TRANSMITTAL

THE IT GROUP
4005 Port Chicago Highway
Concord, CA 94520-1120
(925)288-9898

To: Lynn Hornecker **Date:** November 6, 2002

From: David Kelly

Subject: Interim Data Summary
Abandonment and Closure of Wells – Supplementary Information

On 6 June 2002 the Navy was given written permission NASA to demolish Building 113 and water supply well 6S/8E-9M1. The demolition work is being conducted in accordance with the Attachment 1 of the *Soil Vapor Extraction Optimization for the Remediation of UST Cluster 1 and Site Verification Activities at Various Sites, Work Plan* (IT, 2002). The following is a status of work conducted on the building and well demolition:

- 31 July 2002 - Building 113 was cleaned out to remove bird excrement and other wastes.
- 6 August 2002 - Building 113 was demolished and the construction debris was containerized for disposal.
- 27 and 28 August 2002 - Pump and downhole piping were removed from well 6S/8E-9M1. The pump and piping were staged near the well for potential reuse or disposal.
- 5 September 2002 - A video log was prepared for well 6S/8E-9M1 by lowering a downhole camera into the well.
- 11 September 2002 - Grab samples were collected from well 6S/8E-9M1 at depths of 75 and 400 feet (ft) below ground surface (bgs) and were analyzed at an off-site laboratory to determine disposal requirements

A Wellbore Video Report and video tape were generated during the video logging of the well. The video report and tape were provided in a separate transmittal dated 18 September 2002. The video log indicates that slots are visible at 73 and 143 ft bgs but the casing is corroded and highly encrusted. A possible break or bad casing joint is present at 356 ft bgs. The bottom of the well was encountered at 521 ft bgs. Well logs indicate that the well depth is 700 ft bgs.

The analytical results from the grab samples do not indicate the presence of any compounds that would impact disposal requirements. No petroleum hydrocarbons or volatile organic compounds were detected and metals concentrations are within background ranges established during the Remedial Investigation. Both coliform and *E.Coli* were detected in the samples from 75 and 400 ft bgs. These bacteria are likely detected in the well because of the bird excrement that was present in Building 113 prior to demolition.

Available well log data will be reviewed to determine actual well installation details. A method will be developed for well closure to meet Stanislaus County Requirements and a well destruction permit will be prepared. Well destruction work will be scheduled pending approval by Stanislaus County.

cc: B Hulet
T Barry
Project File

Summary of Analytical Results from Agriculture Well, NASA Crows Landing

Sample ID		6/8-9M1-75(9/02)		6/8-9M1-400(9/02)	
Sample Depth		75 feet bgs		400 feet bgs	
Date Collected		9/11/2002		9/11/2002	
Parameter	Units	Result	Qual	Result	Qual
General Chemistry					
ALKALINITY	mg/L	274		235	
CHLORIDE	mg/L	103		115	
NITRATE AS N	mg/L	10.2		12.3	
NITRITE	mg/L	0.5	U	0.63	U
PHOSPHATE	mg/L	1	U	1.3	U
SULFATE	mg/L	235		239	
SOLIDS, TOTAL DISSOLVED (TDS	mg/L	828		932	
Coliform (SM 9223)					
Total Coliform by MMO-MUG	NA	Present		Present	
Total E. Coli by MMO-MUG	NA	Present		Present	
Metals (EPA 6010B/7470A)					
ANTIMONY	ug/L	10	U	10	U
ARSENIC	ug/L	5	U	5	U
BARIUM	ug/L	26.8		21.6	
BERYLLIUM	ug/L	2	U	2	U
CADMIUM	ug/L	2	U	2	U
CHROMIUM	ug/L	2.3		4.9	
COBALT	ug/L	0.4		0.29	
COPPER	ug/L	4.7		3	
LEAD	ug/L	4.9		2.2	
MERCURY	ug/L	0.16		0.16	
MOLYBDENUM	ug/L	5	U	1.9	
NICKEL	ug/L	6.2		5.2	
SELENIUM	ug/L	3.9		2.9	
SILVER	ug/L	0.5		10	U
THALLIUM	ug/L	4.3		4.5	
VANADIUM	ug/L	0.98		10	U
ZINC	ug/L	40.6		45.1	
Hexavalent Chromium (EPA 7196A)					
Hexavalent Chromium	mg/L	0.02	U	0.02	U
Total Petroleum Hydrocarbons (EPA 8015B)					
GASOLINE	mg/L	0.05	U	0.05	U
JP-4	mg/L	0.05	U	0.05	U
DIESEL	mg/L	0.096	U	0.096	U
MOTOR OIL	mg/L	0.096	U	0.096	U
Volatile Organic Compounds (EPA					
1,1,1,2-TETRACHLOROETHANE	ug/L	0.5	U	0.5	U
1,1,1-TRICHLOROETHANE	ug/L	0.5	U	0.5	U
1,1,2,2-TETRACHLOROETHANE	ug/L	0.5	U	0.5	U
1,1,2-TRICHLOROETHANE	ug/L	0.5	U	0.5	U
1,1-DICHLOROETHANE	ug/L	0.5	U	0.5	U
1,1-DICHLOROETHENE	ug/L	0.56	U	0.56	U
1,1-DICHLOROPROPENE	ug/L	0.5	U	0.5	U
1,2,3-TRICHLOROBENZENE	ug/L	0.5	U	0.5	U
1,2,3-TRICHLOROPROPANE	ug/L	0.5	U	0.5	U
1,2,4-TRICHLOROBENZENE	ug/L	0.5	U	0.5	U
1,2,4-TRIMETHYLBENZENE	ug/L	0.5	U	0.5	U
1,2-DIBROMO-3-CHLOROPROPAN	ug/L	0.59	U	0.59	U
1,2-DIBROMOETHANE	ug/L	0.5	U	0.5	U
1,2-DICHLOROBENZENE	ug/L	0.5	U	0.5	U
1,2-DICHLOROETHANE	ug/L	0.5	U	0.5	U
1,2-DICHLOROPROPANE	ug/L	0.5	U	0.5	U
1,3,5-TRIMETHYLBENZENE	ug/L	0.5	U	0.5	U
1,3-DICHLOROBENZENE	ug/L	0.5	U	0.5	U
1,3-DICHLOROPROPANE	ug/L	0.5	U	0.5	U

