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NAS JACKSONVILLE, FL  
DOMESTIC SLUDGE DRYING BEDS  
AND POLISHING POND

2ND MONTHLY SAMPLING, SEPT 89

REPORT DATE : NOV 89

1032

MONTHLY COMPLIANCE MONITORING AND ANALYSIS  
NAVAL AIR STATION  
JACKSONVILLE, FLORIDA

PREPARED FOR

NAVAL FACILITIES ENGINEERING COMMAND  
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NOVEMBER 1989

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## 1.0 INTRODUCTION

IT Corporation (IT) has conducted the second of four monthly sampling events at the Naval Air Station, Jacksonville, Florida (NAS-JAX). Specifically, monitoring wells at the Domestic Sludge Drying Beds (DSDBs) and Polishing Pond (PP) were sampled in accordance with Amendment 4 of Navy Contract N62467-88-C-0181. Presented in this report is a description of the sampling event conducted in September 1989 and a summary of the data obtained from the compliance monitoring event.

## 2.0 GROUNDWATER SAMPLE COLLECTION

On September 27 through September 29, 1989, ground water samples were collected from eleven monitoring wells at the DSDBs and PP at NAS-JAX. Due to equipment failure, the pH of the samples from Monitoring Wells 41-1 and 41-2 were measured using pH paper. Six quality assurance samples (1-sample duplicate, 1-field blank, 2-trip blanks, 2 equipment rinsates) were collected as part of this sampling event. Sample collection was performed in accordance with IT's site specific Quality Assurance Project Plan (QAPP). All samples were analyzed for the list of parameters established in a draft NAS-JAX Closure Permit of the DSDBs and PP. Analytical methods used were performed in accordance with EPA manual SW-846 Test Methods for Evaluating Solid Waste. Water level measurements were obtained from all wells including those from the Installation Restoration (IR) Project. Table 1 contains the water level measurements from these wells.

IT's scope of work requires the field filtering of groundwater samples to determine dissolved metal concentrations. Because of the difficulty experienced in field filtering caused by excessive turbidity of samples, none of the samples were filtered in the field. All samples were submitted to the laboratory unfiltered, unpreserved, and upon arrival, the samples were filtered and preserved.

### 3.0 SUMMARY OF WATER QUALITY DATA

All groundwater and quality assurance samples were analyzed by IT Analytical Services (ITAS). The Mixed Waste Lab at Oak Ridge, Tennessee performed the analysis of Total Organic Halide (TOX) and all radiological parameters. The ITAS Middlebrook Laboratory in Knoxville, Tennessee analyzed all other parameters. The following field records were kept and are included in the following appendices:

- Field Activity Daily Logs (Appendix A)
- Sample Collection Logs (Appendix B)
- Field Equipment Calibration Records (Appendix C)
- Chain of Custody/Request for Analysis Records (Appendix D)

The analytical results are summarized in Tables 2 and 3 and the Certificates of Analysis are in Appendix E.

The Ground Water Protection Standards (GWPS) are established in accordance with 40 CFR 264.94 for constituents detected in the ground water sampled from the monitoring wells. Analytical results from the Jun89, Jul89, and Aug89 quarterly compliance monitoring of ground water samples from upgradient Monitoring Well NAS 4-9 were used to establish the GWPS background concentrations for the parameters of F006, FAC 17-4.246, 17-28.700. Due to the use of a more extensive parameter list for monthly monitoring than was used for compliance monitoring, some parameters analyzed for as part of the monthly sampling do not have background concentrations established. These parameters are indicated "NZ" in Tables 2 and 3. Background ground water quality levels for the drinking water supply parameters and zinc are set by the permit. Specific Condition 54 of the ISDB's operating permit (H016-119108) to be the mean of each GWPS constituent determined in the four most recent sampling events of Monitoring Well 4-9.

To determine if the GWPS has been exceeded, the concentration of each GWPS constituent detected in the ground water downgradient monitoring wells was compared to that constituent's background ground water quality level. All GWPS constituents analyzed during the last four quarters in samples from Monitoring Well 4-9 with the exception of barium, cadmium, chromium, lead, vanadium, and zinc have been below analytical method detection limits. Therefore, for comparative purposes, the constituent for all parameters except those listed detected in the downgradient monitoring wells greater than the method detection limits have exceeded the GWPS.

Inorganics in monitoring wells at both the DSDBs and PP (cadmium, chromium, nickel, barium, lead, mercury, arsenic, zinc, vanadium, selenium and silver) were detected above GWPS in varying concentrations. Phenol 2-4,D and methylene chloride were compound detected above GWPS at the DSDBs and no organics were detected above GWPS at the PP.

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Table 1  
 Ground Water Elevations  
 DSDBs Monitoring Wells  
 PP Monitoring Wells  
 NAS, Jacksonville, Florida  
 Project No. 453058

<u>Well No.</u>	<u>Top of Casing Elevation (ft) MSL<sup>1</sup></u>	<u>G.W. Levels Measured From TOC<sup>2</sup></u>	<u>G.W. Elevations (ft) MSL</u>
41-1	19.52	2.82	16.70
41-2	19.56	2.70	16.86
41-3	20.09	2.98	17.11
41-4	20.64	3.58	17.06
41-5	19.81	2.80	17.01
41-6	20.25	2.70	17.55
42-5	18.57	7.30	11.27
42-6	18.18	9.10	9.08
42-7	18.19	7.05	11.14
42-8	18.06	8.98	9.08
42-9	11.93	4.25	7.68
4-6 (IR Well)	19.27	8.12	11.50
4-8 (IR Well)	15.18	2.70	12.48

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<sup>1</sup> Mean Sea Level

<sup>2</sup> TOC-Top of Casing

Table 2  
Summary  
Ground Water Sampling Analytical Results  
Domestic Sludge Drying Beds  
Naval Air Station  
Jacksonville, Florida  
Project No. 453058

Parameters	Analytical Method Detection Limits	Background 4-9 <sup>1</sup>	MONITORING WELLS									
			41-1	41-2	DUP OF 41-2	41-3	41-4	41-5	41-6	RINSATE	TRIP BLANK	FIELD BLANK
<u>Indicator Parameters (40 CFR 264.98(a))</u>												
pH (Field)	NA	6.25	6.0 <sup>6</sup>	7.0 <sup>6</sup>	7.0 <sup>6</sup>	6.50	11.10	6.12	7.25	NZ	NZ	NZ
Specific Conductance (Field) (umho/cm)	NA	270	100	410	410	1275	8100	1300	1825	NZ	NZ	NZ
Total Organic Carbon (mg/l)	1	16	16	2	2	67	490	110	970	<1	NZ	<1
Total Organic Halogen <sup>5</sup> (mg/l)	.01	0.053	0.035	0.045	<0.01	0.133	0.285	0.221	0.244	.01	NZ	<0.01
<u>F006 Parameters (40 CFR 261 Appendix VII)</u>												
Cadmium (mg/l)	.005	0.012	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.024	<0.005	NZ	<0.005
Cadmium, Dissolved (mg/l)	.005	<0.005	<0.005	0.006	<0.005	<0.005	<0.005	<0.005	0.022	<0.005	NZ	<0.005
Chromium, Hexavalent (mg/l)	.02 <sup>3</sup>	<0.02	<0.02	<0.02	<0.02	<0.10 <sup>3</sup>	<0.50 <sup>3</sup>	<0.10 <sup>3</sup>	<0.50 <sup>3</sup>	<0.02	NZ	<0.02
Chromium, Hexavalent Dissolved (mg/l)	.02 <sup>3</sup>	<0.02	<0.02	<0.02	<0.02	<0.02	<0.20 <sup>3</sup>	<0.05 <sup>3</sup>	<0.50 <sup>3</sup>	<0.02	NZ	<0.02
Cyanide, Complexed (mg/l)	.01 <sup>3</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NZ	<0.01
Nickel (mg/l)	.02	<0.02	0.03	<0.02	0.02	0.16	0.74	0.43	0.45	<0.02	NZ	<0.02
Nickel, Dissolved (mg/l)	.02	<0.02	0.02	<0.02	<0.02	0.38	0.63	0.35	0.45	<0.02	NZ	<0.02
Carbon Disulfide (ug/l)	5	NA	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Tetrachloroethene (ug/l)	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5

<sup>1</sup> Background is mean of last four sampling events of Well 4-9.  
<sup>2</sup> Elevated detection limits due to matrix influences.  
<sup>3</sup> Variances in detection limits are due to dilution factors.  
<sup>4</sup> Analyte was found in blank as well as sample.  
<sup>5</sup> Reported values are average of two analytical runs.  
<sup>6</sup> Analysis performed using pH paper following failure of pH meter.  
<sup>7</sup> Detection limit adjusted upward due to newer test information.  
NA - Not Applicable  
NZ - Not Analyzed

Table 2 (continued)  
 Summary  
 Ground Water Sampling Analytical Results  
 Domestic Sludge Drying Beds  
 Naval Air Station  
 Jacksonville, Florida  
 Project No. 453058

Parameters	Analytical Method Detection Limits	Background 4-9 <sup>1</sup>	MONITORING WELLS									
			41-1	41-2	DUP OF 41-2	41-3	41-4	41-5	41-6	RINSATE	TRIP BLANK	FIELD BLANK
<u>F006 Parameters (40 CFR 261 Appendix VII)</u>												
Trichloroethene (ug/l)	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1,2-Trichloroethane (ug/l)	5	NA	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-dichlorobenzene (ug/l)	5	NA	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Toluene (ug/l)	5	NA	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Pyridine (ug/l)	5,000	NA	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000
Benzene (ug/l)	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Methylene Chloride <sup>4</sup> (ug/l)	5	<5	<5	<5	<50	<5	25	<5	<5	<5	<5	<5
1,1,1-Trichloroethane (ug/l)	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Chlorobenzene (ug/l)	5	NA	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2,2-trifluoroethane (ug/l)	200	NA	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200
Trichlorofluoromethane (ug/l)	5	NA	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2-butanone (ug/l)	10	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Isobutanol (ug/l)	5,000	NA	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000
2-Ethoxyethanol (mg/l)	2,000 <sup>7</sup>	NA	<2,000 <sup>7</sup>									
2-Nitropropane (ug/l)	5	NA	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5

<sup>1</sup> Background is mean of last four sampling events of Well 4-9.  
<sup>2</sup> Elevated detection limits due to matrix influences.  
<sup>3</sup> Variances in detection limits are due to dilution factors.  
<sup>4</sup> Analyte was found in blank as well as sample.  
<sup>5</sup> Reported values are average of two analytical runs.  
<sup>6</sup> Analysis performed using pH paper following failure of pH meter.  
<sup>7</sup> Detection limit adjusted upward due to newer test information.  
 NA - Not Applicable  
 NZ - Not Analyzed

Table 2 (continued)  
 Summary  
 Ground Water Sampling Analytical Results  
 Domestic Sludge Drying Beds  
 Naval Air Station  
 Jacksonville, Florida  
 Project No. 453058

Parameters	Analytical Method Detection Limits	Background 4-9 <sup>1</sup>	MONITORING WELLS										
			41-1	41-2	DUP OF 41-2	41-3	41-4	41-5	41-6	RINSATE	TRIP BLANK	FIELD BLANK	
<u>Drinking Water Supply Parameters (40 CFR 264.94)</u>													
Arsenic (mg/l)	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	NZ	<0.03
Arsenic, Dissolved (mg/l)	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.06	<0.03	<0.03	<0.03	NZ	<0.03
Barium (mg/l)	0.002	0.088	0.45	0.090	0.11	0.41	0.42	0.28	0.68	<0.002		NZ	<0.002
Barium, Dissolved (mg/l)	0.002	0.050	0.21	0.043	0.046	0.26	0.17	0.077	0.63	<.002		NZ	<0.002
Chromium, (mg/l)	0.01	0.02	0.07	0.01	0.10	0.03	0.18	0.08	1.8	<0.01		NZ	0.02
Chromium, Dissolved (mg/l)	0.01	0.02	<0.01	<0.01	<0.01	0.03	0.10	<0.01	1.8	<0.01		NZ	<0.01
Lead (mg/l)	0.002	0.04	0.031	0.007	0.011	0.060	0.111	0.028	0.19	<0.002		NZ	<0.002
Lead, Dissolved (mg/l)	0.002 <sup>2</sup>	<0.03	<0.003	<0.002	<0.002	0.020	0.040	<0.004 <sup>2</sup>	0.101	<0.002		NZ	<0.002
Mercury (mg/l)	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	0.002	<0.001		NZ	<0.001
Mercury, Dissolved (mg/l)	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	0.003	<0.001		NZ	<0.001
Selenium (mg/l)	0.002 <sup>2</sup>	<0.06	<0.017 <sup>2</sup>	<0.010 <sup>2</sup>	<0.004 <sup>2</sup>	<0.020 <sup>2</sup>	<0.027 <sup>2</sup>	<0.023 <sup>2</sup>	0.040 <sup>2</sup>	<.002		NZ	<0.002
Selenium, Dissolved (mg/l)	0.002 <sup>2</sup>	<0.06	<0.003 <sup>2</sup>	<0.002	<0.002	<0.011 <sup>2</sup>	<0.025 <sup>2</sup>	0.006	<0.029 <sup>2</sup>	<0.002		NZ	<0.002
Silver (mg/l)	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.10	<0.005		NZ	<0.005
Silver, Dissolved (mg/l)	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.086	<0.005		NZ	<0.005

<sup>1</sup> Background is mean of last four sampling events of Well 4-9.  
<sup>2</sup> Elevated detection limits due to matrix influences.  
<sup>3</sup> Variances in detection limits are due to dilution factors.  
<sup>4</sup> Analyte was found in blank as well as sample.  
<sup>5</sup> Reported values are average of two analytical runs.  
<sup>6</sup> Analysis performed using pH paper following failure of pH meter.  
<sup>7</sup> Detection limit adjusted upward due to newer test information.  
 NA - Not Applicable  
 NZ - Not Analyzed

Table 2 (continued)  
 Summary  
 Ground Water Sampling Analytical Results  
 Domestic Sludge Drying Beds  
 Naval Air Station  
 Jacksonville, Florida  
 Project No. 453058

Parameters	Analytical Method Detection Limits	Background 4-9 <sup>1</sup>	MONITORING WELLS									
			41-1	41-2	DUP OF 41-2	41-3	41-4	41-5	41-6	RINSATE	TRIP BLANK	FIELD BLANK
<u>FAC Ch. 17-22.210 and Primary Drinking Water Standards</u>												
<u>FAC Ch. 17-28.700 and 17-4.246 Parameters</u>												
Carbon Tetrachloride (ug/l)	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Turbidity (ntu)	NA	NA	600	200	220	600	750	700	750	0.10	NZ	0.20
1,2-dibromoethane (ug/l)	5	NA	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Sodium (mg/l)	0.2	NA	37.7	18.1	19.0	150	1,230	182	569	<0.2	NZ	<0.2
Sodium, Dissolved (mg/l)	0.2	NA	42.4	19.5	18.1	133	1,100	168	537	0.5	NZ	0.4
Total Coliform (colonies/100 ml)	0	NA	<100 <sup>3</sup>	<50 <sup>3</sup>	<50 <sup>3</sup>	400	<200 <sup>3</sup>	400	16,000	0	NZ	0
Chloroform (ug/l)	5	NA	<5	<5	<5	<5	<5	<5	<5	<5	<5	13
Vinyl Chloride (ug/l)	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Nitrate (as N) (mg/l)	0.05	NA	<0.05	0.07	0.05	0.16	0.23	0.11	0.25	0.05	NZ	0.09
Radium 226	NA	NA	2.3	3.0	2.3	7.2	0.78	9.3	18	<2.3	NZ	<0.14
Radium 228	NA	NA	<0.69	<1.5	<1.3	2.0	<0.72	3.4	5.5	<1.6	NZ	<0.89
Gross Alpha/Gross Beta (pCi/l) (Total)	NA	NA	12/8	11/7	10/6	34/33	77/39	77/71	73/64	<3/<4	NZ	<3/<4

<sup>1</sup> Background is mean of last four sampling events of Well 4-9.

<sup>2</sup> Elevated detection limits due to matrix influences.

<sup>3</sup> Variances in detection limits are due to dilution factors.

<sup>4</sup> Analyte was found in blank as well as sample.

<sup>5</sup> Reported values are average of two analytical runs.

<sup>6</sup> Analysis performed using pH paper following failure of pH meter.

<sup>7</sup> Detection limit adjusted upward due to newer test information.

NA - Not Applicable

NZ - Not Analyzed

Table 2 (continued)  
 Summary  
 Ground Water Sampling Analytical Results  
 Domestic Sludge Drying Beds  
 Naval Air Station  
 Jacksonville, Florida  
 Project No. 453058

Parameters	Analytical Method Detection Limits	Background 4-9 <sup>1</sup>	MONITORING WELLS										
			41-1	41-2	DUP OF 41-2	41-3	41-4	41-5	41-6	RINSATE	TRIP BLANK	FIELD BLANK	
<u>Previously Detected Appendix IX Parameters</u>													
Phenols (ug/l)	10 <sup>3</sup>	<10	<10	<10	<10	<10	<10	550	<10	<52 <sup>3</sup>	<11	NZ	<11
1,1-dichloroethane (ug/l)	5	NA	7	<5	<5	<5	<5	<5	7	<5	<5	<5	<5
Vanadium, (mg/l)	0.01	0.07	0.09	0.02	0.06	0.06	0.78	0.09	0.10	<0.01	NZ	<0.01	<0.01
Vanadium, Dissolved (mg/l)	0.01	0.05	0.01	<0.01	<0.01	0.04	0.67	<0.01	0.11	<0.01	NZ	<0.01	<0.01
Total Xylenes (ug/l)	5	NA	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-dichloroethane (ug/l)	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5

<sup>1</sup> Background is mean of last four sampling events of Well 4-9.

<sup>2</sup> Elevated detection limits due to matrix influences.

<sup>3</sup> Variances in detection limits are due to dilution factors.

<sup>4</sup> Analyte was found in blank as well as sample.

<sup>5</sup> Reported values are average of two analytical runs.

<sup>6</sup> Analysis performed using pH paper following failure of pH meter.

<sup>7</sup> Detection limit adjusted upward due to newer test information.

NA - Not Applicable

NZ - Not Analyzed

Table 2 (continued)  
 Summary  
 Ground Water Sampling Analytical Results  
 Domestic Sludge Drying Beds  
 Naval Air Station  
 Jacksonville, Florida  
 Project No. 453058

Parameters	Analytical Method Detection Limits	Background 4-9 <sup>1</sup>	MONITORING WELLS										
			41-1	41-2	DUP OF 41-2	41-3	41-4	41-5	41-6	RINSATE	TRIP BLANK	FIELD BLANK	
<u>PESTICIDES (40 CFR 264.94)</u>													
Lindane (mg/l)	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	NZ	<0.0001
Endrin (mg/l)	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	NZ	<0.0001
Methoxychlor (mg/l)	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	NZ	<0.0001
Toxaphene (mg/l)	0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	NZ	<0.0004
2-4,D (mg/l)	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0008	<0.0002	0.0014	0.0011	<0.0002	<0.0002	NZ	<0.0002
Silvex (2,4,5-TP) (mg/l)	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	NZ	<0.0001

<sup>1</sup> Background is mean of last four sampling events of Well 4-9.  
<sup>2</sup> Elevated detection limits due to matrix influences.  
<sup>3</sup> Variances in detection limits are due to dilution factors.  
<sup>4</sup> Analyte was found in blank as well as sample.  
<sup>5</sup> Reported values are average of two analytical runs.  
<sup>6</sup> Analysis performed using pH paper following failure of pH meter.  
<sup>7</sup> Detection limit adjusted upward due to newer test information.  
 NA - Not Applicable  
 NZ - Not Analyzed

**Table 3**  
**Summary**  
**Ground Water Sampling Analytical Results**  
**Polishing Pond**  
**Naval Air Station**  
**Jacksonville, Florida**  
**Project No. 453058**

Parameters	Analytical Method Detection Limits	Background 4-9 <sup>1</sup>	MONITORING WELLS					RINSATE	TRIP BLANK
			42-5	42-6	42-7	42-8	42-9		
<u>Indicator Parameters (40 CFR 264.98(a))</u>									
pH (Field)	NA	6.25	7.0	6.15	6.85	6.0	6.90	NZ	NZ
Specific Conductance (Field) (umho/cm)	NA	270	2100	105	2000	1200	140	NZ	NZ
Total Organic Carbon (mg/l) <sup>5</sup>	1	16	42	3	75	54	4	<1	NZ
Total Organic Halogen (mg/l)	.01	0.053	0.088	<0.01	0.071	0.048	<0.01	0.053	NZ
<u>F006 Parameters (40 CFR 261 Appendix VII)</u>									
Cadmium (mg/l)	.005	0.012	<0.005	<0.005	<0.005	0.005	0.015	<0.005	NZ
Cadmium, Dissolved (mg/l)	.005	<0.005	<0.005	<0.005	<0.005	0.005	<0.005	<0.005	NZ
Chromium, Hexavalent (mg/l)	.02	<0.02	<0.10	<0.10	<0.25	<0.25	<0.25	<0.02	NZ
Chromium, Hexavalent Dissolved (mg/l)	.02	<0.02	<0.02	<0.02	<0.10	<0.05	<0.02	<0.02	NZ
Cyanide, Complexed (mg/l)	.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NZ
Nickel (mg/l)	.02	<0.02	0.039	0.02	0.13	0.14	0.34	<0.02	NZ
Nickel, Dissolved (mg/l)	.02	<0.02	.35	.34	.11	.29	.330	<0.02	NZ
Carbon Disulfide (ug/l)	5	NA	<5	<5	<5	<5	<5	<5	<5
Tetrachloroethene (ug/l)	5	<5	<5	<5	<5	<5	<5	<5	<5

<sup>1</sup> Background is mean of last four sampling events of Well 4-9.  
<sup>2</sup> Elevated detection limits due to matrix influences.  
<sup>3</sup> Variances in detection limits are due to dilution factors.  
<sup>4</sup> Analyte was found in blank as well as sample.  
<sup>5</sup> Reported values are average of two analytical runs.  
<sup>6</sup> Detection limit adjusted upward due to newer test information.  
 NA - Not Applicable  
 NZ - Not Analyzed

**Table 3 (continued)**  
**Summary**  
**Ground Water Sampling Analytical Results**  
**Polishing Pond**  
**Naval Air Station**  
**Jacksonville, Florida**  
**Project No. 453058**

Parameters	Analytical Method Detection Limits	Background 4-9 <sup>1</sup>	MONITORING WELLS					RINSATE	TRIP BLANK
			42-5	42-6	42-7	42-8	42-9		
<b>F006 Parameters (40 CFR 261 Appendix VII)</b>									
Trichloroethene (ug/l)	5	<5	<5	<5	<5	<5	<5	<5	<5
1,1,2-Trichloroethane (ug/l)	5	NA	<5	<5	<5	<5	<5	<5	<5
1,2-dichlorobenzene (ug/l)	5	NA	<5	<5	<5	<5	<5	<5	<5
Toluene (ug/l)	5	NA	<5	<5	<5	<5	<5	<5	<5
Pyridine (ug/l)	5,000	NA	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000
Benzene (ug/l)	5	<5	<5	<5	<5	<5	<5	<5	<5
Methylene Chloride (ug/l) <sup>4</sup>	5	<5	<5	<5	<5	<5	<5	<5	<5
1,1,1-Trichloroethane	5	<5	<5	<5	<5	<5	<5	<5	<5
Chlorobenzene (ug/l)	5	NA	<5	<5	<5	<5	<5	<5	<5
1,2,2-trifluoroethane (ug/l)	200	NA	<200	<200	<200	<200	<200	<200	<200
Trichlorofluomethane (ug/l)	5	NA	5	<5	<5	<5	<5	<5	<5
2-butanone (ug/l)	10	NA	<10	<10	<10	<10	<10	<10	<10
Isobutanol (ug/l)	5,000	NA	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000
2-Ethoxyethanol (mg/l)	2,000 <sup>6</sup>	NA	<2,000 <sup>6</sup>						
2-Nitropropane (ug/l)	5	NA	<5	<5	<5	<5	<5	<5	<5

