles?
	Field-filtered for dissolved?
	Lab-filtered for dissolved?
	Ref Lab required?

Additional Sample Remarks

TO BE COMPLETED IN ANCHORAGE UPON ARRIVAL FROM FAIRBANKS:
DATE / TIME: 8.9.02 915
COOLER AND TEMP BLANK READINGS*

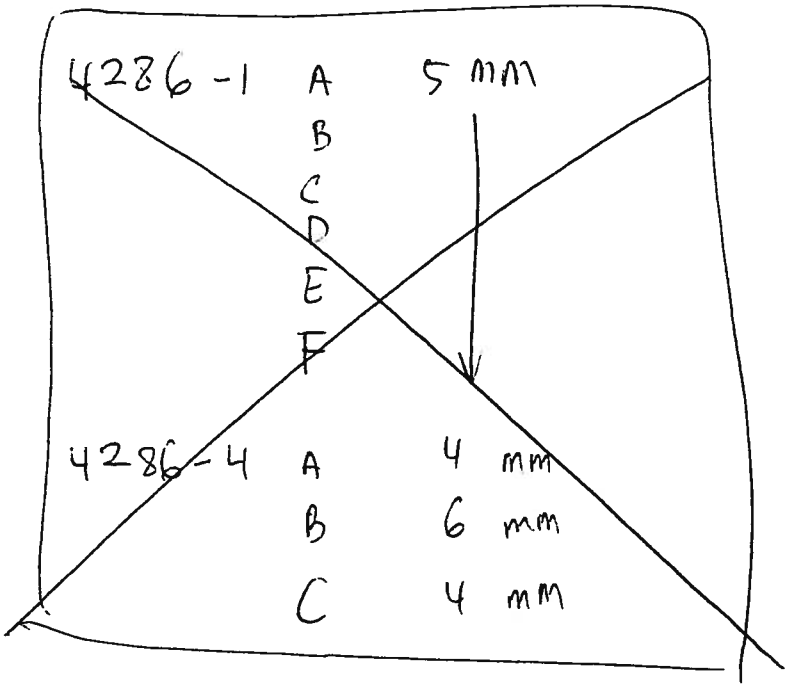
Cooler ID	Temp Blank	Cooler	Cooler ID	Temp Blank	Cooler
1	1.8	15.1			

CUSTODY SEALS INTACT: YES / NO #/ WHERE: _____
COMPLETED BY (INITIAL): _____

Log-in proofed by: _____

*Temperature readings include thermometer correction factors.

Bubbles



4285-14	A	over 1
	B	8 mm
	C	over 1
4285-15	A	5

4285-13	A	7
	B	9
	C	5
	D	9
	E	over 1
	F	6
	G	over 1
	H	↓
	I	

4285 4286 10

CT&E Environmental Services Inc.
Laboratory Division

3180 Peger Road
Fairbanks, AK 99709-5471
Tel: (907) 474-9656
Fax: (907) 474-9685

Change Order / Work Amendment

Client: Shannon and Wilson
Client PM: Sheldon Shaw
Phone No. 479-0600 Fax No. 479-5691

Date/Time: 8/8/02 @ 900
Initiated By:
CT&E PM: Melody Debenham

Project Name: Jack's Service
CT&E Workorder: 1024285

Action To Be Taken: Add'l Analysis ____ Delete Analysis X Add Rush ____
Other: ____

Client ID	CT&E #	Specific Requirements	Test Code	Add'l Cost
1068-080702-WI	013	delete GRO		
			Total Additional Costs:	

Comments / Details: * EDB should be run by 504.1

Authorization: To assure that the correct action is taken, this form will be faxed to the client. The client will review, sign and fax back to CT&E Project Manager (Fax 907-474-9685) their authorization of this change in work/cost before the Change Order can be executed.