Summary of Analytical Results from Agriculture Well, NASA Crows Landing

Sample ID		6/8-9M1-75(9/02)		6/8-9M1-400(9/02)	
Sample Depth		75 feet bgs		400 feet bgs	
Date Collected		9/11/2002		9/11/2002	
Parameter	Units	Result	Qual	Result	Qual
1,4-DICHLOROBENZENE	ug/L	0.5	U	0.5	U
2-BUTANONE	ug/L	10	U	10	U
2-HEXANONE	ug/L	10	U	10	U
ACETONE	ug/L	10	U	10	U
BENZENE	ug/L	0.5	U	0.5	U
BROMOBENZENE	ug/L	0.5	U	0.5	U
BROMOCHLOROMETHANE	ug/L	0.5	U	0.5	U
BROMODICHLOROMETHANE	ug/L	0.5	U	0.5	U
BROMOFORM	ug/L	0.5	U	0.5	U
BROMOMETHANE	ug/L	0.5	U	0.5	U
CARBON DISULFIDE	ug/L	10	U	10	U
CARBON TETRACHLORIDE	ug/L	0.5	U	0.5	U
CHLOROBENZENE	ug/L	0.5	U	0.5	U
CHLOROETHANE	ug/L	0.5	U	0.5	U
CHLOROFORM	ug/L	1	U	0.9	U
CHLOROMETHANE	ug/L	0.5	U	0.5	U
CIS-1,2-DICHLOROETHENE	ug/L	0.5	U	0.5	U
CIS-1,3-DICHLOROPROPENE	ug/L	0.5	U	0.5	U
CUMENE	ug/L	0.5	U	0.5	U
DIBROMOCHLOROMETHANE	ug/L	0.5	U	0.5	U
DIBROMOMETHANE	ug/L	0.5	U	0.5	U
DICHLORODIFLUOROMETHANE	ug/L	0.5	U	0.5	U
ETHYLBENZENE	ug/L	0.5	U	0.5	U
HEXACHLOROBUTADIENE	ug/L	0.5	U	0.5	U
METHYL ISOBUTYL KETONE	ug/L	10	U	10	U
METHYLENE CHLORIDE	ug/L	1.3	U	1.5	U
MTBE	ug/L	1	U	1	U
N-BUTYLBENZENE	ug/L	0.5	U	0.5	U
N-PROPYLBENZENE	ug/L	0.5	U	0.5	U
NAPHTHALENE	ug/L	0.5	U	0.5	U
O-CHLOROTOLUENE	ug/L	0.5	U	0.5	U
P-CHLOROTOLUENE	ug/L	0.5	U	0.5	U
P-CYMENE	ug/L	0.5	U	0.5	U
SEC-BUTYLBENZENE	ug/L	0.5	U	0.5	U
SEC-DICHLOROPROPANE	ug/L	0.5	U	0.5	U
STYRENE	ug/L	0.5	U	0.5	U
TERT-BUTYL ALCOHOL	ug/L	20	U	20	U
TERT-BUTYLBENZENE	ug/L	0.5	U	0.5	U
TETRACHLOROETHENE	ug/L	0.5	U	0.5	U
TOLUENE	ug/L	0.5	U	0.5	U
TRANS-1,2-DICHLOROETHENE	ug/L	0.5	U	0.5	U
TRANS-1,3-DICHLOROPROPENE	ug/L	0.5	U	0.5	U
TRICHLOROETHENE	ug/L	0.5	U	0.5	U
TRICHLOROFLUOROMETHANE	ug/L	0.5	U	0.5	U
VINYL CHLORIDE	ug/L	0.5	U	0.5	U
XYLENES(TOTAL)	ug/L	1	U	1	U

mg/L denotes milligrams per liter
ug/l denotes microgram per liter
U qualifier indicates that the analyte was not detected at the specified reporting limit
bgs denotes below ground surface
"Present" indicates 1 or more colony forming unit per 100 milliliters

1.0 Data Quality Assessment

One sample was collected from an irrigation supply well at the NASA Crows Landing site on September 11, 2002. The sample was sent to Applies Physics and Chemistry Laboratory (APCL) for the following analysis.