<sup>1</sup> Background is mean of last four sampling events of Well 4-9.  
<sup>2</sup> Elevated detection limits due to matrix influences.  
<sup>3</sup> Variances in detection limits are due to dilution factors.  
<sup>4</sup> Analyte was found in blank as well as sample.  
<sup>5</sup> Reported values are average of two analytical runs.  
<sup>6</sup> Detection limit adjusted upward due to newer test information.  
NA - Not Applicable  
NZ - Not Analyzed

Table 3 (continued)  
 Summary  
 Ground Water Sampling Analytical Results  
 Polishing Pond  
 Naval Air Station  
 Jacksonville, Florida  
 Project No. 453058

Parameters	Analytical Method Detection Limits	Background 4-9 <sup>1</sup>	MONITORING WELLS					RINSATE	TRIP BLANK	
			42-5	42-6	42-7	42-8	42-9			
<u>Drinking Water Supply Parameters (40 CFR 264.94)</u>										
Arsenic (mg/l)	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.04	<0.03	NZ
Arsenic, Dissolved (mg/l)	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	NZ
Barium (mg/l)	0.002	0.088	1.00	0.060	0.17	0.36	0.095	<0.002	<0.002	NZ
Barium, Dissolved (mg/l)	0.002	0.050	0.76	0.072	0.13	0.27	0.036	0.003	0.003	NZ
Chromium, (mg/l)	0.01	0.02	0.05	0.01	0.05	0.15	0.11	<0.01	<0.01	NZ
Chromium, Dissolved (mg/l)	0.01	0.02	0.04	0.04	0.03	0.01	0.04	<0.01	<0.01	NZ
Lead (mg/l)	0.002	0.04	0.018	0.011	0.026	0.099	0.024	<0.002	<0.002	NZ
Lead, Dissolved (mg/l)	0.002 <sup>2</sup>	<0.03	0.012	0.047	0.045	0.016	0.086	<0.002	<0.002	NZ
Mercury (mg/l)	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NZ
Mercury, Dissolved (mg/l)	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NZ
Selenium (mg/l)	0.002 <sup>2</sup>	<0.06	<0.020 <sup>2</sup>	0.003	<0.020 <sup>2</sup>	<0.025 <sup>2</sup>	0.016	<0.002	<0.002	NZ
Selenium, Dissolved (mg/l)	0.002 <sup>2</sup>	<0.06	<0.004 <sup>2</sup>	<0.004 <sup>2</sup>	<0.024 <sup>2</sup>	<0.023 <sup>2</sup>	<0.028 <sup>2</sup>	<0.002	<0.002	NZ
Silver (mg/l)	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NZ
Silver, Dissolved (mg/l)	0.005	<0.005	<0.005	<0.005	0.021	0.019	0.009	<0.005	<0.005	NZ

<sup>1</sup> Background is mean of last four sampling events of Well 4-9.  
<sup>2</sup> Elevated detection limits due to matrix influences.  
<sup>3</sup> Variances in detection limits are due to dilution factors.  
<sup>4</sup> Analyte was found in blank as well as sample.  
<sup>5</sup> Reported values are average of two analytical runs.  
<sup>6</sup> Detection limit adjusted upward due to newer test information.  
 NA - Not Applicable  
 NZ - Not Analyzed

Table 3 (continued)  
 Summary  
 Ground Water Sampling Analytical Results  
 Polishing Pond  
 Naval Air Station  
 Jacksonville, Florida  
 Project No. 453058

Parameters	Analytical Method Detection Limits	Background 4-9 <sup>1</sup>	MONITORING WELLS						RINSATE	TRIP BLANK
			42-5	42-6	42-7	42-8	42-9			
<u>FAC Ch. 17-22.210 and Primary Drinking Water Standards</u>										
<u>FAC Ch. 17-28.700 and 17-4.246 Parameters</u>										
Carbon Tetrachloride (ug/l)	5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Turbidity (ntu)	NA	NA	600	850	700	1,800	800	0.18	NZ	NZ
1,2-dibromoethane (ug/l)	5	NA	<5	<5	<5	<5	<5	<5	<5	<5
Sodium (mg/l)	0.2	NA	43.7	11.0	75.6	55.8	8.9	<0.2	NZ	NZ
Sodium, Dissolved (mg/l)	0.2	NA	40.7	9.4	74.8	52.1	7.7	0.4	NZ	NZ
Total Coliform (colonies/100 ml)	100	NA	800	<200	800	200	<200	1	NZ	NZ
Chloroform (ug/l)	5	NA	<5	<5	<5	<5	<5	<5	<5	<5
Vinyl Chloride (ug/l)	10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Nitrate (as N) (mg/l)	0.05	NA	0.25	10	11	11	10	<0.05	NZ	NZ
Radium 226 (pCi/l)	NA	NA	5.5	4.5	2.7	8.3	2.9	<0.23	NZ	NZ
Radium 228 (pCi/l)	NA	NA	4.1	2.4	1.6	2.1	<0.9	<1.6	NZ	NZ
Gross Alpha/Gross Beta (pCi/l) (Total)	NA	NA	41/55	73/38	17/49	241/220	67/59	<3/<4	NZ	NZ

<sup>1</sup> Background is mean of last four sampling events of Well 4-9.  
<sup>2</sup> Elevated detection limits due to matrix influences.  
<sup>3</sup> Variances in detection limits are due to dilution factors.  
<sup>4</sup> Analyte was found in blank as well as sample.  
<sup>5</sup> Reported values are average of two analytical runs.  
<sup>6</sup> Detection limit adjusted upward due to newer test information.  
 NA - Not Applicable  
 NZ - Not Analyzed

Table 3 (continued)  
 Summary  
 Ground Water Sampling Analytical Results  
 Polishing Pond  
 Naval Air Station  
 Jacksonville, Florida  
 Project No. 453058

Parameters	Analytical Method Detection Limits	Background 4-9 <sup>1</sup>	MONITORING WELLS						RINSATE	TRIP BLANK
			42-5	42-6	42-7	42-8	42-9			
<u>FAC 17.55.320 Secondary Drinking Water Standards</u>										
Chloride (mg/l)	1	NA	8	14	67	60	10	1	NZ	
Copper (mg/l)	0.01	NA	0.01	0.01	<0.01	0.04	0.03	<0.01	NZ	
Copper, Dissolved (mg/l)	0.02	NA	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	NZ	
Zinc (mg/l)	0.005	0.025	0.12	0.015	0.012	0.089	0.15	<0.005	NZ	
Zinc, Dissolved (mg/l)	0.005	0.051	0.069	0.057	0.025	0.033	0.040	0.026	NZ	
Iron (mg/l)	0.01	NA	18.9	19.7	13.9	37.0	79.5	0.01	NZ	
Iron, Dissolved (mg/l)	0.01	NA	7.3	24.8	6.4	3.2	20.3	0.02	NZ	
Fluoride (mg/l)	0.1	NA	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NZ	
Manganese (mg/l)	0.002	NA	0.19	0.028	0.14	0.22	0.034	<0.002	NZ	
Manganese, Dissolved (mg/l)	0.002	NA	0.16	0.030	0.12	0.17	0.017	0.002	NZ	
Sulfate (mg/l)	10 <sup>3</sup>	NA	<25 <sup>3</sup>	<25	400	470	<25 <sup>3</sup>	<10	NZ	

<sup>1</sup> Background is mean of last four sampling events of Well 4-9.  
<sup>2</sup> Elevated detection limits due to matrix influences.  
<sup>3</sup> Variances in detection limits are due to dilution factors.  
<sup>4</sup> Analyte was found in blank as well as sample.  
<sup>5</sup> Reported values are average of two analytical runs.  
<sup>6</sup> Detection limit adjusted upward due to newer test information.  
 NA - Not Applicable  
 NZ - Not Analyzed

Table 3 (continued)  
 Summary  
 Ground Water Sampling Analytical Results  
 Polishing Pond  
 Naval Air Station  
 Jacksonville, Florida  
 Project No. 453058

Parameters	Analytical Method Detection Limits	Background 4-9 <sup>1</sup>	MONITORING WELLS						RINSATE	TRIP BLANK
			42-5	42-6	42-7	42-8	42-9			
<u>Previously Detected Appendix IX Parameters</u>										
Phenols (ug/l)	10 <sup>3</sup>	<10	<10	<10	<10	<10	<10	<10	<11	NZ
1,1-dichloroethane (ug/l)	5	NA	<5	<5	<5	<5	<5	<5	<5	<5
Vanadium, (mg/l)	0.01	0.07	0.04	0.02	0.03	0.17	0.11	<0.01		NZ
Vanadium, Dissolved (mg/l)	0.01	0.05	0.02	0.05	0.01	0.01	0.03	<0.01		NZ
Total Xylenes (ug/l)	5	NA	<5	<5	<5	<5	<5	<5	<5	<5
1,2-dichloroethane (ug/l)	5	<5	<5	<5	<5	<5	<5	<5	<5	<5

<sup>1</sup> Background is mean of last four sampling events of Well 4-9.  
<sup>2</sup> Elevated detection limits due to matrix influences.  
<sup>3</sup> Variances in detection limits are due to dilution factors.  
<sup>4</sup> Analyte was found in blank as well as sample.  
<sup>5</sup> Reported values are average of two analytical runs.  
<sup>6</sup> Detection limit adjusted upward due to newer test information.  
 NA - Not Applicable  
 NZ - Not Analyzed

Table 3 (continued)  
 Summary  
 Ground Water Sampling Analytical Results  
 Polishing Pond  
 Naval Air Station  
 Jacksonville, Florida  
 Project No. 453058

Parameters	Analytical Method Detection Limits	Background 4-9 <sup>1</sup>	MONITORING WELLS					RINSATE	TRIP BLANK
			42-5	42-6	42-7	42-8	42-9		
<u>PESTICIDES (40 CFR 264.94)</u>									
Lindane (mg/l)	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	NZ
Endrin (mg/l)	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	NZ
Methoxychlor (mg/l)	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	NZ
Toxaphene (mg/l)	0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	NZ
2-4,D (mg/l)	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	NZ
Silvex (2,4,5-TP) (mg/l)	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	NZ

<sup>1</sup> Background is mean of last four sampling events of Well 4-9.  
<sup>2</sup> Elevated detection limits due to matrix influences.  
<sup>3</sup> Variances in detection limits are due to dilution factors.  
<sup>4</sup> Analyte was found in blank as well as sample.  
<sup>5</sup> Reported values are average of two analytical runs.  
<sup>6</sup> Detection limit adjusted upward due to newer test information.  
 NA - Not Applicable  
 NZ - Not Analyzed

Table 2 (continued)  
 Summary  
 Ground Water Sampling Analytical Results  
 Domestic Sludge Drying Beds  
 Naval Air Station  
 Jacksonville, Florida  
 Project No. 453058

Parameters	Analytical Method Detection Limits	Background 4-9 <sup>1</sup>	MONITORING WELLS									
			41-1	41-2	DUP OF 41-2	41-3	41-4	41-5	41-6	RINSATE	TRIP BLANK	FIELD BLANK
<u>FAC 17.55.320 Secondary Drinking Water Standards</u>												
Chloride (mg/l)	1	NA	64	27	27	79	160	130	320	2.0	NZ	2.5
Copper (mg/l)	0.01	NA	<0.01	<0.01	<0.01	0.02	0.05	0.03	0.23	<0.01	NZ	<0.01
Copper, Dissolved (mg/l)	0.01	NA	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	0.19	<0.01	NZ	<0.01
Zinc (mg/l)	0.005	0.025	0.067	0.085	0.082	0.046	0.072	0.062	0.26	<0.005	NZ	0.29
Zinc, Dissolved (mg/l)	0.005	0.051	0.035	0.035	0.019	0.065	0.022	<0.005	0.19	0.027	NZ	0.091
Iron (mg/l)	0.01	NA	38.3	13.2	26.2	12.5	19.4	30.9	7.7	0.02	NZ	1.3
Iron, Dissolved (mg/l)	0.01	NA	25.1	0.43	2.8	11.6	3.8	0.61	10.2	0.04	NZ	0.06
Fluoride (mg/l)	0.1	NA	<0.1	<0.1	<0.1	0.1	2.6	0.1	<0.1	<0.1	NZ	<0.1
Manganese (mg/l)	0.002	NA	0.13	0.12	0.12	0.75	0.037	0.13	0.36	<0.002	NZ	0.003
Manganese, Dissolved (mg/l)	0.002	NA	0.12	0.055	0.058	0.62	0.007	0.083	0.35	<0.002	NZ	0.002
Sulfate (mg/l)	10 <sup>3</sup>	NA	150	<10	<25	280	<100 <sup>3</sup>	110	<250 <sup>3</sup>	<10	NZ	<10

<sup>1</sup> Background is mean of last four sampling events of Well 4-9.  
<sup>2</sup> Elevated detection limits due to matrix influences.  
<sup>3</sup> Variances in detection limits are due to dilution factors.  
<sup>4</sup> Analyte was found in blank as well as sample.  
<sup>5</sup> Reported values are average of two analytical runs.  
<sup>6</sup> Analysis performed using pH paper following failure of pH meter.  
<sup>7</sup> Detection limit adjusted upward due to newer test information.  
 NA - Not Applicable  
 NZ - Not Analyzed



APPENDIX A  
FIELD ACTIVITY DAILY LOGS



## FIELD ACTIVITY DAILY LOG

PROJECT NAME <u>NAS JAX</u>		PROJECT NO. <u>453058</u>
FIELD ACTIVITY SUBJECT: <u>G.W. Sampling</u>		
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:		
<p><u>load up</u></p> <p><u>Drive to Jax</u></p> <p><u>Met w/ Wallmyer (got keys)</u></p> <p><u>took water level measurements</u></p> <p><u>4-8 w.L. = 2.70'</u></p> <p><u>4-6 w.L. = 8.12'</u></p> <p><u>Showed Sally all wells, procedures, decan, etc</u></p>		
VISITORS ON SITE:		CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.
WEATHER CONDITIONS: <u>Rain</u>		IMPORTANT TELEPHONE CALLS:
IT PERSONNEL ON SITE: <u>Bruce</u>		
SIGNATURE		DATE:



## FIELD ACTIVITY DAILY LOG

PROJECT NAME NAS JAX PROJECT NO. 453058

FIELD ACTIVITY SUBJECT: G.w. Sampling

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

set up decont all eq by Rinse → wash w/ Alconox →  
rinse → isopropanol → final rinse → air dry

did wells

42-8  
42-7  
42-6  
42-5  
42-9

41-6  
41-5  
41-4  
41-3

Rinsath

VISITORS ON SITE:

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

WEATHER CONDITIONS:  
Rain

IMPORTANT TELEPHONE CALLS:

IT PERSONNEL ON SITE: Bruce

SIGNATURE \_\_\_\_\_ DATE: \_\_\_\_\_

## FIELD ACTIVITY DAILY LOG

PROJECT NAME <u>NAS Jax</u>	PROJECT NO. <u>453058</u>
FIELD ACTIVITY SUBJECT: <u>G.w. Sampling</u>	
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:	
<p>Set up</p> <p>did wells</p> <p>41-2</p> <p>41-1</p> <p>Rivets Sample</p> <p>D-I water Sample</p> <p>met w/ Walling + get closure report</p> <p>trip back to Tampa</p> <p>pH meter cover left off (rained on now dead) Talked to Sally about eq. care.</p>	
VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.
WEATHER CONDITIONS: <u>Rain</u>	IMPORTANT TELEPHONE CALLS:
IT PERSONNEL ON SITE: <u>Bruder</u>	
SIGNATURE	DATE:

APPENDIX B  
SAMPLE COLLECTION LOGS



<b>COMMENTS:</b> (Continued)																															
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PREPARED BY: \_\_\_\_\_

LEGEND

1. A SAMPLE COLLECTION LOG IS TO BE COMPLETED FOR EACH SAMPLE.
2. ALWAYS COMPLETE BOTH SIDES. IF SECOND SIDE IS NOT USED, DRAW A LINE THROUGH IT AND MARK N/A. FILL IN CONTROL BLOCK AND PREPARED BY.
3. ALL ENTRIES ON LOG ARE TO BE COMPLETED, IF NOT APPLICABLE MARK N/A.
4. DATE: USE MONTH/DAY/YEAR; I.E., 10/30/85
5. TIME: USE 24-HOUR CLOCK; I.E., 1835 FOR 6:35 P.M.
6. PAGE: EACH SAMPLE TEAM SHOULD NUMBER PAGE \_\_\_\_\_ OF \_\_\_\_\_ FOR THE DAY'S ACTIVITIES FOR ALL SHEETS PREPARED ON A SINGLE DAY, I.E., IF THERE ARE A TOTAL OF 24 PAGES (INCLUDING FRONT AND BACK) NUMBER 1 OF 24, 2 OF 24, ETC.
7. SAMPLE LOCATION: USE BORING OR MONITORING WELL NUMBER, GRID LOCATION (TRANSECT), SAMPLING STATION I.D., OR COORDINATE TO PHYSICAL FEATURES WITH DISTANCES. INCLUDE SKETCH IN COMMENT SECTION IF NECESSARY.
8. SAMPLE TYPE: USE THE FOLLOWING - SOIL; WATER (SURFACE OR GROUND); AIR (FILTERS, TUBES, AMBIENT, PERSONNEL); SLUDGE; DRUM CONTENTS; OIL; VEGETATION; WIPE; SEDIMENT.
9. COMPOSITE TYPE: I.E., 24-HOUR, LIST SAMPLE NUMBERS IN COMPOSITE, SPATIAL COMPOSITE.
10. DEPTH OF SAMPLE: GIVE UNITS, WRITE OUT UNITS SUCH AS INCHES, FEET. DON'T USE ' OR ''.
11. WEATHER: APPROXIMATE TEMPERATURE, SUN AND MOISTURE CONDITIONS.
12. CONTAINERS USED: LIST EACH CONTAINER TYPE AS NUMBER, VOLUME, MATERIAL (E.G., 2 - 1L GLASS; 4 - 40 ML GLASS VIAL; 1 - 400 ML PLASTIC; 1 - 3 INCH STEEL TUBE; 1 - 8 OZ. GLASS JAR).
13. AMOUNT COLLECTED: VOLUME IN CONTAINERS (E.G. 1/2 FULL).



COMMENTS:  
(Continued)

DATE					
TIME					
PAGE	___	OF	___		
PAGE					
PROJECT NO.					

PREPARED BY: \_\_\_\_\_

LEGEND

1. A SAMPLE COLLECTION LOG IS TO BE COMPLETED FOR EACH SAMPLE.
2. ALWAYS COMPLETE BOTH SIDES. IF SECOND SIDE IS NOT USED. DRAW A LINE THROUGH IT AND MARK N/A. FILL IN CONTROL BLOCK AND PREPARED BY.
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5. TIME: USE 24-HOUR CLOCK: I.E., 1835 FOR 6:35 P.M.
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COMMENTS:  
(Continued)

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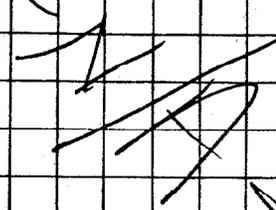
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APPENDIX C  
FIELD EQUIPMENT CALIBRATION RECORDS



## FIELD EQUIPMENT CALIBRATION RECORD<sup>(1)</sup>

PROJECT NAME NAS JAY DATE 9/28/87  
PROJECT NUMBER 453058 PERSONNEL Bruce

EQUIPMENT IDENTIFICATION \_\_\_\_\_  
EQUIPMENT NAME PH meter  
REQUIRED CALIBRATION PERIOD \_\_\_\_\_

CALIBRATION TECHNIQUE<sup>(2)</sup> \_\_\_\_\_

Buffers (all corrected)  
4.01  
7.0  
10.0

REMARKS \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

- NOTES: (1) THIS RECORD SHALL BE COMPLETED FOR ALL EQUIPMENT CALIBRATED IN THE FIELD.  
(2) IF APPLICABLE, CITE REFERENCE



FIELD EQUIPMENT CALIBRATION RECORD<sup>(1)</sup>

PROJECT NAME NAS JAX DATE 9/28/85  
PROJECT NUMBER 453058 PERSONNEL BRUDER

EQUIPMENT IDENTIFICATION \_\_\_\_\_  
EQUIPMENT NAME Sp Cond Meter  
REQUIRED CALIBRATION PERIOD \_\_\_\_\_

CALIBRATION TECHNIQUE<sup>(2)</sup> \_\_\_\_\_  
Buffers (all corrected to)  
145  
1418

REMARKS \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

NOTES: (1) THIS RECORD SHALL BE COMPLETED FOR ALL EQUIPMENT CALIBRATED IN THE FIELD.

(2) IF APPLICABLE, CITE REFERENCE



FIELD EQUIPMENT CALIBRATION RECORD<sup>(1)</sup>

PROJECT NAME NAS JAX DATE 9/29/89  
PROJECT NUMBER 453058 PERSONNEL Bruder

EQUIPMENT IDENTIFICATION \_\_\_\_\_  
EQUIPMENT NAME Sp Cond Meter  
REQUIRED CALIBRATION PERIOD \_\_\_\_\_

CALIBRATION TECHNIQUE<sup>(2)</sup> \_\_\_\_\_  
Buffers (all corrected to)  
147  
1418

REMARKS \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

NOTES: (1) THIS RECORD SHALL BE COMPLETED FOR ALL EQUIPMENT CALIBRATED IN THE FIELD.