Client Approval: [signature] Date: 8/8/02

Internal Routing: EP Tox____ QC____ GC Prep____ Waters____ Metals____ Micro____
O/G____ Oils____ Ref____ QA/QC____ Proj Mng____ Data Mng____ KM____ GP____

CT&E Environmental Services Inc.

CUSTODY SEAL

Signature: _____ **Date/Time:** 8/8/02 430

CT&E Environmental Services Inc.

CUSTODY SEAL

Signature: _____ **Date/Time:** 8/8/02 430

cooler
15.1

temp
1.8

CTE Environmental Services
Alaska Division
Laboratory Data Report

Project: Jack's

Client: Shannon & Wilson-Fairbanks

CTE Work Order: 1017294

Contents:

Chain of Custody
Quality Control Summary Forms

Note:

Unless otherwise noted, all quality assurance/quality control criteria is in compliance with the proper regulatory authority and/or CTE's Quality Assurance Program Plan.

Case Narrative

Customer: SHANFBK **Shannon & Wilson-Fairbanks**

Project: 1017294 **Jack's**

There were no analytical anomalies associated with your data.

CT&E Environmental Services Inc.

200 W. Potter Drive
Anchorage, AK 99518-1605
Tel: (907) 562-2343
Fax: (907) 561-5301
Web: http://www.cteesi.com

Dennis Filler
Shannon & Wilson-Fairbanks
2055 HILL ROAD
Fairbanks, AK 99709

Work Order:	1017294
	Jack's
Client:	Shannon & Wilson-Fairbanks
Report Date:	December 07, 2001

Enclosed are the analytical results associated with the above workorder.

As required by the state of Alaska and the USEPA, a formal Quality Assurance/Quality Control Program is maintained by CT&E. A copy of our Quality Control Manual that outlines this program is available at your request.

Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth in our Quality Assurance Program Plan.

If you have any questions regarding this report or if we can be of any other assistance, please call your CT&E Project Manager at (907) 562-2343.

The following descriptors may be found on your report which will serve to further qualify the data.

U	Indicates the analyte was analyzed for but not detected.
F	Indicates an estimated value that falls below PQL, but is greater than the MDL.
B	Indicates the analyte is found in the blank associated with the sample.
*	The analyte has exceeded allowable limits.
GT	Greater Than
D	Secondary Dilution
LT	Less Than
!	Surrogate out of range

CT&E Environmental Services Inc.

CT&E Ref.#	1017294001	**Client PO#**	
Client Name	Shannon & Wilson-Fairbanks	**Printed Date/Time**	12/07/2001 14:54
Project Name/#	Jack's	**Collected Date/Time**	11/30/2001 13:10
Client Sample ID	11096-113001-2	**Received Date/Time**	11/30/2001 16:15
Matrix	Gas & Air	**Technical Director**	**Stephen C. Ede**
Ordered By		**Released By**	Shawn Poston

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Fuels Department								
Benzene	5.22	0.780	ppm	CTE 8015M/8021B		12/06/01	12/06/01	RMV
Toluene	5.01	0.660	ppm	CTE 8015M/8021B		12/06/01	12/06/01	RMV
Ethylbenzene	0.580 U	0.580	ppm	CTE 8015M/8021B		12/06/01	12/06/01	RMV
P & M -Xylene	4.20	0.580	ppm	CTE 8015M/8021B		12/06/01	12/06/01	RMV
o-Xylene	2.58	0.580	ppm	CTE 8015M/8021B		12/06/01	12/06/01	RMV

CT&E Environmental Services Inc.