- TPH as diesel and motor oil by EPA Method 8015B (with silica gel cleanup EPA Method 3630C)
- TPH as gasoline and jet fuel by EPA Method 8015B
- Volatile Organic Compounds (VOC) by EPA Method 8260B
- Title 22 Metals by EPA Method 6010B/7470A
- Anions (Chloride, Nitrate, Nitrite, Sulfate, Phosphate) by EPA Method 9056
- Alkalinity by EPA Method 310.1
- Total Dissolved Solids (TDS) by EPA 160.1

The sample was also analyzed for hexavalent chromium by EPA Method 7196A at Agriculture and Priority Pollutants Laboratory (APPL), and coliform by SM 9223 at BSK Analytical Laboratory.

1.1 Data Quality Indicators

Analytical data for this project were assessed in terms of precision, accuracy, representativeness and comparability, based on the requirements of the analytical methods and the *Sampling and Analysis Plan, Soil Vapor Extraction Optimization for the Remediation of UST Cluster 1 and Site Verification Activities at Various Sites, Revision 2* (IT, 2001b).

The analytical data were reported in two sample delivery groups (SDGs) shown below. Both SDGs were reviewed by an IT Project Chemist at EPA Level III. The findings of the data review process are summarized in this section.

APCL SDG: 02-4836	APPL/BSK SDG: 39301
6/8-9M1-75	6/8-9M1-75
6/8-9M1-400	6/8-9M1-400
Trip Blank	

1.2 Level III Data Validation

The following laboratory quality control (QC) parameters were evaluated during Level III validation process:

- Sample receipt, preservation and holding times (representativeness)
- Method blanks
- Surrogate standard recoveries (accuracy)
- Calibrations (initial and continuing)
- Internal standards (EPA Method 8260B only)
- Laboratory control spikes (LCSs)/laboratory control spike duplicates (precision and accuracy)
- Interference check sample and serial dilutions (EPA Method 6010B/7000 only)
- Matrix spikes (MSs)/matrix spike duplicates (MSDs) (precision and accuracy)

1.3 Sample Receipt, Temperature, and Holding Times

All sample shipments were received at the laboratory within the EPA-specified temperature range of 2 to 6 degrees Centigrade (°C). Sample preservation was according to the EPA method requirements. All holding times were met for all analyses.

1.4 Method Blanks and Trip Blanks

A method blank is a matrix equivalent sample used to check reagent or process introduced contamination during the method preparation and analysis. Trip blanks are 40 milliliter volatile organic analysis vials of organic-free water, which are kept with the field sample containers from the time they leave the laboratory until the time they are returned to the laboratory. The purpose of trip blanks is to determine whether samples have been contaminated with VOCs during transportation or sample collection. The method blanks and trip blanks did not contain any analytes of interest at or above the method reporting limits with the following exceptions:

VOC (EPA Method 8260B)

Methylene chloride is a common laboratory contaminant that was detected at low concentrations in the trip blank and project samples. Methylene chloride results were changed to not detected (U) in the samples due to the blank contamination. Data usability was not affected.

Chloroform was detected at low concentrations in the method blank, trip blank and project samples due to laboratory contamination. The sample results for chloroform were changed to not detected (U) at the reported concentration due to the blank contamination. Data usability was not affected.

TPH as gasoline (EPA Method 8015B)

Gasoline range organic compounds were detected in the method blanks, trip blanks and the associated project samples at concentrations below the reporting limit. The trace contamination represents chromatographic peaks in the gasoline hydrocarbon range and is not a true gasoline hydrocarbon pattern. The sample results were corrected to "not detected" (U). Data usability was not affected.

Metals (EPA Method 6010B)

Silver, cadmium, molybdenum and beryllium were detected a low concentrations in either the method blanks or the initial and continuing calibration blanks. Some of these elements were also detected in project samples at concentrations less than five times the associated blank concentrations. In these instances, the sample results were reported as not detected "U" at the reporting limit. Data usability was not affected.

1.5 Surrogate Standards

Surrogate standards are added prior to extraction and analysis for EPA Methods 8260B and 8015B to monitor the efficiency of the extraction and the accuracy of the analysis for each sample. All of the surrogate spike recoveries were within the laboratory specified control limits for all samples.

1.6 Calibrations

The requirements for initial and continuing calibrations were met for all analyses.

1.7 Internal Standards

Internal standards are usually synthetic compounds, which are similar in chemical behavior to the target analytes. They are added to samples at the time of instrument analysis and are used to quantify results through internal standard calibration procedures. Internal standard recoveries are used to correct for injection and detector variability. All internal standard areas and retention times for EPA Method 8260B were within the method specified criteria.

1.8 Laboratory Control Samples

Laboratory control samples are blank matrix equivalent spiked samples that are carried through the entire method preparation and analysis. They are used to evaluate the accuracy and precision of the preparation and analysis without matrix interference. LCSs are prepared with each batch of samples for every analysis. All the LCS recoveries were within the specified control limits for all analyses.

1.9 Matrix Spikes and Matrix Spike Duplicates

MS and MSD are representative matrix samples spiked with known concentrations of analytes and carried through the entire method preparation and analysis. They are used to evaluate any bias introduced to the method due to matrix interferences, and to measure accuracy (percent recovery) and precision using Relative Percent Difference (RPD) of recoveries for each analytical batch. 6/8-9M1-400 was used for the MS/MSD sample for EPA 8260B, and 6/89M1-75 was used for the MS/MSD sample for EPA 8015B, EPA 7470A, EPA 7196A. All percent recoveries and RPDs were within the specified control limits for these analyses indicating no matrix interference from this matrix.