(2) IF APPLICABLE, CITE REFERENCE



FIELD EQUIPMENT CALIBRATION RECORD<sup>(1)</sup>

PROJECT NAME WAS JAX DATE 9/25/85  
PROJECT NUMBER 453058 PERSONNEL Breudre

EQUIPMENT IDENTIFICATION \_\_\_\_\_  
EQUIPMENT NAME PH Meter  
REQUIRED CALIBRATION PERIOD \_\_\_\_\_

CALIBRATION TECHNIQUE<sup>(2)</sup> \_\_\_\_\_  
\_\_\_\_\_  
Need have to use pH paper  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

REMARKS \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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APPENDIX D  
CHAIN-OF-CUSTODY  
REQUEST FOR ANALYSIS



# REQUEST FOR ANALYSIS

R/A Control No. 11 473  
 C/C Control No. 117346

PROJECT NAME DAS JAX  
 PROJECT NUMBER 45305P 02 01 03  
 PROJECT MANAGER M Hampton  
 BILL TO JT - Tampa

DATE SAMPLES SHIPPED 9/25/85  
 LAB DESTINATION ETAS - Knox  
 LABORATORY CONTACT Beth McNamee  
 SEND LAB REPORT TO Mike Jones

PURCHASE ORDER NO. \_\_\_\_\_

DATE REPORT REQUIRED \_\_\_\_\_  
 PROJECT CONTACT Mike Jones  
 PROJECT CONTACT PHONE NO. JT Tampa

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
41-1	ground water	5 L amber	none	pesticides / herbicides + phenols	IGNORE
↓	↓	2 40 ml amber	none	TCC	
↓	↓	2 250 ml amber	H <sub>2</sub> SO <sub>4</sub>	TOX	
↓	↓	2 40 ml amber	HCl	VCA	
↓	↓	2 - 1L Plastic	HNO <sub>3</sub>	RAD	
↓	↓	1 - 1L Plastic	- NaOH	CN <sup>-</sup>	
↓	↓	1 - 1/2 L Plastic	none	coliform	
↓	↓	1 - 1L Plastic	none	turbidity	
↓	↓	1 - 1L Plastic	N	- total metals	FILTER THROUGH MESH
↓	↓	1 - 1L Plastic	N	- dissolved metals	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)

Normal  Rush \_\_\_\_\_ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)

Nonhazard  Flammable \_\_\_\_\_ Skin Irritant \_\_\_\_\_ Highly Toxic \_\_\_\_\_ Other \_\_\_\_\_ (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)

Return to Client \_\_\_\_\_ Disposal by Lab

FOR LAB USE ONLY

Received By \_\_\_\_\_ Date/Time \_\_\_\_\_



CHAIN-OF-CUSTODY RECORD

R/A Control No. 118473

C/C Control No. 117346

PROJECT NAME/NUMBER NAS JAX 453058 02 0103 LAB DESTINATION ITAS Knox

SAMPLE TEAM MEMBERS Bruder / Musick CARRIER/WAYBILL NO. 4811963704  
623

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
41-1	Domestic Beds	5/24/89 0900	water	4-1L Amber		
↓	↓	↓	↓	6-1L Plastic		
↓	↓	↓	↓	1 500ml Amber		
↓	↓	↓	↓	1 250ml Amber		
↓	↓	↓	↓	1-XL Plastic		
↓	↓	↓	↓	2-40ml Amber		
		5/29/89 1000		2-40ml AM		

Special Instructions: Filter Metals, Then Preserve

Possible Sample Hazards: \_\_\_\_\_

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: [Signature] ITC 5/25/89 1505  
Received By: \_\_\_\_\_

3. Relinquished By: \_\_\_\_\_  
Received by: \_\_\_\_\_

2. Relinquished By: \_\_\_\_\_  
Received By: \_\_\_\_\_

4. Relinquished By: \_\_\_\_\_  
Received By: \_\_\_\_\_



**INTERNATIONAL  
TECHNOLOGY  
CORPORATION**

**REQUEST FOR ANALYSIS**

R/A Control No. 11 14  
C/C Control No. 117347

PROJECT NAME NAS JAX  
PROJECT NUMBER 453058 020103  
PROJECT MANAGER M. Hampton  
BILL TO ITT - Tampa

DATE SAMPLES SHIPPED 9/25/89  
LAB DESTINATION ITAS - Knox  
LABORATORY CONTACT Beth Monroe  
SEND LAB REPORT TO Mike Jones

PURCHASE ORDER NO. \_\_\_\_\_

DATE REPORT REQUIRED \_\_\_\_\_  
PROJECT CONTACT Mike Jones  
PROJECT CONTACT PHONE NO. ITT - Tampa

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
41-2	ground water	5- 1L Amber	none	pesticides/herbicides/phenols	st I work
		1- 400 ml Amber	none	TOC	
		1- 250 ml amber	H <sub>2</sub> SO <sub>4</sub>	TOX	
		2- 40 ml Amber	HCl	VCA	
		2- 1L Plastic	HNO <sub>3</sub>	RAD	
		1- 1L Plastic	NaOH	CA-	
		1- 1/2 L Plastic	none	coliform	
		1- 1L Plastic	none	turbidity	
		1- 1L Plastic	N	total metals	FILTER THAN PRESERVE
		1- 1L Plastic	N	dissolved metals	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)

Normal  Rush \_\_\_\_\_ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)

Nonhazard  Flammable \_\_\_\_\_ Skin Irritant \_\_\_\_\_ Highly Toxic \_\_\_\_\_ Other \_\_\_\_\_ (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)

Return to Client \_\_\_\_\_ Disposal by Lab

FOR LAB USE ONLY

Received By \_\_\_\_\_ Date/Time \_\_\_\_\_

WHITE - Original, to accompany samples  
YELLOW - Field copy



### CHAIN-OF-CUSTODY RECORD

R/A Control No. 128677

C/C Control No. 112493

PROJECT NAME/NUMBER NAS TAX 45305P

LAB DESTINATION ITAS-KNCX

SAMPLE TEAM MEMBERS Bruce / Morsick

CARRIER/WAYBILL NO. 48196 362  
23

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
41-1	Domestic Beds	9/25/85	water	2.45 ml Amber		
41-2	Domestic Beds			2.45 ml Amber		
PW-1	water		↓	2.40 ml Amber		
rinsate	rinsate			2.40 ml Amber		

Special Instructions: \_\_\_\_\_

Possible Sample Hazards: \_\_\_\_\_

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: [Signature] ITC 9/25/85 1510

3. Relinquished By: \_\_\_\_\_

Received By: \_\_\_\_\_

Received by: \_\_\_\_\_

2. Relinquished By: \_\_\_\_\_

4. Relinquished By: \_\_\_\_\_

Received By: \_\_\_\_\_

Received By: \_\_\_\_\_



REQUEST FOR ANALYSIS

R/A Control No. 12 577
C/C Control No. 112493

PROJECT NAME NAS JAX
PROJECT NUMBER 453058
PROJECT MANAGER M Hampton
BILL TO IT-Tampa

DATE SAMPLES SHIPPED
LAB DESTINATION ITAS-Knox
LABORATORY CONTACT M Hampton
SEND LAB REPORT TO IT-Tampa (M Hampton)

PURCHASE ORDER NO.

DATE REPORT REQUIRED
PROJECT CONTACT M Hampton
PROJECT CONTACT PHONE NO. IT-Tampa

Table with 6 columns: Sample No., Sample Type, Sample Volume, Preservative, Requested Testing Program, Special Instructions. Contains handwritten entries for samples 41-1, 41-2, PW-1, and rinsate.

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)
Normal (checked) Rush (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)
Nonhazard (checked) Flammable Skin Irritant Highly Toxic Other

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)
Return to Client Disposal by Lab (checked)

FOR LAB USE ONLY
Received By Date/Time

WHITE - Original, to accompany samples
YELLOW - Field copy



**INTERNATIONAL  
TECHNOLOGY  
CORPORATION**

**CHAIN-OF-CUSTODY RECORD**

R/A Control No. 128675

C/C Control No. **117359**

PROJECT NAME/NUMBER DAI JAX 453058

LAB DESTINATION TIAS - Knox

SAMPLE TEAM MEMBERS Druder / Musick

CARRIER/WAYBILL NO. 481196368  
23

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
PW-1		5/27/85	water	5-1L Amber		
				6-1L Plastic		
				40 ml Amber		
				1 1/2 L Plastic		
				1-500ml Amber		

Special Instructions: \_\_\_\_\_

Possible Sample Hazards: \_\_\_\_\_

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: [Signature] TIAS 5/27/85 1510

3. Relinquished By: \_\_\_\_\_

Received By: \_\_\_\_\_

Received by: \_\_\_\_\_

2. Relinquished By: \_\_\_\_\_

4. Relinquished By: \_\_\_\_\_

Received By: \_\_\_\_\_

Received By: \_\_\_\_\_



REQUEST FOR ANALYSIS

R/A Control No. 12 675
C/C Control No. 117359
5/25/85

PROJECT NAME WAS JAX
PROJECT NUMBER
PROJECT MANAGER
BILL TO
PURCHASE ORDER NO.

DATE SAMPLES SHIPPED
LAB DESTINATION
LABORATORY CONTACT
SEND LAB REPORT TO
DATE REPORT REQUIRED
PROJECT CONTACT
PROJECT CONTACT PHONE NO.

Table with 6 columns: Sample No., Sample Type, Sample Volume, Preservative, Requested Testing Program, Special Instructions. Row 1: PW-1, water, 5-1L Amber, 6-1L Plastic, 2-40ml Amber, 1-1/2L Plastic, 1-500ml Amber, normal.

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)
Normal [checked] Rush (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)
Nonhazard [checked] Flammable Skin Irritant Highly Toxic Other (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)
Return to Client Disposal by Lab [checked]

FOR LAB USE ONLY
Received By Date/Time

WHITE - Original, to accompany samples
YELLOW - Field copy



# REQUEST FOR ANALYSIS

R/A Control No. 12 376  
C/C Control No. 112492

PROJECT NAME NAS JAY  
PROJECT NUMBER 453058  
PROJECT MANAGER M Hampton  
BILL TO IT - Tampa  
  
PURCHASE ORDER NO. \_\_\_\_\_

DATE SAMPLES SHIPPED 9/29/89  
LAB DESTINATION ITAS - KNOX  
LABORATORY CONTACT Beth Menke  
SEND LAB REPORT TO IT - Tampa  
  
DATE REPORT REQUIRED \_\_\_\_\_  
PROJECT CONTACT M Hampton  
PROJECT CONTACT PHONE NO. IT Tampa

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
<u>rinsate</u>	<u>rinsate</u>	<u>5 - 1L Amber</u>		<u>Normal</u>	
<u>↓</u>	<u>↓</u>	<u>6 - 1L Plastic</u>			
<u>↓</u>	<u>↓</u>	<u>2 - 40 ml Amber</u>			
<u>↓</u>		<u>1 - 1/2 L Plastic</u>		<u>↓</u>	
		<u>1 - 500 ml Amber</u>			

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)  
Normal  Rush \_\_\_\_\_ (Subject to rush surcharge)  
POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)  
Nonhazard  Flammable \_\_\_\_\_ Skin Irritant \_\_\_\_\_ Highly Toxic \_\_\_\_\_ Other \_\_\_\_\_ (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)  
Return to Client \_\_\_\_\_ Disposal by Lab

FOR LAB USE ONLY  
Received By \_\_\_\_\_ Date/Time \_\_\_\_\_

WHITE - Original, to accompany samples  
YELLOW - Field copy



CHAIN-OF-CUSTODY RECORD

R/A Control No. 128676

C/C Control No. 112492

PROJECT NAME/NUMBER NAS SAX 453058

LAB DESTINATION ITAS-KEX

SAMPLE TEAM MEMBERS Bruder / Musick

CARRIER/WAYBILL NO. 4811963682  
23

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
rinsate	rinsate	7/25/88	water	5-1L Amber		
↓	↓			6-1 L Plastic		
				2- 40ml Amber		
				1- 1/2 L Plastic		
				1- 80ml Amber		
		"				
		"				
		"				

Special Instructions: \_\_\_\_\_

Possible Sample Hazards: \_\_\_\_\_

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: [Signature] ITCS/25/88 1510

3. Relinquished By: \_\_\_\_\_

Received By: \_\_\_\_\_

Received by: \_\_\_\_\_

2. Relinquished By: \_\_\_\_\_

4. Relinquished By: \_\_\_\_\_

Received By: \_\_\_\_\_

Received By: \_\_\_\_\_



**INTERNATIONAL  
TECHNOLOGY  
CORPORATION**

**REQUEST FOR ANALYSIS**

R/A Control No. 120694  
C/C Control No. 112512  
5/29/89

PROJECT NAME NAS JAX  
PROJECT NUMBER 453058  
PROJECT MANAGER M Hampton  
BILL TO IT - Tampa

DATE SAMPLES SHIPPED \_\_\_\_\_  
LAB DESTINATION ITAS - Knox  
LABORATORY CONTACT Beth Monroe  
SEND LAB REPORT TO M. Hampton

PURCHASE ORDER NO. \_\_\_\_\_

DATE REPORT REQUIRED \_\_\_\_\_  
PROJECT CONTACT M Hampton  
PROJECT CONTACT PHONE NO. IT - Tampa

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
41-2 ↓ ↓	ground water	6-1L Plastic		normal	J. J. [Signature] Pluto [Signature] Preserve
		4-1L Amber			
		1-500 ml Amber			
		1-250 ml amber			
		1 1/2 L Plastic			
		2-10 ml Amber			

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)

Normal  Rush \_\_\_\_\_ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)

Nonhazard  Flammable \_\_\_\_\_ Skin Irritant \_\_\_\_\_ Highly Toxic \_\_\_\_\_ Other \_\_\_\_\_ (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)

Return to Client \_\_\_\_\_ Disposal by Lab

FOR LAB USE ONLY

Received By \_\_\_\_\_ Date/Time \_\_\_\_\_

WHITE - Original, to accompany samples  
YELLOW - Field copy



CHAIN-OF-CUSTODY RECORD

R/A Control No. 128694  
C/C Control No. 112512

PROJECT NAME/NUMBER NASTAX 453058  
SAMPLE TEAM MEMBERS Bruder Musick

LAB DESTINATION ITAS - Knox  
CARRIER/WAYBILL NO. 4811963696  
4811963623

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
41-2	Domestic Beds	7/25/85 0900	water	6-1L Plastic		
				4-1L Amber		
				1-500ml amber		
				2-250ml amber		
				7-1/2 Plastic		
		7/29/85 1050		2-40ml Amber		

Special Instructions: Filter Metals thru Reverse

Possible Sample Hazards: \_\_\_\_\_

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: [Signature] ITC 5/25/85 1510  
Received By: \_\_\_\_\_

2. Relinquished By: \_\_\_\_\_  
Received By: \_\_\_\_\_

3. Relinquished By: \_\_\_\_\_  
Received by: \_\_\_\_\_

4. Relinquished By: \_\_\_\_\_  
Received By: \_\_\_\_\_



CHAIN-OF-CUSTODY RECORD

R/A Control No. 118474

C/C Control No. 117347

PROJECT NAME/NUMBER NAS/TAX 453058 020103 LAB DESTINATION ITAS - Knox

SAMPLE TEAM MEMBERS Bruder / Musick CARRIER/WAYBILL NO. 481196363  
23

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
41-2	Domestic Beds	9/25/85 0815	Water	4-11 Amber		
↓	↓	↓	↓	6-12 Plastic		
↓	↓	↓	↓	1-500ml Amber		
↓	↓	↓	↓	1-250ml amber		
		9/25/85 0900		1/2 Plastic		
				2-40ml Amber		
				240ml Amber		

Special Instructions: Filter Metals Then Preserve

Possible Sample Hazards: \_\_\_\_\_

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: [Signature] ITC 9/25/85 1500

3. Relinquished By: \_\_\_\_\_

Received By: \_\_\_\_\_

Received by: \_\_\_\_\_

2. Relinquished By: \_\_\_\_\_

4. Relinquished By: \_\_\_\_\_

Received By: \_\_\_\_\_

Received By: \_\_\_\_\_



CHAIN-OF-CUSTODY RECORD

R/A Control No. 118485

C/C Control No. 117358

PROJECT NAME/NUMBER NAD TAX 453058

LAB DESTINATION ITAS - rnzx

SAMPLE TEAM MEMBERS Bruder / Musick

CARRIER/WAYBILL NO. 481963660

Table with 7 columns: Sample Number, Sample Location and Description, Date and Time Collected, Sample Type, Container Type, Condition on Receipt (Name and Date), Disposal Record No. Handwritten entries include 'rinse water', '9/28/85', and container types like '5.1L Amber', '6.1L Plastic', '1.40ml amber', '1.5L Plastic'.

Special Instructions:

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: [Signature] ITCS/28/85 2010

3. Relinquished By:

Received By:

Received by:

2. Relinquished By:

4. Relinquished By:

Received By:

Received By:



CHAIN-OF-CUSTODY RECORD

R/A Control No. 118476

C/C Control No. 117349

PROJECT NAME/NUMBER DAS JAX 453058 020103

LAB DESTINATION ITAS - Knox

SAMPLE TEAM MEMBERS Bruder / music

CARRIER/WAYBILL NO. 4811963645

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
41-4	Domestic Beds	9/20/89 1800	water	4 - 1L Amber		
↓	↓	↓	↓	6 - 1L Plastic		
↓	↓	↓	↓	1 - 500ml Amber		
↓	↓	↓	↓	1 - 250ml Amber		
↓	↓	↓	↓	1 - 1/2 L Plastic		
↓	↓	9/20/89 1855	↓	2 - 40ml Amber		
↓	↓		↓	2 - 40ml Am		

Special Instructions: FILTER METALS THAN PERSTATE

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: [Signature] ITC 9/20/89 2010

3. Relinquished By: \_\_\_\_\_  
Received by: \_\_\_\_\_

2. Relinquished By: \_\_\_\_\_  
Received By: \_\_\_\_\_

4. Relinquished By: \_\_\_\_\_  
Received By: \_\_\_\_\_



# REQUEST FOR ANALYSIS

R/A Control No. 1-0485  
 C/C Control No. 117358  
7/28/85

PROJECT NAME AAS JAX  
 PROJECT NUMBER 453058  
 PROJECT MANAGER M Hampton  
 BILL TO ITT - Tampa

DATE SAMPLES SHIPPED \_\_\_\_\_  
 LAB DESTINATION ITAS - Knoxville  
 LABORATORY CONTACT Beth Manice  
 SEND LAB REPORT TO M Hampton

PURCHASE ORDER NO. \_\_\_\_\_

DATE REPORT REQUIRED \_\_\_\_\_  
 PROJECT CONTACT M Hampton  
 PROJECT CONTACT PHONE NO. ITT - Tampa

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
<u>1</u>	<u>rinse</u>	<u>5 11 Amber</u>		<u>normal</u>	
		<u>6 11 Plastic</u>			
		<u>4 40ml amber</u>			
		<u>1 1/2 L Plastic</u>			

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)  
 Normal  Rush \_\_\_\_\_ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)  
 Nonhazard  Flammable \_\_\_\_\_ Skin Irritant \_\_\_\_\_ Highly Toxic \_\_\_\_\_ Other \_\_\_\_\_  
 (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)  
 Return to Client \_\_\_\_\_ Disposal by Lab

FOR LAB USE ONLY  
 Received By \_\_\_\_\_ Date/Time \_\_\_\_\_



### REQUEST FOR ANALYSIS

R/A Control No. 11-476  
 C/C Control No. 117349

PROJECT NAME NAS TAX  
 PROJECT NUMBER 453058 0201 03  
 PROJECT MANAGER m. Hampton  
 BILL TO IT - Tampa

DATE SAMPLES SHIPPED 9/28/85  
 LAB DESTINATION ITAS - Knox  
 LABORATORY CONTACT Bob McCreary  
 SEND LAB REPORT TO Mike Jones

PURCHASE ORDER NO. \_\_\_\_\_

DATE REPORT REQUIRED \_\_\_\_\_  
 PROJECT CONTACT Mike Jones  
 PROJECT CONTACT PHONE NO. IT - Tampa

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
41-4	ground water	5 1L Amber	none	pest/herbicides phenols	+ I.D.R.G.
↓	↓	2 40ml Amber	none	TOC	
↓	↓	2 250ml Amber	H <sub>2</sub> SO <sub>4</sub>	TOX	
↓	↓	2 10ml Amber	HCl	VOA	
↓	↓	2 1L Plastic	HNO <sub>3</sub>	RAD	
↓	↓	1 1L Plastic	NaOH	CN	
↓	↓	1 8L Plastic	none	coliform	
↓	↓	1 1L Plastic	none	turbidity	
↓	↓	1 1L Plastic	N	total metals	Fluoride TAN PRESERVE
↓	↓	1 1L Plastic	N	dissolved metals	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)

Normal  Rush \_\_\_\_\_ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)

Nonhazard  Flammable \_\_\_\_\_ Skin Irritant \_\_\_\_\_ Highly Toxic \_\_\_\_\_ Other \_\_\_\_\_ (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)

Return to Client \_\_\_\_\_ Disposal by Lab

FOR LAB USE ONLY

Received By \_\_\_\_\_ Date/Time \_\_\_\_\_

WHITE - Original, to accompany samples  
 YELLOW - Field copy



# REQUEST FOR ANALYSIS

R/A Control No. 11 484  
C/C Control No. 117360

PROJECT NAME DAS JAX  
PROJECT NUMBER 453058  
PROJECT MANAGER Mark Hampton  
BILL TO IT - Tampa

DATE SAMPLES SHIPPED 5/28/89  
LAB DESTINATION ITAS - Knox  
LABORATORY CONTACT Beth Pearce  
SEND LAB REPORT TO Mark Hampton

PURCHASE ORDER NO. \_\_\_\_\_

DATE REPORT REQUIRED \_\_\_\_\_  
PROJECT CONTACT M Hampton  
PROJECT CONTACT PHONE NO. 37 - Tampa

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
41-3	ground water ↓	240 ml amber	HCl	VCA	
41-4					
41-5					
41-6					
42-5					
42-6					
42-7					
42-8					
42-9					

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)

Normal  Rush \_\_\_\_\_ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)

Nonhazard  Flammable \_\_\_\_\_ Skin Irritant \_\_\_\_\_ Highly Toxic \_\_\_\_\_ Other \_\_\_\_\_ (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)

Return to Client \_\_\_\_\_ Disposal by Lab

FOR LAB USE ONLY

Received By \_\_\_\_\_ Date/Time \_\_\_\_\_

WHITE - Original, to accompany samples  
YELLOW - Field copy



CHAIN-OF-CUSTODY RECORD

R/A Control No. 118484

C/C Control No. 117360

PROJECT NAME/NUMBER DAS JAX 453058

LAB DESTINATION ITAS Knox

SAMPLE TEAM MEMBERS Bruders / Musick

CARRIER/WAYBILL NO. 4811963660

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
41-3	Domestic Beds	5/28/85	water	2 40ml Amber		
41-4	Domestic Beds					
41-5	Domestic Beds					
41-6	Domestic Beds					
42-5	Polishing Pond					
42-6	Polishing Pond					
42-7						
42-8						
42-9						

Special Instructions:

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: [Signature] 17 (5/28/85) 2010

3. Relinquished By:

Received By:

Received by:

2. Relinquished By:

4. Relinquished By:

Received By:

Received By:



**INTERNATIONAL  
TECHNOLOGY  
CORPORATION**

**CHAIN-OF-CUSTODY RECORD**

R/A Control No. 118475

C/C Control No. 117348

PROJECT NAME/NUMBER NAS JAX 453058 020103 LAB DESTINATION ITAS - Kncx

SAMPLE TEAM MEMBERS Bruder / Musick CARRIER/WAYBILL NO. 4811963656

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
41-3	Domestic Beds	9/28/85 1500	water	4 - 1L Amber		
↓	↓	↓	↓	6 - 1L Plastic		
↓	↓	↓	↓	1 - 500 ml Amber		
↓	↓	↓	↓	1 - 250 ml Amber		
↓	↓	↓	↓	1 - 8 L Plastic		
↓	↓	9/28/85 1955	↓	2 - 40 ml Amber		
↓	↓		↓	2 - 40 ml Amber		

Special Instructions: FILTER METALS THAN PRESERVE

Possible Sample Hazards: \_\_\_\_\_

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: [Signature] ITC 9/28/85 2015

Received By: \_\_\_\_\_

2. Relinquished By: \_\_\_\_\_

Received By: \_\_\_\_\_

3. Relinquished By: \_\_\_\_\_

Received by: \_\_\_\_\_

4. Relinquished By: \_\_\_\_\_

Received By: \_\_\_\_\_



**REQUEST FOR ANALYSIS**

R/A Control No. 11 175  
 C/C Control No. 117348  
9/28/89

PROJECT NAME DAS JAY  
 PROJECT NUMBER 453058 02 01 03  
 PROJECT MANAGER M. Hampton  
 BILL TO IT-Tampa  
 \_\_\_\_\_  
 \_\_\_\_\_  
 PURCHASE ORDER NO. \_\_\_\_\_

DATE SAMPLES SHIPPED \_\_\_\_\_  
 LAB DESTINATION ITAS-Vncx  
 LABORATORY CONTACT Beth Monroe  
 SEND LAB REPORT TO Mike Jones  
 \_\_\_\_\_  
 \_\_\_\_\_  
 DATE REPORT REQUIRED \_\_\_\_\_  
 PROJECT CONTACT Mike Jones  
 PROJECT CONTACT PHONE NO. IT-Tampa

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
41-3	ground water	5-11 Amber	none	pesticides/herbicides/phenols	TJWRG
↓	↓	2-40 ml Amber	none	TCC	
↓	↓	2-20 ml Amber	H <sub>2</sub> SO <sub>4</sub>	TOX	
↓	↓	2-40 ml Amber	HCl	VOA	
↓	↓	2-11 Plastic	HNO <sub>3</sub>	RAD	
↓	↓	1-11 Plastic	NaOH	CN <sup>-</sup>	
↓	↓	1-8L Plastic	none	coliform	
↓	↓	1-11 Plastic	none	turbidity	
↓	↓	1-11 Plastic	N	total metals	FILTER THAN PRESERVE
↓	↓	1-11 Plastic	N	dissolved metals	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)

Normal  Rush \_\_\_\_\_ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)

Nonhazard  Flammable \_\_\_\_\_ Skin Irritant \_\_\_\_\_ Highly Toxic \_\_\_\_\_ Other \_\_\_\_\_ (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)

Return to Client \_\_\_\_\_ Disposal by Lab

FOR LAB USE ONLY

Received By \_\_\_\_\_ Date/Time \_\_\_\_\_

WHITE - Original, to accompany samples  
 YELLOW - Field copy



CHAIN-OF-CUSTODY RECORD

R/A Control No. 118479

C/C Control No. 117352

PROJECT NAME/NUMBER NAs JAX 453058 020103 LAB DESTINATION TTAS-KNOX

SAMPLE TEAM MEMBERS Bruder / Musick CARRIER/WAYBILL NO. 481196 3671

Table with 7 columns: Sample Number, Sample Location and Description, Date and Time Collected, Sample Type, Container Type, Condition on Receipt (Name and Date), Disposal Record No. Handwritten entries include 'Polishing Ponds', '9/20/85 1200', 'water', and various container types like '1L Amber' and '2.40ml Amber'.