CT&E Ref.#	1017294002	**Client PO#**	
Client Name	Shannon & Wilson-Fairbanks	**Printed Date/Time**	12/07/2001 14:54
Project Name/#	Jack's	**Collected Date/Time**	11/30/2001 12:50
Client Sample ID	11096-113001-6	**Received Date/Time**	11/30/2001 16:15
Matrix	Gas & Air	**Technical Director**	**Stephen C. Ede**
Ordered By		**Released By**	Shawn Paxton

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Fuels Department								
Benzene	25.8	0.780	ppm	CTE 8015M/8021B		12/06/01	12/06/01	RMV
Toluene	17.8	0.660	ppm	CTE 8015M/8021B		12/06/01	12/06/01	RMV
Ethylbenzene	0.580 U	0.580	ppm	CTE 8015M/8021B		12/06/01	12/06/01	RMV
P & M -Xylene	2.18	0.580	ppm	CTE 8015M/8021B		12/06/01	12/06/01	RMV
O-Xylene	0.730	0.580	ppm	CTE 8015M/8021B		12/06/01	12/06/01	RMV

CT&E Environmental Services Inc.

CT&E Ref.#	1017294003	**Client PO#**	
Client Name	Shannon & Wilson-Fairbanks	**Printed Date/Time**	12/07/2001 14:54
Project Name/#	Jack's	**Collected Date/Time**	11/30/2001 12:30
Client Sample ID	11096-113001-8	**Received Date/Time**	11/30/2001 16:15
Matrix	Gas & Air	**Technical Director**	**Stephen C. Ede**
Ordered By		**Released By**	Shawn Poston

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Fuels Department								
Benzene	51.1	0.780	ppm	CTE 8015M/8021B		12/06/01	12/06/01	RMV
Toluene	47.6	0.660	ppm	CTE 8015M/8021B		12/06/01	12/06/01	RMV
Ethylbenzene	1.71	0.580	ppm	CTE 8015M/8021B		12/06/01	12/06/01	RMV
P & M -Xylene	5.40	0.580	ppm	CTE 8015M/8021B		12/06/01	12/06/01	RMV
o-Xylene	1.71	0.580	ppm	CTE 8015M/8021B		12/06/01	12/06/01	RMV

CT&E Environmental Services Inc.

CT&E Ref.#	408321 Method Blank	**Printed Date/Time**	12/11/2001 10:23
Client Name	Shannon & Wilson-Fairbanks	**Prep Batch**	VXX 8714
Project Name/#	Jack's	**Method**	
Matrix	Gas & Air	**Date**	12/06/2001

QC results affect the following production samples:

1017294001, 1017294002, 1017294003

Parameter	Results	PQL	Units	Analysis Date	Init
Volatile Fuels Department					
Gasoline Range Organics	20.0 U	20.0	ppm	12/07/01	RMV
Benzene	0.780 U	0.780	ppm	12/07/01	RMV
Toluene	0.460F	0.660	ppm	12/07/01	RMV
Ethylbenzene	0.580 U	0.580	ppm	12/07/01	RMV
P & M -Xylene	0.580 U	0.580	ppm	12/07/01	RMV
o-Xylene	0.580 U	0.580	ppm	12/07/01	RMV

Batch VFC 4953
Method CTE 8015M/8021B
Instrument HP 5890 Series II PID+FID VCA

CT&E Environmental Services Inc.

CT&E Ref.#	408322 Lab Control Sample	**Printed Date/Time**	12/11/2001 10:23
		Prep Batch	VXX 8714
Client Name	Shannon & Wilson-Fairbanks	**Method**	
Project Name/#	Jack's	**Date**	12/06/2001
Matrix	Gas & Air		

QC results affect the following production samples:

1017294001, 1017294002, 1017294003

Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date	Init
o-Xylene	LCS	8.49	89	(70-130)			9.5 ppmv	12/06/01	RMV
Toluene	LCS	9.16	90	(70-130)			10.2 ppmv	12/06/01	RMV
P & M -Xylene	LCS	17.4	85	(70-130)			20.6 ppmv	12/06/01	RMV
Gasoline Range Organics	LCS	231	116	(70-130)			200 ppmv	12/06/01	RMV
Ethylbenzene	LCS	8.41	86	(70-130)			9.8 ppmv	12/06/01	RMV
Benzene	LCS	8.44	84	(70-130)			10 ppmv	12/06/01	RMV

Batch VFC 4951
Method CTE 8015M/8021B
Instrument HP 5890 Series II PID+FID VCA

CT&E Environmental Services Inc.