2.0 Chemical Data Quality and Usability

In summary, all of the QC data are indicative of acceptable analytical method performance. The anomalies mentioned above do not invalidate the data for its intended use. All of the data are valid and usable.

APCL

Applied Physics & Chemistry Laboratory

13760 Magnolia Ave. Chino CA 91710
Tel. (909) 590-1828 Fax (909) 590-1498

October 15,2002

Shaw E & I
Attention: Rose Condit
4005 Port Chicago Highway,
Concord CA 94520-1120

Dear Rose,

This package contains samples in our Service ID 02-4836 and your project 800063 Crows Landing. Enclosed please find:

(1) Original Final Report.
(2) Original Chain of Custody.
(3) One Original and one compact disc of Level C Data Package Deliverable.
(4) One Diskette containing EDD Deliverable.

If anything is missing or you have any questions, please feel free to contact me.

Respectfully submitted,

Regina Kirakozova
Associate QA/QC Director
Applied P & Ch Laboratory

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Submitted to:
Shaw E & I
Attention: Rose Condit
4005 Port Chicago Highway
Concord CA 94520-1120
Tel: (925)288-9898 Fax: (925)827-5927

Service ID #: 801-024836
Collected by: RC/WD
Collected on: 09/11/02

Received: 09/12/02
Extracted: 09/17/02
Tested: 09/12-20/02
Reported: 09/23/02

Sample Description: Water
Project Description: 800063 Crows Landing

Analysis of Water Samples

Component Analyzed	Method	Unit	PQL	Analysis Result 6/8-9M1-75(9/02) 02-04836-1	Analysis Result 6/8-9M1-400 (9/02) 02-04836-2
ALKALINITY	310.1	mg-$CaCO_3$/L	20	274	235
SOLIDS, TOTAL DISSOLVED (TDS)	160.1	mg/L	10	828	932
Dilution Factor				10	12.5
CHLORIDE	9056	mg/L	0.2	103	115
NITRATE AS N	9056	mg/L	0.04	10.2	12.3
NITRITE AS N	9056	mg/L	0.05	<0.5	<0.63
ORTHOPHOSPHATE AS P	9056	mg/L	0.1	<1	<1.3
SULFATE	9056	mg/L	0.5	235	239
METALS					
Dilution Factor				1	1
ANTIMONY	6010B	µg/L	10	<10	<10
ARSENIC	6010B	µg/L	5	<5	<5
BARIUM	6010B	µg/L	10	26.8	21.6
BERYLLIUM	6010B	µg/L	2	0.17J	<2
CADMIUM	6010B	µg/L	2	0.62J	0.34J
CHROMIUM	6010B	µg/L	5	2.3J	4.9J
COBALT	6010B	µg/L	5	0.40J	0.29J
COPPER	6010B	µg/L	10	4.7J	3.0J
LEAD	6010B	µg/L	5	4.9J	2.2J
MERCURY	7470A	µg/L	0.5	0.16J	0.16J
MOLYBDENUM	6010B	µg/L	5	2.7J	1.9J
NICKEL	6010B	µg/L	5	6.2	5.2
SELENIUM	6010B	µg/L	10	3.9J	2.9J
SILVER	6010B	µg/L	10	0.50J	<10
THALLIUM	6010B	µg/L	10	4.3J	4.5J
VANADIUM	6010B	µg/L	10	0.98J	<10
ZINC	6010B	µg/L	10	40.6	45.1
Dilution Factor				0.96	0.96
DIESEL RANGE ORGANICS	M8015E	mg/L	0.1	<0.096 [a]	<0.096 [a]
Dilution Factor				0.96	0.96
MOTOR OIL RANGE ORGANICS	M8015E	mg/L	0.1	<0.096 [a]	<0.096 [a]

Component Analyzed	Method	Unit	PQL	Analysis Result 6/8-9M1-75(9/02) 02-04836-1	Analysis Result 6/8-9M1-400 (9/02) 02-04836-2	Analysis Result TB-9/11/02 02-04836-3
Dilution Factor				1	1	1
GASOLINE RANGE ORGANICS	M8015V	mg/L	0.05	0.03J	0.02J	0.01J
Dilution Factor				1	1	1
JP-4	M8015V	mg/L	0.05	<0.05	<0.05	<0.05