Special Instructions: FILTER METALS THAN MISSISSIPPI

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: [Signature] ITT 9/20/85 1750 Received By: \_\_\_\_\_

3. Relinquished By: \_\_\_\_\_ Received by: \_\_\_\_\_

2. Relinquished By: \_\_\_\_\_ Received By: \_\_\_\_\_

4. Relinquished By: \_\_\_\_\_ Received By: \_\_\_\_\_



**REQUEST FOR ANALYSIS**

R/A Control No. 11 79  
 C/C Control No. 117352  
7/28/89

PROJECT NAME NAS JAX  
 PROJECT NUMBER 453058 02 01 03  
 PROJECT MANAGER M. Hampton  
 BILL TO IT - Tampa  
 \_\_\_\_\_  
 \_\_\_\_\_  
 PURCHASE ORDER NO. \_\_\_\_\_

DATE SAMPLES SHIPPED \_\_\_\_\_  
 LAB DESTINATION ITAS - Knox  
 LABORATORY CONTACT Beth Monroe  
 SEND LAB REPORT TO ~~Mike Jones~~  
 \_\_\_\_\_  
 \_\_\_\_\_  
 DATE REPORT REQUIRED \_\_\_\_\_  
 PROJECT CONTACT Mike Jones  
 PROJECT CONTACT PHONE NO. IT - Tampa

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
42-5	ground water	5-1L Amber	none	pest / herb + phenols	
↓	↓	2-400 ml Amber	none	TOC	
↓	↓	2-400 ml Amber	H <sub>2</sub> SO <sub>4</sub>	TOX (1-250 ml)	
↓	↓	2-40 ml Amber	HCl	VOA	
↓	↓	2-1L Plastic	HNO <sub>3</sub>	RAD	
		1-1L Plastic	NaOH	CH	
		1-1/2 L Plastic	none	coliform	
		1-1L Plastic	none	turbidity	
		1-1L Plastic	N	total metals	
		1-1L Plastic	N	dissolved metals	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)  
 Normal  Rush \_\_\_\_\_ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)  
 Nonhazard  Flammable \_\_\_\_\_ Skin Irritant \_\_\_\_\_ Highly Toxic \_\_\_\_\_ Other \_\_\_\_\_ (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)  
 Return to Client \_\_\_\_\_ Disposal by Lab

FOR LAB USE ONLY  
 Received By \_\_\_\_\_ Date/Time \_\_\_\_\_

WHITE - Original, to accompany samples  
 YELLOW - Field copy



**REQUEST FOR ANALYSIS**

R/A Control No. 11 483  
 C/C Control No. 117356  
9/28/85

PROJECT NAME NAS JAX  
 PROJECT NUMBER 453058 020103  
 PROJECT MANAGER M. Hampton  
 BILL TO IT-Tampa

DATE SAMPLES SHIPPED \_\_\_\_\_  
 LAB DESTINATION ITAS-VNEX  
 LABORATORY CONTACT Both Monroe  
 SEND LAB REPORT TO Mike Jones  
MARK

PURCHASE ORDER NO. \_\_\_\_\_

DATE REPORT REQUIRED \_\_\_\_\_  
 PROJECT CONTACT Mike Jones  
 PROJECT CONTACT PHONE NO. IT-Tampa

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
42-9	ground water	5-1L Amber	none	pest/herb & phenol +	INORG
		2-400 ml Amber	none	TOC	
		1-250ml Amber	H <sub>2</sub> SO <sub>4</sub>	TOX	
		2-40ml Amber	HCl	VOA	
		2-1L Plastic	HNO <sub>3</sub>	RAD	
		1-1L Plastic	NaOH	CN <sup>-</sup>	
		1-1L Plastic	none	coliform	
		1-1L Plastic	none	turbidity	
		1-1L Plastic	n	total metals	FILTRATION RESISTANCE
		1-1L Plastic	n	dissolved metals	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)

Normal  Rush \_\_\_\_\_ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)

Nonhazard  Flammable \_\_\_\_\_ Skin Irritant \_\_\_\_\_ Highly Toxic \_\_\_\_\_ Other \_\_\_\_\_ (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)

Return to Client \_\_\_\_\_ Disposal by Lab

FOR LAB USE ONLY

Received By \_\_\_\_\_ Date/Time \_\_\_\_\_

WHITE - Original, to accompany samples  
 YELLOW - Field copy



CHAIN-OF-CUSTODY RECORD

R/A Control No. 118483

C/C Control No. 117356

PROJECT NAME/NUMBER AAS JAX 453058 020103 LAB DESTINATION ITAS - NAY

SAMPLE TEAM MEMBERS Bruder / Musick CARRIER/WAYBILL NO. 4811563811

Table with 7 columns: Sample Number, Sample Location and Description, Date and Time Collected, Sample Type, Container Type, Condition on Receipt (Name and Date), Disposal Record No. Includes handwritten entries for 'Polishing Ponds' and 'water' with various container types like '4-12 Amber' and '6-1L Plastic'.

Special Instructions: FILTER METALS THROUGH PRESSURE

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: [Signature] ITC 9/28/87 1745

3. Relinquished By:

Received By:

Received by:

2. Relinquished By:

4. Relinquished By:

Received By:

Received By:



**INTERNATIONAL  
TECHNOLOGY  
CORPORATION**

**CHAIN-OF-CUSTODY RECORD**

R/A Control No. 118481

C/C Control No. 117354

PROJECT NAME/NUMBER NAS JAX 453058 02 0103 LAB DESTINATION ITAS - VNCX

SAMPLE TEAM MEMBERS Bruder / Musick CARRIER/WAYBILL NO. 4811963800

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
42-7	Polishing Ponds	5/28/85 1000	Water	4-1L Amber		
↓	↓	↓	↓	6-1L Plastic		
↓	↓	↓	↓	1 500ml Amber		
↓	↓	↓	↓	2 250ml Amber		
↓	↓	↓	↓	1 1/2L Plastic		
↓	↓	5/28/85 1015	↓	2-40 ml Amber		
				2-40 ml Amber		

Special Instructions: FILTER METALS THAN PRESERVE

Possible Sample Hazards: \_\_\_\_\_

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: [Signature] ITC 5/28/85 1740

3. Relinquished By: \_\_\_\_\_

Received By: \_\_\_\_\_

Received by: \_\_\_\_\_

2. Relinquished By: \_\_\_\_\_

4. Relinquished By: \_\_\_\_\_

Received By: \_\_\_\_\_

Received By: \_\_\_\_\_



**INTERNATIONAL  
TECHNOLOGY  
CORPORATION**

**REQUEST FOR ANALYSIS**

R/A Control No. 11 481  
C/C Control No. 117354

PROJECT NAME DAS JAX  
PROJECT NUMBER 453058 02 01 03  
PROJECT MANAGER M. Hampton  
BILL TO IT - Tampa  
  
PURCHASE ORDER NO. \_\_\_\_\_

DATE SAMPLES SHIPPED 9/28/85  
LAB DESTINATION ITAS - Knc x  
LABORATORY CONTACT Beth Monroe  
SEND LAB REPORT TO ~~Mike Jones~~  
MJP  
  
DATE REPORT REQUIRED \_\_\_\_\_  
PROJECT CONTACT ~~Mike Jones~~  
PROJECT CONTACT PHONE NO. IT - Tampa

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
42-7	ground water	5-12 Amber	none	pest/ herb & phenols	IT NARC
↓	↓	2-40 ml Amber	none	TOC	
↓	↓	2-250 ml Amber	H <sub>2</sub> SO <sub>4</sub>	TOX	
↓	↓	2-40 ml Amber	HCl	VOA	
↓	↓	2-12 Plastic	HNO <sub>3</sub>	RAD	
↓	↓	1-12 Plastic	NaOH	CH <sup>-</sup>	
↓	↓	1-1/2 Plastic	none	coliform	
↓	↓	1-12 Plastic	none	turbidity	
↓	↓	1-12 Plastic	n	total metals	EXTRA TAN PASSIVIS
↓	↓	1-12 Plastic	n	dissolved metals	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)

Normal

Rush \_\_\_\_\_

(Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)

Nonhazard

Flammable \_\_\_\_\_

Skin Irritant \_\_\_\_\_

Highly Toxic \_\_\_\_\_

Other \_\_\_\_\_

(Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)

Return to Client \_\_\_\_\_

Disposal by Lab

FOR LAB USE ONLY

Received By \_\_\_\_\_

Date/Time \_\_\_\_\_

WHITE - Original, to accompany samples

YELLOW - Field copy



**INTERNATIONAL  
TECHNOLOGY  
CORPORATION**

**REQUEST FOR ANALYSIS**

R/A Control No. 11478

C/C Control No. 117351

PROJECT NAME NAS TAX  
 PROJECT NUMBER 453058 02 01 03  
 PROJECT MANAGER M Hampton  
 BILL TO IT - Tampa

DATE SAMPLES SHIPPED \_\_\_\_\_  
 LAB DESTINATION ITAS - Knox  
 LABORATORY CONTACT Beth Monroe  
 SEND LAB REPORT TO ~~Mike Jones~~  
MARK

PURCHASE ORDER NO. \_\_\_\_\_

DATE REPORT REQUIRED Normal  
 PROJECT CONTACT ~~Mike Jones~~ MARK  
 PROJECT CONTACT PHONE NO. IT - Tampa

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
41-6	ground water	5-1L Amber	none	pest/herb & phenols/TNORG	
↓	↓	2-40ml Amber	none	TOC	
↓	↓	1-250ml Amber	H <sub>2</sub> SO <sub>4</sub>	TCX	
↓	↓	2-40ml Amber	HCl	VOA	
↓	↓	2-1L Plastic	HNO <sub>3</sub>	RAD	
↓	↓	1-1L Plastic	NaOH	CN <sup>-</sup>	
↓	↓	1-8L Plastic	none	cellulose	
↓	↓	1-1L Plastic	none	turbidity	
↓	↓	1-1L Plastic	none	total metals	FILTER THAN PRESERV
↓	↓	1-1L Plastic	none	dissolved metals	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)

Normal  Rush \_\_\_\_\_ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)

Nonhazard  Flammable \_\_\_\_\_ Skin Irritant \_\_\_\_\_ Highly Toxic \_\_\_\_\_ Other \_\_\_\_\_ (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)

Return to Client \_\_\_\_\_ Disposal by Lab

FOR LAB USE ONLY

Received By \_\_\_\_\_ Date/Time \_\_\_\_\_

WHITE - Original, to accompany samples  
 YELLOW - Field copy



CHAIN-OF-CUSTODY RECORD

R/A Control No. 118477

C/C Control No. 117350

PROJECT NAME/NUMBER DAS JAY 45305802C103 LAB DESTINATION ITAS-Knox

SAMPLE TEAM MEMBERS Bruder / Musick CARRIER/WAYBILL NO. 4811963855

Table with 7 columns: Sample Number, Sample Location and Description, Date and Time Collected, Sample Type, Container Type, Condition on Receipt (Name and Date), Disposal Record No. Includes handwritten entries for 'Domestic Beds' and 'G.W. water' with various container types like Amber and Plastic.

Special Instructions: FILTER METALS TIAN PRESSURE

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: [Signature] ITC 9/28/87 1730

3. Relinquished By:

Received By:

Received by:

2. Relinquished By:

4. Relinquished By:

Received By:

Received By:



**INTERNATIONAL  
TECHNOLOGY  
CORPORATION**

**CHAIN-OF-CUSTODY RECORD**

R/A Control No. 110478  
C/C Control No. **117351**

PROJECT NAME/NUMBER NAS JAX 453058 020103

LAB DESTINATION ITAS Knox

SAMPLE TEAM MEMBERS Bruder / Musick

CARRIER/WAYBILL NO. 4811963844

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
41-6	Domestic Beds	9/28/89 1400	Water	5 1L Amber		
↓	↓	↓	↓	6 1L Plastic		
↓	↓	↓	↓	1 500ml Amber		
↓	↓	↓	↓	1 250ml Amber		
↓	↓	↓	↓	1 3L Plastic		
↓	↓	↓	↓	2 40ml Amber		
↓	↓	9/28/89 1455	↓	2 40ml Amber		

Special Instructions: FILTER METALS THAN PRESERVE

Possible Sample Hazards: \_\_\_\_\_

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: [Signature] 9/28/89 ITC 1730

Received By: \_\_\_\_\_

2. Relinquished By: \_\_\_\_\_

Received By: \_\_\_\_\_

3. Relinquished By: \_\_\_\_\_

Received by: \_\_\_\_\_

4. Relinquished By: \_\_\_\_\_

Received By: \_\_\_\_\_



**INTERNATIONAL  
TECHNOLOGY  
CORPORATION**

**REQUEST FOR ANALYSIS**

R/A Control No. 11717  
C/C Control No. 117350  
9/28/89

PROJECT NAME NAS JAX  
PROJECT NUMBER 453058 02 01 03  
PROJECT MANAGER M. Hampton  
BILL TO IT - Tampa

DATE SAMPLES SHIPPED \_\_\_\_\_  
LAB DESTINATION ITAS - Knox  
LABORATORY CONTACT ~~Bob~~ Monroe  
SEND LAB REPORT TO Anne Jones  
MARK

PURCHASE ORDER NO. \_\_\_\_\_

DATE REPORT REQUIRED \_\_\_\_\_  
PROJECT CONTACT Anne Jones MARK  
PROJECT CONTACT PHONE NO. IT - Tampa

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
41-5	ground water	4-1L Amber	none	pest / herbicide / phenol	
↓	↓	1-500ml Amber	none	<del>FOR</del> INORGANIC	
↓	↓	2-250ml Amber	H <sub>2</sub> SO <sub>4</sub>	TEX	
↓	↓	1-40ml Amber	HCl / none	VGA / TOC	
↓	↓	2-1L Plastic	HNO <sub>3</sub>	RAD	
↓	↓	1-1L Plastic	NaOH	Cr <sup>6+</sup>	
↓	↓	1-1/2L Plastic	none	coliform	
↓	↓	1-1L Plastic	none	turbidity	
↓	↓	1-1L Plastic	none	total metals	FILTER THROUGH PRESSURE
↓	↓	1-1L Plastic	none	dissolved metals	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)  
Normal  Rush \_\_\_\_\_ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)  
Nonhazardous  Flammable \_\_\_\_\_ Skin Irritant \_\_\_\_\_ Highly Toxic \_\_\_\_\_ Other \_\_\_\_\_ (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)  
Return to Client \_\_\_\_\_ Disposal by Lab

FOR LAB USE ONLY  
Received By \_\_\_\_\_ Date/Time \_\_\_\_\_

WHITE - Original, to accompany samples  
YELLOW - Field copy



### REQUEST FOR ANALYSIS

R/A Control No. 10480  
 C/C Control No. 117353  
9/28/85

PROJECT NAME DAS TAX  
 PROJECT NUMBER 453058 02 01 03  
 PROJECT MANAGER M. Hampton  
 BILL TO IT - Tampa  
 \_\_\_\_\_  
 \_\_\_\_\_  
 PURCHASE ORDER NO. \_\_\_\_\_

DATE SAMPLES SHIPPED \_\_\_\_\_  
 LAB DESTINATION ITAS Knox  
 LABORATORY CONTACT Bob Monroe  
 SEND LAB REPORT TO Mike Jones  
MARK  
 \_\_\_\_\_  
 DATE REPORT REQUIRED \_\_\_\_\_  
 PROJECT CONTACT Mike Jones  
 PROJECT CONTACT PHONE NO. IT - Tampa

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
42-6	ground water	5-1L Amber	none	pest/herb + phenol	TNOR6
↓	↓	2-400ml Amber	none	TOC	
↓	↓	1-250ml Amber	H <sub>2</sub> SO <sub>4</sub>	TOX	
↓	↓	2-40ml Amber	HCl	VOA	
↓	↓	3-1L Plastic	HNO <sub>3</sub>	RAD	
↓	↓	1-1L Plastic	NaOH	CN-	
↓	↓	1-1/2L Plastic	none	coliform	
↓	↓	1-1L Plastic	none	turbidity	
↓	↓	1-1L Plastic	none	total metals	FILTER THAN PRESSURE
↓	↓	1-1L Plastic	none	dissolved metals	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)  
 Normal  Rush \_\_\_\_\_ (Subject to rush surcharge)  
 POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)  
 Nonhazard  Flammable \_\_\_\_\_ Skin Irritant \_\_\_\_\_ Highly Toxic \_\_\_\_\_ Other \_\_\_\_\_ (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)  
 Return to Client \_\_\_\_\_ Disposal by Lab

FOR LAB USE ONLY  
 Received By \_\_\_\_\_ Date/Time \_\_\_\_\_



**INTERNATIONAL  
TECHNOLOGY  
CORPORATION**

**CHAIN-OF-CUSTODY RECORD**

R/A Control No. 118480

C/C Control No. 117353

PROJECT NAME/NUMBER NAS JAX 453058 000103

LAB DESTINATION ITAS-Knox

SAMPLE TEAM MEMBERS Bruker / Musick

CARRIER/WAYBILL NO. 4811963822

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
42-6	Polishing Fluids	9/28/89 1120	water	4x1L Amber		
↓	↓		↓	6-1L Plastic		
↓	↓		↓	1-50ml Amber		
↓	↓		↓	10-25ml Amber		
↓	↓		↓	1-8L Plastic		
↓	↓	9/28/89 1145	↓	2-10 ml Amber		
				2-10 ml Amber		

Special Instructions: FILTER METALS THAN PRESERVE

Possible Sample Hazards: \_\_\_\_\_

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: [Signature] ITC 9/28/89 1725

3. Relinquished By: \_\_\_\_\_

Received By: \_\_\_\_\_

Received by: \_\_\_\_\_

2. Relinquished By: \_\_\_\_\_

4. Relinquished By: \_\_\_\_\_

Received By: \_\_\_\_\_

Received By: \_\_\_\_\_



**INTERNATIONAL  
TECHNOLOGY  
CORPORATION**

**REQUEST FOR ANALYSIS**

R/A Control No. 11 482  
C/C Control No. 117355

PROJECT NAME AAS JAX  
PROJECT NUMBER 453058 02 01 03  
PROJECT MANAGER M. Hampton  
BILL TO IT - Tampa  
  
PURCHASE ORDER NO. \_\_\_\_\_

DATE SAMPLES SHIPPED 9/28/89  
LAB DESTINATION JTAS Knox  
LABORATORY CONTACT Both Monica  
SEND LAB REPORT TO Mike Jones  
MARK  
  
DATE REPORT REQUIRED \_\_\_\_\_  
PROJECT CONTACT Mike Jones  
PROJECT CONTACT PHONE NO. IT - Tampa

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
42-8	ground water	5-1L Amber	None	pest / herb & phencols	None
↓	↓	2-400ml Amber	None	TOC	
↓	↓	2-250ml Amber	H <sub>2</sub> SO <sub>4</sub>	TOX	
↓	↓	2-400ml Amber	HCl	VOA	
↓	↓	2-1L Plastic	HNO <sub>3</sub>	RAD	
↓	↓	1-1L Plastic	NaOH	CH-	
↓	↓	1-1/2L Plastic	None	coliform	
↓	↓	1-1L Plastic	None	turbidity	
↓	↓	1-1L Plastic	N	total metals	FILTRATION Pressure
↓	↓	1-1L Plastic	N	dissolved metals	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)  
 Normal  Rush \_\_\_\_\_ (Subject to rush surcharge)  
 POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)  
 Nonhazard  Flammable \_\_\_\_\_ Skin Irritant \_\_\_\_\_ Highly Toxic \_\_\_\_\_ Other \_\_\_\_\_ (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)  
 Return to Client \_\_\_\_\_ Disposal by Lab

FOR LAB USE ONLY  
 Received By \_\_\_\_\_ Date/Time \_\_\_\_\_

WHITE - Original, to accompany samples  
 YELLOW - Field copy



**INTERNATIONAL  
TECHNOLOGY  
CORPORATION**

**CHAIN-OF-CUSTODY RECORD**

R/A Control No. 118482

C/C Control No. **117355**

PROJECT NAME/NUMBER PAS-JAX 45305802 0103

LAB DESTINATION ITAS KNCX

SAMPLE TEAM MEMBERS Bruce / MusicK

CARRIER/WAYBILL NO. 4811963833

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
42-8	Polishing Pendo	9/28/85 0900	water	4-1L Amber		
↓	↓	↓	↓	6-1L Plastic		
↓	↓	↓	↓	1-500ml Amber		
↓	↓	↓	↓	1-250ml Amber		
↓	↓	↓	↓	1-1/2 L Plastic		
↓	↓	↓	↓	2-10 ml Amber		
↓	↓	9/28/85 0915	↓	2-40ml Amber		

Special Instructions: FILTER METALS THAN PRESERVE

Possible Sample Hazards: \_\_\_\_\_

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: [Signature] ITC 9/28/85 1735

Received By: \_\_\_\_\_

2. Relinquished By: \_\_\_\_\_

Received By: \_\_\_\_\_

3. Relinquished By: \_\_\_\_\_

Received by: \_\_\_\_\_

4. Relinquished By: \_\_\_\_\_

Received By: \_\_\_\_\_

APPENDIX E  
CERTIFICATES OF ANALYSIS



INTERNATIONAL  
TECHNOLOGY  
CORPORATION

# ANALYTICAL SERVICES

RECEIVED

NOV 6 1989

## CERTIFICATE OF ANALYSIS

I.T. CORPORATION  
TAMPA, FLORIDA

IT Corporation  
3018 US Highway 301 North, Suite 300  
Tampa, Florida 33619  
ATTN: Mark Hampton

October 31, 1989

Job Number: ITET 44261

P.O. Number: 453058.02.01.03

This is the Certificate of Analysis for the following samples:

Client Project ID: NAS JAX  
Date Received by Lab: 09/30/89  
Number of Samples: Six (6)  
Sample Type: Water-four (4), Rinsate-one (1), Trip Blank-one (1)

### I. Introduction

On 09/30/89 four (4) water samples, one (1) rinsate and one (1) trip blank arrived at the ITAS-Knoxville, Tennessee laboratory for the NAS/JAX project from the IT-Tampa office. The list of analytical tests performed, as well as date of receipt and analysis, can be found in the attached report.

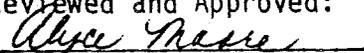
### II. Analytical Results/Methodology

The analytical results for this report are presented by analytical test. Each set of data will include sample identification information and the analytical results. Please note that all data are blank corrected, i.e., if any compound is found in the corresponding laboratory blank, it is subtracted from the analytical result before it is reported. As requested, the samples were filtered and preserved upon receipt.

The total organic halide (TOX) analyses were performed at the IT-Mixed Waste Laboratory (IT-MWL) in Oak Ridge, Tennessee. A separate laboratory report will follow.

The requested radiological analyses were performed at the IT-Radiological Services Laboratory (IT-RSL) in Oak Ridge, Tennessee. A separate laboratory report will follow.

Reviewed and Approved:

  
Alyce Moore  
Laboratory Manager

American Council of Independent Laboratories  
International Association of Environmental Testing Laboratories  
American Association for Laboratory Accreditation

## II. Analytical Results/Methodology (continued)

The samples were analyzed for the requested volatile and semivolatile organic compounds by gas chromatography/mass spectroscopy (GC/MS) based on EPA SW-846 method 8240 and 8270, respectively.

The samples were analyzed for the requested pesticides and herbicides by gas chromatography-electron capture detection (GC-ECD) based on EPA method 608 and method 509B, Standard Methods for the Examination of Water and Wastewater, 16th edition, 1985, respectively.

The samples were analyzed for total organic carbon (TOC) by chemical wet oxidation/infrared detection using EPA method 415.1.