CT&E Ref.#	408323 Duplicate	**Printed Date/Time**	12/11/2001 10:23
Client Name	Shannon & Wilson-Fairbanks	**Prep Batch**	VXX 8714
Project Name/#	Jack's	**Method**	
Original	1017878002	**Date**	12/06/2001
Matrix	Gas & Air		

QC results affect the following production samples:
1017294001, 1017294002, 1017294003

Parameter	Original Result	QC Result	RPD	RPD Limits	Analysis Date	Init
Volatile Fuels Department						
Gasoline Range Organics	20.0 U	20.0 U	0	(< 50)	12/07/01	RMV
Benzene	0.780 U	0.780 U	0	(< 50)	12/07/01	RMV
Toluene	0.660 U	0.660 U	0	(< 50)	12/07/01	RMV
Ethylbenzene	0.580 U	0.580 U	0	(< 50)	12/07/01	RMV
P & M -Xylene	0.580 U	0.580 U	0	(< 50)	12/07/01	RMV
o-Xylene	0.580 U	0.580 U	0	(< 50)	12/07/01	RMV

Batch VFC 4953
Method CTE 8015M/8021B
Instrument HP 5890 Series II PID+FID VCA

CHAIN OF CUSTODY RECORD

1017294

CT&E Environmental Services Inc.
Laboratory Division

(1)

CLIENT: SRW

CONTACT: DENNIS FULLER PHONE NO: ( ) ~~479~~ 4790600

PROJECT: JACK'S PWSID#:

REPORTS TO: D. F. FAX NO: ( ) 479 5691

INVOICE TO: SRW QUOTE#

P.O. NUMBER: JOB 31-1-11096

CT&E Reference:

PAGE _____ OF _____

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No. CONTAINERS	SAMPLE TYPE C = COMP G = GRAB	Preservatives Used	Analysis Required (3) BTEX	REMARKS
(1)	11096-113001-2	11/30/01	1310	AIR	1	G		1	
(2)	11096-113001-6	"	1250	"	1	G		1	
(3)	11096-113001-8	"	1230	"	1	G		1	

(5)

Collected/Relinquished By: (1)	Date	Time	Received By:
	11/30/01	1615	
Relinquished By: (2)	Date	Time	Received By:
	11/30/01	16:45	
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received For Laboratory By:
	12/3/01	0750	

(4)

Shipping Carrier: HAND

Shipping Ticket No:

Temperature C: AMBIENT

Data Deliverables: (Level I) Level II Level III EDD Type:

Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT

Requested Turnaround Time and Special Instructions:

STANDARD

200 W. Potter Drive **Anchorage, AK 99518** Tel: (907) 562-2343 Fax: (907) 561-5301
3180 Peger Road **Fairbanks, AK 99701** Tel: (907) 474-8656 Fax: (907) 474-9685

White - Retained by Lab (Project File) Yellow - Returned with Report Pink - Retained by Sampler

0-720

CT&E Environmental Services Inc.

SAMPLE RECEIPT FORM

CT&E WO# 1017294

Yes	No	
	✓	Are samples **RUSH**, priority, or *within 72 hrs.* of **hold time**?
		If yes have you done *e-mail notification*?
	✓	Are samples *within 24 hrs.* of **hold time** or **due date**?
		If yes, have you *spoken with* Supervisor?
	✓	Are there any **problems** (e.g., ids, analyses)?
✓		Were samples preserved correctly and pH verified?
		Has Project Manager been notified of problems?
✓		Is this an ACOE / AFCEE / ADEC project?
✓		Will a **data package** be required?
		If this is for PWS, provide **PWSID.**
		Is there a **quote** for this project?
	✓	Will ~~courier charges~~ apply?