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result 6/8-9M1-75(9/02) 02-04836-1	6/8-9M1-400 (9/02) 02-04836-2	TB-9/11/02 02-04836-3
VOLATILE ORGANICS						
Dilution Factor				1	1	1
ACETONE	8260B	µg/L	10	<10	<10	<10
BENZENE	8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMOBENZENE	8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMOCHLOROMETHANE	8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMODICHLOROMETHANE	8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMOFORM	8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMOMETHANE	8260B	µg/L	0.5	<0.5	<0.5	<0.5
2-BUTANONE (MEK)	8260B	µg/L	10	<10	<10	<10
N-BUTYLBENZENE	8260B	µg/L	0.5	<0.5	<0.5	<0.5
SEC-BUTYLBENZENE	8260B	µg/L	0.5	<0.5	<0.5	<0.5
TERT-BUTYLBENZENE	8260B	µg/L	0.5	<0.5	<0.5	<0.5
CARBON DISULFIDE	8260B	µg/L	10	<10	<10	<10
CARBON TETRACHLORIDE	8260B	µg/L	0.5	<0.5	<0.5	<0.5
CHLOROBENZENE	8260B	µg/L	0.5	<0.5	<0.5	<0.5
DIBROMOCHLOROMETHANE	8260B	µg/L	0.5	<0.5	<0.5	<0.5
CHLOROETHANE	8260B	µg/L	0.5	<0.5	<0.5	<0.5
CHLOROFORM	8260B	µg/L	0.5	1.0	0.9	1.2
CHLOROMETHANE	8260B	µg/L	0.5	<0.5	<0.5	<0.5
2-CHLOROTOLUENE	8260B	µg/L	0.5	<0.5	<0.5	<0.5
4-CHLOROTOLUENE	8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DIBROMO-3-CHLOROPROPANE	8260B	µg/L	0.59 (b)	<0.59	<0.59	<0.59
1,2-DIBROMOETHANE (EDB)	8260B	µg/L	0.5	<0.5	<0.5	<0.5
DIBROMOMETHANE	8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DICHLOROBENZENE	8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,3-DICHLOROBENZENE	8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,4-DICHLOROBENZENE	8260B	µg/L	0.5	<0.5	<0.5	<0.5
DICHLORODIFLUOROMETHANE	8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1-DICHLOROETHANE	8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DICHLOROETHANE	8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1-DICHLOROETHENE	8260B	µg/L	0.56 (b)	<0.56	<0.56	<0.56
CIS-1,2-DICHLOROETHENE	8260B	µg/L	0.5	<0.5	<0.5	<0.5
TRANS-1,2-DICHLOROETHENE	8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DICHLOROPROPANE	8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,3-DICHLOROPROPANE	8260B	µg/L	0.5	<0.5	<0.5	<0.5
2,2-DICHLOROPROPANE	8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1-DICHLOROPROPENE	8260B	µg/L	0.5	<0.5	<0.5	<0.5
CIS-1,3-DICHLOROPROPENE	8260B	µg/L	0.5	<0.5	<0.5	<0.5
TRANS-1,3-DICHLOROPROPENE	8260B	µg/L	0.5	<0.5	<0.5	<0.5
ETHYLBENZENE	8260B	µg/L	0.5	<0.5	<0.5	<0.5

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result 6/8-9M1-75(9/02) 02-04836-1	6/8-9M1-400 (9/02) 02-04836-2	TB-9/11/02 02-04836-3
HEXACHLOROBUTADIENE	8260B	µg/L	0.5	<0.5	<0.5	<0.5
2-HEXANONE	8260B	µg/L	10	<10	<10	<10
ISOPROPYLBENZENE (CUMENE)	8260B	µg/L	0.5	<0.5	<0.5	<0.5
P-ISOPROPYLTOLUENE	8260B	µg/L	0.5	<0.5	<0.5	<0.5
METHYLENE CHLORIDE	8260B	µg/L	1.1 (b)	1.3	1.5	3.7
4-METHYL-2-PENTANONE (MIBK)	8260B	µg/L	10	<10	<10	<10
METHYL-T-BYTYL ETHER (MTBE)	8260B	µg/L	1	<1	<1	<1
NAPHTHALENE	8260B	µg/L	0.5	<0.5	<0.5	<0.5
N-PROPYLBENZENE	8260B	µg/L	0.5	<0.5	<0.5	<0.5
STYRENE	8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1,1,2-TETRACHLOROETHANE	8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1,2,2-TETRACHLOROETHANE	8260B	µg/L	0.5	<0.5	<0.5	<0.5
TETRACHLOROETHENE	8260B	µg/L	0.5	<0.5	<0.5	<0.5
TOLUENE	8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2,3-TRICHLOROBENZENE	8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2,4-TRICHLOROBENZENE	8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1,1-TRICHLOROETHANE	8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1,2-TRICHLOROETHANE	8260B	µg/L	0.5	<0.5	<0.5	<0.5
TRICHLOROETHENE	8260B	µg/L	0.5	<0.5	<0.5	<0.5
TRICHLOROFLUOROMETHANE	8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2,3-TRICHLOROPROPANE	8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2,4-TRIMETHYLBENZENE	8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,3,5-TRIMETHYLBENZENE	8260B	µg/L	0.5	<0.5	<0.5	<0.5
VINYL CHLORIDE	8260B	µg/L	0.5	<0.5	<0.5	<0.5
XYLENE (TOTAL)	8260B	µg/L	1	<1	<1	<1
T-BUTYL ALCOHOL	8260B	µg/L	20	<20	<20	<20

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit
N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required.
J: Reported between PQL and MDL.
Listed Dilution Factors (DF) are relative to the method default DF. All unlisted DFs are 1.0
(a) Sample chromatogram contained unknown isolated peaks in Diesel/Motor Oil range.
(b) MDL reported.