The samples were analyzed for the requested total and dissolved metals by inductively coupled plasma spectroscopy (ICP), graphite furnace atomic absorption spectroscopy (GFAA), and cold vapor atomic absorption spectroscopy (CVAA) based on EPA SW-846 methods 3010, 6010, 3020, 7421, 7740 and 7470.

The samples were analyzed for total and dissolved hexavalent chromium by colorimetric determination according to method 312B, Standard Methods for the Examination of Water and Wastewater, 16th ed., 1985.

The total coliform bacterial densities were determined using the membrane filter technique described in method 909A, Standard Methods for the Examination of Water and Wastewater, 16th edition, 1985.

The samples were analyzed for complexed cyanide by manual distillation/colorimetric determination using EPA method 335.2.

The samples were analyzed for turbidity according to EPA method 180.1.

The samples were analyzed for nitrate and sulfate by colorimetric determination based on EPA methods 353.3 and 375.4, respectively.

The samples were analyzed for chloride by titration according to EPA method 325.3.

The samples were analyzed for fluoride using an ion-specific electrode according to EPA method 340.2.

IT Corporation  
October 31, 1989

IT ANALYTICAL SERVICES  
5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44261

### III. Quality Control

Routine laboratory level I QC was followed.

The volatiles analyses were performed on 10/09/89 by purge and trap with J&W DB-624 Megabore column on a Finnigan OWA GC/MS/DS. The semivolatiles analyses were performed on 10/10/89 by direct injection of sample extract on a J&W DB-5 capillary column on a VG TRIO-2 GC/MS/DS. The volatiles runs went well. All target analytes were standardized for (although some "bad actors" were not run the same day, due to their tendency to soil the system) except for trifluoroethane and 2-ethoxyethanol. These compounds were looked for by comparing spectra of chromatographic peaks with the NIH database spectra. The detection limits for these compounds were therefore clearly estimates; 2-ethoxyethanol, in particular, did not show up in some standard test runs and thus its results are qualified in that it may not be amenable to the method. The detection limit has been adjusted upward from previous projects to reflect the new information. The semivolatiles (phenols) runs went well. There were no other problems seen in final data review for either fraction.

The samples were extracted for pesticides and herbicides on 10/04 and 10/05/89 and analyzed on 10/09/89 for pesticides and 10/09, 11/89 for herbicides. No problems were encountered.

The samples were analyzed for total organic carbon on 10/12/89. No problems were encountered.

The samples were digested on 10/03 and 10/04/89 for ICP and 10/04/89 for GFAA. The samples for mercury analysis were prepared just prior to analysis. The CVAA analysis for mercury was performed on 10/11/89; the GFAA analyses for lead and selenium were performed on 10/06 and 10/11/89, respectively; the remaining metals were analyzed by ICP on 10/05/89. All run QC was acceptable. No problems were encountered.

The hexavalent chromium analyses were performed on 09/30/89. No problems were encountered.

The total coliform determinations were performed on 09/30/89. Elevated detection limits are reported for samples 41-1, 41-2-1, and 41-2-2. Dilutions were necessary for these analyses due to the turbidity of the samples. No other problems were encountered.

The complexed cyanide determinations were performed on 10/11/89. No problems were encountered.

The turbidity of the samples was measured on 09/30/89. No problems were encountered.

The nitrate and sulfate determinations were performed on 10/17/89 and 10/16/89, respectively. No problems were encountered.

The chloride analyses were performed on 10/16/89. No problems were encountered.

The fluoride determinations were performed on 10/13/89. No problems were encountered.

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IT ANALYTICAL SERVICES  
5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44261

VOLATILE ORGANIC ANALYSIS

Results in  $\mu\text{g/liter}$  (ppb)

Sample Matrix: Water

Client Sample ID: Method Blank  
Lab Sample ID: VB1009

<u>Compound</u>		<u>Compound</u>	
vinyl chloride	10 U	tetrachloroethene	5 U
methylene chloride	2 J	toluene	5 U
carbon disulfide	5 U	chlorobenzene	5 U
1,1-dichloroethane	5 U	total xylenes	5 U
chloroform	5 U	trichlorofluoromethane	5 U
1,2-dichloroethane	5 U	isobutanol	5,000 U
2-butanone	10 U	2-nitropropane	5 U
1,1,1-trichloroethane	5 U	1,2-dibromoethane	5 U
carbon tetrachloride	5 U	1,2-dichlorobenzene	5 U
trichloroethene	5 U	1,2,2-trifluoroethane	200 U
1,1,2-trichloroethane	5 U	2-ethoxyethanol	2,000,000 U
benzene	5 U	pyridine	5,000 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

J - Indicates an estimated value less than the detection limit.

Date Analyzed: 10/09/89

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IT ANALYTICAL SERVICES  
5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44261

VOLATILE ORGANIC ANALYSIS

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: 41-1  
Lab Sample ID: JJ6898

<u>Compound</u>		<u>Compound</u>	
vinyl chloride	10 U	tetrachloroethene	5 U
methylene chloride	5 U	toluene	5 U
carbon disulfide	5 U	chlorobenzene	5 U
1,1-dichloroethane	7	total xylenes	5 U
chloroform	5 U	trichlorofluoromethane	5 U
1,2-dichloroethane	5 U	isobutanol	5,000 U
2-butanone	10 U	2-nitropropane	5 U
1,1,1-trichloroethane	5 U	1,2-dibromoethane	5 U
carbon tetrachloride	5 U	1,2-dichlorobenzene	5 U
trichloroethene	5 U	1,2,2-trifluoroethane	200 U
1,1,2-trichloroethane	5 U	2-ethoxyethanol	2,000,000 U
benzene	5 U	pyridine	5,000 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

J - Indicates an estimated value less than the detection limit.

Date Analyzed: 10/09/89

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IT ANALYTICAL SERVICES  
5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44253

VOLATILE ORGANIC ANALYSIS

Results in  $\mu\text{g/liter}$  (ppb)

Sample Matrix: Water

Client Sample ID: 41-2-1  
Lab Sample ID: JJ6899

<u>Compound</u>		<u>Compound</u>	
vinyl chloride	10 U	tetrachloroethene	5 U
methylene chloride	5 U	toluene	5 U
carbon disulfide	5 U	chlorobenzene	5 U
1,1-dichloroethane	5 U	total xylenes	5 U
chloroform	5 U	trichlorofluoromethane	5 U
1,2-dichloroethane	5 U	isobutanol	5,000 U
2-butanone	2 J	2-nitropropane	5 U
1,1,1-trichloroethane	5 U	1,2-dibromoethane	5 U
carbon tetrachloride	5 U	1,2-dichlorobenzene	5 U
trichloroethene	5 U	1,2,2-trifluoroethane	200 U
1,1,2-trichloroethane	5 U	2-ethoxyethanol	2,000,000 U
benzene	5 U	pyridine	5,000 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

J - Indicates an estimated value less than the detection limit.

Date Analyzed: 10/09/89

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5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44261

VOLATILE ORGANIC ANALYSIS

Results in  $\mu\text{g/liter}$  (ppb)

Sample Matrix: Water

Client Sample ID: 41-2-2  
Lab Sample ID: JJ6900

<u>Compound</u>		<u>Compound</u>	
vinyl chloride	10 U	tetrachloroethene	5 U
methylene chloride	5 U	toluene	5 U
carbon disulfide	5 U	chlorobenzene	5 U
1,1-dichloroethane	5 U	total xylenes	5 U
chloroform	5 U	trichlorofluoromethane	5 U
1,2-dichloroethane	5 U	isobutanol	5,000 U
2-butanone	2 J	2-nitropropane	5 U
1,1,1-trichloroethane	5 U	1,2-dibromoethane	5 U
carbon tetrachloride	5 U	1,2-dichlorobenzene	5 U
trichloroethene	5 U	1,2,2-trifluoroethane	200 U
1,1,2-trichloroethane	5 U	2-ethoxyethanol	2,000,000 U
benzene	5 U	pyridine	5,000 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

J - Indicates an estimated value less than the detection limit.

Date Analyzed: 10/09/89

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KNOXVILLE, TN

Client Project ID: NAS JAX

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VOLATILE ORGANIC ANALYSIS

Results in  $\mu\text{g/liter}$  (ppb)

Sample Matrix: Water

Client Sample ID: PW-1  
Lab Sample ID: JJ6901

<u>Compound</u>		<u>Compound</u>	
vinyl chloride	10 U	tetrachloroethene	5 U
methylene chloride	5 U	toluene	5 U
carbon disulfide	5 U	chlorobenzene	5 U
1,1-dichloroethane	5 U	total xylenes	5 U
chloroform	13	trichlorofluoromethane	5 U
1,2-dichloroethane	5 U	isobutanol	5,000 U
2-butanone	10 U	2-nitropropane	5 U
1,1,1-trichloroethane	5 U	1,2-dibromoethane	5 U
carbon tetrachloride	5 U	1,2-dichlorobenzene	5 U
trichloroethene	5 U	1,2,2-trifluoroethane	200 U
1,1,2-trichloroethane	5 U	2-ethoxyethanol	2,000,000 U
benzene	5 U	pyridine	5,000 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

J - Indicates an estimated value less than the detection limit.

Date Analyzed: 10/09/89

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KNOXVILLE, TN

Client Project ID: NAS JAX

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VOLATILE ORGANIC ANALYSIS

Results in  $\mu\text{g/liter}$  (ppb)

Sample Matrix: Water

Client Sample ID: Rinsate  
Lab Sample ID: JJ6902

<u>Compound</u>		<u>Compound</u>	
vinyl chloride	10 U	tetrachloroethene	5 U
methylene chloride	5 U	toluene	5 U
carbon disulfide	5 U	chlorobenzene	5 U
1,1-dichloroethane	5 U	total xylenes	5 U
chloroform	5 U	trichlorofluoromethane	5 U
1,2-dichloroethane	5 U	isobutanol	5,000 U
2-butanone	10 U	2-nitropropane	5 U
1,1,1-trichloroethane	5 U	1,2-dibromoethane	5 U
carbon tetrachloride	5 U	1,2-dichlorobenzene	5 U
trichloroethene	5 U	1,2,2-trifluoroethane	200 U
1,1,2-trichloroethane	5 U	2-ethoxyethanol	2,000,000 U
benzene	5 U	pyridine	5,000 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

J - Indicates an estimated value less than the detection limit.

Date Analyzed: 10/09/89

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VOLATILE ORGANIC ANALYSIS

Results in  $\mu\text{g/liter}$  (ppb)

Sample Matrix: Water

Client Sample ID: Trip Blank  
Lab Sample ID: JJ6903

<u>Compound</u>		<u>Compound</u>	
vinyl chloride	10 U	tetrachloroethene	5 U
methylene chloride	5 U	toluene	5 U
carbon disulfide	5 U	chlorobenzene	5 U
1,1-dichloroethane	5 U	total xylenes	5 U
chloroform	5 U	trichlorofluoromethane	5 U
1,2-dichloroethane	5 U	isobutanol	5,000 U
2-butanone	10 U	2-nitropropane	5 U
1,1,1-trichloroethane	5 U	1,2-dibromoethane	5 U
carbon tetrachloride	5 U	1,2-dichlorobenzene	5 U
trichloroethene	5 U	1,2,2-trifluoroethane	200 U
1,1,2-trichloroethane	5 U	2-ethoxyethanol	2,000,000 U
benzene	5 U	pyridine	5,000 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

J - Indicates an estimated value less than the detection limit.

Date Analyzed: 10/09/89

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IT ANALYTICAL SERVICES  
5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44261

WATER SURROGATE PERCENT RECOVERY SUMMARY

Sample No.	VOLATILE		
	Toluene-D8 (88-110%)*	BFB (86-115%)*	1,2 Dichloroethane-D4 (76-114%)*
Method Blank	88	90	88
Trip Blank	88	90	89
Rinsate	93	96	97
PW-1	102	102	103
41-2-1	91	94	96
41-1	97	96	97
41-2-2	100	102	102

\*Values in parenthesis represent USEPA contract required QC limits.

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KNOXVILLE, TN

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SEMIVOLATILES ORGANIC ANALYSIS

Results in  $\mu\text{g/liter}$  (ppb)

Sample Matrix: Water

Client Sample ID: Method Blank  
Lab Sample ID: BL4897

phenol	10 U
2-chlorophenol	10 U
2-nitrophenol	10 U
2,4-dimethylphenol	10 U
2,4-dichlorophenol	10 U
4-chloro-3-methylphenol	10 U
2,4,6-trichlorophenol	10 U
2,4-dinitrophenol	50 U
4-nitrophenol	50 U
4,6-dinitro-2-methylphenol	50 U
pentachlorophenol	50 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

J - Indicates an estimated value less than the detection limit.

Date Extracted: 10/05/89  
Date Analyzed: 10/10/89

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SEMIVOLATILES ORGANIC ANALYSIS

Results in  $\mu\text{g/liter}$  (ppb)

Sample Matrix: Water

Client Sample ID: 41-1  
Lab Sample ID: JJ6934

phenol	10 U
2-chlorophenol	10 U
2-nitrophenol	10 U
2,4-dimethylphenol	10 U
2,4-dichlorophenol	10 U
4-chloro-3-methylphenol	10 U
2,4,6-trichlorophenol	10 U
2,4-dinitrophenol	51 U
4-nitrophenol	51 U
4,6-dinitro-2-methylphenol	51 U
pentachlorophenol	51 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

J - Indicates an estimated value less than the detection limit.

Date Extracted: 10/05/89  
Date Analyzed: 10/10/89

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SEMIVOLATILES ORGANIC ANALYSIS

Results in  $\mu\text{g/liter}$  (ppb)

Sample Matrix: Water

Client Sample ID: 41-2-1  
Lab Sample ID: JJ6935

phenol	10 U
2-chlorophenol	10 U
2-nitrophenol	10 U
2,4-dimethylphenol	10 U
2,4-dichlorophenol	10 U
4-chloro-3-methylphenol	10 U
2,4,6-trichlorophenol	10 U
2,4-dinitrophenol	51 U
4-nitrophenol	51 U
4,6-dinitro-2-methylphenol	51 U
pentachlorophenol	51 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

J - Indicates an estimated value less than the detection limit.

Date Extracted: 10/05/89  
Date Analyzed: 10/10/89

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SEMIVOLATILES ORGANIC ANALYSIS

Results in  $\mu\text{g/liter}$  (ppb)

Sample Matrix: Water

Client Sample ID: 41-2-2  
Lab Sample ID: JJ6936

phenol	10 U
2-chlorophenol	10 U
2-nitrophenol	10 U
2,4-dimethylphenol	10 U
2,4-dichlorophenol	10 U
4-chloro-3-methylphenol	10 U
2,4,6-trichlorophenol	10 U
2,4-dinitrophenol	51 U
4-nitrophenol	51 U
4,6-dinitro-2-methylphenol	51 U
pentachlorophenol	51 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

J - Indicates an estimated value less than the detection limit.

Date Extracted: 10/05/89  
Date Analyzed: 10/10/89

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KNOXVILLE, TN

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SEMIVOLATILES ORGANIC ANALYSIS

Results in  $\mu\text{g/liter}$  (ppb)

Sample Matrix: Water

Client Sample ID: PW-1  
Lab Sample ID: JJ6937

phenol	11 U
2-chlorophenol	11 U
2-nitrophenol	11 U
2,4-dimethylphenol	11 U
2,4-dichlorophenol	11 U
4-chloro-3-methylphenol	11 U
2,4,6-trichlorophenol	11 U
2,4-dinitrophenol	54 U
4-nitrophenol	54 U
4,6-dinitro-2-methylphenol	54 U
pentachlorophenol	54 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

J - Indicates an estimated value less than the detection limit.

Date Extracted: 10/05/89

Date Analyzed: 10/10/89

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SEMIVOLATILES ORGANIC ANALYSIS

Results in  $\mu\text{g/liter}$  (ppb)

Sample Matrix: Water

Client Sample ID: Rinsate  
Lab Sample ID: JJ6938

phenol	11 U
2-chlorophenol	11 U
2-nitrophenol	11 U
2,4-dimethylphenol	11 U
2,4-dichlorophenol	11 U
4-chloro-3-methylphenol	11 U
2,4,6-trichlorophenol	11 U
2,4-dinitrophenol	55 U
4-nitrophenol	55 U
4,6-dinitro-2-methylphenol	55 U
pentachlorophenol	55 U

U - Compound was analyzed for but not detected. The number is the detection limit for this sample.

J - Indicates an estimated value less than the detection limit.

Date Extracted: 10/05/89  
Date Analyzed: 10/10/89

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5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44261

WATER SURROGATE PERCENT RECOVERY SUMMARY

Sample No.	SEMI-VOLATILE					
	Nitro-Benzene-D5 (35-114%)*	2-Fluoro-Biphenyl (43-116%)*	Terphenyl-D14 (33-141%)*	Phenol-D5 (10-94%)*	2-Fluoro-Phenol (21-100%)*	2,4,6-Tribromo-Phenol (10-123%)*
Method Blank	73	67	84	29	42	64
41-1	84	77	76	28	41	81
41-2-1	79	73	86	28	41	74
41-2-2	94	77	79	32	48	74
PW-1	80	76	88	33	46	73
Rinsate	89	79	90	31	46	72

\*Values in parenthesis represent USEPA contract required QC limits.

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PESTICIDES AND HERBICIDES ANALYSIS

Results in mg/liter (ppm)

Sample Matrix: Water

Client Sample ID: Method Blank  
Lab Sample ID: BL4895/BL4898

Lindane	0.0001 U
Endrin	0.0001 U
Methoxychlor	0.0001 U
Toxaphene	0.0004 U
2,4-D	0.0002 U
Silvex	0.0001 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

Date Extracted: (Herb) 10/04/89, (Pest) 10/05/89  
Date Analyzed: (Herb) 10/09/89, (Pest) 10/11/89

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PESTICIDES AND HERBICIDES ANALYSIS

Results in mg/liter (ppm)

Sample Matrix: Water

Client Sample ID: Lab Sample ID:	<u>41-1</u> <u>JJ6939</u>	<u>41-2-1</u> <u>JJ6940</u>	<u>41-2-2</u> <u>JJ6941</u>	<u>PW-1</u> <u>JJ6943</u>	<u>Rinsate</u> <u>JJ6944</u>
Lindane	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
Endrin	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
Methoxychlor	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
Toxaphene	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U
2,4-D	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Silvex	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

Date Extracted: (Herb) 10/04/89, (Pest) 10/05/89

Date Analyzed: (Herb) 10/09/89, (Pest) 10/11/89

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TOTAL ORGANIC CARBON ANALYSIS

Results in mg/liter (ppm)

Sample Matrix: Water

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Result</u>
Method Blank	D0234	1 U
41-1	JJ6904	16
41-2-1	JJ6905	2
41-2-2	JJ6906	2
PW-1	JJ6907	1 U
Rinsate	JJ6908	1 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

Date Analyzed: 10/12/89

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TOTAL METALS ANALYSIS

Results in mg/liter (ppm)

Sample Matrix: Water

Client Sample ID: Lab Sample ID:	Method Blank <u>PBWC0712/C0725</u>	41-1 <u>JJ6924</u>	41-2-1 <u>JJ6925</u>
Arsenic	0.03 U	0.03 U	0.03 U
Barium	0.002 U	0.45	0.090
Cadmium	0.005 U	0.005 U	0.005 U
Chromium	0.01 U	0.07	0.01
Copper	0.01 U	0.01 U	0.01 U
Iron	0.01 U	38.3	13.2
Lead	0.002	0.031	0.007
Manganese	0.002 U	0.13	0.12
Mercury	NR	0.001 U	0.001 U
Nickel	0.02 U	0.03	0.02 U
Selenium	0.002 U	0.017 U*	0.010 U*
Silver	0.005 U	0.005 U	0.005 U
Sodium	0.2 U	37.7	18.1
Vanadium	0.01 U	0.09	0.02
Zinc	0.013	0.067	0.085

U - Compound was analyzed for but not detected. The number is the detection limit for sample.

NR - Not required

\* - Detection limit higher than normal due to sample matrix interference.

Date Digested: 10/03 and 10/04/89  
Date Analyzed: (ICP) 10/05/89  
(GFAA) 10/06 and 10/11/89  
(CVAA) 10/11/89

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IT ANALYTICAL SERVICES  
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TOTAL METALS ANALYSIS

Results in mg/liter (ppm)

Sample Matrix: Water

Client Sample ID:	41-2-2	PW-1	Rinsate
Lab Sample ID:	<u>JJ6926</u>	<u>JJ6927</u>	<u>JJ6928</u>
Arsenic	0.03 U	0.03 U	0.03 U
Barium	0.11	0.002 U	0.002 U
Cadmium	0.005 U	0.005 U	0.005 U
Chromium	0.10	0.02	0.01 U
Copper	0.01 U	0.01 U	0.01 U
Iron	26.2	1.3	0.02
Lead	0.011	0.002 U	0.002 U
Manganese	0.12	0.003	0.002 U
Mercury	0.001 U	0.001 U	0.001 U
Nickel	0.02	0.02 U	0.02 U
Selenium	0.004 U*	0.002 U	0.002 U
Silver	0.005 U	0.005 U	0.005 U
Sodium	19.0	0.2 U	0.2 U
Vanadium	0.06	0.01 U	0.01 U
Zinc	0.082	0.29	0.005 U

U - Compound was analyzed for but not detected. The number is the detection limit for this sample.

\* - Detection limit higher than normal due to sample matrix interference.

Date Digested: 10/03 and 10/04/89  
Date Analyzed: (ICP) 10/05/89  
(GFAA) 10/06 and 10/11/89  
(CVAA) 10/11/89

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5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44261

DISSOLVED METALS ANALYSIS

Results in mg/liter (ppm)

Sample Matrix: Water

Client Sample ID: Lab Sample ID:	Method Blank 1 <u>PBFC0713/C0726</u>	41-1 <u>JJ6929</u>	41-2-1 <u>JJ6930</u>	41-2-2 <u>JJ6931</u>
Arsenic	0.03 U	0.03 U	0.03 U	0.03 U
Barium	0.002 U	0.21	0.043	0.046
Cadmium	0.005 U	0.005 U	0.006	0.005 U
Chromium	0.01 U	0.01 U	0.01 U	0.01 U
Copper	0.01 U	0.01 U	0.01 U	0.01 U
Iron	0.01	25.1	0.43	2.8
Lead	0.002 U	0.003 U	0.002 U	0.002 U
Manganese	0.002 U	0.12	0.055	0.058
Mercury	NR	0.001 U	0.001 U	0.001 U
Nickel	0.02 U	0.02	0.02 U	0.02 U
Selenium	0.002 U	0.003 U*	0.002 U	0.002 U
Silver	0.005 U	0.005 U	0.005 U	0.005 U
Sodium	0.2 U	42.4	19.5	18.1
Vanadium	0.01 U	0.01	0.01 U	0.01 U
Zinc	0.013	0.035	0.035	0.019

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

NR - Not required

\* - Detection limit higher than normal due to sample matrix interference.

Date Digested: 10/03 and 10/04/89  
Date Analyzed: (ICP) 10/05/89  
(GFAA) 10/06 and 10/11/89  
(CVAA) 10/11/89

IT Corporation  
October 31, 1989

IT ANALYTICAL SERVICE  
5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44261

DISSOLVED METALS ANALYSIS

Results in mg/liter (ppm)

Sample Matrix: Water

Client Sample ID: Lab Sample ID:	Method Blank 2 <u>PBFC0715/C0732</u>	PW-1 <u>JJ6932</u>	Rinsate <u>JJ6933</u>
Arsenic	0.03 U	0.03 U	0.03 U
Barium	0.002 U	0.002 U	0.002 U
Cadmium	0.005 U	0.005 U	0.005 U
Chromium	0.01 U	0.01 U	0.01 U
Copper	0.01 U	0.01 U	0.01 U
Iron	0.01 U	0.06	0.04
Lead	0.002 U	0.002 U	0.002 U
Manganese	0.002 U	0.002 U	0.002 U
Mercury	NR	0.001 U	0.001 U
Nickel	0.02 U	0.02 U	0.02 U
Selenium	0.002 U	0.002 U	0.002 U
Silver	0.005 U	0.005 U	0.005 U
Sodium	0.2 U	0.4	0.5
Vanadium	0.01 U	0.01 U	0.01 U
Zinc	0.005 U	0.091	0.027

U - Compound was analyzed for but not detected. The number is the detection limit for sample.