Completed by (sign): _____ **(print):** William T. Ankiewicz

Due Date: 12-11-01
Received Date/Time: 11-30-01
Received Temperature: AMBIENT
Matrix of each Sample:
4 " " 1-3
" "
" "
Trip Blank
BMS/BMSD

Additional Sample Remarks:
Extra Sample Volume?
Limited Sample Volume?
Field pres'd for volatiles?
Field-filtered for dissolved ?
Lab-filtered for dissolved ?
Ref Lab required?

Notes:

*********The following *must* be completed for *all* ACOE & AFCEE: *********

Yes	No	
		Is received temperature 4 ± 2°C? Temp:
		Thermometer used:
		Was there an airbill, etc.? Note #:
		Was cooler sealed with custody seals? Fax'd to COE?
		# / where:
		Were seals intact upon arrival?
		Was there a COC with cooler?
		Was the COC filled out properly?
		Did the COC indicate ACOE / AFCEE project? (if applicable)
		Did the COC and samples correspond?
		Were all samples packed to prevent breakage?
		packing material:
		Were all samples unbroken and clearly labeled?
		Were all samples sealed in separate plastic bags?
		Were all bottles for volatiles free of headspace?
		Were correct container / sample sizes submitted?
		Is sample condition good?
		Was client notified of problems? (specify below)

# of each Container Received:
950 ml amber unpres'd
950 ml amber w / HCl
500 ml amber w / H_2SO_4
1L cubies unpres'd
1L cubies w / HNO_3
1L cubies w / H_2SO_4
1L cubies w / NaOH + ZnAc
120 ml coli bottles
60 ml Nalgene
8 oz amber unpres'd
4 oz amber unpres'd
4 oz w / septa w / MeOH
40 ml vials w / HCl
3 Other (specify) STAINLESS STEEL CH
Other (specify)

Individual contacted: _____
Date / Time: _____ **Phone / Fax:** _____

Log-in proofed by: Timothy L Hanson

Form F004r03.1 (Revised 03/08/01)

TO BE COMPLETED IN ANCHORAGE UPON ARRIVAL FROM FAIRBANKS:
DATE / TIME: 12/3/01 0750 **COOLER TEMP:** 2.4°C
CUSTODY SEALS INTACT: YES / NO **# / WHERE:** 2 front
COMPLETED BY (INITIAL): TH

CT&E Environmental Services Inc.

200 W. Potter Drive
Anchorage, AK 99518-1605
Tel: (907) 562-2343
Fax: (907) 561-5301
Web: http://www.cteesi.com

Dennis Filler
Shannon & Wilson-Fairbanks
2055 HILL ROAD
Fairbanks, AK 99709

Work Order:	1021358
	Jacks Service
Client:	Shannon & Wilson-Fairbanks
Report Date:	March 28, 2002

Enclosed are the analytical results associated with the above workorder.

As required by the state of Alaska and the USEPA, a formal Quality Assurance/Quality Control Program is maintained by CT&E. A copy of our Quality Control Manual that outlines this program is available at your request.

Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth in our Quality Assurance Program Plan.

If you have any questions regarding this report or if we can be of any other assistance, please call your CT&E Project Manager at (907) 562-2343.

The following descriptors may be found on your report which will serve to further qualify the data.

U	Indicates the analyte was analyzed for but not detected.
F	Indicates an estimated value that falls below PQL, but is greater than the MDL.
B	Indicates the analyte is found in the blank associated with the sample.
*	The analyte has exceeded allowable limits.
GT	Greater Than
D	Secondary Dilution
LT	Less Than
!	Surrogate out of range

CT&E Environmental Services Inc.