Respectfully submitted,

Dominic Lau
Laboratory Director
Applied P & Ch Laboratory

Hsin-Yi Lee

From: Condit, Rose [Rose.Condit@shawgrp.com]
Sent: Friday, September 13, 2002 8:33 AM
To: 'Hsin-Yi Lee'
Subject: RE: Out of office (09/13/02~09/16/02)

yes, I need silica gel cleanup

-----Original Message-----
From: Hsin-Yi Lee [mailto:HsinL@apclab.com]
Sent: Thursday, September 12, 2002 4:09 PM
To: 'Condit, Rose'
Subject: RE: Out of office (09/13/02~09/16/02)

One more question,
For Diesel/Motor Oil, Need Silica Gel clean up? sample ID 6/8-9M1-75 (9/2) and -400 (9/2)?
Just want to make sure.

Thanks

Hsin-Yi Lee

-----Original Message-----
From: Condit, Rose [mailto:Rose.Condit@shawgrp.com]
Sent: Thursday, September 12, 2002 3:54 PM
To: 'Hsin-Yi Lee'
Subject: RE: Out of office (09/13/02~09/16/02)

I need EDF but not ITEMS. We can take the EDF format and load directly into the ITEMS database....so no more need for double EDDs!! YIPPY!

-----Original Message-----
From: Hsin-Yi Lee [mailto:HsinL@apclab.com]
Sent: Thursday, September 12, 2002 4:02 PM
To: 'Condit, Rose'
Subject: RE: Out of office (09/13/02~09/16/02)

Yes. Need EDF EDDs?

-----Original Message-----
From: Condit, Rose [mailto:Rose.Condit@shawgrp.com]
Sent: Thursday, September 12, 2002 3:49 PM
To: 'Hsin-Yi Lee'
Subject: RE: Out of office (09/13/02~09/16/02)

Did you get samples from Crows Landing today?

-----Original Message-----
From: Hsin-Yi Lee [mailto:HsinL@apclab.com]
Sent: Thursday, September 12, 2002 3:55 PM
To: Vicky Taylor (E-mail); Deirdre O'leary (E-mail); Susan Huang (E-mail); Suman Sharma (E-mail); J. D. Lenzen (E-mail); Rose Condit

Level C Data Package Deliverables

General Information

Project: CORWS LANDING

APCL Service ID: 02-4836

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino, CA 91710
Telephone (909)590-1828
Fax (909)590-1498

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Case Narrative

Project: Crows Landing/800063

For The IT Group

APCL Service No: 02-4836

1. Sample Identification

The sample identifications are listed in the following table:

The IT Group Sample ID	APCL Sample ID
6/8-9M1-75(9/02)	02-04836-1
6/8-9M1-400 (9/02)	02-04836-2
TB-9/11/02	02-04836-3

2. Analytical Methodology

Samples are analyzed by EPA methods

310.1 (Alkalinity),
160.1 (Solids, Total Dissolved (TDS)),
9056 (Anions, by IC),
6010B/7470A (TTLC 17 Metals),
M8015E (TPH: Diesel),
M8015E (TPH: Motor Oil),
M8015V (Gasoline),
M8015V (JP-4),
8260 (Volatile organics),

3. Holding Time

All samples were extracted, digested and analyzed within the holding times defined by the appropriate EPA methods of the analyses.

4. Preservation

All samples were preserved and stored according to the appropriate EPA methods.

5. Tele-log

None

6. Anomaly

None

7. Note

Silica Gel clean-up was performed in TPH analyses.

"I certify that these data are technically accurate, complete, and in compliance with the terms and conditions of the contract, for other than the conditions detailed above. Release of the data contained in the hardcopy data package and its electronic data deliverable submitted on diskette had been authorized by the Laboratory Manager or her/his designee, as verified by the following signature."

Respectfully submitted,

Regina Kirakozova
Associate QA/QC Director
Applied P & Ch Laboratory

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document No. 547376
Page 1 of 1

Project Name/No.[1] 800023 Crows Landing
Sample Team Members[2] RC / Water D
Profit Center No.[3]
Project Manager[4] B. Hulet
Purchase Order No.[6]
Required Report Date[11]

Samples Shipment Date[7] 9/11/02
Lab Destination[8] APCL
Lab Contact[9] HSIN Lee
Project Contact/Phone[12] RCondit 925-288-2157
Carrier/Waybill No.[13] UPS CA 916 9-01 8000

Bill to:[5] IT-Concord, Doug Cooley
Report to:[10] IT-Concord, Rose Condit

ONE CONTAINER PER LINE

Sample Number[14]	Sample Description/Type[15]	Date/Time Collected[16]	Container Type[17]	Sample Volume[18]	Preservative[19]	Requested Testing Program[20]	Condition on Receipt[21]	Disposal Record No.[22]
6/8-9M1-75(9/02)	Ag well 75' bgs	9/11/02 755	Liter	2	None	TPH-DSL/MO		
"	"	"	VOA	5	HCL	TPH-g/JF 8260+TBA+MTBE+EDB	FOR LAB USE ONLY	
"	"	"	HDPE	1 Liter	None	Anions, Alkalinity TDS		
"	"	"	HDPE	1 Liter	None	CAM17 Metals	* Filter and Acidity in Lab	
6/8-9M1-400(9/02)	Ag well 400' bgs	9/11/02 845	Liter	2	None	TPH-DSL/MO	Good Condition	
"	"	"	VOA	5	HCL	TPH-g/JF 8260+TBA, MTBE, EDB	FOR LAB USE 4836	
"	"	"	HDPE	1 Liter	None	Anions, TDS Alkalinity		
"	"	"	HDPE	1 Liter	None	CAM17 Metals	* Filter + Acidity in Lab	

Special Instructions:[23]

Possible Hazard Identification:[24] Non-hazard ☒ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐

Sample Disposal:[25] Return to Client ☐ Disposal by Lab ☒ Archive _____ (mos.)