NR - Not required

Date Digested: 10/03 and 10/04/89  
Date Analyzed: (ICP) 10/05/89  
(GFAA) 10/06 and 10/11/89  
(CVAA) 10/11/89

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October 31, 1989

IT ANALYTICAL SERVICES  
5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44261

TOTAL COLIFORM ANALYSIS  
Results in colonies/100 ml  
Sample Matrix: Water

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Result</u>
Method Blank	P0479	0
41-1	JJ6909	100 U*
41-2-1	JJ6910	50 U*
41-2-2	JJ6911	50 U*
PW-1	JJ6912	0
Rinsate	JJ6913	0

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

\* - Elevated detection limits are due to dilution factors. Dilutions were necessary due to the turbidity of the sample.

Date Analyzed: 09/30/89

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October 31, 1989

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5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44261

CYANIDE ANALYSIS

Results in mg/liter (ppm)

Sample Matrix: Water

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Result</u>
Method Blank	P0510	0.01 U
41-1	JJ6914	0.01 U
41-2-1	JJ6915	0.01 U
41-2-2	JJ6916	0.01 U
PW-1	JJ6917	0.01 U
Rinsate	JJ6918	0.01 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

Date Analyzed: 10/11/89

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October 31, 1989

IT ANALYTICAL SERVICES  
5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44261

WASTEWATER ANALYSIS

Results in mg/liter (ppm)

Sample Matrix: Water

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Nitrate, as N</u>	<u>Sulfate</u>	<u>Chloride</u>	<u>Fluoride</u>
Method Blank	-	0.05 U	10 U	1	0.1 U
41-1	JJ6919	0.05 U	150	64	0.1 U
41-2-1	JJ6920	0.07	10 U	27	0.1 U
41-2-2	JJ6921	0.05	25 U	27	0.1 U
PW-1	JJ6922	0.09	10 U	2.5	0.1 U
Rinsate	JJ6923	0.05	10 U	2.0	0.1 U
Date of Analysis		10/17/89	10/16/89	10/16/89	10/13/89

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

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5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44261

TURBIDITY ANALYSIS

Results in NTU's

Sample Matrix: Water

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Result</u>
Method Blank	P0482	0.15
41-1	JJ6919	600
41-2-1	JJ6920	200
41-2-2	JJ6921	220
PW-1	JJ6922	0.20
Rinsate	JJ6923	0.10

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

Date Analyzed: 09/30/89

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October 31, 1989

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5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44261

TOTAL HEXAVALENT CHROMIUM ANALYSIS

Results in mg/liter (ppm)

Sample Matrix: Water

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Result</u>
Method Blank	P0480	0.02 U
41-1	JJ6924	0.02 U
41-2-1	JJ6925	0.02 U
41-2-2	JJ6926	0.02 U
PW-1	JJ6927	0.02 U
Rinsate	JJ6928	0.02 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

Date Analyzed: 09/30/89

IT Corporation  
October 31, 1989

IT ANALYTICAL SERVICES  
5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44261

DISSOLVED HEXAVALENT CHROMIUM ANALYSIS

Results in mg/liter (ppm)

Sample Matrix: Water

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Result</u>
Method Blank	P0481	0.02 U
41-1	JJ6929	0.02 U
41-2-1	JJ6930	0.02 U
41-2-2	JJ6931	0.02 U
PW-1	JJ6932	0.02 U
Rinsate	JJ6933	0.02 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

Date Analyzed: 09/30/89



INTERNATIONAL  
TECHNOLOGY  
CORPORATION

# ANALYTICAL SERVICES

RECEIVED

NOV - 6 1989

## CERTIFICATE OF ANALYSIS

I.T. CORPORATION  
TAMPA, FLORIDA

International Technology Corp.  
ITAS-Knoxville  
5815 Middlebrook Pike  
Knoxville, TN 37921  
Attn: Mary Tyler

Date: November 1, 1989

ITMWL Job Number: ITET 35635  
ITSTU Job Number: ITET 44254 & ITET 44261

This is the Certificate of Analysis for the following samples:

Client Project ID: ITET 44254 & ITET 44261  
Date Received by Lab: 10/3/89  
Number of Samples: Fifteen (15)  
Sample Type: Water

### I. Introduction

On October 3, 1989, fifteen (15) water samples arrived at the ITAS Oak Ridge, Tennessee laboratory from ITAS-Knoxville, Knoxville, Tennessee. The list of analytical tests performed, as well as date of receipt and analysis, can be found in the attached report.

Data are reported with the qualifier "U" if the compound was analyzed for but not detected. Lists with concentration unit code and lab and client suffix code definitions are attached.

### II. Analytical Results/Methodology

The samples were analyzed for Total Organic Halides. Results are presented in the following report and were determined using Method 9020, Test Methods for Evaluating Solid Waste, USEPA SW-846, 3rd edition, 1986.

Reviewed and Approved

Snell A. Mills III  
Laboratory Manager

SAM/sca

American Council of Independent Laboratories  
International Association of Environmental Testing Laboratories  
American Association for Laboratory Accreditation

ITAS-Knoxville  
ATTN: Mary Tyler  
Date: November 1, 1989

Page 2 of 2  
Job Number: ITET 35635

Date Received: 10/3/89

Sample Description: Water Concentration Units: mg/L

Client ID:	41-3,	41-4,	41-5,	41-6,	42-5,	42-6
IT-MWL ID:	MM0589,	MM0590,	MM0591,	MM0592,	MM0595,	MM0596
IT-STU ID:	JJ6810,	JJ6811,	JJ6812,	JJ6813,	JJ6814,	JJ6815

Client ID:	42-7,	42-9,	Rinsate,	42-8,	41-1,	41-2-1,	41-2-2
IT-MWL ID:	MM0597,	MM0598,	MM0599,	MM0600,	MM0601,	MM0602,	MM0603
IT-STU ID:	JJ6816,	JJ6817,	JJ6818,	JJ6864,	JJ6945,	JJ6946,	JJ6947

Client ID:	PW-1,	Rinsate	
IT-MWL ID:	MM0604,	MM0605,	BLANK
IT-STU ID:	JJ6948,	JJ6949	

Prep and Anal Date:	10/4/89	41-3,	41-4,	41-5,	41-6,	BLANK
	10/5/89	42-5,	42-6,	42-7,	42-9,	BLANK
	10/6/89	Rinsate,	41-1,	41-2-1,	41-2-2,	BLANK
	10/9/89	PW-1,	Rinsate,	BLANK		
	10/10/89	42-8,	BLANK			

T O X

Client ID:	<u>41-3</u>	<u>41-4</u>	<u>41-5</u>	<u>41-6</u>	<u>42-5</u>	<u>42-6</u>	<u>42-7</u>
Average Result:	0.133	0.285	0.221	0.244	0.088	<0.01	0.071

Client ID:	<u>42-9</u>	<u>Rinsate</u>	<u>42-8</u>	<u>41-1</u>	<u>41-2-1</u>	<u>41-2-2</u>	<u>PW-1</u>
Average Result:	<0.01	0.053	0.048	0.035	0.045	<0.01	<0.01

Client ID:	<u>RINSATE</u>	<u>BLANK(10/4/89)</u>	<u>BLANK(10/5/89)</u>	<u>BLANK(10/6/89)</u>
Average Result:	<0.01	<0.01	<0.01	<0.01

Client ID:	<u>BLANK(10/9/89)</u>	<u>BLANK(10/10/89)</u>
Average Result:	<0.01	<0.01

NOV 6 1989

**CERTIFICATE OF ANALYSIS**

**I.T. CORPORATION  
TAMPA, FLORIDA**

IT Corporation  
3018 US Highway 301 North, Suite 300  
Tampa, Florida 33619  
ATTN: Mark Hampton

October 30, 1989

Job Number: ITET 44253

P.O. Number: 453058.01.04.03

This is the Certificate of Analysis for the following samples:

Client Project ID: NAS JAX  
Date Received by Lab: 09/29/89  
Number of Samples: Eleven-(11)  
Sample Type: Water-nine (9), Rinsate-one (1), Trip Blank-one (1)

**I. Introduction**

On 09/29/89 nine (9) water samples, one (1) rinsate and one (1) trip blank arrived at the ITAS-Knoxville, Tennessee laboratory from IT-Tampa, Florida. The list of analytical tests performed, as well as date of receipt and analysis, can be found in the attached report.

**II. Analytical Results/Methodology**

The analytical results for this report are presented by analytical test. Each set of data will include sample identification information and the analytical results. Please note that all data are blank corrected, i.e., if any compound is found in the corresponding laboratory blank, it is subtracted from the analytical result before it is reported.

The samples for metals analysis were filtered and then preserved by the laboratory upon receipt.

The samples were analyzed for the requested volatile organic compounds by gas chromatography/mass spectroscopy (GC/MS) based on SW-846 method 8240.

Reviewed and Approved:

Alyce Moore  
Alyce Moore  
Laboratory Manager

IT Corporation  
October 30, 1989

IT ANALYTICAL SERVICES  
5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44253

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## II. Analytical Results/Methodology (continued)

The samples were analyzed for the requested semivolatile compounds by GC/MS according to SW-846 method 8270.

The samples were analyzed for the requested pesticides and herbicides by gas chromatography/electron capture detection (GC-ECD) based on EPA method 608 and Standard Methods for the Examination of Water and Wastewater, 16th edition, 1985, method 509B.

The samples were analyzed for total organic carbon (TOC) by chemical wet oxidation/infrared detection using EPA method 415.1.

The samples were analyzed for the requested metals by cold vapor atomic absorption spectroscopy (CVAA), graphite furnace atomic absorption spectroscopy (GFAA) and inductively coupled plasma spectroscopy (ICP) using SW-846 methods 3010, 3020, 7421, 7740, 7470, and 6010.

The samples were analyzed for turbidity according to EPA method 180.1.

The samples were analyzed for nitrate and sulfate by colorimetric determination based on EPA methods 353.3 and 375.4, respectively.

The samples were analyzed for chloride by titration according to EPA method 325.3.

The samples were analyzed for fluoride using an ion-specific electrode according to EPA method 340.2.

The total coliform bacterial densities were determined using the membrane filter technique described in method 909A, Standard Methods for the Examination of Water and Wastewater, 16th edition, 1985.

The samples were analyzed for cyanide by manual distillation/colorimetric determination using EPA method 335.2.

The samples were analyzed for hexavalent chromium according to standard methods 312B.

IT Corporation  
October 30, 1989

IT ANALYTICAL SERVICES  
5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44253

### III. Quality Control

Routine laboratory level I QC was followed.

The volatiles analyses were performed on 10/05 and 10/09/89 by purge and trap with J&W DB-624 Megabore column on two Finnigan OWA GC/MS/DS units. The semivolatiles analyses were performed on 10/09, 10/13, 10/16 and 10/17/89 by direct injection of sample extract on a Restek RTX-5 capillary column on a Finnigan 4000 GC/MS/DS. The volatiles runs went well. All target analytes were standardized for (some "bad actors" were evaluated for relative retention time and detection limit from standard data run on one instrument on a different day but under the same analytical conditions) except for trifluoroethane and 2-ethoxyethanol: these compounds were looked for as TIC's (tentatively identified compounds) by matching chromatographic peak spectra with those of the NIH database. The detection limits for these compounds are clearly estimates. Specifically, the 2-ethoxyethanol limit has been adjusted upward from previous projects, on the basis of newer test information. The semivolatiles runs went well. In the samples themselves, 42-8 showed one surrogate recovery low (by about 2%). These deviations were not significant, and did not indicate any problem with the analysis, or qualify any results. No other problems were seen in final review of the data for either fraction.

The samples were extracted for pesticides and herbicides on 10/02 and 10/04/89 and analyzed on 10/05, 10/06 and 10/09/89. No problems were encountered.

The samples were analyzed for TOC on 10/03/89. No problems were encountered.

The samples were digested on 10/03/89 for ICP and 10/04/89 for GFAA. The samples for mercury analysis were prepared just prior to analysis. The CVAA analysis for mercury was performed on 10/12/89; the GFAA analyses for lead and selenium were performed on 10/17/89; the remaining metals were analyzed by ICP on 10/12/89. All run QC was acceptable. No problems were encountered.

The turbidity of the samples was measured on 09/29/89. No problems were encountered.

The nitrate, sulfate, chloride and fluoride analyses were performed on 10/12/89, 10/16/89, 10/16/89 and 10/13/89, respectively. Elevated detection limits were reported for samples 41-4, 41-6, 42-5, 42-6 and 42-9. Dilution was necessary due to the turbidity of the samples. No other problems were encountered.

The total coliform analyses were performed on 09/29/89. Elevated detection limits were reported for samples 41-4, 42-6 and 42-9. Dilution was necessary due to the turbidity of the samples. No other problems were encountered.

The cyanide analyses were performed on 10/11/89. No problems were encountered.

The hexavalent chromium analyses were performed on 09/29/89. Elevated detection limits were reported for all samples due to sample turbidity. No other problems were encountered.

IT Corporation  
October 30, 1989

IT ANALYTICAL SERVICES  
5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44253

VOLATILE ORGANIC ANALYSIS

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: Method Blank 1  
Lab Sample ID: CB1005

<u>Compound</u>		<u>Compound</u>	
vinyl chloride	10 U	tetrachloroethene	5 U
methylene chloride	2 J	toluene	5 U
carbon disulfide	5 U	chlorobenzene	5 U
1,1-dichloroethane	5 U	total xylenes	5 U
chloroform	5 U	trichlorofluoromethane	5 U
1,2-dichloroethane	5 U	isobutanol	5,000 U
2-butanone	10 U	2-nitropropane	5 U
1,1,1-trichloroethane	5 U	1,2-dibromoethane	5 U
carbon tetrachloride	5 U	1,2-dichlorobenzene	5 U
trichloroethene	5 U	1,2,2-trifluoroethane	200 U
1,1,2-trichloroethane	5 U	2-ethoxyethanol	2,000,000 U
benzene	5 U	pyridine	5,000 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

J - Indicates an estimated value less than the detection limit.

Date Analyzed: 10/05/89

This method blank applies to the following samples: Trip Blank, Rinsate, 41-4, 41-3, 41-5.

IT Corporation  
October 30, 1989

IT ANALYTICAL SERVICES  
5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44253

VOLATILE ORGANIC ANALYSIS

Results in  $\mu\text{g/liter}$  (ppb)

Sample Matrix: Water

Client Sample ID: 41-3  
Lab Sample ID: JJ6779

<u>Compound</u>		<u>Compound</u>	
vinyl chloride	10 U	tetrachloroethene	5 U
methylene chloride	5 U	toluene	5 U
carbon disulfide	5 U	chlorobenzene	5 U
1,1-dichloroethane	3 J	total xylenes	5 U
chloroform	5 U	trichlorofluoromethane	5 U
1,2-dichloroethane	5 U	isobutanol	5,000 U
2-butanone	10 U	2-nitropropane	5 U
1,1,1-trichloroethane	5 U	1,2-dibromoethane	5 U
carbon tetrachloride	5 U	1,2-dichlorobenzene	5 U
trichloroethene	5 U	1,2,2-trifluoroethane	200 U
1,1,2-trichloroethane	5 U	2-ethoxyethanol	2,000,000 U
benzene	5 U	pyridine	5,000 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

J - Indicates an estimated value less than the detection limit.

Date Analyzed: 10/05/89

IT Corporation  
October 30, 1989

IT ANALYTICAL SERVICES  
5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44253

VOLATILE ORGANIC ANALYSIS

Results in  $\mu\text{g/liter}$  (ppb)

Sample Matrix: Water

Client Sample ID: 41-4  
Lab Sample ID: JJ6780

<u>Compound</u>		<u>Compound</u>	
vinyl chloride	10 U	tetrachloroethene	5 U
methylene chloride	25	toluene	2 J
carbon disulfide	5 U	chlorobenzene	5 U
1,1-dichloroethane	4 J	total xylenes	5 U
chloroform	5 U	trichlorofluoromethane	5 U
1,2-dichloroethane	5 U	isobutanol	5,000 U
2-butanone	3 J	2-nitropropane	5 U
1,1,1-trichloroethane	5 U	1,2-dibromoethane	5 U
carbon tetrachloride	5 U	1,2-dichlorobenzene	5 U
trichloroethene	5 U	1,2,2-trifluoroethane	200 U
1,1,2-trichloroethane	5 U	2-ethoxyethanol	2,000,000 U
benzene	5 U	pyridine	5,000 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

J - Indicates an estimated value less than the detection limit.

Date Analyzed: 10/05/89

IT Corporation  
October 30, 1989

IT ANALYTICAL SERVICES  
5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44253

VOLATILE ORGANIC ANALYSIS

Results in  $\mu\text{g/liter}$  (ppb)

Sample Matrix: Water

Client Sample ID: 41-5  
Lab Sample ID: JJ6781

<u>Compound</u>		<u>Compound</u>	
vinyl chloride	10 U	tetrachloroethene	5 U
methylene chloride	5 U	toluene	5 U
carbon disulfide	5 U	chlorobenzene	5 U
1,1-dichloroethane	7	total xylenes	5 U
chloroform	5 U	trichlorofluoromethane	5 U
1,2-dichloroethane	5 U	isobutanol	5,000 U
2-butanone	10 U	2-nitropropane	5 U
1,1,1-trichloroethane	5 U	1,2-dibromoethane	5 U
carbon tetrachloride	5 U	1,2-dichlorobenzene	5 U
trichloroethene	5 U	1,2,2-trifluoroethane	200 U
1,1,2-trichloroethane	5 U	2-ethoxyethanol	2,000,000 U
benzene	5 U	pyridine	5,000 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

J - Indicates an estimated value less than the detection limit.

Date Analyzed: 10/05/89

IT Corporation  
October 30, 1989

IT ANALYTICAL SERVICES  
5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44253

VOLATILE ORGANIC ANALYSIS

Results in  $\mu\text{g/liter}$  (ppb)

Sample Matrix: Water

Client Sample ID: Rinsate  
Lab Sample ID: JJ6788

<u>Compound</u>		<u>Compound</u>	
vinyl chloride	10 U	tetrachloroethene	5 U
methylene chloride	5 U	toluene	5 U
carbon disulfide	5 U	chlorobenzene	5 U
1,1-dichloroethane	5 U	total xylenes	5 U
chloroform	5 U	trichlorofluoromethane	5 U
1,2-dichloroethane	5 U	isobutanol	5,000 U
2-butanone	10 U	2-nitropropane	5 U
1,1,1-trichloroethane	5 U	1,2-dibromoethane	5 U
carbon tetrachloride	5 U	1,2-dichlorobenzene	5 U
trichloroethene	5 U	1,2,2-trifluoroethane	200 U
1,1,2-trichloroethane	5 U	2-ethoxyethanol	2,000,000 U
benzene	5 U	pyridine	5,000 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

J - Indicates an estimated value less than the detection limit.

Date Analyzed: 10/05/89

IT Corporation  
October 30, 1989

IT ANALYTICAL SERVICES  
5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44253

VOLATILE ORGANIC ANALYSIS

Results in  $\mu\text{g/liter}$  (ppb)

Sample Matrix: Water

Client Sample ID: Trip Blank  
Lab Sample ID: JJ6789

<u>Compound</u>		<u>Compound</u>	
vinyl chloride	10 U	tetrachloroethene	5 U
methylene chloride	5 U	toluene	5 U
carbon disulfide	5 U	chlorobenzene	5 U
1,1-dichloroethane	5 U	total xylenes	5 U
chloroform	5 U	trichlorofluoromethane	5 U
1,2-dichloroethane	5 U	isobutanol	5,000 U
2-butanone	10 U	2-nitropropane	5 U
1,1,1-trichloroethane	5 U	1,2-dibromoethane	5 U
carbon tetrachloride	5 U	1,2-dichlorobenzene	5 U
trichloroethene	5 U	1,2,2-trifluoroethane	200 U
1,1,2-trichloroethane	5 U	2-ethoxyethanol	2,000,000 U
benzene	5 U	pyridine	5,000 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

J - Indicates an estimated value less than the detection limit.

Date Analyzed: 10/05/89

IT Corporation  
October 30, 1989

IT ANALYTICAL SERVICES  
5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44253

VOLATILE ORGANIC ANALYSIS

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: Method Blank 1A  
Lab Sample ID: VB1009

<u>Compound</u>		<u>Compound</u>	
vinyl chloride	10 U	tetrachloroethene	5 U
methylene chloride	2 J	toluene	5 U
carbon disulfide	5 U	chlorobenzene	5 U
1,1-dichloroethane	5 U	total xylenes	5 U
chloroform	5 U	trichlorofluoromethane	5 U
1,2-dichloroethane	5 U	isobutanol	5,000 U
2-butanone	10 U	2-nitropropane	5 U
1,1,1-trichloroethane	5 U	1,2-dibromoethane	5 U
carbon tetrachloride	5 U	1,2-dichlorobenzene	5 U
trichloroethene	5 U	1,2,2-trifluoroethane	200 U
1,1,2-trichloroethane	5 U	2-ethoxyethanol	2,000,000 U
benzene	5 U	pyridine	5,000 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

J - Indicates an estimated value less than the detection limit.

Date Analyzed: 10/09/89

This method blank applies to the following samples: 42-9, 42-8.

IT Corporation  
October 30, 1989

IT ANALYTICAL SERVICES  
5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44253

VOLATILE ORGANIC ANALYSIS

Results in ug/liter (ppb)

Sample Matrix: Water

Client Sample ID: 42-8  
Lab Sample ID: JJ6786

<u>Compound</u>		<u>Compound</u>	
vinyl chloride	10 U	tetrachloroethene	5 U
methylene chloride	5 U	toluene	5 U
carbon disulfide	5 U	chlorobenzene	5 U
1,1-dichloroethane	5 U	total xylenes	5 U
chloroform	5 U	trichlorofluoromethane	5 U
1,2-dichloroethane	5 U	isobutanol	5,000 U
2-butanone	10 U	2-nitropropane	5 U
1,1,1-trichloroethane	5 U	1,2-dibromoethane	5 U
carbon tetrachloride	5 U	1,2-dichlorobenzene	5 U
trichloroethene	5 U	1,2,2-trifluoroethane	200 U
1,1,2-trichloroethane	5 U	2-ethoxyethanol	2,000,000 U
benzene	5 U	pyridine	5,000 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

J - Indicates an estimated value less than the detection limit.

Date Analyzed: 10/09/89

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October 30, 1989

IT ANALYTICAL SERVICES  
5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44253

VOLATILE ORGANIC ANALYSIS

Results in  $\mu\text{g/liter}$  (ppb)

Sample Matrix: Water

Client Sample ID: 42-9  
Lab Sample ID: JJ6787

<u>Compound</u>		<u>Compound</u>	
vinyl chloride	10 U	tetrachloroethene	5 U
methylene chloride	5 U	toluene	5 U
carbon disulfide	5 U	chlorobenzene	5 U
1,1-dichloroethane	5 U	total xylenes	5 U
chloroform	5 U	trichlorofluoromethane	5 U
1,2-dichloroethane	5 U	isobutanol	5,000 U
2-butanone	10 U	2-nitropropane	5 U
1,1,1-trichloroethane	5 U	1,2-dibromoethane	5 U
carbon tetrachloride	5 U	1,2-dichlorobenzene	5 U
trichloroethene	5 U	1,2,2-trifluoroethane	200 U
1,1,2-trichloroethane	5 U	2-ethoxyethanol	2,000,000 U
benzene	5 U	pyridine	5,000 U

U - Compound was analyzed for but not detected. The number is the detection limit for sample.

J - Indicates an estimated value less than the detection limit.