CT&E Ref.#	1021358001	**Client PO#**	
Client Name	Shannon & Wilson-Fairbanks	**Printed Date/Time**	03/28/2002 14:04
Project Name/#	Jacks Service	**Collected Date/Time**	03/22/2002 13:16
Client Sample ID	1068-032202-6	**Received Date/Time**	03/22/2002 15:25
Matrix	Gas & Air	**Technical Director**	Stephen C. Ede
Ordered By		**Released By**	

Sample Remarks:

GRO/BTEX - DFB surrogate recovery is biased high due to matrix interference. Results are not affected.

Parameter	Results		PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Fuels Department									
Gasoline Range Organics	1540		20.0	ppm	CTE 8015M/8021B		03/27/02	03/27/02	SCL
Benzene	89.7		0.780	ppm	CTE 8015M/8021B		03/27/02	03/27/02	SCL
Toluene	130		0.660	ppm	CTE 8015M/8021B		03/27/02	03/27/02	SCL
Ethylbenzene	7.44		0.580	ppm	CTE 8015M/8021B		03/27/02	03/27/02	SCL
P & M -Xylene	29.4		0.580	ppm	CTE 8015M/8021B		03/27/02	03/27/02	SCL
o-Xylene	9.36		0.580	ppm	CTE 8015M/8021B		03/27/02	03/27/02	SCL
Surrogates									
1,4-Difluorobenzene <Surr>	124	!		%	CTE 8015M/8021B	60-120	03/27/02	03/27/02	SCL
4-Bromofluorobenzene <Surr>	96.8			%	CTE 8015M/8021B	50-150	03/27/02	03/27/02	SCL

CT&E Environmental Services Inc.

CT&E Ref.#	1021358002	**Client PO#**	
Client Name	Shannon & Wilson-Fairbanks	**Printed Date/Time**	03/28/2002 14:04
Project Name/#	Jacks Service	**Collected Date/Time**	03/22/2002 13:25
Client Sample ID	1068-032202-8	**Received Date/Time**	03/22/2002 15:25
Matrix	Gas & Air	**Technical Director**	Stephen C. Ede
Ordered By		**Released By**	Michael Pinkley

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Fuels Department								
Gasoline Range Organics	330	20.0	ppm	CTE 8015M/8021B		03/27/02	03/27/02	SCL
Benzene	2.58	0.780	ppm	CTE 8015M/8021B		03/27/02	03/27/02	SCL
Toluene	38.6	0.660	ppm	CTE 8015M/8021B		03/27/02	03/27/02	SCL
Ethylbenzene	3.13	0.580	ppm	CTE 8015M/8021B		03/27/02	03/27/02	SCL
P & M -Xylene	14.1	0.580	ppm	CTE 8015M/8021B		03/27/02	03/27/02	SCL
o-Xylene	4.99	0.580	ppm	CTE 8015M/8021B		03/27/02	03/27/02	SCL
Surrogates								
1,4-Difluorobenzene <Surr>	108		%	CTE 8015M/8021B	60-120	03/27/02	03/27/02	SCL
Bromofluorobenzene <Surr>	91.7		%	CTE 8015M/8021B	50-150	03/27/02	03/27/02	SCL

CHAIN OF CUSTODY RECORD

1021358

CT&E Environmental Services Inc.
Laboratory Division

(1)

CLIENT: Shannon Wilson, Inc.
CONTACT: Dennis Filler PHONE NO: (907) 479 0600
PROJECT: Jacks Service PWSID#:
REPORTS TO: 2055 Hill Rd Fairbanks FAX NO: ( )
INVOICE TO: QUOTE#
P.O. NUMBER:

CT&E Reference:

PAGE 1 OF 1

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No. CONTAINERS	SAMPLE TYPE C = COMP G = GRAB	Preservatives Used: NA Analysis Required (3): AK101/8021	REMARKS
1A	1068-032202-6	3/22	1316	AIR	1	G	X	
2A	1068-032202-8	3/22	1325	AIR	1	G	X	

(5)

Collected/Relinquished By: (1)	Date	Time	Received By:
Angela Cotter	3/22/02	1525	Melody Debenham
Relinquished By: (2)	Date	Time	Received By:
Melody Debenham	3/22/02	430	
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received For Laboratory By:
	3/26/02	0705	Cathy P Hanson