Turnaround Time Required:[26] Normal ☒ Rush ☐

QC Level:[27] I. ☐ II. ☐ III. ☒ Project Specific (specify):

	Relinquished by[28] (Signature/Affiliation)	Date/Time	Received by[28] (Signature/Affiliation)	Date/Time
1.	Rose Condit	Date: 9/11/02 Time:	USPS	Date: 9/11/02 Time:
2.		Date: Time:		Date: 9/12/2 Time: 0900
3.		Date: Time:		Date: Time:

Comments:[29] * Metals Not Acidified - Filter then Acidify in Lab
UPS TRACKING - 1Z 71V 92 01 9391 4156

MCA 3/15/91

White: To accompany samples
Yellow: Field copy
*See back of form for special instructions.

IT INTERNATIONAL TECHNOLOGY CORPORATION

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD (cont.)*

Reference Document No.[30] 47376
Page 2 of 2

Project Name Crows Landing Project No. 800063 Samples Shipment Date 9/11/02

ONE CONTAINER PER LINE

Sample[14] Number	Sample[15] Description/Type	Date/Time[16] Collected	Container[17] Type	Sample[18] Volume	Pre-[19] servative	Requested Testing[20] Program	Condition on[21] Receipt	Disposal[22] Record No.
TB - 9/11/02	tripblank	—	VOA	2	HCl	TPH-G/JF 8260 + TBA, MTBE, EDB		
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							4836 FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	

White: To accompany samples Yellow: Field copy *See back of form for special instructions.

MCA 3/15/91

BSK ANALYTICAL LABORATORIES

RECEIVED
OCT 0 3 2002
BY:

Certificate of Analysis
ELAP Certificate #1180

Report Issue Date: 09/26/2002

Diane Anderson
APPL Inc.
4203 West Swift
Fresno, CA 93722

BSK Submission #: 2002091205
BSK Sample ID #: 250800

Project ID / Desc.:
Submission Comments:
Sample Type: Liquid
Sample Description: AP38188 6/8-9M1-75 (9/02)
Bacteriological Lab ID: 13628
Bacteriological Type: Routine
Residual Chlorine (mg/L): N/A
Field Turbidity (NTU): N/A

Date Sampled: 09/11/2002
Time Sampled: 0755
Date Received: 09/11/2002
Sampled by: CLIENT

Analyte	Method	Result	Innoculation Date:Time	Read Date:Time Run No.:43190
Total Coliform by MMO-MUG	SM 9223	Present	09/11/2002 @ 15:41	09/12/2002 @ 10:30
al E coli. by MMO-MUG	SM 9223	Present	09/11/2002 @ 15:41	09/12/2002 @ 10:30

Approved by: _____

...N: Most Probable Number
CFU: Colony Forming Unit
Absent: Less than 1 CFU/100mLs
Present: 1 or more CFU/100mLs

DLR: detection limit for reporting
PQL: practical quantitation limit
ND: none detected at PQL
P: preliminary result
S: suspect result. See Cover Letter for comments

1414 Stanislaus Street Fresno, CA 93706-1623 Phone 559-497-2888, In CA 800-877-8310 Fax 559-485-6935

BSK ANALYTICAL LABORATORIES

Certificate of Analysis
ELAP Certificate #1180

Report Issue Date: 09/26/2002

Diane Anderson
APPL Inc.
4203 West Swift
Fresno, CA 93722

BSK Submission #: 2002091205
BSK Sample ID #: 250801

Project ID / Desc.:
Submission Comments:
Sample Type: Liquid
Sample Description: AP38189 6/8-9M1-400 (9/02)
Bacteriological Lab ID: 13629
Bacteriological Type: Routine
Residual Chlorine (mg/L): N/A
Field Turbidity (NTU): N/A

Date Sampled: 09/11/2002
Time Sampled: 0845
Date Received: 09/11/2002
Sampled by: CLIENT

Analyte	Method	Result	Innoculation Date:Time	Read Date:Time Run No.:43190
Total Coliform by MMO-MUG	SM 9223	Present	09/11/2002 @ 15:41	09/12/2002 @ 10:30
al E coli. by MMO-MUG	SM 9223	Present	09/11/2002 @ 15:41	09/12/2002 @ 10:30

Approved by: _____

MPN: Most Probable Number
CFU: Colony Forming Unit
Absent: Less than 1 CFU/100mLs
Present: 1 or more CFU/100mLs

DLR: detection limit for reporting
PQL: practical quantitation limit
ND: none detected at PQL
P: preliminary result
S: suspect result. See Cover Letter for comments

1414 Stanislaus Street Fresno, CA 93706-1623 Phone 559-497-2888, In CA 800-877-8310 Fax 559-485-6935

4203 West Swift ∇ Fresno, California 93722 ∇ Phone 559-275-2175 ∇ Fax 559-275-4422

Case Narrative
EPA METHOD 7196A
Hexavalent Chromium
APPL, Inc. State Certification No. CA1312

ARF: 39301

Project: 800063 CROWS LANDING

Sample Receipt Information:

The sample group was assigned Analytical Request Form (ARF) number 39301 and the sample numbers and requested analysis were compared to the chain of custody. The shuttle was received at 5°C. The Total Coliform and E. Coli analyses were subcontracted to BSK Laboratories. No exceptions were encountered.