Date Analyzed: 10/09/89

IT Corporation  
October 30, 1989

IT ANALYTICAL SERVICES  
5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44253

VOLATILE ORGANIC ANALYSIS

Results in  $\mu\text{g/liter}$  (ppb)

Sample Matrix: Water

Client Sample ID: Method Blank 2  
Lab Sample ID: CB1009

<u>Compound</u>		<u>Compound</u>	
vinyl chloride	10 U	tetrachloroethene	5 U
methylene chloride	3 J	toluene	5 U
carbon disulfide	5 U	chlorobenzene	5 U
1,1-dichloroethane	5 U	total xylenes	5 U
chloroform	5 U	trichlorofluoromethane	5 U
1,2-dichloroethane	5 U	isobutanol	5,000 U
2-butanone	10 U	2-nitropropane	5 U
1,1,1-trichloroethane	5 U	1,2-dibromoethane	5 U
carbon tetrachloride	5 U	1,2-dichlorobenzene	5 U
trichloroethene	5 U	1,2,2-trifluoroethane	200 U
1,1,2-trichloroethane	5 U	2-ethoxyethanol	2,000,000 U
benzene	5 U	pyridine	5,000 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

J - Indicates an estimated value less than the detection limit.

Date Analyzed: 10/09/89

This method blank applies to the following samples: 41-6, 42-5, 42-6, 42-7.

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IT ANALYTICAL SERVICES  
5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44253

VOLATILE ORGANIC ANALYSIS

Results in  $\mu\text{g/liter}$  (ppb)

Sample Matrix: Water

Client Sample ID: 41-6  
Lab Sample ID: JJ6782

<u>Compound</u>		<u>Compound</u>	
vinyl chloride	10 U	tetrachloroethene	5 U
methylene chloride	5 U	toluene	5 U
carbon disulfide	5 U	chlorobenzene	5 U
1,1-dichloroethane	5 U	total xylenes	5 U
chloroform	5 U	trichlorofluoromethane	5 U
1,2-dichloroethane	5 U	isobutanol	5,000 U
2-butanone	10 U	2-nitropropane	5 U
1,1,1-trichloroethane	5 U	1,2-dibromoethane	5 U
carbon tetrachloride	5 U	1,2-dichlorobenzene	5 U
trichloroethene	5 U	1,2,2-trifluoroethane	200 U
1,1,2-trichloroethane	5 U	2-ethoxyethanol	2,000,000 U
benzene	5 U	pyridine	5,000 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

J - Indicates an estimated value less than the detection limit.

Date Analyzed: 10/09/89

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IT ANALYTICAL SERVICES  
5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44253

VOLATILE ORGANIC ANALYSIS

Results in  $\mu\text{g/liter}$  (ppb)

Sample Matrix: Water

Client Sample ID: 42-5  
Lab Sample ID: JJ6783

<u>Compound</u>		<u>Compound</u>	
vinyl chloride	10 U	tetrachloroethene	5 U
methylene chloride	5 U	toluene	5 U
carbon disulfide	5 U	chlorobenzene	5 U
1,1-dichloroethane	5 U	total xylenes	1 J
chloroform	5 U	trichlorofluoromethane	5
1,2-dichloroethane	5 U	isobutanol	5,000 U
2-butanone	10 U	2-nitropropane	5 U
1,1,1-trichloroethane	5 U	1,2-dibromoethane	5 U
carbon tetrachloride	5 U	1,2-dichlorobenzene	5 U
trichloroethene	5 U	1,2,2-trifluoroethane	200 U
1,1,2-trichloroethane	5 U	2-ethoxyethanol	2,000,000 U
benzene	4 J	pyridine	5,000 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

J - Indicates an estimated value less than the detection limit.

Date Analyzed: 10/09/89

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IT ANALYTICAL SERVICES  
5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44253

VOLATILE ORGANIC ANALYSIS

Results in  $\mu\text{g/liter}$  (ppb)

Sample Matrix: Water

Client Sample ID: 42-6  
Lab Sample ID: JJ6784

<u>Compound</u>		<u>Compound</u>	
vinyl chloride	10 U	tetrachloroethene	5 U
methylene chloride	5 U	toluene	5 U
carbon disulfide	5 U	chlorobenzene	5 U
1,1-dichloroethane	5 U	total xylenes	2 J
chloroform	5 U	trichlorofluoromethane	5 U
1,2-dichloroethane	5 U	isobutanol	5,000 U
2-butanone	10 U	2-nitropropane	5 U
1,1,1-trichloroethane	5 U	1,2-dibromoethane	5 U
carbon tetrachloride	5 U	1,2-dichlorobenzene	5 U
trichloroethene	5 U	1,2,2-trifluoroethane	200 U
1,1,2-trichloroethane	5 U	2-ethoxyethanol	2,000,000 U
benzene	5 J	pyridine	5,000 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

J - Indicates an estimated value less than the detection limit.

Date Analyzed: 10/09/89

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IT ANALYTICAL SERVICES  
5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44253

VOLATILE ORGANIC ANALYSIS

Results in  $\mu\text{g/liter}$  (ppb)

Sample Matrix: Water

Client Sample ID: 42-7  
Lab Sample ID: JJ6785

<u>Compound</u>		<u>Compound</u>	
vinyl chloride	10 U	tetrachloroethene	5 U
methylene chloride	5 U	toluene	5 U
carbon disulfide	5 U	chlorobenzene	5 U
1,1-dichloroethane	5 U	total xylenes	5 U
chloroform	5 U	trichlorofluoromethane	5 U
1,2-dichloroethane	5 U	isobutanol	5,000 U
2-butanone	10 U	2-nitropropane	5 U
1,1,1-trichloroethane	5 U	1,2-dibromoethane	5 U
carbon tetrachloride	5 U	1,2-dichlorobenzene	5 U
trichloroethene	5 U	1,2,2-trifluoroethane	200 U
1,1,2-trichloroethane	5 U	2-ethoxyethanol	2,000,000 U
benzene	2 J	pyridine	5,000 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

J - Indicates an estimated value less than the detection limit.

Date Analyzed: 10/09/89

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IT ANALYTICAL SERVICES  
5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44253

WATER SURROGATE PERCENT RECOVERY SUMMARY

Sample No.	VOLATILE		
	Toluene-D8 (88-110%)*	BFB (86-115%)*	1,2 Dichloroethane-D4 (76-114%)*
Method Blank 1	96	94	93
Trip Blank	97	90	80
Rinsate	101	97	80
41-4	110	91	87
41-3	96	92	83
41-5	96	93	79
Method Blank 2	100	90	83
41-6	98	89	83
42-5	98	91	83
42-6	95	89	84
42-7	97	94	81
Method Blank 1A	88	90	88
42-9	91	94	95
42-8	96	97	99

\*Values in parenthesis represent USEPA contract required QC limits.

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IT ANALYTICAL SERVICE  
5815 MIDDLEBROOK PIK  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44253

SEMIVOLATILES ORGANIC ANALYSIS

Results in  $\mu\text{g/liter}$  (ppb)

Sample Matrix: Water

Client Sample ID: Method Blank  
Lab Sample ID: BL4885

phenol	10 U
2-chlorophenol	10 U
2-nitrophenol	10 U
2,4-dimethylphenol	10 U
2,4-dichlorophenol	10 U
4-chloro-3-methylphenol	10 U
2,4,6-trichlorophenol	10 U
2,4-dinitrophenol	50 U
4-nitrophenol	50 U
4,6-dinitro-2-methylphenol	50 U
pentachlorophenol	50 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

J - Indicates an estimated value less than the detection limit.

Date Extracted: 10/04/89

Date Analyzed: 10/09/89

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October 30, 1989

IT ANALYTICAL SERVICES  
5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44253

SEMIVOLATILES ORGANIC ANALYSIS

Results in  $\mu\text{g/liter}$  (ppb)

Sample Matrix: Water

Client Sample ID: 41-3  
Lab Sample ID: JJ6800

phenol	10 U
2-chlorophenol	10 U
2-nitrophenol	10 U
2,4-dimethylphenol	10 U
2,4-dichlorophenol	10 U
4-chloro-3-methylphenol	10 U
2,4,6-trichlorophenol	10 U
2,4-dinitrophenol	50 U
4-nitrophenol	50 U
4,6-dinitro-2-methylphenol	50 U
pentachlorophenol	50 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

J - Indicates an estimated value less than the detection limit.

Date Extracted: 10/04/89

Date Analyzed: 10/09/89

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IT ANALYTICAL SERVICE  
5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44253

SEMIVOLATILES ORGANIC ANALYSIS

Results in  $\mu\text{g/liter}$  (ppb)

Sample Matrix: Water

Client Sample ID: 41-4  
Lab Sample ID: JJ6801

phenol	550
2-chlorophenol	51 U
2-nitrophenol	51 U
2,4-dimethylphenol	51 U
2,4-dichlorophenol	51 U
4-chloro-3-methylphenol	51 U
2,4,6-trichlorophenol	51 U
2,4-dinitrophenol	260 U
4-nitrophenol	260 U
4,6-dinitro-2-methylphenol	260 U
pentachlorophenol	260 U

U - Compound was analyzed for but not detected. The number is the detection limit for that sample.

J - Indicates an estimated value less than the detection limit.

Date Extracted: 10/04/89

Date Analyzed: 10/16/89

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IT ANALYTICAL SERVICE  
5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44253

SEMIVOLATILES ORGANIC ANALYSIS

Results in  $\mu\text{g/liter}$  (ppb)

Sample Matrix: Water

Client Sample ID: 41-5  
Lab Sample ID: JJ6802

phenol	10 U
2-chlorophenol	10 U
2-nitrophenol	10 U
2,4-dimethylphenol	10 U
2,4-dichlorophenol	10 U
4-chloro-3-methylphenol	10 U
2,4,6-trichlorophenol	10 U
2,4-dinitrophenol	51 U
4-nitrophenol	51 U
4,6-dinitro-2-methylphenol	51 U
pentachlorophenol	51 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

J - Indicates an estimated value less than the detection limit.

Date Extracted: 10/04/89  
Date Analyzed: 10/16/89

IT Corporation  
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IT ANALYTICAL SERVICE  
5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44253

SEMIVOLATILES ORGANIC ANALYSIS

Results in  $\mu\text{g/liter}$  (ppb)

Sample Matrix: Water

Client Sample ID: 41-6  
Lab Sample ID: JJ6803R

phenol	52 U
2-chlorophenol	52 U
2-nitrophenol	52 U
2,4-dimethylphenol	52 U
2,4-dichlorophenol	52 U
4-chloro-3-methylphenol	52 U
2,4,6-trichlorophenol	52 U
2,4-dinitrophenol	260 U
4-nitrophenol	260 U
4,6-dinitro-2-methylphenol	260 U
pentachlorophenol	25 J

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

J - Indicates an estimated value less than the detection limit.

Date Extracted: 10/04/89  
Date Analyzed: 10/17/89

IT Corporation  
October 30, 1989

IT ANALYTICAL SERVICE  
5815 MIDDLEBROOK PIK  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44253

SEMIVOLATILES ORGANIC ANALYSIS

Results in  $\mu\text{g/liter}$  (ppb)

Sample Matrix: Water

Client Sample ID: 42-5  
Lab Sample ID: JJ6804

phenol	10 U
2-chlorophenol	10 U
2-nitrophenol	10 U
2,4-dimethylphenol	10 U
2,4-dichlorophenol	10 U
4-chloro-3-methylphenol	10 U
2,4,6-trichlorophenol	10 U
2,4-dinitrophenol	52 U
4-nitrophenol	52 U
4,6-dinitro-2-methylphenol	52 U
pentachlorophenol	52 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

J - Indicates an estimated value less than the detection limit.

Date Extracted: 10/04/89  
Date Analyzed: 10/16/89

IT Corporation  
October 30, 1989

IT ANALYTICAL SERVICES  
5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44253

SEMIVOLATILES ORGANIC ANALYSIS

Results in ug/liter (ppb)

Sample Matrix: Water

Client Sample ID: 42-6  
Lab Sample ID: JJ6805

phenol	10 U
2-chlorophenol	10 U
2-nitrophenol	10 U
2,4-dimethylphenol	10 U
2,4-dichlorophenol	10 U
4-chloro-3-methylphenol	10 U
2,4,6-trichlorophenol	10 U
2,4-dinitrophenol	52 U
4-nitrophenol	52 U
4,6-dinitro-2-methylphenol	52 U
pentachlorophenol	52 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

J - Indicates an estimated value less than the detection limit.

Date Extracted: 10/04/89

Date Analyzed: 10/13/89

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KNOXVILLE, TN

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Job Number: ITET 44253

SEMIVOLATILES ORGANIC ANALYSIS

Results in  $\mu\text{g/liter}$  (ppb)

Sample Matrix: Water

Client Sample ID: 42-7  
Lab Sample ID: JJ6806

phenol	10 U
2-chlorophenol	10 U
2-nitrophenol	10 U
2,4-dimethylphenol	10 U
2,4-dichlorophenol	10 U
4-chloro-3-methylphenol	10 U
2,4,6-trichlorophenol	10 U
2,4-dinitrophenol	52 U
4-nitrophenol	52 U
4,6-dinitro-2-methylphenol	52 U
pentachlorophenol	52 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

J - Indicates an estimated value less than the detection limit.

Date Extracted: 10/04/89

Date Analyzed: 10/13/89

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IT ANALYTICAL SERVICES  
5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44253

SEMIVOLATILES ORGANIC ANALYSIS

Results in  $\mu\text{g/liter}$  (ppb)

Sample Matrix: Water

Client Sample ID: 42-8  
Lab Sample ID: JJ6807

phenol	10 U
2-chlorophenol	10 U
2-nitrophenol	10 U
2,4-dimethylphenol	10 U
2,4-dichlorophenol	10 U
4-chloro-3-methylphenol	10 U
2,4,6-trichlorophenol	10 U
2,4-dinitrophenol	52 U
4-nitrophenol	52 U
4,6-dinitro-2-methylphenol	52 U
pentachlorophenol	52 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

J - Indicates an estimated value less than the detection limit.

Date Extracted: 10/04/89  
Date Analyzed: 10/13/89

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KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44253

SEMIVOLATILES ORGANIC ANALYSIS

Results in  $\mu\text{g/liter}$  (ppb)

Sample Matrix: Water

Client Sample ID: 42-9  
Lab Sample ID: JJ6808

phenol	10 U
2-chlorophenol	10 U
2-nitrophenol	10 U
2,4-dimethylphenol	10 U
2,4-dichlorophenol	10 U
4-chloro-3-methylphenol	10 U
2,4,6-trichlorophenol	10 U
2,4-dinitrophenol	51 U
4-nitrophenol	51 U
4,6-dinitro-2-methylphenol	51 U
pentachlorophenol	51 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

J - Indicates an estimated value less than the detection limit.

Date Extracted: 10/04/89

Date Analyzed: 10/13/89

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KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44253

SEMIVOLATILES ORGANIC ANALYSIS

Results in  $\mu\text{g/liter}$  (ppb)

Sample Matrix: Water

Client Sample ID: Rinsate  
Lab Sample ID: JJ6809

phenol	11 U
2-chlorophenol	11 U
2-nitrophenol	11 U
2,4-dimethylphenol	11 U
2,4-dichlorophenol	11 U
4-chloro-3-methylphenol	11 U
2,4,6-trichlorophenol	11 U
2,4-dinitrophenol	55 U
4-nitrophenol	55 U
4,6-dinitro-2-methylphenol	55 U
pentachlorophenol	55 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

J - Indicates an estimated value less than the detection limit.

Date Extracted: 10/04/89

Date Analyzed: 10/13/89

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October 30, 1989

IT ANALYTICAL SERVICES  
5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44253

WATER SURROGATE PERCENT RECOVERY SUMMARY

Sample No.	SEMI-VOLATILE					
	Nitro-Benzene-D5 (35-114%)*	2-Fluoro-Biphenyl (43-116%)*	Terphenyl-D14 (33-141%)*	Phenol-D5 (10-94%)*	2-Fluoro-Phenol (21-100%)*	2,4,6-Tribromo-Phenol (10-123%)*
Method Blank	72	71	71	25	39	75
41-3	81	76	69	25	37	79
41-4	106	80	57	38	51	113
41-5	70	65	67	19	36	85
41-6	60	62	35	15	25	82
42-5	80	76	97	26	47	90
42-6	50	43	59	13	25	58
42-7	57	47	54	17	28	61
42-8	54	41 **	49	15	26	68
42-9	55	44	74	14	25	64
Rinsate	78	68	90	23	41	84

\*Values in parenthesis represent USEPA contract required QC limits.

\*\*Values are outside of contract required QC limits.

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October 30, 1989

IT ANALYTICAL SERVICE  
5815 MIDDLEBROOK PI  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44253

PESTICIDES AND HERBICIDES ANALYSIS

Results in mg/liter (ppm)

Sample Matrix: Water

Client Sample ID: Lab Sample ID:	Method Blank <u>BL4875/4876</u>	<u>41-3</u> <u>JJ6790</u>	<u>41-4</u> <u>JJ6791</u>	<u>41-5</u> <u>JJ6792</u>	<u>41-6</u> <u>JJ6793</u>
Lindane	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
Endrin	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
Methoxychlor	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
Toxaphene	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U
2,4-D	0.0002 U	0.0008	0.0002 U	0.0014	0.0011
Silvex	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U

U - Compound was analyzed for but not detected. The number is the detection limit for sample.

Date Extracted: 10/04/89  
Date Analyzed: 10/09/89

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IT ANALYTICAL SERVICE  
5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44253

PESTICIDES AND HERBICIDES ANALYSIS

Results in mg/liter (ppm)

Sample Matrix: Water

Client Sample ID: Lab Sample ID:	<u>42-5</u> <u>JJ6794</u>	<u>42-6</u> <u>JJ6795</u>	<u>42-7</u> <u>JJ6796</u>	<u>42-8</u> <u>JJ6797</u>	<u>42-9</u> <u>JJ6798</u>
Lindane	0.0001 U				
Endrin	0.0001 U				
Methoxychlor	0.0001 U				
Toxaphene	0.0004 U				
2,4-D	0.0002 U				
Silvex	0.0001 U				

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

Date Extracted: 10/04/89  
Date Analyzed: 10/09/89

IT Corporation  
October 30, 1989

IT ANALYTICAL SERVICES  
5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44253

PESTICIDES AND HERBICIDES ANALYSIS

Results in mg/liter (ppm)

Sample Matrix: Water

Client Sample ID: Rinsate  
Lab Sample ID: JJ6799

Lindane	0.0001 U
Endrin	0.0001 U
Methoxychlor	0.0001 U
Toxaphene	0.0004 U
2,4-D	0.0002 U
Silvex	0.0001 U

U - Compound was analyzed for but not detected. The number is the detection limit for this sample.

Date Extracted: 10/04/89  
Date Analyzed: 10/09/89

IT Corporation  
October 30, 1989

IT ANALYTICAL SERVICE  
5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44253

TOTAL ORGANIC CARBON ANALYSIS

Results in mg/liter (ppm)

Sample Matrix: Water

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Result</u>
Method Blank	D0216	1 U
41-3	JJ6769	67
41-4	JJ6770	490
41-5	JJ6771	110
41-6	JJ6772	970
42-5	JJ6773	42
42-6	JJ6774	3
42-7	JJ6775	75
42-8	JJ6776	54
42-9	JJ6777	4
Rinsate	JJ6778	1 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

Date Analyzed: 10/03/89

IT Corporation  
October 30, 1989

IT ANALYTICAL SERVICES  
5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44253

TOTAL METALS ANALYSIS

Results in mg/liter (ppm)

Sample Matrix: Water

Client Sample ID: Lab Sample ID:	Method Blank <u>PBWC0727/C0718</u>	41-3 <u>JJ6749</u>	41-4 <u>JJ6750</u>	41-5 <u>JJ6751</u>
Arsenic	0.03 U	0.03 U	0.03 U	0.03 U
Barium	0.002 U	0.41	0.42	0.28
Cadmium	0.005 U	0.005 U	0.005 U	0.005 U
Chromium	0.01 U	0.03	0.18	0.08
Copper	0.01 U	0.02	0.05	0.03
Iron	0.01 U	12.5	19.4	30.9
Lead	0.002 U	0.060	0.111	0.028
Manganese	0.002 U	0.75	0.037	0.13
Mercury	NR	0.001 U	0.001	0.001 U
Nickel	0.02 U	0.16	0.74	0.43
Selenium	0.002 U	0.020 U*	0.027 U*	0.023 U*
Silver	0.008	0.005 U	0.005 U	0.005 U
Sodium	0.2 U	150	1,230	182
Vanadium	0.01 U	0.06	0.78	0.09
Zinc	0.027	0.046	0.072	0.062

U - Compound was analyzed for but not detected. The number is the detection limit for sample.

NR - Not required

\* - Elevated detection limit due to sample matrix interference.

Date Digested: 10/04/89

Date Analyzed: 10/17/89

IT Corporation  
October 30, 1989

IT ANALYTICAL SERVICE  
5815 MIDDLEBROOK PIK  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44253

TOTAL METALS ANALYSIS

Results in mg/liter (ppm)

Sample Matrix: Water

Client Sample ID: Lab Sample ID:	41-6 <u>JJ6752</u>	42-5 <u>JJ6753</u>	42-6 <u>JJ6754</u>	42-7 <u>JJ6755</u>
Arsenic	0.03 U	0.03 U	0.03 U	0.03 U
Barium	0.68	1.0	0.060	0.17
Cadmium	0.024	0.005 U	0.005 U	0.005 U
Chromium	1.8	0.05	0.01	0.05
Copper	0.23	0.01	0.01	0.01 U
Iron	7.7	18.9	19.7	13.9
Lead	0.19	0.018	0.011	0.026 U*
Manganese	0.36	0.19	0.028	0.14
Mercury	0.002	0.001 U	0.001 U	0.001 U
Nickel	0.45	0.39	0.20	0.13
Selenium	0.040 U*	0.020 U*	0.003 U*	0.020 U*
Silver	0.10	0.005 U	0.005 U	0.005 U
Sodium	569	43.7	11.0	75.6
Vanadium	0.10	0.04	0.02	0.03
Zinc	0.26	0.12	0.015	0.012

U - Compound was analyzed for but not detected. The number is the detection limit for sample.

\* - Elevated detection limit due to sample matrix interference.

Date Digested: 10/04/89  
Date Analyzed: 10/17/89

IT Corporation  
October 30, 1989

IT ANALYTICAL SERVICES  
5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44253

TOTAL METALS ANALYSIS

Results in mg/liter (ppm)

Sample Matrix: Water

Client Sample ID: Lab Sample ID:	<u>42-8</u> <u>JJ6756</u>	<u>42-9</u> <u>JJ6757</u>	<u>Rinsate</u> <u>JJ6758</u>
Arsenic	0.03 U	0.04	0.03 U
Barium	0.36	0.095	0.002 U
Cadmium	0.005	0.015	0.005 U
Chromium	0.15	0.11	0.01 U
Copper	0.04	0.03	0.01 U
Iron	37.0	79.5	0.01
Lead	0.099	0.024	0.002 U
Manganese	0.22	0.034	0.002 U
Mercury	0.001 U	0.001 U	0.001 U
Nickel	0.14	0.34	0.02 U
Selenium	0.025 U*	0.016	0.002 U
Silver	0.005 U	0.005 U	0.005 U
Sodium	55.8	8.9	0.2 U
Vanadium	0.17	0.11	0.01 U
Zinc	0.089	0.15	0.005 U

U - Compound was analyzed for but not detected. The number is the detection limit for sample.

\* - Elevated detection limit due to sample matrix interference.

Date Digested: 10/04/89

Date Analyzed: 10/17/89

IT Corporation  
November 7, 1989

IT ANALYTICAL SERVICES  
5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44253  
Corrected Certificate

DISSOLVED METALS ANALYSIS

Results in mg/liter (ppm)

Sample Matrix: Water

Client Sample ID:  
Lab Sample ID:

Method Blank  
PBFC0728/C0719

Arsenic	0.03 U
Barium	0.002 U
Cadmium	0.005 U
Chromium	0.01 U
Copper	0.01 U
Iron	0.01 U
Lead	0.002 U
Manganese	0.002 U
Mercury	NR
Nickel	0.02 U
Selenium	0.002 U
Silver	0.005 U
Sodium	0.2 U
Vanadium	0.01 U
Zinc	0.017

U - Compound was analyzed for but not detected. The number is the detection limit for sample.