(4)

Shipping Carrier: Hand
Shipping Ticket No:
Temperature C: N/A
Data Deliverables:
Level I Level II Level III EDD Type:
Chain of Custody Seal: (Circle)
INTACT BROKEN ABSENT
Requested Turnaround Time and Special Instructions:

200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301
3180 Peger Road Fairbanks, AK 99701 Tel: (907) 474-8656 Fax: (907) 474-9685

White - Retained by Lab (Project File) Yellow - Returned with Report Pink - Retained by Sampler

CT&E Environmental Services Inc.

SAMPLE RECEIPT FORM

CT&E WO#: 102135E

Yes	No		
	✓	Are samples **RUSH**, priority, or *within 72 hrs.* of hold time?	
	NA	If yes have you done *e-mail notification*?	
	✓	Are samples *within 24 hrs.* of hold time or due date?	
	NA	If yes, have you *spoken with* Supervisor?	
	NA	Archiving bottles - if required, are they properly marked?	
	✓	Are there any **problems** (e.g., ids, analyses)?	
	NA	Were samples preserved correctly and pH verified?	
	NA	Has Project Manager been notified of problems?	
	✓	Is this a DOD project? (USACE, Navy, AFCEE):	
		If yes, complete page 2 of Sample Receipt Form	
	✓	Will a **data package** be required?	
	✓	If this is for PWS, provide **PWSID**.	
	✓	Is there a quote for this project?	
	✓	Will **courier** charges apply?	
		Method of payment?	

3/24/02 MH

Due Date: 3/29/02

Received Date/Time: 3/22/02 @ 325

Received Temperature*:

Thermometer ID: N/A

Cooler ID	Temp Blank	Cooler Temp

Matrix of each Sample:

4 " " 1, 2

" "

" "

" "

" "

Trip Blank

BMS/BMSD

Additional Sample Remarks

Extra Sample Volume?

Limited Sample Volume?

Field pres'd for volatiles?

Field-filtered for dissolved?

Lab-filtered for dissolved?

Ref Lab required?

Completed by (sign): Melody Debenham **(print):** Melody Debenham

Notes:

# of each Container Received:

- 950 ml amber unpres'd
- 950 m' amber w / HCl
- 500 ml amber w / H_2SO_4
- 1L cubies unpres'd
- 1L Cubitainers w / HNO_3
- 1L Cubitainers w / H_2SO_4
- 1L Cubitainers w / NaOH + ZnAc
- 250 mL Nalgene NaOH
- 120 ml coli bottles
- 60 ml Nalgene unpres'd
- 60 mL Nalgene w/ H_2SO_4
- 8 oz amber unpres'd
- 4 oz amber unpres'd
- 4 oz w / septa w / MeOH
- 40 ml vials w / HCl
- 40 mL ascorbic acid + HCl

2 Other (specify) steel air cylinders

Other (specify)

Other (specify)

Other (specify)

TO BE COMPLETED IN ANCHORAGE UPON ARRIVAL FROM FAIRBANKS:

DATE / TIME: 3/26/02 0705

COOLER AND TEMP BLANK READINGS*

Cooler ID	Temp Blank	Cooler	Cooler ID	Temp Blank	Cooler
	2.4	5.7			

CUSTODY SEALS INTACT: YES / NO **# / WHERE:** 2 front

COMPLETED BY (INITIAL): MH

*Temperature readings include thermometer correction factors.

Form Control (Revised 12-28-01)

CT&E Environmenta

al Services Inc.

CUSTODY SEAL

Signature: Melody Deba

Date/Time: 3/22/02 @ 430

CT&E Environment

al Services Inc.

CUSTODY SEAL

Signature: Melody Deba

Date/Time: 3/22/02 @ 430

1354

1355

1357

1358