Sample Table

CLIENT ID	APPL ID	Matrix	Date Sampled	Date Received
6/8-9M1-75 (9/02)	AP38188	Water	09/11/02	09/11/02
6/8-9M1-400 (9/02)	AP38189	Water	09/11/02	09/11/02

Sample Preparation and Analysis Information:

The samples were prepared and analyzed according to EPA method 7196A. All sample data were investigated for trace levels ranging between the PQL and current MDL of 0.0042 mg/L. All such findings would have been flagged with a "J" indicator.

Calibrations:

Calibrations were performed according to the method. No problems were encountered.

Blanks:

No target compound was detected at or above the reporting level.

Spikes:

The laboratory control spike and spike duplicate met all acceptance criteria. The matrix spike and matrix spike duplicate was performed on sample 6/8-9M1-75 (9/02) (AP38188). All spike recoveries met acceptance criteria.

Summary:

All data were acceptable.

CERTIFICATION

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the hard copy has been authorized by the Laboratory Manager or her designee, as verified by the following signature.

Paula Young 10/3/02

Paula Young, Laboratory Manager/ Date

INORGANIC ANALYSIS
Sample Data

PPL, INC.

Wet Lab Analysis

IT Corporation
4C Port Chicago Highway
Concord, CA 94520-1120

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Attn: Rose Condit

Project: 800063 CROWS LANDING

Sample ID: 6/8-9M1-75 (9/02)

Sample Collection Date: 9/11/02

APPL ID: AP38188

ARF: 39301

Method	Analyte	Result	PQL	Units	Prep Date	Analysis Date
SW846 7196A	Hexavalent Chromium	Not detected	0.02	mg/L	9/11/02	9/11/02

Printed: 9/12/02 8:57:06 AM

Wet Lab Analysis

IT Corporation
40[illegible]ort Chicago Highway
Concord, CA 94520-1120

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Attn: Rose Condit

Project: 800063 CROWS LANDING

Sample ID: 6/8-9M1--400(9/20)

APPL ID: AP38189

Sample Collection Date: 9/11/02

ARF: 39301

Method	Analyte	Result	PQL	Units	Prep Date	Analysis Date
SW846 7196A	Hexavalent Chromium	Not detected	0.02	mg/L	9/11/02	9/11/02

Printed: 9/12/02 8:57:06 AM

IT INTERNATIONAL TECHNOLOGY CORPORATION

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document No. 547374
Page 1 of 1

Project Name/No.[1] 800663 Crows Landing
Sample Team Members[2] RC/Walter D
Profit Center No.[3]
Project Manager[4] B Hulet
Purchase Order No.[6]
Required Report Date[11]

Samples Shipment Date[7] 9/11/02
Lab Destination[8] APPL
Lab Contact[9] Glen Brown
Project Contact/Phone[12] RCandit 925-255-2457
Carrier/Waybill No.[13] Same Day Express

Bill to:[5] IT-Concord
Doug Cadey
Report to:[10] R. Candit - IT Concord

ONE CONTAINER PER LINE

Sample Number[14]	Sample Description/Type[15]	Date/Time Collected[16]	Container Type[17]	Sample Volume[18]	Preservative[19]	Requested Testing Program[20]	Condition on Receipt[21]	Disposal Record No.[22]
6/8-9M1-75(9/02)	Ag Well	9/11/02 755	HDPE	125ml	None	7196A-Cr+6	FOR LAB USE ONLY	
"	Sample 75' bgs	9/11/02 755	↓	Sterile Bottle	Sodium Thiosulfate	Coliform (fecal)		
6/8-9M2-400(9/02)	" 400' bgs	9/11/02 845		125ml	None	7196A Cr+6		
"	"	9/11/02 845	↓	Sterile Bottle	Sodium Thiosulfate	Coliform (fecal)	FOR LAB USE ONLY	
Temp blank								

Special Instructions:[23] 6 hour Hold time for Coliform - See Glen Brown about Subcontract

Possible Hazard Identification:[24]
Non-hazard ☒ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐

Sample Disposal:[25]
Return to Client ☐ Disposal by Lab ☒ Archive _____ (mos.)

Turnaround Time Required:[26]
Normal ☒ Rush ☐

QC Level:[27]
I. ☐ II. ☐ III. ☒ Project Specific (specify):

1. Relinquished by[28] (Signature/Affiliation) RCandit	Date: 9/11/02 Time: 900
1. Received by[28] (Signature/Affiliation) Same Day Express	Date: 9/11/02 Time:
2. Relinquished by (Signature/Affiliation)	Date: Time:
2. Received by (Signature/Affiliation)	Date: Time:
3. Relinquished by (Signature/Affiliation)	Date: Time:
3. Received by (Signature/Affiliation) Eric Dutton	Date: 9-11-02 Time: 1150

Comments:[29]

White: To accompany samples Yellow: Field copy *See back of form for special instructions.