NR - Not required

Date Digested: 10/04/89

Date Analyzed: 10/17/89

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I.T. CORPORATION  
TAMPA, FLORIDA

IT Corporation  
October 30, 1989

IT ANALYTICAL SERVICE  
5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44253

DISSOLVED METALS ANALYSIS

Results in mg/liter (ppm)

Sample Matrix: Water

Client Sample ID: Lab Sample ID:	41-3 <u>JJ6759</u>	41-4 <u>JJ6760</u>	41-5 <u>JJ6761</u>	41-6 <u>JJ6762</u>
Arsenic	0.03 U	0.06	0.03 U	0.03 U
Barium	0.26	0.17	0.077	0.63
Cadmium	0.005 U	0.005 U	0.005 U	0.022
Chromium	0.03	0.10	0.01 U	1.8
Copper	0.01 U	0.01	0.01 U	0.19
Iron	11.6	3.8	0.61	10.2
Lead	0.020	0.040	0.004 U*	0.101
Manganese	0.62	0.007	0.083	0.35
Mercury	0.001 U	0.001	0.001 U	0.003
Nickel	0.38	0.63	0.35	0.45
Selenium	0.011 U*	0.025 U*	0.006	0.029 U*
Silver	0.005 U	0.005 U	0.005 U	0.086
Sodium	133	1,100	168	537
Vanadium	0.04	0.67	0.01 U	0.11
Zinc	0.065	0.022	0.005 U	0.19

U - Compound was analyzed for but not detected. The number is the detection limit for sample.

\* - Elevated detection limit due to sample matrix interference.

Date Digested: 10/04/89

Date Analyzed: 10/17/89

IT Corporation  
October 30, 1989

IT ANALYTICAL SERVICES  
5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44253

DISSOLVED METALS ANALYSIS

Results in mg/liter (ppm)

Sample Matrix: Water

Client Sample ID:	42-5	42-6	42-7	42-8
Lab Sample ID:	<u>JJ6763</u>	<u>JJ6764</u>	<u>JJ6765</u>	<u>JJ6766</u>
Arsenic	0.03 U	0.03 U	0.03 U	0.03 U
Barium	0.76	0.072	0.13	0.27
Cadmium	0.005 U	0.005 U	0.005 U	0.005 U
Chromium	0.04	0.04	0.03	0.01
Copper	0.01 U	0.01	0.01 U	0.01 U
Iron	7.3	24.8	6.4	3.2
Lead	0.012	0.047	0.045	0.016
Manganese	0.16	0.030	0.12	0.17
Mercury	0.001 U	0.001 U	0.001 U	0.001 U
Nickel	0.35	0.34	0.11	0.29
Selenium	0.004 U*	0.004 U*	0.024 U*	0.023 U*
Silver	0.005 U	0.005 U	0.021	0.019
Sodium	40.7	9.4	74.8	52.1
Vanadium	0.02	0.05	0.01	0.01
Zinc	0.069	0.057	0.025	0.033

U - Compound was analyzed for but not detected. The number is the detection limit for sample.

\* - Elevated detection limit due to sample matrix interference.

Date Digested: 10/04/89

Date Analyzed: 10/17/89

IT Corporation  
November 7, 1989

Client Project ID: NAS JAX

IT ANALYTICAL SERVICE  
5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Job Number: ITET 44253  
Corrected Certificate

DISSOLVED METALS ANALYSIS

Results in mg/liter (ppm)

Sample Matrix: Water

Client Sample ID:	42-9	Rinsate
Lab Sample ID:	<u>JJ6767</u>	<u>JJ6768</u>
Arsenic	0.03 U	0.03 U
Barium	0.036	0.003
Cadmium	0.005 U	0.005 U
Chromium	0.04	0.01 U
Copper	0.01 U	0.01 U
Iron	20.3	0.02
Lead	0.086	0.002 U
Manganese	0.017	0.002
Mercury	0.001 U	0.001 U
Nickel	0.33	0.02 U
Selenium	0.028 U*	0.002 U
Silver	0.009	0.005 U
Sodium	7.7	0.4
Vanadium	0.03	0.01 U
Zinc	0.040	0.026

U - Compound was analyzed for but not detected. The number is the detection limit for sample.

\* - Elevated detection limit due to sample matrix interference.

Date Digested: 10/04/89

Date Analyzed: 10/17/89

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I.T. CORPORATION  
TAMPA, FLORIDA

IT Corporation  
October 30, 1989

IT ANALYTICAL SERVICES  
5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44253

TURBIDITY ANALYSIS

Results in NTU's

Sample Matrix: Water

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Result</u>
Method Blank	P0478	0.13
41-3	JJ6729	600
41-4	JJ6730	750
41-5	JJ6731	700
41-6	JJ6732	750
42-5	JJ6733	600
42-6	JJ6734	850
42-7	JJ6735	700
42-8	JJ6736	1,800
42-9	JJ6737	800
Rinsate	JJ6738	0.18

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

Date Analyzed: 09/29/89

IT Corporation  
October 30, 1989

IT ANALYTICAL SERVICES  
5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44253

WASTEWATER ANALYSIS

Results in mg/liter (ppm)

Sample Matrix: Water

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Nitrate, as N</u>	<u>Sulfate</u>	<u>Chloride</u>	<u>Fluoride</u>
Method Blank	P0508/527/ 526/519	0.05 U	10 U	1	0.1 U
41-3	JJ6729	0.16	280	79	0.1
41-4	JJ6730	0.23	100 U	160	2.6
41-5	JJ6731	0.11	110	130	0.1
41-6	JJ6732	0.25	250 U	320	0.1 U
42-5	JJ6733	0.25	25 U	8	0.1
42-6	JJ6734	10	25 U	14	0.1 U
42-7	JJ6735	11	400	67	0.1 U
42-8	JJ6736	11	470	60	0.1 U
42-9	JJ6737	10	25 U	10	0.1 U
Rinsate	JJ6738	0.05 U	10 U	1	0.1 U
Date of Analysis		10/10-12/89	10/16/89	10/16/89	10/13/89

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

IT Corporation  
October 30, 1989

IT ANALYTICAL SERVICE  
5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44253

TOTAL COLIFORM ANALYSIS

Results in colonies/100 ml

Sample Matrix: Water

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Result</u>
Method Blank	P0476	0
41-3	JJ6719	400
41-4	JJ6720	200 U
41-5	JJ6721	400
41-6	JJ6722	16,000
42-5	JJ6723	800
42-6	JJ6724	200 U
42-7	JJ6725	800
42-8	JJ6726	200
42-9	JJ6727	200 U
Rinsate	JJ6728	1

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

Date Analyzed: 09/29/89

IT Corporation  
October 30, 1989

IT ANALYTICAL SERVICES  
5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44253

CYANIDE ANALYSIS

Results in mg/liter (ppm)

Sample Matrix: Water

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Result</u>
Method Blank	P0510	0.01 U
41-3	JJ6739	0.01 U
41-4	JJ6740	0.01 U
41-5	JJ6741	0.01 U
41-6	JJ6742	0.01 U
42-5	JJ6743	0.01 U
42-6	JJ6744	0.01 U
42-7	JJ6745	0.01 U
42-8	JJ6746	0.01 U
42-9	JJ6747	0.01 U
Rinsate	JJ6748	0.01 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

Date Analyzed: 10/11/89

IT Corporation  
October 30, 1989

IT ANALYTICAL SERVICE  
5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44253

TOTAL HEXAVALENT CHROMIUM ANALYSIS

Results in mg/liter (ppm)

Sample Matrix: Water

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Result</u>
Method Blank	P0474	0.02 U
41-3	JJ6749	0.10 U
41-4	JJ6750	0.50 U
41-5	JJ6751	0.10 U
41-6	JJ6752	0.50 U
42-5	JJ6753	0.10 U
42-6	JJ6754	0.10 U
42-7	JJ6755	0.25 U
42-8	JJ6756	0.25 U
42-9	JJ6757	0.25 U
Rinsate	JJ6758	0.02 U

U - Compound was analyzed for but not detected. The number is the detection limit for 1 sample.

Date Analyzed: 09/29/89

IT Corporation  
October 30, 1989

IT ANALYTICAL SERVICES  
5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN

Client Project ID: NAS JAX

Job Number: ITET 44253

DISSOLVED HEXAVALENT CHROMIUM ANALYSIS

Results in mg/liter (ppm)

Sample Matrix: Water

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Result</u>
Method Blank	P0475	0.02 U
41-3	JJ6759	0.02 U
41-4	JJ6760	0.20 U
41-5	JJ6761	0.05 U
41-6	JJ6762	0.50 U
42-5	JJ6763	0.02 U
42-6	JJ6764	0.02 U
42-7	JJ6765	0.10 U
42-8	JJ6766	0.05 U
42-9	JJ6767	0.02 U
Rinsate	JJ6768	0.02 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

Date Analyzed: 09/29/89

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Received: 10/02/89

ITRSL Oak Ridge REPORT  
11/08/89 12:36:20

Work Order # R9-10-013

REPORT IT CORPORATION/MIDDLEBROOK  
TO 3615 MIDDLEBROOK PIKE  
KNOXVILLE, TN 37921

PREPARED IT/RADIOLOGICAL SCIENCES LAB.  
BY 1350 BEAR CREEK ROAD  
OAK RIDGE, TN 37831

*James R. Dillard*  
CERTIFIED BY

ATTEN JANICE STERRETT

ATTEN ERS  
PHONE 615-482-9707

CONTACT JIM DILLARD

CLIENT ITAS SAMPLES 5  
COMPANY IT CORPORATION/MIDDLEBROOK  
FACILITY MIDDLEBROOK PIKE

NOTE: AMENDED SAMPLE I.D.'S. ALSO SAMPLES WHICH WERE  
INCLUDED IN ERROR HAVE BEEN REMOVED FROM REPORT.

WORK ID IT/TAMPA WATERS - ITET 44261  
TAKEN \_\_\_\_\_  
TRANS \_\_\_\_\_  
TYPE \_\_\_\_\_  
P. O. # 486000.04  
INVOICE under separate cover

SAMPLE IDENTIFICATION  
01 JJ6950 41-1  
02 JJ6951 41-2-1  
03 JJ6952 41-2-2  
04 JJ6953 PW-1  
05 JJ6954 RINSATE

TEST CODES and NAMES used on this report  
GALPHA GROSS ALPHA  
GBETA GROSS BETA  
RA226 RA-226  
RA228 RA-228  
SPEC SPECIAL FORM FOR REPORTING

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I.T. CORPORATION  
TAMPA, FLORIDA

Page 2  
Received: 10/02/89

ITRSL Oak Ridge REPORT  
Results by Sample

Work Order # R9-10-013

SAMPLE ID JJ6930 41-1 FRACTION 01A TEST CODE SPEC NAME SPECIAL FORM FOR REPORTING  
Date & Time Collected 09/29/89 Category 11/379

PARAMETER	RESULT	2-SIGMA ERROR	UNITS
RA-226	2.3	0.4	pCi/l
RA-228	<0.69		pCi/l
GROSS ALPHA	12	2	pCi/l
GROSS BETA	8	3	pCi/l

SAMPLE ID JJ6951 41-2-1 FRACTION 02A TEST CODE SPEC NAME SPECIAL FORM FOR REPORTING  
Date & Time Collected 09/29/89 Category 11/379

PARAMETER	RESULT	2-SIGMA ERROR	UNITS
RA-226	3.0	0.6	pCi/l
RA-228	<1.5		pCi/l
GROSS ALPHA	11	2	pCi/l
GROSS BETA	7	2	pCi/l

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Received: 10/02/89

ITRSL Oak Ridge REPORT  
Results by Sample

Work Order # R9-10-013

SAMPLE ID JJ6952 41-2-2 FRACTION 03A TEST CODE SPEC NAME SPECIAL FORM FOR REPORTING  
Date & Time Collected 09/29/89 Category 117379

PARAMETER	RESULT	2-SIGMA ERROR	UNITS
RA-226	2.3	0.5	pCi/l
RA-228	<1.3		pCi/l
GROSS ALPHA	10	2	pCi/l
GROSS BETA	6	2	pCi/l

SAMPLE ID JJ6953 PW-1 FRACTION 04A TEST CODE SPEC NAME SPECIAL FORM FOR REPORTING  
Date & Time Collected 09/29/89 Category 117379

PARAMETER	RESULT	2-SIGMA ERROR	UNITS
RA-226	<0.14		pCi/l
RA-228	<0.89		pCi/l
GROSS ALPHA	<3		pCi/l
GROSS BETA	<4		pCi/l

Page 4  
Received: 10/02/89

ITRSL Oak Ridge REPORT  
Results by Sample

Work Order # R9-10-013

SAMPLE ID JJ6954 RINSATE FRACTION 05A TEST CODE SPEC NAME SPECIAL FORM FOR REPORTING  
Date & Time Collected 09/29/89 Category 11/379

PARAMETER	RESULT	2-SIGMA ERROR	UNITS
RA-226	<0.23		pCi/l
RA-228	<1.6		pCi/l
GROSS ALPHA	<3		pCi/l
GROSS BETA	<4		pCi/l

Page 1  
Received: 10/02/89

ITRSL Oak Ridge REPORT  
11/07/89 13:40:59

Work Order # R9-10-013

REPORT IT CORPORATION/MIDDLEBROOK  
TO 5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN 37921

PREPARED IT/RADIOLOGICAL SCIENCES LAB.  
BY 1550 BEAR CREEK ROAD  
OAK RIDGE, TN 37831

  
CERTIFIED BY

ATTEN JANICE STERRETT

ATTEN ERS  
PHONE 615-482-9707

CONTACT JIM DILLARD

CLIENT ITAS SAMPLES 8  
COMPANY IT CORPORATION/MIDDLEBROOK  
FACILITY MIDDLEBROOK PIKE

WORK ID WATER SAMPLES - IT/TAMPA  
TAKEN \_\_\_\_\_  
TRANS \_\_\_\_\_  
TYPE \_\_\_\_\_  
P.O. # 486000.04  
INVOICE under separate cover

SAMPLE IDENTIFICATION  
01 JJ6950  
02 JJ6951  
03 JJ6952  
04 JJ6953  
05 JJ6954  
06 JJ6697  
07 JJ6698  
08 JJ6699

TEST CODES and NAMES used on this report  
GALPHA GROSS ALPHA  
GBETA GROSS BETA  
RA226 RA-226  
RA228 RA-228  
SPEC SPECIAL FORM FOR REPORTING

Page 2  
Received: 10/02/89

ITRSL Oak Ridge REPORT  
Results by Sample

Work Order # R9-10-013

SAMPLE ID JJ6950 FRACTION 01A TEST CODE SPEC NAME SPECIAL FORM FOR REPORTING  
Date & Time Collected 09/29/89 Category 117379

PARAMETER	RESULT	2-SIGMA ERROR	UNITS
RA-226	2.3	0.4	pCi/l
RA-228	<0.69		pCi/l
GROSS ALPHA	12	2	pCi/l
GROSS BETA	8	3	pCi/l

SAMPLE ID JJ6951 FRACTION 02A TEST CODE SPEC NAME SPECIAL FORM FOR REPORTING  
Date & Time Collected 09/29/89 Category 117379

PARAMETER	RESULT	2-SIGMA ERROR	UNITS
RA-226	3.0	0.6	pCi/l
RA-228	<1.5		pCi/l
GROSS ALPHA	11	2	pCi/l
GROSS BETA	7	2	pCi/l

Page 3  
Received: 10/02/89

ITRSL Oak Ridge REPORT  
Results by Sample

Work Order # R9-10-013

SAMPLE ID JJ6952

FRACTION 03A TEST CODE SPEC  
Date & Time Collected 09/29/89

NAME SPECIAL FORM FOR REPORTING  
Category 117379

PARAMETER	RESULT	2-SIGMA ERROR	UNITS
RA-226	2.3	0.5	pCi/l
RA-228	<1.3		pCi/l
GROSS ALPHA	10	2	pCi/l
GROSS BETA	6	2	pCi/l

SAMPLE ID JJ6953

FRACTION 04A TEST CODE SPEC  
Date & Time Collected 09/29/89

NAME SPECIAL FORM FOR REPORTING  
Category 117379

PARAMETER	RESULT	2-SIGMA ERROR	UNITS
RA-226	<0.14		pCi/l
RA-228	<0.89		pCi/l
GROSS ALPHA	<3		pCi/l
GROSS BETA	<4		pCi/l

Page 4  
Received: 10/02/89

ITRSL Oak Ridge REPORT  
Results by Sample

Work Order # R9-10-013

SAMPLE ID JJ6954

FRACTION 05A TEST CODE SPEC  
Date & Time Collected 09/29/89

NAME SPECIAL FORM FOR REPORTING  
Category 117379

PARAMETER	RESULT	2-SIGMA ERROR	UNITS
RA-226	<0.23		pCi/l
RA-228	<1.6		pCi/l
GROSS ALPHA	<3		pCi/l
GROSS BETA	<4		pCi/l

SAMPLE ID JJ6697

FRACTION 06A TEST CODE SPEC  
Date & Time Collected 09/28/89

NAME SPECIAL FORM FOR REPORTING  
Category 117387

PARAMETER	RESULT	2-SIGMA ERROR	UNITS
RA-226	0.97	0.23	pCi/l
GROSS ALPHA	5	1	pCi/l
GROSS BETA	<4		pCi/l

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Work Order # R9-10-013

SAMPLE ID JJ6698 FRACTION Q7A TEST CODE SPEC NAME SPECIAL FORM FOR REPORTING  
Date & Time Collected 09/28/89 Category 117387

PARAMETER	RESULT	2-SIGMA ERROR	UNITS
RA-226	1.2	0.3	pCi/l
GROSS ALPHA	4	1	pCi/l
GROSS BETA	<4		pCi/l

SAMPLE ID JJ6699 FRACTION Q8A TEST CODE SPEC NAME SPECIAL FORM FOR REPORTING  
Date & Time Collected 09/27/89 Category 117387

PARAMETER	RESULT	2-SIGMA ERROR	UNITS
RA-226	1.5	0.4	pCi/l
GROSS ALPHA	3		pCi/l
GROSS BETA	<4		pCi/l

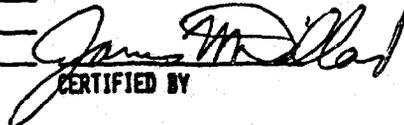
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11/09/89 12:52:34

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REPORT IT CORPORATION/MIDDLEBROOK  
TO 5815 MIDDLEBROOK PIKE  
KNOXVILLE, TN 37921

PREPARED IT/RADIOLOGICAL SCIENCES LAB.  
BY 1550 BEAR CREEK ROAD  
OK RIDGE, TN 37831

  
CERTIFIED BY

ATTEN JANICE STERRETT

ATTEN ERS  
PHONE 615-482-9707

CONTACT JIM DILLARD

CLIENT ITAS SAMPLES 10  
COMPANY IT CORPORATION/MIDDLEBROOK  
FACILITY MIDDLEBROOK PIKE

WORK ID IT/TAMPA WATERS - ITET 44234  
TAKEN \_\_\_\_\_  
TRANS \_\_\_\_\_  
TYPE \_\_\_\_\_  
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SAMPLE IDENTIFICATION  
01 JJ6819 41-3  
02 JJ6820 41-4  
03 JJ6821 41-5  
04 JJ6822 41-6  
05 JJ6823 42-5  
06 JJ6824 42-6  
07 JJ6825 42-7  
08 JJ6826 42-8  
09 JJ6827 42-9  
10 JJ6828 RINSATE

TEST CODES and NAMES used on this report  
GALPHA GROSS ALPHA  
GBETA GROSS BETA  
RA226 RA-226  
RA228 RA-228  
SPEC SPECIAL FORM FOR REPORTING

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SAMPLE ID JJ6819 41-3

FRACTION 01A TEST CODE SPEC  
Date & Time Collected 09/28/89

NAME SPECIAL FORM FOR REPORTING  
Category 117383

PARAMETER	RESULT	2-SIGMA ERROR	UNITS
RA-226	7.2	1.2	pCi/l
RA-228	2.0	1.0	pCi/l
GROSS ALPHA	34	12	pCi/l
GROSS BETA	33	12	pCi/l

SAMPLE ID JJ6820 41-4

FRACTION 02A TEST CODE SPEC  
Date & Time Collected 09/28/89

NAME SPECIAL FORM FOR REPORTING  
Category 117383

PARAMETER	RESULT	2-SIGMA ERROR	UNITS
RA-226	0.78	0.20	pCi/l
RA-228	<0.72		pCi/l
GROSS ALPHA	77	28	pCi/l
GROSS BETA	39	15	pCi/l

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SAMPLE ID JJ6821 41-5

FRACTION 03A TEST CODE SPEC  
Date & Time Collected 09/28/89

NAME SPECIAL FORM FOR REPORTING  
Category 117383

PARAMETER	RESULT	2-SIGMA ERROR	UNITS
RA-226	9.3	1.5	pCi/l
RA-228	3.4	1.2	pCi/l
GROSS ALPHA	77	26	pCi/l
GROSS BETA	71	24	pCi/l

SAMPLE ID JJ6822 41-6

FRACTION 04A TEST CODE SPEC  
Date & Time Collected 09/28/89

NAME SPECIAL FORM FOR REPORTING  
Category 117383

PARAMETER	RESULT	2-SIGMA ERROR	UNITS
RA-226	18	3	pCi/l
RA-228	5.5	1.2	pCi/l
GROSS ALPHA	73	29	pCi/l
GROSS BETA	64	27	pCi/l

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SAMPLE ID JJ6823 42-5

FRACTION 05A TEST CODE SPEC  
Date & Time Collected 09/28/89

NAME SPECIAL FORM FOR REPORTING  
Category 117383

PARAMETER	RESULT	2-SIGMA ERROR	UNITS
RA-226	9.5	0.9	pCi/l
RA-228	4.1	1.0	pCi/l
GROSS ALPHA	41	20	pCi/l
GROSS BETA	55	25	pCi/l

SAMPLE ID JJ6824 42-6

FRACTION 06A TEST CODE SPEC  
Date & Time Collected 09/28/89

NAME SPECIAL FORM FOR REPORTING  
Category 117383

PARAMETER	RESULT	2-SIGMA ERROR	UNITS
RA-226	4.5	0.8	pCi/l
RA-228	2.4	0.7	pCi/l
GROSS ALPHA	73	21	pCi/l
GROSS BETA	38	15	pCi/l

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ITRSL Oak Ridge REPORT  
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SAMPLE ID JJ6825 42-7

FRACTION Q7A TEST CODE SPEC  
Date & Time Collected 09/28/89

NAME SPECIAL FORM FOR REPORTING  
Category 117383

PARAMETER	RESULT	2-SIGMA ERROR	UNITS
RA-226	2.7	0.5	pCi/l
RA-228	1.6	0.6	pCi/l
GROSS ALPHA	17	11	pCi/l
GROSS BETA	49	18	pCi/l

SAMPLE ID JJ6826 42-8

FRACTION Q8A TEST CODE SPEC  
Date & Time Collected 09/28/89

NAME SPECIAL FORM FOR REPORTING  
Category 117383

PARAMETER	RESULT	2-SIGMA ERROR	UNITS
RA-226	8.3	1.3	pCi/l
RA-228	2.1	0.6	pCi/l
GROSS ALPHA	241	71	pCi/l
GROSS BETA	220	69	pCi/l

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ITRSL Oak Ridge REPORT  
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SAMPLE ID JJ6827 42-9

FRACTION 09A TEST CODE SPEC  
Date & Time Collected 09/28/89

NAME SPECIAL FORM FOR REPORTING  
Category 117383

PARAMETER	RESULT	2-SIGMA ERROR	UNITS
RA-226	2.9	0.5	pCi/l
RA-228	<0.9		pCi/l
GROSS ALPHA	67	20	pCi/l
GROSS BETA	59	17	pCi/l

SAMPLE ID JJ6828 RINSATE

FRACTION 10A TEST CODE SPEC  
Date & Time Collected 09/28/89

NAME SPECIAL FORM FOR REPORTING  
Category 117383

PARAMETER	RESULT	2-SIGMA ERROR	UNITS
RA-226	<0.23		pCi/l
RA-228	<1.6		pCi/l
GROSS ALPHA	<3		pCi/l
GROSS BETA	<4		pCi/l